Appendix L

RESPONSES TO COMMENTS ON THE DRAFT EIS (INCLUDING COMMENT LETTERS AND TESTIMONY)

Appendix L.

Public Comments on the Draft Environmental Impact Statement and Responses

Introduction

The draft Environmental Impact Statement (EIS) was published for public review and comment in August 2010. The comment period was open for 120 days (75 Fed. Reg. 47591, August 6, 2010; 75 Fed. Reg. 54146, September 3, 2010). Additionally, a series of public meetings was held throughout the Columbia River Basin, in the states of Washington, Oregon, and Idaho (Section 1.6.6, Public Review and Comment). This public process resulted in the National Marine Fisheries Service (NMFS) receiving more than 1,100 comments via letter, email, and public testimony. These comments were used to inform, shape, and improve this final EIS.

This comment and response appendix (Appendix L) is organized into three (3) sections. The first section (Appendix L1) is designed to organize and respond to comments with common general themes. NMFS refers to these as "global" comments. The second section (Appendix L2) contains all comments received during the public process, as well as NMFS' written responses. These are organized into a table with a reference to the letter number and the comment number of the individual letters/testimonies received and the response to each. The last section (Appendix L3) contains copies of the original individual letters/emails/testimonies received. These documents (referred to as "letters" for organization purposes) identify the individual letter number and comment number contained in each letter. In addition to the specific letters from individuals, there are also a number of form letters that were submitted by more than one individual. Appendix L3 contains only one copy of each of the form letters. The letters in Appendix L3 can be used as a reference with the table in Appendix L2.

Appendix L1

Global Comments and Responses

In reviewing comments received on the draft EIS, NMFS found that there were common themes in many of the comments. Many of these comments were based on the reviewer's misunderstanding of either the scope of the EIS and NMFS' intent for the EIS (i.e., purpose and need), or a misunderstanding about the relationship between the alternatives and the example implementation scenarios used to analyze the effects of the alternatives. As noted below and in its response to individual comments (Appendix L2), to address these misunderstandings NMFS has revised and provided additionally clarifying language throughout the EIS.

NMFS has organized these common themes into a series of "global comments." Rather than responding to these comments individually and likely repeating very similar if not exact answers, NMFS has generated a series of global responses to address these commonly themed, global comments. These global responses cover seven (7) areas of general comment:

1. Comments stating a preference and/or ideas for the EIS preferred alternative
2. Comments addressing the scope of the EIS
3. Comments addressing the EIS process
4. Comments asserting and referring to a mitigation obligation associated with the Mitchell Act or calling for NMFS to define the obligation
5. Comments addressing the EIS and its relationship to other plans, regulations, agreements, laws, and executive and secretarial orders
6. Comments addressing the range of EIS alternatives
7. Comments addressing the supporting analyses within the EIS

Below are the global responses to each of these comment themes.

1. Comments Stating a Preference (Preferences) and/or Ideas for the EIS Preferred Alternative

NMFS did not identify a preferred alternative in the draft EIS. During the public review of the draft EIS, NMFS encouraged reviewers to "[f]ormulate a notion of what the hatchery programs should accomplish; that is, formulate a notion of the policy direction they think should guide NMFS decisions on hatchery production in the Columbia River Basin," and "After considering the effects (presented in Chapters 4 and 5), comment on how NMFS should formulate a preferred alternative for publication in the final EIS and record of decision."

Many commenters identified a preferred alternative. NMFS appreciates these comments. These preferences covered a wide range of ideas including the following: comments stating a preference for one or more of the alternatives analyzed in the draft EIS; comments on an alternative that increased hatchery production; comments calling for a no hatchery production alternative; and comments calling for alternatives outside the scope of this EIS, such as management options for the hydropower system or habitat restoration alternatives. These comments provided NMFS with a diverse spectrum of opinions from interested parties, and they helped the agency formulate the preferred alternative (Section 2.5.6, Alternative 6 [Preferred Alternative - All Hatchery Programs Meet Stronger Performance Goal]) for the final EIS. Alternative 6, the preferred alternative for this EIS, represents a combination or blending of several of the draft EIS alternatives.

2. Comments Addressing the Scope of this EIS

a. Commenter's views that the EIS considers alternatives that are inconsistent with NMFS' current authority

Some commenters supported NMFS' inclusion of a full range of alternatives for review. However, several commenters expressed concern that some of the alternatives included actions beyond NMFS' current legal jurisdiction or that may be inconsistent with existing management plans and agreements. Commenters said that inclusion of these actions is not reasonable.

First, most of the comments arise out of a misunderstanding regarding the purpose of the implementation scenarios. These implementation scenarios were a tool NMFS developed

to facilitate the comparison of environmental effects associated with various alternatives, and they are not intended to suggest ultimate options. See Response 7(a).

Second, NMFS recognizes that certain actions within the example implementation scenarios may be viewed as inconsistent with current laws, plans, and agreements (e.g., actions to fund hatchery programs not currently funded by the Mitchell Act, or proposed changes to hatchery programs that do not currently affect ESA-listed species under NMFS' jurisdiction). However, NMFS believes that including these actions is important to ensure that decision makers have the best available information on all relevant environmental effects.

The Council of Environmental Quality (CEQ) supports this broad-based approach and states that a potential conflict with Federal or local law does not necessarily render an alternative unreasonable (40 CFR 1502.14[c]), and the lead agency should do the following:

> *Include reasonable alternatives not within the jurisdiction of the lead agency.*

CEQ further clarifies this regulation in the "Forty Most Asked Questions Concerning CEQ's National Environmental Policy Act Regulations" paper (http://energy.gov/nepa/downloads/forty-most-asked-questions-concerning-ceqs-national-environmental-policy-act), stating the following in response to question 2b:

> *An alternative that is outside the legal jurisdiction of the lead agency must still be analyzed in the EIS if it is reasonable. A potential conflict with local or federal law does not necessarily render an alternative unreasonable, although such conflicts must be considered.*

NMFS anticipates that the resource effects analyzed in this EIS will be informative for policy decisions for approximately 10 years. Consequently, the EIS must evaluate actions that may be beyond NMFS' existing regulatory authority, but possibly are within future legal authorities that allow implementation of scenario measures (e.g., through future Mitchell Act hatchery funding or through additional ESA listings). Laws, plans, and agreements may be amended or repealed. Accordingly, NMFS included some actions within the example implementation scenarios that may conflict with current implementation of existing laws and agreements. This approach accommodates the possibility that laws and agreements may change in the future, and it ensures the vitality of this EIS.

Finally, by including these actions, NMFS does not suggest or anticipate future decision making related to compliance with existing agreements or plans. Ultimately, Mitchell Act hatchery funding decisions must harmonize with many preexisting plans, regulations, agreements, laws, and executive and secretarial orders. Future decisions regarding Mitchell Act hatchery funding will be coordinated through the various management forums that exist in the Columbia River Basin, as appropriate.

b. EIS scope is too broad or too narrow

Some commenters suggested that NMFS narrow the scope of the EIS to make it more manageable and to focus only on the hatchery programs that are currently funded through the Mitchell Act. NMFS agrees that narrowing the scope of the EIS might simplify the document, but it would hinder informed decision making for future funding decisions (Section 1.2, Purpose and Need for Action). Mitchell Act funds can be spent throughout the Columbia River Basin, not just on hatchery programs that currently receive Mitchell Act funds. As a result, the EIS considered options for hatchery production throughout the Columbia River Basin. However, as noted throughout the responses to comments, NMFS took every opportunity it could to update, correct, and clarify the EIS, as appropriate, to ease reader comprehension.

Although some commenters suggested that the scope of the EIS should be reduced, other commenters suggested that the scope of the EIS should be expanded to include the following: screens and fishways that are funded through the Mitchell Act, harvest management, habitat restoration, and/or the operation of hydropower facilities, since all of these actions affect salmon and steelhead in the Columbia River Basin. NMFS agrees that all of these types of actions have an effect on salmon and steelhead populations in the Columbia River Basin and included the current estimated effects of several of these (harvest, hydropower, and current habitat) in the baseline condition discussions (Chapter 3, Affected Environment). Further, the analysis of effects (Chapter 4, Environmental Consequences) considered the effects of the hatchery alternatives on an environment that is also being affected by actions in non-hatchery sectors. NMFS did not evaluate alternatives for hatchery management in these non-hatchery sectors, because this action would confound the purpose and need, which focus on the ability to meaningfully inform hatchery-related decisions.

c. Scope should focus on hatchery funding decisions, not on future ESA determinations

Many commenters supported use of the EIS to guide NMFS' distribution of Mitchell Act funds, but commented that it should not be used for analyses of individual hatchery programs under the Endangered Species Act (ESA). Commenters questioned whether an analysis under the National Environmental Policy Act (NEPA) was appropriate or sufficient to make determinations under ESA. These commenters misinterpreted the inclusion of the ESA-related information in the purpose and need section of the EIS; this information was intended merely to help inform future ESA analyses, but not to replace these analyses.

The relationship between ESA and NEPA is complex, in part because both laws address environmental values related to the impacts of a proposed action. However, each law has a distinct purpose, and the scope and standards of review under each statute are different. The purpose of an EIS under NEPA is to promote disclosure, analysis, and consideration of the broad range of environmental issues surrounding a proposed major Federal action by considering a full range of reasonable alternatives, including a no-action alternative. Public involvement promotes this purpose. The purpose of ESA is to conserve listed species and the ecosystems upon which they depend. Determinations about whether hatchery programs meet ESA requirements are made under separate evaluations for ESA section 4(d), section 7, or section 10 (Section 1.3.3, Potential Future Decisions in Response to Hatchery Actions). Each of these ESA sections has its own substantive requirements, and the documents that reflect the analysis and decisions are different than those related to a NEPA analysis.

As a result of these comments, NMFS revised the purpose and need section and its proposed action to avoid misunderstanding NMFS' purpose, as related to ESA. In the final EIS, the proposed action is to develop a NMFS policy direction that will guide the distribution of Mitchell Act hatchery funds. The proposed action does not include development of a policy direction to inform NMFS's future review of individual hatchery programs under ESA.

3. Comments Addressing the EIS Process

a. More coordination with tribal and state co-managers

Several commenters suggested that NMFS should have included more coordination with the co-managers, particularly tribes, during the development of the draft EIS. NMFS recognizes that it is the Federal government's and NMFS' policy to meet and confer (consult) with the tribes on all issues where Federal actions may affect the tribes, tribal resources, or Federal Trust responsibilities. Executive Order 13175, Commerce Departmental Administrative Order 218-8, and Secretarial Order 3206 all direct NMFS to confer early and often with tribal officials when developing Federal policies with tribal implications.

In developing the draft EIS, NMFS sought input from individual tribes as well as multi-tribal management organizations (e.g., Columbia River Inter-tribal Fish Commission) during the initial project scoping (2004), subsequent scoping (2009), and development of the draft EIS alternatives. Following the public review of the draft EIS, NMFS worked diligently to continue to fulfill these policies, holding government-to-government meetings with tribes throughout the basin, as well as maintaining consistent and thorough reporting of the EIS progress in all applicable co-manager forums. Additionally, NMFS worked extensively with the co-managers in the action area since the draft EIS was released to ensure that the information presented in the EIS is accurate and includes the best available information regarding the status of and likely effects on all of the resources included.

b. Comments on producing a supplemental EIS

Some commenters suggested that the EIS be withdrawn or that a supplemental draft EIS be produced. As stated earlier, most of these comments were based on confusion experienced by commenters regarding the following: the EIS would be used to replace future ESA determinations, rather than merely to inform future ESA analyses as intended by NMFS, and misunderstanding concerning the purpose of the implementation scenarios (See global response 7, Comments Addressing the Analysis). To address this confusion, NMFS made text and format changes in the final EIS. Neither of these changes meets the

criteria in the CEQ regulations to issue a supplemental EIS. Those regulations stipulate the following in Forty (40) CFR 1502.9(c)(1):

> *Agencies [s]hall prepare supplements to either draft or final environmental impact statements if:*
>
> > *(i) The agency makes substantial changes in the proposed action that are relevant to environmental concerns; or*
> >
> > *(ii) There are significant new circumstances or information relevant to environmental concerns and bearing on the proposed action or its impacts.*

Additionally, even though the final EIS reflects some changes to the draft EIS, none of these represents substantial changes to the proposed action, relevant to environmental concerns, significant new circumstances, or information pertinent to environmental concerns or to the proposed action.

NMFS carefully considered the changes that were made to the draft EIS, relative to 40 CFR 1502.9(c) requirements, and decided that a supplemental draft EIS is not necessary for the following reasons:

- Changes to the EIS, since the draft, were based on the addition of the preferred alternative, revision and refinement of the text to avoid reader confusion, and updates to the supporting data and information that was presented in the draft EIS, none of which suggested changes relevant to environmental concerns.
- NMFS's preferred alternative is a combination of Alternative 1, Alternative 3, Alternative 4, and Alternative 5, all of which were analyzed in the draft EIS. The effects of the preferred alternative are similar to effects of alternatives analyzed in the draft EIS (Subsection 4.0, Environmental Consequences). For example, the preferred alternative policy guidance, performance goals, and additional goals and principles were all analyzed, in a variety of combinations, in one or more of the draft EIS alternatives.
- The preferred alternative falls within the range of alternatives that the public could have reasonably anticipated that NMFS would consider from the draft EIS (Section 1.3.1, Preferred Alternative Formulated and Identified in the Final EIS; Box 2-1, Was there a preferred alternative in the draft EIS?; and Section 2.8, Selection of a Preferred Alternative).

- Information added to or updated in the EIS, since the draft EIS, takes the following form:
  - Clarifying language and information based on comments received during the public review of the draft EIS
  - Updating information and data related to inaccuracies in the draft EIS that were informed by the public review of the draft EIS
  - Providing relevant updates and refinements of information, since the draft EIS, related to the baseline status of the affected resources
- Comments received on the draft EIS meaningfully informed NMFS of the public's attitudes toward the preferred alternative because the preferred alternative is a combination of components included in the alternatives evaluated in the draft EIS. That is, the comments that NMFS received on the various alternatives presented in the draft EIS meaningfully informed NMFS of the public's attitudes towards our preferred alternative.
- NMFS identified a preferred alternative only after considering comments received on the draft alternatives, so the preferred alternative was influenced directly through the public review process.

---

4. Comments Asserting and Referring to the Mitchell Act's Mitigation Obligation or Calling for NMFS to Define the Obligation

When Congress authorized the Mitchell Act (Act) in 1938, it did not specify goals for annual hatchery production or annual funding levels to support hatcheries and other actions directed by the Act. The development of hatchery facilities and other projects associated with the Mitchell Act evolved in the decades that followed. The Act was amended in 1946 to allow the Federal government to pass funding on to the states of Washington, Oregon, and Idaho to carry out the work of the Act, in addition to the Federal Department of the Interior. In 1947, the Lower Columbia River Fisheries Development Plan was authorized for funding. Thus began the era of Mitchell Act hatchery construction and funding. During that time and since, Congress has not identified specific quantitative goals for hatchery production, nor have permanent levels of funding been established in the law, notwithstanding NMFS' short-term production agreements (e.g., *U.S. v. Oregon* [(Section 1.7.4, *U.S. v. Oregon*)] management agreements) that specify objectives for some Mitchell Act-funded programs.

Several commenters requested that the EIS define the Mitchell Act's mitigation obligation. In addition, some commenters believed that the EIS appeared to "subsume" the Mitchell Act under ESA and, in effect, to "abolish" the mitigation requirements of the Mitchell Act. To help the reader better understand the Act and its history, NMFS has added historical information to Chapter 1 (Section 1.1.1, The Mitchell Act) and the full text of the Mitchell Act, which was included in the draft EIS, remains in this final EIS.

NMFS will not use the EIS to define the mitigation obligation, in terms of fixed hatchery production objectives. The purpose of the EIS is not to define or specify the Mitchell Act mitigation obligation. The purpose of the EIS is to provide best available information and science to inform NMFS' policy on the distribution of funds for hatchery production under the Mitchell Act (Section 1.2, Purpose and Need for Action). Ultimately, Mitchell Act hatchery funding decisions must harmonize with many preexisting plans, regulations, agreements, laws, and executive and secretarial orders. Future decisions regarding Mitchell Act hatchery funding will be coordinated through the various management forums that exist in the Columbia River Basin as appropriate. See global response 2, Comments Addressing the Scope of this EIS, and global response 5, Comments Addressing the EIS and its Relationship to Other Plans, Regulations, Agreements, Laws, and Executive and Secretarial Orders.

5. Comments Addressing the EIS and Its Relationship to Other Plans, Regulations, Agreements, Laws, and Executive and Secretarial Orders

Several commenters recommended that the draft EIS be revised to ensure better consistency with the hatchery strategies identified in NMFS' biological opinions, the Columbia River Fish Accords, the *U.S. v. Oregon* Management Agreement, the Pacific Salmon Treaty, the Lower Snake River Compensation Plan, mitigation agreements, existing hatchery reform efforts, and salmon and steelhead recovery plans.

Forty CFR 1502.14 requires that an EIS examine all reasonable alternatives to a proposal. In determining the scope of alternatives to be considered, the emphasis is on what is "reasonable," rather than on whether the proponent or applicant likes or is itself capable of carrying out a particular alternative. Reasonable alternatives include those that are practical or feasible from the technical and economic standpoint and using common sense, rather than simply desirable from the standpoint of the applicant (CEQ's Forty Most Asked Questions [http://energy.gov/nepa/downloads/forty-most-asked-questions-concerning-ceqs-national-

environmental-policy-act]). Doing so ensures that decision makers have access to all relevant information. Consequently, this EIS includes hatchery strategies that may be different from strategies currently identified in some existing agreements and plans.

In response to these comments, information was added to better describe how NMFS' future Mitchell Act hatchery funding decisions, guided by the EIS, relate to other current plans, regulations, agreements, laws, and executive and secretarial orders (Section 1.7, Relationship to Other Plans, Regulations, Agreements, Laws, and Executive and Secretarial Orders). For example, new sections have been added to the EIS recognizing Executive Order 13175 (Section 1.7.1) and Commerce Departmental Administrative Order 218-8 (Section 1.7.2).

Ultimately, NMFS recognizes that future Mitchell Act hatchery funding decisions must harmonize with many preexisting plans, regulations, agreements, laws, and executive and secretarial orders. Future decisions regarding Mitchell Act hatchery funding will be coordinated through the various management forums that exist in the Columbia River Basin to implement these plans, regulations, agreements, laws, executive and secretarial orders.

---

6. Comments Addressing the Range of Draft EIS Alternatives

Comments on the alternatives analyzed in the draft EIS centered on 11 core issues:

a. The No-action Alternative should be updated to capture the current state of hatchery management.

NMFS agreed and updated the No-action Alternative (Section 2.5.1, Alternative 1 [No Action]). NMFS also added expanded text in Chapter 3 (Section 3.2.3.1, General Risks and Benefits of Hatchery Programs to Salmon and Steelhead Species) and Chapter 4 (Section 4.1.2, Mitigation), describing current measures commonly incorporated by hatchery operators to reduce program risks.

b. The alternatives should not distinguish between the upper and lower Columbia River.

The decision to develop and analyze alternatives in the draft EIS, which proposed different policy directions (performance goals) for the Interior Columbia Recovery Domain and the Willamette/Lower Columbia Recovery Domain (Alternative 4 and Alternative 5), was informed by the public scoping process, as well as recognition that there are important aspects of Columbia River salmon and steelhead planning and management that have varying management objectives for the interior Columbia River

Basin (i.e., above Bonneville Dam) and the Lower Columbia Basin (i.e., below Bonneville Dam). These include recovery domain delineation, Federal Columbia River Power System (FCRPS) management, and important hatchery production and harvest management aspects of the current *U.S. v. Oregon* management agreement.

Alternative 4 and Alternative 5 were developed to compare and contrast the likely effects on the resources, in both the human and natural environment, by assuming some geographic variability in the application of NMFS policy direction. Either of the performance goals (stronger or intermediate) are meant, in general, to reduce the risks that hatchery programs present to natural-origin salmon and steelhead populations compared to the baseline, Alternative 1. The variable between Alternative 4 and Alternative 5 was the geographic implementation of the stronger and intermediate performance goals: Alternative 4 applied the stronger performance goal to the Willamette/Lower Columbia Recovery Domain and the intermediate performance goal to the Interior Columbia River Recovery Domain; Alternative 5 reversed the performance goal application.

NMFS remains confident that Alternative 4 and Alternative 5 provide important information to NMFS and the public on the likely effects and the variation of those effects for the different resources (i.e., fish, socioeconomics, and environmental justice). Such information will help guide NMFS' Mitchell Act hatchery funding decisions.

c. The EIS should include an alternative that increases production levels and is more supportive of harvest than the existing alternatives.

Comments on this issue point to a misunderstanding over the difference between the alternatives and the example implementation of the alternatives. NMFS understands that the presentation of this difference in the draft EIS was confusing. NMFS, therefore, made efforts, based on public comment, to improve these sections and clarify these differences (see global response 7, Comments Addressing the Analysis). As clarification, other than Alternative 2, which assumes that Mitchell Act hatchery program funding would be eliminated and would undoubtedly result in a decrease in overall basinwide hatchery production, none of the other alternatives (Alternative 3 through Alternative 6) would preclude increases in program production.

The implementation scenarios are responsible for generating the estimated, assumed production of implementing each alternative. They are one example of a scenario directed at meeting the alternative policy goals. NMFS developed these scenarios under a set of

implementation measures (Section 4.1.3.3, Implementation Measures), based on current and reasonable approaches to reducing hatchery program risks and enhancing program benefits for natural-origin salmon and steelhead populations. There are likely many additional approaches or combinations of the measures applied in this analysis that may present opportunities for programs to increase their production while still meeting performance goals.

For Alternative 5 and Alternative 6, the implementation scenario specifically identifies that "[b]ecause some existing hatchery production levels would be reduced, under the implementation scenario, for Alternative 5 [and Alternative 6] to ensure that hatchery programs could meet performance metrics, opportunities would be explored for increasing hatchery production in other existing hatchery facilities while still meeting target performance metrics."

d. The alternatives should accommodate new hatchery programs, not just changes to the production levels in existing hatchery programs. The alternatives should also allow for the construction of new, innovative hatchery facilities.

Several of the alternatives presented in the draft EIS, as well as the preferred alternative presented in the final EIS, would allow for new hatchery programs for conservation, harvest, or both (Section 2.5, Alternatives Analyzed in Detail). Only Alternative 2 and Alternative 3 assume that no new hatchery programs would be initiated (Section 2.5, Alternatives Analyzed in Detail). Table 4-15, summarizing the new hatchery programs assumed to be initiated under each alternative's implementation scenario, can be found at the end of Section 4.1.3.4, Comparison of Implementation Scenarios.

Text addressing the construction of new hatchery facilities was updated, based on public comment, in Section 2.7.3, Construction of New Hatchery Facilities with Mitchell Act Funds. While decisions regarding the scope of review in this EIS would not preclude the construction of new or expanded hatchery facilities in the Columbia River Basin, current and reasonably foreseeable appropriations under the Mitchell Act for hatchery production would preclude the option to construct new hatchery facilities in the project area.

e. The EIS should include an alternative that increases funding levels.

The annual congressional appropriations for Mitchell Act hatchery program operations and maintenance have declined for over a decade. This is in addition to significant reductions that took place during the mid-1990s. Based on this recent history, NMFS cannot speculate on how much funding Congress will allocate to the Mitchell Act in

future years. Therefore, NMFS did not place a funding cap on the alternatives or their example implementation scenarios. As a result, some alternatives would likely increase the total cost of operating hatcheries in the Columbia River Basin relative to baseline conditions. For example, total estimated annual hatchery facility costs increased under the implementation scenarios for Alternative 4 through Alternative 6, decreased for the implementation scenario for Alternative 2, and remained stable for the implementation scenario for Alternative 3, compared to Alternative 1 (Table 4-100). Projected costs are presented for comparison of the alternatives in Section 4.3.3, Hatchery Program Costs, and they are summarized in Table 4-100.

f. The EIS should include more specific information on research, monitoring, and evaluation.

The Mitchell Act hatchery program has had a specific segment of annual appropriations directed toward the monitoring and evaluation of Mitchell Act hatchery programs since 2001 (Table 1-3). The title for this Mitchell Act activity is monitoring, evaluation, and reform (MER) (Section 1.1.1, The Mitchell Act). Monitoring and evaluation activities provide the hatchery managers with the information they need to adaptively manage their hatchery programs over time, as needed, when new information becomes available.

While the EIS does not identify specific activities associated with the alternatives for MER, it does discuss the need for these activities to occur under all alternatives. Variations in application of the MER objective occur in all MER activities guided by a comprehensive, basinwide MER plan (Alternative 2 through Alternative 5) or in MER activities developed at the local, hatchery program, and population levels (Alternative 1 and Alternative 6). MER activities vary in both scale and cost, dependent on species, run, geography, hydrology, etc. These factors make broad application assumptions, and the costs associated with them highly speculative.

g. The same performance goals should not be applied to primary and contributing populations.

The EIS alternatives provide a range of performance goal application, including alternatives that apply the same performance goal for both contributing and primary populations. Alternative 2 and Alternative 3 both apply the intermediate performance goal to all primary and contributing populations of salmon and steelhead basinwide. Alternative 6, the preferred alternative, applies the stronger performance goal basinwide.

The stronger and intermediate performance goals that are proposed in the alternatives are goals that are objectives for risk reduction and/or benefit increases relative to the baseline (Alternative 1). By varying the application of these two performance goals across population types and geographic scope, the EIS can best inform NMFS and the public regarding differences in resource effects across these categories.

The programs that are generated in the alternative's implementation scenarios should only be interpreted as one example of how programs might be modified to meet an alternative performance goal. They should not be seen as absolute, prescriptive plans for future hatchery production. Likewise, the implementation measures and performance metrics should also be viewed as examples of ways to implement change, where needed, and examples of ways to measure the outcomes.

h. The use or prohibition of weirs should not be a component of the alternatives.

NMFS agrees that weirs are a tool and, like other tools (e.g., selective fisheries or program operational strategy), should be considered as a measure to be implemented and not a goal for or component of the alternatives themselves. The use of weirs, which was a goal or objective of the alternatives, as presented in the draft EIS, was removed from the alternatives themselves. Weirs are used in the analysis portion of the EIS, to varying degrees, as one of several implementation measures (Section 4.1.3.3, Implementation Measures).

i. The EIS should include an alternative that alters production programs to reduce adverse effects on natural-origin spawners and results in significantly increased numbers of natural-origin fish.

All of the action alternatives, including Alternative 6 (preferred alternative), have performance goals for reducing the adverse effects of hatchery programs, compared to the baseline, Alternative 1, on primary and contributing populations (Box 1-5, What are recovery plans? What are primary, contributing, and stabilizing populations?) in the Columbia River Basin. The implementation scenarios for Alternative 2 through Alternative 6 all result in increases of estimated natural-origin spawner abundance, compared to the baseline, Alternative 1 (Table 4-19 and Table 4-122).

j. The alternatives should include innovative hatchery practices that consider marine conditions such as ocean productivity.

Although the alternatives do not explicitly include hatchery practices that consider marine conditions such as ocean productivity, the scope of the EIS does not preclude the

use of information such as consideration of ocean productivity from informing future decisions on hatchery program production. NMFS anticipates that increased understanding of potential relationships among environmental factors such as ocean productivity and performance of hatchery-produced and naturally-produced salmon and steelhead will add to existing and other future considerations when planning hatchery program size and operation.

k. The EIS should evaluate an alternative that includes habitat restoration.

As described in Section 2.7.6, Alternative that Focuses on Habitat Improvements Rather than Hatchery Production, Congress directs NMFS to use the Mitchell Act funds subject to this environmental review specifically for Columbia River hatchery production. As a result, this alternative was considered, but it was eliminated from detailed analysis.

---

7. Comments Addressing the Analysis within the EIS

Comments on the draft EIS's effects analysis centered around four core issues:

a. Confusion between the alternatives and the implementation scenarios

NMFS agrees that language in the draft EIS regarding the differences between the alternatives and the alternatives' implementation scenarios was confusing and proved difficult for reviewers to understand. The primary misunderstanding concerned separating the alternatives themselves from the examples (implementation scenarios) used in the analysis. Based on many public comments on this subject, NMFS improved this element of the EIS by reordering and revising the sections associated with describing the implementation scenarios. The EIS sections on implementation scenarios were moved from Chapter 2, Alternatives, to a more appropriate location in Chapter 4, Environmental Consequences (Section 4.1.3, Implementation Scenarios). This helped further differentiate the alternatives, which are variations of the proposed action, from the implementation scenarios, which are examples and part of the analysis.

While the alternatives contain broad, goal-oriented, policy language (e.g., meet stronger performance goals), the alternatives do not provide specific guidance for fulfilling the alternative policy direction (Section 4.1.3, Implementation Scenarios). This is purposeful in that NMFS recognizes that hatchery operators throughout the Columbia River Basin have diverse goals and objectives for hatchery production. Thus, hatchery program

planning is best done on a program-by-program basis. The EIS alternatives also recognize that there are likely many ways in which hatchery operators can approach the alternative performance goals (i.e., more than one way to minimize risks to a natural-origin population [stronger performance goal]).

To analyze, illustrate, and compare the potential environmental effects of each alternative, an example of how each alternative might be implemented was necessary. Accordingly, an implementation scenario was developed for the policy direction under each alternative. Each implementation scenario is one example of how hatchery programs could be operated to meet the policy direction of the alternative. There are, however, different potential implementation scenarios that managers could apply and still remain consistent with each alternative policy direction.

NMFS does not advocate for any of the implementation scenarios evaluated in this EIS over any other potential scenarios that managers could use, and the analysis may show that implementing some components of a scenario might be unreasonable. For example, some components of these implementation scenarios may or may not be viewed as consistent with commitments in the current *U.S. v. Oregon* Management Agreement (Section 1.7.4, *U.S. v. Oregon*), or other current congressional mitigation agreements (e.g., Lower Snake River Compensation Plan). The EIS does not make a determination that an alternative or its implementation scenario is or is not consistent with the *U.S. v. Oregon* Management Agreement or other mitigation agreements, and no such assertion is made (Section 1.7, Relationship to Other Plans, Regulations, Agreements, Laws, and Executive and Secretarial Orders). Likewise, the programs developed through the alternatives' implementation scenarios should not be viewed as necessarily being consistent with ESA applications. ESA determinations will be made during program-specific consultations with NMFS when hatchery managers seek ESA authorizations.

b. Criticism of the use of the All-H Analyzer in the EIS analysis

Many commenters questioned the applicability of the All-H Analyzer for the type of analysis needed in this EIS. Questions were raised about the All-H Analyzer assumptions regarding hatchery-origin relative reproductive success (fitness) and how it incorporates them; questions were raised about the assumptions of hatchery and natural population optimal fitness parameters; commenters were also concerned about how the information produced from the All-H Analyzer, reported in the EIS, would be interpreted or misinterpreted.

The All-H Analyzer, in present form, was developed during the Hatchery Scientific Review Group's (HSRG's) review of the Columbia River Hatchery System (http://hatcheryreform.us/hrp/reports/system/welcome_show.action). Congress funded and established the HSRG in 2000 because it believed the hatchery system needed a comprehensive review. Since then, the All-H Analyzer has been used in other NMFS West Coast, region-wide, hatchery reviews, e.g., the USFWS's Pacific Region Hatchery Review (http://www.fws.gov/pacific/Fisheries/Hatcheryreview/reports.html).

NMFS chose the All-H Analyzer for this EIS based on its capability to model all of the Columbia River Basin hatchery programs at one time and to allow hatchery program fish to interact with all natural-origin populations. The All-H Analyzer facilitates the comparison of potential effects on salmon and steelhead resources across the alternatives. The All-H Analyzer was designed to allow fish managers to compare alternative management scenarios and to understand how each scenario might perform relative to other scenarios.

The All-H Analyzer is not a tool designed to predict the exact numbers of hatchery-origin or natural-origin fish that would result from different management actions. Results from the All-H Analyzer should be considered in the context of general qualitative, rather than quantitative, changes that might be expected from substantial hatchery program adjustments. See Appendix I for a detailed review of the All-H Analyzer.

c. Comments on data quality in the EIS

Several commenters identified errors in the analysis or areas where the technical information could be updated or improved. In response, NMFS worked with technical staff from federal, tribal, and state fisheries management agencies throughout the Columbia River Basin to update the information used in the analysis and in the modeling assumptions to ensure use of best available science and information.

NMFS' work included an update of the baseline hatchery production to reflect 2010 hatchery releases. Additionally, the EIS harvest model was updated to reflect the current Columbia River fisheries management, as agreed to in the 2008 to 2017 *U.S. v. Oregon* Management Agreement (Appendix B). The EIS harvest model was also updated to reflect relevant changes to the Pacific Fishery Management Council (PFMC) and Pacific Salmon Commission (PSC) regulated fisheries affecting Columbia River stocks (Appendix K).

Several commenters identified specific issues with Appendix I in the draft EIS and wondered why NMFS included it in the draft EIS. NMFS originally included this report as a socioeconomic appendix for context and transparency. However, NMFS decided that including it as an appendix was confusing and unnecessary, as it is cited as a source in the references for the socioeconomics section in the final EIS (The Research Group 2009 in Chapter 6, References, Chapter 3 and Chapter 4, Socioeconomics). Therefore, the report is not included in the final EIS.

d. Comments on the presentation of the analysis results in the EIS

Several commenters suggested that the information presented in the chapters and appendices was too technical for an EIS analysis and should be refined and presented in more qualitative ways. NMFS agrees that the EIS contains a large amount of information related to the baseline environment and the effects of the alternatives, particularly the salmon and steelhead resources sections.

NMFS attempted, in this final EIS, to improve the way the information is presented by using additional qualitative approaches to compare the effects on the various resources across alternatives. Table 4-122, in Section 4-8, Summary of Resource Effects, is an example of these improvements. In doing so, however, NMFS continued to ensure that the EIS was based on and incorporated best available science and information.

This page left blank intentionally.

Appendix L2
Individual Comments and Responses

The table below contains all of the individual comments received during the public review of the draft EIS. It is organized by letter number and comment number within each letter. These can be used to reference the original letters, which are contained in the next section, Appendix L3. In the response column of this table, you will read either an individual response or see a reference to one of the global responses in Appendix L1.

This page left blank intentionally.

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES.

Letter/ Comment #	Comment	Response
1/1	Overall, BPA recommends that the Draft EIS be revised to ensure better consistency with the hatchery strategy and findings in the Federal Columbia River Power System (FCRPS) Biological Opinion, the Biological Opinion on U.S. v. Oregon, and the Upper Snake Biological Opinion that are currently in place.	See Global Response 5: Comments Addressing the EIS and Its Relationship to Other Plans, Regulations, Agreements, Laws, and Executive and Secretarial Orders.
1/2	As described below, we encourage NOAA Fisheries to reformulate the alternatives and analysis and clarify the ultimate objective: to provide for both 1) ESA directives to recover naturally spawning salmon and steelhead, and 2) commitments to produce hatchery fish under legally mandated mitigation and tribal treaty and trust obligations.	See Global Response 6: Comments Addressing the Range of Draft EIS Alternatives.
1/3	One way to simplify the EIS would be to focus on Mitchell Act funding only. This would scale back the EIS to a more manageable level. A more narrowly focused EIS would establish a viable Mitchell Act funding policy and still allow the individual hatchery projects to continue their present path of obtaining individual ESA compliance, and would not prohibit later National Environmental Policy Act (NEPA) efforts from considering other, focused initiatives.	See Global Response 2: Comments Addressing the Scope of This EIS.
1/4	The purpose and objectives for this EIS are unclear. Tying the EIS to specific objectives – e.g. enabling hatchery production commitments while minimizing impacts to wild fish --would build an understanding of why this EIS needs to go forward and the benefits it may provide. A clearer statement of the underlying need may also help, as the need can then be used to help define the alternatives.	Please refer to updated and expanded language in Section 1.2, Purpose and Need for Action.
1/5	Is the intent to inform future hatchery operations decisions under the ESA a purpose for the document, or is it a cumulative impact—i.e. a reasonably foreseeable future action—at least in a general sense and at the level of a policy-type EIS?	The purpose of this EIS is to provide a broad analysis of the effects of varying hatchery production policies (Alternatives) to guide NMFS' continued funding of the Mitchell Act hatchery program. Please refer to updated and expanded language in Section 1.2, Purpose and Need for Action.
1/6	One confusing aspect is that the alternative proposed policies seem to be based upon achieving specific quantitative Endangered Species Act (ESA) performance goals, but the EIS, at the same time, seems to disassociate itself from having any use for ESA purposes (i.e., it does not contribute to	NMFS understands that the fact that ESA-listed salmon and steelhead populations present in the Columbia River Basin are affected by the alternatives in this EIS makes it difficult not to draw conclusions with regard to a particular alternative's

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED).

Letter/ Comment #	Comment	Response
	conclusions about whether an alternative meets or does not meet ESA requirements). This seems contradictory and inconsistent. It is hard to understand how the alternative policies proposed, all of which would introduce significant changes to existing hatchery practices, can be analyzed without serious consideration to both ESA coverage and legal commitments to produce hatchery fish. Hatchery operators and the public need to know whether compliance with the new policy would help them achieve ESA compliance and meet the requirements of mandated US v. Oregon fishery production and harvest targets.	consistency with a determination under ESA. However, It is not the purpose of this EIS to suggest to the reader any conclusions relative to ESA. While the Record of Decision (ROD) identifies the selected NEPA alternative, the ROD does not determine whether that alternative complies with ESA. For a more thorough description of links between this EIS and ESA, please see Section 1.3, Decisions to be Made.
1/7	We suggest that the purpose and need statement, as well as the alternatives, be modified to include and address other mandates, such as US v. Oregon obligations and commitments, a process for achieving ESA compliance, and tribal trust responsibilities. As an example, since so much of the Mitchell Act funding is used to meet U.S. v. Oregon needs, it seems problematic to omit these obligations as a central component of the EIS. The hatchery policy and the comprehensive review of hatchery programs to inform decision-makers on how to proceed with individual hatchery programs under the ESA require a balancing of the goals of ESA against other project purposes, such as the value of meeting mitigation obligations and tribal trust responsibilities.	See Global Response 5: Comments Addressing the EIS and Its Relationship to Other Plans, Regulations, Agreements, Laws, and Executive and Secretarial Orders.
1/8	In formulating a hatchery policy, NOAA Fisheries should undertake a comprehensive analysis that considers the various legal mandates that must be met, rather than trying to avoid making determinations of whether compliance with competing legal processes is likely to be achieved. Considering only the one purpose, without evaluating its effects upon other purposes, would likely produce a skewed approach.	See Global Response 5: Comments Addressing the EIS and Its Relationship to Other Plans, Regulations, Agreements, Laws, and Executive and Secretarial Orders.
1/9	If NOAA Fisheries decides to continue with a combined EIS approach, then we recommend that the alternatives be revisited. A fuller range of reasonable policy-level alternatives should be considered, to provide NOAA Fisheries with a better analysis and understanding of environmental impacts. In particular, the alternatives presented in the EIS tend to be too technical for the broad level of analysis NOAA Fisheries suggests it is trying to achieve, and reduce flexibility in terms of being able to incorporate changing science over time.	See Global Response 6: Comments Addressing the Range of Draft EIS Alternatives.

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED)

Letter/ Comment #	Comment	Response
1/10	Each of the alternatives should also incorporate an adaptive management approach in order to allow change to take place over time as new information is collected and assessed.	See Section 2.5, Alternatives Analyzed in Detail. Adaptive management is a component of each of the alternative policy statements (Alternative 2 through Alternative 6).
1/11	The alternatives should enable NOAA Fisheries to evaluate the sometimes competing needs of mitigation and tribal trust responsibilities versus ESA compliance needs. These needs must be balanced, so that neither goal is excluded. For example, the stated purpose for the Puget Sound Chinook Harvest Resource Management Plan EIS was defined as "to ensure the sustainability of Puget Sound Chinook salmon by conserving the productivity, abundance and diversity of the populations within the Puget Sound ESU while optimizing harvest of abundant Puget Sound salmon, and to meet the criteria under Limit 6 of the ESA 4(d) rule."	Comment noted. See response to next comment (letter 1, comment 12).
1/12	NOAA Fisheries could take a similar approach in this EIS, emphasizing sustainability while meeting mitigation and tribal trust responsibilities.	This comment should be combined with the one above. Unlike the Puget Sound Chinook Harvest Resource Management Plan EIS, which reviews alternatives relative to a proposed action by the state of Washington and the Puget Sound treaty tribes, this EIS is being used to develop a policy direction for Mitchell Act hatchery funding decisions.
1/13	It is unclear why NOAA Fisheries used a seemingly arbitrary distinction between Alternatives 4 and 5, focusing on upper versus lower river hatcheries for stronger performance goals. If specific performance goals are kept in the alternatives, why not tie the need for the stronger performance goals to populations that are weaker and/or more important for recovery?	See Global Response 6: Comments Addressing the Range of Draft EIS Alternatives.
1/14	Other criteria that should affect formulation of a hatchery funding policy might include importance of the hatchery's contribution to harvest objectives, its economic value, its ceremonial or subsistence value to Native Americans, the cost and ease of implementation, and the relative merit of funding on the ground improvements versus the need to fund monitoring and evaluation. While some of these criteria are presented in the draft EIS, others are not. And, for those that are presented, it is difficult to discern their relative importance in terms of your pending policy decision. NOAA Fisheries should provide its assessment of the tradeoffs, limitations, or synergistic effects these various components might offer.	See Global Response 1: Comments Stating a Preference (Preferences) and/or Ideas for the EIS Preferred Alternative.

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED).

Letter/ Comment #	Comment	Response
1/15	The difference between "activities not considered" and "alternatives not considered" is unclear. For example, in the Executive Summary and Purpose and Need chapter, the EIS describes "activities" that are not considered reasonable. However, in the main alternatives chapter the EIS describes "alternatives" not considered reasonable. The use of these terms should be clarified to avoid confusion.	The EIS has been revised to address this comment. Please see revised and clarified language regarding alternatives not considered in Section 2.7, Alternatives Considered but Eliminated from Detailed Analysis. Language regarding specific activities not considered for further analysis has been removed from the EIS.
1/16	Once clarified, the section on alternatives and activities that have been considered but dismissed should be re-written to provide a better rationale as to why they were dismissed. Several of the dismissed activities seem to artificially restrict the reasonable array of alternatives (e.g. no new hatchery facilities, no hatchery practices with adverse effects, and no habitat restoration). In some instances, these types of actions or alternatives might make sense. To eliminate them completely from consideration could be seen as pre-decisional.	The EIS has been revised to address this comment. Please see revised and clarified language regarding alternatives not considered in Section 2.7, Alternatives Considered but Eliminated from Detailed Analysis.
1/17	Alternative 1 fails to recognize that, under present policies, there are already changes expected in hatchery operation based on the FCRPS Biological Opinion and the ESA. All hatcheries need ESA coverage, and all hatcheries are currently already preparing Hatchery and Genetic Management Plans (HGMPs). NOAA Fisheries, even without this new programmatic policy, is already in the process of reviewing those HGMPs and issuing compliance documents, which may alter hatchery operations to minimize effects on wild fish. Recognition of these efforts should be included in the EIS.	See revised and expanded language in Section 2.5.1, Alternative 1, as well as Section 1.3.3, Potential Future Decisions in Response to Hatchery Actions.
1/18	It is unclear why Alternative 2 should be the only alternative that contains a limitation of no new weirs or selective fisheries. The isolated application of this limitation on Alternative 2 only would seem to skew the results of the comparison. Alternatives 3, 4 and 5 all utilize new weirs and selective fisheries and are thus treated differently than Alternative 2. Overall, why would a policy alternative get into such a level of technical detail? If NOAA Fisheries wants to analyze the effects of including weirs, or selective fisheries, consider doing it by including them in all alternatives where they make sense based on the definition of the alternative, and excluding them in the alternatives where they don't make sense based on the definition.	NMFS has included an additional alternative in this final EIS, Alternative 6, the preferred alternative. Alternative 6 does not implement new weirs or new selective fisheries, when compared to Alternative 1 (baseline).

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED)

Letter/ Comment #	Comment	Response
1/19	Further, the EIS should explore the range of ways that can be used to minimize impacts of hatchery fish on wild fish.	See Section 3.2.3.1, General Risks and Benefits of Hatchery Programs to Salmon and Steelhead Species, for a description of current approaches to minimizing risks associated with hatchery programs. Further, see Section 4.1.3.3, Implementation Measures, for a description of all the potential measures to reduce risks associated with hatchery programs employed across the alternatives in the EIS.
1/20	Cost of implementation: One criterion that does not seem to be addressed at all is the cost of implementation. While the EIS presents information on socio-economic impacts to the fisherman, and those who receive money from fisherman, it doesn't seem to consider budgetary constraints of those who would have to implement the policies, i.e. pay for the weirs, new fishing terminals, construction of new hatcheries, etc. Cost of implementation is a large factor in terms of how quickly, or even whether, some of these policies may be realistically implemented.	Costs for application of the proposed Implementation measures of each alternative (Table 4-3) are estimated within Chapter 4, Section 4.3.3, Hatchery Program Costs. The effects on hatchery program costs are estimated for each alternative, including any additional costs for implementation of measures such as weirs and facility best management practices (BMPs).
1/21	Summary of resource effects: In the summary of resource effects, it is hard to determine, based on numbers alone, if the impact is adverse or beneficial, making the comparison of alternatives more difficult. We suggest NOAA Fisheries use more qualitative descriptions of the effects in the summary, and elaborate on how these impacts to resources may affect the regulated public. Numbers of fish and dollars are not sufficient for this purpose. Of course, then they could be backed up by the numbers as appropriate.	NMFS agrees with the commenter that the summary of effects presented in the draft EIS (which contained many numbers) may have made it difficult for many readers to gain a qualitative understanding of the effects of the different alternatives on any of the resources. Please see the revised summary of resources effects table in Section 4-8, Summary of Resource Effects.
1/22	Council on Environmental Quality (CEQ) guidance suggests that only past (not present) actions should be reflected in the baseline. Present actions should be part of the cumulative impact analysis. In addition, there is some guidance that although past actions need not be analyzed individually they should be catalogued in such a way to show they were considered. Also, only past actions that have current impacts need to be considered. CEQ has produced several guidance documents, including a document entitled "Guidance on Consideration of Past Actions in Cumulative Effects Analysis." In contrast, this document states that consideration of past actions is only necessary in so far as it informs agency decisionmaking. In the EIS, NOAA considers both past and present actions as part of the environmental	Support for the suggestion that baseline conditions do not include present actions/conditions could not be found in the CEQ regulations or the CEQ 40 Most Asked Questions (CEQ. 1981. Forty Most Asked Questions. Available at http://ceq.hss.doe.gov/nepa/regs/40/40p3.htm). CEQ regulations require that the affected environment describe the environment of the area(s) to be affected (40 CFR 1502.15). This cannot be accomplished without a description of the present condition of the action area. Further, the regulations contain many references to requirements about the state of the human environment. Impacts to the current state of the human

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED).

Letter/ Comment #	Comment	Response
	baseline and only analyzes reasonably foreseeable future actions as part of their cumulative impacts analysis, which seems inconsistent with the guidance referenced above. BPA suggests that the cumulative impact analysis be restructured accordingly.	environment cannot be accurately assessed without a clear understanding of the current, present condition of the human environment. CEQ regulations do not require that descriptions of present actions be solely confined to the cumulative effects analysis. Direct and indirect effects on the affected environment (i.e., present condition/actions) must be analzyed under the environmental consequences review (40 CFR 1502.16), but the regulations do not address cumulative effects as being a part of the environmental consequences analysis. Therefore, the cumulative effects analysis can be distinct from the direct and indirect effects analysis (see also 40 CFR 1508.25). The commenter has not provided the guidance about past actions being catalogued to show they were considered. Regardless, the EIS demonstrates how past actions were considered in the cumulative effects analysis (Chapter 5, Cumulative Effects), and in the summary of related ongoing and planned actions and policies (Section 1.7, Relationship to Other Plans, Regulations, Agreements, Laws, and Executive and Secretarial Orders) that have bearing on the EIS analysis. Finally, the condition of the affected environment (i.e., baseline conditions) appropriately reflects the state of the human environment as a result of both past and present actions. It would be remiss to remove past actions from consideration of baseline conditions since these actions formed the current conditon along with current actions. As such, the affected environment depicts the current condition, which incorporates past and present actions. Adding future actions to the affected environment condition for a cumulative analysis then rounds out the full study of how reasonably foreseeable actions could affect the current state of the human environment (which, again, is a reflection of past and present actions). While there are numerous, allowable ways to present direct, indirect, and cumulative information, the EIS fully discloses the environmental impacts of alternatives on the affected environment (which represents the condition of the human environment from past and present actions) and the

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED)

Letter/ Comment #	Comment	Response
		cumulative effect of alternatives on the affected environment.
1/23	We suggest that the impacts on greenhouse gas emission be addressed. Under NEPA, climate change is not a cumulative action but rather a range of shifting future scenarios. Combining the two can be confusing. Consider revising this section to be more in line with CEQ draft guidance.	NMFS does not see the relevance of an analysis on the potential for hatchery actions to cumulatively add to the impact of greenhouse gases since there is little or no potential for this impact nexus. As such, NMFS did not address greenhouse gases in the cumulative effects analysis. NMFS believes the cumulative effects analysis complies with CEQ regulations as well as the current CEQ guidance (CEQ. 2005. Guidance on the Consideration of Past Actions in Cumulative Effects Analysis. June 24. Available at http://ceq.hss.doe.gov/nepa/regs/Guidance_on_CE.pdf).
1/24	Length of Time for EIS: The EIS suggests that the analysis is only good for ten years. Setting a period such as this seems arbitrary as the analysis is valid so long as the conditions warranting a supplemental EIS have not been met. These conditions include substantial changes to the proposed action that are relevant to environmental concerns or there are significant new circumstances or information relevant to environmental concerns (see 40 CFR 1502.9(c)).	NMFS agrees with the commenter and did not intend that the final EIS's reference to a 10-year time frame would equate to an expiration date for the final EIS. Rather, the 10-year time frame provided a reference point from which to measure and evaluate cumulative effects. NMFS will continue to evaluate the information and analyses that inform the final EIS and supplement as warranted pursuant to regulatory and statutory criteria.
2/1	Our review of this DEIS found numerous areas in which the technical information and analysis for hatchery and harvest programs in the Columbia Basin require modification and improvement. In addition, it is our understanding that the model used in analyzing the alternatives was constructed in 1999 and that model assumptions, data inputs, and the resulting impact analyses may be in error.	See Global Response 7: Comments Addressing the Analysis within the EIS.
2/2	The DEIS does not address how the hatchery performance policy being developed correlates to the existing hatchery strategy in the 2008 Federal Columbia River Power System Biological Opinion (FCRPS BiOp); the 2008-2017 U.S. v. Oregon Management Agreement; or the Columbia River Fisheries Management Agreement (CRFMA) which was negotiated under the authority of the U.S. v. Oregon court proceedings and accepted by the Oregon Federal District Court in 2008. The U.S. Fish and Wildlife Service (Service) operates hatchery programs funded under the Mitchell Act in support of the CRFMA, and the Department believes any modifications to	See Global Response 5: Comments Addressing the EIS and Its Relationship to Other Plans, Regulations, Agreements, Laws, and Executive and Secretarial Orders.

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED).

Letter/ Comment #	Comment	Response
	Mitchell Act hatchery programs that reflect the provisions of the CRFMA must be agreed upon by the U.S. v. Oregon parties.	
2/3	Further, the Department believes that the development of the DEIS would have benefited from the participation of the Federal, Tribal, and State Columbia Basin co-managers.	See Global Response 3: Comments Addressing the EIS Process.
2/4	CEQ Regulations 1502.9(c)(1)(ii) direct agencies to prepare a supplemental draft or final environmental impact statement in the presence of "significant new circumstances or information relevant to environmental concerns and bearing on the proposed action or its impacts." The Department believes that issues and commitments associated with the FCRPS BiOp, U.S. v. Oregon, and the CRFMA need to be addressed and analyzed in association with the proposed action. Further, too many agreements and too many fisheries depend upon Columbia River hatchery production at current levels to make alterations without more certainty as to the validity of the modeling effort and the subsequent impacts analyses. The correction of these deficiencies will provide significant new circumstances and information that are relevant to environmental concerns and that will affect the proposed action and its impacts. The significant deficiencies in this document cannot be rectified in a Final EIS. Therefore, the Department recommends that NOAA Fisheries prepare and issue a Supplemental DEIS for further public review prior to issuing the Final EIS.	See Global Response 3: Comments Addressing the EIS Process.
2/5	Conversely, if NOAA Fisheries no longer considers funding hatchery programs appropriate Federal mitigation, a regional discussion among the Columbia Basin co-managers needs to occur on what type of mitigation would be appropriate, what levels of mitigation would be commensurate with the impacts associated with Federal water resource development, and how to secure the funding necessary to fulfill the Federal mitigation obligation.	Comment noted.
2/6	There are two stated purposes for the proposed action in this DEIS: 1) to develop policy direction to guide future funding and direction for Mitchell Act programs and 2) to develop hatchery performance policy direction to inform subsequent Endangered Species Act (ESA) consultations. Funding hatchery programs is only part of the mitigation being provided under the	See Global Response 2: Comments Addressing the Scope of This EIS.

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED)

Letter/ Comment #	Comment	Response
	Mitchell Act. Fish screens and fish passage programs are also funded under the Mitchell Act and are critically important mitigation measures for Federal water resource development in the Columbia Basin. The Department recommends that, in the SDEIS, the analysis be expanded to include all programs funded under the Mitchell Act to facilitate a better understanding of the scope of the entire program as well as allow for the identification of potential mitigation trade-offs and alternative mitigation, particularly in watersheds where NOAA Fisheries may conclude that hatchery production may affect wild salmon and steelhead and ESA recovery.	
2/7	When NOAA Fisheries began this process (2004), the original intent was to provide direction for distributing funding for the Mitchell Act Program. However, in 2009 the scope of the analysis was expanded to the second objective: develop hatchery performance policy for all Columbia Basin hatchery programs. The Department supported the initial scope of the EIS, as well the expansion of the analysis to all hatchery programs in the Columbia Basin as a means of providing context for the Mitchell Act programs; however, we do not support the development of policy alternatives for hatchery programs that are beyond the authority of the NOAA Fisheries to implement under this DEIS.	See Global Response 2: Comments Addressing the Scope of This EIS.
2/8	The other hatchery programs in the Columbia Basin, except those funded under the Mitchell Act, are operated and/or administered by the Service; the States of Oregon, Washington, and Idaho; several Tribes; and numerous private entities. For those hatchery programs funded by Federal agencies - including the BPA, the Corps of Engineers, and the Bureau of Reclamation – the responsibility for program implementation and any necessary NEPA processes rests with that funding entity. The Department recommends that the analysis in the SDEIS address only those programs where NOAA Fisheries has direct authority to implement the proposed alternatives through Mitchell Act funding. Other hatchery programs in the Columbia Basin, such as the Lower Snake Compensation Plan or the John Day Mitigation Program, may be appropriate for inclusion in the analysis, but only for the purpose of providing context for the Mitchell Act programs.	See Global Response 2: Comments Addressing the Scope of This EIS.

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED).

Letter/ Comment #	Comment	Response
2/9	The Department supports engaging the Columbia Basin co-managers in a detailed discussion of ESA compliance, performance standards, and metrics that may be used in the ESA consultation process, as well as NOAA Fisheries‟ efforts to provide as much guidance as possible relative to their ESA consultation responsibilities for hatchery programs. However, it is not clear that the current DEIS outlines the specific risks and benefits in sufficient detail to make an informed decision on how these hatchery programs are affecting the environment in which they occur, or what alternatives might exist to reduce any potential adverse effects. Consequently, a site-specific and watershed-specific NEPA analysis will still be required at the time of ESA consultation, despite the inclusion of these hatchery programs in this EIS. The Department recommends that the two primary purposes of the EIS be separated and addressed under separate documents. The Department recommends that the SDEIS for the Mitchell Act eliminate references to ESA, except to state that all hatchery programs in the Columbia Basin need to be consistent with the ESA.	See Global Response 2: Comments Addressing the Scope of This EIS.
2/10	Where the ESA is concerned, NOAA Fisheries‟ adherence to the principles of Secretarial Order 3206 could have vastly improved the validity of the DEIS. None of the alternatives presented address Secretarial Order 3206 requirements to minimize ESA impacts to tribal fisheries.	See Global Response 2: Comments Addressing the Scope of This EIS.
2/11	The Department believes that there are other alternatives that would accomplish NOAA Fisheries‟ purpose without adversely impacting tribal fisheries, and these alternatives should be formulated and properly analyzed in a SDEIS. It is not necessary to choose an alternative that reduces the number of fish available to tribal fisheries.	See Global Response 6.c: The EIS should include an alternative that increases production levels and is more supportive of harvest than the existing alternatives.
2/12	However, there are other ways in which we believe the Secretarial Order was violated. The DEIS quotes portions of Secretarial Order 3206, but excludes an especially relevant portion regarding consultation, i.e.: "Whenever the agencies, bureaus, and offices of the Departments are aware that their actions planned under the Act may impact tribal trust resources, the exercise of tribal rights, or Indian lands, they shall consult with, and seek the participation of, the affected Indian tribes to the maximum extent practicable. This shall include providing affected	See Global Response 3: Comments Addressing the EIS Process.

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED)

Letter/ Comment #	Comment	Response
	tribes adequate opportunities to participate in data collection, consensus seeking, and associated processes." This does not appear to be what occurred in the preparation of the DEIS. Because tribes are co-managers, possess treaty rights, that the Federal government is obliged to protect, and are staffed by biologists that are experts in their field, NOAA Fisheries should consult with the tribes immediately, and throughout the preparation of a SDEIS.	
2/13	An alternate means of providing mitigation for the lost fishery resources of the Columbia River will be necessary if hatchery programs need to be significantly modified to achieve consistency with the ESA. Mitigation for Federal water resource development is a legal responsibility and represents a commitment to the people of the Pacific Northwest, including the Native American tribes. Any reduction in the mitigation provided by the Mitchell Act hatchery programs represents a loss to the fishery resources of the Columbia River and the Pacific coastal fisheries. This loss must be offset by alternate mitigation. This could include habitat restoration, removing obsolete infrastructure from watersheds, restoring instream flows, remediating contaminated areas, long-term habitat acquisition and protection, restoring fish passage into blocked areas, and possibly opening up additional habitat to anadromous fish. As previously stated, a comprehensive evaluation of all Mitchell Act programs would facilitate this analysis.	See Global Response 4: Comments Asserting and Referring to the Mitchell Act's Mitigation Obligation or Calling for NMFS to Define the Obligation.
2/14	The DEIS does not address how the hatchery performance policy being developed correlates to the existing FCRPS BiOp hatchery strategy. The FCRPS BiOp and Reasonable and Prudent Alternative received intense scrutiny through extensive regional collaboration, as a consequence of ongoing court challenges and, most recently, due to a change in Presidential Administration. The Obama Administration (represented by four different Cabinet-level agencies and the White House, including Dr. Jane Lubchenco for the Department of Commerce), engaged in a substantial and thorough consideration of the FCRPS BiOp that included the science on which the BiOp was based[1]. The FCRPS BiOp calls for, among other things, "implementing safety net and conservation hatchery	See Global Response 5: Comments Addressing the EIS and Its Relationship to Other Plans, Regulations, Agreements, Laws, and Executive and Secretarial Orders.

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED).

Letter/ Comment #	Comment	Response
	programs to assist recovery; and ensuring that hatchery operations do not impede recovery[2]." The FCRPS BiOp includes a programmatic review of specified non-Mitchell Act hatcheries and a requirement to complete site-specific ESA consultations for each FCRPS mitigation hatchery, but it is not clear how the alternatives described in the DEIS relate to the existing hatchery strategy already encompassed in the FCRPS BiOp . The Department recommends that the SDEIS include a description of the link between the Mitchell Act DEIS, the hatchery strategy in the FCRPS BiOp, and the hatchery strategies in existing salmon plans.	
2/15	The 2008-2017 United States v. Oregon Management Agreement of May, 2008 (Management Agreement) was signed by all parties, including NOAA Fisheries, on May 5, 2008. The DEIS was released July 19, 2010. The DEIS includes a disclaimer stating that determinations of consistency of the "EIS analysis" with the Management Agreement are not asserted. Commitments under U.S. v. Oregon should be addressed and analyzed in the SDEIS.	See Global Response 5: Comments Addressing the EIS and Its Relationship to Other Plans, Regulations, Agreements, Laws, and Executive and Secretarial Orders.
2/16	In addition, the Service administers hatchery programs funded under the Mitchell Act that support the CRFMA. The CRFMA is an agreement between the States of Oregon, Washington, and Idaho; the treaty Tribes of the Columbia Basin (Yakama, Warm Springs, Umatilla, and Nez Perce Tribes); and the U.S. Federal government. The purpose of the CRFMA is to determine how harvest and hatchery production of Pacific salmon and steelhead will be implemented in the Columbia Basin, primarily on the mainstem Columbia River. NOAA Fisheries and the Service are the Federal agencies responsible for implementing the CRFMA on behalf of the U.S. government. The provisions of the agreement (e.g., hatchery production tables) that were negotiated and agreed upon in the CRFMA are binding on the signatories, and any modifications to our Mitchell Act hatchery programs, which reflect the provisions of the CRFMA, must be agreed upon by the U.S. v. Oregon parties. The SDEIS should analyze the impact of the alternatives on CRFMA obligations.	See Global Response 5: Comments Addressing the EIS and Its Relationship to Other Plans, Regulations, Agreements, Laws, and Executive and Secretarial Orders.
2/17	It is well established that the Federal government has an obligation to provide mitigation for the loss of the fishery resources of the Columbia Basin that were affected by the construction and operation of the Federal Columbia River Power System (FCRPS). The Mitchell Act is one of the	See Global Response 4: Comments Asserting and Referring to the Mitchell Act's Mitigation Obligation or Calling for NMFS to Define the Obligation.

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED)

Letter/ Comment #	Comment	Response
	primary means by which Congress provides the mitigation funding associated with the FCRPS and other Federal activities; however, the Federal mitigation obligations under the Mitchell Act are not well defined. The text of the Mitchell Act does not contain specific mitigation goals or objectives. As such, NOAA Fisheries has requested, and Congress has appropriated, funding under the Mitchell Act for decades without the benefit of explicit and well defined goals and objectives. This EIS is an important opportunity to establish a framework for the Mitchell Act, including a vision, a mission statement, goals, and objectives. As part of that framework, the Department recommends that NOAA Fisheries and the co-managers, working collaboratively, define the Federal mitigation obligation under the Mitchell Act in terms of hatchery programs, production goals, fish screens, fish passage, and funding levels; articulate the goals and objective for the program; and begin the process for determining whether the Federal government is being successful, or not, in meeting its mitigation obligations. This must include input from the Columbia River treaty tribes who had no voice in early Mitchell Act program decisions but were affected by early decisions regarding Mitchell Act hatchery facilities.	
2/18	It is critical that integrated hatchery programs are maintained in order to insure the existence of the species into the future.	See Global Response 1: Comments Stating a Preference (Preferences) and/or Ideas for the EIS Preferred Alternative.
2/19	In that regard, the Department recommends that the SDEIS include a history of annual appropriations, previous NEPA efforts for distribution of these funds, and a historical record of the Columbia River fisheries program to help inform those mitigation obligations, vision, mission statement, and future goals and objectives for the Mitchell Act.	Comment noted. Please see final EIS Table 1-3 for updated information on recent Mitchell Act hatchery program appropriations. See Global Response 4: Comments Asserting and Referring to the Mitchell Act's Mitigation Obligation associated or Calling for NMFS to Define the Obligation.
2/20	NOAA Fisheries has requested approximately the same amount of hatchery operation and maintenance funding from Congress ($11 million) for the Mitchell Act since the mid 1990's. During this time, production from Mitchell Act hatcheries decreased from about 128 million juvenile salmon and steelhead to about 60 million, and the number of hatchery facilities and rearing ponds has decreased from 25 to 17. The majority of the decreases have been a result of flat funding, continued infrastructure maintenance, and increasing costs of operations (e.g., fish feed). These	Comment noted.

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED).

Letter/ Comment #	Comment	Response
	factors are eroding the Service's capability to provide juvenile salmon and steelhead consistent with Federal obligations, such as in the CRFMA. Similarly, these factors are eroding the ability of State and Tribal partners to fulfill their hatchery obligations. This has created a scenario in which funding is essentially being cut due to inflation, production is declining, and hatchery facilities and valuable fish stocks are at risk from inadequate maintenance. This is not consistent with good hatchery management and is incompatible with the commitments in the CRFMA (section III.A.5) that requires the signatories to use their best efforts to secure sufficient funding to carry out production management measures in the agreement. It may also set the stage for conflicts if hatchery practices and production goals required by the CRFMA cannot be reconciled with the needs of ESA-listed Pacific salmon and steelhead. Likewise, we are concerned that any reductions in our Mitchell Act programs, particularly funding, could affect the ability of the Federal government to fulfill their obligations under the CRFMA.	
2/21	The Service receives approximately $3.75 million annually under the Mitchell Act from the NMFS to operate and maintain five National Fish Hatcheries for the production of Pacific salmon and steelhead in the Columbia River Basin. These include Carson, Little White Salmon, Willard, Spring Creek, and Eagle Creek National Fish Hatcheries. The Service hatchery programs funded under the Mitchell Act support the CRFMA. The following is a brief summary of the hatchery programs implemented by the Service at these facilities. *Spring Creek National Fish Hatchery*. Spring Creek National Fish Hatchery (NFH) is located on the banks of the mainstem Columbia River near Underwood Washington. Spring Creek NFH provides "tule" fall Chinook for mitigation and harvest as part of the CRFMA, and is funded through the Mitchell Act. Fall Chinook production from Spring Creek NFH contributes significant harvest to ocean fisheries (including Washington, Oregon, and Canadian commercial and recreational fisheries) and in-river commercial, sport, and tribal fisheries. Spring Creek NFH's program has a brood stock goal of at least 8,000 tule fall Chinook (4,000 females). The adult returns are used to meet the hatchery release goal of 12.2 million sub-yearlings	Comment noted.

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED)

Letter/ Comment #	Comment	Response
	(10.5 million releases at Spring Creek NFH and 1.7 million releases at Little White Salmon NFH). Eggs from Spring Creek NFH (2.8 million) are transferred to Bonneville State Hatchery just downstream of Bonneville Dam for their tule fall Chinook program. The native White Salmon River fall Chinook population was the founding source for Spring Creek fall Chinook and is considered the stock of choice for reintroduction into the White Salmon River pending Condit Dam removal. *Carson National Fish Hatchery*. Carson NFH is located on the Wind River upstream from the Columbia River near Stevenson, Washington. Carson NFH's spring Chinook program operates as part of the CRFMA and is funded through the Mitchell Act to provide spring Chinook for mitigation and harvest. The purpose of the hatchery is to rear 1.17 million Spring Chinook salmon smolts for release on-station into the Wind River. In addition, Carson NFH produces 250,000 Spring Chinook smolts for transfer and release into the Walla Walla River basin as part of a Umatilla tribal restoration program. The releases are to partially mitigate for fish losses in the Columbia River Basin caused by mainstem hydropower projects and other water resource development. Fish releases contribute to important terminal area tribal ceremonial and subsistence fisheries and non-tribal sport fisheries, as well as mainstem Columbia River tribal and non-tribal commercial and sport fisheries, while providing for adequate escapement for hatchery production. Hatchery operations strive to meet mitigation requirements of the Mitchell Act and the production commitments of the CRFMA. *Little White Salmon/Willard National Fish Hatcheries*. These two hatcheries are located in the Columbia River Gorge on the Little White Salmon River near Cook, Washington. They are administered as a single Complex. Little White Salmon NFH produces 1.0 million spring Chinook salmon released on-site, 2.0 million upriver bright fall Chinook released on-site, and 1.7	

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED).

Letter/ Comment #	Comment	Response
	million upriver bright fall Chinook transferred and released on the Yakama Nation near Toppenish, Washington. This facility also acclimates 1.7 million tule fall Chinook from Spring Creek NFH and 2.5 million upriver bright fall Chinook from Bonneville State Hatchery for release on-site. Willard NFH produces coho salmon released off-site in the Wenatchee River for the Yakama Nation using locally adapted fish stocks. Funding for the Wenatchee River coho program is shared between the Bonneville Power Administration (BPA) (60 percent) and NMFS through the Mitchell Act (40 percent). The purpose of the Spring Chinook program is to mitigate for fish losses in the Columbia River caused from Federal hydropower projects and other Federal water resource development. These programs contribute to important terminal area tribal ceremonial and subsistence fisheries, and recreational fisheries, as well as tribal and non-tribal mainstem Columbia River commercial and sport fisheries, while providing escapement for hatchery production to meet mitigation requirements of the CRFMA. The purpose of the fall Chinook program is to rear and release 4.5 million upriver bright and tule fall Chinook salmon into the Little White Salmon River to provide mitigation for Federal hydropower development, to meet Federal obligations under the CRFMA and to produce sub-yearlings for transfer to the Yakima River basin. Upriver bright fall Chinook salmon are reared and released from Little White Salmon NFH as part of the John Day Dam mitigation program funded by the U.S. Army Corps of Engineers. Fall Chinook production from Little White Salmon NFH contributes harvest to ocean fisheries (including Alaska, British Columbia, Washington, and Oregon commercial and recreational fisheries) and in-river commercial, sport, and tribal fisheries. Adult upriver bright fall Chinook returning to the hatchery also provide an important fall terminal-area tribal fishery. Additional upriver bright fall Chinook adults are collected and spawned to provide eggs for the Klickitat Tribal Hatchery, which is a Mitchell Act facility operated by the Yakama Nation.	

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED)

Letter/ Comment #	Comment	Response
	The purpose of the cooperative coho program is to assist with the development of locally adapted, naturally spawning populations of coho salmon in the Wenatchee River system. This is a cost-share program with the Yakama Nation with funding provided by the NMFS under the Mitchell Act and the BPA. *Eagle Creek National Fish Hatchery*. Eagle Creek NFH is located in northwest Oregon in the Clackamas River watershed, near Portland. The purpose of Eagle Creek NFH is to mitigate for the lost and degraded habitat and fish populations caused by the construction and operation of the Columbia River hydropower projects by providing 350,000 coho salmon and 100,000 winter steelhead for on-site releases from locally adapted brood stock for sport, commercial, and international harvest. Eagle Creek NFH also supports important tribal restoration programs, including approximately 550,000 coho yearlings for the Nez Perce Tribe to the Clearwater River, Idaho, 500,000 coho yearlings for the Yakama Nation to the Yakima River, Washington using locally adapted broodstock, and provides 1.5 million coho salmon eggs to the State of Idaho to support State resident coho release programs in Idaho.	
2/22	The DEIS provides some discussion of the potential impacts associated with terminating hatchery programs or closing Federal, State, or Tribal hatcheries funded by the Mitchell Act. The presumption under Alternative 2 is that all Mitchell Act funded programs would cease. It also appears likely that under some of the alternatives, terminating hatchery programs and closing facilities is a potential outcome. The EIS should recognize these potential realities but, we do not recommend analyzing the environmental risks and benefits of terminating hatchery programs in this EIS. Rather, this observation strengthens our recommendation that site-specific NEPA analysis will be necessary when evaluating the environmental effects of specific hatchery programs in the watersheds in which they occur. This is particularly evident in those watersheds where hatchery production may need to be significantly modified to manage the risks associated with wild fish and hatchery fish on the spawning grounds.	As explained in Section 1.3.3.4, NEPA Requirements for NMFS ESA Determinations under Sections 7, 4(d), or 10 on Hatchery Operations, future proposed hatchery actions requiring NMFS ESA section 10 permitting or section 4(d) limit determination may need additional, site-specific analysis under NEPA.

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED).

Letter/ Comment #	Comment	Response
2/23	The current DEIS lays out a framework of alternative hatchery performance levels that define the proportion natural influence (PNI) and proportion hatchery origin spawners (pHOS) as the metrics that hatchery programs may be judged against. The DEIS analysis is then based on a set of programmatic scenarios that appear to be focused primarily on maintaining smolt release numbers and harvest at the highest possible values while, at the same time, constraining hatchery programs to the degree necessary to meet these two performance measures. Presumably, these metrics would be applied in the ESA consultation process. Although these two performance metrics could be used as direct measures of genetic risk (higher values of pHOS and lower values of PNI imply higher genetic risk), any application of those performance measures to hatchery management would need to be performed on a program-by-program basis where the viability and status of natural populations in the local watershed can be used as primary factors for assessing those risks. For example, pHOS = 0.5 would be considered a "high risk" situation for a viable, natural population capable of sustaining itself without artificial propagation. However, pHOS = 0.5 might also be essential for a maintaining a naturally spawning population in an area incapable of supporting a viable natural population under current conditions. Further, there is no evidence presented in the DEIS as to a direct link between meeting PNI and pHOS standards and the recovery of wild fish populations. Implementation of a specific alternative will need to assess those risks on a program-by-program or watershed-by-watershed basis. However, because the DEIS is based on a single scenario for each alternative that is then used as an example of the types of changes that could be implemented with adoptions of a preferred alternative, the quantitative outputs of those scenarios appear to be the criteria by which NOAA Fisheries is asking reviewers to select a preferred alternative. Again, the Department recommends that NOAA Fisheries refocus the scope and analysis back to just the Mitchell Act Program in the SDEIS, with appropriate comparisons to the total basin hatchery production, including large hatchery programs such as the Lower Snake River Compensation Plan and the John Day	NMFS agrees that appropriate hatchery program performance has to be determined on a program-by-program basis. Please review updated language in Section 4.1.3, Implementation Scenarios (revised and re-located draft EIS Section 2.7) for and expanded explanation of Implementation scenarios, their performance metrics, and their intended use.

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED)

Letter/ Comment #	Comment	Response
	Mitigation Program.	
2/24	The No-Action Alternative presented in the DEIS does not accurately represent the baseline condition. Currently, Federally-funded Columbia River hatchery production must be consistent with ESA and all other laws and regulations. Hatchery ESA compliance is determined on a case-by-case basis through the development of Hatchery Genetic Management Plans. For example, Table 2-6, page 2-27, shows that no changes would be made under the No-Action Alternative. However, under the baseline condition, changes could be made to some or all of the measures presented on a case-by-case basis. These changes could be effected by NOAA Fisheries via the site specific ESA consultations under the FCRPS BiOp or through site-specific consultations for each of the Mitchell Act hatcheries. The Department recommends that the SDEIS revise the No-Action Alternative to acknowledge the many existing hatchery strategies that can incorporate changes, including those related to the FCRPS BiOp.	See Global Response 6: Comments Addressing the Range of Draft EIS Alternatives and Global Response 2.a, Commenter's views that the EIS considers alternatives that are inconsistent with NMFS' current authority and Global Response2.c, Scope should focus on hatchery funding decisions, not on future ESA determinations.
2/25	The Department does not believe the other alternatives presented in the DEIS are appropriate for the Mitchell Act, or any other hatchery program in the Columbia Basin at this time. The existing alternatives outline where ESA consultation and hatchery reform (Lower Columbia, Upper Columbia, both, neither) could occur, but this is premature because the goals and objectives of the Mitchell Act Program have yet to be determined. The Department recommends that new alternatives be developed and analyzed in the SDEIS. These alternatives should be developed in collaboration with the co-managers in the basin, directly relate to the mission and purpose of the Mitchell Act program, be developed in an open and transparent manner, and have a sound rationale for supporting the selection. In addition, the analyses of these alternatives should consider climate change considerations and the use of adaptive management strategies to accommodate changes as they occur. Examples of potential alternatives could include: • Different funding and production between the lower Columbia Basin and the upper Basin. • Differing funding between hatcheries, fish screens, and fish	See Global Response 6: Comments Addressing the Range of Draft EIS Alternatives and Global Response 2.a, Commenter's views that the EIS considers alternatives that are inconsistent with NMFS' current authority and Global Response2.c, Scope should focus on hatchery funding decisions, not on future ESA determinations.

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED).

Letter/ Comment #	Comment	Response
	passage facilities. • Adjusting current production programs to reflect the actual fish stocks that were lost due to Federal water resource development. • Altering production programs to reduce the effect on natural origin spawners. • Additional funding to fully implement existing agreements, such as the CRFMA. Increased appropriations for infrastructure maintenance, increased support for State and Tribal hatcheries, and increased costs of operations.	
2/26	NOAA Fisheries, as a federal trustee to Native American people, is held to high standards of fiduciary conduct. These fiduciary standards extend beyond those encompassed by NEPA. NOAA Fisheries‟ fiduciary conduct standards require it to keep trust property (i.e. salmon) productive for the beneficiary (Tribes with treaty fishing rights), and also require that reasonable care and skill be exercised in the way NOAA Fisheries administers the elements of the trust under its control. Increasingly, treaty fisheries have had to rely on hatchery production to maintain the relevance of the treaty-fishing right. Without that mitigation, many tribal fishers would be unable to exercise their treaty rights. The DEIS fails to acknowledge this essential role that hatchery production in the Columbia River plays in enabling the tribes to exercise their treaty fishing rights. The SDEIS should analyze the connection between the federal trust responsibility and the need to keep trust property productive, …	Please refer to Section 4.4.3.1, Tribal Indicators of Environmental Justice Effects, through Section 4.4.4.3, Tribal Salmon Fishing and Hatchery Program Revenue, for the analysis of the alternatives on fish harvest and tribal value, ceremonial and subsistence harvest for tribes, and tribal salmon fishing and hatchery program revenue.
2/27	… include new Alternatives that accommodate the needs of the ESA, the recovery of salmon in general, and the simultaneous maintenance of hatchery production that is so vital to sustaining treaty fishing rights.	See Global Response 1: Comments Stating a Preference and/or Ideas for the EIS Preferred Alternative.
2/28	Alternatives assessed on the idea that even local natural stocks reared under best management practices must be stopped from spawning in the natural environment or they will hinder recovery efforts, appears arbitrary and capricious. Given the scientific uncertainties, the Federal government's obligation to honor their treaties with Indian tribes, and Congress's clear expression of intent to mitigate for losses that badly degraded and blocked	See Section 3.2.3.1, General Risks and Benefits of Hatchery Programs to Salmon and Steelhead Species. Additionally see Global Response 4: Comments Asserting and Referring to the Mitchell Act's Mitigation Obligation or Calling for NMFS to Define the Obligation.

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED)

Letter/ Comment #	Comment	Response
	habitats have wrought, we believe NOAA Fisheries has an obligation to maintain and restore levels of Columbia River hatchery production so that moderate standards of living are sustained by tribal fishers. Treaty rights are not maintained by the analysis of divisive DEIS Alternatives that continue to avoid Mitchell Act mitigation in-kind and in-place (i.e., above Bonneville Dam where the bulk of losses have occurred).	
2/29	In addition CEQ Memorandum of 7-28-1999 urges agencies to actively solicit the participation of Tribes as "cooperating agencies" in implementing the environmental impact statement process under the National Environmental Policy Act. This solicitation is to begin as soon as practicable, but no later than the scoping process. Invitations are to be extended to identified tribal government agencies which have jurisdiction by law or special expertise with respect reasonable alternatives or significant environmental, social or economic impacts associated with a proposed action that requires an EIS. This has not occurred. Again, the Department recommends that NOAA Fisheries consult with the tribes immediately and throughout the preparation of the SDEIS.	In adherence with the policies and government-to-government intentions supporting the CEQ 1999 Memorandum regarding tribal involvment, and with CEQ regulations (40 CFR 1501.6, 40 CFR 1508.5, CEQ's Forty Most Asked Questions [1981] available at http://ceq.hss.doe.gov/nepa/regs/40/40p3.htm), NMFS made early and consistent efforts to invite all tribes and tribal organizations potentially affected by this action to particiate in the NEPA process. This information is on file at NMFS, and is available upon request. The Notice of Intent to conduct public scoping was published on September 3, 2004. Three months prior to this announcement, in a letter dated June 9, 2004, NMFS formally invited the tribes and tribal organizations listed below to particiate in development of the EIS. The formal written letters requested tribal participation (stating "Your participation is crucial to the development of this EIS."), and a draft description of the purpose and need statement was attached. This letter also provided invitations to an informational meeting on June 28, 2004, to supply NMFS with information important to tribes prior to initating work on this EIS. On March 17, 2009, NMFS again notified the same tribes and tribal organizations with an announcement regarding a change in EIS scope, and inviting comment during the public comment period related to this change, as well as an invitation to contact the responsible NMFS staff lead directly. This direct notification was in addition to the Federal Register Notice announcing a new 30-day comment period on the change in EIS scope. Regarding the March 17, 2009 invitation to contact NMFS staff, NMFS has only one documented written response from the Shoshone-Bannock Tribes dated April 16, 2009, which followed a telephone

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED).

Letter/ Comment #	Comment	Response
		conversation with the NMFS staff lead. The following tribes and tribal organizations received direct formal communications inviting their participation on June 9, 2004 and March 17, 2009: Nez Perce Tribe, Confederated Tribes of the Umatilla Reservation, Confederated Tribes of the Warm Springs Reservation of Oregon, Yakama Tribal Council, Colville Business Council of the Confederated Tribes of the Colville Reservation, Columbia River Inter-Tribal Fish Commission, and Northwest Indian Fisheries Commission. From this list, the following attended the informational meeting on June 28, 2004: Northwest Indian Fisheries Commission, Confederated Tribes of the Colville Reservation, Columbia River Inter-Tribal Fish Commission, Nez Perce Tribe, and the Institute for Tribal Government.
2/30	The DEIS appears to endorse the mistaken belief that natural production can be increased by simply controlling the composition of naturally-spawning fish and does not address the role of habitat restoration as a means of protecting the genetic qualities of salmon populations in the natural environment. It is reasonably predictable that were hatchery production eliminated entirely, the sad state of unmet habitat requirements would still prevent natural salmon recovery. It may not be included in the purpose statement, but it is not possible to ignore the effects of habitat when evaluating the success of salmon restoration efforts. The SDEIS should include an analysis of the role habitat plays in restoration levels. In this way, the key component of a comprehensive recovery will be analyzed, putting into proper context the assumption that natural production can be meaningfully increased or protected by simply controlling the composition of naturally-spawning fish.	See Global Comment 2b: EIS scope is too broad or too narrow.
2/31	The DEIS does not adequately address economic impacts to fishers. There are numerous errors and omissions in the DEIS descriptions of existing hatchery programs. This includes the incorrect harvest estimates under all of the alternatives. Consequently none of the analyses of harvest differences between the alternatives are valid. Consequently, the	The EIS has been updated to address this comment. Since publication of the draft EIS, NMFS has worked with technical staff from federal, tribal, and state fisheries management agencies throughout the Columbia River Basin to update the information utilized in the analysis and in the modeling

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED)

Letter/ Comment #	Comment	Response
	predictions of economic impacts premised on erroneous harvest inputs are also not valid.	assumptions. See Global Response 7: Comments Addressing the Analysis within the EIS.
2/32	Of particular concern to the Department is that the DEIS economic analyses does not provide any meaningful discussion of the actual impacts on Native people to be expected from implementing the DEIS Action Alternatives.	Please refer to Section 4.4.3.1, Tribal Indicators of Environmental Justice Effects, through Section 4.4.4.3, Tribal Salmon Fishing and Hatchery Program Revenue, for the analysis of the alternatives on fish harvest and tribal value, ceremonial and subsistence harvest for tribes, and tribal salmon fishing and hatchery program revenue.
2/33	It is not clear how the DEIS range of Alternatives, which only proposes stasis or declines in salmon released from hatcheries, will achieve a balance between populations and resource use which will permit high standards of living and a wide sharing of life's amenities in accordance with the requirements in NEPA	The commenter is confusing the implementation scenarios analyzed with the alternative goals. The alternative goals do not propose any level of increase or decrease in hatchery production. Rather, they focus on decreases in risk to natural-origin salmon and steelhead populations. The EIS acknowledges that there are various implementation scenarios that managers could apply to meet alternative goals. However, no practicable scenarios that would not be speculative could be identifed to demonstrate increases in production with decreases in salmonid population risks. Further, Mitchell Act funding would not likely support increases in production. The NEPA requirement presented by the commenter is one component of six responsibilities set for by Congress for the Federal Government in the Delcaration of National Environmental Policy (42 USC 4321, Sec. 101 (b)(1-6)). When taking into consideration all required responsibilites in the Declaration of National Environmental Policy, NMFS is confident that its range of alternatives not only represents all reasonable alternatives that would meet the purpose and need for development of hatchery policy directions, but that also balances the six specified requirements by Congress.
2/34	Few Native people and fewer treaty fishers achieve a high standard of living. The DEIS does not assess the impacts on the native communities that, while sometimes dispersed across a myriad of counties, come together and are a single class by virtue of their treaty protected livelihood. For example, 43% of Yakama Indian Nation families were in poverty by one	Comment noted. Please refer to Section 4.4.3.1, Tribal Indicators of Environmental Justice Effects, through Section 4.4.4.3, Tribal Salmon Fishing and Hatchery Program Revenue, for the analysis of the alternatives on fish harvest and tribal value, ceremonial and subsistence harvest for tribes, and tribal salmon fishing and

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED).

Letter/ Comment #	Comment	Response
	estimate (Meyer Resources, 1999), and the majority of fishers in Zone 6 are known to be Yakama tribal members. The DEIS does not analyze the impacts on the already crushing poverty faced by these people. The SDEIS should include an analysis of the impacts on the poverty levels faced by these treaty fishers.	hatchery program revenue.
2/35	A model of Economic Analysis, although dated and written for a differing document, is the Tribal Circumstances and Perspectives report, Meyer Resources, 1999. It is summarized in Appendices I, section 5 of the Lower Snake River Juvenile Salmon Migration Feasibility Report. This document should be utilized in the development of additional alternatives in a SDEIS that address economic impacts to treaty fishers.	Thank you. NMFS has incorporated the suggested document into Section 3.4.4.1.1, Fish Harvests and Tribal Values, and Section 3.4.4.1.2, Ceremonial and Subsistence Harvests.
2/36	Additionally, the DEIS does not address effects of the Action Alternatives on the availability of salmon as an accessible healthy food for minorities and low income people. These groups will likely suffer disproportionate effects from the Action Alternatives. Executive Order 12898 of February 11, 1994 gives all Departments, including the Dept. of Commerce direction concerning Federal Actions affecting „Environmental Justice in Minority Populations and Low-Income Populations‟. While the DEIS acknowledges the existence of the order it does not adequately discuss the impacts to minority and low-income populations. The SDEIS should include a more detailed analysis identify differential patterns of consumption of natural resources among minority populations and low-income populations.	Refer to Section 3.4.3.1.1, Fish Harvests and Tribal Values, for an explanation of how effects on tribal health, relative to the alternatives, is factored into the environmental justice analysis. In particular, the effects to tribal subsistence and ceremonial harvest, are analyzed as an indicator of tribal health effects in Section 4.4.4, Analysis of Environmental Justice Effects.
2/37	All of the Action Alternatives in the DEIS result in reductions in the carcasses available to the environment, via the removal of salmon from weirs, and/or reductions in the numbers of salmon released from Mitchell Act and other hatcheries. There are growing indications of the ecological importance of salmon in aquatic and terrestrial ecosystems, yet the DEIS is nearly entirely silent on this topic. Section 3.5.6.5, in a single paragraph citing a carcass distribution as a means of replacing “some of the nutrients in nutrient-deficient areas where spawning salmon and steelhead are limiting or lacking.” Salmon-derived nutrient subsidies may have significant and wide ranging impacts on both freshwater and riparian communities and on the life	The commenter is confusing the alternatives with the Implementation scenarios analyzed under the alternatives. See Global Comment 7: Comments Addressing the Analysis within the EIS. Additionally, the effects of carcasses on the environment is addressed in Section 3.2.3.1.12, Benefits of Nutrient Cycling, and the effects of each alternative's implementation scenario on the availability of carcasses, relative to baseline (Alternative 1) are analyzed in Section 4.2.3.1.5, Benefits of Nutrient Cycling. Also, the relationship between salmon carcasses and the effect they have on the ecosytem is discussed in the Section 3.5.6.5 Nutrients/Distribution of Salmon Carcasses, as well as the effect of the alternatives on this relationship in Section 4.5.3.4,

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED)

Letter/ Comment #	Comment	Response
	histories of organisms that live there. The SDEIS needs to include a more comprehensive analysis of this nutrient distribution into the context of the severe truncation of marine-derived nutrient distribution already extant in the Columbia River basin.	Availability of Nutrients/Distribution of Salmon Carcasses. Additionally, the commenter is confusing the alternatives with the implementation scenarios analyzed under the alternatives when commenting on the results of the "Action Alternatives"; see Global Comment 7: Comments Addressing the Analysis within the EIS.
2/38	The cumulative impacts analysis in the DEIS does not adequately address the ecological effects of diminished salmon in the Columbia Basin by utilizing a project boundary that excludes large portions of the Columbia River ecosystem accessed and influenced by salmon in the recent past. An analysis of the significance of reducing salmon abundance under DEIS Alternatives cannot be placed in context if the proportions of salmon lost is not explained. The magnitude and distribution of those losses shed light on the high significance of salmon to those areas where they are still found. Historic populations of salmon in the Columbia Basin are estimated to have been 16 fold higher than in recent years. Between 10 million and 16 million salmon and steelhead are believed to have returned to the river to spawn annually prior to the 1840 (Northwest Power Planning Council. 1986. Compilation of information on salmon and steelhead losses in the Columbia River basin. Portland, OR).	See Chapter 5, Cumulative Effects, for a description of past and present actions and how they are represented for analysis in the EIS.
2/39	In addition, the SDEIS would benefit from an analysis of the direct and indirect ecological implications of salmon depletion. The Department recommends that the following publication on the subject be considered in the development of the SDEIS: Gende, S.M., Edwards, R.T., Willson, M.F., and Wipfli, M.S. 2002. Pacific salmon in aquatic and terrestrial ecosystems. Bioscience, **52**: 917–928.	NMFS thanks the commenter for the resources provided. Both expected direct and indirect ecological effects of the alternative's implementation scenarios are included in Chapter 4, Environmental Consequences. We specifically refer the reader to Section 4.2.3.1.3, Risk of Competition with and Predation from Hatchery-origin Fish (on salmon and steelhead); Section 4.2.3.1.5, Benefits of Nutrient Cycling (on salmon and steelhead); Competition and Predation Risks subsections within each salmon and steelhead ESU/DPS section; Section 4.2.4, Effects on Other Fish Species that Have a Relationship to Salmon and Steelhead; Section 4.5.3.1, Availability of Salmon and Steelhead to Wildlife Predators; Section 4.5.3.4, Availability of Nutrients/Distribution of Salmon Carcasses (and effects on wildlife); and the species-

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED).

Letter/ Comment #	Comment	Response
		specific discussion of each potentially affected wildlife species under Section 4.5.4, Wildlife Species Effects.
2/40	Too many agreements and too many fisheries depend upon Columbia River hatchery production at current levels to alter that production without more certainty as to the validity of the modeling effort and the subsequent impacts analyses. The loss of even small portions of the Columbia River hatchery production could alter the impacts northern fisheries have on stocks that are important to southern fisheries, making it necessary for fishery managers to impose more conservative measures on fishers in Puget Sound, coastal Washington and the Columbia River. This possibility has not been adequately assessed, and must be in a SDEIS.	Comment noted. The draft EIS considered effects of the alternatives on harvest outside of the Columbia River Basin, including on the California, Oregon, and Washington Coasts; Puget Sound and the Strait of Juan de Fuca; and Southeast Alaska and British Columbia. As described in Appendix K, Chinook and Coho Salmon Fishery Modeling Approach for Application to the Mitchell Act EIS, the fishery model did not speculate on how fishery managers would adjust regulations in the future.
2/41	Speculations on a detrimental effect of competition among salmon with differing rearing histories (natural or hatchery facility) also need to make mention of historic run sizes. Components of this ecosystem once supported much higher densities of salmon, and perhaps could again if these environments are restored. This needs to be addressed in the SDEIS.	Thank you for the information.
2/42	Our review indicates numerous areas for updating and improving the technical information and analysis. In addition, it is our understanding that the model used in analyzing the alternatives was constructed in 1999 and that model assumptions, data inputs, and the resulting impact analyses may be in error. Given the complexity of the various hatchery programs, and comprehensive analysis in the DEIS, we believe that correcting and clarifying the technical information is best done by experts in those specific programs. The Department, through the Department's bureaus (the Service, Bureau of Indian Affairs, and Bureau of Reclamation), offer our assistance to address any inconsistencies and to ensure the most up-to-date information is used in the analysis.	See Global Response 7: Comments Addressing the Analysis within the EIS.
2/43	Page iii, Line 15: Replace "PCFRF" with "PCSRF."	The EIS was updated to make the noted revision.
2/44	Page iii, Line 20: Delete second reference to PNI.	The EIS was updated to make the noted revision.
2/45	Page viii, Line 12: Replace "rake" with "take."	The EIS was updated to make the noted revision.
2/46	Page 1-12, Lines 8-10: Here the document states that this DEIS analyzes effects of hatchery programs on the environment, including natural-origin salmon and steelhead populations. This DEIS does not effectively analyze specific effects of each hatchery program. The Department recommends	NMFS agrees and has modified the language in Section 1.2, Purpose and Need for Action, accordingly.

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED)

Letter/ Comment #	Comment	Response
	that the SDEIS include revised language to specifically state that the document provides a comparison of effects from applying different broad goals or principles to hatchery programs.	
2/47	Page 1-12, Box 1-6: This box explains the relationship between NOAA Fisheries and Mitchell Act funded hatchery operators. The SDEIS should include an additional box that explains the relationship between NOAA Fisheries and non-Mitchell Act funded hatchery operators and their funding agencies.	This is now Box 1-7. The EIS was updated to make the noted revision.
2/48	Page 1-12, Box 1-6: The SDEIS should also include a clearer distinction between Mitchell Act funded hatcheries and hatcheries operated under other authorities such as mitigation. Mitchell Act funded hatcheries may provide the opportunity to be more flexible to different operational scenarios or hatchery actions that meet a policy direction developed through public process, whereas non-Mitchell Act funded hatcheries may not have as much flexibility or discretion in their programs.	This is now Box 1-7. The EIS was updated to make the noted revision
2/49	Page 1-12, Box 1-6: Reverse the order of "way" and "the" in the third line in first paragraph,	This is now Box 1-7. The EIS was updated to make the noted revision
2/50	Page 1-15, Paragraph 1.3.3.1 includes the following statements: "As mentioned above, section 7 of the ESA requires Federal agencies to consult with NOAA Fisheries on any actions that may adversely affect listed salmon and steelhead. Section 7 provides a mechanism to authorize the incidental take of listed species should it be found to occur as a result of hatchery actions." These statements are not correct. The Department recommends the SDEIS include revised language that reads: "As mentioned above, section 7 of the ESA requires Federal agencies to consult with NMFS on any actions that *they authorize, fund, or carry* out *that may affect* listed salmon and steelhead. Section 7 provides a mechanism to *exempt* the incidental take of listed species from the *prohibitions in Section 9 should it be found to occur as a result of otherwise lawful actions."*	The EIS was updated to make the noted revision.

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED).

Letter/ Comment #	Comment	Response
2/51	Page 1-21 Lines 14-19: The SDEIS should include the Bureau of Reclamation or Corps of Engineers in this discussion. These entities also provide considerable funding to Columbia River hatchery programs.	The EIS was updated to make the noted revision.
2/52	Page 1-27 Klickitat Hatchery is operated by the Yakama Nation not WDFW.	The EIS was updated to make the noted revision.
2/53	Page 1-33 Funding source for "USFWS Carson NFH" "Walla Walla Spring Chinook Salmon" program is "Mitchell Act" not "Other". "Upper Yakima-Naches Coho Salmon" program listed under "USFWS Little White Salmon/Willard NFH Complex" should be under "USFWS Eagle Creek NFH". Need to include "Summer Chinook Salmon" program at "USFWS Entiat NFH" ("Harvest" "Other"). Need to include "Summer Steelhead" program at "USFWS Hagerman NFH" ("Harvest" "Other"). Delete "Umatilla Spring Chinook Salmon" program at "USFWS LWS/Willard NFH Complex". This program has been discontinued.	The EIS was updated to make the noted revisions. Additionally, Table 1-4 has been updated to reflect 2010 production programs.
2/54	Page 2-15 Lines 13-15: The bullets are not accurate as stated. They specify that "… if any money remains, MER occurs." MER has been a line item component of Mitchell Act hatchery funding since 2001 and has ranged between $1.162M and $1.7M from 2001-2009 with $1.689M designated in 2009 (see Table 1-3 on page 1-8).	The EIS was updated to make the noted revision.
2/55	Lines 29-30: Eliminating MA funding and closing all MA facilities would conflict with the 2008-2017 Management Agreement which outlines production commitments for most hatchery programs above Bonneville Dam, a number of which are wholly or partially funded by the Mitchell Act. This should be acknowledged for Alternative 2.	See Global Comment 5: Comments Addressing the EIS and Its Relationship to Other Plans, Regulations, Agreements, Laws, and Executive and Secretarial Orders.

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED)

Letter/ Comment #	Comment	Response
2/56	Page 2-30, Lines 4-5: Change "Nine" to "Eight" after correction to Table 2-12 which should have "Entiat" deleted from all alternatives (summer Chinook are reared and released in-basin by Entiat NFH) and change Alternative "2" to "1".	The EIS has been updated in response to the comment. This section has been moved to page 4-21, and text has been corrected.
2/57	Page 2-28: Should include three lines for each alternative (i.e., All hatchery programs, non-Mitchell Act funded hatchery programs, and Mitchell Act funded hatchery programs) for ease of alternative comparisons.	The EIS has been updated in response to the noted comment. This section has been moved to page 4-12, and suggested changes have been made.
2/58	Page 2-37: Delete "Entiat" from all alternatives. Entiat NFH has transitioned from an in-basin spring Chinook salmon release program to an in-basin summer Chinook salmon release program.	The EIS has been updated in response to the comment This section has been moved to page 4-19. Suggested changes have been made.
2/59	Page 2-38: Need to include clarifying language that other non-Mitchell Act funded basin wide production is also reduced by 29% to achieve intermediate level of performance metrics (Table 2-7).	Table 4-4 (draft Table 2-7) has been updated to show changes in hatchery production for Mitchell Act-funded and non-Mitchell Act-funded hatchery production.
2/60	Page 2-38, Lines 7-10: Numbers of programs terminated in Table 2-8 and Table 2-13 do not match across ecological provinces.	The EIS has been updated in response to the comment. Hatchery production numbers and programs have all been updated to 2010 production levels. This has resulted in updates to all EIS tables with hatchery program numbers and program releases affected by alternatives. NMFS has made every effort to provide consistent information that is cross-referenced in the final EIS.
2/61	Page 2-38, Line 14: Table 2-13 implies "88" programs are terminated rather than the "72" stated here and listed in Table 2-8.	The EIS has been updated in response to the comment. Hatchery production numbers and programs have all been updated to 2010 production levels. This has resulted in updates to all EIS tables with hatchery program numbers and program releases affected by alternatives. NMFS has made every effort to provide consistent information that is cross-referenced in the final EIS.
2/62	Page 2-40, Line 1: Change "Twenty-one" to "Twenty" ("Entiat" needs to be deleted from all alternatives in Table 2-12.)	The EIS has been updated in response to the comment. Hatchery production numbers and programs have all been updated to 2010 production levels. This has resulted in updates to all EIS tables with hatchery program numbers and program releases affected by alternatives. NMFS has made every effort to provide consistent information that is cross-referenced in the final EIS.
2/63	Page 2-42, Lines 2-5: Table 2-14 implies "10" programs are terminated rather than the "Seventeen" stated here and listed in Table 2-8.	The EIS has been updated in response to the comment. Hatchery production numbers and programs have all been updated to

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED).

Letter/ Comment #	Comment	Response
		2010 production levels. This has resulted in updates to all EIS tables with hatchery program numbers and program releases affected by alternatives. NMFS has made every effort to provide consistent information that is cross-referenced in the final EIS.
2/64	Page 2-44, Line 7: Replace "(Box 2-9)" with "(Box 2-10)".	The EIS has been updated in response to the comment. This section is now on page 4-28 and reference to correct box (Box 4-4) has been made.
2/65	Page 2-46, Line 24: Add the following at the end of the sentence, "assuming facility space is available for these programs with corresponding termination of other programs that do not achieve performance metrics.	Comment noted.
2/66	Page 2-46, Lines 23-31: Program numbers in the text do not match those identified in Table 2-17.	The EIS has been updated in response to the comment. Hatchery production numbers and programs have all been updated to 2010 production levels. This has resulted in updates to all EIS tables with hatchery program numbers and program releases affected by alternatives. NMFS has made every effort to provide consistent information that is cross-referenced in the final EIS.
2/67	Page 2-47, Lines 1-6: Number of terminated programs does not match between Table 2-8 and Table 2-15.	The EIS has been updated in response to the comment. Hatchery production numbers and programs have all been updated to 2010 production levels. This has resulted in updates to all EIS tables with hatchery program numbers and program releases affected by alternatives. NMFS has made every effort to provide consistent information that is cross-referenced in the final EIS.
2/68	Page 2-47, Lines 16-19: Rewrite as follows, "Of the 27 contributing populations, 11 (41 percent) would achieve or exceed target stronger performance metrics but some hatchery programs would continue operations even though they affect 8 contributing populations (30 percent) that would not meet even the intermediate performance metrics (Table 2-10)."	The EIS has been updated in response to the comment. Hatchery production numbers and programs have all been updated to 2010 production levels. This has resulted in updates to all EIS tables with hatchery program numbers and program releases affected by alternatives. NMFS has made every effort to provide consistent information that is cross-referenced in the final EIS.
2/69	Page 2-48, Line 18: Insert "intermediate" between "target" and "performance".	The EIS has been updated in response to the comment.
2/70	Page 2-50, Lines 3-9: Number of new programs between Table 2-8 and Table 2-17 do not match.	The EIS has been updated in response to the comment.

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED)

Letter/ Comment #	Comment	Response
2/71	Page 2-50, Lines 18-21: Number of terminated programs between Table 2-8 and Table 2-16 do not match.	The EIS has been updated in response to the comment. Hatchery production numbers and programs have all been updated to 2010 production levels. This has resulted in updates to all EIS tables with hatchery program numbers and program releases affected by alternatives. NMFS has made every effort to provide consistent information that is cross-referenced in the final EIS.
2/72	Page 2-50, Lines 31-33 through Lines 1-2 on Page 2-51: Rewrite as follows, "Of the 22 contributing populations, 8 populations (36 percent) would achieve or exceed the target stronger performance metrics (Table 2-10). Some hatchery programs would be maintained under the implementation scenario for Alternative 5 even though 9 contributing populations (41 percent) would not achieve even the intermediate performance metrics (Table 2-10)".	The EIS has been updated in response to the comment. Hatchery production numbers and programs have all been updated to 2010 production levels. This has resulted in updates to all EIS tables with hatchery program numbers and program releases affected by alternatives. NMFS has made every effort to provide consistent information that is cross-referenced in the final EIS.
2/73	Page 3-4, Line 15: Replace the first reference to "natural-origin" with "hatchery-origin".	The EIS has been updated in response to the comment.
2/74	Page 3-5, Line 6: Insert "be" between "not" and "that".	The EIS has been updated in response to the comment.
2/75	Page 3-6, Line 21: Replace "displaying" with "displacing".	The EIS has been updated in response to the comment.
2/76	Page 3-8, Table 3-3: It would be informative to list the ESA status for each ESU/DPS in the first column (e.g., endangered, threatened, or not warranted).	The EIS has been updated in response to the comment.
2/77	Page 3-20, Line 17: Replace "benefit from" with "provide benefits for".	The EIS has been updated in response to the comment.
2/78	Page 3-27, Line 5: Insert "summer/fall run" between "of" and "Chinook" to distinguish this run of Chinook from the spring run of Chinook which is endemic to this basin.	The EIS has been updated in response to the comment. A change was made to line 8 of page 3-30 in the final EIS.
2/79	Page 3-74, Line 15: Add the following to the end of the sentence after "directive": "for federally operated, administered, or funded programs that produce fish for harvest".	The EIS has been revised to address this comment.
2/80	Page 3-78, Line 21: Add "occur elsewhere" to end of sentence.	The EIS has been revised to address this comment.
2/81	Page 3-79, Line 16: Delete "south of Cape Falcon, Oregon" and replace with "off California". Insert "for Chinook" between "closures" and "in the Klamath …"	The EIS has been revised to address this comment.

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED).

Letter/ Comment #	Comment	Response
2/82	Page 3-84, Lines 8-9: Replace "tribal commercial" with "recreational" and likewise "recreational fisheries" with "tribal commercial" to match Table 3-11.	The EIS has been revised to address this comment.
2/83	Page 3-84, Line 14: Delete "but only 6 percent of the tribal commercial fishery" and replace "1" with "11" relative to percent of the non-tribal commercial fishery to match Table 3-11.	The suggested corrections were noted; however these numbers have changed in the final EIS as a result of revised harvest estimates.
2/84	Page 3-84, Line 24: Insert "northern" between "along the" and "Oregon coast".	The EIS has been revised to address this comment.
2/85	Page 3-85, Table 3-17: Should include a section for Oregon Coast-South of Cape Falcon (i.e., south of Garibaldi, Oregon (see Table 3-11).	It is understood that some harvest of Columbia River Chinook occurs south of Cape Falcon. However, available information indicates that the contribution is small, and the fisheries there are largely affected by the status of populations south of Cape Falcon. Columbia River Chinook are largely north-migrating, so variations in alternative Columbia River production levels would have negligible impacts on harvests by fisheries south of Cape Falcon.
2/86	Page 3-87, Table 3-19: The average non-tribal commercial catch values of 9,375 Chinook and 4,165 coho are for the northern Oregon coast (Astoria catch area) only, not the entire Oregon coast as is implied by the table and in the preceding narrative on Page 3-86, Lines 6-8. Need to add a section for Oregon Coast-South of Cape Falcon. (See Table 3-11 and suggestion for revised Table 3-17 as stated above.)	Thank you. This table is now Table 3-18 in the final EIS. The values represent the Astoria area only. Table 3-18 and other tables have had footnote and header information added, where necessary, to clarify this.
2/87	Page 3-88, Lines 2-4: Replace "66 percent" with "65 percent", "39,697,033 fish" with "149,783 fish", and "59,707,540 fish" with "228,886 fish" to correctly match Table 3-20.	The suggested corrections were noted; however, these numbers have changed in the final EIS as a result of updated harvest estimates.
2/88	Page 3-109, Lines 21-31: Should note and acknowledge that no economic value has been assigned to tribal ceremonial and subsistence harvests, which from a tribal perspective have religious, social, and cultural value far above the economic value of commercial fisheries.	The EIS has been revised to address this comment.
2/89	Page 3-112, Line 28: Delete "Wheeler" from the list.	The EIS has been revised to address this comment.
2/90	Page 3-125, Lines 16-19: Should include "white sturgeon" in this list of prey species for Stellar sea lions.	The EIS has been updated in response to the comment. Please see revisions to Section 3.5.5.1.1. Steller Sea Lion.

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED)

Letter/ Comment #	Comment	Response
2/91	The timeframe of analysis is not clear; therefore, the reader cannot determine whether the outputs indicate1 year into the future, 10 years, or more, which in turn makes it difficult to make any assumptions about populations and productivity.	Natural population responses (productivity and abundance) to harvest and hatchery management actions were projected forward 100 generations using the All-H-Analyzer. The natural population outputs reflect a long-term future projection of impacts for comparison across alternatives.
2/92	The models do not appear to account for possible population responses to stronger metrics which may occur but could take several generations to show up. For example, if a population had a fairly high pHOS, and hatchery reforms brought that down to meet the stronger metric. If the models did account for these items, it seems as though there would be fewer fish initially if the reform resulted in decreased hatchery production.	The analysis does, in fact, account for the long-term response of natural populations to hatchery influence affecting productivity and abundance. Natural population responses (productivity and abundance) to hatchery contribution (pHOS) were projected forward 100 generations using the All-H-Analyzer model. The initial state in the model was to assume fully fit natural populations. If NMFS were to plot trends over the 100 generations, there would be a decline in productivity and abundance in cases of high pHOS and less or no decline for populations managed for the stronger metrics. NMFS reported the long-term equilibrium response to describe future effects for comparison across alternatives.
2/93	The document did not, however, explore if there would be a long-term population response, i.e. initial drop and then increasing population over time due to increased productivity of natural origin spawners. The entire socioeconomic analysis is based on numbers of fish, so this analysis could affect the socioeconomic section significantly.	Depending on the status of the existing population there may be a short-term drop in abundance of some natural populations with a recovery over multiple generations. NMFS reported the long-term equilibrium response to describe long-term future projection of effects for comparison across alternatives.
2/94	The Department recommends that the SDEIS clarify the timeframe of analysis, discuss possible population responses to proposed reform actions in this section, and discuss the uncertainties of population numbers in the socioeconomics section.	NMFS has added language regarding the timeframe of the analysis to Section 1, Purpose of and Need for the Proposed Action.
2/95	Recreational harvest and economic value is not a linear relationship, with angling economic output decreasing drastically with decreasing populations. The Department recommends that the SDEIS clarify whether or not this is incorporated into the socioeconomic analysis under recreational harvest and economic value sections.	NMFS acknowledges that the relationship between angler effort and economic values (both gross and net economic values) is not likely linear. However, the precise form of this relationship varies substantially depending on many relevant factors. As discussed in most of the 124 studies identified as sources for the valuation database (Boyle et al. [1999]) cited in Appendix J for identifying point estimates of net WTP values for the draft EIS analysis, the effect that changes in recreational catch (as determined by

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED).

Letter/ Comment #	Comment	Response
		hatchery production, among other factors) have on angler effort and economic values varies across the range of angler demand for fishing. Information has been added to Appendix I (Socioeconomic Impact Methods) explaining this issue.
2/96	Page 4-9, Line 28: Here the document states that the model outputs, as well as consequential socioeconomic analyses, are only raw numbers and not specific predictions. In the SDEIS, this should be clearly stated throughout the document, as appropriate.	The EIS has been updated in response to the comment. This section has been moved to Section 4.2.2, Methods for Analyzing Effects, starting on page 4-55 in the final EIS. This language has been clarified and is restated in several additional sections throughout the EIS, as appropriate.
2/97	Page 4-11, Line 19: Replace “Four” with “Three”.	Comment noted.
2/98	Page 4-28, Line 15: Replace “Alternative 4” with “Alternative 5”.	Comment noted.
2/99	Page 4-64, Lines 11-12: Replace “56 percent”, “8 percent”, and “24 percent” with “64 percent”, “9 percent”, and “27 percent”, respectively and correct all values in Table 4-56 for the three right- hand columns.	The EIS has been updated in response to the comment. Hatchery production numbers and programs have all been updated to 2010 production levels. This has resulted in updates to all EIS tables with hatchery program numbers and program releases affected by alternatives. Additionally, the results of these updates on the natural-origin population and their levels of performance, by alternative, have also been updated. NMFS has made every effort to provide consistent information that is cross-referenced in the final EIS.
2/100	Page 4-66, Lines 15-18: Text does not match values in Table 4-59 for Alternative 5.	Comment noted.
2/101	Page 4-83, Line 6: Add “except for Alternative 4 which increases by 17 percent” to the end of the sentence to match the values in Table 4-80.	The EIS has been updated in response to the comment. Hatchery production numbers and programs have all been updated to 2010 production levels. This has resulted in updates to all EIS tables with hatchery program numbers and program releases affected by alternatives. NMFS has made every effort to provide consistent information that is cross-referenced in the final EIS.
2/102	Page 4-90, Line 3: Delete “onon” and replace with “on”.	Comment noted.
2/103	Page 4-119, Line 26: Delete “$113,067 for the Southeast Alaska economic impact region”. This is an increase not a decrease as noted earlier in the text.	The EIS has been revised to address this comment.

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED)

Letter/ Comment #	Comment	Response
2/104	Page 4-202 and 4-208, Line 4: Water quality would improve under the no action alternative because facilities with National Pollution Discharge Elimination Systems (NPDES) permits and watersheds with Total Maximum Daily Loads (TMDLs) in place, or upcoming, will be required to reduce their pollutant discharge levels in order to comply with the NPDES permit or TMDL. Discharge levels for both NPDES permits and TMDLs are often revised and lowered. NPDES permits are renewed on a five to ten year basis. The Department recommends these water quality control processes be recognized and included as part of the analysis in the SDEIS.	The EIS has been updated in response to the comment. Thank you. Section 3.6.3.2.1, Federal Regulations, Section 4.6.3, Water Quality, and Section 4.7.3, Hatchery Chemical Use, Handling, and Safety, were revised to reflect the comment.
2/105	Page 5-6, Line 15: Replace “Clark County” with “Multnomah County”.	Comment noted.
2/106	Appendices C through F are the most critical part of the analysis from the standpoint of impacts to the fishery resources. However, it is difficult to determine which hatchery programs might be terminated and which programs are new under each of the alternatives in those appendices. Tables 2-13 through 2-17 provide this information, but cross-comparison among alternatives, as one can do in Appendices C through F, is difficult and time-consuming.	Several format changes have been made to the species-specific appendices to aid in navigating through them. However, the appendices remain very large. This is out of necessity to report the information in a format that can be printable.
2/107	Also, the number of smolts released under each of the modeled scenarios for each Alternative is not presented in the DEIS. Some of this production information is presented as pooled information (e.g., Table 2-3, Table 2-7), but the production levels for each individual program under each alternative/scenario are not presented.	Hatchery program production levels under each alternative are present in the species-specific appendices (C-F) in the EIS, under the "Hatchery Smolt Release" column headers.
2/108	Our recommendation is to create an additional Table or Appendix that has the same rows as Appendices C through F, categorized by “Population name”, but with columnar headings under each alternative indicating (a) natural, integrated, or segregated, and (b) the number of hatchery-origin fish released from each population under each of the five alternatives. The number of hatchery-origin fish would be zero or N/A for populations categorized as “natural” under a particular alterative. For current programs that might be terminated under one or more of Alternatives 2 through 5, “Terminated” should be entered under the column labeled “Number of fish released”. For new hatchery programs that currently do not exist, “New” should be entered for Alternative 1 in the column “Number of fish released”. For example, if a segregated program is terminated and an	The EIS has been updated to reflect a number of the suggestions. NMFS has made several changes to the label categories and information presented in the species-specific appendices (C through F) to help the reader understand what information is presented.

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED).

Letter/ Comment #	Comment	Response
	integrated program is developed to replace it under Alternative 4, then the segregated "population" would show "Term." for the number of smolts released under Alternative 4, the "natural" population would show "New" for the number of smolts released under Alternative 1, and "natural" would be replaced with "integrated" and the proposed or modeled number of smolts to be released under Alternative 4 would be presented. This additional table or Appendix would allow a more comprehensive assessment of the scenario modeled to illustrate each alternative.	
2/109	In Appendices C through F, information for Alternatives 4 and 5 are presented in a separate line than information for Alternatives 1, 2 and 3. Our recommendation is to eliminate the "ESU" and "Designation" columns in Appendices C through F, and group the entries by "ESU" table headings, and present the information for all 5 Alternatives as a single row for each population.	Comment noted.
2/110	The use of weirs to exclude hatchery-origin fish from natural spawning areas is a critical component of Alternatives 3, 4, and 5. However, this information is not clearly presented in a single table or location (compare Tables 2-9, 3-4, 4-6, 4-10, 4-15, 4-24, etc.).	The commenter is correct that all of the information about the weirs, assumed to be used under each alternative's implementation scenario, is not available in a single location. However the weir information is organized in just a few locations in the document. Table 4-6 shows the number and location (recovery domain/ecological province) of all of the weirs used in the alternative implementation scenarios. Additionally the location (stream) and assumed weir efficiency for all alternative implementation scenarios are contained in individual tables for each ESU/DPS in Section 4.2.3.2, Effects on Salmon ESUs and Steelhead DPSs Under All Alternatives.
2/111	In Chapter 4 where information is presented for each ESU (e.g., Table 4-10), it is not clear whether the columnar heading "Location" refers to the mainstem of the presumed river/stream (e.g., "Elochoman") or whether "Location" refers to some location within the indicated watershed.	The location of new weirs as referenced in Chapter 4 tables refers to an unspecified mainstem location within the watershed. The weir location is assumed to be downstream of the primary population spawning locations to allow removal of hatchery-origin adults from the natural spawning aggregate.
2/112	Also, Mill, Abernathy, and Germany creeks are three separate streams with an existing weir on Abernathy Creek at the Service's Abernathy Fish Technology Center. Is Alternative 4 proposing one new weir or three new weirs to control Fall Chinook in these three streams?	This table assumes weirs in all three streams, downstream of the fall Chinook spawning locations. The Mill/Abernathy/Germany fall Chinook population was identified as a "primary" population (a population that is targeted for restoration to high or very high

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED)

Letter/ Comment #	Comment	Response
	This is confusing because those three small creeks do not support native populations of Chinook salmon.	persistence probability) in the final NMFS recovery plan for lower Columbia River salmon and steelhead, as well as the 2004 draft LCFRB plan and the final LCFRB plan.
2/113	Coho and steelhead inhabit these streams, with chum salmon historically spawning in the lower reaches. However, in Table 4-74, no weirs are listed for Mill, Germany, and Abernathy creek for the Lower Columbia coho ESU although approximately 50 percent of the adult coho migrating up those three streams are stray hatchery coho.	NMFS' assessment of hatchery coho contribution to these streams is approximately 10%. However, that is an average, and NMFS recognizes that hatchery contribution likely varies considerably from year to year. Performance goals were achieved through reform of nearby hatchery programs contributing hatchery strays to this population. Thus weirs were not needed to achieve goals.
2/114	The Department recommends that all the information on weirs (Tables 2-9, 3-4, 4-6, 4-10, etc.) be consolidated into a single table and categorize presence/absence by watershed in the first column and not by separate tables for each Evolutionary Species Unit. In column 2 of this proposed table, all of the populations affected by an existing or new weir would then be listed; if a particular weir was going to be used to control pHOS for more than one natural population (e.g., coho, steelhead, Chinook), then all those populations would be listed under column 2. For example, under the Elochoman River, both Fall Chinook (Table 4-10) and "Late-Type N" coho would be listed. If separate weirs would be developed for each species within a particular river, then each weir would need to be listed separately. This table should clearly show all existing weirs, which of those existing weirs would be replaced or upgraded, and all new weirs for each of the Alternatives. In general, we believe the analysis of the risks associated with weirs necessitates a more detailed and comprehensive presentation, if this becomes a realistic alternative.	The commenter is correct that all of the information about the weirs, assumed to be used under each alternative's implementation scenario, is not available in a single location. However the weir information is organized in just a few locations in the document. Table 4-6 shows the number and location (recovery domain/ecological province) of all of the weirs used in the alternative implementation scenarios. Additionally the location (stream) and assumed weir efficiency for all alternative implementation scenarios are contained in individual tables for each ESU/DPS in Section 4.2.3.2, Effects on Salmon ESUs and Steelhead DPSs Under All Alternatives.
2/115	Appendix I, Page 23, Table 3.4: The share percentages for North of Cape Falcon Commercial Coho and Total column values appear low, perhaps by an order of magnitude. The Department recommends these numbers be validated in the SDEIS.	Several commenters identified specific issues with Appendix I (The Research Group 2009a) in the draft EIS and wondered why NMFS included it in the draft EIS. NMFS originally included this report as a socioeconomic appendix for context and transparency. However, NMFS has decided that including it as an appendix was confusing and unnecessary, as it is included as a source in the references to the socioeconomic and environmental justice sections. Therefore, the report is not

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED).

Letter/ Comment #	Comment	Response
		included in the final EIS.
3/1	The EIS considers four action alternatives in order to inform a National Marine Fisheries Service (NMFS) policy direction that will guide the distribution of Mitchell Act hatchery funds and inform NMFS' future review of Columbia River basin hatchery programs under the Endangered Species Act (ESA). The alternatives are crafted with the recognition that adverse effects of hatchery operations are contributing to the decline of listed salmon and steelhead in the Columbia Basin. As a result, each of the action alternatives utilizes a different suite of strategies to reduce the adverse effects of hatchery operation on natural-origin fish. We are broadly supportive of this direction, and we believe that the species recovery goals under ESA are directly in line with the "fishable/swimmable" goal of the Clean Water Act (protection and propagation of fish, shellfish, and wildlife and recreation in and on the water)). We encourage NMFS to consider CWA goals in conjunction with ESA goals as a preferred alternative is crafted in the FEIS.	NMFS has considered requirements of the CWA in its analyses of all alternatives, including the preferred alternative. The action alternatives all require that hatchery facilities meet best management practices, including CWA compliance/NPDES permitting.
3/2	While we are supportive of the direction being pursued in the DEIS, our review of the document raised a number of questions and concerns. Many of our concerns relate to the completeness of the DEIS with regard to the range of alternatives and implementation scenarios analyzed. We also identified concerns related to a lack of information on the economic analysis; the monitoring, evaluation and reform (MER) program; tribal consultation; and the basis for the hatchery reform principles put forward in the document. Finally, we provide a detailed review of the water quality sections (3.6 and 4.6) and we make some recommendations to improve the readability of the document.	Thank you. NMFS has reviewed your comments and has provided responses accordingly.
3/3	Based on our review, we have assigned the DEIS a rating of EC-2. A copy of the EPA rating system is also enclosed.	Thank you. Rating noted.
3/4	We appreciate the effort on the part of NMFS to expand the scope of this analysis to include all 178 hatchery programs in the Columbia River basin. The impacts associated with the operations of Mitchell Act hatcheries cannot be analyzed and understood without also considering the operations and impacts of the other hatcheries in the basin. We are challenged, however, by the implementation scenarios for a number of	See Global Response 5: Comments Addressing the EIS and Its Relationship to Other Plans, Regulations, Agreements, Laws, and Executive and Secretarial Orders. Additionally, see Global Response 6: Comments Addressing the Range of Draft EIS Alternatives.

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED)

Letter/ Comment #	Comment	Response
	reasons. We recognize that the implementation scenarios were developed for the purposes of analysis only, and that the DE IS is not intending to make a determination about the operation or closure of any specific hatchery. We believe, however, that the scenarios developed and analyzed should be implementable.	
3/5	As noted on page 2-56 of the DEIS, NMFS does not fund or operate non-Mitchell Act funded hatcheries and, therefore, cannot mandate their termination. Further, because NMFS does not guide the disbursement of non-Mitchell Act funds, it is not clear how the non-Mitchell Act-funded hatcheries could be required to meet the performance metrics established in the DEIS. We recognize that NMFS reviews non-Mitchell Act-funded hatchery programs under the Endangered Species Act, but as noted in the DEIS, those reviews only occur in response to specific proposals for operational changes submitted by operating agencies and tribes. Given these limiting factors, it is not clear why the DEIS did not analyze an alternative that seeks to meet the established performance goals while assuming no change in non-Mitchell Act-funded hatcheries. If performance goals cannot be met without operational changes at the non-Mitchell Act-funded hatcheries, that fact should be disclosed, and carefully considered as a preferred alternative is developed.	NMFS' intent, in evaluating changes to all hatchery production programs in the basin, is to disclose the effects of alternative performance goals on the resources throughout the basin. NMFS intends to distribute Mitchell Act hatchery funding basinwide, where it can best be used to benefit the anadromous fishery resources of the Columbia River. To that end, it is necessary to understand the potential effects of the policy guidance alternatives throughout the basin, even for program and activities that are not currently funded with Mitchell Act hatchery funds, but that may seek to receive Mitchell Act hatchery funding in the future.
3/6	Another implementation concern has to do with how the various implementation scenarios address commitments under the 2008 Columbia River Fish Management Plan authorized in *U.S. v Oregon.* Our concerns are not that some of the implementation scenarios under certain alternatives may be inconsistent with the commitments in the Management Agreement since CEQ guidance[2] and legal precedent[3] support the development of a broad range of alternatives, and alternatives that may be outside of the legal jurisdiction of the lead agency. What is concerning, however, is the lack of clarity in the document around the process for addressing the requirements of the Management Agreement in the future. The DEIS states that, "NMFS assumes that affected parties will exercise their authority regarding production measures following this environmental analysis in a manner that is consistent with the most current Management Agreement" (DE IS p. 2-21). If parties to the agreement are to proceed with management that is consistent with the current Management Agreement,	See Global Comment 5: Comments Addressing the EIS and Its Relationship to Other Plans, Regulations, Agreements, Laws, and Executive and Secretarial Orders.

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED).

Letter/ Comment #	Comment	Response
	but the management direction is not consistent with what was analyzed under the EIS, it is not clear how the DEIS is supporting the decision-making process.	
3/7	The performance metrics and the "primary, contributing, and stabilizing" population designations provide the underlying basis for the analyzed alternatives. The document notes that these hatchery reform concepts were developed by the Hatchery Science Review Group (HSRG), but does not provide additional information about the scientific basis for the proposed reform concepts. In order to provide agency and public reviewers with a level of confidence that the proposed metrics represent the best available science, we recommend that the FEIS provide a discussion of whether and to what extent these concepts have been peer reviewed and tested.	The concept of "primary," "contributing," and "stabilizing" population designations was first developed by the Lower Columbia Fish Recovery Board (2004) and eventually adopted in the final NOAA Recovery Plan (2013). The HSRG expanded this concept to all populations in the Columbia Basin to guide their process (Paquet et al. 2011). The application of particular performance metrics for specific population designations was applied in the EIS as a measure of risk reduction for the natural-origin populations. For a review of the application of metrics such as PNI and pHOS, please see Appendix I, Recovery Implementation Science Team 2009.
3/8	It would also be helpful to include a discussion of hatchery reform concepts other than proportion of hatchery origin spawners (pHOS) and proportion of natural origin broodstock (pNOB), and why these were not considered in the context of alternative development.	Thank you. The EIS discusses many aspects of hatchery program management and different strategies and approaches used by hatchery operators to achieve the desired goals for performance and/or risk reductions. These are detailed in Section 3.2.3.1, General Risks and Benefits of Hatchery Programs to Salmon and Steelhead Species. Each of the sections has a subsection titled "Current Approaches for Reducing Risks to. . .." Additionally, Section 4.1.2, Mitigation, summarizes current approaches that are generally applied to reduce the risks associated with hatchery production. The EIS does not attempt to define the term "hatchery reform," to which the commenter alludes. All of the measures NMFS has pointed to in the response could be considered "reform" measures.
3/9	In their report to Congress on hatchery reform in the Columbia River basin, the HSRG recommended 1) setting clear goals; 2) scientific defensibility; and 3) monitoring, evaluation and adaptive management[4] . This last recommendation is reflected in the DEIS on page 2-14, where the document states that each alternative's policy direction includes goals and/or principles related to monitoring, evaluation, and reform (MER). We support this direction agree that MER is foundational to successful hatchery	See Global Response 6: Comments Addressing the Range of EIS Alternatives.

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED)

Letter/ Comment #	Comment	Response
	reform in the basin. The document falls short, however, in elaborating on what a comprehensive, basin-wide plan for MER would look like. We recommend that the FEIS include a robust discussion of the monitoring program, including program development; key monitoring parameters; how implementation and effectiveness monitoring would be addressed; triggers for adaptation/reform; and the likely extent to which it would be adequately implemented/funded.	
3/10	The DEIS is very conscientious about breaking out and analyzing impacts to tribes and tribal fisheries, and we appreciate the attention given to this component of the analysis. We are concerned, however, over the lack of detail in the document around tribal consultation, and compliance with Executive Order 13175 *(Consultation and Coordination with Indian Tribal Governments).* Given the role of tribes as co-managers within the basin, and the potential ramification of the proposed alternatives to tribal fisheries and hatchery operations, it is reasonable to expect a robust discussion of consultation efforts and outcomes in the EIS. Tribal involvement is noted at the scoping phase (DEIS p. 2-11), and a number of tribal representatives are listed among the list of preparers on page 8-2, but it is not clear from these brief notations if formal consultation was pursued. We strongly recommend that the FEIS include a discussion of tribal consultation efforts and outcomes, and how tribal concerns will be addressed in accordance with federal tribal trust responsibilities.	See Global Response 3: Comments Addressing the EIS Process.
3/11	The Mitchell Act Coalition has reported that the total Columbia River basin household personal income generated from Columbia Basin fisheries is about $408 million, of which $142 million come from anadromous wild and hatchery salmon and steelhead[5]. Table 3-24 of the EIS puts this estimate at $46 million. We recognize that this large discrepancy may be driven in large part by the smolt to adult return (SAR) ratio utilized in the economic analysis. Appendix J of the EIS demonstrates that a higher SAR can greatly influence the results of an economic analysis. Because the overall assessment of social, economic and environmental justice impacts rests in part on the assessment of harvest-related income, we recommend that the FEIS address these conflicting estimates directly, and elaborate on the rationale behind the methodology selected.	The source for the economic values identified in this comment apparently is a handout for a meeting of the Mitchell Act Coalition of agencies, tribes, and other interested parties. The original source for most of the economic values identified in the handout is a December 2005 report prepared by the Independent Economic Analysis Board (IEAB), entitled "Economic Effects from Columbia River Basin anadromous salmonid fish production." This report can be found at http://www.nwcouncil.org/library/ieab/ieab2005-1.pdf. A closer examination of the IEAB report reveals that the $142 million estimate of personal income generated by salmon and

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED).

Letter/ Comment #	Comment	Response
		steelhead fisheries in the Columbia River includes an estimated $81.7 million in the Columbia River Basin. As a comparison, estimates of personal income derived for the final EIS (see revised Table 4-95) using revised hatchery production estimates include $109.2 million in in-basin personal income (the in-basin personal income estimate for the draft EIS was $104.0 million). Considering that the IEAB estimate of $89.1 million represented "early 2000s" fisheries in the Columbia River Basin, and the estimates for the Mitchell Act EIS (both for the draft EIS and the final EIS) are in more recent (2009) dollars and reflect more recent fish prices and other factors, the two estimates of in-basin personal income are considered consistent. This finding is not surprising considering that similar FEAM and IMPLAN modeling factors were used in both of the analyses.
3/12	The document analyzes four action alternatives. Alternatives four and five are distinct among these because they draw a geographical distinction between the Interior Columbia recovery domain and the Willamette/Lower Columbia recovery domain and because they apply different performance metrics in each of these domains. The analysis provides valuable insight regarding how the "intermediate" and "stronger" performance goals would affect each of these domains. The analysis does not, however, provide a rationale for applying different metrics to each domain. It also does not provide a rationale for treating the two domains separately.	See Global Response 6: Comments Addressing the Range of Draft EIS Alternatives.
3/13	We find that the current construction does add value to the decision-making process, but we recommend that in the FEIS, another alternative be crafted that applies the stronger performance metric to both domains. Given the overall goal of species recovery, and the overarching direction from the HSRG to manage harvest, hatchery broodstock and natural spawning escapement to meet or exceed the HSRG standards, an alternative that applies the stronger performance metric to the entire basin seems to be a logical bookend for the purposes of analysis. If the development of such an alternative is not pursued, the rationale for that decision should be provided in the FEIS.	See Global Response 1: Comments Stating a Preference (Preferences) and/or Ideas for the EIS Preferred Alternative.

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED)

Letter/ Comment #	Comment	Response
3/14	As noted in our cover letter, we believe that the species recovery goals under ESA are directly in line with the "fishable/swimmable" goal of the CWA[6]. We encourage NMFS to consider CWA goals in conjunction with ESA goals as a preferred alternative is crafted in the FEIS.	See Global Response 6: Comments Addressing the Range of Draft EIS Alternatives.
3/15	Page 3-140 at 31: The DEIS states, "The water quality parameters discussed could be transported from hatcheries to the aquatic system through discharges of hatchery water used for operations (referred to as effluent), decomposition of hatchery-origin salmon carcasses placed in streams to enhance nutrient levels, and releases of large numbers of hatchery-origin salmon into receiving streams." We note that NPDES permits only address the discharge of pollutants from hatcheries, not the planting of carcasses in the watershed, or the release of fish to the stream. The carcasses and fish are not seen as pollutants.	Thank you. Section 3.6.3.1, Water Quality Parameters, was revised to reflect the comment.
3/16	Page 3-141 at 11: The DEIS describes chemical or physical parameters associated with hatchery operation that have the potential to impact receiving waters. Among the parameters listed is "sediment". We note that in effluent, this is measured as "settleable solids" and "total suspended solids"; in the stream, it is discussed as turbidity or sediment.	Thank you. Section 3.6.3, Water Quality, and Section 3.6.3.1.5, Sediment (Turbidity, Total Suspended Solids, and Settleable Solids), were revised to reflect the comment.
3/17	Page 3-141 at 12: The DEIS states that some water quality parameters could also be affected by decomposition of salmon carcasses and suggests that spawned-out salmon could occur at the facility site. We note that permits usually prohibit discharge of carcasses at the hatchery.	Thank you. Section 3.6.3.1, Water Quality Parameters, was revised to reflect the comment.
3/18	Page 3-142 at 6: The DEIS states that effluent discharge permits for hatcheries specify effluent temperature limits. We note that only some permits have temperature limits; most do not.	Thank you. Section 3.6.3.1.1, Temperature, was revised to reflect the comment.
3/19	Page 3-143 at 10: The DEIS states that there is a low risk of water quality violations from nutrients with adequate dilution by receiving water. We note that risk of nutrient impairment depends on the characteristics of the stream. Icicle Creek is impaired because of phosphorus, primarily from the Leavenworth National Fish Hatchery.	Thank you. Section 3.6.3.1.2, Nutrients, was revised to reflect the comment.
3/20	Page 3-143 at 10: We also note that dilution comes into play only if there is a mixing zone allowed by the state. We are not aware of any such mixing zones for the hatcheries in Washington and Idaho.	Thank you. Section 3.6.3.1.2, Nutrients, was revised to reflect the comment.

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED).

Letter/ Comment #	Comment	Response
3/21	Page 3-144 at 6: The DEIS states that changes in pH likely arise from primary production (algal growth via photosynthesis) within hatcheries. We recommend that NMFS consider the findings in the 2006 TMDL study of the Wenatchee River prepared by the Washington Department of Ecology. That study showed pH above the acceptable 8.5 can be caused by excess growth of periphyton in the river, which can be caused by excess nutrients from any source, including hatchery effluent.	Thank you. Section 3.6.3.1.4, pH, was revised to reflect the comment.
3/22	Page 3-144 at 22: The DEIS makes reference to "settling nutrients". More appropriately, the DEIS should discuss "settling solids" -which have nutrients in or on them, rather than settling nutrients as a methods to reduce solids.	Thank you. Section 3.6.3.1.5, Sediment (Turbidity, Total Suspended Solids, and Settleable Solids) was revised to reflect the comment.
3/23	Page 3-147 at 3: The DEIS states that, "for discharges from hatcheries not located on Federal or tribal lands within Oregon and Washington, the EPA has delegated its regulatory oversight to the states" and that, "Oregon, Washington, and Idaho are all responsible for certifying that NPDES-permitted projects not located on Federal or tribal lands comply with state water quality standards." We add to this with the following clarifications: Oregon has the NPDES program for federal facilities but not for tribal facilities; Washington certifies EPA written federal permits that are not on tribal land, but does not certify tribal permits; and Idaho certifies all permits (EPA written) except tribal permits.	Thank you. Section 3.6.3.2.1, Federal Regulations, was revised to reflect the comment.
3/24	Page 3-151 at 5: We note that there is no mention or discussion of the federal hatchery general permit which EPA issued effective August 1, 2009. It applies to 10 federal and tribal hatcheries in Washington in the Columbia River basin. EPA also issued a general permit for cold water hatcheries in Idaho, including 8 in the Columbia-Snake River basin. It was effective Dec. 1, 2007.	Section 3.6.3.2.1, Federal Regulations, was revised to include a discussion of EPA's federal hatchery general permit for Washington. The discussion of EPA's cold water hatchery general permit for Idaho was moved from Section 3.6.3.2.2, State Regulations, to Section 3.6.3.2.1, Federal Regulations.
3/25	Page 3-152 at 28: We note that pH, temperature, and total ammonia as nitrogen are only required for direct discharges from offline settling basins, which is a small percentage of the facilities.	The discussion of the EPA's cold water hatchery general permit for Idaho was moved from Section 3.6.3.2.2, State Regulations, to Section 3.6.3.2.1, Federal Regulations. The text was revised to reflect the comment.
3/26	Page 3-152 at 31: We note that temperature monitoring is only required of warm water facilities, and that copper & hardness are only required when copper is being used.	The discussion of the EPA's cold water hatchery general permit for Idaho was moved from Section 3.6.3.2.2, State Regulations, to Section 3.6.3.2.1, Federal Regulations. The text was revised to

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED)

Letter/ Comment #	Comment	Response
		reflect the comment.
3/27	Page 3-153 at 1: We note that monitoring of total inorganic nitrogen and total nitrogen is only required at one facility each.	The discussion of the EPA's cold water hatchery general permit for Idaho was moved from Section 3.6.3.2.2, State Regulations, to Section 3.6.3.2.1, Federal Regulations. The text was revised to reflect the comment.
3/28	Page 4-201 at 20: Federal regulations do not have water quantity requirements.	Section 4.6.3, Water Quality, was revised to reflect the comment.
3/29	Page 4-201 at 22: The DEIS states that all hatchery programs in the analysis area are in compliance with their NPDES discharge permit. This is a broad characterization of the hatchery system. We recommend that the FEIS provide additional basis for this statement.	Section 4.6.3, Water Quality, was revised to reflect the comment, recognizing that some NPDES permits may not reflect current water quality conditions and technologies.
3/30	Page 4-201 at 22: We also recommend that consideration be given to the status of the hatchery NPDES permits. For example, the Leavenworth National Fish Hatchery is under a 35 year old permit. Efforts are ongoing to issue a new permit, but the much has changed in both the water quality and technology arena that bring into question the benefit complying with a 35-year-old permit.	Section 4.6.3, Water Quality, Section 3.6.3.2.1, Federal Regulations, and Section 3.6.3.2.2, State Regulations, were revised to reflect the comment, recognizing that some NPDES permits may not reflect current water quality conditions and technologies.
3/31	Page 4-201 at 26: The DEIS states that hatcheries have not been identified as a source of impairment to streams. Again, this is a broad characterization that cannot be applied to all hatcheries. For example, the Leavenworth National Fish Hatchery is seen as a source of impairment to Icicle Creek at least for dissolved oxygen and pH, and because of its phosphorus discharges that encourage algal growth. We recommend that the FEIS provide a more careful characterization of the water quality impacts from hatcheries.	Section 4.6.3, Water Quality, was revised to reflect the comment, recognizing that some NPDES permits may not reflect current water quality conditions and technologies.
3/32	Page 4-201 at 29: The DEIS states that any hatchery facility that would increase production under any of the alternatives would have to do so in compliance with an NPDES permit. We note that a standard condition of NPDES permits is that any proposed increase in discharge of pollutants must be reported to the permitting authority (which may then take action to modify a permit). Some permits, however, have mass limits on pollutants, which would limit such hypothetical increases.	Section 3.6.3.2.1, Federal Regulations, and Section 4.6.3, Water Quality were revised to reflect the comment.
3/33	Page 4-202 at 7 (and repeated throughout the document): We recommend that the FEIS utilize language consistent with water quality permitting.	Section 4.6.3, Water Quality, was revised to reflect the comment, and suggested language was replaced throughout the

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED).

Letter/ Comment #	Comment	Response
	Water quality is not something to be "increased" or "decreased". Rather, water quality is something to either be "improved" or "degraded".	document.
3/34	Page 4-202 at 9: Each of the action alternatives is characterized as decreasing the contribution of hatchery facilities to the impairment of 303(d) waters. We understand the rationale behind this statement, but note that these statements conflict with previous statements in the EIS that hatcheries, "have not been identified as a source of impairment" (4.6.3 at 26). We recommend that the FEIS revisit the logical progression of these statements in order to allay confusion on the part of the reviewer.	Section 4.6.3, Water Quality, was revised to reflect the comment by removing conflicting language.
3/35	Enhancing public participation in government planning and decision making is fundamental to NEPA. A well developed document, written in language that can be understood by a broad range of stakeholders, is critical to ensuring successful public involvement. We found the Mitchell Act DE IS to be cumbersome to read, particularly with regard to the lack of explanation around technical concepts (such as the performance goals and metrics), and the overuse of acronyms that are not familiar to readers outside the hatchery management process. We recommend that as the FEIS is crafted, care is taken to improve the readability of the document. In particular we recommend that the discussions on page 2-22 related to the performance goals and metrics be expanded. It would also be helpful to introduce these foundational concepts before the alternatives are presented. We also recommend that the use of acronyms be scaled back.	Thank you for your comments. These comments echoed others received during the public review of the draft EIS. In response, NMFS has revised many of the more complicated and hard-to-understand sections of the EIS. In particular, NMFS has expanded the description of the performance goals in Section 2.4.2, Alternative Performance Goals. NMFS intends that the alternatives, which are goal-oriented policy guidance, not be limited to examples of potential implementation that are presented in the EIS. To that end, NMFS has attempted to further separate the alternatives, presented in Chapter 2, from the language and metrics associated with the implementation scenarios. All of the information regarding the performance metrics and implementation measures has been moved to Chapter 4 (Section 4-1, Introduction) to better associate them, for the reader, with the analysis of example implementation scenarios.
4/1	The Confederated Tribes of the Colville Reservation ("Colville Tribes" or "Tribes") appreciate the opportunity to comment on the Draft Environmental Impact Statement to Inform Columbia River Basin Hatchery Operations and the Funding of Mitchell Act Hatchery Programs ("DEIS"). The Colville Tribes see this DEIS as an important opportunity to provide much needed guidance to the region on how best to operate hatcheries and to integrate hatcheries into a fisheries management framework that could both promote conservation of the Basin's salmon populations and sustain harvest in a manner compatible with species recovery. Such	Comment noted.

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED)

Letter/ Comment #	Comment	Response
	guidance and clarity are long overdue. I appreciate your having taken the time earlier this year to meet with my staff to discuss the Tribes' salmon and steelhead programs and the broader actions that are needed for recovery of our upper Columbia River anadromous fish. We will only see recovery and sustainable harvest of salmon and steelhead in the upper Columbia if NO A A and the region make sensible reforms to hatchery programs and harvest regimes concurrently with ongoing reforms of the Federal Columbia River Power System and improvements to tributary habitats. The Colville Tribes' comments on the DEIS are attached. We request you give our comments careful consideration as NOAA drafts its policy and adopts a preferred alternative for operation of your Mitchell Act Hatchery Program. Should you or your staff have any questions regarding our comments, please do not hesitate to contact the Tribes' Fish and Wildlife Department Director, Joe Peone, at (509) 634-2110.	
4/2	The Colville Tribes encourage NOAA to promptly complete this DEIS and policy process. The region has needed policy clarification and consistency on hatchery operations pursuant to the Mitchell Act and the Endangered Species Act ("ESA"). Hatchery programs throughout the Columbia River Basin need to be operated in a manner consistent with species conservation and within a framework for sustainable harvest that is also consistent with conservation. The best available scientific information is demonstrating that too many hatchery fish spawning in the wild can significantly depress the productivity of natural populations, thereby inhibiting their viability and persistence. Further, the abundance of hatchery-origin salmon in the ocean and in many runs of Columbia River salmon directly enables higher fishing mortalities on the natural-origin salmon in these mixed stock fisheries as harvest rates are often based on aggregate fish abundance. Reforms to these hatchery programs and the fisheries they enable are available and feasible. We trust our comments will assist NOAA in directing	Comment noted.

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED).

Letter/ Comment #	Comment	Response
	needed reforms through a comprehensive policy implementing its authorities under the Mitchell Act, ESA, and sustainable fishery mandates in addition to NOAA's trust responsibilities for the reserved rights of Native Americans. NOAA should always remember that the underlying principle in each of these laws and responsibilities is effective salmon conservation.	
4/3	In developing a preferred alternative and policy, the Colville Tribes encourage NOAA to look to the work completed by the Columbia River Hatchery and Scientific Review Group ("HSRG"). The HSRG has developed hatchery standards, metrics and a flexible plan for their application that the Tribes believe offer a means to reform hatchery programs for the benefit of species conservation and sustainable harvest. The HSRG standards and metrics offer a pragmatic means for application of the pertinent and best available scientific information for the management of salmon.	See Global Response 1: Comments Stating a Preference and/or Ideas for the EIS Preferred Alternative.
4/4	As proposed by the HSRG, the Colville Tribes encourage NOAA to adopt a policy applying HSRG standards and metrics flexible to salmon and steelhead populations based both on their importance to species conservation and on the need to promote sustainable tribal, sport and commercial fisheries. Managing the Mitchell Act Hatchery Program and guiding operations of other hatcheries to HSRG standards for Primary, Contributing and Stabilizing designated populations provides a justifiable strategy for addressing NOAA's multiple mandates. Stronger (i.e., more conservation oriented) standards can be applied to those Primary populations essential to species recovery and persistence. Intermediate performance standards can be applied to populations designated as Contributing. Populations designated as Stabilizing can be managed at lesser conservation standards and therefore provide locations for hatchery programs that can support important fisheries. Hatchery programs can be reformed and production adjusted or relocated to both meet conservation needs and provide salmon for the marine and freshwater fisheries.	See Global Response 1: Comments Stating a Preference and/or Ideas for the EIS Preferred Alternative.
4/5	Designation of populations within each evolutionarily significant unit ("ESU") and application of HSRG standards (or similar NOAA hatchery performance goals) should be carefully considered based in large part on recovery plans, Interior Columbia Technical Recovery Team criteria, and locations of existing hatchery programs and fisheries (particularly tribal	See Global Response 1: Comments Stating a Preference and/or Ideas for the EIS Preferred Alternative.

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED)

Letter/ Comment #	Comment	Response
	fisheries).	
4/6	In crafting a preferred alternative, the Tribes encourage NOAA to take a regional approach and avoid a geographic boundary, such as Bonneville Dam, as the basis for applying hatchery performance goals. Performance standards should be applied consistently across all ESUs, upriver and downriver. The same principles of conservation biology apply to all ESUs regardless of locale. But, as stated above, flexibility exists within each ESU, ESA-listed or not, for application of the performance goals based on population designations.	See Global Response 1: Comments Stating a Preference and/or Ideas for the EIS Preferred Alternative.
4/7	Finally, with regard to integrating the work of the HSRG into a policy for Mitchell Act funding and ESA reviews, NOAA should adopt a pHOS metric for integrated populations as well as segregated populations. The HSRG recommended a pHOS not to exceed 30% for Primary and Contributing populations.	See Global Response 1: Comments Stating a Preference and/or Ideas for the EIS Preferred Alternative.
4/8	The Colville Tribes offer their summer/fall Chinook management plan for the Okanogan River and Chief Joseph Hatchery as a realistic example of how the HSRG principles, standards and metrics can be successfully applied for management of salmon in a Primary population. Hatchery production can be implemented, harvest increased, and natural spawning escapements improved for population health and persistence.	Comment noted.
4/9	The Colville Tribes understand that developing, adopting and implementing a Basin-wide hatchery policy that directs hatchery performance standards is a daunting task. There are fiscal, political, and logistical complexities and constraints to reforms that must be considered. The policy should therefore include guidelines for prioritizing implementation. We suggest performance standards for reforming hatchery operations should generally occur first for those ESA-listed ESUs for which recovery is not evident or lagging. Second, priority should generally be given to funding reform actions needed for Primary populations within the ESA-listed ESUs to ensure conservation of the most essential populations. Also, policy priority should be given to actions that maintain ceremonial and subsistence fisheries for Native Americans.	See Global Response 1: Comments Stating a Preference and/or Ideas for the EIS Preferred Alternative.
4/10	The Colville Tribes offer that hatchery and harvest management and reform are inseparable and both should be addressed in the NOAA policy for two	See Global Response 2: Comments Addressing the Scope of the EIS.

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED).

Letter/ Comment #	Comment	Response
	key reasons. First, necessary reduction of hatchery salmon spawning in the wild can be accomplished in significant part through converting many of the existing marine and freshwater sport and commercial fisheries over to selective methods. Additional hatchery salmon and steelhead can also be harvested by initiating new sport or tribal selective fisheries in terminal locations to harvest hatchery fish escaping the existing mainstem fisheries. Secondly, 85% of the Mitchell Act hatchery fish are produced for harvest purposes. Likewise because of other hatcheries operating in the Basin, roughly 80% of most salmon and steelhead runs consist of hatchery-origin fish. In mixed stock, abundance-based fisheries, the production of these hatchery fish is directly accountable and responsible for higher harvest rates that also increase the mortality to the wild salmon for which ESA recovery and species conservation depends.	
4/11	By concurrently improving harvest management, reforms of hatchery programs could proceed in a manner less detrimental to tribal, sport and commercial fisheries. Additional selective fishing also offers an opportunity to achieve additional value from hatchery programs by increasing harvest while lessening the numbers of hatchery strays spawning in the wild. Inclusion of selective fishing in harvest management regimes would be a more sustainable model biologically and fiscally, and, in the long term, politically.	See Global Response 2: Comments Addressing the Scope of the EIS.
4/12	The Colville Tribes see significant inconsistencies in how NOAA has addressed salmon consultations for fishery management activities and those for hydroelectric projects and other actions that degrade salmon habitat. The Tribes have worked hard in sovereign forums with NOAA to improve the survival of specific salmon ESUs and their attendant populations. NOAA's science clearly supports populations as the building blocks for ESU health and viability. Mitigation actions are developed, funded and implemented through these consultations to recover specific populations of ESA-listed salmon. The success or failure of these consultations is monitored, evaluated and regulated based on resulting survival and recovery of ESUs and populations. Yet in Mitchell Act hatchery operations and harvest consultations, this	See Global Response 1: Comments Stating Stating a Preference and/or Ideas for the EIS Preferred Alternative.

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED)

Letter/ Comment #	Comment	Response
	same concern for all ESA-listed ESUs and populations is not evident. The Columbia River hatchery/harvest management system is held to a different standard. The system and many of its component actions are not monitored, evaluated and regulated to achieve a consistent contribution to ESU recovery and sustainability. The hatchery system is operated to substantially increase aggregate salmon abundance in the ocean and in Columbia River runs; then fisheries are approved that are not tempered based on the status of the individual ESUs and populations. The biological gains and progress towards recovery of populations being made through hydropower and habitat consultations, and recovery plans can be negated by the lack of consistent hatchery and harvest management and consultation. Productivity gains for many salmon populations made through improved passage survivals can be lost to excessive spawning of hatchery fish or increased harvest of wild salmon when mixed stock fisheries are managed on the aggregate run. The policy NOAA adopts through this process should strive to achieve the needed consistency across the life cycle of the salmon to ensure recovery and sustainability throughout the Basin.[1]	
4/13	The DEIS is confusing as to the future use of Mitchell Act funding for new "hatchery facilities". The Colville Tribes agree that the funding burden for hatchery and harvest reform likely does not allow for new programs in the foreseeable future. However, at the same time, new facilities are likely needed to reform existing programs and production agreements.	NMFS agrees with the commenter that the draft EIS was not clear on the role of Mitchell Act funding related to new hatchery facilities in the Columbia River Basin. NMFS has included language in Section 2.7.3, Construction of New Hatchery Facilities with Mitchell Act Funds, that more clearly explains that reasonably foreseeable funding levels would preclude the Mitchell Act from funding the construction of new hatchery facilities. This would not preclude financing new facilities from other funding sources. Additionally, this does not necessarily mean that Mitchell Act funds would not or could not be used for new construction at existing facilities.
4/14	The HSRG proposed shifting some existing production from lower river hatcheries to net pen operations in off-channel, terminal fishing sites as a reform that would increase harvest of hatchery fish, reduce mortality of wild fish in mixed stock fisheries, reduce surplus hatchery returns, and reduce straying into spawning habitats. Investment in such net pen	See Global Response 1: Comments Stating a Preference (Preferences) and/or Ideas for the EIS Preferred Alternative.

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED).

Letter/ Comment #	Comment	Response
	facilities should be considered as a viable action under NOAA's policy.	
4/15	Similarly, the Colville Tribes have proposed construction of new acclimation facilities in the terminal area below Chief Joseph Dam as a reform action to maintain harvest for others in the Basin and provide, for the first time, the Colville Tribes with a modicum of program benefits ("environmental justice"), while reducing conservation conflicts in tributary habitats.	Comment noted.
4/16	The Colville Tribes obviously see the need for substantial hatchery and harvest reforms in the Columbia Basin. The Tribes believe that current management of the hatchery/harvest system is a weak link in the recovery and sustainable future for salmon and steelhead in the Columbia River Basin. For this reason, the Tribes believe Mitchell Act funding for the "...conservation of the fishery resources..." should be directed specifically towards hatchery and harvest reforms. These reforms will require substantial and carefully prioritized funding. The Mitchell Act program should ensure progress towards vibrant sport, commercial and tribal fisheries that are sustainable and consistent with conservation goals by, for example, allocating Mitchell Act funds to develop and test selective fishing gears for use in fisheries enabled by the program's hatchery fish production. The Tribes do not see the flexibility to divert these needed reform funds toward other conservation endeavors, such as fish passage, habitat improvements and research. The contribution Mitchell Act funding could make to these worthwhile endeavors would be insignificant relative to the current dollars allocated from other programs.	See Global Response 1: Comments Stating a Preference (Preferences) and/or Ideas for the EIS Preferred Alternative.
4/17	The Colville Tribes believe a priority for the Mitchell Act Hatchery Program should be recovery of ESA-listed chum salmon populations in the lower Columbia River. Most of the historical populations are functionally extinct and require reintroduction actions from nearby, healthier populations. Artificial propagation has been shown to be an effective means of reestablishing chum populations, and chum reintroduction programs using existing hatcheries are inexpensive. A Mitchell Act program specifically supporting widespread chum reintroduction is a priority to the Colville Tribes. Currently, Lake Roosevelt	See Global Response 1: Comments Stating a Preference (Preferences) and/or Ideas for the EIS Preferred Alternative.

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED)

Letter/ Comment #	Comment	Response
	is drafted in the fall through spring period to support spawning flows for a portion of one chum population below Bonneville Dam. This operation degrades the lake environment on the Colville Reservation, harms the economic interests of the Colville Tribes, and reallocates storage in Lake Roosevelt that in many years can be used to support the survival of spring migrating salmon and steelhead originating from all ESUs from the upper Columbia and Snake river basins. Drafting of Lake Roosevelt as a recovery action for lower Columbia River chum is a very inefficient and costly means for supporting one chum population at the loss to all other upper basin ESUs, particularly when other alternatives for more widespread chum recovery are readily available through the Mitchell Act program.	
4/18	The Colville Tribes encourage NOAA to promptly develop and adopt a policy for hatchery and related harvest reforms for Columbia Basin salmon and steelhead. The policy should not only address the funding of Mitchell Act hatcheries and NOAA's ESA review of hatchery programs, but all of NOAA's mandates and responsibilities, particularly to the rights of Native Americans. The policy should include hatchery performance standards and measurable metrics that are flexibly applied to salmon and steelhead populations based on population designations that reflect their importance to ESU persistence and recovery. The policy's performance metrics should reflect those recommended by the HSRG. The policy should include an adaptive management process to periodically review and update metrics, if needed, based upon future scientific findings. Prompt policy development and application is needed to thwart the continued declines in population productivity caused by ongoing hatchery programs, and related harvest regimes. And finally a hatchery and harvest reform policy needs to address management and recovery of ESUs and populations consistently with that of other factors affecting the life cycle of salmon and steelhead.	See Global Response 1: Comments Stating a Preference (Preferences) and/or Ideas for the EIS Preferred Alternative.
5/1	… we are concerned with the precedent that this DEIS might set for NMFS policies and plans for the hatchery system on the Columbia River, and in the Northwest in general.	NMFS appreciates your comment and concern. Please see revised language in Section 1.2, Purpose and Need for Action; Section 1.3.3. Potential Future Decisions in Response to Hatchery Actions; and Section 1.7, Relationship to Other Plans,

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED).

Letter/ Comment #	Comment	Response
		Regulations, Agreements, Laws, and Executive and Secretarial Orders.
5/2	Of the five alternatives listed in the EIS, the current hatchery program funding - and the alternative with the highest level of hatchery production - is listed as Alternative 1, the "No Action" alternative. We do not consider the current condition to be "no action." We consider it to be hatchery production that helps to supports fisheries, while at the same time conserving wild stocks.	Comment noted. “No action” as defined by NEPA does not preclude actions currently taking place. It is used to describe expected conditions if the proposed action is not implemented, which, in this case, would be a continuation of status quo management. Please see changes that have been made to Alternative 1 (no action) (Section 2.5.1, Alternative 1 [No Action]) to better capture the current state of hatchery management.
5/3	To be fair, contributing to harvest and conserving natural stocks is mentioned in the first bullet-point in the description of this alternative on page 2-15. Yet the other seven bullet-points are written with such negative terms as to give the reader the impression that NMFS is biased from the start against these hatchery programs. This impression is further reinforced in the description of the other four alternatives, all of which involve partial or complete cuts in hatchery funding, and therefore lead to reductions in fisheries.	See Global Response 6: Comments Addressing the Range of EIS Alternatives.
5/4	That said, it is also important to note that the current levels of production (the *highest* levels of production among the EIS alternatives) are themselves reduced from production levels in recent decades. Mitchell Act funding for these hatcheries has been flat since the mid-1990's, while funding has been diverted to other salmon-related projects in the Columbia Basin. In that light, we ask why there is not an alternative that reflects production levels from years with adequate Mitchell Act funding. By making the "no action" alternative the current level of funding, and then setting all the other alternatives with lower levels of funding (including one with *no* funding) you limit from the beginning the range of alternatives you consider, and you limit the analysis to alternatives with sub-optimal levels of operation. Since there were higher levels of hatchery production in the past, we suggest that to cover the full range of alternatives, you establish and analyze, at least one alternative with higher levels of funding and production than the current levels.	See Global Response 6: Comments Addressing the Range of EIS Alternatives.

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED)

Letter/ Comment #	Comment	Response
5/5	We appreciate the efforts of your fishery modelers, and the approach they took to comparing the alternatives listed in the EIS for their impacts on fisheries. However, as a "reality-check" we took a different approach to evaluate the importance of the Mitchell Act-funded hatcheries and programs to our troll fishery. We looked at our actual troll catches, and, using coded-wire tag data (from return years 1988 through 2008) we estimated the contribution of Mitchell Act-funded programs to our catch. Bearing in mind the cautions that your modelers noted in Appendix K of the EIS, we found remarkable agreement between the results of the two approaches to estimating the contribution of the Mitchell Act hatcheries to our troll fishery (Table 1, below). Our estimate from the CWT data is that these hatcheries contribute 32 percent of the chinook and 6 percent of the coho taken in our treaty ocean troll fishery. The modeled estimates in the EIS amount to 33 percent of our chinook and 4 percent of our troll coho < Table 1: Evaluating the Impact of Alternative 2 (No Funding) on the Treaty Troll Fishery Comparing CWT Data with EIS Modeling on page 2 of comment letter. >	Comment noted.
5/6	Given this close agreement in the results of our two approaches, the question remains: are these reductions important? To the Makah Tribe, the answer is a resounding "yes". Under the "No Funding" Alternative 2, we could expect an average reduction in our chinook catch of 32 percent (our estimate) to 33 percent (your estimate). While the proportions of chinook and coho in our catch vary year-by-year, the value of our chinook catch, in particular, is such that reductions of that magnitude would amount to a major reduction in income to our fishermen. Reduced to simple ex-vessel value, we would expect an annual loss of more than $250,000 to our fishermen alone (using 2001-2010 average prices). Because our fishermen live in Neah Bay, and spend much of their income locally on fuel, groceries and fishing supplies, we could expect a considerably larger impact on the economy of Neah Bay as a whole.	As discussed on page 4-164 of the draft EIS, reductions in catch and harvest revenue for tribes are estimated to be greatest under Alternative 2, resulting in adverse environmental justice effects. The effects on the salmon harvest of specific tribes, however, were not estimated in the draft EIS, nor are they estimated for the final EIS. It is unclear where the estimate identified in the comment letter of a 33% negative impact (and $250,000) on the tribal harvest came from, unless the commenter misinterpreted values in draft EIS Table 4-88 that provide combined harvest estimates for treaty and non-treaty commercial salmon fisheries along the Washington Coast. Note that the Makah tribe is specifically mentioned as one of the tribes that would be affected by catch reductions under the alternatives (draft EIS page 4-164, lines 19-21), although effects specific to the Makah tribe are not estimated.

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED).

Letter/ Comment #	Comment	Response
5/7	But these might be conservative estimates of the impacts on our fishery. The direct contribution of fish from Mitchell Act-funded hatcheries is not their only effect on our fishery. By diluting the impact on wild stocks, the Mitchell Act-funded hatchery fish make it possible to conduct commercial and sport fisheries without adversely affecting the wild stocks. The effect of hatchery reductions on ocean fisheries should not be calculated simply as the reduction of hatchery fish in the catches. By increasing the abundance of fish in the ocean, hatchery production also reduces the impact of ocean fisheries on wild fish. If hatchery production is reduced on the Columbia River, there will be some years - perhaps many years - in which some weak stocks will be so vulnerable to exploitation in ocean fisheries that we will not be able to conduct a fishery at all. Our fisheries will be deprived of the opportunity to harvest not only Mitchell Act-produced fish, but also fish from other abundant hatchery runs. This is not a hypothetical scenario: our ocean troll fishery is already restricted on a nearly annual basis, as NMFS implements its ESA jeopardy standards during the PFMC process. We anticipate greater restrictions on our ocean fishery under any of the alternatives except Alternative 1. Therefore, in years when the shortage of hatchery fish prevents us from conducting ocean fisheries, the effect of reductions would likely be considerably more than 33 percent of our chinook. It could lead to a complete closure of chinook fishing in the Washington ocean fisheries.	The effects on catch in the ocean fisheries, under the alternative implementation scenarios, accounts not only for the difference in harvest of Mitchell Act hatchery fish, it also accounts for the effect on total harvest of all stocks encountered in the particular fishery. The analysis does account for and report expected changes in the overall total harvest for the alternatives. These include the current (2010) ESA impact limits, so they do account for the effect on the total catch to which the commenter refers. Please see updated final EIS Appendix K for more detail on the fishery model and the limits and assumptions within.
5/8	Finally, even if we ignore the ESA-related restrictions on our fishery, as the abundance of hatchery salmon in the ocean is reduced, they will become more and more difficult to catch. Then it will take longer *per fish* for our fishermen to take what quota they can get. They will have to fish longer, burn more fuel, and incur more expenses per fish, which will further reduce the net value of our fishery.	The commenter is correct in noting that fishing effort and related cost may increase as the abundance of hatchery fish declines under Alternative 2 through Alternative 5. The methodology used in the EIS to assess changes in the net economic value of harvests employs an average net value factor that may not fully capture the effects of increasing incremental costs as abundance declines. As a result, the estimates of changes in the net economic value of the commercial harvest (final EIS Table 4-103) may be somewhat low, particularly for alternatives with

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED)

Letter/ Comment #	Comment	Response
		relatively large changes, such as Alternative 2. This has been noted in the Socioeconomic Impact Methods Appendix (Appendix J of the final EIS).
5/9	More importantly, the value of these fish to the tribes is not something that can be measured in mere dollars. These fish have a cultural value to the tribes, dating from ancestral times. This is a value that cannot be replaced if chinook abundance is allowed to decline and if our ocean fisheries cannot harvest them.	NMFS agrees that the availability of harvestable salmon for tribes represents more than just the potential economic benefit. The cultural importance of salmon to the tribes of the Columbia River Basin and the coastal areas of Washington, including the Puget Sound, cannot be overstated. NMFS has worked to incorporate a more thorough description of this relationship into the EIS. Please see Section 4.3.4, Harvest and Economic Values, and Section 4.4.4.1, Fish Harvest and Tribal Values, for revised and updated language on this subject.
5/10	NMFS's arguments for reducing hatchery production rely heavily on purported problems with low survival and recruitment of hatchery fish, especially when they share habitat with wild fish. Yet the issue of hatchery and wild fish sharing rivers is not as simple as this. Numerous publications, including some from your own agency, show that this is a simplistic view of the question of relative fitness. We respectfully suggest that this problem might not be simply a function of the fish being of hatchery origin, but could be related to the selection of broodstock, and the habitat into which the hatchery fish are released. For decades, hatchery broodstock were selected and propagated as if hatchery managers were "playing Johnny Appleseed" spreading fish around the region without regard to their ancestral origins or their genetic adaptation to certain habitats. As a consequence, many hatcheries are producing fish that, if they stray into spawning streams, are poorly suited to live in the natural habitat. This problem might be addressed to a great extent by more thoughtful selection of broodstock, rather than by wholesale reductions in hatchery production.	Comment noted.
5/11	In addition, the hatchery fish are placed at a disadvantage by the locations into which they are released. Hatcheries are not generally constructed, and hatchery fish are generally not released, at locations where the wild stocks are already thriving. If wild stocks were thriving, there would be no need	Comment noted.

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED).

Letter/ Comment #	Comment	Response
	for hatchery supplementation. The hatcheries on the Columbia River, in particular, were constructed to mitigate for losses due to the hydroelectric dams and other habitat degradation. The dams remain and the habitat has not been restored. In that light, is it surprising that fish do not survive and reproduce well in this habitat? Blaming this poor survival on the introduction of hatchery fish is a sad excuse for your agency to avoid the need to restore the quality of the salmon habitat in the Columbia Basin.	
5/12	The EIS simplifies the question of hatchery-wild interactions by reducing them to the PNI standard, which is a function of hatchery-origin spawners in the streams and natural-origin broodstock in the hatcheries. While this metric might be easy to calculate, it oversimplifies a situation that is a function of many other conditions. As we noted above, introducing broodstock fish that aren't well adapted to a watershed is not a wise practice, but the simple presence of hatchery-origin fish on the spawning grounds does not guarantee interbreeding genetic mixing.	Comment noted.
5/13	The anti-hatchery bias in the EIS raises our concerns. To cite all instances of this bias in the EIS, we would require a document that would be considerably longer and more detailed than this letter. Overall, the perspective presented by the EIS appears to be that anything associated with a hatchery presents risks to the wild fish. The bias takes extreme proportions in Section 4.2.3.1.2, which cites among the possible risks of hatcheries to fish of natural origin, real or potential catastrophic events in hatcheries that present far more risks to the fish being raised in the hatchery. If hatchery-origin fish are such a problem, then perhaps these events should be viewed (at least by your ElS-preparers) as beneficial to wild salmon. Instead, these possibilities, too, since they are associated with hatcheries, are depicted only as risks to wild salmon.	The commenter has misinterpreted the section related to hatchery facility risks. The risk associated with facility failure relates to instances when natural-origin fish are being held at a facility, or when facilities are housing programs need for conservation of a species.
5/14	Likewise, the EIS cites the possibility of predation by hatchery-origin fish on wild fish, but ignores the possibility that juvenile wild salmon might prey on juvenile hatchery salmon -and benefit from that food source. We realize that the hatchery fish are not produced to be a food source for wild fish, but we mention this as just one more example of the anti-hatchery bias that pervades the EIS.	Comment noted.

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED)

Letter/ Comment #	Comment	Response
5/15	We mentioned earlier in this letter that the hatchery-produced fish help reduce the impact of fisheries on wild stocks. This function is important, not only to support fisheries, but also to conserve wild stocks that cannot support heavy levels of fishing. In some cases, the hatcheries play a vital role in sustaining the gene pool of wild stocks when they are at critical abundance levels. The Makah Tribe is quite familiar with this function: we operate the Hoko River Hatchery, which is vital to sustaining the Hoko fall chinook, even though we have not fished this stock since the early 1980's.	Comment noted.
5/16	After several years of negotiations, the United States and Canada last year entered into a new chinook agreement as part of the Pacific Salmon Treaty. These negotiations were conducted in the background of certain levels of chinook production in both countries. This should not be news to you. Your own agency issued a biological opinion on the consequences of that agreement. The analyses that went into that opinion also incorporate a number of assumptions about chinook production and availability. Major reductions in Columbia River chinook production, such as are envisioned in the DEIS, would change the context from that in which the treaty was negotiated, and would likely have a number of negative consequences. Most notably, we would see increased exploitation of ESA-listed and other wild chinook stocks in fisheries managed under the Pacific Salmon Treaty. For example, with fewer Columbia River hatchery fish available to the AABM chinook fisheries on the west coast of Vancouver Island, the impacts of those fisheries would likely shift more to Puget Sound chinook. Further, it is not impossible that in 2014 Canada would invoke the provisions of Annex IV, Chapter 3, Section 6(c) of the Treaty, and would withdraw from the chinook conservation program established in the agreement. The consequences of such a withdrawal on our ESA-listed chinook stocks are terrible to contemplate. Certainly, it would make it much more difficult for NMFS and the tribal and state co-managers to recover listed stocks.	Comment noted.

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED).

Letter/ Comment #	Comment	Response
5/17	The Mitchell Act hatcheries are a partial fulfillment of the federal government's obligation to the tribes to mitigate for losses of wild salmon caused by hydroelectric dams and other developments in the Columbia River basin. Any reduction in hatchery production is a violation of that commitment. When we signed a treaty with the United States government, our people were guaranteed the right to fish. Because we fish in the ocean, our tribe has harvested chinook from the Columbia River runs, which were considerably more abundant when the treaties were signed. The construction and operation of the dams on the Columbia River diminished the value of that treaty right, but the fish produced by the Mitchell Act hatcheries have helped to partially restore it. As we noted earlier, and as your modeling shows, those hatcheries account for approximately one-third of the chinook we take in the ocean troll fishery. Closing those hatcheries, or reducing their production, would once again reduce the value of the fishing rights. As long as the dams remain on the Columbia River system, and as long as they reduce the abundance of fish on the river, the hatcheries should remain fully operational. They should produce at their capacity, and they should be fully funded to do so.	See Global Response 4: Comments Asserting and Referring to the Mitchell Act's Mitigation Obligation or Calling for NMFS to Define the Obligation.
5/18	Alternatives 3, 4 and 5, while they may be well-intentioned measures aimed at recovering wild stocks, are also untried, experimental approaches. They would involve sweeping changes in the management and production of hatchery programs, and of fishing, in large areas of the Columbia Basin and in the ocean. Further, implementing them involves considerable funds, which would have to be diverted from hatchery production. Given the life span of chinook salmon, the entire salmon fishing community, sport and commercial, from Oregon to southeast Alaska, could see its catches reduced for decades, as we wait for results of these experimental techniques, and for enough data to allow scientifically valid conclusions.	See Global Response 6: Comments Addressing the Range of Draft EIS Alternatives.
5/19	If NMFS wants to test some of these approaches, such as weirs or terminal selective fisheries to reduce the numbers of hatchery fish on the spawning	See Global Response 1: Comments Stating a Preference (Preferences) and/or Ideas for the EIS Preferred Alternative

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED)

Letter/ Comment #	Comment	Response
	grounds, or different choices of broodstock, perhaps a more sensible approach would be to tie them in one or two small tributaries, where the experiment would not impact the entire Columbia River system and the ocean fisheries. Treat this as the experiment it would be: collect the data for as many years as it takes, analyze the results in consultation with the co-managers, and then perhaps we can agree on an improved approach to hatchery operations on the Columbia River.	
5/20	In closing, we see the draft EIS as an evidence of NMFS's intent to reduce hatchery production on the Columbia River. That reduction would also reduce our tribal catch, and would therefore substantially reduce the value of our treaty right. But the impacts go well beyond our fishery. Our tribal fishermen fish in the same ocean, and harvest the same stocks as non-tribal commercial and sport fishermen. We therefore believe that the impacts on our fishery will be felt by all ocean fisheries, from Alaska to Oregon, and we stand together with all ocean fishermen in opposing the reductions in Mitchell Act hatchery funding and operation.	Thank you for your comments. NMFS understands the commenter's concern regarding significant changes to hatchery production in the Columbia River Basin. The commenter may be confusing the alternatives themselves with one or more of the implementation scenarios analyzed. Please refer to Global Response 7.a, Confusion between the alternatives and the implementation scenarios the alternatives and the implementation scenarios.
5/21	We respectfully recommend that NMFS withdraw the EIS, and the proposals in it, and consult with the tribes and with non-tribal groups concerned about fisheries, about how you might take our concerns into account before you make any further decisions on the use of Mitchell Act funds.	See Global Response 3: Comments Addressing the EIS Process.
6/1	… we attach or incorporate by reference our testimony of October 13,2010 (Attachment 1), … < Attachment 1: See T8 >	Thank you. Comment noted.
6/2	… the testimony and comments of the Columbia River Inter-tribal Fish Commission, …	Thank you. Comment noted.
6/3	… and the comments of the Technical Advisory Committee and Production Advisory Committee of U.S. v Oregon.	Thank you. Comment noted.
6/4	As the Tribe has made clear in our testimony, we believe the DEIS is fatally flawed. The Tribe believes the overbroad purpose of the DEIS, the way it was developed without partners in the Columbia Basin, its advocacy for abrogating congressional mitigation mandates and legal agreements, and its potential real-life effects on our fishermen, all call for NOAA to start	See Global Response 2: Comments Addressing the Scope of this EIS.

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED).

Letter/ Comment #	Comment	Response
	over. NOAA Fisheries should narrow this DEIS to just focus on Mitchell Act funding, it should use appropriate evaluation methods in doing so, and it should leave policy direction on Columbia Basin hatchery practices for a more fully informed collaborative effort.	
6/5	It is disturbing that the DEIS openly admits that it may affect the Nez Perce Tribe (3-104) and yet the Nez Perce Tribe was only contacted at the scoping phase over five years ago and NOAA never consulted on a Government-to-Government basis with the Tribe as it prepared the DEIS.	See Global Response 3: Comments Addressing the EIS Process.
6/6	Equally disturbing, and a consequence of NOAA's failure to consult with the Tribe throughout the preparation of the DEIS, is that the DEIS' statement concerning the Tribe, the Tribe's Reservation, the Treaty-reserved fishing rights the Tribe reserved and the United States secured, and the importance of salmon to the Tribe (3-104 to 3-105) is incomplete, inaccurate, and internally inconsistent. We cannot understand how NOAA Fisheries would have so mischaracterized these issues considering how frequently and extensively we interact with NOAA Fisheries[1]. Please replace the existing statement on pages 3-104 to 3-105 with the following: The Nez Perce Indian Reservation contains 770,000 acres in north-central Idaho. The Nez Perce Tribe, in its 1855 Treaty with the United States, reserved "[t]he exclusive right of taking fish in all the streams where running through or bordering said reservation is further secured to said Indians; as also the right of taking fish at all usual and accustomed places in common with citizens of the Territory..." 12 Stat. 957. Salmon and steelhead are central to the Tribe's culture, spiritual beliefs, economics, and way of life. The Tribe is committed to rebuilding salmon and steelhead to healthy, harvestable levels and fairly sharing the conservation burden so that it may fully exercise its right to take fish at all usual and accustomed fishing places. The Tribe currently conducts ceremonial, subsistence, and commercial fisheries in the mainstem Columbia "Zone 6" fishery and at its usual and accustomed fishing places throughout most of the Columbia and Snake	The final EIS has been revised to include the text suggested by the commenter. Additionally, please see Global Response 3.a., More coordination with tribal and state co-managers.

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED)

Letter/ Comment #	Comment	Response
	River Basin. < [1] See Attachment 2, A Summary of Nez Perce Fishing >	
6/7	It is also disturbing that the DEIS in this "Tribes" section is just as ungrounded from legal realities (including but not limited to U.S. v. Oregon) in this section as it is throughout the DEIS. The statement that "The Shoshone-Bannock Tribes have a long history of salmon fishing…in the Columbia basin, and this has been judicially affirmed" (3-107) is simply inaccurate. As the 2008-2018 U.S. v. Oregon Management Agreement – that NOAA entered into and that has been entered as a Court Order -- describes (at pp. 2-3), and as the U.S. v. Oregon court has repeatedly stated, Shoshone-Bannock fishing claims and allegations based on their treaty remain legally unestablished and undetermined in nature and scope. The statement that "Currently [SBT] tribal members do not fish the Zone 6 commercial tribal fishery (located between Bonneville and McNary Dams" is misleading as the reason for this is not provided. The reason is the Shoshone-Bannock Tribes do not fish in Zone 6 is because the United States refused to bring claims on their behalf in U.S. v. Oregon and the SBT themselves have not established any treaty-based fishing rights in this area. This is made clear by the proceedings in U.S. v. Oregon itself as well as in the 2008-2018 U.S. v. Oregon Management Agreement. The DEIS' statement that "[SBT] Tribal members fish mostly in the Salmon and Snake Rivers in Idaho" is inaccurate; there are no lawful or agreed-upon SBT fisheries in the Snake River and any that occur in the Salmon are contested by the Nez Perce Tribe. The statement that "[SBT tribal members] "plan to continue to develop fisheries in Northeast Oregon and southwest Washington is again misleading and inconsistent with status of the SBT as described in the U.S. v. Oregon proceedings and the 2008-2018 U.S. v. Oregon Management Agreement that NOAA has agreed to and has been entered as a Court Order. Particularly with respect to Northeast Oregon, southwest Washington, and the Snake River, the United States has never adopted the SBT's allegations and theories; the DEIS appears to do so here. The Nez Perce Tribe simply requests that an accurate statement with respect to the status of the SBT's allegations and desires, similar to that found in the U.S. v. Oregon proceedings or in the U.S. v. Oregon	Thank you for your comments. Please refer to the revised section in Chapter 3, Section 3.4.4.1, Native American Tribes of Concern. NMFS has worked directly with the tribes of the Columbia River Basin and outside of the basin to provide more complete and accurate descriptions of the tribes potentially affected by the actions evaluated in this EIS.

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED).

Letter/ Comment #	Comment	Response
	Management Agreement is included in this description.	
6/8	The DEIS provides only cursory history, background and purpose information on the Mitchell Act program in less than four pages. The Mitchell Act was developed in response to significant habitat loss that led to substantial fish loss on the mainstem Columbia River due to construction of hydroelectric dams. This document should provide a concise history and a chronology of how the program was developed and has been modified over the past 80 years. It should include what the funding levels have been, 'what production levels have been, which hatcheries have been shut down, and what other funding sources fish managers have had to tap to keep the Mitchell Act production going.	See Global Response 4: Comments Asserting and Referring to the Mitchell Act's Mitigation Obligation or Calling for NMFS to Define the Obligation.
6/9	The draft alternatives are unreasonable and would call for implementing reductions in production that are not legally possible as they are inconsistent with Congressionally and legally mandated mitigation responsibility of hatchery programs in the Columbia Basin. These do NOT provide a full range of alternatives as stated in the DEIS.	See Global Response 5: Comments Addressing the EIS and Its Relationship to Other Plans, Regulations, Agreements, Laws, and Executive and Secretarial Orders.
6/10	Further, "Alternative 1 -No Action" totally misrepresents the current status of hatchery production in the Columbia Basin as being out-of-control, mismanaged, and unmonitored. While this characterization may be true for Mitchell Act hatcheries below Bonneville Dam, it is not true for hatchery programs contained the U.S. vs. Oregon Management Agreement. This global characterization of hatchery production is erroneous, misinformed, offensive, and out-of-touch with what's happening in the Basin.	NMFS has revised language in this final EIS to better reflect more current improvements in hatchery program management. Please see Section 2.5, Alternatives Analyzed in Detail.
6/11	The implementation scenarios for Alternatives 2-5 produce substantial reductions in hatchery production and harvest levels. The analysis done by the Production Advisory Committee (PAC) concludes that the DEIS alternatives would reduce current production in the US v. Oregon Management Agreement of 86 million juveniles to 23 million, 66 million, 69 million, and 68 million in Alternatives 2, 3, 4, and 5, respectively. These dramatic reductions are unacceptable and inconsistent with legally mandated agreements governing hatchery production in the Columbia Basin including the U.S. v. Oregon Management Agreement that NOAA agreed to and that has been entered as a court order.	See Global Response 5: Comments Addressing the EIS and Its Relationship to Other Plans, Regulations, Agreements, Laws, and Executive and Secretarial Orders.

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED)

Letter/ Comment #	Comment	Response
6/12	Any development of policy that affects U.S. v. Oregon production needs to be done in a collaborative fashion in the appropriate forum.	See Global Response 5: Comments Addressing the EIS and Its Relationship to Other Plans, Regulations, Agreements, Laws, and Executive and Secretarial Orders.
6/13	The harvest analysis appears to use the mainstem harvest rates and assumptions from 2007 rather than the 2008-2017 U.S. v.Oregon Management Agreement. All information needs to be updated to reflect the information and abundance based harvest management approach in the current Agreement and associated Biological Opinion.	See Global Response 7: Comments Addressing the Analysis within the EIS.
6/14	Substantial errors are contained in the baseline harvest data, in the approaches used to estimate harvest rates, and in harvest assumptions used in the DEIS. All Columbia River harvest numbers (treaty, commercial and sport) in Section 3.3.5.1 have some kind of error in them.	See Global Response 7: Comments Addressing the Analysis within the EIS.
6/15	Economic values of the various salmonids by area and stock also are not accurate.	See Global Response 7: Comments Addressing the Analysis within the EIS.
6/16	The harvest analysis relies in part on AHA modeling which cannot use the abundance based harvest rate approaches used in most mainstem fisheries.	NMFS disagrees. A typical use of the All-H Analyzer does not include abundance based harvest rates. However, specific, abundance-based harvest models were developed for the EIS to adjust rates based on average abundance conditions associated with each alterative. Abundance was based on the predicted average from the All-H Analyzer.
6/17	The incorrect data and errors in the DEIS has a compounding effect on analysis. Incorrect harvest information would result in incorrect adult escapements, which would likely affect estimates of productivity and the production performance standards in the DEIS (for example PNI and pHOS) which drive whether hatchery programs need to be adjusted to meet predefined production performance metrics.	See Global Response 7: Comments Addressing the Analysis within the EIS.
6/18	It is incredulous to us that the economic analysis model identifies an increase in tribal fishing revenue in Zone 6 of$554,000 under alternative 5 (Table 4-100) when the production under alternative 5 involves a reduction from the U.S. v. Oregon Agreement of 5 million spring Chinook, 3 million sockeye, 5 million (essentially all) Snake River fall Chinook, and 4 million steelhead (including all the B-run supplementation releases). Perhaps this conclusion is due to the substantial errors in the harvest and economic data mentioned above.	The commenter is correct in noting that overall hatchery production declines under the implementation scenario for Alternative 5 (draft EIS), while the total harvest value increases relative to Alternative 1. Across the entire Columbia River Basin, the number of hatchery Chinook salmon released declined by 17 million under implementation scenario for Alternative 5. However, nearly all of the decline was in hatchery production below Zone 6 (below Bonneville Dam). Upper Columbia River

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED).

Letter/ Comment #	Comment	Response
		hatchery production (particularly summer Chinook salmon) changed little between the implementation scenarios for Alternative 1 and Alternative 5. Also, the strategies implemented as part of the implementation scenarios for Alternative 5 resulted in an additional 2 million natural juvenile Chinook salmon produced upstream of Bonneville Dam. Although total tribal harvests of all salmon species were estimated to fall by 5,793 fish under the implementation scenario for Alternative 5, Chinook salmon harvests were estimated to increase, partially offsetting estimated reductions in coho and steelhead harvests. The greater average per fish value of Chinook ($3.61 per pound compared to $0.83 per pound for coho) resulted in net revenues increasing relative to Alternative 1 levels. Harvest estimates and fish values have been revised for the final EIS, and resulting tribal salmon revenues have changed.
6/19	We have similar concerns with harvest information in the Snake Basin; the harvest data reported and used in the DEIS is inaccurate and not up to date. The Nez Perce Tribe can provide to NOAA our estimates of tributary harvest in Snake Basin for Chinook salmon and steelhead. We request NOAA incorporate our harvest estimates and any other harvest-related items that may need to be refined.	Thank you. NMFS has coordinated with CRITFC and the Nez Perce Tribe and has used the information provided to update and evaluate effects to the tribal commercial and C&S fisheries in the lower Snake River economic impact area, across the EIS alternatives.
6/20	Also, the Tribe reminds NOAA that the Tribe is coordinating with other appropriate Snake Basin co-managers, including NOAA Fisheries, to develop an integrative harvest framework for treaty and non-treaty fisheries on Chinook salmon and steelhead in the basin. This coordination will be affected by this DEIS.	Comment noted.
6/21	We are further amazed that the economic analysis model identifies an $23,000 increase in tribal fishing revenue in the Snake Basin under Alternative 5 (Table 4-100) when under that same Alternative the DEIS scenario terminates the release of 3 million spring Chinook from Rapid River Hatchery in the Snake Basin.	Thank you for your comment. For the updated analysis in the final EIS, the spring Chinook salmon program at the Rapid River Hatchery remains in place under all alternatives (see Appendix C, pages 3 and 4, population number 39). For a revised list of hatchery programs terminated under each scenario, see Table 4-10 through Table 4-14 in the final EIS.
6/22	The economic information in the socioeconomics section for the Nez Perce Tribe annual hatchery facility costs is also wrong (Table 4-85). The value of	As described in Section 2.1 of the Socioeconomic Impacts Methods Appendix (Appendix J), total hatchery production costs

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED)

Letter/ Comment #	Comment	Response
	.9 million should be changed to 6.0 million for non-MA hatchery programs. The values for other tribal programs (Umatilla and Yakama) are also wrong and Warm Springs, Colvilles, and Sho-Ban Tribes hatchery programs should be added.	for all affected hatcheries were estimated using average production values (Table A-8) derived from cost information available for Mitchell Act facilities, along with smolt production estimates for each alternative. The commenter states that annual hatchery costs for the Nez Perce Tribes should be changed to $6.0 million but does not identify the source for this estimate of operating costs or how this estimate was derived. It is recognized and acknowledged that using average production costs, even ones that are species- and entity-specific, can introduce potential error in the estimate of total production costs for specific hatcheries. However, the average-cost approach that was used to estimate total production costs is considered reasonable, given the number of affected facilities to evaluate and the production cost data available.
6/23	The DEIS states that one of the main purposes of this document was to inform NOAA with respect to future ESA consultation. Unfortunately, the alternatives and proposed policy direction in this DEIS is inconsistent with hatchery assessments in recent ESA documents also developed by NOAA.	Thank you. NMFS agrees that the purpose, as proposed in the draft EIS, to inform future ESA decisions with this EIS was confusing and not clearly substantiated. Please see Global Response 2.c., Scope should focus on hatchery funding decisions, not on future ESA determinations.
6/24	NOAA staff also informed us that the expansion of the DEIS beyond the Mitchell Act·programs to include the entire Columbia Basin would provide NEPA coverage for Section 10 or 4(d) (direct take) ESA consultations for programs in the U.S. v. Oregon Management Agreement. We question whether this NEPA document would be sufficient to provide such coverage. Further we question whether this global NEPA coverage provides much benefit. Mitchell Act fish make up 38% of the production in the U.S. v. Oregon Agreement – none of these programs involve direct take consultation. Only 16% (14 million) of the production in the Agreement involves direct take of ESA listed fish.	Thank you. NMFS agrees that the purpose, as proposed in the draft EIS, to inform future ESA decisions with this EIS was confusing and not clearly substantiated. Please see Global Response 2.c., Scope should focus on hatchery funding decisions, not on future ESA determinations.
6/25	The Tribe is terribly disappointed with NOAA's actions in producing this DEIS the way it has. The Tribe works regularly with NOAA Fisheries, and it is incomprehensible how your agency could have proceeded with releasing such a significant document without notice and consultation with the Nez Perce, as well as other Columbia River Tribes. As a result, the document is	See Global Response 2.c., Scope should focus on hatchery funding decisions, not on future ESA determinations.

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED).

Letter/ Comment #	Comment	Response
	riddled with errors and inaccuracies; it has needlessly caused alarm and misunderstandings and damaged trust.	
6/26	NOAA Fisheries should start over; the focus of the DEIS should be narrowed to analyzing the environmental effects of congressional appropriations for the long-standing Mitchell Act program.	See Global Response 2: Comments Addressing the Scope of this EIS.
6/27	NOAA Fisheries should leave policy direction on Columbia Basin hatchery practices for a more fully informed collaborative effort.	Comment noted.
7/1	The DEIS fails to emphasize that hatchery production in the Columbia is fundamentally essential to preserving the opportunity for tribes to exercise their treaty rights. The EIS should better reflect the trust responsibilities of federal agencies in the context of implementing the ESA, and the mandate to minimize effects on tribal trust resources in pursuit of the common goals of salmon recovery. Alternatives considered by the DEIS, and their implementation scenarios, omit approaches that could maintain tribal fishing opportunity, while achieving ESA conservation standards for key salmon and steelhead stocks.	See Global Response 5: Comments Addressing the EIS and Its Relationship to Other Plans, Regulations, Agreements, Laws, and Executive and Secretarial Orders.
7/2	Until unequivocal scientific evidence quantifies the genetic and ecological aspects of interactions between hatchery- and natural-origin salmon, particularly for Chinook and coho, and offers the NMFS a factual basis for deciding whether these risks truly impede the recovery of listed or other wild populations, Federal treaties with Indian tribes, and Congressional intent to mitigate degradation of habitat, mandates that hatchery production continue at current levels to enhance fishing opportunity and to protect wild populations from extinction	Comment noted.
7/3	The PST objectives for assuring equitable harvest opportunity in the U.S. and Canada are served by the large contribution of Columbia River hatchery Chinook to many coastal fisheries. Hatchery production 'dilutes' the impacts of fisheries on key wild Chinook stocks originating in B.C., Puget Sound, and the Columbia River. Reduced Columbia River hatchery production, as described in Alternatives 2-5, may be inconsistent with the assumptions underlying the PST Chinook Agreement. Before the NMFS advocates any significant changes in Columbia River hatchery production, the potential effects on PST	See Global Response 5: Comments Addressing the EIS and Its Relationship to Other Plans, Regulations, Agreements, Laws, and Executive and Secretarial Orders.

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED)

Letter/ Comment #	Comment	Response
	agreements should be more thoroughly explored	
7/4	We are concerned that substantial reductions in Columbia River hatchery production (particularly for Lower River fall Chinook) would have more significant consequences on Washington coastal and Puget Sound fisheries than are revealed by the harvest model used for the Mitchell DEIS. Under current conditions, Chinook abundance is generally much lower than during the model base period. Small increases in the exploitation rate on Puget Sound stocks in Alaskan, B.C., and Washington coastal fisheries could result in the need for substantial further constraint of Puget Sound fisheries to achieve exploitation rate ceilings imposed by the ESA and the Puget Sound Chinook Harvest Management Plan. Of particular concern are changes in the exploitation rate for Puget Sound Chinook stocks in critical status which greatly influence on Puget Sound fisheries management.	Effects of any changes in Mitchell Act hatcheries on Puget Sound Chinook salmon stocks are expected to be very small, likely negligible. PFMC (2014) stated the following relative to how Puget Sound stocks are affected by the Council-area fisheries: "Puget Sound stocks contribute to fisheries off B.C., are present to a lesser degree off SEAK, and are impacted to a minor degree by Council-area ocean fisheries. Because Council-area fishery impacts to Puget Sound Chinook stocks are negligible, ocean regulations are not generally used to manage these stocks."
7/5	The ratio of hatchery- and natural-origin spawners (i.e. the proportionate natural influence or PNI) is a simplistic approximation of gene flow between hatchery- and natural-origin salmon. Absent a more precise understanding of the temporal, spatial and behavioral isolating mechanisms of hatchery- and natural-origin , or direct measures of gene flow, PNI as utilized in the DEIS is, at best, a coarse indicator of potential genetic risk, and is not an appropriate performance goal for hatchery management.	Comment noted.
7/6	Utilization of PNI as an index of gene flow emerged from theoretical modeling of the rate of change in a single hypothetical genetic trait with defined bimodal fitness peak for hatchery and natural environments respectively (Ford 2006). Based on theoretical rate of trait change, the AHA model, using PNI, assumes the fitness of wild populations decline precipitously under the influence of hatchery programs. But AHA is unsuited to quantifying genetic risk (RIST 2009). AHA simulations typically limit fitness loss to 50 percent to prevent the modeled population from declining to extinction, indicating that the reductive model does not capture mitigating factors that occur in the real environment. Many natural populations of Chinook and coho long-influenced by hatchery programs remain productive (i.e., their fitness has not apparently declined to the extent predicted by theoretical models), though many are clearly constrained by habitat condition. The AHA model allows specification of the	Thank you for your comment. As noted by the commenter, the All-H analyzer and results produced from it have to be interpreted appropriately. NMFS has added language to the final EIS related to this need for understanding. Please see Section 4.1.3.3, Implementation Measures; Section 4.2.2, Methods for Analyzing Effects; and the inclusion of the RIST (2009) report, cited by the commenter, as final EIS Appendix I.

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED).

Letter/ Comment #	Comment	Response
	shape of fitness curves, distance separating fitness peaks of the hypothetical trait in natural and hatchery environments, and reproductive success of hatchery fish in the natural environment and in the hatchery, but the model has usually been run with these parameters at default levels that have already been shown to produce unrealistic results.	
7/7	There is ample evidence that domestication selection occurs among salmon in the hatchery environment, but its effect on the fitness of juvenile salmon, particularly for sub-yearling Chinook programs, is not understood. A NMFS study showed survival rates of hatchery- and natural-origin Hood Canal summer chum were similar (Berejikian et al 2009); most Chinook hatchery programs release sub-yearling smolts after a similar short period of rearing. The risk of reduced fitness in cultured fish is inferred from studies of farmed Atlantic salmon, which have been subjected to many generations of deliberate domestication, and on steelhead which have substantially different life history and longer hatchery residence than most Chinook hatchery programs. Some studies that measure gene flow directly, by estimating the similarity of wild and hatchery genotypes, indicate that wild populations of steelhead, Chinook, and Atlantic salmon (NRC 2002) retain their diversity and remain genetically distinct from co-occurring hatchery populations even after decades of hatchery production.	Thank you for your comment. Please see final EIS Section 3.2.3.1.1.2, Effects on Genetic Diversity, for a revised and updated discussion of the potential genetic effects of hatchery programs.
7/8	Substantial evidence also exists that wild populations are more productive (i.e., fit) in terms of smolt production or survival than suggested by the AHA model's assumptions about, although their productivity is clearly constrained by habitat conditions. Recovery and reintroduction programs, even those using stocks with a long history in the hatchery environment, have been successful in reestablishing or supplementing natural production.	Comment noted.
7/9	Genetic theory suggests risks associated with effects on within- and among-population diversity, may also be associated with hatchery production. The DEIS offers no insight on the potential for improved culture practices, such as carefully designed broodstock selection and mating protocols, to mitigate these risks. Many programs have already implemented these improvements.	Thank you for your comment. Please see revised and expanded language in Section 3.2.3.1.1.3, Current Approaches for Reducing Risks to Genetic Diversity.

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED)

Letter/ Comment #	Comment	Response
7/10	The DEIS should include a more balanced assessment that describes the potential negative effects of utilizing natural origin adults for integrated hatchery broodstock, as a means of increasing PNI. Removing natural-origin adults for use as hatchery broodstock may not be sustainable. Broodstock mining has in the past resulted in fewer natural-origin recruits as the remainder of that brood matures, and potentially forces use of an ever larger proportion of them as hatchery broodstock in subsequent years. Sequentially reducing the number of natural-origin spawners is contrary to the VSP principles of conservation, particularly when the real benefits to the fitness of hatchery-origin fish are highly uncertain.	Thank you for your comment. NMFS agrees with the commenter and has acknowledged this potential in the EIS, in Section 4.1.3.2, Performance Metrics.
7/11	The DEIS explains why habitat restoration measures were not specified as part of any of the Alternatives or implementation scenarios, but salmon populations will not recover unless habitat function is restored. The DEIS perpetuates the fallacy that manipulation of the composition of spawners will, by itself, result in substantially increased natural productivity. Increased fitness, associated with alleviating the effects of domestication selection, may improve the productivity of natural populations to some degree, but restoring habitat function is absolutely essential to rebuilding populations to viable levels of abundance and productivity. Improved natural productivity could have a greater positive effect on PNI.	See Global Response 2: Comments Addressing the Scope of this EIS.
7/12	Preliminary drafts of the Puget Sound DEIS describing genetic risks and ecological interactions among hatchery and natural-origin salmon and steelhead include much greater technical detail, and a more nuanced and accurate view of how to mitigate those risks, compared with the Mitchell DEIS. If consultation regarding ESA compliance of Columbia River hatchery programs takes the simplistic approach of the Mitchell DEIS, we are concerned that precedents thus established will influence the NMFS' subsequent review of Puget Sound hatchery programs.	Thank you for your comment. Please see revised and expanded language in Section 3.2.3.1.1.3, Current Approaches for Reducing Risks to Genetic Diversity. Additionally, see Global Response 2.c., Scope should focus on hatchery funding decisions, not on future ESA determinations.
7/13	Broad scale reduction of mitigation hatchery programs, and possible constraint of recovery programs intended to conserve the diversity of ESUs, is inappropriate and unnecessary when uncertainty persists regarding the effectiveness of such measures to materially improve the status of listed salmon and steelhead stocks. Reduced hatchery production will have certain and substantial negative consequences to the economic and	Comment noted.

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED).

Letter/ Comment #	Comment	Response
	cultural well-being of the tribes. Tribes are attentive to the potential risks of hatchery programs to wild salmon stocks, and are engaged in scientific inquiry and adaptive management to address these risks.	
7/14	We expect further consultation on these issues as the NMFS further develops policies to guide authorization of salmon and steelhead hatchery programs under the ESA.	Comment noted.
8/1	Hatchery programs in the Columbia River Basin play an important role in regional economics by supplying jobs directly through hatchery operations as well as commercial and recreational fisheries. Furthermore, many of those hatcheries are in place to mitigate the effects on fisheries by dams that provide hydropower to the region. In any assessment of the Columbia River Basin hatchery programs, these benefits plus the supply of harvestable fish to tribes, recreational anglers and the commercial fishing industry cannot be overlooked. However, the impact those hatchery programs have on wild fish populations must also be considered. The effects of hatchery-origin fish on wild populations have been documented in profusion and many of the documented effects would be detrimental. Concerns expressed in literature include: alteration of native population genetics, increased predation on juveniles during out-migration, increased density-dependant mortality, and decreased productivity of wild populations in the presence of large quantities of hatchery fish. These negative impacts can be largely mitigated through the implementation of a coordinated hatchery management plan. Some aspects of such a management plan are included in one or more of the alternatives proposed in the Draft EIS.	Comment noted.
8/2	If the objective here was to choose one of the alternatives listed, Alternative 5 would be the most appealing to the Tribe.	See Global Response 1: Comments Stating a Preference (Preferences) and/or Ideas for the EIS Preferred Alternative.
8/3	While the comments offered here show that the Burns Paiute Tribe supports NMFS' efforts to reduce the impacts of Mitchell Act-funded hatchery operations on wild populations, the Tribe does not feel that these efforts necessitate a reduction in the number of fish returning to the Columbia Basin.	Comment noted.

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED)

Letter/ Comment #	Comment	Response
8/4	**Performance Goals for Mitchell Act-funded hatchery programs should be set by NMFS.** This should be done on an individual program basis in cooperation with hatchery managers and should take into consideration both desired and undesired effects on wild populations affected by a given program. The Burns Paiute Tribe understands that setting specific performance goals is not included in the intent of the DEIS, but the notion that this should be left to hatchery managers seems to risk neglecting the stated objective of reducing impacts of Mitchell Act-funded hatchery programs on native populations. It appears to leave too much leeway for the status quo. NMFS-prescribed performance goals would allow hatchery managers to pursue all possible approaches to meet those goals while seeking to meet their production goals. In the case of a single native population being affected by multiple Mitchell Act-funded hatcheries, the prescribed performance goals would also provide NMFS with a means of evaluating and controlling the cumulative effects of those hatcheries on that population.	See Global Response 1: Comments Stating a Preference (Preferences) and/or Ideas for the EIS Preferred Alternative.
8/5	**Performance Goals should be integrated with mandatory monitoring, evaluation, and reform (MER).** PNI and pHOS as performance metrics seem to be a reasonable way of measuring the influence of hatchery programs on native populations and, thus, appear to be sensible means for evaluating the performance of a hatchery in regards to its prescribed goals. However, in addressing the problem posed by maintaining a prescribed PNI in integrated populations with a small number of natural-origin spawners, it may be better to reduce the output of the hatchery affecting that population rather than use the natural-origin fish for broodstock. The integration of performance goals and MER could lead to such a situation being recognized and managed in a manner that would allow production of hatchery fish (albeit at a temporarily reduced level) while maintaining the prescribed performance goals. The key idea here is adaptive management. With prescribed performance goals and mandatory MER, hatchery managers would be better informed as to both what was expected from their hatchery in regards to performance goals and the consequences of not meeting those goals.	See Global Response 1: Comments Stating a Preference (Preferences) and/or Ideas for the EIS Preferred Alternative.

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED).

Letter/ Comment #	Comment	Response
8/6	**Allocation of Mitchell Act funds should reflect the performance of individual hatchery programs.** NMFS should use the allocation of Mitchell Act funds to get individual hatchery programs to adhere to their respective performance goals. If an individual hatchery program does not meet its performance goals, its funding should reflect that. If a program's current funding cannot support a balance between its production and performance goals, it may be an indication that the program needs to be reevaluated. Perhaps that program's production should be curtailed while steps are taken to increase its ability to meet its performance goals. For example, a program could move funding allocations from fish production to weir installation and operation. In any case, in order to receive Mitchell Act funding, individual hatchery programs need to be accountable for their effects on native populations. The risk of funding reductions or decreased fish production would likely persuade hatchery managers meet performance goals.	See Global Response 1: Comments Stating a Preference (Preferences) and/or Ideas for the EIS Preferred Alternative.
8/7	As previously mentioned, the above comments show that the Burns Paiute Tribe supports NMFS' efforts to reduce the impacts of Mitchell Act-funded hatchery operations on native populations, however, the Tribe does not support reducing the number of fish returning to the Columbia Basin. The Tribe feels that other options exist for lessening the impacts of hatchery operations on native populations, especially at the smolt life stage, which could be implemented with relative ease while allowing returns to remain at or near their current levels.	See Global Response 1: Comments Stating a Preference (Preferences) and/or Ideas for the EIS Preferred Alternative.
8/8	**Installation of weirs to control pHOS.** Weirs are an effective means of controlling the number of hatchery fish on spawning grounds and should be installed whenever feasible. If natural spawning of hatchery fish is prescribed as part of a recovery plan for a native population, those fish can be passed upstream in accordance with that plan. Excess hatchery returns to a weir could be recycled downstream for increased harvest opportunities or distributed to tribes for subsistence purposes. For these reasons, weirs should be a significant component of the policy direction.	See Global Response 1: Comments Stating a Preference (Preferences) and/or Ideas for the EIS Preferred Alternative.
8/9	**Stagger releases of hatchery-reared juveniles.** The negative impacts of hatchery releases of juveniles on out-migrating	See Global Response 1: Comments Stating a Preference (Preferences) and/or Ideas for the EIS Preferred Alternative.

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED)

Letter/ Comment #	Comment	Response
	wild juveniles have been documented repeatedly. Large releases of juveniles from hatcheries have been cited as partly responsible for those negative impacts. One of the suggested tactics for decreasing those impacts is to stagger releases of smolts from hatcheries. This seems to be a relatively simple action that could lead to better survival of native smolts by decreasing density-dependant mortality and predation.	
8/10	**Delay the release of hatchery-reared juveniles until native smolts have migrated downstream of the acclimation site.** Again this point speaks to reducing the negative impacts of hatchery operations early in the salmonid life cycle. Though this method may involve more effort than simply staggering hatchery releases, it would do more to reduce interactions between hatchery and native smolts, thereby further decreasing density-dependant mortalities and predation.	See Global Response 1: Comments Stating a Preference (Preferences) and/or Ideas for the EIS Preferred Alternative.
8/11	**Mark 100% of hatchery-reared fish.** In order to truly understand the extent of interactions between hatchery-reared fish and native populations, managers must be able to identify every fish as such. The Tribe understands that some upriver interests have concerns about fin-clipped fish destined for upriver locations being harvested in the lower river, but in order to monitor hatchery returns to much of the basin and allow for the harvest of hatchery fish, fin clips are necessary. If fish reared in upriver hatcheries are intended to return for integration with wild populations, we suggest PIT tagging as an alternative marking technique.	See Global Response 1: Comments Stating a Preference (Preferences) and/or Ideas for the EIS Preferred Alternative.
8/12	**Use Mitchell Act funds to reintroduce extirpated populations.** The use of Mitchell Act funds to reintroduce extirpated populations could reduce the interaction of hatchery stocks and wild populations. By placing hatchery-raised juveniles in waters within historic habitat that are currently uninhabited by wild populations, an added benefit could be the recovery of extirpated populations. Considering the number of populations throughout the Columbia Basin extirpated by activities meant to be mitigated for by Mitchell Act funds, especially in the uppermost reaches (e.g., Snake River and tributaries above Hell's Canyon), there are many options for such reintroduction efforts.	See Global Response 1: Comments Stating a Preference (Preferences) and/or Ideas for the EIS Preferred Alternative.

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED).

Letter/ Comment #	Comment	Response
8/13	In conclusion, the Burns Paiute Tribe agrees that steps need to be taken to ensure that the negative impacts of Mitchell Act-funded hatcheries on native populations are minimized. The Tribe believes that this can be accomplished through coordinated hatchery management plans and NMFS is in a position to realize that coordination. By attentively distributing Mitchell Act funds, NMFS could effect positive changes to much of the Columbia Basin hatchery system without necessarily reducing hatchery output.	Comment noted.
8/14	Paramount among those gaps is NMFS' apparent reluctance to take part in the determination of performance goals for Mitchell Act-funded hatcheries. We understand that blanket performance goals would be ineffective and, in some cases counterproductive. However, NMFS should take part in establishing performance goals in conjunction with individual hatchery program managers in order to make certain that those goals are striving to minimize negative impacts of hatchery operations on wild populations. Though it would be a tedious and arduous process, the benefits could be far-reaching.	See Global Response 1: Comments Stating a Preference (Preferences) and/or Ideas for the EIS Preferred Alternative.
8/15	Furthermore, NMFS should make MER mandatory for recipients of Mitchell Act funds. This would lead to a better understanding of how individual hatchery operations effect wild populations and which techniques are most effective for mitigating those negative effects. If NMFS were to require such MER to be reported regularly, it could facilitate idea exchange throughout a significant portion of the Columbia Basin hatchery system.	See Global Response 1: Comments Stating a Preference (Preferences) and/or Ideas for the EIS Preferred Alternative.
8/16	Lastly, the Tribe would like to see a shift in the distribution of Mitchell Act funds to include more recovery efforts in the upper reaches of the Columbia Basin. The effects of hydroelectric dams have been most severe in the upper reaches, yet the lower river has the majority of hatcheries operated under Mitchell Act funds. We believe this distribution to be flawed and it should be addressed during the process of planning the future of Mitchell Act fund allocations.	See Global Response 1: Comments Stating a Preference (Preferences) and/or Ideas for the EIS Preferred Alternative.
9/1	… believes the DEIS is fatally flawed. The Commission submits these comments and further recommends that the DEIS be narrowly focused on Mitchell Act funding with a more fully informed collaborative effort, or withdrawn.	See Global Response 2: Comments Addressing the Scope of the EIS.

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED)

Letter/ Comment #	Comment	Response
9/2	Parties that were consulted during the development of the DEIS are listed in the document. Glaring omissions in that list include our member tribes, which were not consulted in the development of the DEIS. This lack of consultation is disturbing. As recognized by the federal courts, our member tribes are co-managers of salmon in the Columbia Basin. Our tribes are hatchery operators. The lack of consultation dismisses this relationship.	See Global Response 3: Comments Addressing the EIS Process.
9/3	There are defects in the scope and purpose of the DEIS. The original scope of the DEIS was appropriately limited to funding of Mitchell Act facilities. At some point, the scope was expanded to include an analytical framework for Endangered Species Act consultations for all hatchery facilities in the Columbia Basin. The expansion of the scope of the DEIS creates an awkward document that fails to give adequate treatment to the original scope.	See Global Response 2: Comments Addressing the Scope of the EIS.
9/4	Since 1982 the tribes have formally advocated for a Mitchell Act program that emphasizes in-place, in-kind mitigation, focused on the areas that have suffered the most impacts, which are above the Bonneville Dam. (See, Mitigation of Anadromous Fish Losses: Efforts Related to Columbia and Snake River Dams and a Plan for Reprogramming Hatcheries, CRITFC, August 1982.) The current structure of the DEIS makes it very difficult to identify the proposed changes to Mitchell Act funding under the proposed alternatives. Indeed, the DEIS does not recognize any mitigation responsibility whatsoever associated with the Mitchell Act.	See Global Response 4: Comments Asserting and Referring to the Mitchell Act's Mitigation Obligation or Calling for NMFS to Define the Obligation.
9/5	Further, the DEIS does not contain a full range of alternatives (See Appendix A: Adequacy of Alternatives). The implementation scenarios in the DEIS all call for a reduction in hatchery production from the 2007 baseline.[1] There are no alternatives or implementation scenarios that include increases in total Mitchell Act or total other production upstream of Bonneville Dam. The DEIS does not appear to address new hatcheries. It does not address current programs in transition such as summer Chinook in the Entiat sub-basin or summer Chinook restoration efforts of the Yakama Nation in the Yakama sub-basin. The DEIS also does not appear to allow for completely new programs, such as reintroduction programs for sockeye or Coho in the Grande Ronde system.	See Global Response 6: Comments Addressing the Range of Draft EIS Alternatives. See Global Response 7: Comments Addressing the Analysis within the EIS.

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED).

Letter/ Comment #	Comment	Response
9/6	NMFS staff has told our tribes that there is a distinction between the alternatives and the implementation scenarios. From our perspective we see no distinction. We can only comment on what is written in the DEIS. The implementation scenarios provide insight on the actions NMFS believes necessary to accomplish the alternatives.	See Global Response 7: Comments Addressing the Analysis within the EIS.
9/7	The tribes believe that hatcheries are a key element of a comprehensive approach to salmon management in the Columbia Basin. The tribes have worked diligently for decades on restoration efforts that include the use of hatchery fish. The positive trend in Snake River fall Chinook returns, as well as the reintroduction of Umatilla spring Chinook, Walla Walla spring Chinook, and Coho upstream of the Klickitat River are only a few examples of successful tribal programs. The reduction in hatchery production called for in the DEIS threatens to unravel tribal restoration efforts.	See Global Response 7.a, Confusion between the alternatives and the implementation scenarios, and Global Response 6.c., The EIS should include an alternative that increases production levels and is more supportive of harvest than the existing alternatives.
9/8	The tribes have worked collaboratively with state and federal agencies in developing regional and international agreements that address the resource. The Columbia Basin Fish Accords, the 2008-2017 *U.S. v. Oregon* Management Agreement, and the Pacific Salmon Treaty all recognize the importance of hatchery production. The reduction in hatchery production called for in the DEIS is inconsistent with and threatens the existing federal obligations in these regional agreements.	See Global Response 5: Comments Addressing the EIS and Its Relationship to Other Plans, Regulations, Agreements, Laws, and Executive and Secretarial Orders.
9/9	Hatchery programs play an important role in conservation and mitigation. Loss of fish production due to destroyed and degraded habitat, are often mitigated through hatchery production. The DEIS calls for reduced hatchery production without offering any alternatives for mitigation. The consequence is an implicit removal of the mitigation obligation. The tribes believe this is contrary to the federal government's duty to make sure that those accountable for damages provide compensation for the losses incurred. Moreover, the loss of mitigation fish would also have a profound effect on all fisheries from southeast Alaska to the Oregon coast and inland to the Snake River through reductions and restructuring in recreational, commercial and tribal fisheries.	See Global Response 5: Comments Addressing the EIS and Its Relationship to Other Plans, Regulations, Agreements, Laws, and Executive and Secretarial Orders.
9/10	Any major changes to the tribal fisheries must be consistent with federal case law (See Appendix B: Environmental Justice).	See Global Response 5: Comments Addressing the EIS and Its Relationship to Other Plans, Regulations, Agreements, Laws, and Executive and Secretarial Orders..

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED)

Letter/ Comment #	Comment	Response
9/11	With respect to the technical substance of the DEIS, the document is plagued by a flawed analytical construct, and littered with erroneous information (See Appendix C: Section by Section Comments).	See Global Response 7: Comments Addressing the Analysis within the EIS.
9/12	The proposed evaluation metrics (PNI and pHOS) are arbitrary, static and too simplistic to capture the complexities of the sub-basin by sub-basin variations throughout the entire Columbia Basin. The invariant nature of these metrics defies the accepted need for management that is flexible and responsive to changing conditions. No evidence is presented as to why these standards are appropriate and should be fixed. Nor is there any evidence linking these standards to the recovery of wild fish populations.	Thank you for your comment. NMFS agrees with the commenter's statement regarding the need for flexibility at the local level. The use of the performance metrics for determining effects on genetic diversity (PNI and pHOS) in the analysis of the alternative effects should not be perceived as NMFS advocating for their use. They represent one method to compare the potential genetic effects of the EIS alternatives.
9/13	The range of habitat conditions in the Columbia River Basin refutes the efficacy of a onesize-fits-all approach.[2] This myopic view of the effects of hatchery fish on the genetic fitness of the populations ignores the oftentimes determinative demographic risks suffered by those populations and the positive effects that hatchery supplementation can affect on abundance, spatial structure and diversity. Further, the DEIS applies this analysis to both listed and non-listed ESUs, without explanation. At best, the DEIS approach results in remnant population management. At worst, it may speed up the process of extirpation by limiting options to address demographic risk. The beneficial effect of increasing populations of weak stocks through hatchery supplementation may well outweigh any adverse genetic effects. (See Appendix D: Review of Fitness Studies.)	Thank you for the information. NMFS disagrees with the commenter's assessment of the "one-size-fits-all" approach in the EIS. The EIS utilizes a range of approaches to disclose potential benefits and risks of hatcheries. The commenter has not thoroughly reviewed the sections in the EIS related to the acknowledged benefits of hatcheries (Section 3.2.3.1, General Risks and Benefits of Hatchery Programs to Salmon and Steelhead Species).
9/14	In addition, the alternatives were analyzed using the AHA (All H Analyzer) model. The modeling exercise was simplistic and did not accurately reflect current conditions. Therefore, the ability of the AHA model to forecast future conditions is compromised. For example, harvest rates were held constant, while the current co-management agreements prescribe harvest rates that vary as abundances change. The erroneous assumptions in the harvest modeling also lead to flawed conclusions in the economic analysis. In the Hatchery section, the model is parameterized with unrealistically high values for heritability and for strength of selection in the hatchery environment. The model is highly sensitive to both these parameters, and their high values over estimate what might be a deleterious effect of hatchery supplementation on natural population productivity. (See	NMFS disagrees. While the analysis uses abundance-based harvest rates, which rely on average abundance estimates from the All-H Analyzer, NMFS concludes that the model and analysis are useful as an accounting tool to make relative comparisons of effects among the EIS alternatives. Harvest rules in the analysis have been updated to reflect the abundance-based harvest rate schedules in the 2008 to 2017 *U.S. v. Oregon* management agreement. The values for heritability and strength of selection used in the genetic fitness model were sufficient to provide a relative measure among alternatives of potential effect of hatchery influence on natural populations. For more information on the use of the heritability and selection strength setting in the

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED).

Letter/ Comment #	Comment	Response
	Appendix E: Genetic Risks and PNI Standard.)	All-H Analyzer, please see Appendix I, Recovery Implementation Science Team 2009.
9/15	We have identified additional documents that should be considered by NOAA. We are providing these in a CD to be included in the record as part of CRITFC's comments.	NMFS appreciates contribution to this EIS process and will review your submitted information. See Global Response 7.c., Comments on data quality in the EIS.
9/16	Based on policy and technical concerns, the tribes recommend that NOAA does not proceed on developing a preferred alternative and a final environmental impact statement.	Comment noted.
9/17	NMFS has failed to analyze a reasonable range of alternatives by not including alternatives that consider the tribes' scoping comments or implement the United States v. Oregon and Accords agreements and by only including alternatives (other than the no action alternative) that are counter to these agreements.	See Global Response 6: Comments Addressing the Range of Draft EIS Alternatives.
9/18	First the DEIS confounds implementation of the Mitchell Act hatchery program with hatchery management policy generally. Ultimately, the analysis of hatchery policy completely overshadows longstanding questions about Mitchell Act hatchery implementation.	See Global Response 2: Comments Addressing the Scope of the EIS.
9/19	Second, the hatchery policy alternatives examined by NMFS are alternatives essentially defined by the metrics of PNI and PHOS, metrics that are used throughout the DEIS and its appendices. The fact that DEIS suggests that these metrics are only one hypothetical measurement is belied by the document itself and its voluminous analyses framed by these metrics.	See Global Response 7: Comments Addressing the Analysis within the EIS.
9/20	**NEPA Requires a Reasonable Range of Alternatives** The CEQ Regulations implementing NEPA, at 40 C.F.R. §1502.14, read as follows: Sec. 1502.14 Alternatives including the proposed action. This section is the heart of the environmental impact statement. Based on the information and analysis presented in the sections on the Affected Environment (Sec. 1502.15) and the Environmental Consequences (Sec. 1502.16), it should present the environmental impacts of the proposal and	Please see revised sections within Chapter 2, Alternatives, including Section 2.3, Context for the Alternatives; 2.4, Alternative Development; and Section 2.7, Alternatives Considered but Eliminated from Detailed Analysis. Additionally, see Global Response 2: Comments Addressing the Scope of this EIS and Global Response 6: Comments Addressing the Range of Draft EIS Alternatives.

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED)

Letter/ Comment #	Comment	Response
	the alternatives in comparative form, thus sharply defining the issues and providing a clear basis for choice among options by the decisionmaker and the public. In this section agencies shall: (a) Rigorously explore and objectively evaluate all reasonable alternatives, and for alternatives which were eliminated from detailed study, briefly discuss the reasons for their having been eliminated. (b) Devote substantial treatment to each alternative considered in detail including the proposed action so that reviewers may evaluate their comparative merits. (c) Include reasonable alternatives not within the jurisdiction of the lead agency. (d) Include the alternative of no action. (e) Identify the agency's preferred alternative or alternatives, if one or more exists, in the draft statement and identify such alternative in the final statement unless another law prohibits the expression of such a preference. (f) Include appropriate mitigation measures not already included in the proposed action or alternatives. As the regulations state, NEPA requires agencies to "rigorously explore and objectively evaluate all reasonable alternatives" to a proposed plan of action that has significant environmental effects. 40 C.F.R. § 1502.14(a) (2000). This is "the heart" of an EIS. *City of Carmel-by-the-Sea v. United States Dep't of Transp.*, 123 F.3d 1142, 1155 (9th Cir.1997). "The existence of a viable but unexamined alternative renders an environmental impact statement inadequate." *Citizens for a Better Henderson v. Hodel*, 768 F.2d 1051, 1057 (9th Cir.1985). The range of reasonable alternatives is "dictated by the nature and scope of the proposed action, and [must be] sufficient to permit a reasoned choice." *Idaho Conservation League v. Mumma,* 956 F.2d 1508, 1520 (9th Cir.1992) (internal citation and quotations omitted). The "no action" alternative must also be considered in detail. *Alaska Wilderness Recreation*	

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED).

Letter/ Comment #	Comment	Response
	& Tourism Ass'n v. Morrison, 67 F.3d 726, 729 -730 (9th 1995). CEQ's guidance, *Forty Most Asked Questions Concerning CEQ's NEPA Regulations*, Fed Reg 18026 (1981), elaborates on the range of alternatives: Q1b. How many alternatives have to be discussed when there is an infinite number of possible alternatives? A. For some proposals there may exist a very large or even an infinite number of possible reasonable alternatives. For example, a proposal to designate wilderness areas within a National Forest could be said to involve an infinite number of alternatives from 0 to 100 percent of the forest. When there are potentially a very large number of alternatives, only a reasonable number of examples, covering the full spectrum of alternatives, must be analyzed and compared in the EIS. An appropriate series of alternatives might include dedicating 0, 10, 30, 50, 70, 90, or 100 percent of the Forest to wilderness. What constitutes a reasonable range of alternatives depends on the nature of the proposal and the facts in each case. As discussed more below, the DEIS fails to rigorously explore a full spectrum or series of alternatives. While purporting to review Mitchell Act funding, the DEIS fails to recognize the mitigation objective of the Mitchell Act and the agreements in *U.S. v. Oregon* and the Fish Accords. These agreements and mitigation objectives render it reasonable that Mitchell Act appropriations and hatchery production might increase – a viable alternative that NMFS fails to consider. NMFS needed to consider a broader spectrum of alternatives and its failure to do so renders the DEIS inadequate.	
9/21	**The DEIS unreasonably fails to include additional alternatives that were identified through public comments.** Since CRITFC and the tribes provided scoping comments on the DEIS that included other alternatives, NMFS should have included some alternative to cover that range of alternatives. Since 1982, the Commission and its member tribes have called for various reforms to Mitchell Act hatchery implementation. The Tribes' 1983 Reprogramming proposal attached to	See Global Response 6: Comments Addressing the Range of Draft EIS Alternatives.

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED)

Letter/ Comment #	Comment	Response
	these comments reflects one such call for reform: > As shown in this report, past efforts to mitigate fish losses caused by the hydro-projects have been, at best, less than complete. If this situation is to be reversed, the redirection of many hatchery programs, initiated as mitigative efforts, will be required. Primary among these programs are those receiving funds und the provisions of the Mitchell Act of 1938 (as amended in 1946) and those of the John Day Dam mitigation program. > Mitigation of fish losses caused by hydro-development of the Columbia system cannot and will not occur until fish produced as mitigation are reestablished in the areas of loss. The tribes' 1983 request was similar to the 1983 Commerce Appropriations language calling on NMFS to use the Mitchell Act to rebuild upriver salmon runs. These and subsequent calls for hatchery reform are detailed in "Fight of the Salmon People", a copy of which is being provided with these comments and request that the full text be placed in the administrative record. These calls for Mitchell Act reform were echoed in CRITFC's scoping comments for this DEIS, wherein the tribes again requested that the Mitchell Act be directed to in-place, in-kind mitigation. The tribes' alternative calling for in place, in kind mitigation was not among the range of alternatives examined in the DEIS. It was and is a reasonable alternative, albeit one that might not be meaningfully framed or discussed within the limitations of the PNI and PHOS analytical scheme used by NMFS in the DEIS. NMFS cannot "apply a threshold test of superiority to reject alternatives before they are considered in the impact statement." *Roosevelt Campobello Int'l Park Comm'n v. EPA*, 684 F.2d 1041 (1st Cir. 1982).	
9/22	The range of alternatives in the DEIS fail to illuminate the impacts of Mitchell Act	See Global Response 6: Comments Addressing the Range of Draft EIS Alternatives.

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED).

Letter/ Comment #	Comment	Response
	implementation and the metrics used to frame the alternatives further obscure the effects of the Mitchell Act implementation on tribal fisheries. The range of alternatives appears to be constrained by two underlying tacit policy determinations. First, despite decades of requests by the states of Oregon, Washington and the Commission's member tribes, the DEIS nowhere analyzes the prospect of restoring and expanding Mitchell Act hatchery programs. Instead the alternatives in the DEIS look only at options that would reduce Mitchell Act programs, which have already been reduced by years of funding attrition. NMFS could have considered alternatives that would implement the physical facilities rehabilitation agreed to by states and tribes for many years. The DEIS does not do this either. In essence, the DEIS is written as if NMFS has determined that the Mitchell Act is constrained to current budget levels.	
9/23	The second tacit policy determination is something like "hatchery fish are bad". With this as a starting premise, NMFS essentially rejects alternatives that call for any sizeable expansion of hatchery production in the Columbia Basin. Without saying so, the DEIS constrains the policy options for restoring salmon in the Columbia River Basin to modification of harvest, hydro, and habitat management. We believe that such a consequence is inconsistent with the *U.S. v. Oregon* 2008-2017 Management Agreement, the Columbia Basin Accords agreements, and the Secretarial Order on ESA and Trust Responsibilities.	See Global Response 6: Comments Addressing the Range of Draft EIS Alternatives.
9/24	In this regard, NMFS utter failure to consult with the Commission's member tribes on the DEIS is especially disconcerting.	See Global Response 3: Comments Addressing the EIS Process.
9/25	Had the DEIS considered the alternative of in place, in kind mitigation, the DEIS would have illuminated the devastating effects that mitigation failures have had on the four tribes fisheries. Instead the DEIS present an obscure picture of the role of hatcheries in the Columbia Basin, primarily disclosed in the context of PNI and PHOS. NEPA, however, requires that an agency "present complete and accurate information to the decision makers and to the public to allow an informed comparison of the alternatives considered." *Natural Res. Def. Council v. U.S. Forest Serv.*, 421 F.3d 797, 813 (9th Cir. 2005). If in fact the alternatives would allow for broader hatchery	See Global Response 4: Comments Asserting and Referring to the Mitchell Act's Mitigation Obligation or Calling for NMFS to Define the Obligation. Additionally, NMFS disagrees with the commenter's characterization of the information in the draft EIS as "incomplete or misleading." See Global Response 6: Comments Addressing the Range of Draft EIS Alternatives.

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED)

Letter/ Comment #	Comment	Response
	management alternatives, the DEIS fails to present such information and allow for an informed comparison. The DEIS would need to be revised to demonstrate the breadth of the alternatives. "Where the information contained in the initial EIS [is] so incomplete or misleading that the decision maker and the public [cannot] make an informed comparison of the alternatives, revision of the EIS may be necessary to provide a reasonable, good faith, and objective presentation of the subjects required by NEPA." *Animal Def. Council v. Hodel*, 840 F.2d 1432, 1439 (9th Cir. 1988), *amended by* 867 F.2d 1244 (9th Cir. 1989)(internal citation and quotations omitted).	
9/26	Executive Order 12898, "Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations," provides that "each Federal agency shall make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations. " The Executive Order makes clear that its provisions apply fully to programs involving Native Americans. In the memorandum to heads of departments and agencies that accompanied Executive Order 12898, the President specifically recognized the importance of procedures under the National Environmental Policy Act (NEPA) for identifying and addressing environmental justice concerns. The memorandum states that "each Federal agency shall analyze the environmental effects, including human health, economic and social effects, of Federal actions, including effects on minority communities and low-income communities, when such analysis is required by [NEPA]." The memorandum particularly emphasizes the importance of NEPA's public participation process, directing that "each Federal agency shall provide opportunities for community input in the NEPA process." Agencies are further directed to "identify potential effects and mitigation measures in consultation with affected communities, and improve the accessibility of meetings, crucial documents, and notices." Basically, the Executive Order says that federal agencies must to talk to affected Indian tribes and disclose the impacts to them.	See Global Response 3: Comments Addressing the EIS Process.

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED).

Letter/ Comment #	Comment	Response
9/27	Consultation with tribes is required by Executive Order 12898 and NMFS utterly failed to consult with the Columbia River Treaty Tribes in preparing the DEIS. Had it done so, NMFS would have learned of the generational trauma that resulted from the discriminatory effects that implementation of the Mitchell Act had on tribal fisheries. Documentation of the impacts of the Mitchell Act implementation on tribal economies and culture can be found in Meyer (1999), Dupris (2006) and Dompier (2005). NMFS also would have learned of the Treaty Tribes' proposed remedies, which are nowhere meaningfully discussed in the DEIS.	See Global Response 3: Comments Addressing the EIS Process. Also note that in response to this and other comments on Section 3.4, Environmental Justice, a new section was added to the final EIS that discusses the cultural and historical importance of salmon to Columbia River Basin tribes. See Section 3.4.4.1.1, Fish Harvests and Tribal Values, Importance of Salmon to Tribes. Additionally, substantial information on the cultural importance of ceremonial and subsistence harvests to tribes was added to final EIS Section 3.4.4.1.2, Ceremonial and Subsistence Harvests.
9/28	The DEIS misapprehends the nature of the Treaty Tribes' fisheries. For example, the DEIS' description of Spring ceremonial fisheries fails to wholly portray the importance of ceremonial fishing ascribed separately by each of the Treaty Tribes to the maintenance of their cultures. This is but one example among many of how the DEIS is culturally encapsulated, i.e. written from a mono-cultural perspective ignorant of the diverse cultural backgrounds at stake and the effects of the proposed action on those cultures.	Thank you. In response to this and other comments on the draft EIS, substantial new information on the importance of ceremonial and subsistence harvests to tribal culture was added to Section 3.4.4.1.2, Ceremonial and Subsistence Harvests.
9/29	The DEIS is Culturally Encapsulated and Fails to Adequately Consider Tribal Culture and Cultural Impacts Nowhere does the DEIS truly acknowledge the role that salmon has played and now plays in the Treaty Tribes' culture and economies or the associated generational trauma associated with the construction of the Columbia River dams and the resulting failures in mitigating impacts to the Treaty Tribes' fisheries. Generational or historical trauma is still very real for the tribal members of the Treaty Tribes. Generational trauma is explained in an article by Whitbeck et al., 2004: In a series of articles Brave Heart (Brave Heart, 1998; 1999a,b; Brave-Heart & DeBruyn, 1988; Brave Heart-Jordan & DeBruyn, 1995), ties the American Indian genocide, ethnic cleansing, and policies of forced acculturation to the Holocaust experience and alludes to patterns of symptoms that correspond in many respects to those experienced by Holocaust survivors and their families. The symptoms identified by	See response to letter 9 comments 27 and 28.

Letter/ Comment #	Comment	Response
	Brave Heart and colleagues run the gamut of those associated with posttraumatic stress disorder (i.e., Brave Heart's symptoms of "Historical Trauma" (Brave Heart, 1998, p. 288)) to symptoms of unresolved grief (p. 291). However, many of the symptoms overlap and their number encompasses almost the entire range of psychopathology. Documentation of the importance of salmon to the Tribes, generational trauma in the tribal peoples' own words, and the cautions associated with cultural encapsulation was readily available to NMFS. The DEIS's ignorance, is in itself, an affront to the role that salmon plays in the cultures of the Columbia River Treaty Tribes. Meyer (1999) describes the dangers with cultural encapsulation in the context of the Columbia River Treaty Tribes as follows: Even today, where the tribes participate in "white man's market exchanges" voluntarily – or where such participation is sometimes forced - differing value perceptions based on differing culture still exist. In particular, tribal cultures share a strong concern for intrinsic values – both use and nonuse related - with economists of the previous century. What kind of foods did God set aside for you, reserve for you (non-Indians)? Like salmon and deer meat and the roots and berries were set aside for us. That's what we still obtain yet. We still go out and get it. And that's what we eat today. And that's what we use for communion with God. (remarks of Hazel Miller) It's just that salmon are part of the country, they're part of the environment. They belong here as much as Indians belong here. And in that way they complement each other. They've become part of us because it's what we depend on to live... . You know, it becomes a part of the person's or peoples' culture. (remarks of	

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED).

Letter/ Comment #	Comment	Response
	Antone Minthorn) These differences in perception of value pose strong risks that economists may culturally encapsulate project impacts on tribes. Too often in the past, economic valuation models have misrepresented tribal effects and damaged tribal interests. Alternatively, tribal values have not been treated substantively - and such values have been marginalized and appendicized in related reports. This has been damaging to reasonable consideration of tribal effects.	
9/30	The impacts of Bonneville Dam construction and hatchery mitigation are well documented, though largely ignored in the DEIS. Meyer (1999) discusses how the Treaty Tribes' traditional Indian fishing grounds at the Long Narrows and Great Cascades were flooded in 1938 when the government constructed Bonneville Dam on the Columbia River. And, that Congress passed legislation promising that the salmon and steelhead that had been destroyed would be replaced by hatchery fish (i.e., The Mitchell Act). However, the Act was implemented by establishing almost all of the hatcheries downriver from Bonneville Dam, where only non-Indians fished, instead of upriver in the tribal fishing areas. Dompier (2005) describes how testimony before Congress reflected concern for the impacts of the dams to the middle Columbia and Snake River tributaries, but that hatchery mitigation was constructed below the dams. The timing of this hatchery development and repeated attempts to close the tribal commercial fishery above Bonneville Dam were coincident in time and well-documented. When The Dalles Dam inundated Celilo falls many non-Indians were joyful that the tribal fishery at the falls had been eliminated. And, coincidentally, discussions then began about moving Mitchell Act hatchery development to the Columbia River tributaries above McNary Dam. Tribal spokespersons did not agree with the transformation of the Columbia/Snake system into one which produces extensive wealth associated with electricity and crops - but fewer and fewer salmon. The	Thank you for your comment. The final EIS has been revised and updated to include a more expansive description of the importance of salmon to tribes. Please see Section 3.4.4.1.1, Fish Harvests and Tribal Values.

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED)

Letter/ Comment #	Comment	Response
	tribes concerns with respect to their Treaty resources were largely ignored. Meyer (1999) recounts the following tribal sentiments: The Indians didn't have no voice at all. Because I remember when they built the John Day Dam the fish wouldn't go up the fish ladders. And they said the fish down there just died by the thousands at The Dalles Dam, because they didn't know how to go up them ladders. Plus the water was several degrees warmer above than it was below, and they couldn't adjust to that. Everyone knew that, even white people. (Denny Williams, at Mission, October 13, 1982). On each reservation, the story is the same. Inadequate provision for salmon and steelhead during dam construction and operation--consequent decline of natural stocks--broken and discarded promises by hydroelectric interests respecting safeguards and compensation--and severe inroads into capability for tribal survival. These conditions have also spawned a present attitude of almost universal mistrust among Indian people, accompanied either by hopelessness or outrage--depending on the person involved.(Meyer Resources, 1983). The DEIS's failure to adequately acknowledge these basic tribal circumstances attending dam development and the failure of the Mitchell Act implementation makes it is apparent that the DEIS is repeating the mistakes of the past, including utter disregard for tribal peoples and their culture. This failure must be remedied.	
9/31	Executive Summary, Page 7. The document states that it does not include any actions that would increase adverse effects on wild fish. However, the presence of hatchery fish is considered an adverse impact. Therefore, all the alternatives involve various levels of reduced hatchery production. In other words, the assumption that all hatchery fish represent a negative impact results in a document in which the only reasonable alternative is to reduce hatchery production. Such an assumption on the effects of hatchery fish is erroneous.	Please see revised sections within Chapter 2, Alternatives, including Section 2.3, Context for Alternatives; 2.4, Alternative Development; and Section 2.7, Alternatives Considered but Eliminated from Detailed Analysis. Additionally, see Global Response 6: Comments Addressing the Range of Draft EIS Alternatives.

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED).

Letter/ Comment #	Comment	Response
9/32	Executive Summary, Page 17. The structure of the DEIS contains very confusing definitions and descriptions of performance goals and performance metrics. The document claims there are two performance goals, stronger and intermediate. There are also performance metrics which are defined as PNI and pHOS standards. The DEIS states that the policy being considered is the performance goal not the performance metrics. But there is no way to understand the goal without looking at the metric that is used to define and achieve it. It appears that the stated PNI and pHOS metrics are the actual policies that are being considered. There is no flexibility stated in these policies (metrics).	NMFS has made many revisions to the document, including the Executive Summary, to better clarify confusing language identified through the public review of the draft EIS. See Global Response 7: Comments Addressing the Analysis within the EIS.
9/33	Page 1-13. The discussion of options not considered to be within the range of reasonable alternatives is flawed. The DEIS does not consider construction of new hatcheries with Mitchell Act funding. This fails to recognize that the mitigation objectives of the Mitchell Act remain incompletely fulfilled, that additional Mitchell Act appropriations would further those mitigation purposes, and that CRITFC member tribes are actively pursuing efforts to build new facilities with using such funding sources. These new facilities include but are not limited to the proposed NE Oregon Hatchery, a summer Chinook facility in the Yakama sub-basin, a coho and fall Chinook facility in the Klickitat subbasin, and a sockeye and/or coho program in the Grande Ronde sub-basin.	See Global Response 6: Comments Addressing the Range of Draft EIS Alternatives.
9/34	Page 1-13. Also, the DEIS does not consider any hatchery practices that increase adverse effects on listed fish. This may be a result of the decision to only analyze status quo production and various versions of reduced production, which in turn appears to be based on the erroneous assumption that hatchery fish have a significant adverse effect on ESA listed wild fish. Even excepting this logic, it is unclear why the DEIS considers reductions and sometimes elimination of programs that do not have associated listed populations (e.g., Clearwater spring chinook, Klickitat coho, Upper Columbia summer fall chinook, and Round Butte spring chinook).	NMFS did not make a decision to look only at status quo or reduced production, and the alternatives do not represent this. The commenter is confusing the alternatives with the implementation scenarios. See Global Response 7: Comments Addressing the Analysis within the EIS. NMFS disagrees with the commenter's dismissal of the effects of hatchery-origin fish on ESA-listed wild fish. Hatchery-produced fish have been listed as a factor in the status of several of the ESUs/DPSs listed in the Columbia River Basin. This was the basis for the decision to look only at alternatives that reduce adverse effects on natural-origin populations compared to the baseline.
9/35	Table 1.4, page 1-29. This list of hatchery programs would be easier to use if it were organized by either species and/or geographic area. It is unclear	The EIS has been updated in response to the comment. Table 1-4 has been reordered, alphabetically, by hatchery program

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED)

Letter/ Comment #	Comment	Response
	as structured whether this table is consistent with the program descriptions agreed to by all parties, including NOAA Fisheries, in the 2008-2017 *US v. Oregon* Management Agreement and Court Order. The table does not include existing sockeye programs in the Wenatchee or Okanagan, Chief Joseph hatchery, or the Entiat Hatchery in the list of current hatcheries. It also does not mention the Yakama Nation summer Chinook program. Finally, it does not mention future programs such as NEOH or a coho or sockeye re-introduction program in the Grande Ronde system.	operator. Additionally, the table has been updated to reflect 2010 hatchery programs, including the Wenatchee sockeye salmon program. The Okanogan sockeye is in Canada and is not considered for hatchery program alternatives in this EIS. Table 1-4 is meant to reflect hatchery programs operating in 2010 and, as such, does not contain future hatchery programs.
9/36	Page 1-41. Relationship to Other Plans, Regulations, Agreements, Laws, and Secretarial Orders The DEIS fails to discuss any mitigation agreements with Public Utility Districts,the US Fish and Wildlife Service's Lower Snake Compensation Plan, or the US Corps of Engineers' John Day Mitigation obligations.	Please see updated and expanded Section 1.7, Relationship to Other Plans, Regulations, Agreements, Laws, and Executive and Secretarial Orders.
9/37	Page 1-42. In its discussion of the 2008-2017 *US v. Oregon* Management Agreement, the DEIS provides: "*For the purpose of analysis, NMFS developed alternatives that may or may not be viewed by any particular commenter as consistent with the current (production) commitments in the Management Agreement. Rather, NMFS assumes that affected parties will exercise their authority regarding production measures following this environmental analysis in a manner that is consistent with the most current Management Agreement*." What does this mean? What is the purpose of proposing an assortment of production decreases/eliminations that are clearly not consistent with the *US v. Oregon* Management Agreement? Does it mean that NMFS thinks it has the authority to unilaterally force changes in the Management Agreement based on the analysis framework of a NEPA document? This approach is inconsistent with guidance NOAA previously provided to the region in 2010.	See revised language in this section in the final EIS. See Global Response 5: Comments Addressing the EIS and Its Relationship to Other Plans, Regulations, Agreements, Laws, and Executive and Secretarial Orders.
9/38	Page 1-45. FCRPS Biological Opinion. The DEIS fails to discuss the relationship between Snake River Fall Chinook production and the Columbia Basin Fish Accords.	Information on the Columbia Basin Fish Accords has been added to Section 1.7.5, The Columbia Basin Fish Accords, of the final EIS. See Global Response 5: Comments Addressing the EIS and

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED).

Letter/ Comment #	Comment	Response
		Its Relationship to Other Plans, Regulations, Agreements, Laws, and Executive and Secretarial Orders.
9/39	Table 2.3, page 2-6. The table uses outdated and (in some instances significantly inaccurate) hatchery production by species data.	See Global Response 7: Comments Addressing the Analysis within the EIS.
9/40	Pages 2-11 - 2-13. The hatchery performance goals are inappropriately limited to only reducing negative effects of hatchery programs on natural origin salmon and steelhead. The two performance goals are "stronger performance goal" which appears to mean a large reduction in negative effects, and an "intermediate performance goal" which appears to mean a smaller reduction in negative effects compared to either current conditions or in some cases status quo – it is not really clear.	Thank you for your comment. Please see revised and expanded language in new Section 2.4.2.1, Performance Goals Defined.
9/41	Pages 2-11 - 2-13 . Additionally, the use of the HSRG adapted definitions of primary, contributing, and stabilizing populations are limiting, and not warranted.	Comment noted.
9/42	Pages 2-11 - 2-13 . The DEIS provides, "*These (performance) goals are not intended to infer compliance with any legal standard, nor are they intended to be analogous to ESA terminology or threshold standards, but they are helpful in aggregating and describing the effect of multiple hatchery programs on natural-origin populations of salmon and steelhead.*" What does this statement mean? How are the goals useful for such effects if they are not correlated with any standard of significance for the consideration of environmental impacts? Does this mean that the goals do not comply with a NEPA analysis? What purpose do they serve in a DEIS they do not infer compliance with the alleged purposes of the document?	The statement is only meant to separate the use of the performance goals for evaluations outside of the EIS. These performance goals are relevant and applicable for the purposes of this EIS. Please see revised and expanded language in the final EIS related to the Performance goals (Section 2.4.2) and their definitions (Section 2.4.2.1).
9/43	Table 2-5, page 2-22. As discussed in the cover letter and elsewhere in the Appendices, the PNI and pHOS standards are arbitrary and fixed for all populations.	Comment noted.
9/44	Page 2-21. The DEIS provides: "*For example, some components of these implementation scenarios may or may not be viewed as consistent with the commitments in the U.S. v. Oregon Management Agreement (Section 1.7.1, U.S. v. Oregon). The intent of the EIS analysis is not to make a determination that an alternative or its implementation scenario is or is not consistent with*	See Global Response 5: Comments Addressing the EIS and Its Relationship to other Plans, Regulations, Agreements, Laws, and Executive and Secretarial Orders and Executive and Secretarial Orders.

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED)

Letter/ Comment #	Comment	Response
	the U.S. v. Oregon Management Agreement, and no such assertion is made. Rather NMFS anticipates that the affected parties will ensure their hatchery plans (e.g. hatchery genetic and management plans) are consistent with the most current Management Agreement." NMFS' apparent claimed unfamiliarity with the *U.S. v. Oregon* Management Agreement is startling and seemingly inexcusable. It is a party to the Management Agreement, and has issued guidance to the region regarding HGMP development with explicit reference to the Management Agreement. Why does the DEIS include in its alternatives measures which clearly conflict with the Management Agreement? Such inclusion gives the appearance of duplicity, and is not faithful to the Management Agreement.	
9/45	Box 2-8, page 2-23. The statement that weirs require an external mark to be able to identify hatchery-origin fish is misleading. A mark of some kind is required, but it may not need to be external.	NMFS agrees. This statement has been removed. This box has been moved to Chapter 4 and now appears as Box 4-2.
9/46	Table 2-7, page 2-28. The table does not include the correct sockeye hatchery production; it omits the Wenatchee and Okanagan production.	Thank you for the comment. Draft EIS Table 2-7 now appears as Table 4-4 in the final EIS. NMFS reviewed the program release data and contacted the hatchery managers to ensure reporting the correct number released as of 2010. The Okanogan sockeye program is in Canada and was not included in the EIS scope.
9/47	Table 2-11, page 2-37. The harvest data is incorrect because of errors in projected in-river harvest. The DEIS incorporates erroneous mainstem harvest rates and incorrect tributary harvest data. This table should be re-done.	See Global Response 7: Comments Addressing the Analysis within the EIS.
9/48	Table 2-12, page 2-37. This table of "no releases" is inaccurate. It does not address existing steelhead and summer Chinook programs in the Entiat River.	Thank you for the comment. Draft EIS Table 2-12 is now Table 4-9. NMFS reviewed the program release data and contacted the hatchery managers to ensure reporting the correct number released as of 2010. The table of watersheds with no hatchery releases (Table 4-9) has been updated to correct the information.
9/49	Pages 2-38 *et seq*. There are numerous factual errors in the discussion of Implementation Scenario for Alternative 2 (no Mitchell Act Funding). The document indicates there would be an existing spring Chinook program that would be continued in the White Salmon. While there is a spring	Thank you. This section is now located in Section 4.1.5, Implementation Scenario for Alternative 2 (No Mitchell Act Funding). There were several transcription errors in the location you reference in Chapter 2. These errors have been addressed.

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED).

Letter/ Comment #	Comment	Response
	Chinook program in the Little White Salmon, there is no current spring Chinook program in the White Salmon River. Similarly, the document indicates an existing spring Chinook program in the Entiat would be continued. This program was already terminated by the *U.S. v. Oregon* parties. The document also references a steelhead program in the Yakima River that does not exist. Further, the document indicates harvest under Alternative 2 would be 51% of Alternative 1. This is not valid because neither Alternative 1 harvest nor Alternative 2 harvest assumptions are correct.	Also, NMFS reviewed the program release data and contacted the hatchery managers to ensure reporting the correct number released as of 2010. Several programs were revised in recent years, and the updated numbers reflect these changes. Harvest rules in the analysis have been updated to reflect the abundance-based harvest rate schedules in the 2008 to 2017 *U.S. v. Oregon* management agreement.
9/50	Box 2-9, page 2-41. The document does not establish that weirs help achieve performance goals. Rather, the DEIS makes arbitrary and fixed assumptions about the effectiveness of weirs at keeping hatchery fish from spawning. In so doing, it minimizes the potential risks of delaying or preventing wild fish from passing, or adverse impacts on other species and on juvenile fish.	NMFS disagrees. This box has been moved to Chapter 4 and is now Box 4-3. NMFS clearly identifies that there are variable rates to a weir's effectiveness depending on the type of weir. Additionally, negative effects associated with weir operations are clearly identified in Box 4-2. Please also see Section 3.2.3.1.1.3, Current Approaches for Reducing Risks to Genetic Diversity, for a detailed discussion of these risks.
9/51	Pages 2-44 *et seq.* There are also numerous errors in the discussion of Implementation Scenario for Alternative 3. The document indicates a spring Chinook program in the White Salmon and a coho program in the Hood River would be retained, but there are no such programs in these rivers. The document indicates steelhead programs would be retained in the Entiat and the Yakima River, but there are no such programs. The document indicates harvest under Alternative 3 would be 80% of Alternative 1. This is not valid because neither Alternative 1 harvest nor Alternative 3 harvest assumptions are correct.	Thank you. This section is now located in Section 4.1.6, Implementation Scenario for Alternative 3. There were several transcription errors in the location you reference in Chapter 2. These errors have been addressed. Also, NMFS reviewed the program release data and contacted the hatchery managers to ensure reporting the correct number released as of 2010. Several programs were revised in recent years, and the updated numbers reflect these changes. Harvest rules in the analysis have been updated to reflect the abundance-based harvest rate schedules in the 2008 to 2017 *U.S. v. Oregon* management agreement.
9/52	Pages 2-47 *et seq*. There are also numerous errors in the discussion of Implementation Scenario for Alternative 4. The document indicates a spring Chinook program and a fall Chinook program in the White Salmon would be continued, but there are no such programs currently. The document indicates a coho program in the Hood River, and steelhead programs in the Entiat and Yakima would be continued, but there are no such programs currently. The document indicates harvest under Alternative 4 would be	Thank you. This section is now located in Section 4.1.7, Implementation Scenario for Alternative 4. There were several transcription errors in the location you reference in Chapter 2. These errors have been addressed. Also, NMFS reviewed the program release data and contacted the hatchery managers to ensure reporting the correct number released as of 2010. Several programs were revised in recent years, and the updated

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED)

Letter/ Comment #	Comment	Response
	89% of Alternative 1. This is not valid because neither Alternative 1 harvest nor Alternative 4 harvest assumptions are correct.	numbers reflect these changes. Harvest rules in the analysis have been updated to reflect the abundance-based harvest rate schedules in the 2008 to 2017 *U.S. v. Oregon* management agreement.
9/53	Pages 2-50 et seq. There are also numerous errors in the discussion of Implementation Scenario for Alternative 5. The document states that, "At least one hatchery program would be terminated in all ecological provinces, except Mountain Snake." In Table 2-16, however, the document states that three programs would be terminated in the Mountain Snake Province (South Fork Clearwater B steelhead, Rapid River spring Chinook, and East Fork Salmon B steelhead). The document indicates a steelhead program would be continued in the Entiat River, but there is no such current program. The document indicates coho programs in the Hood River and Chinook programs in the White Salmon would be continued, but there are no current programs there. The document indicates harvest under Alternative 5 would be 83% of Alternative 1. This is not valid because neither Alternative 1 harvest nor Alternative 5 harvest assumptions are correct.	Thank you for the comment. Assumptions related to programs that are assumed to be terminated under each of the alternative implementation scenarios have been reviewed for consistency. Additionally, harvest assumptions in the EIS have been updated to align with the 2008 to 2017 *U.S. v. Oregon* management agreement.
9/54	Section 2.8. Alternatives Considered but Eliminated from Detailed Analysis. There are no alternatives discussed which move Mitchell Act production upstream of Bonneville Dam (in kind, in place mitigation). There are no alternatives discussed which presume appropriate funding of the Mitchell Act. There are no alternatives discussed which increase production based on tribal recommendations. There is no mention of tribal views or recommendations. These omissions are inappropriate.	See Global Response 6: Comments Addressing the Range of Draft EIS Alternatives.
9/55	Page 2-56. Alternative that Terminates Non-Mitchell Act-funded Hatchery Programs that meet Performance Metrics. The DEIS proposes eliminating Mitchell Act funding in Alternative 2 even though many of the Mitchell Act programs are mandated under the 2008 Columbia River Fish Management Plan under *U.S. v. Oregon.* It fails to mention that many of the programs proposed for termination are mandated under the 2008-2017 *U.S. v. Oregon* Management Agreement, FERC agreements, the Columbia Basin Accords, and/or the Lower Snake River Compensation Plan. The DEIS dos not explain why it includes alternatives that violate these various mandates	See Global Response 6: Comments Addressing the Range of Draft EIS Alternatives.

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED).

Letter/ Comment #	Comment	Response
	and federal obligations.	
9/56	The DEIS also states that because NMFS does not fund or operate non-Mitchell Act funded hatcheries, they could not mandate their termination. Why does the DEIS propose terminating programs that NMFS has no control over?	NMFS is not proposing to terminate any programs. The commenter is confusing the implementation scenario analyzed with the alternatives themselves. Please see Global Response 7: Comments Addressing the Analysis within the EIS.
9/57	Table 2-13, page 2-62. Hatchery Programs Terminated under the Implementation Scenario for Alternative 2. Alternative 2 addresses no Mitchell Act funding. It is not clear as to why NMFS proposes elimination of Round Butte (Deschutes) spring Chinook and several Clearwater spring Chinook programs because of stray issues. These programs do not involve Mitchell Act funding.	Alternative 2, in addition to assuming the elimination of all Mitchell Act funding, also assumes that all remaining, non-Mitchell Act-funded programs, would meet the Intermediate performance goals. Given the updated baseline in this final EIS, neither the Round Butte spring Chinook program nor the Clearwater Basin spring Chinook programs are terminated under the Implementation scenario for Alternative 2. See Table 4-10 in the final EIS.
9/58	Table 2-13, page 2-62. Hatchery Programs Terminated under the Implementation Scenario for Alternative 2. It is also unclear what authority or justification NMFS has to set standards for strays for populations where there are no listed fish, such as spring Chinook in the Deschutes and Clearwater.	Alternative 2, in addition to assuming the elimination of all Mitchell Act funding, also assumes that all remaining, non-Mitchell Act-funded programs, would meet the Intermediate performance goals. Given the updated baseline in this final EIS, some programs that were terminated in Alternative 2, in the draft EIS, are not necessarily terminated under the Implementation scenario for Alternative 2 in this final EIS. See Table 4-10 in the final EIS.
9/59	Table 2-14, page 2-65. Hatchery Programs Terminated under the Implementation Scenario for Alternative 3. Rapid River Hatchery is proposed for termination along with other programs mandated in the *U.S. v. Oregon* Management Agreement. This is contrary to the Management Agreement that NMFS signed.	See Global Response 6: Comments Addressing the Range of Draft EIS Alternatives.
9/60	Table 2-15, page 2-68. Hatchery Programs Terminated under the Implementation Scenario for Alternative 4. Several upriver programs proposed for termination are also mandated in the U.S. v. Oregon Management Agreement.	See Global Response 6: Comments Addressing the Range of Draft EIS Alternatives.
9/61	Table 2-16. Hatchery Programs Terminated under the Implementation Scenario for Alternative 5. Page 2-69. Rapid River Hatchery is proposed for termination along with other programs mandated in the *U.S. v. Oregon* Management Agreement.	Please note that draft EIS Table 2-16 has been relocated into Chapter 4, at the end of Section 4.1.3.4, Comparison of Implementation Scenarios, Table 4-13, Hatchery Programs Terminated under the Implementation Scenario for Alternative

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED)

Letter/ Comment #	Comment	Response
		5. The closure of the Rapid River spring Chinook program was an error in the draft EIS. It has been corrected in this final EIS.
9/62	Table 2-17, page 2-71. New Hatchery Programs Proposed under one or more of the Implementation Scenarios. The table indicates new Klickitat steelhead programs would be started. There are already steelhead programs in the Klickitat, so these would not be new programs. The table also indicates a new steelhead program would be started for steelhead in Hells Canyon. There is already a Hells Canyon steelhead program, so this is not new. The table indicates a new spring Chinook program at Ringold. Spring Chinook have been produced there in the past, but are not currently produced there. The *U.S. v. Oregon* parties do not have current plans to produce spring Chinook there. The table indicates that a new spring Chinook program would be started at Yankee Fork in the Upper Salmon. There is already a spring Chinook program there, so this is not a new program. This table should be corrected.	This table is now Table 4-15 in Section 4.1.3.4, Comparison of Implementation Scenarios. In this analysis, new programs include one that changes broodstock source. The existing Klickitat steelhead program is an isolated summer steelhead program using Skamania stock fish. The new program is an integrated program using natural-origin adults collected from the Klickitat River and local brood hatchery adults returning to the Klickitat River. With regard to Yankee Fork, NMFS reviewed the program release data and contacted the regional managers to ensure reporting the correct number released as of 2010. Programs were updated, and a hatchery program at Yankee Fork was not identified. The Ringold spring Chinook program was evaluated under Alternative 5 to replace lost harvest in the Mid-Columbia ESU due to reductions in other programs.
9/63	3.2.3.1, page 3-13. Risks from Competition with Hatchery-origin Fish. The DEIS is critical of sub-yearling production because of unwarranted fears of competition. If hatchery fish are going to be produced like the wild fish (integrated program), we need to produce sub-yearlings.	Comment noted.
9/64	3.2.3.1.7, page 3-14. Risks of Predation from Hatchery Origin Fish. There is no evidence presented that hatchery fish may eat wild fish, or that this is a problem.	NMFS disagrees. See Section 3.2.3.1.6, Risks of Predation from Hatchery-origin Fish.
9/65	3.2.3.1.7, page 3-14. Risks of Predation from Hatchery Origin Fish. There is no discussion that wild fish may also eat hatchery fish which could be under some circumstances of benefit to wild fish.	Comment noted.
9/66	3.2.3.1.10, page 3-17. Current Approaches for Reducing the Risks of Masking. There are other ways to mark fish besides the use of adipose fin clips that are useful for monitoring the numbers and origins of hatchery fish in natural spawning areas. Otolith marks and PIT tags are examples that not only allow fish to be identified, but they can be identified by age and by origin which is something that adipose fin clips by themselves can not do. These should be discussed and favored over adipose fin clips.	The EIS has been updated in response to the comment. This section is now 3.2.3.1.9, Current Approaches for Reducing the Risks of Masking. The language has been expanded to include other ways to mark hatchery fish for identification.

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED).

Letter/ Comment #	Comment	Response
9/67	3.2.3.1.11, page 3-17. Risks Associated with Fisheries that Target Hatchery-Origin Fish. The DEIS provides, "Efforts to focus fishing effort on harvest of hatchery-origin fish can lead to the incidental harvest of natural origin fish in excess of levels compatible with their survival and recovery." While this is theoretically a valid concern, in practice, all fisheries that impact listed fish must have ESA coverage which limits overall wild impacts to levels which NMFS has determined do not endanger them and do not adversely impact the ability to recover wild fish population levels.	The EIS has been updated in response to the comment. Text in the section has been revised to clarify the issue raised by the commenter.
9/68	3.2.3.1.12, page 3-18. Current Approaches for Reducing Risks Associated with Fisheries that Target Hatchery Origin Fish. The document indicates that requiring the release of all unmarked natural origin fish will reduce the risks from fisheries targeting hatchery fish. The DEIS should discuss the fact that release mortality rates can vary by gear and by temperature and by location of fisheries. Some rates can be quite high. Some fisheries do not have agreed to release mortality rates which can greatly increase the uncertainty in estimating wild harvest rates. Fish can be handled multiple times in different fisheries which may increase mortality. More accurate fish mortality rates need to be developed.	The EIS has been updated in response to the comment. Please see revised Section 3.2.3.1.11, Current Approaches for Reducing Risks Associated with Fisheries that Target Hatchery-origin Fish.
9/69	Using mark selective fisheries has caused increased uncertainties in harvest management due to problems associated with using CWT data from marked hatchery fish that are harvested at different rates than the wild fish they represent.	Comment noted.
9/70	The document states that fisheries should be managed for cumulative harvest rates. This is not possible since many tributary sport and upstream mainstem fisheries do not have complete creel monitoring and harvest estimates are not made until voluntarily reported catch record cards are analyzed which is sometimes years after the fishery takes place.	The commenter does not provide a citation for the referenced language. NMFS is not certain of the location of the referenced language in the draft EIS. NMFS does not make statements in the final EIS regarding how harvest should be managed, rather it describes how fisheries, related to impacts on limiting stock are managed. See Section 2.3.4, Harvest, Habitat, and Hydro — the other "H"s.
9/71	The document states that fisheries should be monitored. Mark selective fisheries are more expensive and complicated to monitor than full retention fisheries. NMFS does not discuss the effects on agency budgets of the more complicated monitoring and harvest analysis associated with mark selective fisheries compared to full retention fisheries.	The commenter does not provide a citation for the referenced language. NMFS is not certain of the location of the referenced language in the draft EIS. NMFS does not make statements in the final EIS regarding either monitoring requirements or the costs of mark-selective fisheries versus full-retention fisheries.

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED)

Letter/ Comment #	Comment	Response
9/72	Table 3.7, page 3-22. Several of the Total Natural Spawner Abundances are low and need to be corrected. These include the Upper Columbia Summer/Fall run Chinook spawner abundance, the Snake River steelhead abundance, the Upper Columbia Steelhead and the Snake River sockeye abundance is low. Instead of relying on the flawed AHA model, NMFS should have used actual spawner abundance data for recent years.	This table is now Table 3-2 in the final EIS. Survival rates for natural- and hatchery-origin smolts have been updated to reflect more recent (2010) survival rates. The abundances in Table 3-2 now reflect these adjustments.
9/73	3.2.3.2, page 3-23. Status of Salmon ESU's and Steelhead DPS's. . The document states that all coho salmon in the analysis are found in one ESU. This is not correct. The document includes information on coho found upstream of the Lower Columbia ESU.	NMFS based the ESUs/DPSs used in the EIS off of those that have been officially delineated to date. Please see the salmon and steelhead species boundary information here: http://www.westcoast.fisheries.noaa.gov/maps_data/species_population_boundaries.html
9/74	3.2.3.2, page 3-23. Status of Salmon ESU's and Steelhead DPS's. The document fails to discuss the relationship of fish not included in listed ESU's such as Upper Columbia River sockeye, Clearwater Spring Chinook, Umatilla Spring Chinook and Walla Walla Spring Chinook. There are hatchery programs affecting these groups of fish.	The analysis includes all salmon and steelhead populations within U.S. waters of the Columbia River Basin. Okanogan Sockeye salmon are in Canada. ESU and DPS designations are not based on ESA listing. Please see (http://www.westcoast.fisheries.noaa.gov/maps_data/species_population_boundaries.html) for more information on ESU/DPS determinations and the populations that are included in each.
9/75	3.2.3.2, page 3-23. Status of Salmon ESU's and Steelhead DPS's. The DEIS alternatives propose cuts to some of these programs but does not clarify that these are not listed populations.	The EIS does not limit the effects analysis to only ESA-listed salmon and steelhead ESU/DPSs. In Section 3.2.3.2, Status of Salmon ESUs and Steelhead DPSs, the current status and trends for each of the 17 ESU/DPSs in the Columbia River Basin, 13 of which are listed, are discussed. For additional information on why NMFS has chosen to analyze alternatives for hatchery programs that affect non-listed salmon and steelhead populations, see Section 2.4, Alternative Development and in particular, Box 2-5, Challenge 2, Effects of All Columbia River Basin Salmon and Steelhead Hatchery Programs Should be Analyzed.
9/76	3.2.3.2, page 3-23. Status of Salmon ESU's and Steelhead DPS's. The authority of NMFS to propose cuts in these programs is not specified.	The EIS does not limit the effects analysis to only ESA-listed salmon and steelhead ESU/DPSs. In Section 3.2.3.2, the current status and trends for each of the 17 ESU/DPSs in the Columbia River Basin, 13 of which are listed. For additional information on why NMFS has chosen to analyze alternatives for hatchery

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED).

Letter/ Comment #	Comment	Response
		programs that effect non-listed salmon and steelhead populations, see Section 2.4, Alternative Development and in particular, Box 2-5, Challenge 2, Effects of All Columbia River Basin Salmon and Steelhead Hatchery Programs Should be Analyzed.
9/77	3.2.3.2.2, page 3-26. Mid-Columbia Spring Run Chinook Salmon ESU. The DEIS states that the spring Chinook populations in the Walla Walla and Umatilla may have been part of the ESU but are considered extinct. The DEIS fails to mention that the tribes have reintroduced spring Chinook into both basins using hatchery fish and that there are now natural spawning populations in both basins.	The EIS has been updated in response to the comment. NMFS has added text to the Mid-Columbia spring Chinook salmon ESU section regarding the reintroduction efforts in the Walla Walla and Umatilla Basins.
9/78	3.2.3.2.3 Deschutes River Summer Fall Chinook ESU. Under the Current Status and Recent Trend section, the text is misleading and the last sentence is incorrect. ODFW and Warm Springs have reached technical agreement on the basin returns and spawning escapement. The text uses basin return numbers which are inaccurate as an index of abundance due to tributary harvest. The DEIS appears to argue that the somewhat lower 2008 returns are indicative of a declining population. The spawning escapement estimates are a better estimate of status and should be used. From 1990-2009, there is a slight upward trend in spawner escapement, but the trend is not statistically significant. Spawning escapement in the Deschutes appears to be somewhat cyclical, with some good years and some years with poorer escapement.	The EIS has been updated in response to the comment. Language alluding to a lack of agreed-to method for abundance estimation has been removed for this section.
9/79	3.2.3.2.5, page 3-28. Upper Columbia Summer/Fall Run Chinook Salmon ESU. The DEIS implies that there has been a declining trend for this ESU. This implication is inaccurate, and is based on incorrect and incomplete information. The document states, “Between 2003 and 2008, the adult returns have ranged between 114,500 and 373,200 fish (ODFW and WDFW 2009). However, a steady declining trend occurred from a high of 373,000 fish in 2003 to a low of 114,000 fish in 2007, while the 2008 return was higher at 197,300 fish.” First, these are TAC estimates of the URB stock run size at the river mouth. These numbers include Deschutes fish which are not in the ESU and they also include the Snake River fall Chinook ESU. But they do not include Upper Columbia Summer Chinook which are in the ESU.	Comment noted.

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED)

Letter/ Comment #	Comment	Response
	Deschutes fish are a small but somewhat variable component of these numbers. There are no river mouth run size estimates for the ESU that do not also include the Deschutes. However, there is also no declining trend, especially if the last 10 years of data are used. The figure below shows URB plus upper Columbia Summer Chinook at the Columbia River mouth since 2000. 2010 data are preliminary in-season estimates. This figure clearly shows the natural cyclic nature of this group of fish and indicates that there is no declining trend. < Figure: River Mouth Run Size of URB fall Chinook and UC Summer Chinook, page 8 in Appendix C, Section by Section Comments >	
9/80	3.2.3.2.8, Page 3.31. Snake River Fall-run Chinook Salmon ESU. The DEIS states that the recent 10 year average abundance of natural origin Snake River fall Chinook is 1,273 fish. This is not correct. The 10 year average natural abundance is over 2,500 at Lower Granite Dam, based on TAC estimates.	The EIS analysis was updated in response to the comment to better reflect recent year survival of hatchery and wild production. The number of natural-origin Snake River fall Chinook salmon adults returning to spawn in the updated analysis was 2,400.
9/81	3.2.3.2.10, page 3-33. Middle Columbia River Steelhead DPS. The DEIS fails to mention the new passage system for Steelhead at Round Butte Dam.	The EIS has been updated in response to the comment. The Mid-Columbia River Steelhead are in Section 3.2.3.2.9. Language describing the Round Butte juvenile passage project has been added to this section.
9/82	3.2.3.2.13, page 3-35. Upper Columbia River Steelhead DPS. The DEIS contains the speculative statement, "Naturally spawning hatchery-origin fish were not adapted to local conditions, which most likely limited their effectiveness and depressed the production of the population as a whole. While there are not precise means to measure the full effect of these practices, they likely contributed substantially to the current low recruits-per-spawner (R/S) productivities for naturally spawning fish." No data or citations are shown to support this claim. This statement should be removed.	The EIS has been updated in response to the comment, and the noted statement has been removed from section.
9/83	3.2.3.2.17, page 3-39. Snake River Sockeye ESU. The DEIS provides, "The Stanley Basin Technical Oversight Committee has determined that the next step toward meeting the goal of amplifying the natural-origin population is to increase the number of smolts released." The DEIS does not explain how the proposed reduction in smolt releases from the 1,000,000 target release	See Global Response 5: Comments Addressing the EIS and Its Relationship to Other Plans, Regulations, Agreements, Laws, and Executive and Secretarial Orders.

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED).

Letter/ Comment #	Comment	Response
	in the *U.S. v. Oregon* Management agreement to 750,000 in Alternatives 3, 4, and 5 (as well as the elimination of the program in Alternative 2) are consistent with the concept of amplifying the natural origin population.	
9/84	3.2.4, page 3-40. Other Fish Species that Have a Relationship with Salmon and/or Steelhead. The DEIS does not mention white sturgeon or American Shad.	Thank you. American shad have been added to Section 3.2.5, Nonindigenous Fish Species. For white sturgeon, please see response to letter 29, comment 39.
9/85	3.2.4, page 3-40. Other Fish Species that Have a Relationship with Salmon and/or Steelhead. The DEIS also indicates that hatchery rainbow trout are competitors and predators of juvenile salmon and steelhead, but fails to mention that wild rainbow trout may also be competitors and predators of juvenile salmon and steelhead. The DEIS speculates that competition between native rainbows and salmon and steelhead does not occur, but does no support for this statement whatsoever. No information is provided to explain why hatchery trout would compete with juvenile salmonids, but wild trout would not.	Thank you. This statement, which still remains in the final EIS, is meant to demonstrate the potential effects related to artificially-stocked rainbow trout.
9/86	3.3.1,page 3-67. Socioeconomics Introduction. Harvest data from 2002-2006 do not represent the best data to use for ocean and mainstem Columbia River fisheries. The economic value of the fisheries is significantly different today.	Thank you for your comment. The fishery impact analysis presented in the final EIS incorporates changes to fishery rules based on provisions of the 2008 amendments to the Pacific Salmon Treaty, updated ESA guidance given by NOAA Fisheries (through 2010), and updated provisions of the latest *U.S. vs. Oregon* agreement (2008 to 2017). There were also several corrections made to how some rates were calculated. Aspects of these changes have been reviewed with co-manager biologists. The harvest data for 2002 to 2006 were meant to represent a recent baseline for analysis. These estimates have been expanded in the final EIS to include harvest in 2007 to 2009. See Global Response 7: Comments Addressing the Analysis within the EIS.
9/87	Table 3-11, page 3-68. Estimated Catch of Columbia River Basin Stocks as a Percentage of total harvest by area and Fishery. The table indicates no harvest of Columbia River Chinook south of Cape Falcon. This is not correct.	It is understood that some harvest of Columbia River Chinook salmon occurs south of Cape Falcon. However, available information indicates that the contribution is small, and the fisheries there are largely affected by the status of populations south of Cape Falcon. Columbia River Chinook salmon are largely north-migrating, so variations in alternative Columbia River

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED)

Letter/ Comment #	Comment	Response
		production levels would have negligible impacts on harvests by fisheries south of Cape Falcon.
9/88	Table 3-12, page 3-74. Hatchery Production of Salmon and Steelhead in the Columbia River Basin in 2007. The sockeye release number is incomplete. The Wenatchee and Okanagan programs are not included.	Thank you for the comment. This table is Table 3-11 in the final EIS. NMFS reviewed the program release data and contacted the hatchery managers to ensure reporting the correct number released as of 2010. The Okanogan sockeye program is in Canada and was not included in the EIS scope.
9/89	3.3.3, page 3-74. Hatchery Program Costs. The DEIS should clarify and explain the statement that marking hatchery origin fish with either an adipose fin clip or CWT is a federal directive. Only salmon and steelhead intended for harvest only and produced by federal hatcheries or with federal money must be marked with an adipose fin clip. Fish intended for non-harvest purposes, such as recovery purposes, are not required to be marked with adipose fin clips. There is no specific federal requirement for CWT marking (although certain levels of CWT marking is required under Management Agreements and for general harvest monitoring purposes).	The EIS has been updated in response to the comment. The text in this section has been updated to clarify the language regarding the Federal requirement for mass-marking with an adipose fin clip.
9/90	3.3.4.1, pages 3-77 and 3-78. Historical Overview – Columbia River Basin. The sections on tribal fishing are incomplete and contain numerous errors. The list of fishing gears used in mainstem fisheries is not correct. The statement that no fish are sold until ceremonial and subsistence needs are met is not correct. There is no mention of summer season fisheries. The statement that spring Chinook were only available for ceremonial purposes until 1995 is not correct. The total catches listed are not correct. There is no mention of tribal tributary fisheries. There is no mention of direct sales to the public. There is no mention of the new tribal fish processing plant. There is no mention of the commercial fish buyers in the Portland area.	According to The Research Group (2009), tribes used a wide variety of gears and methods over the years, including hoop and dip nets at cascades such as Celilo and Willamette Falls, and spears, weirs, and traps, usually in smaller streams and headwater areas. This is consistent with information presented on page 3-76 of the draft EIS; therefore, no change in gear descriptions was made to the final EIS. Information concerning ceremonial and subsistence fisheries was modified in the final EIS to correct the statement than no commercial sales occur until ceremonial and subsistence needs are met. The spring Chinook salmon fishery has now been added to the list (on page 3-83) of commercial fisheries that are important to tribes. The statement that spring Chinook salmon were only available for ceremonial purposes until 1995 has been deleted from the final EIS. The total catch numbers listed on draft EIS page 3-77, line 19, could not be confirmed and have been deleted from the final EIS. Tributary fisheries are now mentioned on page 3-83. Information on direct sales to the public and on the new tribal fish processing

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED).

Letter/ Comment #	Comment	Response
		plant in White Salmon has been added to the final EIS. Commercial fish buyers in the Portland area were mentioned on draft EIS page 3-77 (final EIS page 3-84); therefore, no changes have been made to the final EIS.
9/91	3.3.4.2, Pages 3-78 and 3-79. Pacific Ocean and Puget Sound. There is inadequate reference to the treaty troll fishery and the buyers buying fish at tribal ports including the tribal buyer (Quinault Enterprises).	Harvest information pertaining to the treaty troll fishery is included in Table 3-18 of the draft EIS. The comment that buyers purchasing fish at tribal ports includes tribal buyers is noted, but the relevance of this information to the economic analysis is unclear. Potential income effects on buyers and processors are included in the estimates of personal income presented in Table 4-109 (Total [Direct and Secondary] Economic Impacts on Personal Income in the Columbia River Basin by Alternative); impacts on specific fishery-related sectors, such as buyers and processors, are considered beyond the scope for this programmatic assessment, which is based on the application of multipliers that consider total effects across all sectors (see Appendix J for details on the methodology).
9/92	3.3.5.1,page 3-80. Commercial Harvest and Economic Value – Columbia River Basin. This section is inaccurate. Tribal commercial fishing occurs in the Zone 6 area between Bonneville and McNary Dams, in the tribal fishing area just downstream of Bonneville, in certain Zone 6 tributaries (Wind, Little White Salmon – Drano Lake, and Klickitat Rivers), in Icicle Creek in the Wenatchee, and in parts of the Clearwater Basin. Non-treaty commercial fishing occurs in the mainstem in Zones 1-5 as well as in the Select Areas (off channel areas of the lower river). Further, the total catch numbers in the text are not correct. Correct commercial harvest data should be used. There is no mention of tribal steelhead or treaty and non-treaty commercial sockeye catches. The DEIS should also clarify that there are significant social and and cultural benefits to tribal fishing that can not be quantified economically. The DEIS should analyze the impacts to tribal subsistence fishing in tributary areas. Base period tribal tributary harvests are not presented and should be.	The descriptions of the locations of the non-tribal and tribal commercial fisheries on draft EIS page 3-80, lines 3 to 6, have been revised in the final EIS to reflect the information provided by the comment. The comment does not specify how the harvest numbers in the text are incorrect, nor does it provide different numbers. The harvest numbers cited on Draft EIS page 3-80 match the harvest numbers in Table 3-14; therefore, no changes are required to the Draft EIS. Despite the comment's assertion that no mention of tribal steelhead catch was made in this section, tribal catch of steelhead was mentioned on Draft EIS page 3-81, line 11, with catch listed in Table 3-15. Concerning the sockeye salmon fishery, historical catch was not estimated, but a sentence was added to final EIS page 3-87 stating that small numbers of sockeye salmon are caught in the Mid-Columbia River economic impact region. Regarding the social and cultural benefits of tribal fisheries, a sentence has been added to page 3-90 to this effect. Existing ceremonial and subsistence harvests in tributary areas are discussed and quantified in final EIS Section

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED)

Letter/ Comment #	Comment	Response
		3.4.4.1.2, Ceremonial and Subsistence Harvests, and final EIS Table 3-26.
9/93	Table 3-14, page 3-81. Columbia River Basin in-river historical (2002-2006 catch for non-tribal commercial fisheries). This table contains numerous errors. It also omits sockeye harvest. Sturgeon harvest should be included also since, sturgeon are economically important, and the availability of salmon for commercial harvest has a large impact on how and when sturgeon fishing can occur.	Thank you for your comment. This table is Table 3-13 in the final EIS. NMFS reviewed these tables, and there were errors translating catch data. These tables were updated to report available reported catch and the catch period was expanded to include 2007 to 2009 to better describe the base period in the analysis. Sockeye salmon harvest levels under baseline (Alternative 1) and all action alternatives are reported in Table 4-8. Sturgeon harvest and the effects to sturgeon harvest are not included in in the EIS.
9/94	3.3.5.1 (cont.) Columbia River Basin. Page 3-81. The tribal harvest numbers are not correct and therefore the percentages by area are not correct. There is no tribal commercial mainstem fishing in the upper Columbia, nor is there tribal commercial fishing in the lower Snake River.	Thank you. Table 3-14 has updated harvest estimates. NMFS reviewed these tables, and there were errors translating catch data. NMFS contacted the appropriate tribal managers to gather information available. In Table 3-14, the Upper Columbia Chinook salmon harvest is Ceremonial and Subsistence and not commercial harvest. Snake River harvest information has been provided by the Nez Perce Tribe.
9/95	Table 3-15, page 3-82. Columbia River Basin In-river Historical Catch for Tribal Commercial Fisheries. The data in this table except for Mid Columbia coho is incorrect. The base period should use more recent years to better reflect future fishing. Sockeye harvest is missing. Winter season sturgeon fisheries should be included as there is an associated commercial steelhead catch that is dependent on sturgeon abundance. There is no commercial fishing in the upper Columbia mainstem or in the lower Snake River. Commercial fishing downstream of Bonneville, in Icicle Creek, and in the Clearwater are also missing.	Thank you. This table is Table 3-14 in the final EIS. All of these harvest estimates have been updated. NMFS reviewed these tables and there were errors translating catch data. NMFS contacted the appropriate tribal managers to gather information available. Sturgeon harvest and the effects to sturgeon harvest are not included in in the EIS. The Upper Columbia Chinook salmon harvest represents Ceremonial and Subsistence and not commercial harvest. Icicle Creek is included in the Upper Columbia River estimates, Clearwater is included in the Lower Snake River estimates. No treaty commercial estimates are included for below Bonneville Dam. Non-treaty commercial estimates are included in Table 3-13.
9/96	Table 3-16. Average Annual Catch and Commercial Ex-vessel value for Tribal and Non-Tribal Fisheries in the Columbia Basin. This table has incorrect numbers in part because the average catches that it is based on are incorrect, and in part because the value per pound and average pounds per	The draft EIS was revised to incorporate updates to the various rules for both the in-river (*U.S. v. Oregon* agreement) and ocean fisheries for Chinook salmon, coho salmon, and steelhead. These were made to reflect the more recent harvest management

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED).

Letter/ Comment #	Comment	Response
	fish used is incorrect. This table as well as Appendix J should be re-done. More recent years should be used. 2002-2006 is not the best base period because of changes in fish prices since then. The DEIS should incorporate the higher value of tribal fish sold direct to the public in the economic value estimates.	agreements (in-river and ocean) and ESA guidance that have controlled fisheries in recent years (as of 2010). NMFS also updated hatchery program release and brood stock management for No Action Alternative 1 (baseline) to reflect program operations as of 2010. Survival of natural and hatchery populations varies considerably from year to year. The draft EIS used lower survival rates and did not adequately describe recent abundances. The survival rates have been updated for the final EIS analysis to better reflect recent year survival observations. For the final EIS, average annual catch numbers have been revised to reflect catch over the 2002 to 2009 period to better reflect recent changes in fisheries. Additionally, average fish weights and per pound values have been revised. As discussed in the revised and updated socioeconomics technical appendix (Appendix J), average weights for Columbia River salmon have been recalculated based on data over the 2003 to 2009 period, per pound values for Columbia River coho and spring and fall Chinook were revised based on ex-vessel price data over the 2002 to 2009 period, and values for Columbia River summer Chinook and sockeye were revised based on data for the 2008 to 2009 period (data for other years were not available). As a result, the catch and harvest estimates presented in Table 3-16 have been revised in the final EIS. (No data were readily available concerning values for tribal fish sold directly to the public.)
9/97	3.3.5.2, page 3-84. Pacific Ocean and Puget Sound. For the economic value of Washington, Oregon, and California commercial fisheries, data from PFMC should be used.	No economic values are discussed on page 3-84 of the draft EIS. Rather, commercial catch data are discussed. A single source for catch data for all areas is not available, requiring that NMFS use a variety of sources. The catch data mentioned for Oregon and Washington were compiled from Pacific Fisheries Management Council (PFMC) reports, as sourced for final EIS Table 3-16 and Table 3-17. No catch data for California are described on page 3-84 or in Table 3-16 and Table 3-17. California was not included in the analysis as Columbia River stocks are not an appreciable contributor to these commercial fisheries.

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED)

Letter/ Comment #	Comment	Response
9/98	Table 3-17, page 3-85. Historical Salmon Catch in Non-Tribal Pacific Ocean and Puget Sound Fisheries. The Oregon Coast (Astoria) Chinook and coho catches are incorrect. PFMC catch data should be used for these catches. The table should also include fisheries south of Cape Falcon since Columbia River stocks contribute to these fisheries also. A more recent base period should be used to reflect current fish prices.	Thank you. Draft EIS Table 3-17 is now Table 3-16 in the final EIS. NMFS reviewed these tables and discovered there were errors translating catch data from reports (PFMC). These tables were updated to report available reported catch, and the catch period was expanded to include 2007 to 2009 to better describe the base period in the analysis. Although Columbia River populations may contribute to fisheries south of Cape Falcon, from review of available information, NMFS concluded that the contribution of Columbia River stocks to commercial fisheries south of Cape Falcon is small, and these fisheries are largely affected by the status of populations south of Cape Falcon.
9/99	Table 3-18, page 3-86. Historical Salmon Catch in Tribal Pacific Ocean and Puget Sound Fisheries. The Washington Coast Chinook catches are incorrect. A more recent base period should be used to reflect current fish prices.	Thank you for your comment. This table is Table 3-17 in the final EIS. NMFS reviewed these tables, and there were errors translating catch data from reports (PFMC). These tables were updated to include available reported catch, and the catch period was expanded to include 2007 to 2009 to better describe the base period in the analysis.
9/100	Table 3-19, page 3-87. Average Annual Catches and Commercial Ex-Vessel Value for Tribal and non-Tribal Commercial Fisheries for The Pacific Ocean and Puget Sound. Values for California and Oregon south of Cape Falcon should be included as Columbia River stocks do contribute to these fisheries. For the economic value of Washington, Oregon, and California commercial fisheries, data from PFMC should be used.	Thank you. Draft EIS Table 3-19 is now Table 3-18 in the final EIS. The table was updated to include available reported catch (PFMC), and the catch period was expanded to include 2007 to 2009 to better describe the base period in the analysis. Although Columbia River populations may contribute to fisheries south of Cape Falcon, from review of available information, NMFS concluded that the contribution of Columbia River stocks to commercial fisheries south of Cape Falcon is small, and these fisheries are largely affected by the status of populations south of Cape Falcon.
9/101	Table 3-20, page 3-88. Average Annual Catch, Number of Trips, and Trip Expenditures or Recreational Fisheries. The Upper Columbia River average Chinook harvest is too low. The lower Snake River average Chinook harvest is also too low. The table should site the source of the catch data so other catch numbers can be checked as well. These data do not correspond to the averages shown in Table 3-21.	Thank you for your comment. This table is Table 3-19 in the final EIS. NMFS reviewed these tables, and there were errors translating catch data. These tables were updated to include available reported catch, and the catch period was expanded to include 2007 to 2009 to better describe the base period in the analysis. Average catch values in Table 3-19 are sourced from Table 3-20, and sources for harvest estimates were added to

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED).

Letter/ Comment #	Comment	Response
		Table 3-20.
9/102	Table 3-21, page 3-90. Columbia River In-River Historical Catch for Recreational Fisheries. Much of this data do not match data in ODFW and WDFW Joint Staff Reports which comprise the official public data reports. The Zone 6 coho catch is greater than zero. The Zone 6 tributary Chinook catches are higher than those shown. The DEIS should use catch data available from ODFW and WDFW. The upper Columbia River Chinook harvest shown is significantly below actual catches. The Lower Snake River Chinook harvest is incorrect. Steelhead catches are available from the states and should be included. Also, there are significant tributary sport fisheries upstream of Lower Granite Dam and in upper Columbia Tributaries that should be included. In sum, this table significantly under estimates total recreational harvest which will produce a significant under valuation of the recreational fisheries.	Thank you for your comment. This table is Table 3-20 in the final EIS. NMFS reviewed these tables, and there were errors translating catch data. These tables were updated to report available catch estimates from the Joint Staff Reports and other sources. See data source information added to Table 3-20. The catch period was expanded to include 2007 to 2009 to better describe the base period in the analysis.
9/103	Table 3-22, page 3-92. Historical Salmon catch in Recreational Pacific Ocean and Puget Sound Fisheries. This table should include California Chinook catches which do include some impacts to Columbia River fish.	Thank you for your comment. This table is Table 3-21 in the final EIS. From review of available information, NMFS concluded that the contribution of Columbia River Chinook salmon stocks to fisheries south of Cape Falcon is negligible, and these fisheries are largely affected by the status of populations south of Cape Falcon.
9/104	Table 3-22, page 3-92. Additionally, the harvest of fish by non-treaty tribal groups (Shoshone Bannock, Wanapum, and Colville) should be accounted for in the DEIS. While these fish are allegedly not sold commercially, the harvest by these tribes does provide social and cultural benefits for them.	Draft EIS Table 3-22, on page 3-92, reports recreational harvest outside of the Columbia River Basin. The analysis does include harvest by non-treaty tribal groups in the locations mentioned by the commenter. These harvest estimates are provided in Final EIS Table 3-15, Average Annual (2002 through 2009) Catch and Commercial Ex-vessel Value for Tribal Commercial and Ceremonial and Subsistence Fisheries and Non-Tribal Commercial Fisheries in the Columbia River Basin.
9/105	3.4.4.1 Native American Tribes of Concern. The four Columbia River Treaty Tribes should be discussed separately from the non-treaty tribal groups. The proper names of all four treaty tribes should be used. The descriptions of our tribes are incomplete and in-accurate. The descriptions should be revised based on information from the tribes themselves.	Please see revised Section 3.4.4.1, Native American Tribes of Concern, for updated descriptions of the tribes within the Columbia River Basin and outside of the basin that would be affected by the alternatives analyzed in the EIS. Much of the revised language was provided by the affected tribes through their comments on the draft EIS and through further discussion

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED)

Letter/ Comment #	Comment	Response
		with NMFS.
9/106	3.4.4.1 Native American Tribes of Concern. For the description of the Shoshone Bannock tribes, the DEIS should clarify that the tribe does not have established fishing rights outside the Snake Basin and there is a current legal dispute regarding their rights to fish in Northeast Oregon and Southwest Washington.	Comment noted.
9/107	3.4.4.1 Native American Tribes of Concern. For the description of the Cowlitz Tribe, the DEIS should clarify that the tribe has no legally established fishing rights in the Columbia Basin.	EIS has been revised to address comment
9/108	3.4.4.1 Native American Tribes of Concern. The DEIS should provide more complete descriptions of Makah, Quileute, Hoh, and Quinault Tribes, all of which have recognized treaty fishing rights in the ocean off the Washington Coast and all of which would be impacted by changes in Columbia River hatchery production.	Thank you. Information about the fishing activities of the Washington coastal tribes has been included in Section 3.4.4.1, Native American Tribes of Concern.
9/109	3.4.4.1.1, page 3-109. Fish Harvests and Tribal Values. The paragraph mentions Table 3-17 which is non-treaty harvest. None of the non-commercial harvest data is presented. This noncommercial harvest is of critical importance to the tribes. There is no harvest data from the nontreaty tribes presented. There is quantifiable treaty tribe harvest that occurs downstream of Bonneville Dam.	Thank you. In the final EIS, total estimated catch in Columbia River tribal commercial and ceremonial and subsistence (C&S) fisheries is presented in Table 3-15. For estimated C&S harvests, included in these totals, see Table 3-26.
9/110	3.4.4.1.2, page 3-109. Ceremonial and Subsistence Harvest. The statement that harvest of salmon for ceremonial and subsistence purposes typically occurs before fish are taken for commercial purposes is not true. Subsistence fishing occurs all year in both mainstem and tributary areas. Some fish are sold commercially in the winter season prior to the spring ceremonial fisheries.	Thank you for the clarification. For the final EIS, Section 3.4.4.1.2, Ceremonial and Subsistence Harvests, has been expanded to include more detailed information on ceremonial and subsistence harvests. As part of this addition, the statement concerning when fish are harvested for ceremonial and subsistence purposes has been modified to reflect the information presented in this comment. Additionally, information on cultural uses of salmon has been added to this section. In the final EIS, ceremonial and subsistence harvest estimates, which have been revised, are considered as part of the environmental justice assessment for each alternative (Section 4.4.4.1, Fish Harvest and Tribal Values).
9/111	3.4.4.1.2, page 3-109. Ceremonial and Subsistence Harvest. The assumptions regarding ceremonial and subsistence harvest on page 3-110	Please see updates to Section 3.4.4.1.2, Ceremonial and Subsistence Harvest, for updated estimates for C&S harvest, as

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED).

Letter/ Comment #	Comment	Response
	are extremely faulty and produce wildly incorrect estimates of C&S catch. The tributary C&S catch estimates should be shown as well. Actual base period estimates of C&S catch are available and should have been used.	well as an expanded explanation of sources and methods used to derive these estimates.
9/112	3.4.4.1.3, page 3-110. Tribal Salmon Fishing and Hatchery Program Revenue. Commercial sales of fish direct to the public should have been included since this is a significant source of revenue in tribal commercial fisheries and the prices paid are much higher than prices paid by wholesale fish buyers.	The estimates of the commercial harvest values include all salmon commercially harvested by the tribes, including those sold directly to the public, along with those sold to wholesale buyers. NMFS acknowledges that commercial sales of salmon to the public would be expected to generate higher prices per pound, but NMFS lacks information concerning the percent of the commercial harvest by tribes that is sold directly to the public.
9/113	3.4.5, page 3-114. Public Outreach. The DEIS should clearly state that NMFS did not engage in any consultation with the four Columbia River Treaty Tribes as part of the development of this document and these alternatives.	Comment noted. See Global Response 3: Comments Addressing the EIS Process.
9/114	Table 3-30, page 3-119. Status, Distribution, Habitat Association, and Trends for Bird Species in the Analysis Area that prey on Salmon. This table fails to include white pelicans.	The EIS has been updated in response to the comment. American White Pelican has been added to Table 3-30.
9/115	Table 3-31, page 3-123. Status, Distribution, Habitat Association, and Trends for Marine Mammals of Concern. This table should include Steller sea lions since their impacts on Salmon have been increasing.	The EIS has been updated in response to the comment. Steller sea lion has been added to Table 3-31.
9/116	3.5.3.1.1, page 3-124. Killer Whales. The statement that it is reasonable to expect that southern resident killer whales likely prefer Chinook salmon is conjecture and should be omitted.	NMFS disagrees. The statement is well supported in the literature, particularly during the summer months, as discussed in Section 3.5.3.1.1, Killer Whale (Southern Resident DPS). Refer to Ford and Ellis (2006), Ford et al. (2010), Hanson et al. (2010), Hanson (2011), and Hempelmann et al. (2012).
9/117	3.5.3.1.1, page 3-124. Killer Whales. If the statement on page 3-125 that hatchery fish may have produced benefits for killer whales is true, then it should also be stated that the proposed reductions in hatchery fish in the DEIS would also adversely impact killer whales.	Agreed, and this impact is discussed in Section 4.5.4.1.1, Killer Whale (Southern Resident DPS).
9/118	3.5.3.1.2, page 3-125. Steller Sea Lion. In 2010, there was an increase in sightings of Steller sea lions stealing salmon from California sea lions. The DEIS should clarify that impacts on salmon from Steller sea lions may be increasing.	Please refer to revisions in Section 3.5.5.1.1, Steller Sea Lion, which describes recent annual counts of Steller sea lions at Bonneville Dam.

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED)

Letter/ Comment #	Comment	Response
9/119	4.2.2, page 4-4. Methods for Analyzing Effects. The AHA model should not have been used in the DEIS. It is not capable of utilizing the abundance based harvest frameworks that are used in Columbia basin fisheries and therefore provides misleading and incorrect results. The DEIS states that the AHA model allows users to input data reflecting current habitat productivity/capacity, harvest rates and hatchery facility operations. This is an incorrect statement. The AHA model does not allow users to input current abundance based harvest rates.	See Global Response 7: Comments Addressing the Analysis within the EIS.
9/120	4.2.2, page 4-4. Methods for Analyzing Effects. On page 4-7, the document states that harvest conditions are assumed to represent recent average conditions. The 2002-2006 time period is not the best time period to use as a base period. Because NMFS used incorrect harvest data for this period, the average harvest for this period is also incorrect. Appendix K also uses incorrect harvest rates. This flawed harvest analysis produces incorrect information for the rest of the modeling. When flawed harvest scenarios are used, the output of numbers of hatchery and wild fish in escapement areas will be incorrect. This produces incorrect estimates of PNI and pHOS. Because NMFS has used a flawed harvest analysis, all of the information on how many populations would meet the performance metrics under the different alternatives is also incorrect. NMFS should either remove all of the information regarding which populations meet which metric under the different alternatives, or re-do the entire harvest analysis.	The final EIS was updated to incorporate revisions to the various rules for both the in-river and the ocean fisheries for salmon and steelhead. This revision was made to reflect the more recent harvest management agreements (in-river and ocean) and ESA guidance that have controlled fisheries in recent years (as of 2010). NMFS also updated hatchery program release and brood stock management for the No Action baseline to reflect program operations as of 2010. Survival assumptions were also updated to better reflect abundances as of 2010.
9/121	4.2.3.1.1, page 4-11. Genetic Risks. The DEIS states that new selective fisheries would be established in terminal areas as a way of reducing genetic risks. The DEIS fails to state where these new fisheries would be used. The DEIS fails to discuss how the increased handle of unclipped fish would impact wild harvest rates if increased selective fisheries were to occur. This item should be removed from the DEIS for any tributary fisheries upstream of Bonneville Dam as it is not realistic. Tributary fisheries are managed cooperatively by the states and tribes with specific sharing agreements for different fisheries. It is not possible to expand current tributary sport fisheries without also expanding tribal fishing opportunity which is generally nonselective. Almost all current tributary sport fisheries are already mark selective fisheries. It is not feasible to presume that	Thank you for your comment. Implementation of new mark-selective terminal fisheries was a possible implementation measure for Alternative 4 and Alternative 5 only. As described in Box 4-2, Alternative 4 and Alternative 5 assume increased harvest rates on hatchery-origin fish in “terminal” areas, i.e., the tributaries into which adult fish return, when necessary to meet the alternative performance goal. These additional fisheries are modeled to maintain harvest limits on the natural-origin fish and to achieve identified escapement goals.

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED).

Letter/ Comment #	Comment	Response
	additional terminal mark selective fisheries could actually be implemented.	
9/122	4.2.3.1.1, page 4-11. Genetic Risks. The recommendation for building new temporary and permanent weirs also relies on a great deal of speculation about their feasibility and effectiveness.	Comment noted.
9/123	Table 4-17, page 4-35. Mean Percent Change in PRODadj and in Abundance of NOS per population in the Mid-Columbia River Spring ESU. NMFS should clarify how a reduction in abundance of natural origin fish under Alternatives 2, 3, and 5 (presuming the analysis were correct) is a benefit to the resource or to people.	This table is now Table 4-28 in the final EIS. Updated information has meant that the implantation scenarios for Alternative 2 through Alternative 5 now result in increases to both productivity and abundance relative to the figures in the draft EIS. Alternative 6 results in increases in productivity but a small decrease in estimated abundance. This information is presented to show potential effects of the alternative implementation scenarios on the indicators for the salmon and steelhead resources. By demonstrating these potential effects, and the interdependencies of attributes such as productivity and abundance, the EIS better informs NMFS, hatchery operators, and the public of the potential benefits, risks, and potential tradeoffs of the alternatives.
9/124	Table 4-17, page 4-35. Mean Percent Change in PRODadj and in Abundance of NOS per population in the Mid-Columbia River Spring ESU. NMFS should also clarify why on page 1-13, they claim to have not considered options that increase adverse effects to natural origin fish when some of these alternatives apparently would result in fewer natural origin fish which should be considered an adverse effect.	Thank you. The reduction in abundance, relative to increases in productivity, in the draft EIS, has been updated and now does not demonstrate a decrease in NOS abundance for Alternative 2 through Alternative 5. Alternative 6 does demonstrate this result, however, at higher total abundance than the draft EIS estimate (10,156 and 16,463, draft EIS Alternative1 and final EIS Alternative 6, respectively). See final EIS Table 4-28.
9/125	Table 4-21, page 4-38. Mean Percent Change in PRODadj and in Abundance of NOS per population in the Deschutes River Summer/Fall run Chinook Salmon ESU. NMFS should clarify how a reduction in abundance of natural origin fish under Alternatives 3, 4, and 5 (presuming the analysis were correct) is a benefit to the resource or to people. NMFS should also clarify why on page 1-13, they claim to have not considered options that increase adverse effects to natural origin fish when some of these alternatives apparently would result in fewer natural origin fish which should be considered an adverse effect.	This table is now Table 4-33 in the final EIS. Updated information has meant that the implementation scenarios for Alternative 2 through Alternative 6 now result in increases in both productivity and abundance. This information is presented to show potential effects of the alternative implementation scenarios on the indicators for the salmon and steelhead resources. By demonstrating these potential effects, and the interdependencies of attributes such as productivity and abundance, the EIS better informs NMFS, hatchery operators, and the public of the potential benefits, risks, and tradeoffs of

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED)

Letter/ Comment #	Comment	Response
		the alternatives.
9/126	Table 4-26, page 4-42. Mean Percent Change in PRODadj and in Abundance of NOS per population in the Upper Columbia spring run Chinook Salmon ESU. NMFS should clarify how a reduction in abundance of ESA listed natural origin fish under Alternatives 2, 3, and 4 (presuming the analysis were correct) is a benefit to the resource or to people. NMFS should also clarify why on page 1-13, they claim to have not considered options that increase adverse effects to natural origin fish when some of these alternatives apparently would result in fewer natural origin fish which should be considered an adverse effect.	This table is now Table 4-42 in the final EIS. Updated information has meant that the implementation scenarios for Alternative 2 through Alternative 6 now result in increases to both productivity and abundance. This information is presented to show potential effects of the alternative implementation scenarios on the indicators for the salmon and steelhead resources. By demonstrating these potential effects, and the interdependencies of attributes such as productivity and abundance, the EIS better informs NMFS, hatchery operators, and the public of the potential benefits, risks, and tradeoffs of the alternatives.
9/127	Table 4-30, page 4-45. Mean Percent Change in PRODadj and in Abundance of NOS per population in the Upper Columbia River summer/fall run Chinook Salmon ESU. The Total NOS under Alternative 1 (status quo) is unrealistically low based on actual data for this ESU. This should be corrected.	This was a case of using low survival rates for natural and hatchery populations in the draft EIS. These rates were updated in the final EIS to better reflect recent data. The final EIS was also updated to incorporate revisions to the various rules for both the in-river and ocean fisheries for salmon and steelhead. This update was made to reflect the more recent harvest management agreements (in-river and ocean) and ESA guidance that have controlled fisheries in recent years (as of 2010). Natural population responses (productivity and abundance) to harvest and hatchery management actions were projected forward 100 generations using the All-H-Analyzer model. So the natural population outputs reflect a long-term future projection of impacts for comparison across alternatives.
9/128	Table 4-44, page 4-56. Mean Percent Change in PRODadj and in Abundance of NOS per population in the Snake River fall run Chinook Salmon ESU. NMFS should clarify how a reduction in abundance of ESA listed natural origin spawners under Alternatives 2, 3, 4, and 5 (presuming the analysis were correct) is a benefit to the resource or to people. NMFS should also clarify why on page 1-13, they claim to have not considered options that increase adverse effects to natural origin fish when some of these alternatives apparently would result in fewer natural origin fish which should be considered an adverse effect.	This table is now Table 4-57 in the final EIS. This information is presented to show potential effects of the alternative implementation scenarios on the indicators for the salmon and steelhead resources. By demonstrating these potential effects, and the interdependencies of attributes such as productivity and abundance, the EIS better informs NMFS, hatchery operators, and the public of the potential benefits, risks, and tradeoffs of the alternatives.

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED).

Letter/ Comment #	Comment	Response
9/129	Table 4-67, page 4-74. Mean Percent Change in PRODadj and in Abundance of NOS per population in the Upper Columbia River Steelhead DPS. NMFS should clarify how a reduction in abundance of ESA listed natural origin spawners under Alternatives 2, 3, 4, and 5 (presuming the analysis were correct) is a benefit to the resource or to people. NMFS should also clarify why on page 1-13, they claim to have not considered options that increase adverse effects to natural origin fish when some of these alternatives apparently would result in fewer natural origin fish which should be considered an adverse effect.	This table is now Table 4-80 in the final EIS. Updated information has meant that the implementation scenarios for Alternative 2, Alternative 3, Alternative 4, and Alternative 6 now result in increases to both productivity and abundance. Alternative 5 still results in a small decrease in estimated total NOS abundance and the highest mean adjusted productivity estimate. This information is presented to show potential effects of the alternative implementation scenarios on the indicators for the salmon and steelhead resources. By demonstrating these potential effects, and the interdependencies of attributes such as productivity and abundance, the EIS better informs NMFS, hatchery operators, and the public of the potential benefits, risks, and tradeoffs of the alternatives.
9/130	4.3.2.1 Harvest Estimates. Page 4-109. In many cases, incorrect historical data was used.	Thank you for your comment. This table is Table 3-13 in the final EIS. NMFS reviewed these tables, and there were errors translating catch data. These tables were updated to report available reported catch, and the catch period was expanded to include 2007 to 2009 to better describe the base period in the analysis.
9/131	4.3.2.1 Harvest Estimates. Page 4-109. Appendix K also used incorrect in-river and tributary harvest rates which produces erroneous results.	The final EIS was updated to incorporate revisions to the various rules for both the in-river and ocean fisheries for salmon and steelhead. This change was made to reflect the more recent harvest management agreements (in-river and ocean) and ESA guidance that have controlled fisheries in recent years (as of 2010). Actual tributary harvest rates were difficult to determine in some cases. They also vary considerably from year to year based on run size.
9/132	4.3.2.3. Harvest and Economic Values. Page 4-111. The value of the catch does not reflect current fish prices. NMFS did not include the value of fish sold direct to the public. NMFS also used in some cases incorrect weights per fish in economic value calculations. This combined with faulty harvest modeling makes economic comparison of the alternatives impossible.	See response to letter 9, comment 112. Harvest estimates, salmon weights, and salmon values have been revised in the final EIS to incorporate more current data.
9/133	4.3.4 Harvest and Economic Values. Page 4-114 through page 4-158. See Comments above. This section includes numerous errors and should either	See Global Response 7: Comments Addressing the Analysis within the EIS.

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED)

Letter/ Comment #	Comment	Response
	be re-done or removed from the DEIS.	
9/134	4.4.3.1 Tribal Indicators of Environmental Justice Effects. Page 4-161. There is no discussion of the mitigation commitments made to the tribes due to the development of the Columbia River Basin. See also a full discussion of Environmental Justice Considerations submitted as a separate appendix.	Thank you for the information. See Global Response 4: Comments Asserting and Referring to the Mitchell Act's Mitigation Obligation or Calling for NMFS to Define the Obligation.
9/135	4.4.4.2 Ceremonial and Subsistence Harvest. Page 4-166. The statement that only 12,976 fish are likely taken for ceremonial and subsistence purposes is incorrect. The DEIS should include actual average C&S catches which are significantly higher.	The ceremonial and substance (C&S) catch was updated based on guidance from the tribal fish managers. A complete accounting of total C&S catch was not available, and the final EIS has been revised to indicate reported C&S is a minimum estimate.
9/136	4.4.4.2 Ceremonial and Subsistence Harvest. Page 4-166. The following statements in the DEIS are incorrect and should be removed from the document: "Because ceremonial and subsistence fish are taken first before fish are harvested for commercial harvest, changed in hatchery production would primarily affect commercial tribal fisheries. Thus, there would be a negligible impact on ceremonial and subsistence fishing for all action alternatives compared to Alternative 1." As previously stated in these comments, subsistence fishing occurs throughout the year. Also, some limited commercial fishing often occurs prior to the spring ceremonial fishing. Some tribes also utilize surplus hatchery fish for cultural purposes (funerals, etc.) Reducing hatchery production would have significant adverse impacts on tribal ceremonial and subsistence fisheries.	For the final EIS, the sentences (and paragraph in which the sentences appear) in Section 4.4.4.2, Ceremonial and Subsistence Harvests, concerning when fish are harvested for ceremonial and subsistence purposes and what effects are anticipated under the action alternatives have been deleted. In their place, a paragraph has been added stating that although ceremonial and subsistence harvest typically occurs before commercial harvests, ceremonial and subsistence fishing can occur at other times of the year. As a result, changes in hatchery production would be expected primarily to affect commercial tribal fisheries, although effects on ceremonial and subsistence harvests could result from implementing certain action alternatives. Consistent with this change, the subsections following Section 4.4.4.2 have been added to the final EIS to address the alternative-specific environmental justice effects of the action alternatives on ceremonial and subsistence harvests, and information on cultural uses of salmon has been added to the impact discussions. In the final EIS, ceremonial and subsistence harvest estimates have also been revised. In the final EIS, Section 3.4.4.1.2, Ceremonial and Subsistence Harvests, has been expanded to include more detailed information on ceremonial and subsistence harvests.
9/137	Table 4-100. Tribal Fishing Revenue. Page 4-167. This table contains erroneous estimates for in-river fisheries and should be re-done. The values	This table is now Table 4-114 in the final EIS. The final EIS has been updated to incorporate revisions to the various rules for

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED).

Letter/ Comment #	Comment	Response
	shown are the result of erroneous harvest modeling combined with invalid assumptions about the value of the catch.	both the in-river and ocean fisheries for salmon and steelhead. This change was made to reflect the more recent harvest management agreements (in-river and ocean) and ESA guidance that have controlled fisheries in recent years (as of 2010).
9/138	Table 4-100. Tribal Fishing Revenue. Page 4-167. There are also no commercial fisheries in the upper Columbia mainstem or in the Lower Snake River. References to these fisheries should be removed from the DEIS.	This table is now Table 4-114 in the final EIS. The estimated tribal fishing revenue has been updated to reflect that no commercial tribal harvest currently occurs in the Upper Columbia River economic impact region. However, commercial fisheries currently occur in the lower Snake River economic impact region (possibly not in the actual lower Snake River itself, but in some tributaries to it). The numbers of commercially harvested fish, under baseline conditions, were provided by the Nez Perce Tribe.
9/139	5.3.3.2 Ceremonial and Subsistence Harvest for Tribes. Page 5-20. The last sentence regarding "localized tribal benefit over the next 10 years" is unreasonable. Given the significant adverse impacts on the tribes from the implementation of any of the given alternatives along with possible adverse impacts from climate change, it does not seem reasonable that there would be any localized tribal benefit.	The final EIS section has been revised to respond to the comment.
9/140	5.3.3.3 Tribal Fishing and Hatchery Revenue. Page 5-20. The last sentence regarding "localized tribal benefit over the next 10 years" is unreasonable. Given the significant adverse impacts on the tribes from the implementation of any of the given alternatives along with possible adverse impacts from climate change, it does not seem reasonable that there would be any localized tribal benefit.	The final EIS section has been revised to respond to the comment.
9/141	Page 8-2, Agencies Consulted. It should be specifically noted that NMFS did not consult with the four Columbia River Treaty Tribes.	See Global Response 3: Comments Addressing the EIS Process.
9/142	**Appendix A Columbia River Hatchery Programs and Facility Information.** Not all Columbia Basin hatchery programs were included.	See Global Response 7: Comments Addressing the Analysis within the EIS.
9/143	**Appendix B 2008-2017 U.S. v. Oregon Management Agreement.** NMFS should have relied on the harvest rate schedules in this agreement for mainstem fisheries and should provide additional information as to why they chose alternatives that are inconsistent with this agreement that NFMS entered, and which is a federal Court Order.	See Global Response 7: Comments Addressing the Analysis within the EIS.

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED)

Letter/ Comment #	Comment	Response
9/144	**Appendix C Hatchery Performance and Production by Alternative for Chinook Salmon** NMFS should include the review by the *U.S. v. Oregon* Production Advisory Committee in the Comparison Analysis Tables, included in the attachments.	NMFS has incorporated, as appropriate, information that has been provided. Additionally, See Global Response 7: Comments Addressing the Analysis within the EIS.
9/145	**Appendix D Hatchery Performance and Production by Alternative for Coho Salmon and Steelhead.** NMFS should include the review by the *U.S. v. Oregon* Production Advisory Committee in the Comparison Analysis Tables, included in the attachments.	NMFS has incorporated, as appropriate, information that has been provided. Additionally, see Global Response 7: Comments Addressing the Analysis within the EIS.
9/146	**Appendix F Hatchery Performance and Production by Alternative for Sockeye Salmon.** NMFS should include the review by the *U.S. v. Oregon* Production Advisory Committee in the Comparison Analysis Tables, included in the attachments.	NMFS has incorporated, as appropriate, information that has been provided. Additionally, See Global Response 7: Comments Addressing the Analysis within the EIS.
9/147	**Appendix F Hatchery Performance and Production by Alternative for Sockeye Salmon.** Information on Wenatchee and Okanagan sockeye should also be included.	Thank you for the comment. Draft EIS Table 2-7 now appear as Table 4-4 in the final EIS. NMFS reviewed the program release data and contacted the hatchery managers to ensure reporting the correct number released as of 2010. The Okanogan sockeye program is in Canada and was not included in the EIS scope.
9/148	**Appendix G Overview of the All H Analyzer** The AHA model is not appropriate for this type of analysis since it is not capable of adequately modeling Columbia Basin mainstem fisheries utilizing abundance based harvest rate frameworks. It should not be used in the DEIS.	NMFS disagrees. A typical use of the AHA model does not include abundance-based harvest rates. For this analysis, however, additional abundance-based harvest models were developed. Abundance was based on the predicted average from the AHA model. This required two iterations of the models to evaluate the effect of harvest rates on abundance of natural populations.
9/149	**Appendix H Assessment of Operational Effectiveness of Columbia River Hatchery Programs (HPV analysis)** The best management practices for hatchery programs will vary according to the goals and objectives of each program as well as the status of local wild stocks. Establishing rigid protocols applicable to all programs for best management practices is not appropriate.	NMFS agrees that the broad application of rigid program management standards may not be appropriate. The application of BMPs in the draft EIS and in Appendix H was confusing and not thoroughly explained. The final EIS clarifies that the application of BMPs is relegated to the aspects of hatchery facility effects, including facility failure, water quality, intake screening, and migration of fish, both juvenile and adult, through hatchery facilities.
9/150	**Appendix I Draft Socioeconomics Report Submitted by The Research Group to NMFS 2008.**	See Global Response 7: Comments Addressing the Analysis within the EIS.

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED).

Letter/ Comment #	Comment	Response
	Section 3.3.4.1 Harvesting. Page 22. California fisheries should be included since Columbia Basin stocks do contribute to all coastal fisheries.	
9/151	**Appendix I Draft Socioeconomics Report Submitted by The Research Group to NMFS 2008.** Table 3.5. Columbia Basin Inland Harvests by Species Population Origins and by fishery for Status Quo Alternative. Page 24. This table omits tribal C&S harvest. It also omits tribal tributary harvest. It omits sockeye harvest. The commercial harvest data source is not cited and the are not correct for a recent year average.	See Global Response 7: Comments Addressing the Analysis within the EIS.
9/152	**Appendix I Draft Socioeconomics Report Submitted by The Research Group to NMFS 2008.** 3.3.4.2.1 Processing and Markets. Processing. Page 27. Tribal direct sales to the public are not adequately included but should be, as they make up a significant percentage of tribal commercial fishing revenue.	See Global Response 7: Comments Addressing the Analysis within the EIS.
9/153	**Appendix I Draft Socioeconomics Report Submitted by The Research Group to NMFS 2008.** 3.3.4.2.1 Processing and Markets. Processing. Page 27. The statement that lower river caught fish typically fetch higher prices than the catch in upriver tribal fisheries is no longer true. Prices paid by wholesale buyers in tribal fisheries are often equal and sometimes higher than in the lower river.	As indicated in Global Response 7, the TRG 2009 document has been removed as an appendix from the final EIS because of its limited use for the analysis. However, the text in Appendix J (Socioeconomic Impact Methods) was revised to reflect this comment. The analysis does not differentiate prices for fish caught in the lower river and elsewhere in the river.
9/154	**Appendix I Draft Socioeconomics Report Submitted by The Research Group to NMFS 2008.** Table 3.8. Columbia River Salmon Commercial Harvest Real Ex-vessel Price, Value, and Pounds. Page 28. These data are not correct. PacFIN apparently does not have complete final data. Data should be obtained directly from the states and tribes. Prices should be broken out for spring and summer fisheries separately as they are significantly different. Fall Chinook prices need to be separated by bright and tule since the prices for each are very different and the proportion of the total fall Chinook catch varies significantly.	Columbia River fish weights and values have been revised for the final EIS to incorporate more current data, as described in the revised Appendix J. These revised factors were incorporated into the economic modeling conducted to assess the effects of the alternatives in the final EIS. As described in revised Appendix J, average weights were calculated using landing and weight data from fish receiving tickets, as reported by the Oregon Department of Fish and Wildlife in its Columbia River Fishing Landing Reports. For ex-vessel values, average prices were calculated based on data from the 2009 PFMC SAFE Report and from the Joint Columbia River Management Staff 2010 Joint Staff Report. As requested by the commenter, weights and prices were developed separately for spring, summer, and fall Chinook fisheries. Although individual prices were not developed for

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED)

Letter/ Comment #	Comment	Response
		brights and tules, fall-season Chinook prices were weighted by pounds of brights and tules landed in Oregon and Washington each year.
9/155	**Appendix I Draft Socioeconomics Report Submitted by The Research Group to NMFS 2008.** 3.3.4.3. Economic Contributions. Page 35. The statement that no fish of any run are sold for commercial purposes until ceremonial and subsistence needs are met is not correct. Allocating sufficient fish for ceremonial and subsistence harvest takes priority over commercial harvest, but this does not mean that in all cases the C&S catch comes before the commercial harvest. Tributary subsistence catch often occurs well after the conclusion of mainstem commercial fishing.	The final EIS section has been revised to respond to the comment.
9/156	**Appendix J Mitchell Act Hatchery EIS Socio Economics Impact Methods Appendix** Table A-1 Average Pounds per Fish (commercial) Page 12. The average pounds shown for in-river fisheries are not correct. Spring season, summer season, and fall season bright and tule groups should all be separated as the average pounds varies for each group. The average steelhead and sockeye weights are significantly high. Average weights from actual fish tickets should have been used. Using the wrong average weights produces errors in other parts of the economic analysis. This should be corrected.	As discussed in the response to letter 9, comment 154 and as described in revised Appendix J, average weights were recalculated using data from fish receiving tickets. Additionally, as requested by the commenter, separate weights were developed for spring, summer, and fall Chinook seasons. Separate weight data for brights and tules were not available; however, value data for brights and tules were incorporated into the analysis.
9/157	**Appendix J Mitchell Act Hatchery EIS Socio Economics Impact Methods Appendix** Table A-2. Ex-vessel price per pound. Page 13. The prices shown for tribal and non-tribal commercial fisheries are not correct. Chinook prices should be broken out by spring, summer, and fall bright and fall tule prices as they are very different. This produces errors in the economic analysis and should be corrected.	Individual prices were not developed for brights and tules; however, fall-season Chinook prices were weighted by pounds of brights and tules landed in Oregon and Washington each year. Prices shown in Table A-2 have been revised to show prices for spring, summer, and fall Chinook.
9/158	**Appendix K Chinook and Coho Salmon Fishery Modeling Approach for Application to the Mitchell Act EIS** The AHA model is flawed as a tool to do Columbia Basin harvest modeling.	See Global Response 7: Comments Addressing the Analysis within the EIS.
9/159	**Appendix K Chinook and Coho Salmon Fishery Modeling Approach for Application to the Mitchell Act EIS** The catch modeling relies on smolt outmigrants that come out of the AHA	The AHA model includes natural population productivity and capacity assumptions that predict the number of smolts and adults at equilibrium (based on smolt to adult survival rates)

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED).

Letter/ Comment #	Comment	Response
	model as a starting point and then applies some sort of maturation rates and ocean survival. The problem is in the number of smolts going out. Because the modeling relies on inaccurate estimates of spawners, they will have estimated the wrong numbers of outmigrating smolts.	prior to fisheries. The predicted adult abundances were used in the harvest models to determine abundance-based fishery harvest rates. The AHA model was rerun to estimate new equilibrium abundance values, then was rerun again through the harvest models. NMFS found that two iterations were sufficient to stabilize AHA predictions and abundance harvest rates. Ocean survival rates applied to hatchery and natural smolts were adjusted to better reflect recent year abundances.
9/160	**Appendix K Chinook and Coho Salmon Fishery Modeling Approach for Application to the Mitchell Act EIS** For in -river fisheries, NMFS used the wrong harvest rates. They used the harvest rate schedules in the 2007 *U.S. v Oregon* Management Agreement, not the current one. So they didn't incorporate catch balancing into spring chinook. NMFS did not use the abundance based fall chinook schedule. NMFS based the fall harvest rates on the Bonneville run size not the river mouth run size. And NMFS applied the URB harvest rate to the tules and the MCB's which is wrong. For summer chinook, they did not use a mark selective sport fishery, and they applied a scalar to the summer harvest rates schedule that presumes that treaty and non-treaty fisheries cant catch all the summer Chinook allowed which is completely untrue. For coho they used average Bonneville based harvest rates, but they started with the wrong average catch. Since NMFS doesn't predict realistic fisheries, then incorrect escapement of hatchery and wild fish are estimated. Incorrect escapements will result in erroneous estimates of pHOS. Predicting pHOS incorrectly will result in incorrect decisions on how much hatchery production to cut (even presuming NMFS made a reasonable standard on PNI and pHOS).	Thank you for your comment. Fishery rules for the final EIS analysis are based on provisions of the 2008 amendments to the Pacific Salmon Treaty, updated ESA guidance given by NOAA Fisheries (through 2010), and updated provisions of the latest *U.S. vs. Oregon* agreement (agreement of 2008 for the period from 2008 to 2017). There have also been several corrections to how some calculations have been made. Aspects of these changes have been reviewed with co-manager biologists.
9/161	**Appendix K Chinook and Coho Salmon Fishery Modeling Approach for Application to the Mitchell Act EIS** They applied a completely incorrect percentage for C&S vs Commercial catch for the tribal fishery. This produces additional errors in the economic analysis.	Thank you for your comments. The C&S catch estimates were significantly reworked based on interactions between the EIS modelers and biologists for CRITFC and individual tribes. The modelers conclude that the C&S estimates are as reliable as can be without more definitive information from the tribes. It is noted that C&S estimates in general should be regarded as minimum estimates.

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED)

Letter/ Comment #	Comment	Response
9/162	**Appendix K Chinook and Coho Salmon Fishery Modeling Approach for Application to the Mitchell Act EIS** They also failed to do any economic analysis of ocean troll (or sport)catches of Columbia River stocks occurring on the Oregon Coast south of cape falcon or any of the California fisheries that also have some impacts on Columbia River stocks. So they are underestimating the economic impact on those fisheries of reducing Columbia Basin hatchery production.	Appendix K of the draft EIS describes the modeling approach used to estimate changes in the harvest of salmon and steelhead in affected fisheries. The economic analysis of these estimated changes in harvest, including changes in recreational fisheries along the entire Oregon Coast and the California Coast, were presented in Table 4-93 of the draft EIS. As explained in the response to letter 2, comment 85, the EIS alternatives are not expected to affect the commercial Chinook salmon fisheries south of Cape Falcon.
9/163	**Appendix K Chinook and Coho Salmon Fishery Modeling Approach for Application to the Mitchell Act EIS** As far as their economic analysis, they made some mistakes in the treaty troll chinook harvest. They also drastically underestimated all the tributary sport harvest. (The sport harvest data is also used to estimate average tributary harvest, so they got their harvest modeling wrong there too). So, the current economic value of fisheries is simply not correct. And their predictions of economic impacts of any of the alternatives are not valid. There is no way to read the DEIS and get a realistic understanding about how badly any of the alternatives will affect any particular fishery.	Thank you for your comment. The draft EIS used lower survival rates, thus underestimating catch compared to recent years. These rates were updated in the final EIS to better match abundance and catch as of 2010.
9/164	**Appendix K Chinook and Coho Salmon Fishery Modeling Approach for Application to the Mitchell Act EIS** NMFS is proposing reducing the Snake River fall chinook program from its current releases of 5.9million fish anually to 330,000 under Alternatives 2-4 and reducing it to 110,000 under Alternative 5. This almost certainly guarantees reductions in the adult returns to Lower Granite from 15-25,000 with 2-3,000 natural origin fish to returns of probably no more than 5,000 with probably no more than 1,000 natural origin fish. If river mouth returns of natural origin Snake River fall chinook drop to less than 2,000, then the in-river treaty harvest rate drops to 23% and the non-treaty harvest rate drops to 4%. If the river mouth return on natural origin fish drops to less than 1,000, then the inriver treaty harvest rate drops to 20% and the non-treaty harvest rate drops to 1.5%. A 1.5% harvest rate on URB's effectively means no commercial mainstem fishing and no chinook retention for the sport fishery in the mainstem from Buoy 10 on upstream.	See Global Response 7: Comments Addressing the Analysis within the EIS.

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED).

Letter/ Comment #	Comment	Response
9/165	**Appendix K Chinook and Coho Salmon Fishery Modeling Approach for Application to the Mitchell Act EIS** NMFS staff were asked for detailed steelhead modeling assumptions that were done for the DEIS, but this information was not provided.	See Global Response 7: Comments Addressing the Analysis within the EIS.
9/166	**Appendix K Chinook and Coho Salmon Fishery Modeling Approach for Application to the Mitchell Act EIS** There is ample evidence in this appendix that the harvest and economic analysis is completely inadequate and useless. The most appropriate action would be for NMFS to withdraw this DEIS start over with their harvest modeling and economic analysis. The DEIS can not be adequately analyzed for impacts to tribal or other economies.	See Global Response 7: Comments Addressing the Analysis within the EIS.
9/167	**Appendix L Supporting Demographic and Socioeconomic Data for the Analysis of Environmental Justice Impacts** Instead of just reservation population data, the actual numbers of enrolled tribal members should have been reported along with information that many tribal members live along the Columbia River in various communities and not simply on the reservations themselves. Additional comments are provided in a separate appendix.	Demographic data relevant to the environmental justice assessment have been updated using data from the 2010 U.S. Census and the American Community Survey. Relevant demographic data in Appendix L have been shifted into the environmental justice sections (Section 3.4 and Section 4.4), and Appendix L has been deleted from the final EIS. Data concerning enrolled members for each tribe were not available through this source and were, therefore, not included in the table. This information would not affect the analysis or conclusions presented in the environmental justice sections of the final EIS.
9/168	Analyses and the proposed alternatives presented in draft environmental impact statement (DEIS) for the Mitchell Act (MA) rely heavily on use of the proportionate natural influence (PNI) and the proportion of hatchery-origin spawners (pHOS) standards proposed by the Hatchery Scientific Review Group (HSRG 2009). Strict application of these standards can put severe restrictions on the scale of hatchery programs, and on the numbers of hatchery-origin fish that are permitted to augment abundance of a natural spawning population. Hence, all of the proposed alternatives in the MA DEIS, other than Status Quo, require moderate to substantial reductions in current and proposed hatchery programs in the basin. Justification for the PNI and pHOS standards are based on the presumption that hatchery rearing will affect a substantial negative effect on fitness of a	See Global Response 7: Comments Addressing the Analysis within the EIS.

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED)

Letter/ Comment #	Comment	Response
	natural population that is receiving hatchery-origin adults, and that this effect is genetically-based. This presumption is derived from assessment of results of studies that provide quantified measures of relative fitness (RF) or relative reproductive success (RRS) of the hatchery-origin (HO) versus natural-origin (NO) fish. In particular, two recent studies of Hood River steelhead (Araki et al. 2007b and 2009) are widely cited as "proof" that hatchery programs have dramatically large deleterious effects on natural population productivity, and that even over a small number of generations, these effects will rapidly accumulate so as to render natural fitness of the affected population significantly reduced. We feel that this conclusion is exaggerated and misrepresents the scientific data that exists across the breadth of studies that have examined the issue. Further, focus on this single aspect to drive hatchery management policy in the Columbia basin ignores benefits that hatcheries may have on other viable salmonid population (VSP) parameters – abundance, spatial structure and diversity (McElhany et al. 2000), and completely disregards the associated legal, social and political issues related to fisheries and mitigation responsibilities for operation of the hydrosystem. It is for these reasons, as summarized in the cover letter to our comments, that the tribes recommend that NOAA not proceed on developing a preferred alternative and a final environmental impact statement based on the proposed document.	
9/169	In this document, however, we concentrate solely on the rationale behind our conclusion that the presumption that use of hatcheries to supplement natural salmonid populations will significantly depress population fitness is exaggerated and misrepresents the available data. We provide synopses of all (to our knowledge) currently available information from studies of anadromous salmonids that have derived quantified measures of RF and RRS, then have summarized these data in a table and series of figures. The data were compiled from published manuscripts, technical reports and oral presentations made at scientific meetings. Results for several of these reports were previously presented within Table 1 of Araki et al. (2008) and/or in Figure 4 of the report Hatchery Reform Science by the Recovery Implementation Science Team (RIST 2009), copied below. Information from	Thank you for your comment. Please see revised and expanded Section 3.2.3.1, General Risks and Benefits of Hatchery Programs to Salmon and Steelhead Populations. NMFS has added updated information related to more recent studies on the relative reproductive success of hatchery fish, including studies of additional species (Chinook salmon) (Section 3.2.3.1.1.2, Effects on Genetic Diversity). Additionally, the Salmon and Steelhead resource Section 3.2.3 and Section 4.2.1 in the final EIS have been arranged to present the baseline and effects information relative to viable salmon population attributes, to help the reader better understand the interconnectedness of VSP attributes.

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED).

Letter/ Comment #	Comment	Response
	additional studies, many of them recently described for ongoing programs, are also presented. Of note, substantial caution is required in interpreting these results, especially when illustrated together within a graph such as RIST (2009) Figure 4, whose format was followed in the summary graphs. The data are not necessarily directly comparable. The methodologies used to obtain the RF and RRS measures differ greatly among studies, and the management schemes followed by the hatchery programs vary dramatically in terms species, source of the broodstock, broodstock management, and hatchery rearing and juvenile release practices. These issues and how they affect the resulting RF/RSS data are described in more detail below, followed by the synopses, and table and graphs. a) Some of the measures are of RF, representing differential survival between various life stages of HO and NO fish, while other studies are of RRS, involving differential natural spawning success plus survival to various life stages. b) Results for six different species are represented among these studies. However, the substantial differences in life histories among species will undoubtedly have varying impact on how hatchery rearing may affect reproductive fitness and survival. For example, except for one study each of Atlantic and Chinook salmon, the studies (limited to those using local broodstock sources) that provided the lowest measures of RF/RRS were of steelhead (Figures 2a and 2b). c) Some of the studies compare performance of hatchery stocks from non-local sources – often following several generations of deliberate selection for altered run/spawn timing, growth and/or behaviors relative to the natural population to which they were compared. When the objective is to assess effects of Supplementation hatchery programs (e.g., as described by Cuenco et al. 1993) for the purposes of rebuilding depressed populations, results from these studies using	

Letter/ Comment #	Comment	Response
	non-local hatchery stocks must necessarily be excluded (as was done in Figures 3 and 4). d) Some of the studies involve hatchery programs which followed segregated broodstock management (only HO adults were incorporated into the broodstock), while others integrated NO fish into the broodstock (from small proportions to 100%, depending on the program) each generation. The two approaches will have obvious impacts on the extent to which genetically-based impacts on fitness may accumulate over generations. e) The majority of the studies are indicated as "Confounded" within the "Effect on RF/RRS" column in the summary table. That is, results of the comparison between performance of HO and NO fish does not solely represent a genetically-based effect on fitness, but instead represents possible genetic effects plus confounding non-heritable environmental effects associated with the different spawning and juvenile life histories experienced by the fish being compared. If it possible to parse out the environmental effects from the overall RF/RRS measure, the resulting estimate for heritable RF/RRS would be closer to 1.0, and the data points for measures <1.0 would shift upwards. To illustrate this, the RF and RRS data from studies indicated as Confounded and < 1.0 were recalculated on the presumption that 50% of this difference was due to non-genetic effects. Graphing of the modified data (Figures 4a and 4b) provides a much more moderated impression of the magnitude might be of a deleterious effect of hatchery rearing that could accumulate (due to its heritable/genetic nature) over generations. Of note, even in those studies whose "Effect on RF/RRS" in the summary table is indicated as "Genetic" (studies whose "common garden" designs permitted comparison of RF or RRS of fish with similar immediate rearing histories, but with differential natural versus hatchery genetic backgrounds), there are invariably additional confounding environmental effects that may have influenced results of the studies, typically to the detriment of the HO fish.	

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED).

Letter/ Comment #	Comment	Response
	f) In Figures 3 and 4, results from the Araki et al. (2007a and b, 2009) for Hood River (HR) steelhead are differentiated from those of other studies using local source broodstock. These results from Araki et al 2007b and 2009 (although not those from2007a, as they indicate non-significant effects on natural fitness following a generation of hatchery rearing), as indicated above, have been widely referenced to support the view that hatchery effects on natural population fitness are substantially negative and threaten their viability, and that hatchery programs must therefore be reduced in scope and duration. However, examining the compiled results for all of the studies presented here, it is evident that the RRS measures for HR steelhead are at the extreme low end of the range for reported data. In light of the "outlier" nature of these HR steelhead data, normal scientific caution requires that they be noted as cause for concern, but that to the extent that one is permitted to make generalized statements, it would be that the magnitude of heritable effects of a properly managed hatchery supplementation program will likely of a much reduced magnitude relative to that indicated by the HR steelhead studies. g) Again, a reminder is appropriate that recommendations on how salmonid hatchery programs are scaled and managed – in particular for supplementation of depressed natural stocks - must not be based solely on possible deleterious fitness effects, but must also consider counteracting positive effects on the other VSP parameters – population abundance, diversity and spatial structure. Additionally, decisions of how best to manage hatchery programs within the Columbia basin must not be made in isolation from the social, political and legal issues associated with fisheries mitigation and alternative actions (restoration of freshwater habitat, changes in hydrosystem management to reduce mortality, and harvest management) that might be effective in rebuilding the basin's salmon stocks. In view of the substantial variation among study designs and the great dispersion of the resulting RF/RRS data, one cannot justifiably draw a	

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED)

Letter/ Comment #	Comment	Response
	general conclusion as to the magnitude of the effect that hatchery rearing may have on productivity of a natural population. The data do imply, however, that appropriate management of a hatchery program can diminish negative effects on reproductive fitness, both of an environmental and a genetic basis. Instead of imposing a single set of management standards (PNI and pHOS), hatchery programs need to be designed on a species and river-specific basis. The management plans must also be adaptive in nature so as to respond to environmental variation and to changes in population VSP parameters.	
9/170	PNI is a useful metric for assessing hatchery programs. The rationale behind the HSRG's promotion of improved (higher) PNI in hatchery-affected populations, which was incorporated into the MA DEIS, is scientifically sound – any deleterious genetic effects to natural productivity associated with hatchery rearing will be increasingly reduced as an integrated supplementation program can be managed for an increasingly high PNI.	Comment noted.
9/171	The productivity estimates (R/S) for natural origin (NO) and hatchery origin (HO) fish spawning naturally remain fixed in the model, whereas realistically, these values, and their ratio will, will vary over time in response to changes in relative abundance of the fish (pNOS and pHOS) and to changes in the pNOB-pHOB ratio – which together determine PNI	The productivity and capacity terms, which the commenter regards as fixed, are actually estimates of the intrinsic maximum productivity and capacity for the population. These are used in the All-H Analyzer as parameters in a Beverton-Holt recruitment function. The actual productivity for a given escapement varies based on the size of the escapement relative to the capacity parameter (non-linear function). The All-H Analyzer uses variable SAR and accounts for the presence of varying proportions of hatchery-origin spawners to calculate the productivity of each escapement of the population.
9/172	The pNOB-pHOB ratio also remains fixed in the model, whereas change in this ratio in response to changes in NO escapement, as recommended below, can have dramatic effects on PNI	NMFS agrees with the commenter's statement regarding the ratio of natural-origin escapement having a dramatic effect on PNI. See the response to letter 9, comment 172.
9/173	The heritability (h2) estimate for change in fitness in the model is fixed at 0.5. This is much too high an estimate, especially for a fitness character, and even more so when it is repetitively used in the model over multiple generations. Use of a lower, more realistic value for h2 (0.5, 0.1) will	Comment noted. Please see Appendix I (RIST 2009) for a review of the base setting utilized in the All-H Analyzer's fitness function and trait equilibrium settings.

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED).

Letter/ Comment #	Comment	Response
	dramatically slow down modeled depressive fitness effects associated with hatchery rearing.	
9/174	The model was run with Natural Selection Strength and Hatchery Selection Strength both set at: ω2 = 10xσ2, implying strong selection pressure in both environments. While strong selection against "hatchery traits" in a natural setting (where juvenile mortality is quite high) may be appropriate, a presumption of strong selection against "natural traits" in the hatchery setting is not appropriate, especially when broodstock is representatively chosen from among the NO and HO return run each successive broodyear. Unlike the natural stream setting, mortality in a hatchery is purposefully quite low, making an explanation for how and when strong selection against "natural traits" difficult to formulate. Use of a relatively lower value for Hatchery Selection Strength will slow down modeled depressive fitness effects associated with hatchery rearing	Comment noted. Please see Appendix I (RIST 2009) for a review of the base setting utilized in the All-H Analyzer's fitness function and trait equilibrium settings.
9/175	Another problem with the HSRG analysis (which was adopted in the MA DEIS) is apparent in a sentence within Appendix C of the HSRG report – Analytical Methods and Information Sources, p.11 (http://www.hatcheryreform.us/hrp_downloads/reports/columbia_river/system-wide/4_appendix_c_analytical_methods_and_info_sources.pdf), which is repeated almost word for word as Appendix G – Overview of the All H Analyzer (also p.11; http://www.nwr.noaa.gov/Salmon-Harvest-Hatcheries/Hatcheries/upload/MA-DEIS-AppG.pdf): "All hatchery adults not recovered in fisheries or at hatchery racks or weirs at their point of release are considered strays." (underlining for emphasis) In the supplementation model, a hatchery program uses integrated broodstock management to produce fish with the express intent to have them return as adults to augment the depressed number of naturally spawning fish. Yet, according to the analysis, they are nonetheless considered as "strays" …? Merriam-Webster defines "stray" (used as an adjective) as: "1. having strayed or escaped from a proper or intended place, 2 occurring at random or sporadically , 3. not serving any useful purpose". This is more than a problem of semantics, but bears witness to an inherent bias in the analysis which deems all hatchery programs as	The commenter is incorrect in assuming that NMFS has adopted the HSRG analysis in the EIS. Some methods and baseline modeling assumptions, which were developed with the input for the basin co-managers for their 2009 review, are utilized in the analysis for this EIS. The term "stray" is an often misused term. The final EIS has incorporated a more strict use of the term than that used in the draft EIS. NMFS thanks the commenter for information regarding the details of a supplementation program. NMFS refers to these as conservation programs or "both," i.e., harvest programs with a conservation benefit as well, in the EIS.

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED)

Letter/ Comment #	Comment	Response
	having a negative effect on the well-being of natural salmon populations, and disregards potential demographic benefits, in addition to the social and legal rationales for creation of the hatchery programs.	
9/176	The MA DEIS adopts the HSRG recommendations, but it is unclear - in both the HSRG report and in the Mitchell Act DEIS - how these PNI goals/standards are to be practically applied to each particular hatchery program. It is reasonable to consider the PNI standards as goals to be worked towards over time, through a combination of reform measures to hydrosystem management and freshwater habitat restoration, in addition any needed hatchery management reforms. On the other hand, strict annual application of these standards is untenable from all standpoints – scientific, social, and legal. From a scientific standpoint, a strict application of a PNI standard to an integrated supplementation program operating in a population which is at depressed levels, will necessarily restrict the escapement of hatchery origin (HO) fish to the spawning grounds and will restrict the number of broodstock that can be spawned in a given year, to reflect the level of natural escapement. That is, when natural origin (NO) escapement is low, very few hatchery origin fish will be allowed upstream to supplement the naturally spawning population, and the number of broodstock spawned in the hatchery must likewise be limited (thus reducing the number supplementation juveniles that can be produced from that broodyear). This situation negates the ability of supplementation to provide a needed boost to population abundance. A strict application of a PNI standard will also likely run counter to public expectations vis a vis fisheries opportunities, and to production levels agreed upon in the US v Oregon process.	In the EIS, the application of implementation measures, including those that would affect PNI and or pHOS levels, is assumed to occur immediately within the implementation scenario. Each of the alternatives makes accommodations for conservation programs (e.g., supplementation programs) that cannot meet an implementation scenario objective (such as PNI or pHOS in implementation scenarios for Alternative 2 through Alternative 5). See Global Response 7: Comments Addressing the Analysis within the EIS.
9/177	Culling of HO fish at a weir: It is reasonable to prevent excessive escapement of fish from a segregated harvest augmentation program to natural spawning grounds. However, for a reasonably scaled and managed integrated supplementation program, it is neither necessary nor advisable to preclude HO fish from the spawning grounds. These fish will be	See Global Response 1: Comments Stating a Preference (Preferences) and/or Ideas for the EIS Preferred Alternative.

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED).

Letter/ Comment #	Comment	Response
	sufficiently similar genetically, and their exclusion will diminish the demographic boost obtainable through supplementation, thus slowing down the rebuilding process. If the hatchery program is reasonably scaled, as NO escapement rebuilds, the number of HO fish may remain relatively stable, but pHOS will diminish – resulting in an increase in PNI. Also, culling will preclude the contribution of marine derived nutrients to the ecosystem that these fish would bring. (Exceptionally, if total escapement does greatly surpass carrying capacity, and if it is deemed socially desirable to cull a portion of the HO escapement to provide fish for a food bank, one should prioritize males, particularly jacks.)	
9/178	While short-term PNI goals for primary and contributing populations may be different – all populations should be considered as having a long-term PNI goal of 1.0 - a population that has been restored to a level of natural productivity and abundance, such that a supplementation program is no longer deemed necessary and may be reduced in scale and eventually eliminated.	See Global Response 1: Comments Stating a Preference (Preferences) and/or Ideas for the EIS Preferred Alternative.
9/179	Do not cull returning HO fish from the spawning population, unless from a segregated harvest augmentation program.	See Global Response 1: Comments Stating a Preference (Preferences) and/or Ideas for the EIS Preferred Alternative.
9/180	As opposed to adopting for each integrated hatchery program an invariant PNI standard = 0.5 or 0.67 and an invariant guideline for pNOB and pNOB, a sliding scale adaptive broodstock management scheme should be developed. The sliding scale will provide a pNOB value that goes from 0% to 100% as NO escapement increases from near zero, to a population level for escapement of NO fish beyond which pNOB will be 100%. PNI will necessarily be low when NO escapement is low, but supplementation will therefore not be restricted from affecting a needed demographic boost to population abundance. As NO escapement increases, pNOB can increase and pHOS will decline, and program PNI will increase to and eventually beyond the PNI = 0.5 or 0.67 standards defined in the HSRG report and MA DEIS. A sliding scale broodstock management scheme should be established for programs in both populations classified as primary or contributing, with this difference taken into consideration in decisions on scale of the supplementation program and on the chosen rate for increase in pNOB in the sliding scale. An example, provided below, is that of the management	See Global Response 1: Comments Stating a Preference (Preferences) and/or Ideas for the EIS Preferred Alternative.

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED)

Letter/ Comment #	Comment	Response
	scheme utilized in the Lostine River spring Chinook supplementation program, agreed upon by the Nez Perce Tribe and ODFW, to which we added the final column showing the Minimum PNI value that results from its application.	
10/1	We feel that any option that cuts hatchery production in the Columbia Basin is of great concern to our Tribe. We appreciate the need to protect endemic Salmon populations and fully support efforts to return our Salmon populations to pro-dam numbers, but we do not want Salmon availability to suffer because of this. Our Tribe relies on the hatcheries to provide us with fish for our ceremonial and subsistence needs. The Salmon are already in short supply and further limiting their availability is unacceptable to us.	See Global Response 1: Comments Stating a Preference (Preferences) and/or Ideas for the EIS Preferred Alternative.
10/2	It appears that the DEIS focuses on the negative effects of hatchery Salmon on natural fish run and does not take into consideration the potential for modern hatchery practices to help save our endangered stocks while providing for adequate harvest opportunities. We feel it is possible to bolster Salmon numbers while protecting endangered fish.	See Global Response 1: Comments Stating a Preference (Preferences) and/or Ideas for the EIS Preferred Alternative.
10/3	The second problem with the current DEIS is that it missing two very important ideas: Inclusion of modem techniques for hatcheries such as incubation and rearing that closely resembles natural conditions. Also, size and release timing that mimics natural populations (i.e. using the same environmental cues that natural fish use) etc.	Thank you for your comment. While the EIS does not look at specific fish culture procedures for affecting hatchery program performance, it does not preclude operators from developing site-specific fish culture techniques to improve the performance of hatchery fish for programs with a conservation or harvest goal.
10/4	Supporting an environment of collaboration and cooperation amongst stakeholders and management agencies. As written, the current DEIS places sports (inland, upland etc), commercial and Tribal Fisheries at odds with each other.	Comment noted.
10/5	The Tribe would recommend that the DEIS be rewritten to address both areas of concern mentions above. We do not support a reduction in hatchery production in the Columbia Basin. If the DEIS addresses these areas of concern, the alternatives to lower hatchery production should no longer be necessary.	See Global Response 1: Comments Stating a Preference (Preferences) and/or Ideas for the EIS Preferred Alternative.
10/6	We feel that natural and hatchery fish can coexist if we plan adequately, use modern techniques and work together for the good of our Salmon.	Comment noted.

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED).

Letter/ Comment #	Comment	Response
11/1	The Tribes expect full consideration of the following issues, leading to the development of a new alternative that would provide a consistent and equitable policy direction for the distribution of Mitchell Act funds. As stated in the DEIS, the preferred policy direction could be crafted from a combination of some of the alternatives listed in the DEIS and/or some of the public comments received on the document.[1]	Thank you. See Global Response 1: Comments Stating a Preference (Preferences) and/or Ideas for the EIS Preferred Alternative.
11/2	A global check for the accuracy of the figures presented in the tables should be performed due to the multiple inaccuracies throughout the document, in particular with regard to the harvest schedules and the economic estimates for the value of salmonids in the northwest.	See Global Response 7: Comments Addressing the Analysis within the EIS.
11/3	The National Environmental Policy Act (NEPA, 42 U.S.C. 4321,-4347, January L, L97O) requires federal agencies to provide a process which results in a more comprehensive and strategic approach to decision-making; integrating environmental considerations into proposed federal actions to achieve a "productive harmony" among our various social, economic and environmental objectives. The stated goal of the Mitchell Act DEIS is to "develop a NMFS policy direction that will 1) guide NMFS' distribution of Mitchell Act Hatchery funds and 2) inform NMFS future review of individual Columbia River basin hatchery programs under the ESA."[2] Ilt is critical that the development of any future NFMS policy direction regarding the distribution of Mitchell Act funding be informed by a detailed analysis in the Final Mitchell Act EIS and Record of Decision of the direct, indirect and cumulative impacts to Tribal rights and resources.	Comment noted. See Section 4.3.4, Harvest and Economic Values, and Section 4.4.4.1, Fish Harvest and Tribal Values.
11/4	The various bands of the Shoshone and Bannock people occupied a wide geographic area throughout the Great Basin, Snake Basin and the Intermountain region. Prior to non-Indian settler's entry into the region, Indians utilized the vast rich natural resources, and enjoyed the cultural traditions and lifestyles unique to our people. The various bands of Shoshone and Bannock peoples were subject to wars, starvation, imprisonment and forced removal to military forts and ultimately, to Indian reservations far from the natural resources that formed the basis for subsistence foods, and traditional cultural practices. During this period a series of treaties were negotiated with the various	Comment noted.

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED)

Letter/ Comment #	Comment	Response
	tribes; most of which included some reserved rights to harvest natural resources and maintain traditional livelihoods. The Treaty with the Eastern Shoshone and Bannocks, July 3, 1868 was the only treaty ratified by Congress between the Shoshone and Bannock peoples.[3] The language from the 1868 Fort Bridger Treaty Article IV states: *The Indians herein named agree, when the agency-house and other buildings shall be constructed on their reservations named, they will make said reservations their permanent home, and they will make no permanent settlement elsewhere; but they shall have the right to hunt on the unoccupied land of the United States so long as game may be found thereon, and so long as peace subsists among the whites and Indians on the borders of the hunting districts.* Article IV is one mechanism for the Tribes to maintain a cultural, social and spiritual link to our ancestral homelands through exercising subsistence-based traditional cultural practices. In order to ensure that subsistence resource continue to be found in abundant and harvestable quantities, the Tribes actively engage in resource management activities throughout the Columbia and Snake basins for the benefit of fish and wildlife. Through the Tribes' Fish and Wildlife Department numerous programs are administered using funds from the Bonneville Power Administration, NOAA/NMFS, the Lower Snake River Compensation Plan-Program, Bureau of Indian Affairs and the Tribes' general funds. The Tribes remain committed to ensuring that the right to harvest anadromous fish off-reservation is upheld and that the stocks of fish are both sustainable and harvestable.	
11/5	When the final Environmental Impact Statement (EIS) is completed, prior to the signing of the Record of Decision (ROD), it would be appropriate for the NOAA/NMFS decision-makers and appropriate staff to engage the Tribes; Fort Hall Business Council in formal session, to satisfy the requirements of government to government consultation. Tribal input is a necessary part of the NEPA process because it helps decision-makers effectively consider Tribal rights and issues; prior to implementing a decision. Without effective consultation the Tribes often bear the burden of conservation activities or	See Global Response 3: Comments Addressing the EIS Process.

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED).

Letter/ Comment #	Comment	Response
	the adverse impacts from federal management decisions. The Tribes request, consistent with guidance from the Executive branch, that the proper Government to Government Consultation protocol be established and followed with regard to the analysis and decision on this EIS.	
11/6	Congress enacted the Mitchell Act in 1938 to conserve anadromous fish resources throughout the Columbia River basin, specifically authorizing and directing the Secretary of Commerce to "...establish one or more salmon-cultural stations in the Columbia River Basin in each of the States of Oregon, Washington, and Idaho."[4] Today there are 25 hatcheries (10 in Oregon and 15 in Washington) that produce fish utilizing those funds. Of the three states mentioned in the act, only Idaho has not been true a beneficiary of these funds. Mitchell funds were used to construct a couple of holding ponds at Pahsimeroi Fish Hatchery and on the South Fork Salmon River weir, but not a single hatchery was constructed with Mitchell funds and there is not one hatchery operated under these funds. The clear intent of the Act was to equitably distribute congressionally appropriated funds to all Columbia Basin watersheds, but for the better part of a century, the Snake River basin has been virtually ignored in favor of downstream interests; mainly programs to benefit fisheries below Bonneville Dam. The downriver benefits for both tribal and sportsmen speak volumes as to the benefits of the program, and reflect the impact of the funding disparity between downriver harvest and terminal harvest in Idaho. The mere fact that Idaho has been excluded from funding opportunities over the past seventy years demonstrates that the current policy direction of NOAA/NMFS ¡n distributing Mitchell Act funds defeats the intent of the legislation. Because there is not an existing Mitchell Act hatchery facility in Idaho, and the DEIS eliminates any alternative that would propose new Hatchery Facilities using Mitchell Act funds, there is an almost certain outcome that future hatchery operations will not include Idaho as a significant recipient of Mitchell Act funds.[5] The Shoshone-Bannock Tribes request that NOAA/NMFS select a policy direction, based on a modified alternative, which encompasses the intent of Congress and does not unfairly exclude Idaho from consideration for additional Mitchell Act funding.	See Global Response 1: Comments Stating a Preference (Preferences) and/or Ideas for the EIS Preferred Alternative.

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED)

Letter/ Comment #	Comment	Response
	Setting a policy direction for the distribution of funding should be based on meeting the intent and spirit of the original legislation, not maintaining existing facilities; in particular, those facilities that have had an adverse impact on natural-origin stocks of anadromous fish. It is indicated at the outset of this document that operations will not include new facilities that actually improve or contribute to salmon recovery in Idaho, and the Tribes firmly request that a new alternative be developed that actually analyzes the potential impacts of constructing new facilities and expending additional funds in Idaho. Without this analysis it would be extremely difficult for an objective and legally defensible decision to be made about the current policy direction for Mitchell Act funds. Under the current system, only those hatchery facilities that are a part of the Mitchell system are allocated funding, leaving existing programs in the interior Columbia basin without funding to implement necessary reforms that would directly contribute to the recovery of listed anadromous fish. With the increases in hatchery costs, efforts to maintain effective hatchery programs has been severely constrained, with the members of the Shoshone-Bannock Tribes and the sportsmen of Idaho shouldering the burden of conservation, without the requisite support for interior fisheries from Mitchell funds. While several of Idaho's hatchery facilities are contributing to salmon recovery, there is a demonstrated need to include additional programs that would have positive system-wide benefits for anadromous fish in the Snake River basin. This is particularly obvious when one considers that the Snake River basin significantly contributes to downriver harvest, but is forced to curtail fisheries each season due to low adult escapement to the tributaries. The Tribes specifically request that a new alternative be developed that would permit the construction and operation of at least one facility in Idaho; with the necessary funds being shifted from downriver facilities and operations. While this may seem unreasonable to request that downriver hatcheries tighten their fiscal belts, it should be noted that in order to meet the congressional intent of the Mitchell Act; it is a requirement that the	

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED).

Letter/ Comment #	Comment	Response
	Secretary perform this function. The Tribes are unwilling to support any NEPA document as adequate, without first making a detailed and objective analysis of the potential impacts, both positive and negative, of shifting funds from downriver to Idaho.	
11/7	In addition to this analysis, the Tribes also support and request a specific allocation for retrofitting existing hatchery facilities in Idaho to help meet hatchery reform goals for salmon recovery in the Salmon River sub-basin. This may require allocating funds to construct new components of existing hatcheries such acclimation ponds, holding facilities and other acceptable hatchery projects that contribute to the recovery of listed stocks.	See Global Response 1: Comments Stating a Preference (Preferences) and/or Ideas for the EIS Preferred Alternative.
11/8	The Tribes' support the expenditure of funds to improve and propagate listed stocks to maintain the fisheries in the Columbia River basin, consistent with the principles of sound biological science. If the current funding levels are inadequate to meet the congressional intent of the Mitchell Act, and NOAA/NMFS is unable to secure additional appropriations to meet a policy direction that ensures interior fisheries share in the benefits of funding, then there must be an evaluation of the current funding appropriations and a commensurate shift of those funds to the interior.	See Global Response 1: Comments Stating a Preference (Preferences) and/or Ideas for the EIS Preferred Alternative.
11/9	As indicated by the US v. Oregon TAC and other entities throughout the Columbia River basin, the Tribes share concerns about both the assumptions used to develop the alternatives and how to objectively evaluate the Mitchell Act DEIS. NOAA/NMFS emphasizes in the DEIS that the implementation scenarios are not intended to represent on the ground regional scenarios, but are intended to be illustrative of some reasonable scenarios resulting from the selected policy direction. Accordingly, it remains unclear as to how the Tribes will conduct an objective evaluation of the document without assuming that the features of the implementation scenarios, such as the fixed PNI and pHOS standards, are actually the goals under each alternative.	See Global Response 7: Comments Addressing the Analysis within the EIS.
11/10	The assumptions used to evaluate each of the alternatives in the DEIS should accurately and consistently match the general management direction that is found in the NPCC Fish and Wildlife program, the US.v Oregon Management Agreement, and/or the Columbia Basin Fish Accords.	See Global Response 7: Comments Addressing the Analysis within the EIS.

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED)

Letter/ Comment #	Comment	Response
	Without appropriately estimating population level harvest impacts for both main-stem and terminal fisheries, the Tribes find it difficult to truly gage the impact of any of the alternatives. Any error in the estimates for adult returns could have serious implications for the actual impact of any given alternative.	
11/11	The current management and recovery paradigms depend on an evaluation of the relative success of individual populations within an Evolutionary Significant Unit (ESU) or Distinct population Segment (DPS) and have been prioritized based on a hierarchical framework developed by the managers. These priority populations have been noted by both the Technical Recovery Team documents and the managers for the role they play in stabilizing and rebuilding the ESU/DPS. This analysis is further complicated by the fact that there are not many stabilizing populations above the mid-Columbia region and any new production would require an investment of funds that we are told by the DEIS, does not exist. overall, the fish managers of the Columbia have agreed on some fundamental principles for salmon recovery that would require a shift in the policy direction of Mitchell Act funds to implement. In Alternatives 3-5, the targets for recovery would be shifted without the requisite realignment of production and supplementation programs. Specifically, the Tribes remain concerned about the potential impact that changing the current stock make-up would have on the continued harvest of anadromous fish in the terminal areas. This change may lead to impacts for Tribal fisheries and the Tribes' ability to effectively manage tributary fisheries.	Thank you for your comment. The commenter does not provide enough information for NMFS to understand the statement that "Alternative 3 through Alternative 5, the targets for recovery would be shifted without the requisite realignment of production and supplementation programs". The EIS does not shift any recovery targets for any of the populations under any of the alternatives. What the EIS does do is disclose the potential effects of alternative hatchery policy direction on the salmon and steelhead populations (and other resources). The EIS makes no assumptions with regard to the other factors currently affecting these populations. This ultimately acts to isolate the potential effects of hatcheries, both beneficial and adverse, to better inform NMFS, hatchery operators, and the public.
11/12	Notwithstanding our objections to the relevant IJS v. Oregon Management Agreement (Agreement) provisions, the DEIS should have objectively evaluated and developed an alternative that encompassed the obligations and goals of the managers for each specific population. While the Tribes have only agreed to the administrative portions of the Agreement, opting out of the provisions governing harvest and production due to technical and policy level objections in some parts, it would benefit the analysis by including some on the ground data from the relevant managers. The analysis for Alternatives 2-5 reveals a significant reduction of production capacity in direct conflict with the programs proposed for the next ten	See Global Response 5: Comments Addressing the EIS and Its Relationship to Other Plans, Regulations, Agreements, Laws, and Executive and Secretarial Orders.

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED).

Letter/ Comment #	Comment	Response
	years of the Agreement.	
11/13	In addition to the Agreement, the DEIS should also include in that evaluation the commitments made in the Columbia Basin Fish Accords, the Lower Snake Compensation Plan and the 2008 Biological Opinion for the Federal Columbia River Power System. It should be noted that while the focus of these programs is primarily addressing mitigation measures, the purpose of the Mitchell Act funds has been to conserve fisheries' These two goals are intended to complement one another, and not be made in lieu of each other. While the DEIS states that there is no intended conflict, the Tribes are having trouble seeing the value of a hypothetical evaluation of funding priorities when an objective analysis would include the actual program framework.	See Global Response 5: Comments Addressing the EIS and Its Relationship to Other Plans, Regulations, Agreements, Laws, and Executive and Secretarial Orders.
11/14	Notwithstanding the above mentioned uncertainties, modifying Alternative 5 would seem to present NOAA/NMFS with an opportunity to change its funding priorities and shift Mitchell funds to those programs in the interior Columbia basin that meet the goals of recovery and provide additional opportunities to harvest fish for the Tribes. The Tribes recognize that there is a substantial investment that was made in downriver hatchery programs, but that does not justify a funding system that virtually ignores the significant recovery needs of distinct populations within interior Columbia basin. In selecting a priority for funds that improve interior Columbia River goals, NOAA/NMFS could improve the delivery of Mitchell Act funds to programs that will contribute to salmon recovery in the tributaries, where additional funding could implement much needed changes at existing facilities. In advocating for a modified Alternative 5, the Tribes posit that it would be the only alternative that would meet the congressional intent of the Mitchell Act, the harvest demands of the Snake basin and the recovery needs of distinct population segments within the interior Columbia basin. The Shoshone-Bannock Tribes request a fundamental shift in the priorities for Mitchell Act funds to include actions that: 1) improve the segregation of hatchery produced fish from spawning gravels, consistent with HSRG recommendation; 2) implement new or modify existing conservation	See Global Response 1: Comments Stating a Preference (Preferences) and/or Ideas for the EIS Preferred Alternative.

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED)

Letter/ Comment #	Comment	Response
	hatchery programs for populations deemed at high risk of extinction; 3) improve the existing performance standards to improve the return of wild fish, proportionate to returning hatchery stocks; and, 4) provide management flexibility for entities to determine the appropriate treatment methods for individual stocks with an ESU. While this policy direction would require a shift of funds from existing facilities, the change in funding would demonstrate NOAA/NMFS commitment to the full implementation of the original intent of the Mitchell Act and those funds appropriated for salmon recovery.	
11/15	The Shoshone-Bannock Tribes support the current NEPA evaluation of the NOAA/NMFS policy direction for disbursing Mitchell Act funds, but remain concerned that these valid issues will go unaddressed if there is not a corresponding commitment from Congress and NOAA/NMFS to force a change in the program. The Snake basin and the excellent programs run by the various co-managers, stands ready to implement effective Mitchell Act programs that truly contribute to the recovery of fish; not simply sustain commercial fisheries below Bonneville Dam and in the main-stem Columbia River. The Tribes will continue to work diligently to implement programs that directly contribute to recovery of struggling stocks of wild fish in the interior basin, but require the support envisioned over seventy years ago when the Mitchell Act was passed. The Tribes repeat our stance that an objective evaluation of the program, the intent of Congress, and the needs of the interior Columbia will inescapably lead to the conclusion that a paradigm shift to include the interior basin in Mitchell operations is appropriate.	Comment noted.
12/1	**None of the Columbia River or Puget Sound Treaty Tribes were adequately consulted during all phases of development of the CRDEIS** The Nez Perce, Umatilla, Warm Springs and Yakama Tribes, as well as all of the Puget Sound Treaty Tribes, were not consulted in the development of the CRDEIS. This goes against the regulations and guidance of the Council on Environmental Quality (CEQ) requiring Federal agencies to contact Indian tribes and provide them with opportunities to participate at various stages as cooperating agencies with Federal agencies in NEPA reviews and preparation of EAs or EISs. Particularly, Section 40 CFR 1501.2(d)(2)	See Global Response 3: Comments Addressing the EIS Process.

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED).

Letter/ Comment #	Comment	Response
	requires that Federal agencies consult with Indian Tribes early in the NEPA process. Other sections also refer to interacting with Indian Tribes while implementing the NEPA process (see Part 1.B.2 in WH-IAEWG 2009; NEPA Guidance 2004). The process under which the CRDEIS was developed is not consistent with Treaty Rights, circumvented the Tribal Trust relationship, and does not recognize the co-management authority of the tribes or the responsibilities of the federal government in ensuring that those relationships be honored.	
12/2	**The CRDEIS relies on the work of the Hatchery Scientific review Group (HSRG) and other advisors who have no management authority** As you are aware, the tribes, state and federal governments have well-established co-management roles and intergovernmental relationships specifically documented through numerous orders (U.S. v. Washington, 759 F.2d 1353, 1358-59 (9th Cir. 1985); resulting in current law such as the Puget Sound Salmon Management Plan (PSSMP), developed by the comanagers and adopted as an order of the Federal Court in 1985. In all watersheds, the state, tribes and the federal government operate jointly-coordinated hatchery, harvest and research programs in compliance with ESA opinions, permits and exemptions and there can be no separate goals or policies that are incompatible with the other key entities and agencies that depend upon them. Our joint management process does not single out hatchery- or fishery-only actions but instead requires an "all-H" approach closely coordinated between the co-managers on all of our regional goals, policies and guidelines because our programs are so closely coordinated and entirely interdependent and inseparable. Within our area, this integrated management approach is legally mandated under the PSSMP, which includes the Equilibrium Brood Document. Also, all of the coordinated hatchery, harvest, and habitat programs that are currently exempted from take and authorized by NOAA Fisheries under the ESA call for integrated management of the Hs.	See Global Response 7: Comments Addressing the Analysis within the EIS.
12/3	**None of the CRDEIS alternatives are adequate; either separately or in combination**	See Global Response 6: Comments Addressing the Range of Draft EIS Alternatives.

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED)

Letter/ Comment #	Comment	Response
	The lack of consultation with the tribes likely was the cause of tribal concerns not being taken into account when identifying, considering, and analyzing the alternatives. We are especially concerned about important alternatives that should have been included but were not (see "Habitat alternative left out" under "Items missing from the alternatives presented" and our comments pertaining to maintaining or increasing hatchery production under alternative 1 below). The inevitable result from any of alternatives 2-5 as proposed will be either a requirement for numerous takes of natural spawners - removals of listed fish of either hatchery or natural origins, from spawning grounds or at weirs, in violation of the ESA; or greatly reducing or eliminating mitigation hatchery production and dismantling the trust responsibility and the promise made to the tribes when the dams were built and the habitat destroyed. None of these options is acceptable to the Tulalip Tribes, nor we would expect, to any of the tribes, …	
12/4	… and they aren't compatible with NEPA mitigation requirements in Section 6.9 Mitigation of WH-IAEWG (2009). "Mitigation involves taking steps to avoid, minimize, rectify, reduce, eliminate, or compensate for the impact of an analyzed alternative (40 CFR 1508.20)." "Mitigation measures discussed in an EIS must cover the range of impacts of the analyzed alternatives, and such measures should be considered even for impacts that by themselves would not be considered "significant" (Question 19a, "CEQ's Forty Questions").	Thank you. Please see revised and updated Section 4.1.2, Mitigation.
12/5	Alternative 1 is the no-action alternative. However, the CRDEIS implies that the current programs under this alternative are not adequate to conserve the listed populations under the ESA. In fact, current production could be maintained or increased, in combination with innovative hatchery strategies and effective habitat protection and restoration, while supporting salmon recovery. This obvious alternative was left out of the CRDEIS.	See Global Response 6: Comments Addressing the Range of Draft EIS Alternatives.
12/6	Funding for all of the Mitchell Act Hatcheries would be eliminated under Alternative 2, which is unacceptable.	Comment noted.

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED).

Letter/ Comment #	Comment	Response
12/7	Hatchery production is cut, with varying levels of additional weirs and selective fisheries implemented, in Alternatives 3 through 5, under the guise of conservation. These last three alternatives are based on untested and unsupported assumptions and are also unacceptable.	See Global Response 6: Comments Addressing the Range of Draft EIS Alternatives.
12/8	NMFS has further stated that no one alternative proposed will likely be adopted anyway but instead some compromise. Even if the alternatives proposed were acceptable to tribal policy or treaty rights, we are convinced the best available science was not used in the development of the alternatives, which are not scientifically defensible.	See Global Response 7: Comments Addressing the Analysis within the EIS.
12/9	**Habitat alternative left out: Addressing genetic risks from hatchery fish introgression by increasing natural production through habitat protection and active restoration as the preferred alternative** Perhaps the biggest oversight of the CRDEIS in our opinion was the decision to exclude habitat restoration and protection as one of the alternatives, or as a part of all alternatives, since this is necessary to support both hatchery and wild production in the Columbia River basin. A chief conservation concern of the EIS was to address risks to genetic fitness that may reduce productivity to wild fish, but also to reduce potential ecological risks to wild fish posed by high proportions of hatchery-origin fish relative to natural-origin fish. We need to state up front that we believe that habitat is by far the primary factor limiting productivity, not hatchery fish introgression. The actions proposed in alternatives 3-5 that seek to increase the productivity of natural spawners without including habitat as their primary element will only result in reducing viability; any improvements conferred to productivity will not be realized because the fish will still be unable to utilize the degraded habitat, which is the current condition.	See Global Response 2: Comments Addressing the Scope of This EIS.
12/10	The relative gene flow between the composite wild-hatchery population can be expressed through the equation of proportionate natural influence (PNI), which, like any fraction, can be increased by decreasing the denominator (decreasing the hatchery fish proportion). The proposed alternatives seek to reduce the denominator of the PNI equation by reducing hatchery fish proportions by reducing Mitchell Act Hatchery production, installing weirs and implementing selective fisheries. However, the more obvious and also more sustainable alternative to address the	See Global Response 2: Comments Addressing the Scope of This EIS.

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED)

Letter/ Comment #	Comment	Response
	problem of reducing the fraction of hatchery fish is to increase the numerator of the fraction (increase the natural fish proportion). Not including this extremely basic and obvious solution does not comport with NEPA regulations, which require that alternatives analysis ..."Rigorously explore and objectively evaluate all reasonable alternatives and for alternatives which were eliminated from detailed study, discuss the reasons for their having been eliminated." http://www.fhwa.dot.gov/environment/alts.htm.	
12/11	Will, as you know and have heard me say for years, the primary goal of the Tulalip Tribes is to protect and restore the habitat necessary to produce robust natural runs at a level necessary to support treaty rights and other benefits. Our primary management objective has always been natural production of all species of fish in all of the watersheds that we manage. It is the cornerstone to our recovery plans. Increasing natural spawner abundance, productivity, spatial structure and diversity through implementing salmon recovery efforts and associated habitat protection and restoration actions is the obvious solution to reducing the fraction of hatchery fish on the spawning grounds. Not placing the primary focus on implementing habitat actions and increasing natural spawners flies directly in the face of NOAA Fisheries' and the co-manager's mandate to implement salmon recovery plans using an all-H approach. Hatchery reform is destined to fail if it is not implemented with a consideration of all of the Hs.	Comment noted.
12/12	We understand the reason stated in the CRDEIS was that its purpose was to evaluate funding of Mitchell Act Hatcheries and because habitat restoration funding falls under a different source (the Pacific Coastal Salmon Recovery Fund); it was not included in the CRDEIS for that reason. However, hatchery and harvest reform and salmon recovery cannot be evaluated, much less performed or achieved, in isolation from habitat protection and restoration, especially when habitat quantity and quality are the primary factors for the decline and the primary factors limiting the recovery of self-sustaining salmonid populations in the Pacific Northwest.	See Global Response 2: Comments Addressing the Scope of This EIS.
12/13	Soon after the EIS was first initiated, NOAA decided to expand its scope to include many other hatcheries throughout the basin that are not funded by the Mitchell Act because it made sense to evaluate the entire hatchery	See Global Response 2: Comments Addressing the Scope of This EIS.

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED).

Letter/ Comment #	Comment	Response
	production, which we agree makes logical sense. However, this train of logic refutes the reason given why habitat was omitted because the EIS was limited to the evaluation of funding for the Mitchell Act hatcheries. We would also agree that evaluating harvest in the context of hatchery reform also makes good sense. What we don't understand, at all, is how reform of habitat protection and restoration can be omitted as an alternative in this CRDEIS?	
12/14	We were recently informed that you were told directly that habitat is not the problem; that it isn't as important to recovery as is the threat to wild fish posed by hatchery fish on the spawning grounds. WDFW recently similarly stated in responses to comments received on their Hatchery and Fishery Reform Policy (Appleby 2009) that, "The scientific literature and analyses of the HSRG clearly indicate that reducing pHOS is a much more effective and sustainable approach for achieving a desired PNI than increasing pNOB". WDFW went on to state, "We agree and believe it is implied in the policy (Policy Guidelines Item 2. "Use the principles, standards and recommendations of the Hatchery Scientific Review Group (HSRG) to guide the management of hatcheries operated by the Department."). All of this is highly disturbing and unacceptable. We strongly doubt that simply culling hatchery fish is the most sustainable or effective approach to achieve a desired PNI as opposed to increasing self-sustaining natural production. More importantly, we strongly disagree that hatchery fish pose a larger threat to salmon recovery than does the continued loss of habitat and ask NOAA Fisheries to clarify its position on that issue as well. All of this greatly damages and minimizes many years of work and expense we have devoted toward our habitat protection and restoration efforts, which the Tribes are dedicated to achieve no matter what obstacles we may encounter on the way. We know this to be the key to recovering ALL of our salmon populations. All of the evidence, including all of the "All-H" integrated AHA modeling that we have done to date, shows that habitat is the primary limiting factor to recovery of the listed populations we work with. Undoubtedly this would be found to be true for most of the other populations throughout the state where it has been estimated that the vast	Comment noted.

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED)

Letter/ Comment #	Comment	Response
	majority of the freshwater rearing and spawning habitat has been lost and the remainder severely qualitatively degraded.	
12/15	Habitat protection and restoration, if effectively implemented, continue to generate fish sustainably over the long term, while continued habitat degradation will result in continued natural production declines. Given that the primary limiting factors are habitat-related, that sustainable recovery requires meaningful and effective habitat protection and active restoration actions, and that not doing so is allowing the same mistake to occur over and over again, the CRDEIS absolutely must include habitat actions and a strong commitment and approach to "All-H" management, habitat protection and active habitat restoration (if not, see next paragraph). This will be absolutely necessary for NOAA Fisheries to implement the salmon recovery plans and achieve the recovery goals. The CRDEIS has to be re-done to include habitat and salmon recovery actions incorporated into a primary alternative. Any future we envision that includes a sustainable salmon resource must include a greatly improved approach to habitat management than we now see; "habitat reform", if you will.	See Global Response 2: Comments Addressing the Scope of This EIS.
12/16	One thing we often hear from opponents to salmon recovery is that the habitat in the Columbia basin, with its dams, irrigation and other habitat problems, along with other particularly degraded watersheds, cannot be restored much less even realistically, adequately protected. Meanwhile, we realize that NOAA Fisheries must still protect the fish because it is your responsibility under the ESA. However, when the opposition makes that argument, it is circular and either illogical and even nonsensical, or deceptive and intentionally obfuscating. This decline in the salmon runs was anticipated when the government built the dams and developed the Mitchell Act to compensate for the natural production loss caused by the degraded and lost habitat. Now the concern is that there are too many hatchery fish, relative to natural fish, on the spawning grounds, so we now have to reduce the Mitchell Act hatchery production... Of course there are! That's why we built them! We either need to fix and protect the habitat or operate the mitigation hatcheries as required and promised. We can't have it both ways. The dams came with the hatcheries, and they go with the hatcheries. It's as simple as that really.	Comment noted.

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED).

Letter/ Comment #	Comment	Response
12/17	In chapter 4, the CRDEIS categorizes the Columbia River salmonid populations into three categories (Primary, Contributing and Stabilizing). Genetic risks are to be controlled by limiting pHOS interacting with NOS. The background technical documentation to support the assertion made in the CRDEIS that cutbacks in mitigation hatchery production, installing weirs and implementing selective fisheries to cull hatchery fish will provide conservation benefits to natural wild populations from hatchery populations is not given. Please supply quantitative data that shows the justification and rationale for subdividing the salmonid populations into these categories and the benefits of their associated management strategies toward achieving viability and recovery goals. These designations are similar to the tiered approach in the Population Recovery Approach (PRA) for watershed prioritization. We are extremely concerned that these classifications are being used to make decisions about which watersheds or salmonid populations to leave behind, which should receive the necessary improvements, and protections, which can be expected to achieve recovery, and how stringent the HSRG guidelines should be applied based on those designations. We understand the PRA approach is also being proposed for the Puget Sound DEIS alternatives. In Appleby (2009), it is stated that the HSRG wants full implementation of all of the PNI and pHOS standards within five years for all populations, whether Primary, Contributing, or Stabilizing (essentially, the tiered approach in PRA) and says that the endorsement of the HSRG's guidelines by NOAA's Recovery Implementation Science Team (RIST) "...reinforces the need for rapid implementation of hatchery reforms.". This is also highly disturbing and is another show stopper approach to the tribes. Through our Hatchery Action Coordination Committee (HACC) process we will be asking the Puget Sound Recovery Implementation Technical Team (RITT) and the Recovery Implementation Science Team (RIST), to evaluate, from a technical standpoint, the Primary, Contributing, and Stabilizing (PCS) approach and the PRA approach to watershed and population	Thank you for your comment. The categorization of natural-origin populations in the EIS was modeled after the Lower Columbia Fish Recovery Board 2004 draft recovery plan, the 2010 updated LCFRB recovery plan, and the NOAA Fisheries 2013 final Lower Columbia River Recovery Plan for Salmon and Steelhead (www.westcoast.fisheries.noaa.gov/protected_species/salmon_steelhead/recovery_planning_and_implementation/lower_columbia_river/lower_columbia_river_recovery_plan_for_salmon_steelhead.html). Additionally, The HSRG utilized this categorization for its 2009 Columbia River hatchery review. The EIS does not make determinations regarding the efficacy of any particular population recovery organization. NMFS is unable to respond to the other issues raised in this comment due to lack of specificity.

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED)

Letter/ Comment #	Comment	Response
	prioritization. We will be requesting them to evaluate whether they endorse "full implementation of all of the PNI and pHOS standards within five years for all populations, whether Primary, Contributing, or Stabilizing" through rapid implementation of hatchery reforms and how those takes off of the spawning grounds are being addressed in our integrated harvest, hatchery, and habitat management and salmon recovery plans. We will also need to get the final policy, technical, and treaty rights perspective on PRA, PCS watershed and population designations and rapid implementation of the HSRG's guidelines from the tribes.	
12/18	**Disease risk assessments are not adequately emphasized** Risk assessments in Chapter 4 include competition, predation, viability parameters, fish removals from weir placements, disease, nutrient recycling, and stray hatchery fish risks. However, disease risks were not adequately considered in the alternatives. Recently, the Pacific Northwest Fish Health Protection Committee (PNFHPC), a consortium of fish health experts from multiple agencies from all of the Pacific Northwest States and Canada, all agreed to a resolution to control the spread of IHN virus and other fish pathogens of concern at fish hatcheries in the Pacific Northwest coastal region with major emphasis on the Columbia River basin. The resolution recognizes that there has been a recent increase in the number of detections of the steelhead-specific MD subgroup of IHN virus in juvenile and adult steelhead stocks on the Washington Coast. The virus has appeared in six watersheds that were negative for this virus before 2007. IHN virus and other pathogens of concern have caused significant losses to hatchery stocks and their dependent harvest programs in the Columbia River basin and more recently along the Washington coast. Since IHN virus and other serious fish pathogens increase the threat of disease to Endangered Species Act-listed steelhead and other wild salmonid populations of concern, these at-risk populations are more sensitive to local extinction due to disease, so the emergence of serious fish pathogens such as the MD subgroup of IHN virus into new geographical regions has far-reaching implications that affect domestic and international hatchery and fishery programs including US-Canadian fishery management and the	Thank you. Recognition of the recent prevalence of IHN virus (M-clade) in hatchery steelhead in rivers of coastal Washington State has been added to Section 3.2.3.1.13, Risks Associated with Disease Transfer.

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED).

Letter/ Comment #	Comment	Response
	ESA. Since there is no effective treatment to control IHN epidemics, fish health experts are in agreement that the most effective strategy to control IHN virus or other pathogens of concern in susceptible hatchery populations is to prevent them from being introduced into a facility by implementing strict bio-security measures that include, first and foremost, securing the influent water supply where the majority of these outbreaks come about in facilities with surface water supplies in which fish are naturally present. The PNFHPC, an organization devoted to safeguarding the health of aquatic animals in the Pacific Northwest, concluded that securing the water supplies in the region's hatcheries would dramatically decrease pathogen outbreaks and the possible amplification of pathogens. Fish health experts representing all of the state, tribal, and federal agencies are currently disseminating a survey to all of the respective hatcheries throughout the Columbia River basin to determine what it would cost to disinfect their hatchery water supplies to make them pathogen-free. The survey is to be completed by March of 2011. The PNFHPC will provide policy advisors in western Washington with a letter that entails a short explanation of the problem, the proposed strategy to correct it that eliminates virus or other pathogens of concern from rearing facilities influents and the associated costs to retrofit water intakes to make them pathogen-free. This major problem and effort being made to address it was not even mentioned in the CRDEIS but needs to be added, recognizing the great benefits it will provide to both wild and hatchery fish production and the improvements to fish health that will result by implementing this effort. This effort should be an overarching concern to all conservation agencies in the Northwest and in our opinion, should take priority over the genetic risks reviewed here and given such weight throughout the CRDEIS. We urge NOAA Fisheries to work together with the PNFHPC in solving this problem. This should be a priority for hatchery reform communicated to elected	

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED)

Letter/ Comment #	Comment	Response
	officials, which has been supported and signed by all of the parties, agencies, and entities in three different states. Disease prevention is another ESA mandate that has been largely ignored in what has been called "Hatchery Reform".	
12/19	**Pinniped predation risk assessments are not adequately emphasized** Also, the recent decision to remand the authorization for lethal removal of problem sea lions at Bonneville dam was not adequately considered in the alternatives. Interactions from marine mammals that affect salmonids were not quantified in terms of total mortality or the effects on wild fish viability in the CRDEIS in the first place. Reduced hatchery production and removal of natural spawners for broodstock could easily result in higher proportions of natural-origin listed salmonids predated upon at Bonneville. When this CRDEIS was sent out for comment, NMFS still had authorization through the Marine Mammal Protection Act to address the issue of predation by California sea lions at Bonneville Dam. Now, however, since November of this year, the 9th Circuit Court of Appeals remanded the authorization for lethal removal of problem seas lions at Bonneville Dam back to the Oregon District Court, which, combined with the proposed hatchery reductions in the alternatives and the apparent lack of evaluation of predation, all combine to form a very significant threat that is not being adequately evaluated. The need for continuing sea lion eradication is urgent and the need to consider the recent decision with the effects of the various alternatives is going to be required and poses another significant risk to salmon recovery and ESA protections of listed fish.	Impacts of Steller sea lion and California sea lion predation on salmon and steelhead at Bonneville Dam are described in Section 3.5.5.1.1, Steller Sea Lion, and Section 3.5.5.1.2, California Sea Lion. Effects by alternative are provided in Section 4.5.4.3.1, Steller Sea Lion, and Section 4.5.4.3.2, California Sea Lion.
12/20	**Some alternatives actually call for physical removal of wild and hatchery fish from natural spawning areas** This seems to directly contravene the requirements of the ESA to protect listed fish. These fish removals are also not compatible with the comanagers' salmon recovery goals. The alternatives include natural spawner removals to meet arbitrary genetic broodstock integration, hatchery-origin spawner (pHOS) limits, and PNI guidelines; employing selective fisheries for the sole purpose of adjusting hatchery:wild ratios, installing weirs, and cutting mitigation hatchery production to reduce pHOS and increase PNI. These arbitrary, but significant, natural spawner removals	Thank you for your comment. This EIS does not attempt to make determinations of actions related to ESA compliance; see Section 1.2, Purpose and Need for Action, and Section 1.3.3, Potential Future Decisions in Response to Hatchery Actions. Additionally, the EIS does not make any determination regarding the efficacy of the implementation metrics as related to ESA. The final EIS utilizes pHOS and PNI as surrogate measures for effects on, or conservation of, genetic diversity within a natural-origin population affected by a hatchery program. Please see Appendix I, RIST (2009), for a review of these metrics.

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED).

Letter/ Comment #	Comment	Response
	are not adequately substantiated or supported by conclusive science. Hatchery-origin natural spawner removals are also direct takes because there are numerous hatchery populations that are designated as part of the listed ESU, which cannot be distinguished from other non-listed hatchery-origin fish and not all are adipose fin mass-marked either. We have not seen quantitative data that document the justification and rationale for determining the apparently arbitrary threshold pHOS limits of 0.05 and 0.10 for primary and contributing populations and the PNI goals of 0.7 or 0.5 for integrated programs. We are not aware of any documentation that these methods have worked to improve population viability.	
12/21	The argument has been made that wild fish removals from the spawning grounds for hatchery broodstock integration aren't direct takes because they produce hatchery progeny that mitigate for the removals. While it may be true that they will be used to make hatchery progeny, they only replace other existing hatchery broodstock and thus provide no net increased production or benefit beyond theoretical improved fitness of hatchery stocks, which depends on available productive habitat. We reject that this is necessarily the best use of those natural spawners. Rather, any removal of any/either natural- or hatchery-origin listed salmonids from natural spawning grounds must only be done when the benefit to the resource has clearly been shown to exceed the cost of losing a natural spawner. We are concerned that mining wild populations to replace other already available hatchery-origin broodstock fish often reduces all four aspects of population viability. We are concerned that this strategy could backfire and instead of protecting the extant naturally-spawning wild salmonid populations, it could erode their reproductive success and viability and harm salmon recovery efforts. The science does not appear to have been conclusively substantiated across varying life history types, across the associated varying hatchery programs, with their varying rearing durations, methods, and release strategies. We would like to see the conclusive evidence that mitigates these direct takes and guarantees increased productivity of the integrated hatchery stocks, particularly given the current state of the habitat, including subyearling and fry release programs, without reducing	Comment noted.

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED)

Letter/ Comment #	Comment	Response
	wild population viability and reproductive success.	
12/22	We reiterate that, while these comments mainly pertain to the Columbia River DEIS, we are concerned that broad application of simple PNI guidelines will set further precedent and inevitably result in the inappropriate removal of natural-origin fish elsewhere as well, further impacting the spatial structure, diversity and abundance of listed populations with questionable benefits to productivity that simply put, do not justify the other numerous and severe reductions in viability. Without detailed, watershed-specific analyses, efforts to improve hatchery broodstocks will directly counteract our other efforts toward salmon recovery. The important point is that management decisions should be made specific to the situation in each watershed.	NMFS agrees that decisions regarding the operation of hatchery programs have to incorporate the site-specific information and needs at the watershed level. However, NMFS is not suggesting, with this EIS, broad application of PNI, pHOS, or any other "guidelines." The EIS utilizes these metrics as example measures to illustrate potential effects to the fish resources. The alternatives themselves are devoid of prescriptive language directing the use of any specific measures.
12/23	With regard to integrating at PNI > 0.7 for all Primary populations, we looked at what this would mean in the Snohomish basin and first noted that all of the populations in the Snohomish system are designated as Primary (HAIP 2009). Just to integrate broodstock only for the on-station portion of the Wallace-Tulalip Chinook salmon would have to be removed from the spawning grounds annually). We also looked at what it would mean to meet the pHOS < 5% guideline (we now understand it is 2%, but we looked at 5%) in the Snoqualmie and < 30% for the integrated Skykomish population. Using historic NOS/HOS breakouts with 100% marking and tagging from 1998-2000, this would have required the additional removal of, on average, 32.% of the estimated Skykomish population natural spawning escapement for these years. To illustrate how this is not consistent with salmon recovery goals, the combined removals to meet the HSRG policy for both natural-origin brood stock integration and hatchery-origin spawners throughout the Snohomish basin would amount to taking approximately 50%, or more than 2,000 fish, out of the natural Snohomish basin spawning escapement in each of the years from 1998-2000. If these removals were calculated the same as exploitation rates, they would be more than	Thank you for your comment. NMFS appreciates your concern regarding broad scale application of metrics such as PNI or pHOS. The EIS does not, however, prescribe the use of such metrics in the alternatives. See Global Response 7: Comments Addressing the Analysis within the EIS.

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED).

Letter/ Comment #	Comment	Response
	double the allowable exploitation. This approach would have left only 48.0%, 50.3%, and 53.0% of the original escapements, for 1998, 1999, and 2000, respectively. This level of reduction of natural escapement would be unacceptable and may jeopardize NOAA Fisheries 4(d) Exemption from take issued for the co-managers' harvest management plan. Compensation for any takes to meet the guidelines under any of the alternatives in terms of RERs or recovery plan objectives was never addressed in the CRDEIS. Under the 4(d) Rule, NOAA Fisheries has exempted the hatchery, harvest, and salmon recovery/research activities for listed Chinook salmon populations as they are stated in the harvest plan, the HGMPs, RMPs and salmon recovery plans. We are concerned that these large natural spawner removals might significantly affect NOAA Fisheries' ESA assessment of the effects on listed populations under the harvest plan and other permitted salmon recovery, hatchery and research programs.	
12/24	**There is too much reliance on concerns about deleterious genetic interactions between hatchery and wild fish with a lack of documentation and use of best available science** Estimating gene flow on the basis of carcass surveys is indirect at best, perhaps not even indicating whether hatchery fish and natural fish even died in similar locations, not indicating the degree to which they were spawning in the same location at the same time. Genetic data can be used to infer gene flow between hatchery and natural populations, and furthermore they can be tested to determine whether there is sufficient statistical power in a given data set to make specific inferences. The Ford (2002) model, from which the concept of PNI was derived, relies un several simplifying assumptions in modeling the fitness effects of hatchery integration. Spawner surveys and carcass sampling are expanded out according to the hypothesized run distribution to estimate pHOS. This method can only produce a point estimate with no measure of the uncertainty around the point estimate (a confidence interval). This estimate of pHOS therefore cannot be evaluated as to whether it	See Global Response 7: Comments Addressing the Analysis within the EIS.

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED)

Letter/ Comment #	Comment	Response
	provides a statistically valid representation of the actual relative distribution of hatchery- and natural-origin fish in a river system. And that is before tackling the question of whether the fish are alive in the same time and place that spawning occurs. These pHOS estimates are then used to indirectly estimate effects on fitness of natural populations. Thus, using pHOS estimates as a proxy to estimate gene flow inserts an additional set of simplifying assumptions between observations and management outcomes. The large but unknowable uncertainty and error inherent in the escapement estimates and carcass sampling has been extensively documented in the literature and in annual survey data. If the variance on escapement estimates of hatchery- and natural-origin fish could even be known in order to be introduced into the estimate of the proportion of natural- and hatchery-origin fish on the spawning grounds, differences in run-timing, spawn-timing, assortative mating, and reproductive success of the hatchery- and natural-origin fish would remain. Preliminary analyses of genetic data in the Snohomish indicate that gene flow may be substantially less than carcass surveys alone would support. Blanket management of hatchery program size and constitution according to a single parameter (pHOS) with unknowable uncertainty should not be conducted without rigorous evaluation of data that can address the same question but with knowable uncertainty. The results of multiple independent analyses can then be compared in order to produce a better-informed estimate of what is actually happening in the river.	
12/25	Numerous studies show that, when done right, supplementation with hatchery fish can boost natural production. Techniques such as random, representative selection of local broodstock and factorial mating to maintain diversity, low rearing densities, underwater feeders and exposure to live feed can train fish to recognize and capture prey, camouflage coloration of rearing vessels, in-stream and overhead cover and subsequently of fish, combined with exercising fish and exposure to predators during rearing can help fish to evade predators after their release, some or all of which can be incorporated depending on practicality of rearing locations to more closely mimic natural rearing conditions. Tests of different rearing/release strategies and growth regimes that mimic	See Global Response 7: Comments Addressing the Analysis within the EIS.

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED).

Letter/ Comment #	Comment	Response
	natural rearing may have the potential to further increase survival.	
12/26	Meanwhile, the AHA model inaccurately assumes that all hatchery fish are the same and all have the same negative effects on natural population productivity and viability. Recent studies have been purported to indicate that the reproductive fitness of hatchery-origin fish and of natural salmon with which they interbreed with decreases through time and in some cases quite rapidly. Most of these studies were done on steelhead; however, we do not think that steelhead are a representative species to make broad-based claims about hatchery fish. A review of those studies brings up several confounding factors that need to be accounted for. Hatchery steelhead from non-local sources with a multi-generational record of domestication should not be compared to the productivity of wild fish, particularly in consideration of the fact that supplementation guidelines and most current supplementation programs require the use of local natural populations as the source for hatchery broodstock. Most steelhead stocks have been deliberately or inadvertently, selected for characteristics that diverge from those of native populations that may be maladaptive such as altered run timing, hatchery selection of age and stage of development at release not representative of the age at which natural-origin steelhead migrate to sea. Also, inadvertent hybridization of winter and summer populations in hatcheries is not representative of these different races and runs that remain reproductively isolated in nature. Using steelhead to make broad-based claims about the reduced productivity to a composite hatchery-natural population caused by hatchery fish is disingenuous.	See Global Response 7: Comments Addressing the Analysis within the EIS.
12/27	Likewise there can be confounding environmental effects, other than genetic, that cause reduced fitness in hatchery fish. Comparing natural-origin spawning in optimal habitat with hatchery fish spawning in less ideal conditions is a biased comparison and does not consider important life history and behavioral effects. As one example, natural spawners have evolved in, colonized, and are better imprinted on the available productive habitat remaining, resulting in higher homing affinity back to the productive spawning and rearing habitats; displacing hatchery fish that are instead released at various points in watersheds often lacking productive habitats. Even if they were released only into productive spawning and	Comment noted.

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED)

Letter/ Comment #	Comment	Response
	rearing habitats, wild fish have the advantage simply due to the fact that they already occupy those habitats making it harder for the hatchery fish to spawn and rear with the same relative productivity.	
12/28	Our concern here is that salmon recovery efforts may actually be impeded if properly-operated hatchery programs that use local natural stocks (that may or may not be integrated with natural-origin fish depending on the assessed impacts on viability in each particular case) that are in fact making valuable contributions to recovery are all treated the same and culled regardless of their differences and potential benefits or threats they may have associated.	Comment noted.
12/29	Also, it appears that there have been very few studies of gene flow that have demonstrated reduced productivity, particularly in F2 or subsequent generations or for most subyearling hatchery programs, particularly of listed subyearling Chinook that comprise most of the life history types in the populations that NOAA is responsible to protect and recover.	Please see Section 3.2.3.1.1.2, Effects on Genetic Diversity, for updated information related to genetic differences between hatchery-origin fish and natural-origin fish and potential effects on other VSP indicators, such as productivity.
12/30	While the Policy itself is certain to reduce abundance, diversity and spatial structure, limited DNA data suggests that it will not improve productivity or fitness either, which is driven by gene flow influenced primarily by relative effective populations size. Causing direct takes, reducing viability, and violating jeopardy standards in this CRDEIS is incompatible with Endangered Species Act NEPA requirements in Section 6.8.1 of the Federal Tribal Consultation Statutes, Orders, Regulations, Rules, Policies, Manuals, Protocols and Guidance (WH-IAEWG 2009). The policy states that, "Section 7 of the Endangered Species Act (ESA) directs all Federal agencies to use their existing authorities to conserve threatened and endangered species and, in consultation with the Fish and Wildlife Service (FWS) or the National Marine Fisheries Service (NMFS), to ensure that their actions do not jeopardize listed species or destroy or adversely modify critical habitat."	Please see Section 1.3.3, Potential Future Decisions in Response to Hatchery Actions. This section details the requirements for consultation under ESA. Additionally, please see Global Response 2.a, Commenter's views that the EIS considers alternatives that are inconsistent with NMFS' current authority.
12/31	While we understand that the economic analysis and the fishery modeling it was based upon have numerous technical errors that would take an entire separate analysis to address, we are very concerned that the reduced production from Mitchell Act hatcheries that is likely to result from this CRDEIS will increase impacts on listed natural populations. This is particularly concerning because past baseline stock abundances modeled	Thank you for your comment. As stated in your comment, issues with the information used in the draft EIS harvest date were pointed out in the public comments on the draft. NMFS has worked to address these issues and has consulted with the Columbia Basin co-managers for assistance with this. The assumptions in the final EIS harvest analysis are updated to

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED).

Letter/ Comment #	Comment	Response
	were much higher than they are currently, which has the potential to further underestimate future fishery impacts. Plans for "fishery reform" and to "fully implement selective fisheries" will undoubtedly further exacerbate the effects on natural populations if Mitchell Act hatchery production is decreased under the proposed alternatives due to increased encounter rates and increased hook and release mortality on unmarked fish. This will also further increase our uncertainty in modeling the impacts of selective fisheries.	utilize the most recent (as of 2010) harvest rates and limits in the Columbia Basin and in the marine water of Washington, Oregon, British Columbia, and Southeast Alaska. For more information regarding the assumptions and limits utilized in the final EIS analysis, please see Appendix K. See Global Response 7: Comments Addressing the Analysis within the EIS.
12/32	However, while we remain very concerned about the effects of this CRDEIS on fisheries, we are most concerned about the over-emphasis on the economic value of these hatcheries. As far as we are concerned, the real value of these fish to the tribes is cultural. This CRDEIS does not recognize any mitigation responsibility associated with the Mitchell Act and seeks to further diminish Treaty Fishing Rights to access fish that has already been greatly diminished by the loss of natural resources. We have been dismayed to read some economic evaluations and comments that completely ignore the tribes altogether focusing solely on the negative cost:benefit ratio or putting price tags on the value of these fish. These hatcheries provide a way of life for Tribal members to maintain the culture and knowledge of fishing during the long period that we will be working on restoring the natural production required for the full realization of the Treaty right to fish in all usual and accustomed areas. And, of course, the value of that fishing to the Tribes greatly transcends any monetary values.	Thank you for your comment. Please see expanded language in Section 3.4.4.1, Native American Tribes of Concern, for additional information on the importance of salmon to the tribes.
13/1	The scope of the DEIS should focus primarily on the action of Mitchell Act funding. The DEIS attempts to serve two different functions: A. Provide National Environmental Policy Act (NEPA) coverage for the specific action of providing Mitchell Act funding for hatchery programs. B. Provide NEPA coverage for Hatchery Genetic Management Plan (HGMP) permitting by serving as a broad programmatic EIS. Although a programmatic EIS might be the most efficient approach for providing NEPA coverage for HGMP permitting, NOAA Fisheries' attempt to	See Global Response 2: Comments Addressing the Scope of This EIS.

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED)

Letter/ Comment #	Comment	Response
	address two different purposes in a single EIS falls short of adequately accomplishing either objective. In fact, by broadening the initial scope to something beyond Mitchell Act funding decisions and by failing to provide clear and explicit policy alternatives for the region to consider, NOAA Fisheries caused general confusion about the intent of the DEIS, as evidenced by the overwhelmingly negative public response to it. As such, the development of a set of final NOAA Fisheries policies to guide HGMP permitting will require additional discussion and coordination with fisheries managers and the public. This effort will and should take more time than that currently allotted by NOAA Fisheries for completion of the DEIS. NOAA Fisheries should pursue the more complicated programmatic EIS only after it completes the necessary dialogue on the development of a regional hatchery policy. The DEIS should focus on its original scoping, i.e. only address the action of Mitchell Act funding. As such, the preferred alternative must achieve the Mitchell Act's original intent and purpose, as well as recognize the requirements and responsibilities of other agreements, in addressing the environmental impacts and loss of salmon spawning habitat and productivity resulting from the construction of the hydro-power system in the Columbia River Basin.	
13/2	In addition, the Mitchell Act Hatchery EIS Record of Decision should be made concurrent with completion of ESA consultation processes for critical hatchery programs throughout the Columbia Basin, including those specifically included in the 2008-2017 United States v. Oregon Management Agreement, as well as lower river hatcheries. This approach enables a preferred alternative to be informed by the policies and agreements associated with salmon and steelhead recovery that have been, and will be, developed collaboratively among the co-managers, NOAA Fisheries, regional entities, and other interests in the Basin.	See Global Response 3: Comments Addressing the EIS Process.
13/3	In late October and early November 2010, ODFW met with NOAA Fisheries to gain a better understanding of the policy choices NOAA Fisheries intended to represent by each alternative in the DEIS. These meetings were necessary because, as pointed out above, these choices are not explicitly	Comment noted.

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED).

Letter/ Comment #	Comment	Response
	presented and described within the DEIS. Instead the alternatives describe key elements of corresponding implementation scenarios, the details of which significantly influence the results and outcomes of the DEIS.	
13/4	Although NOAA Fisheries' intent was to have the alternatives represent the full array of choices regarding the use of Mitchell Act funds to meet hatchery mitigation commitments in the Columbia River Basin, none of these choices acknowledge the fact that static funding since 1996 has crippled the ability of Mitchell Act-funded programs to maintain production, nor do they include a viable alternative for remedying the problem. Current production does not meet the minimum Mitchell Act mitigation obligation when it is put in a historical perspective. As with other hatchery mitigation commitments in the Basin, additional Mitchell Act funding is necessary to meet both conservation and mitigation obligations associated with Columbia Basin hatcheries.	See Global Response 6: Comments Addressing the Range of Draft EIS Alternatives.
13/5	As it applies to Mitchell Act-funded hatchery programs in Oregon, a preferred alternative should include the following: a. Annual operation and maintenance (O&M). In Oregon, Mitchell Act funds annual O&M for six salmon hatcheries operated by the Oregon Department of Fish and Wildlife. These are the Big Creek, Bonneville, Cascade, Clackamas, Oxbow, and Sandy hatcheries. These hatcheries are involved in the propagation, rearing and liberation of spring and fall Chinook salmon, summer and winter steelhead, coho salmon and sockeye salmon for use in conservation and/or harvest augmentation management programs. Some specific activities include: 1. *Salmonid propagation, rearing and liberation*. This includes program administration, equipment and infrastructure maintenance, public outreach, education, and planning. 2. *Pathology services*. This includes providing diagnostic fish health services, including, but not limited to periodic fish health monitoring, exams and treatment recommendations during disease outbreaks, and pre-release fish health checks. 3. *Fish distribution activities*. This includes moving fish between	See Global Response 1: Comments Stating a Preference (Preferences) and/or Ideas for the EIS Preferred Alternative.

Letter/ Comment #	Comment	Response
	hatcheries and, where necessary, transporting them to remote release sites. 4. *Alternative uses of excess hatchery adults*. This includes the disposition of adults, including providing food quality fish to food banks and tribes and placing carcasses in streams as nutrient sources. b. Annual monitoring and evaluation. Annual monitoring and evaluation addresses uncertainties associated with hatchery production and operations, hatchery risks to wild populations, selective harvest, and natural production monitoring. Some specific activities include: 1. *Fish identification*. This includes: a. Marking fish with fin clips and/or coded wire tags or PIT tags. b. Procuring and maintaining marking and tag recovery equipment. c. Operating tag retrieval facilities, including a coded wire tag laboratory. 2. *Selective harvest*. This includes: a. Implementing mass marking. b. Developing live-capture commercial gear and techniques. c. Conducting release mortality studies. d. Conducting studies detailing when various species/stocks are present in different river sections for the purpose of refining harvest selectivity (non-target avoidance). This could be accomplished through telemetry or PIT tag studies of migrating adult fish or through tagging of naturally-produced juvenile fish to assess differential fishery/harvest impacts, migration timing, and survival. e. Bringing current terminal sites to full production potential. f. Investigating new terminal sites to better accommodate all existing fishers. Funding would be needed for expansion of	

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED).

Letter/ Comment #	Comment	Response
	infrastructure (net pens, pilings, etc.). g. Implementing and monitoring new live capture recreational and commercial fisheries as deemed effective and appropriate, using location, timing and mark-selective methods. Implementing monitoring programs to quantify release numbers and release mortalities. h. Funding to maintain fishery management, planning, oversight and monitoring. 3. *Abundance monitoring*. This includes habitat use, distribution, spawning ground surveys and other abundance monitoring of lower Columbia River wild fish populations, including fall and spring Chinook, chum, and coho salmon and winter steelhead. 4. *Hatchery program evaluation*. This includes annual assessments of stray rates, survival to adults, contribution to fisheries, hatchery fractions on natural spawning grounds, interactions between wild and hatchery fish, hatchery program risks to wild populations, and investigations into efficacy of integrated and segregated hatchery programs to evaluate consistency with program objectives and recovery of ESA-listed species.	
13/6	Hatchery reforms. General recommendations for how best to mitigate risks hatchery programs pose to wild fish have been provided by the Hatchery Scientific Review Group (HSRG), in ESA recovery plans, in other state and federal policies and regulations, and in the scientific literature. These recommendations will guide reforms for Oregon's Mitchell Act hatchery programs, although specific hatchery reform actions will require local solutions customized to solve local problems. Hatchery reform actions, which would require special funding, or other associated activities as deemed appropriate, may include: 1. *Installation of sorting weirs in tributaries*. The purpose of the weirs would be to exclude hatchery fish from natural spawning areas. 2. *Development of new conservation hatchery programs*. Programs would be unique and specific to certain stocks and areas, for example, a chum program that can be used for reintroductions.	See Global Response 1: Comments Stating a Preference (Preferences) and/or Ideas for the EIS Preferred Alternative.

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED)

Letter/ Comment #	Comment	Response
	3. *Capital improvement activities that facilitate hatchery reform*. Mitchell Act funding in Oregon supports capital improvements to facilities aimed at decreasing risks to wild populations. Examples include: a. Improvements in water intake screens, b. Improvements in fish passage at hatchery weirs, c. Facilities for improved broodstock collection and management, d. New acclimation facilities.	
13/7	Coordination with other funding partners. Mitchell Act funded programs in Oregon are part of several cooperative programs that include additional funding from the Bonneville Power Administration, the US Army Corps of Engineers, the State of Idaho, Tribal Accords, the State of Oregon, Portland General Electric, and the City of Portland. These cooperative programs include recovery of Snake River sockeye, reintroduction of coho in cooperation with Columbia Basin treaty tribes, the John Day Mitigation program, and mitigation for hydropower and water supply developments in the Sandy and Clackamas basins. These programs are obligations by Oregon and are dependent on Mitchell Act funding.	See Global Response 1: Comments Stating a Preference (Preferences) and/or Ideas for the EIS Preferred Alternative.
13/8	Mid-Columbia Steelhead Recovery Plan (available at http://www.dfw.state.or.us/fish/CRP/mid_columbia_river_plan.asp). Hatchery programs that affect the Mid-Columbia steelhead Distinct Population Segment (DPS) are described in Section 8.6 (p. 8-124 to 8-145) and under the individual population viability assessments in Appendix B. Stray hatchery adults from Columbia Basin hatchery programs outside of the DPS have been identified as a high risk factor for several populations. Recommended hatchery strategies to mitigate hatchery risks are described in Section 9.7 (p. 9-206 to 9-218). Hatchery strategies in the Mid-Columbia Steelhead Recovery Plan are generally consistent with HSRG recommendations (p. 12-14).	Comment noted.
13/9	Lower Columbia Recovery Plan (available at http://www.dfw.state.or.us/fish/CRP/lower_columbia_plan.asp). Hatchery risk standards are defined in Table 4-5 (page 68). Hatchery programs and their associated (ESUs) (coho, Chinook, and chum) and one DPS (steelhead) are described in Chapter 5, "Limiting Factors" (starting on p.79). Hatchery	Comment noted.

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED).

Letter/ Comment #	Comment	Response
	risks specific to each ESU/DPS are described in Section 5.4 and Table 5-5 (coho), Section 5.5 and Table 5-7 (Chinook), Section 5.6 and Table 5-11 (steelhead) and Section 5.7 and Table 5-14. (chum). Actions to mitigate hatchery risks are included in Chapter 7 (pages 211-294), and summarized in Tables 7-3A through E, with additional information on each action in Table 9-3.	
13/10	The preferred alternative should be consistent with obligations under the 2008-2017 *United States v. Oregon* Management Agreement. The *US v. Oregon* Agreement establishes obligations related to harvest and hatchery production. Production principles and agreements are detailed in section III (pages 62-83) and Tables B1 through B7. Particular attention should be paid to Section III.5, page 67, which specifically addresses Mitchell Act funding for hatchery programs.	See Global Response 1: Comments Stating a Preference (Preferences) and/or Ideas for the EIS Preferred Alternative.
13/11	Differences in roles played by the evolutionary significant unit/distinct population segment (ESU/DPS) populations in achieving recovery objectives. It is important that the preferred alternative incorporates site-specific goals, management actions, and standards to achieve conservation and survival of naturally-producing native fish species. Regional approaches mask potential efficiencies of this site-specific or watershed-specific approach to hatchery reform. Efficiencies with implementing hatchery reform action plans that are based on distinguishing characteristics of primary, contributing, and stabilizing populations or other population viability designations are not clearly identified within the DEIS. The preferred alternative should consider these population and watershed differences.	See Global Response 1: Comments Stating a Preference (Preferences) and/or Ideas for the EIS Preferred Alternative.
13/12	Use of best management practices to mitigate hatchery risks. Various resources, including the HSRG, the ESA Technical Recovery Teams, Recovery Plans, other state and federal policies and regulations, and the scientific literature provide general recommendations for how best to mitigate risks.	Comment noted.
13/13	Custom designs to address specific problems. While general resources provide valuable guidance, program-specific hatchery reform may require novel approaches to manage specific problems.	See Global Response 1: Comments Stating a Preference (Preferences) and/or Ideas for the EIS Preferred Alternative.

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED)

Letter/ Comment #	Comment	Response
13/14	Flexibility in hatchery risk management strategies. Approaches to hatchery risk management should remain flexible enough to consider new, developing and future risk management information and strategies as they become available. Where differences exist in how to best mitigate risks because of uncertainty in the underlying science upon which recommendations for best management practices are based (noted above), the preferred alternative should allow for flexibility and avoid being prescriptive with specific strategies. Some risk abatement strategies will need to be tested for effectiveness.	See Global Response 1: Comments Stating a Preference (Preferences) and/or Ideas for the EIS Preferred Alternative.
13/15	Integration with harvest management. Hatchery reform actions will need to be integrated with harvest management, including the use of fisheries that are selective with regard to location, timing, and marked hatchery fish	See Global Response 1: Comments Stating a Preference (Preferences) and/or Ideas for the EIS Preferred Alternative.
13/16	Sufficient funding to implement and evaluate hatchery reform actions. The preferred alternative should allow for flexibility and avoid being prescriptive with regards to the distribution of funding for specific risk-management strategies. Also, because it is anticipated that the costs of implementing new hatchery reform actions, along with research, monitoring and evaluation of these actions, will exceed current Mitchell Act funding levels, the preferred alternative should include additional funding to implement and evaluate hatchery reform actions.	See Global Response 1: Comments Stating a Preference (Preferences) and/or Ideas for the EIS Preferred Alternative.
13/17	The biological and socioeconomic analyses of the alternatives in the DEIS should use accurate and current information about hatchery production levels, hatchery risks, harvest assumptions, harvest data, and wild fish population status. The analysis in the current DEIS is based on out-dated information and includes some significant errors. The following information sources are pertinent to and contain data and assessments necessary for the analysis of alternatives: a. ODFW's most recent Fish Propagation Report (available at http://www.dfw.state.or.us/fish/hatchery/docs/2009%20Fish%20Propogation%20Annual%20Report.pdf), which identifies current hatchery production and releases in Oregon, as of 2009. b. The most current Columbia River Joint Staff and recreational fisheries reports, which identify mainstem Columbia River catch data	Thank you. Since publication of the draft EIS, NMFS has worked with technical staff from Federal, tribal, and state fisheries management agencies throughout the Columbia River Basin to update the information utilized in the analysis and in the modeling assumptions. See Global Response 7: Comments Addressing the Analysis within the EIS.

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED).

Letter/ Comment #	Comment	Response
	through 2009: • 2010 Spring Joint Staff Report (available at http://www.dfw.state.or.us/fish/OSCRP/CRM/reports/10_reports/2010springjsr.pdf) • 2010 Fall Joint Staff Report (available at http://www.dfw.state.or.us/fish/OSCRP/CRM/reports/10_reports/2010julyfalljsr.pdf) • 2008 Lower Columbia River and Buoy 10 Recreational Fisheries (available at http://www.dfw.state.or.us/fish/OSCRP/CRM/reports/08_reports/08_col_sport_report.pdf) c. The most recent Select Area Fisheries Evaluation (SAFE) Annual Reports, which describe the current fishery and hatchery management strategies, including operational considerations and monitoring and evaluation, for the SAFE programs in the lower Columbia River. • FY 2007-08 Annual Report (available at http://www.dfw.state.or.us/fish/OSCRP/CRM/reports/08_reports/SAFE_07_08AnnRept.pdf) • FY 2009 Annual Report (Enclosed) d. The 2008 US v Oregon Biological Assessment for Columbia River Harvest (Enclosed), which describes Columbia River fisheries impact limits, harvest assumptions and monitoring and evaluation. We also recommend that the analysis be consistent with the terms of 2008-17 US v Oregon Management Agreement, which was included as Appendix B in the DEIS but apparently did not influence the analysis.	
13/18	ODFW also recommends that the hatchery risk assessment and best management strategies in the DEIS be based on the best available science. The peer-reviewed literature on hatchery risks is extensive. The DEIS should be substantiated by this literature, and should include either a thorough literature review, or at least a concise but comprehensive summary. A short list of recent review papers is included[1], which should provide enough sources to initiate a literature review.	Thank you for your comment and the information. See Global Response 7: Comments Addressing the Analysis within the EIS.

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED)

Letter/ Comment #	Comment	Response
	Additional reference information is available from a. The Hatchery Scientific Review Group, available at http://www.hatcheryreform.us/hrp/reports/system/welcome_show.action (accessed October 6, 2010). b. The US Fish and Wildlife Federal Hatchery Review, available at http://www.fws.gov/Pacific/fisheries/hatcheryreview/reports.html (accessed October 6, 2010).	
13/19	Table 1-4 contains errors (e.g. Klaskanine Hatchery programs are not current, Clatsop County's hatchery facility is not listed). ODFW's Propagation Report (attached as Appendix D) should be the source for current ODFW programs.	The EIS been updated in response to the comment. NMFS updated hatchery program release and broodstock management for the baseline (Alternative 1) to reflect program operations as of 2010.
13/20	The preferred alternative should be consistent with adopted recovery plans, or if a federal recovery plan is not yet adopted, with a state recovery plan that has been accepted by NOAA Fisheries.	See Global Response 1: Comments Stating a Preference (Preferences) and/or Ideas for the EIS Preferred Alternative.
13/21	Currently, none of the alternatives are consistent with these plans.	See Global Response 5: Comments Addressing the EIS and Its Relationship to Other Plans, Regulations, Agreements, Laws, and Executive and Secretarial Orders.
13/22	Alternative 1 (Status Quo) reflects conditions in 2007 and not the present. For example the implementation scenario assumed that hatchery fractions on natural spawning grounds could not be controlled. In fact, hatchery fractions are being controlled in many current hatchery programs. A true "Status Quo" alternative should reflect the hatchery reforms that have already been implemented, and are anticipated for near-term implementation, even without any further NOAA policy development.	The EIS has been updated in response to the comment. NMFS has updated the relevant hatchery program operation information in the final EIS for Alternative 1 (baseline). It has been updated to reflect 2010 hatchery program management.
13/23	Although there are references to policies the alternatives represent, the document does not clearly describe them. For example, there are references to policies that guide the use of hatchery weirs and for sizing and termination criteria for conservation hatcheries. There also appears to be an anticipated basin-wide monitoring, evaluation and hatchery reform plan, and guidance for implementing Best Management Practices.	See Global Response 6: Comments Addressing the Range of Draft EIS Alternatives.
13/24	The policy alternatives should provide direction for meeting regional management objectives for Mitchell Act funded hatchery programs. Instead, they appear to focus on technical issues such as the use of	See Global Response 6: Comments Addressing the Range of Draft EIS Alternatives.

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED).

Letter/ Comment #	Comment	Response
	hatchery weirs.	
13/25	Regional policies for implementing hatchery reform actions should provide guidance for setting and achieving management objectives for Mitchell Act funded hatchery programs. The policies should also maintain considerable flexibility on technical details about how to meet the objectives. General recommendations for how best to mitigate risks hatchery programs pose to wild fish have been provided by the Hatchery Scientific Review Group (HSRG), in ESA recovery plans, in other state and federal policies and regulations, and in the scientific literature. These recommendations are intended to guide reforms for Mitchell Act hatchery programs. However, program-specific hatchery reform may require novel approaches customized to manage and solve specific problems. Also hatchery risk management will need to remain flexible enough to consider new, developing and future risk management strategies as they become available. Some risk abatement strategies will need to be tested for effectiveness.	See Global Response 2: Comments Addressing the Scope of This EIS.
13/26	There are different perspectives across the region about integrated vs. segregated hatchery programs. One perspective is that listed wild populations should not be used for integration into a harvest augmentation hatchery program, and likewise, integration into such a program does not make it a conservation hatchery program. Rather than organizing the draft Environmental Impact Statement (DEIS) based on integrated and segregated hatchery programs, NOAA Fisheries should make distinctions between hatchery program objectives (i.e., harvest augmentation and conservation) since brood type and program objective are not interchangeable. An example of this is that the overarching standards/criteria in Table 2-5 do not mention a pHOS rate for integrated programs, which is necessary if the program is for augmentation.	Thank you for your comment. Please see final EIS Section 2.3.2, Purpose of Hatchery Programs, which distinguishes between conservation and harvest augmentation programs.
13/27	There seems to be a focus on using weirs to control pHOS (e.g. Table 2-9). Weirs require infrastructure and staff investments beyond what may be sustainable into the future with unknown or unstable funding sources. The DEIS should consider how much Mitchell Act funding would be required for weir construction, operation, and/or maintenance.	The estimated costs associated with weir construction and operations are contained in Section 4.3.3, Hatchery Program Costs, as well as in Table 4-99 of the final EIS.

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED)

Letter/ Comment #	Comment	Response
13/28	Alternative 2 eliminates Mitchell Act funding, but anticipates continuation of conservation hatchery programs. It is unclear whether this implies that Mitchell Act funding would actually continue in these cases, or whether some other funding would be anticipated.	Under Alternative 2, all Mitchell Act programs, including conservation programs, are assumed to be terminated. The conservation programs that remain in the implementation scenario for Alternative 2 are non-Mitchell Act-funded programs.
13/29	The DEIS applies "intermediate" or "strong" performance goals under alternatives 3-5. The DEIS definitions of these goals are similar to the HSRG performance standards, but they are applied differently. The "intermediate" performance goal corresponds to the HSRG recommendations for contributing populations, while the "strong" performance goal corresponds to the HSRG recommendations for primary populations. However, the HSRG recommends these standards be applied as stated to all primary or contributing populations within an ESU. The DEIS applies them geographically, applying "strong" standards in some ESUs, but only "intermediate" standards in others. The DEIS should explain why it would be scientifically sound to treat some ESUs/DPSs one way, while treating others a different way.	The commenter is correct in pointing out the differences between the HSRG application of PNI and pHOS values and that of this EIS. In developing the final EIS, NMFS has taken great effort to clarify the use of the PNI and pHOS metrics. They are utilized as metrics to measure the effects of the different alternatives on the genetic diversity of the salmon and steelhead populations. NFMS has chosen to apply these metrics, at different levels and over different geographic areas, to further illustrate the effects that a wide range of potential Mitchell Act policy guidance (Alternatives) might have on the resources. It was not NMFS' intent to be aligned with or unaligned with any other standardized use of these metrics.
13/30	As evidenced in Tables 2-14, 2-15, and 2-16, the DEIS does not consider the desired status of wild populations determined in the recovery planning processes. For example, the DEIS indicates that the Big Creek coho hatchery program will be terminated because strays adversely affect the local population. This is fundamentally inconsistent with the plans desired status for that population, which is to treat it as a sustaining population for the express purpose of maintaining the harvest opportunities supported by the hatchery program. Thus, there was no pHOS standard denoted for this population (as opposed to other extinction risk levels and populations where there were standards), allowing unlimited stray rates. Other examples exist as well.	Thank you for your comment. Table 4-11 through Table 4-14 now contain the programs that are assumed to be terminated under implementation scenarios for Alternative 2 through Alternative 6. The Big Creek coho program is no longer included in these tables.
13/31	As evidenced in Tables 2-14, 2-15, 2-16, and 2-17, the DEIS does not consider the actions or approach called for in recovery plans. Contrary to recovery plans, the DEIS implementation scenarios appear to call for segregated programs to be replaced by integrated ones.	See Global Response 5: Comments Addressing the EIS and Its Relationship to Other Plans, Regulations, Agreements, Laws, and Executive and Secretarial Orders.
13/32	The DEIS should recognize that hatchery programs may have different goals. As such, additional performance metrics, besides pHOS, should be evaluated (e.g. SARs, contribution to harvest, escapement to hatchery).	See Global Response 1: Comments Stating a Preference (Preferences) and/or Ideas for the EIS Preferred Alternative.

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED).

Letter/ Comment #	Comment	Response
13/33	The HSRG recognized the management relationship between hatcheries and harvest. For example the HSRG recommended the use of selective and terminal fisheries as part of a hatchery management scenario, and recommended that some programs be expanded. The DEIS alternatives have some of these same hatchery programs being eliminated.	See Global Response 6: Comments Addressing the Range of Draft EIS Alternatives.
13/34	In Tables 2-13 – 2-16, the DEIS should better explain and provide evidence for terminating programs because straying problems prevent the programs from meeting performance standards. The DEIS does not clearly describe the source of the straying rate information it used in its analyses and whether the information is current or historic.	Thank you for your comment. The stray-rate assumptions used in the EIS analysis were based on the rates developed by HSRG during the 2009 review of the Columbia River Basin hatcheries. These rates were developed with the help of the resource management agencies. For more information on the development of these stray-rate assumptions, please see Appendix G.
13/35	Under the implementation scenarios analyzed for Alternatives 4 and 5 new hatchery programs would be initiated, and/or existing hatchery programs would be changed to better support harvest opportunities. The difference between the alternatives is in which recovery domain these changes would occur. Increased production in the Upper Willamette/Lower Columbia domains will have little benefit to fisheries occurring upstream of Bonneville Dam. However, the reverse is not true. Added production in the Interior Columbia domain can and would provide fishery benefits for areas downstream of Bonneville Dam, including ocean fisheries. The DEIS should explain that under Alternative 5, fishery benefits may accrue throughout the Columbia Basin.	Thank you for the comment. The benefit to lower Columbia River fisheries, from Alternative 5, is demonstrated in the harvest and economic benefit estimates contained in Section 4.3, Socioeconomics.
13/36	Because the analysis of the alternatives relies on the technical details of the associated implementation scenarios, the DEIS should ensure those details accurately reflect the intent of each alternative. Each implementation scenario contains data errors and questionable assumptions that appear to influence the results for both the biological effects and socio-economic effects of the associated alternative. The DEIS should better document and assess those details which most significantly affect the analyses.	See Global Response 7: Comments Addressing the Analysis within the EIS.
13/37	The DEIS should describe how the alternatives and implementation scenarios relate to the management objectives for affected hatchery programs and to recovery goals for listed salmon and steelhead stocks. As recommended by the HSRG, by the USFWS Hatchery Review, and by the	Thank you. Comment noted

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED)

Letter/ Comment #	Comment	Response
	literature (e.g. Kostow 2009[1]) the first step in a "best management practices" scenario is to identify the management objectives.	
13/38	In Box 2-8, a statement is made that weirs require an external mark to be able to identify hatchery-origin fish. Although a mark of some kind is required, it may not need to be external. For example, the U.S. Army Corps of Engineers (USACE) has proposed sorting equipment that uses blank coded-wire tags (CWTs) to detect hatchery-origin fish. The external mark may be most appropriate for most situations where weirs would be manually operated, but it should not be the only identification method considered.	The EIS has been updated in response to the comment.
13/39	The DEIS appears to target segregated hatchery programs and harvest for reductions, even though these programs can be consistent with conservation and recovery goals. The DEIS should embrace and endorse a flexible management approach in which hatchery and harvest management decisions are left to local interest as long as the recommended standards are met.	The EIS does not "target" particular programs for reductions. The EIS applies performance goals in the alternatives. For purposes of the analysis, the EIS applies implementation measures and performance metric to these performance goals. See Global Response 7: Comments Addressing the Analysis within the EIS. NMFS agrees and acknowledges that decisions on appropriate hatchery management are best made at the local scale.
13/40	Harvest level (number of fish harvested) is expected to decline across all alternatives compared to the status quo (Alternative 1). The DEIS should explain why, since many of the harvest rates are now limited by ESA impact rates on wild fish abundance. In many cases, selective and adaptively managed fisheries can be used to catch as many hatchery fish as possible while staying within the ESA impacts on wild fish. For example, the HSRG scenarios recommended that mark-selective and terminal harvests be coupled with hatchery management in order to optimize the return of hatchery fish to harvests. As a result, harvest levels often increase if the HSRG recommendations were followed.	Declines in numbers of fish harvested are the result of the implementation scenarios used as examples to analyze the potential effects of the alternatives. See Global Response 7: Comments Addressing the Analysis within the EIS. Current (2010) harvest rate limits on ESA-listed stock were used in the modeled fisheries. See Global Response 2.b, Comments Addressing the Scope of This EIS.
13/41	In Box 2-9, paragraph 3, last sentence, the DEIS should clarify whether it means "permanent weirs" rather than "seasonal weirs".	The EIS has been updated in response to the comment. Section, 2.7 of the draft EIS has been moved to Section 4.1.3.4, Comparison of Implementation Scenarios, in the final EIS. The weir language in Box 4-3 (formerly Box 2-9) has been revised for clarity.

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED).

Letter/ Comment #	Comment	Response
13/42	The hatchery risk assessment and best management strategies in the DEIS should be based on the best available science. The review of hatchery risks in Chapter 3 can be and should be redone to reflect the extensive peer-reviewed literature on the subject and should include a thorough literature review, or a concise but comprehensive summary. A short list of recent review papers is appended[2], which should provide enough sources to initiate a literature review. Additional reference information is available from the Hatchery Scientific Review Group, available at: http://www.hatcheryreform.us/hrp/reports/system/welcome_show.action (accessed October 6, 2010); and the US Fish and Wildlife Federal Hatchery Review, available at: http://www.fws.gov/Pacific/fisheries/hatcheryreview/reports.html (accessed October 6, 2010).	Thank you for your comment and the supplied information sources. Please see the updated and expanded Section 3.2.3.1, General Risks and Benefits of Hatchery Programs to Salmon and Steelhead Species.
13/43	The DEIS, in section 3.2.3.1 says: "Data on current risks … (are) …developed from literature and through modeling". Data are normally considered to be an input to models, rather than a derivative. If model out-puts are used instead of actual data, the DEIS should define such applications as "simulations", rather than "data".	Comment noted
13/44	There is a lot of discussion of metrics for pHOS and PNI throughout the document, but there are no cited references in the text that identify the source of these metrics. The DEIS should better document and cite its sources, especially since the metrics are thoroughly discussed by the HSRG.	The EIS has been updated in response to the comment. Language relating the performance metrics and their development and use has been expanded in the final EIS. See Section 3.2, Fish, as well as updated Appendix G.
13/45	The language on Pg 3-12 and 3-13, lines 21, and 1-2 is potentially misleading. Although hatchery fish can increase the total number of fish and therefore the competition effects, competition would occur whether those high numbers of fish were of hatchery-origin or not. Having large numbers of hatchery fish present can have effects in addition to competition, however those effects are a separate issue from the abundance issue. The DEIS should replace the existing language with "competition will be highest at very high abundances, a condition large hatchery escapements may exacerbate".	Thank you for your comment. Please see revised language in Section 3.2.3.1.4, Risks from Competition with Hatchery-origin Fish.
13/46	The DEIS Table 3.3 reports how many populations, by ESU, meet their "strong" or "intermediate" criteria under the baseline. The HSRG report (2009) also lists the number of populations that currently meet their HSRG	Thank you for your comment. The EIS, while employing some of the HSRG information (model and baseline input, updated as necessary) and using similar metrics in the example

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED)

Letter/ Comment #	Comment	Response
	criteria. The HSRG recognizes that there are primary, contributing and stabilizing populations and corresponding criteria, so "meeting the criteria" means the population met or exceeded the criteria for the category the population is in. The DEIS appears to evaluate whether the "strong" or "intermediate" criteria are met, regardless of the category the population is in. A comparison of the results from these two sources for one ESU, Lower Columbia Coho, demonstrates significant discrepancies between the DEIS and HSRG findings, even though they apparently considered the same populations: a. The DEIS says that only three populations in this ESU meet their "strong" criteria, while another three meet their "intermediate" criteria, out of 17 populations. Stabilizing populations are apparently ignored. b. The HSRG says that 15 out of 29 populations currently meet or exceed the HSRG criteria as appropriate for the population designation (primary, contributing or stabilizing), including three that exceed their criteria (i.e. a contributing or stabilizing population meets the criteria for a primary population). c. The HSRG says that 6 out of 29 populations currently meet their criteria for a primary population (which is the same criteria as the DEIS "strong" criteria). d. The HSRG says that 2 out of 29 populations currently meet their criteria for a contributing population (which is the same criteria as the DEIS "intermediate" criteria). e. As an example of a specific error: in the Willamette, the Middle Fork spring Chinook population is listed as "contributing". The current draft of the recovery plan has it as "primary". The DEIS should resolve, or at least explain these discrepancies. Note that while the HSRG report lists results for individual populations, the DEIS table is a summary count of populations by ESU/DPS so it is not possible to determine if the same populations are ranked and evaluated the same way.	implementation scenarios, should not be compared directly to the HSRG standards applied to populations or the review that HSRG completed in 2009. The EIS performance goals, stronger and intermediate, should not be viewed as being synonymous with the HSRG guidelines.

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED).

Letter/ Comment #	Comment	Response
13/47	The DEIS appears to be heavily reliant on the use of weirs as a tool to reduce pHOS in natural populations. Because of the uncertainty associated with the effectiveness of weirs, especially in highly dynamic systems such as coastal area tributaries, the DEIS should consider a suite of measures tailored to specific hatchery programs and/or natural populations.	See Global Response 6h: Comments Addressing the Range of Draft EIS Alternatives, for information on the revised use of weirs in the final EIS. Additionally, please see the updated and expanded information on the use and effects of weirs in Section 3.2.3.1.1.3, Current Approaches for Reducing Risks to Genetic Diversity.
13/48	Although the DEIS lists some best management practices for various risk factors, the lists fall far short of what is available from the literature. If an intent of the DEIS is to have a policy of encouraging best management practices, it should include a comprehensive set of practices.	The final EIS utilizes the Best Management Practices (BMP) concept in reference to hatchery facility effects and the mitigation of those effects. See Section 4.2.2, Methods for Analyzing Effects.
13/49	Although the DEIS makes repeated references to increasing selective terminal fisheries as a component of the alternatives, it is unclear whether the effect of increased selective terminal fisheries was modeled for the options. Appendix K does not explicitly indicate that they were.	The implementation scenarios for Alternative 4 and Alternative 5 utilize additional terminal, tributary-level, selective fisheries as an implementation measure to meet the performance goal of these alternatives (Table 4-3). See also the last bullet in Box 4-2 for more detailed information on the assumed application of these fisheries.
13/50	The DEIS identifies harvest on hatchery fish as a risk factor and provides some best management practices to manage the risks. However, these practices do not mesh with NOAA's own harvest biological opinion; nor do they really fall in line with the HSRG harvest recommendations.	Comment noted. See updated Section 3.2.3.1.10, Risks Associated with Fisheries that Target Hatchery-origin Fish and Section 3.2.3.2.11, Current Approaches for Reducing Risks Associated with Fisheries that Target Hatchery-origin Fish, as well as information related to selective fisheries in Box 4-2.
13/51	Although the DEIS cites the Biological Opinion for the Federal Columbia River Power System (FCRPS) as the source of status data in Table 3-7, there appears to be significant discrepancies between the data in the table and that in the recently released FCRPS supplemental Biological Opinion. For example, for the Upper Columbia Spring Chinook ESU the DEIS says total abundance for this ESU is 1,104 fish, and average productivity (R/S?) is 1.4. The supplemental Biological Opinion says the abundance for the 1994-03 period was 461 (sum of the three populations), with an R/S of 0.73 (average of the three populations); while the updated data for the 1999-08 period is an abundance of 861 (again a sum) and an R/S of 0.62 (again an average). It appears that the DEIS used the AHA model to get their numbers. If so the information in the table is the result of simulations, and is not status data. The DEIS should explain why these differences exist and	This is now Table 3-2 in the final EIS. In the draft EIS, the source for the information in this table was listed as "Appendix C though Appendix F." Information was generated with the All-H Analyzer model using best available data. This remains the case in the final EIS. The estimated abundance and productivity values in Table 3-2 are model results, using the best available information.

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED)

Letter/ Comment #	Comment	Response
	whether the information in Table 3-7 is actual data or modeling results.	
13/52	The DEIS sections on status of each ESU are not well documented (few to no citations), so it is difficult to determine if they are accurate and complete. NOAA Fisheries has the original regional reviews (which are old now, but very comprehensive), biological opinions, the 2005 Biological Review Team (BRT) reviews (when all listings were reviewed and reconfirmed), new data from the current BRT review, and various recovery plans to cite and draw from.	The EIS has been updated in response to the comment. Please see updates to Section 3.2.3.2, Status of Salmon ESUs and Steelhead DPSs, which have been updated to reflect the most recent NMFS status review (2010).
13/53	The DEIS sections describing status of other species (chub, dace, lamprey, etc.) are also not well documented.	Comment noted. Please see updated Section 3.2.4, Other Fish Species that Have a Relationship with Salmon and/or Steelhead, for improved language.
13/54	On page 3-77, lines 17-18, steelhead, coho, and white sturgeon should be listed as fish routinely harvested for commercial sale (treaty).	The EIS has been revised to address this comment.
13/55	On page 3-79, lines 18-19, references to ocean harvest reductions cite only those in California. Reductions occurred coast-wide. The DEIS should drop the word “California”.	The EIS has been revised to address this comment.
13/56	On page 3-79, line 20, the DEIS should not refer to the 1900 + firms affected by ocean harvest reductions as a “relatively small number”.	The EIS has been revised to address this comment.
13/57	All Columbia River harvest numbers in Section 3.3.5.1 have some kind of error in them (treaty, commercial and sport). It is unknown what the implications of this are, but they likely effect subsequent analyses, including the economic calculations.	See Global Response 7: Comments Addressing the Analysis within the EIS.
13/58	Also, it appears that the harvests in Section 3 are largely from historical documents for “current” catches, but are derived from modeling for harvests under the alternatives. If harvests for alternatives were derived only from modeling and harvest rates provided to HSRG for AHA, and were used in any way to generate future catches under alternatives, they need to be recalculated from the start due to the substantial errors found in Chapter 3.	Harvest estimates presented in Chapter 3, Affected Environment, are based on estimated harvest from catch reported in Columbia River Joint Staff Reports, PFMC annual report, and PSC annual reports. Modeled estimates are used where empirical estimates are not available. These instances are documented where they are used. Please see updated harvest estimates in Chapter 3, Affected Environment.
13/59	The footnote for Table 3-20 (recreational values) in Section 3.3.6 says the average catch numbers came from Table 3-18. However, Table 3-18 is historic ocean tribal fishery catches, which has no relation to recreational economic catches or values. It appears to be the wrong citation. Given this,	Thank you. This table is now Table 3-19 in the final EIS. The source table reference has been updated.

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED).

Letter/ Comment #	Comment	Response
	it is impossible to see where the catch numbers used in 3-20 actually came from, and therefore to evaluate the adequacy or appropriateness of using those numbers in the economic analysis.	
13/60	The description of the boundary between Buoy 10 and lower Columbia River recreational fishing areas on page 3-88, lines 1-2 is incorrect. The Tongue Point/Rocky Point line is the boundary not the Astoria-Megler Bridge.	The EIS has been revised to address this comment.
13/61	Table 3-14 and 3-21 have significant errors in them. Citations of the Joint Staff Reports (JSRs) appear to be inaccurate, as many of the values shown in these tables are not contained in the JSRs. Where they are included in JSRs, the values differ from those in the DEIS.	The EIS has been updated in response to the comment. NMFS reviewed these tables and discovered there were errors in translating catch data. These tables were updated to report available reported catch, and the catch period was expanded to include 2007 to 2009 to better describe the base period in the analysis.
13/62	In Table 3-21, the DEIS should replace "Z1-5" with "Mouth to Bonneville" and "Zone 6" with "Bonneville to McNary". Z1-5 and Z6 are commercial fishing boundary definitions only.	The EIS has been revised to address this comment.
13/63	The DEIS should define the "terminal areas" referenced on page 3-89, line 11. As is, the definition is open for interpretation.	The EIS has been updated in response to the comment. Please see the definition for terminal fishery in the Glossary of Key Terms of the final EIS.
13/64	The number of harvest-related jobs (part- and full-time) listed in Table 3-24 is unbelievably low. Further explanation is necessary to support the claim that only 18 and 23 jobs (non-tribal and tribal, respectively) are supported by commercial harvest.	Thank you. Errors occurred in the presentation of jobs identified in draft EIS Table 3-24. The table (now Table 3-23) has been revised in the final EIS, both to correct errors and to account for the effects of changing the historical harvest baseline from 2002 to 2006 to 2002 to 2009. Substantially more jobs have now been reported for non-tribal and tribal commercial fishing in the Columbia River Basin.
13/65	Throughout the socio-economic section, the DEIS should: a. Carry any issues already discussed regarding catches through to the economic analyses; b. Make sure that all harvest assumptions are up-to-date (i.e. which fisheries are selective, what harvest rates to use, etc); c. Make sure hatchery production data are up to date. For Oregon	Responses specific to each comment part follow: a. The comment is not specific regarding harvest issues that should be carried through to the economic analysis. The economic analysis, however, carried forward harvest estimates prepared by the Mitchell Act Fishery Modeling Team.

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED)

Letter/ Comment #	Comment	Response
	releases, the DEIS should refer to the ODFW 2009 Fish Propagation Report. d. Make sure the economic data is up-to-date. Some of the sources are 10-years old (circa 2000).	b. The final EIS was updated to incorporate revisions to the various rules for both the in-river and ocean fisheries for Chinook, coho salmon, and steelhead. This was done to reflect the more recent harvest management agreements (in-river and ocean) and ESA guidance that have controlled fisheries in recent years (as of 2010). Updated harvest modeling assumptions have been included in the revised version of Appendix K. With the exception of data in Section 3.3.4, Historical Overview, the economics data in the final EIS represent data over the 2002 to 2009 period to match the baseline for the revised harvest estimates. Some data, such as demographic and income data in the environmental justice section, have been updated to 2010. c. For the final EIS, NMFS updated hatchery program release and broodstock management for the baseline (Alternative 1, No Action) to reflect program operations as of 2010. d. As mentioned in the response to b., above, the baseline catch data have been updated to the 2002 to 2009 period in most cases; other information has been updated as well.
13/66	The sources of much of the information in Chapter 3 are undocumented, even though the necessary documentation is available. In those instances where citations are provided, it is not always clear whether the documents cited were actually used because the data does not match what it in the cited document (the harvest data in the DEIS compared with the cited ODFW/WDFW Joint Staff Reports is an example). The DEIS should also cite primary sources of data, when available, For example, a report by someone with Yakima County is used as the source for tribal catches in the Columbia Basin.	The EIS has been updated in response to the comment. The final EIS has incorporated updated information and has more thoroughly cited the information sources used.
13/67	The DEIS should explain why Clatsop and other lower river counties appear to be excluded from the analyses in the environmental justice section.	Clatsop County and other lower river counties were not excluded from the environmental justice analysis. As shown in draft EIS Table 3-25, Clatsop County was included in both the Lower Columbia River and Oregon Coast economic impact regions. Clatsop County was not included in draft EIS Table 3-28 because

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED).

Letter/ Comment #	Comment	Response
		it did not meet the threshold criteria for an environmental justice community of concern. It was, therefore, not carried forward in the assessment of environmental justice impacts. In the final EIS, Table 3-28 has been expanded to include all counties within the study area, including Clatsop County.
13/68	In Chapter 4 the DEIS states "The alternatives (from Chapter 2) are based on goals and principles that together form a policy direction". However, the DEIS does not, but should explicitly describe the goals, principles or policy direction.	Thank you. Please see expanded language, describing the Alternative goals and principles in Section 2.4.2, Alternative Performance Goals.
13/69	Under section 4.1.2 "Mitigation", paragraph 3 (page 4-3) the DEIS states that under the status quo (Alternative 1) "…BMPs applied by hatchery operators would not specifically be intended to mitigate for negative effects on salmon and steelhead…" However, practices have been and continue to be put in place to reduce and mitigate for negative impacts on salmon and steelhead. The DEIS should explicitly acknowledge and describe those practices.	Thank you for your comment. Based on this and other similar comments, NMFS has revised Section 4.1.2, Mitigation, for more accurate portrayal of measures hatchery operators commonly apply to mitigate for potential program impacts.
13/70	In the introductory material for Chapter 4, the DEIS states that "… the adherence of each hatchery program to Hatchery Scientific Review Group [HSRG] BMPs would increase under Alternative 2 through Alternative 5 compared to Alternative 1." However, the alternatives 2-5, as stated in Chapter 2, are explicitly inconsistent with the HSRG recommendations.	Thank you for your comment. Based on this and other similar comments, NMFS has revised Section 4.1.2, Mitigation, for more accurate portrayal of measures hatchery operators commonly apply to mitigate for potential program impacts. This has included clarification that the BMPs utilized in the EIS are related to hatchery facility effects and not operational BMPs.
13/71	There is a lot of discussion of new selective fisheries in terminal areas, however it is unclear in the DEIS whether new selective fisheries are included in any of the proposed alternatives. The DEIS should identify those alternatives that include new selective fisheries and describe the kinds of fisheries, how they were modeled in the implementation scenarios (catch rates, encounter rates, post-release mortality assumptions, mark rates, etc.), and whether production would be moved from existing areas to new terminal areas to increase fishery access, or whether the intent is to add new fisheries to areas with existing production.	The implementation scenarios for Alternative 4 and Alternative 5 utilize additional terminal, tributary-level, selective fisheries as an implementation measure to meet the performance goal of these alternatives (Table 4-3). See also the last bullet in Box 4-2 for more detailed information on the assumed application of these fisheries.
13/72	The AHA model can only use single point estimates for harvest. Although it is able to model mark-selective fisheries and recognize separate ocean, mainstem and terminal fisheries, it cannot deal with the variable	NMFS disagrees. A typical use of the All-H Analyzer does not include abundance-based harvest rates. For the EIS, however, abundance-based harvest models were developed to adjust

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED)

Letter/ Comment #	Comment	Response
	abundance-based harvest schedules that are in the 2008-2017 United States v. Oregon Management Agreement. Therefore out-puts from it are inappropriate for evaluating the effects of these actions on harvest and associated socioeconomic impacts. The DEIS appears to recognize this problem and so employs a separate harvest model.	rates based on average abundance conditions associated with each alterative. Abundance was based on the predicted average from the AHA model.
13/73	The AHA model explicitly does not deal with any ecological risks of hatchery programs, including competition and predation. It deals only with genetic risks. The DEIS apparently tried to use a ratio of the natural-origin to hatchery-origin juveniles from the AHA model as a way of talking about ecological risks. This is not a credible approach.	NMFS disagrees. The relative abundance of hatchery and natural juveniles is useful as an index of potential ecological interactions from hatchery programs due to competition and predation. However, NMFS agrees this simple metric does not fully describe all facets of ecological risk. For this reason, NMFS did not use these ratios to shape hatchery strategies by alternative (program size or location). Again, these ratios are reported to provide a relative index of potential ecological risk across the alternatives.
13/74	The AHA model deals with abundance and productivity as related to habitat carrying capacity by incorporating a Beverton-Holt model. It does not address viability/extinction probabilities, spatial distribution or diversity. Outputs of the AHA model were apparently used as inputs to a viability analysis, while a gross estimate of status of populations across ESUs was used to address spatial distribution and diversity (i.e. some percent of the populations in an ESU having some level of abundance and productivity).	Thank you for your comment. The commenter is correct that the All-H Analyzer does not produce viability/extinction probabilities, spatial distribution, or direct measures of diversity. Additional NMFS did not input the All-H Analyzer outputs into a viability analysis. The EIS does, however, utilize outputs from the All-H Analyzer as approximate indices for the VSP attributes (abundance, productivity, and diversity). The changes in these outputs, by population, under each alternative implementation scenario, is used in the EIS to compare potential effects on the salmon and steelhead VSP attributes. The EIS does not make determinations on the viability or extinction risk to the populations, only potential change to the attributes by alternative, relative to baseline (Alternative 1).
13/75	There are assumptions about hydropower operations and habitat implicit in the AHA model. It is not real clear what these assumptions were in the DEIS.	Assumptions for hydropower and habitat conditions were taken from the Hatchery Scientific Review Group basin-wide report (HSRG 2009, Appendix D, Section 1.1 and 1.3). Hydro-system passage rates were sourced for the FCRPS 2008 Biological Opinion.
13/76	The DEIS appears to rely heavily on an “HPV” model, which was apparently developed a few years ago by the HSRG. This model, which is described in Appendix H, addresses some factors that the AHA cannot, and compares	Comment noted.

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED).

Letter/ Comment #	Comment	Response
	current management practices with some Best Management Practices.	
13/77	The methods in the DEIS analysis should be better explained. It is not clear how the "HPV" and AHA results were integrated. There is no indication how the lists of variables or Best Management Practices are supposed to affect pHOS or PNI.	Thank you for your comment. The information in the final EIS was revised to clarify the relationship between these two analysis components. The All-H Analyzer and the HPV model work independent of one another. Please see Section 4.2.2, Methods for Analyzing Effects.
13/78	The DEIS should explain why it had to rely on qualitative analysis for other species.	The draft EIS relied on a qualitative analysis for fish species other than salmon and steelhead because the data, research, and/or published studies were not available to adequately model and quantitatively predict how implementation of the alternatives, particularly changes in hatchery production, would impact or benefit other fish species. Thus, a qualitative analysis was conducted using best available science.
13/79	The DEIS does not, but should explain whether harvest estimates used in modeling the economic sections were outputs from the modeling described in Appendix K or came from analyses included in Chapter 3. Modeling in Appendix K generally appears to be properly conducted, while the information in Chapter 3 contains large errors in multiple locations.	Thank you. We reviewed the Chapter 3 sections on harvest and economic analysis and discovered there were errors translating catch data to these tables in the draft EIS. These sections were updated to show available reported catch, and the catch period was expanded to include 2007 to 2009 to better describe the base period in the analysis. Harvest reported in the economic analysis was based on results from the harvest models. The text has been clarified throughout Section 3.3, Section 3.4, Section 4.3, and Section 4.4 and in the Socioeconomics Impacts Methods Appendix (J) to indicate that most of the harvest estimates came from the EIS harvest model (see Appendix K). The only exceptions were for certain Pacific Coast regions (Southeast Alaska British Columbia, and Puget Sound) under Alternative 1 (in which case, historical observed estimates were used. These exceptions are explained in Appendix J and in Section 4.3 table footnotes.
13/80	In Chapter 5 the DEIS should not only discuss climate change effects for in-river issues, but also for ocean issues and issues affecting returning adults (i.e. increased water temps = higher mortality of adults returning).	Thank you, Please see updated and expanded language in Chapter 5, Cumulative Effects, regarding climate change.

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED)

Letter/ Comment #	Comment	Response
13/81	Appendix G. The DEIS does not, but should describe the differential harvest rates used for mark-selective fisheries and how they were derived.	The rates are described in the technical appendix for the harvest modeling in the EIS, Appendix K.
13/82	Appendix G. The DEIS does not, but should describe the "proposed harvest plans and recommendations" from which it estimated future harvests.	The EIS has been updated in response to the comment. This statement has been removed from Appendix G.
13/83	Appendix H. The list of "Best Management Practices" (BMPs) that are identified in the DEIS should be better described and more comprehensive, given their use as a basis for assessing hatchery programs.	See the response to letter 3, comment 48.
13/84	Appendix H. The DEIS should not just rely on a determination of whether a hatchery program employs the array of "Best Management Practices" listed in the DEIS to assess hatchery programs. The risks posed by a particular program may largely be solved, even though the hatchery does not follow this prescription. Original actions may be needed to solve unique problems. New ideas might come along. Any list of BMPs should be viewed as general guidance rather than a specific prescription and assessments should focus on results, not just actions.	See Global Response 1: Comments Stating a Preference (Preferences) and/or Ideas for the EIS Preferred Alternative.
13/85	Appendix H. The DEIS should better describe and cite sources for the "…current genetics theory..." it relies on regarding pHOS and PNI criteria. The HSRG has a comprehensive White Paper available to cite and other sources of information are available. It is especially important to describe in detail the scientific basis for these criteria, given that they are key factors in DEIS determinations of the fate of various programs under each alternative.	The EIS appendix has been revised in response to the comment.
13/86	Appendix I. In Tables 3-5 and 3-8 the tribal catch of coho and steelhead looks much too high in some years. The DEIS should better explain and document the basis for its estimates, including whether they assume some increased harvest due to recovery or reintroduction efforts.	See Global Response 7: Comments Addressing the Analysis within the EIS.
13/87	Appendix I. The DEIS should provide a much more detailed description of the methods used in its analysis of harvest, given its significance to the entire DEIS.	As noted in Global Response 7, the TRG Report (Appendix I in the draft EIS) is not included in the final EIS because of its limited use and the confusion it caused for reviewers. Additionally, the harvest data as reported in the TRG Report and included as Appendix I in the draft EIS have been revised for purposes of analysis in the final EIS.

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED).

Letter/ Comment #	Comment	Response
13/88	Appendix I. Some of the implementation scenarios show substantial increases in Mitchell Act harvests – but there is no discussion of how that occurs. The DEIS should explain whether harvest are a result of changes in production, faster recovery, and/or reallocation of production by area and the resultant changes in fishery access.	See Global Response 7: Comments Addressing the Analysis within the EIS.
13/89	Appendix I. In Table 3-14, the DEIS shows a 38% decline in total salmon value for the non-treaty gillnet fishery under Alternatives 4 and 5, despite an increase of 122% for spring Chinook and 26% for fall Chinook. It is very unlikely that these increases would be negated by the corresponding decrease for coho assumed under each alternative. The DEIS should better explain how the changes it assumes in fisheries value are derived and relate to each other.	See Global Response 7: Comments Addressing the Analysis within the EIS.
13/90	Appendix I. In Table A-5 of the DEIS, the success rates for fall fisheries seem too high. It appears the rates include all salmonid species (Chinook, steelhead, coho) combined. The DEIS should base its assessments on species-specific success rates, as presented in the ODFW lower Columbia River recreational fisheries reports it cites. This issue is discussed more in comments on Appendix J.	See Global Response 7: Comments Addressing the Analysis within the EIS.
13/91	Appendix J. The DEIS does not, but should describe the basis for the CPUEs it lists in Appendix J tables. In general, they appear to be higher than observed. For coho, except for Buoy 10, the CPUEs in A-4 appear too high. In particular, CPUEs for areas upstream of the lower Columbia appear to be more than double that which would be deemed reasonable. For Chinook, CPUEs appear to be too high across the board.	The CPUEs shown in draft EIS Appendix J were derived based on CPUEs in Appendix I. For the final EIS, the CPUEs have been revised for the Columbia River Basin based on 2002 to 2009 angler trips and catch data from Catch Cards (Appendix J, Table 2) provided by WDFW, as described in revised Appendix J. As a result, the CPUEs for all Columbia River Basin regions and species are now lower than they were for the draft EIS analysis.
13/92	Appendix J. In Appendix J the DEIS apportions the pooled CPUEs calculated in Appendix I evenly across all species and all areas. Although the DEIS pooled CPUEs by area because CPUE data for the area upstream from Bonneville Dam was lacking, it should acknowledge the flaws in the approach, i.e. that the pooled CPUEs are not accurate and likely over-optimistic. Catch card data is available for Oregon and Washington and may alleviate the need to pool areas. The DEIS should not pool CPUEs by species, but instead use the original	For the final EIS, CPUEs have been calculated independently for coho salmon and Chinook salmon. As described in the response to letter 13, comment 91, and in revised Appendix J, CPUEs were estimated using catch card data. Additionally, a statement has been added to Appendix J to advise readers that using the same CPUEs across all four Columbia River Basin regions may result in over or underestimating effects in individual regions.

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED)

Letter/ Comment #	Comment	Response
	CPUEs that are available by species. Pooled CPUEs may be significantly biased. For example, catches of coho upstream of Buoy 10 are historically very low and CPUEs are small. By pooling the CPUE of coho with higher values typically observed for Chinook and/or steelhead, catch and economic contribution per produced fish would be the same for each species. In fact CPUEs for coho are likely less than half that of Chinook and correspondingly so is the economic contribution coho make to the recreational fishery.	
13/93	Appendix J. In Table A-2 and A-3 of the DEIS, the economic values of the various salmonids by area are not accurate. Prices per pound decline substantially for all species as the run moves upstream. Prices in Zone 6 are never as high as they are in Zones 1-5.	For the final EIS, efforts were made to collect ex-vessel price data specific to the four economic impact regions comprising the Columbia River Basin. However, historical data needed to develop average region-specific prices for each species were not available. For the final EIS, prices were updated as described in the response to letter 9, comment 154, and as detailed in revised Appendix J. As part of this revision, prices were independently estimated for tribal and non-tribal fisheries. These prices reflect the fact that prices in the lower Columbia River are higher than those for upstream tribal fisheries. Additionally, a statement has been added to Appendix J indicating that prices may be overestimated for salmon in the upper Columbia River.
13/94	Appendix J. The DEIS does not, but should explain whether the dollar value attributed to the commercial harvest of steelhead pertains only to Treaty harvest. Retention and sale of steelhead in commercial fisheries downstream of Bonneville Dam was outlawed in 1975.	For both the draft and final EISs, commercial steelhead values represent only tribal steelhead catch in the mid-Columbia River economic impact region, although, for the final EIS, a small number of steelhead are estimated to be harvested in the upper Columbia River (Alternative 4 and Alternative 5) and Snake River economic impact regions. A statement has been added to revised Appendix J to clarify this.
13/95	Appendix J. Footnotes for Table A-3 of the DEIS indicate that the price on Chinook is a weighted annual average of fall and spring. Prices for the two stocks are radically different, and modeling of future effects should be done separately for each stock. Models should estimate catches of fall Chinook and spring Chinook separately for each alternative and apply differential values accordingly. Using an average based on historic proportions will be invalid if the modeled alternatives result in substantially	In response to this and other similar comments, harvests and prices were estimated independently for spring, summer, and fall Chinook salmon in the final EIS, as described in the revised Appendix J and in the response to letter 9, comment 154.

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED).

Letter/ Comment #	Comment	Response
	different proportions of fall/spring catches than historic.	
13/96	Appendix J. Because the values in the tables in Appendix J appear to be used in subsequent analyses –any problems with the information in them would propagate through this section and should be addressed.	See the responses to letter 9, comment 154 and letter 13, comment 95.
13/97	Appendix K. The general methodology as described in Appendix K of the DEIS appears appropriate. However, most of the interim results of the models are not shown – only the final rollups – so it is not possible to verify the results with the information given. The DEIS should rectify this situation.	NMFS assumes that the commenter meant "intermediate" results and not "interim" results. Some of the intermediate results are contained in Appendix C and Appendix D of the EIS. The many details of harvest levels associated with each population and fishery are contained in intermediate steps shown in the actual models for each alternative. Which can be made available for review.
13/98	Appendix K. Many of the harvest rates in the models used in the DEIS are outdated– largely due to the 2008-2017 United States v Oregon Management Agreement, but also because of recent catch balancing agreements and implementation of mark-selective recreational fisheries for summer Chinook. Although the DEIS used a 15% rate for LCN coho that is likely close to an average rate, the sliding scale used to manage LCN coho was available and could have been used.	The fishery impact analysis presented in the final EIS incorporates changes to fishery rules based on provisions of the 2008 amendments to the Pacific Salmon Treaty, updated ESA guidance given by NOAA Fisheries (through 2010), and updated provisions of the latest *U.S. vs. Oregon* agreement (for the 2008 to 2017 period). In effect, the final EIS is based on information available regarding fishery rules as they existed for the 2010 and 2011 fisheries. In the Columbia River, catch balancing is taken into account. Recreational fisheries on summer Chinook salmon in the Columbia River are modeled as MSFs regardless of run size. Regarding the impact limit on LCN coho salmon, it is recognized that there is a sliding scale that is used for management. In its biological opinion for the 2008-2017 Columbia River Management Agreements, NOAA stated that the total estimated run (ER) for each year would be determined using the ocean portion of Oregon's proposed harvest matrix (Table 8.11.5.5-1 in the biological opinion). In 2010 and 2011, the ESA limit NOAA set on the total ER on LCNs was 15% in each year. Since 2005, the ER limit has averaged 15.5% (2006 through 2011). In the final EIS, a maximum impact limit of 15% has been applied.
14/1	The expansion of scope of the DEIS in 2009 from the original focus on the Mitchell Act hatcheries to the entire Columbia Basin system of hatcheries	See Global Response 2: Comments Addressing the Scope of This EIS.

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED)

Letter/ Comment #	Comment	Response
	has resulted in confusion and made it difficult to provide meaningful input.	
14/2	Through membership on the Pacific Fishery Management Council (Council), ADFG participated in the Council's discussion and actions, including work on the Mitchell Act Committee at the November Council meeting. We support the Council's letter of November 22, 2010, outlining some of the concerns with the DEIS. ADFG's answers to a number of questions posed by the Council to assist with consideration of the DEIS at the November meeting are attached. As noted in the Council letter and in the comments submitted by ADFG and other management entities that assisted the Mitchell Act Committee's development of the Council's comments, there are many areas of concern with the current DEIS. In addition to the general confusion in the scope and purpose of the DEIS noted above, these concerns include: the lack of proper recognition of mitigation responsibilities of hatcheries in the Columbia Basin; the virtually exclusive focus on, and indiscriminate application of, genetic standards for facilities in the Columbia Basin that we do not believe have been adequately analyzed and peer reviewed; the failure to address the broad suite of actions that should be considered in meaningful hatchery reform; significant problems with the data and framework (temporal and other) that was used in the analysis; and a need for more complete economic analysis to fully recognize the impacts that hatchery production from the Columbia Basin has on the regional economies.	Thank you for your comments. Based on comments received during the public review of the draft EIS, NMFS has worked to address the technical and contextual issues raised by the public. Please see Appendix L, Responses to Comments on the Draft EIS, and in particular, Section L1, Global Comments and Responses, where many of the general issues your comment raises are addressed.
14/3	We take heart from the acknowledgement of the need for NMFS to provide a document (or documents) for review based on updated analyses that provide the clarity needed for management entities and the public to understand the purpose and scope of proposed actions and adequately recognizes the implications for mitigation responsibilities and the economic impacts of the alternatives. We believe that this could best be accomplished by refocusing the DEIS on the original scope of analyzing Mitchell Act hatchery facilities and helping guide future funding.	See Global Response 2: Comments Addressing the Scope of This EIS.
14/4	The broader reach into Columbia Basin hatchery operations with regard to ESA considerations should be the subject of a significantly revised	See Global Response 2: Comments Addressing the Scope of This EIS.

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED).

Letter/ Comment #	Comment	Response
	Supplemental EIS, or be addressed outside of the focus on the Mitchell Act program	
14/5	Alaska does not have detailed knowledge regarding the level of peer review that the EIS fishery modeling detailed in Appendix K has undergone by other agencies. However, the modeling exercise is based upon standard and accepted algorithms that are components of the PSC Chinook Model and the PFMC FRAM Model, albeit in simplified form. Chinook stock groupings were manipulated; many stocks were aggregated to estimate the ocean fishery impacts using the PSC Chinook Model stock structure. These groupings were then disaggregated before estimating the fishery impacts within the Columbia River. Assuming that the stock group aggregations and disaggregations were done in a manner that was representative and consistent with the stock group representation in the PSC Chinook Model, this portion of the modeling of the fishery impacts seems appropriate.	Comment noted.
14/6	First, the analysis is overly simplistic by assuming production from non-Columbia River stocks in the ocean is constant and totally independent from the Columbia River stocks.	The analysis is intended to provide information on relative changes in fishery harvests resulting from the alternatives considered for Columbia River hatchery production. The analysis reflects changes in natural and hatchery escapements in the Columbia River as a result of harvest management constraints on natural stocks. The modeling approach is simplistic by design. It is not possible to consider all potential permutations of abundance of Columbia River and non-Columbia River stocks and hypothesize how fisheries might be adjusted in response. Consequently, the best approach to inform reprogramming decisions would be to hold production levels outside the Columbia system constant. In the analysis, variations or co-variations in survival between stocks are not considered to provide information that can most readily and directly compare impacts of alternative production levels in response to the EIS alternatives.
14/7	Second, the analysis simulates harvest rates in the ocean fisheries during the 1999 PST Agreement, which are higher than those currently allowed in the 2008 PST Agreement.	The analysis for the final EIS has been updated to incorporate provisions of the 2008 PST agreement. These provisions include three Aggregate Abundance Based Management fisheries: West Coast Vancouver Island (WCVI), North British Columbia (NBC),

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED)

Letter/ Comment #	Comment	Response
		and Southeast Alaska (SEAK). The fishery rules now incorporate the limits that control these fisheries.
14/8	Lastly, the analysis relies heavily on stock production parameters for Columbia River stocks that are not adequately explained in Appendix K.	The EIS has been updated in response to the comment. Appendix K has been updated to address this comment.
14/9	Also, model data sets have been created for virtually all Columbia River populations of Chinook and coho, whether they are entirely natural, entirely hatchery (segregated), or an integrated composite of natural and hatchery fish. The derivations of production parameters for each stock and the inherent assumptions behind them are never fully explained. This issue is vital regardless of the NEPA harvest alternative since one of the major factors that will determine the long term health of each of the stocks is its' production potential.	The values used were compiled by HSRG for its analysis of Columbia River hatcheries, and the values are documented in HSRG's report (HSRG 2009 Appendix D Section 1.1, 1.2, and Section 1.3). However, based on comments on the draft EIS and NMFS' assessment of low model predictions of abundance, relative to recent year run size for the Columbia Basin, NMFS has, with the help of Columbia Basin managers, adjusted average marine survival rates upwards for many of the populations in the final EIS analysis.
14/10	Does the AHA model take into account the interaction of the wild and hatchery fish as the level of hatchery production goes up or down? Will the production parameters of the *hatchery fish change as hatchery practices change? For example, will the introduction of* more wild fish into the hatchery broodstock change the production parameters for the hatchery fish?	Yes; natural production will increase if the level of hatchery influence decreases due to reduced program size or exclusion of hatchery fish from spawning populations. This effect is modeled through the fitness model included in the All-H Analyzer. No; hatchery production parameters (e.g., post-release survival) are fixed in the model and do not change with change in program size or brood stock management.
14/11	The assumptions about the underlying productivity of the stocks are a major part of this analysis that deserves more scrutiny	See Global Response 7: Comments Addressing the Analysis within the EIS.
14/12	*Are the mitigation requirements and responsibilities under the Mitchell Act adequately described in the DEIS?* ***(WA, OR, ID, Tribes, AK)*** No. We do not find that the EIS adequately addresses the mitigation requirements and responsibilities within the Columbia River Basin. These requirements and responsibilities are not limited to the Mitchell Act, but also include a large number of other programs that are the subject of "policy direction" under the DEIS. The document should recognize the range of mitigation purposes of enhanced production and describe how actions / policies identified in the DEIS may impact the variety of mitigation requirements and responsibilities in both the short and long-term.	See Global Response 4: Comments Asserting and Referring to the Mitchell Act's Mitigation Obligation or Calling for NMFS to Define the Obligation.
14/13	*Can hatchery reform concepts other than percent of hatchery origin spawners (PHOS) and percent of natural origin broodstock (PNOB), such as*	See Global Response 1: Comments Stating a Preference (Preferences) and/or Ideas for the EIS Preferred Alternative.

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED).

Letter/ Comment #	Comment	Response
	natural rearing strategies, be used to develop alternatives that meet the purpose and need of the DEIS but maintain more production than Alternatives 3-5? ***(Tribes, AK, OR, WA, ID)*** While reform of Columbia River basin hatcheries is widely considered to be a beneficial and desired action, focusing only on the genetics and intent to implement genetic standards as described in the draft Mitchell Act EIS is disappointing. The single minded focus on this technical issue and recommended application of the proposed genetic standards to all Columbia River basin hatcheries represents a failure by NMFS to address reform of Columbia River basin hatchery programs in a meaningful manner. Other technical issues (for example disease prevention and transmission, water quality and quantity) are completely ignored in the alternatives. There are a number of hatchery reforms that need to be evaluated and utilized in developing alternatives that meet the purpose and need while maintaining more production than those identified in the DEIS.	
14/14	*What fisheries are assumed in the analysis to be mark-selective, and at what point in time?* ***(OR, WA, ID, Tribes, AK, NMFS)*** Appendix K provides some detail regarding the mark-selective fisheries (MSFs) that were incorporated into the EIS fishery models for coho and Chinook. It gives a more detailed description of the assumptions used in the MSFs for coho than for Chinook. It also states that the model incorporates *"MSF only for spring chinook fisheries in the Columbia River below Bonneville Dam."* Thus the modeling does not reflect recent expansion of MSF into ocean fisheries in 2010 or potential impacts that may result if the "policy direction" of significantly expanded MSFs were to be implemented. There is currently increasing concern over the mark rates experienced in MSFs. If hatchery production is reduced, the issues with observed mark rates and mortalities of wild stock release (potentially multiple releases in several fisheries) will be exacerbated.	Comment noted.
14/15	As explained in the response to question 1 with the noted caveats, the approach taken appears to be a reasonable one for estimating the stock impacts that occur in the ocean fisheries. In other words, the model structure itself seems reasonable. However, the assumptions about the independence of the production from Columbia River and non-Columbia	To be clear, the EIS does not contain "harvest alternatives." The EIS contains alternatives for hatchery program operations in the Columbia River Basin. The harvest analysis is relegated to demonstrating the effects on harvest under current harvest management that these hatchery production alternatives would

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED)

Letter/ Comment #	Comment	Response
	River stocks; the choice of ocean harvest rates derived from years under the 1999 PST Agreement instead of the 2008 PST Agreement; the estimated impacts from MSFs; and the AHA production parameters for Columbia River stocks could influence the model results for each of the NEPA harvest alternatives and should be investigated further.	likely present. The final EIS has been updated to incorporate revisions to the various rules for both the in-river and ocean fisheries for salmon and steelhead. This was done to reflect more recent harvest management agreements (in-river and ocean) and ESA guidance that have controlled fisheries in recent years (as of 2010, which includes the 2008 PST agreement).
14/16	*Were expected benefits to fisheries from increased wild production included in the economic analyses?* ***(WA, OR, ID, Tribes, AK)*** No. The DEIS does not appear to include any substantive discussion of underlying assumptions with increased wild production in either the technical or economic analyses. The lack of focus on how recommended actions may actually benefit the wild salmon stocks of the Columbia River Basin or the users of these natural resources is a serious deficiency in the document.	Yes; increases in estimated natural-origin production did translate to higher estimated catches of natural fish, some populations and some fisheries. Overall catch (natural- and hatchery-origin) for a given alternative may be lower in particular fisheries because catch is predominately hatchery fish in some fisheries.
14/17	*Were current fishery and hatchery management agreements used to estimate impacts (e.g., US v Oregon, Pacific Salmon Treaty Chinook Annex, US V Washington, Hoh v Baldrige, etc.)?* ***(WA, OR, ID, Tribes, AK)*** The DEIS uses the 1999 Pacific Salmon Treaty (PST) agreement rather than the provisions contained in the 2008 revision. Thus the Chinook impacts under the current PST Chinook fishery provisions may not be estimated correctly.	The commenter is correct. Some of the harvest assumptions used for the draft EIS analysis utilized values and rates from management agreements that had been renewed/revised close to the time of publication, i.e., the harvest rates in the *U.S. v. Oregon* (CRFMP) agreement. Fishery rates and limits were updated and included in the analysis for this final EIS. Please see revised Appendix K for specific information utilized in the harvest analysis portion of the final EIS.
14/18	As detailed in Appendix K, the DEIS uses relatively simple models to project marine fishery catch levels and run sizes to the mouth of the Columbia River. There are 30 model stock groups in the PSC Chinook Model, 10 of which are from the Columbia River. The modeling of the 5 alternatives assumed constant abundance for the 20 non-Columbia River stock groups, while the 10 aggregated Columbia Rivers stocks were allowed to vary and various assumptions were applied to them, such as survival.	The analysis is intended to provide information on relative changes in fishery harvests resulting from the alternatives considered for Columbia River hatchery production. The analysis reflects changes in natural and hatchery escapements in the Columbia River Basin as a result of harvest management constraints on natural stocks. The modeling approach is simplistic by design. It is not possible to consider all potential permutations of abundance of Columbia River and non-Columbia River stocks and hypothesize how fisheries might be adjusted in response. Consequently, the best approach to inform reprogramming decisions would be to hold

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED).

Letter/ Comment #	Comment	Response
		production levels outside the Columbia system constant. In the analysis, variations or co-variations in survival between stocks are not considered to provide information that can most readily and directly compare impacts of alternative production levels in response to the EIS alternatives.
14/19	The analysis in Appendix K uses a harvest-rate as the center piece of the simplified approach as noted above. However, the 2008 PST agreement does not specify an underlying harvest-rate approach for the three Aggregate Abundance Based Management fisheries: West Coast Vancouver Island (WCVI), North BC (NBC) and Southeast Alaska (SEAK). Catch limits in all three are now tied to relative abundance, rather than a harvest-rate, e.g., at a given abundance index, a catch limit is the accounting benchmark and the harvest rate is whatever postseason analysis deems it to be.	The analysis for the final EIS has been updated to incorporate provisions of the 2008 PST agreement. These provisions include three aggregate abundance-based management fisheries: West Coast Vancouver Island (WCVI), North British Columbia (NBC), and Southeast Alaska (SEAK). The fishery rules now incorporate the limits that control these fisheries.
14/20	In addition, at all abundance levels the catch limits in WCVI and SEAK under the 2008 agreement are currently reduced by 30% and 15% respectively as compared to those in the 1999 agreement.	The updated harvest analysis incorporates the changes identified by the reviewer.
14/21	*Were impacts to commitments and expectations in the PST, USv Oregon, USv Washington, Hoh v Baldrige properly described in the DEIS?* ***(WA, OR, ID, Tribes, AK)*** Under the PST Agreement, if any of the four alternatives in the DEIS other than alternative #1 are implemented, changes in Columbia River hatchery production of Chinook salmon will likely be inconsistent with expectations in the PST. For example, catch limits in the WCVI AABM fishery were cut by 30%, but it was agreed that no further reductions would be applicable to the table used to calculate this fishery's annual abundance-based catch limits. Changes in abundance of the Columbia River hatchery or wild stocks could significantly change the overall abundance and stock-age mixture in the WCVI fishery. Catches of Chinook in this fishery are dominated by Columbia River and Puget Sound stocks. Impacts on Puget Sound stocks, which are listed under the U.S. ESA, would most likely increase.	Comment noted.
14/22	The approach in the MA-DEIS does not reflect what may happen if any but alternative #1 is implemented. For the other alternatives, effects on stock abundance, catch levels, exploitation rates and impacts to fisheries, fishers and economies are unknown. It appears to be a trial and error approach	NMFS disagrees with the comment. The analysis presents changes relative to Alternative 1. The analysis is based on fishery modeling that the reviewer's letter states early on "is based upon standard and accepted algorithms that are components of

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED)

Letter/ Comment #	Comment	Response
	and could deliver very deleterious impacts to coastal fisheries and communities.	the PSC Chinook Model and the PFMC FRAM Model, albeit in simplified form" (letter 14, comment 5).
14/23	*Is the temporal scale of the impact assessment adequate?* ***(WA, OR, Tribes, ID, AK)*** This question is somewhat vague. Does it mean to address whether a sufficient number of years were modeled or whether there was a sufficient stratification of time periods within each year? Since the PSC Chinook Model operates on a yearly time step, it is unlikely that the DEIS fishery model which is based upon it would be able to estimate impacts down to a finer scale than a year. In addition, the DEIS model was not set up to make yearly projections of future fishery impacts so it does not address that issue either.	Comment noted.
14/24	A remarkable void in the NMFS draft Mitchell Act Hatchery EIS is a listing or description of possible benefits from the suggested alternatives. The three action alternatives (3-5) all involve setting genetic brood stock standards for hatcheries in the Columbia River basin. However, there is no description, either qualitative or quantitative that describes potential benefits were these standards achieved. Would productivity of natural spawners increase; if so, to what degree? The document devotes a small amount of text to the genetic risks that hatchery salmon pose to natural spawning salmon; yet devotes no effort to describing benefits to ESA-listed or non-ESA-listed salmon stocks were these standards adhered to by hatcheries within the Columbia River basin.	The effects, both beneficial and adverse, on the salmon and steelhead resources by alternative are demonstrated in Section 4.2, Fish. These sections, which were also included in the draft EIS, have been updated to reflect a more contemporary baseline (Alternative 1), as well as reapplication of the draft EIS Alternative 2 through Alternative 5, and the newly added Alternative 6.
14/25	The color coding indicating **Supporting**, **Consistent**, and **Not Consistent** needs explanation in the context of this DEIS. Are these ratings intended to convey current conditions or conditions under the proposed alternative at some time in the future; if so when? The concept behind the color coding and the terms: **Primary**, **Contributing**, and **Supporting** have an implied meaning for salmon stocks listed under the Endangered Species Act as described elsewhere in the EIS document. However, these same terms are used to label hatchery production associated with non-ESA listed stocks as well. For instance, the entries listed under Upper Columbia River Summer/Fall-run Chinook are all listed as primary, contributing, or stabilizing and yet these fish are not ESA listed. Federal labeling of these	Thank you for your comment. The color-coded scheme for the species-specific appendices (C through F) has been changed to a simpler scheme of shading that indicates the results of the action alternatives, relative to Alternative 1 (No-action). The scheme is a more simplistic approach that demonstrates increases or benefits, no change; or decreases or adverse [effects] for the hatchery program and/or natural-origin population attributes.

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED).

Letter/ Comment #	Comment	Response
	stocks in an ESA context is not appropriate. Details concerning individual hatchery programs can only be gleaned from information listed in Appendix C, yet the labeling and color coding provided is inadequate for review.	
14/26	We believe that the scope of the EIS should be scaled back to its original intent of providing guidance for utilization of Mitchell Act funds. The expansion of the document in 2009 to consider all hatchery programs in the Columbia River Basin has led to much confusion and an inferior document. Future examination of facilities and policies in the basin could be based on much better analysis of the overall operations of individual hatcheries, the mitigation requirements and responsibilities associated with facilities, and the variety of factors (habitat, water, etc) that must be taken into account to determine potential benefits to wild salmon production from hatchery actions.	See Global Response 2: Comments Addressing the Scope of This EIS.
15/1	There are existing mitigation hatchery programs operated under formal agreements *(e.g.,* Lower Snake River Compensation Plan and Hell's Canyon Settlement Agreement) and related legal agreements, particularly the U.S. v Oregon 2008 - 2017 Management Agreement. The Department supports a preferred alternative and implementation scenarios that recognize these agreements and this base level of mitigation production and do not require or encourage reductions in that production.	See Global Response 1: Comments Stating a Preference (Preferences) and/or Ideas for the EIS Preferred Alternative.
15/2	The programmatic approach used in the draft EIS includes all Columbia Basin hatchery programs. However, the range of alternatives in the draft EIS does not include a reasonable option for accommodating new conservation programs within the capacity of the existing mitigation hatchery program. New conservation programs being implemented by the Department rely on increasing production from existing hatchery programs to jointly satisfy existing mitigation agreements while attempting to restore depressed natural populations and reducing potential impacts of hatchery fish to ESA-listed fish.	See Global Response 6: Comments Addressing the Range of Draft EIS Alternatives.
15/3	Idaho was the leader in implementing fishery conservation measures for steelhead in the early 1980s, years before they were listed under the ESA, by adipose-clipping hatchery-produced fish and restricting harvest to only those fish in sport fisheries. The next phase of conservation and restoration actions we are implementing are supplementation and integrated brood	See Global Response 6: Comments Addressing the Range of Draft EIS Alternatives.

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED)

Letter/ Comment #	Comment	Response
	stock strategies that put additional fish-rearing space demands on the existing hatchery infrastructure. None of the implementation scenarios used in the draft EIS address situations where fish production at a facility may increase to maintain mitigation production and initiate new conservation/production programs. The draft EIS goes so far as to state (page 2-19 lines 4 & 5, page 2-20 lines 7-8) "new conservation hatchery programs would be initiated using existing hatchery capacity." This limitation on alternatives and implementation scenarios is unreasonably restrictive.	
15/4	Idaho has a sincere interest in fish conservation programs and believes those should be implemented in addition to fish production occurring under existing mitigation agreements, not in replacement of that mitigation production. The range of alternatives and implementation scenarios in the final EIS should explicitly include production scenarios where production is increased to support both mitigation and conservation objectives. For example, NMFS could analyze scenarios for increased production that are clearly described in Hatchery and Genetic Management Plans being prepared by the Department. The Department discussed these scenarios with NMFS during their development.	See Global Response 1: Comments Stating a Preference (Preferences) and/or Ideas for the EIS Preferred Alternative.
15/5	The Department supports evaluation of these scenarios and the selection of a preferred alternative that allows protection for existing levels of mitigation production and provides for increased production to initiate new conservation programs. Such a preferred alternative would best support the conservation and harvest outcomes we strive to achieve in Idaho and the Snake River Basin.	See Global Response 1: Comments Stating a Preference (Preferences) and/or Ideas for the EIS Preferred Alternative.
15/6	Table of comments on Appendix A < Spreadsheet table with corrections to population data >	Revisions noted by IDFG were incorporated into the revised EIS to reflect programs as of 2010.
16/1	First, we believe it is imperative that the preferred alternative be consistent with the Mitchell Act's original intent to address the environmental impacts and loss of salmon and steelhead production resulting from the construction of the hydro-power system and environmental degradation.	See Global Response 1: Comments Stating a Preference (Preferences) and/or Ideas for the EIS Preferred Alternative.
16/2	Second, hatchery actions must be implemented as part of an "all-H" strategy that integrates hatchery, harvest, and habitat actions.	See Global Response 1: Comments Stating a Preference (Preferences) and/or Ideas for the EIS Preferred Alternative.

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED).

Letter/ Comment #	Comment	Response
16/3	Finally, our management decisions must be informed by our best scientific understanding of the effects of hatchery programs. In particular, we should promote the achievement of hatchery goals through management based on a structured monitoring, evaluation, and research program.	See Global Response 1: Comments Stating a Preference (Preferences) and/or Ideas for the EIS Preferred Alternative.
16/4	The devastating impacts to salmon production that resulted from the construction of the hydro-power system and habitat degradation led to the passage of the Mitchell Act in 1938. The state of Washington's Columbia River and coastal communities have been historically dependent on fishing the Columbia River salmon runs, and now depend on fish produced from the Mitchell Act hatcheries and other mitigation programs. Despite the obvious limitations and inadequacies to current Mitchell Act funding, we believe that a scientific basis exists to support increased or new production programs. NMFS should confirm that the scope of production for hatchery programs covered by the final EIS include scenarios for increased production and the associated facilities necessary for that increased production to achieve conservation and mitigation objectives, even if the funding for the needed facilities and production is not currently in hand. A scope of alternatives that includes properly aligned, increased hatchery production will allow the identification of a preferred alternative in the final EIS that is consistent with conservation and sustainable fisheries.	See Global Response 6: Comments Addressing the Range of Draft EIS Alternatives.
16/5	We are concerned that the DEIS alternatives compare actions taken regionally rather than on a population basis. We encourage NMFS to develop a preferred policy direction that directly reflects the differences in roles played by the evolutionary significant unit/distinct population segment (ESU/DPS) populations in achieving recovery objectives. The preferred policy should support the implementation of existing, recovery plans and regional hatchery reform action plans that are based on distinguishing characteristics of primary, contributing, and stabilizing populations.	See Global Response 1: Comments Stating a Preference (Preferences) and/or Ideas for the EIS Preferred Alternative.
16/6	We suggest that the final EIS include analyses that identify a broader use of selective harvest of hatchery fish. Broader use of selectivity in fisheries can also result in reducing the risk hatchery fish pose to naturally produced fish, but without necessarily having to rely only on significant reductions in hatchery production. This is an important aspect given the original intent of	Thank you for your comment. The EIS contains two alternatives, Alternative 4 and Alternative 5, which employ terminal selective harvest as an implementation measure.

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED)

Letter/ Comment #	Comment	Response
	the Mitchell Act.	
16/7	If the conservation objectives can be achieved through another means besides simply reducing hatchery production, then these strategies must be considered first	NMFS agrees and has presented alternatives with many approaches to meeting performance goals. See Section 4.1.3.3, Implementation Measures. Depending on the alternative, some or all of these additional measures were used in an attempt to meet the alternative performance goal, prior to reducing the hatchery program release numbers.
16/8	We realize in order to complete the DEIS analysis, a specific point in time needed to be identified and used as the base reference. However, hatchery programs and harvest management have undergone some important changes to enhance the conservation measures. Several hatchery programs funded under the Mitchell Act have undergone significant changes in operation since 2007 to align better with regional priorities and recovery needs as identified in the Lower Columbia Salmon Recovery Plan. In addition, fishery impacts, particularly within the Pacific Fishery Management Council, waters have been reduced since 2007. It is our hope that the final EIS includes these measures in an analysis to help inform the public about the contribution and credit due to each towards recovery.	See Global Response 6: Comments Addressing the Range of Draft EIS Alternatives.
16/9	Finally, we would like to provide comment on the distribution of Mitchell Act funding in general. Based upon analysis presented in the DEIS, Mitchell Act appropriations for hatchery programs represent less than 15% of the entire Columbia River basin expenditures on like activities. We contend that the FCRPS BiOp and associated commitments go a long way toward meeting the federal mitigation obligations and conservation of hatchery programs upstream of Bonneville Dam. Given contemporary needs and agreements e.g. Lower Columbia River Salmon Recovery Plan, Pacific Salmon Treaty, *US v Oregon,* we would contend that elimination or broad redistribution of the Mitchell Act funds would be hurtful overall to the region and undermine several of the long term management plans and strategies the region has in place. Given the 2008 FCRPS Biological Opinion and Accords have focused funding of mitigation and conservation needs on hatchery program operations upstream of Bonneville Dam, we believe that a more equitable distribution of Mitchell Act funds would be achieved with a preferred policy direction that resulted in a higher share of total funding	See Global Response 1: Comments Stating a Preference (Preferences) and/or Ideas for the EIS Preferred Alternative.

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED).

Letter/ Comment #	Comment	Response
	applied to mitigate for fishery resources below Bonneville Dam.	
16/10	We generally support the scientific assessment of the genetic, facility, and ecological effects of hatchery programs included in the DEIS, and the use of performance metrics such as the Proportionate Natural Influence (PNI). We emphasize, however, that it is important to develop watershed-specific action plans that systematically implement hatchery actions as part of a comprehensive, integrated (All-H) strategy for meeting conservation and fishery goals at the watershed and Evolutionarily Significant Unit/Distinct Population Segment level. These plans should rely upon watershed specific monitoring information and an adaptive management program.	See Global Response 1: Comments Stating a Preference (Preferences) and/or Ideas for the EIS Preferred Alternative.
16/11	In closing, we acknowledge NMFS has important work ahead in order to finalize this process and we encourage NMFS to move forward with the DEIS/NEPA process. However, the process has generated confusion about the intent and purpose of the MA DEIS/NEPA and the potential misinterpretation of alternatives 2-5. We encourage NMFS to initiate a process to help clarify these for the public and management entities before finalizing the EIS.	See Global Response 3: Comments Addressing the EIS Process.
16/12	Recognizing how significant the preferred policy direction will be to the region for future Mitchell Act funding, we also request that NMFS identify a preferred alternative and seek public comment before the final EIS is completed.	Comment noted.
16/13	Coordination and synchrony of Federal action relating to ESA compliance remains a concern of the Department. We recommend that the Mitchell Act Hatchery Environmental Impact State Record of Decision be made concurrent with completion of all related ESA consultation processes. For example, NMFS is evaluating the approval of the US v. Oregon hatchery programs under the ESA. The Department also recommends that the ESA consultation for lower river hatcheries also be made concurrently with the Record of Decision. This approach enables a preferred alternative to be informed by the policies and agreements associated with salmon and steelhead recovery that have been, and will be, developed collaboratively among the co-managers, NMFS regional entitities, and other interest in the Basin.	See Global Response 3: Comments Addressing the EIS Process.

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED)

Letter/ Comment #	Comment	Response
17/1	We join with recreational, commercial and tribal fishers, in-river and ocean, from Oregon, Washington, Alaska and Idaho, with generations of experience behind us on what it takes to conduct viable fisheries, and shared concerns regarding the Mitchell Act DEIS. We are united in our agreement that all of our groups are entitled to conduct viable fisheries that sustain our communities.	Comment noted.
17/2	We share a mutual concern that, due to its many errors, lack of documentation, faulty modeling, and major omissions, the DEIS is not ready for public comment and should not have been put forth for such review. It has cost numerous fisheries organizations and fisheries and tribal agencies considerable time and money to comment on a document that is seriously flawed, and which should have been corrected by the agency before public review. These comments are contained in individual letters provided NMFS by the respective organizations and agencies. The document itself represents a significant investment by the U.S. taxpayer of approximately $1,000,000. The public has a right to expect an accurate and complete document to be presented for public review.	See Global Response 7: Comments Addressing the Analysis within the EIS.
17/3	We share a mutual concern that the five alternatives presented for review all result in adverse effects on harvest. NO alternative appears that is supportive of harvest. All alternatives, including status quo, will result in reduced harvest. It does not appear to us that any alternatives that might have been supportive of harvest were considered. If they were, they are not evident in the document. The Mitchell Act was intended to compensate for habitat that was destroyed due to hydro-electric and other development of the Columbia Basin. Further, its intent was mitigation to provide continued harvest opportunities to compensate for that destruction (DEIS, pp. 1-21 and 2-15). We do not believe that the five alternatives provided in the DEIS fulfill these legal obligations of the Mitchell Act.	See Global Response 6: Comments Addressing the Range of Draft EIS Alternatives.
17/4	We share a mutual concern that the DEIS appears to subsume the Mitchell Act under the Endangered Species Act and abolish the mitigation requirements of the Mitchell Act. We are concerned that this focus might be construed as a regulatory repeal of the Mitchell Act without a Congressional vote. Fisheries along the entire west coast will be affected by	See Global Response 4: Comments Asserting and Referring to the Mitchell Act's Mitigation Obligation or Calling for NMFS to Define the Obligation.

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED).

Letter/ Comment #	Comment	Response
	the draconian cuts in harvest proposed, and we object strongly to this reorientation of the Mitchell Act. We do not believe that conservation and harvest are mutually exclusive.	
17/5	We recommend that the National Marine Fisheries Service withdraw this document, consult with our groups and the numerous agencies and tribal governments who were not consulted in the drafting of this document, and redraft a DEIS that corrects the multitude of errors and omissions noted in comments received by the agency.	See Global Response 3: Comments Addressing the EIS Process.
17/6	We also recommend that NMFS provide alternatives that are supportive of viable fisheries across all sectors, and respectful of the place of salmon and salmon fisheries in the history, economy and culture of the west coast.	See Global Response 6: Comments Addressing the Range of Draft EIS Alternatives.
17/7	We are united in our agreement that good government, good regulatory practice and good stewardship require that the current DEIS be withdrawn as requested.	See Global Response 3: Comments Addressing the EIS Process.
18/1	Along with Oregon, Washington, Alaska and Idaho and all recreational, commercial and tribal fishers of in-river and ocean fishing we stand united in agreement that all of these groups are entitled to conduct viable fisheries that sustain our communities.	Comment noted.
18/2	We share in the concern that errors, lack of documentation, faulty modeling along with major omissions, makes the DEIS not ready for public comment or review. The public has the right to expect an accurate and complete document for review, particularly following the significant investment of US taxpayer's funds totaling approximately $1,000,000.00.	Comment noted
18/3	The five alternatives presented for review all result in negative effects on harvest. There is no alternative that appears supportive of harvest. It appears that none of the alternatives that might have been supportive of harvest were even considered.	See Global Response 6: Comments Addressing the Range of Draft EIS Alternatives.
18/4	We highly recommend that National Marine Fisheries Service withdraw this document and consult with the numerous agencies and groups who were not consulted.	See Global Response 3: Comments Addressing the EIS Process.
18/5	We also highly recommend that NMFS provide viable alternatives of this fishery, which are respectful of the place salmon and the salmon fisheries	See Global Response 6: Comments Addressing the Range of Draft EIS Alternatives.

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED)

Letter/ Comment #	Comment	Response
	hold in the history, economy and highly regarded culture of the west coast.	
18/6	Good government, good stewardship and good regulatory practices require NMFS to withdraw the current Draft Environmental Impact Statement.	See Global Response 3: Comments Addressing the EIS Process.
19/1	We are extremely disturbed with the DEIS.	Comment noted.
19/2	Sport fishing on the mainstream Snake River is a huge economic benefit to communities and very important for local moral.	Comment noted.
19/3	Farmers and ranchers are constantly being identified in recovery plans as contributing to the problems that face salmonids in their freshwater life stages. You continue to look at the historic practices and have failed to recognize the projects that have been completed in the past 20 years that are protecting riparian habitat, reducing soil erosion and increasing stream length and complex habitat in local streams.	Comment noted
19/4	The economic section of the DEIS is not accurate for southeastern Washington …	See Global Response 7: Comments Addressing the Analysis within the EIS.
19/5	… if hatchery production is reduced we will see a decrease in fishing opportunities, which will penalize locals who have been restoring critical habitat for juvenile and adult salmonids. We need to continue building partnerships and maintaining trust and credibility, not reducing fishing opportunities for tribal or sport fishermen.	Comment noted.
19/6	We would appreciate more local input from hatchery managers within our region. There is a wealth of knowledge regarding hatchery production, harvest and habitat in the Snake basin, yet none of these individuals were consulted.	See Global Response 3: Comments Addressing the EIS Process.
19/7	… the Garfield County Board of Commissioners supports the withdrawal of the DEIS to provide for a complete rescoping and revision in order develop a draft that reflects a collaborative effort with all the affected parties.	See Global Response 3: Comments Addressing the EIS Process.
20/1	This letter represents the collective response of the Chelan, Douglas and Grant County Public Utility Districts (Mid-Columbia PUDs) to the National Marine Fisheries Service's (NMFS) Draft Environmental Impact Statement to Inform Columbia River Basin Hatchery Operations & the Funding of Mitchell Act Hatchery Programs (DEIS). We applaud NMFS' efforts to identify conservation approaches in the DEIS that may benefit listed species. The effort to consolidate such a broad range of conservation goals	Comment noted.

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED).

Letter/ Comment #	Comment	Response
	and objectives for analysis and public review is noteworthy and ambitious.	
20/2	The Mid-Columbia PUDs have been proponents of NMFS' implementation of performance standards for hatchery programs, combined with a structured, adaptive approach to hatcheries management. Accordingly, we have a direct and significant interest in the development and implementation of hatchery policies in the Columbia River Basin. Indeed, the adaptive approach being employed in our programs is currently integrating the best science and most recent policy directives into the management of our hatchery programs. Our comments here are not only provided to assist NMFS in formulating a preferred alternative for publication in the Final Environmental Impact Statement (FEIS) and Record of Decision, but also to highlight how our programs, as currently implemented, are in harmony with (i) the general goals established by the Hatchery Scientific Review Group (HSRG), (ii) the goals set forth in the DEIS, and (iii) to encourage NMFS to ensure that the approach set forth in a FEIS remains consistent with the ongoing and adaptive approach being employed by the Mid-Columbia PUDs' programs.	See Global Response 1: Comments Stating a Preference (Preferences) and/or Ideas for the EIS Preferred Alternative.
20/3	The Mid-Columbia PUDs supply power to thousands of individuals and businesses in a large geographic range that includes Chelan, Douglas, and Grant counties and extends across Washington State. We collectively generate clean hydroelectric energy from a total of 5 hydroelectric projects on the Columbia River. These include the Priest Rapids, Wanapum, Rock Island, Rocky Reach and Wells hydroelectric projects. We have undertaken an innovative and adaptive approach to Endangered Species Act (ESA) compliance in our operation of these hydroelectric projects. For example, Chelan PUD and Douglas PUD operate under Habitat Conservation Plans (HCPs) implemented pursuant to Section 10 of the ESA. These were developed in accordance with the ESA's goals of conserving and facilitating the recovery of natural populations. The overarching goal of the HCPs, as well as Grant PUD's Priest Rapids Project Salmon and Steelhead Agreement (SSA) — is to achieve no-net impact (NNI) on anadromous salmonids as they pass through our hydroelectric projects. A key component of the HCPs and SSA is the operation and maintenance of conservation hatchery programs, the primary goal of which is to meet NNI (mitigation goals) in a	Comment noted.

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED)

Letter/ Comment #	Comment	Response
	manner consistent with the objective of rebuilding natural populations. The Mid-Columbia PUD hatchery programs are managed through the active participation of State, Federal, and Tribal signatories in defined "hatchery committees," utilizing adaptive management principles and robust monitoring and evaluation (M&E) programs. The HCPs and SSA set forth the specific standards, rules, and guidelines applicable to the operations of the hatchery committees and their adaptive management mandate. The hatchery committee members, including NMFS, ensure that the Mid-Columbia PUD hatchery programs incorporate the best available science to meet program objectives and ESA compliance. The Mid-Columbia PUDs have been leaders in collecting comprehensive M&E data to support adaptive, conservation-based decision making. Moreover, we have already begun incorporating many of the goals or principles indentified in the "stronger performance" categories identified in the DEIS into our hatchery programs. As an example, the Mid-Columbia PUDs (in coordination with their respective hatchery committees) have already begun implementing the Hatchery Scientific Review Group (HSRG) conservation recommendations and have voluntarily submitted Hatchery Genetic Management Plans (HGMPS) that are based on HSRG principles. Both Chelan PUD and Grant PUD have developed HGMPs in coordination with NMFS that have been published in the federal register and are currently undergoing Section 7 consultation. Similarly, Douglas PUD submitted a Methow Basin spring Chinook HGMP to NMFS in March 2010 and is currently working with the HCP Hatchery Committee on a new HGMP for Wells Hatchery Steelhead. These HGMPs are consistent with the best available science and HSRG recommendations, and are at the forefront of NMFS' developing comprehensive hatchery policy for the Columbia Basin. In addition, these ongoing HGMP processes derive from, and are consistent with, the hatchery reform goals set forth in the FCRPS 2008 Biological Opinion, Reasonable and Prudent Alternatives (RPAs) 39 and 40. Some of the adaptive changes we anticipate incorporating as a result of our current program reviews are significant reductions in program sizes for some	

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED).

Letter/ Comment #	Comment	Response
	stocks, managing for Proportionate Natural Influence (PNI) levels consistent with conservation, targeted reproductive success studies, and conservation-based release strategies.	
20/4	It is our understanding that NMFS intends the DEIS to reflect a comprehensive basin-wide approach to the management of Columbia River hatchery programs. Specifically, the DEIS explains that "NMFS' purpose for the action is to develop a policy direction related to Columbia River basin hatchery production that will 1) guide its decisions about the distribution of funds for hatchery production under the Mitchell Act ; and 2) inform its future review of individual Columbia River hatchery programs under the ESA."1 The DEIS further explains that NMFS "anticipates adopting a policy direction that identifies general goals for NMFS to pursue with regard to Columbia River basin hatchery production and a series of recommendations for hatchery operators to consider and adopt when developing plans for their individual hatchery programs." This "policy direction" will apparently be generated from a combination of two or more of the alternatives set forth in the DEIS and will be aimed to "develop standards that will reduce the adverse effects of hatcheries on natural origin fish." It is our understanding that the policy direction developed in the DEIS is intended by NMFS to reflect and harmonize the policies and standards currently being implemented in our programs in accordance with NMFS' HGMP policy. However, while NMFS suggests in the DEIS that it is documenting a comprehensive hatchery strategy for the Columbia River Basin, it does not clearly and specifically express how this strategy incorporates or affects existing hatchery reform efforts such as those currently being employed in the PUD programs, which are not funded by the Mitchell Act but are governed by existing Federal Energy Regulatory Commission license requirements and HCPs (i.e., Chelan and Douglas PUDs HCPs) or SSA (Grant PUD) contained therein. We recognize NMFS' desire to document a comprehensive approach to hatchery management for potential use in future reviews. Nonetheless, NMFS should ensure that that development of the selected approach incorporates and reflects current policy and programs, and will be adaptively implemented in our hatchery programs. The approach set forth	See Global Response 5: Comments Addressing the EIS and Its Relationship to Other Plans, Regulations, Agreements, Laws, and Executive and Secretarial Orders.

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED)

Letter/ Comment #	Comment	Response
	in the DEIS should not limit our hatchery programs' adaptive flexibility or otherwise modify terms and conditions set forth in the HCPs, Section 10 permits, or agreements contained in our FERC licenses. We assume that the approach set forth in the DEIS is intended to be consistent with, and to document, the current hatchery reform efforts being employed adaptively in our programs, and that the FEIS will maintain this consistency. If this assumption is incorrect, we request that NMFS clarify its intent in the FEIS or in its responses to comments. In summary, the Mid-Columbia PUDs strongly suggest that NMFS continue to develop its hatchery policy direction, as reflected in the DEIS, in a manner consistent with the conservation agreements contained within our FERC licenses, which endorse an adaptive approach based on the best and most current science.	
20/5	The statement "Implementation of hatchery practices that would increase adverse effects on listed species when compared to existing practices is not considered in this draft EIS"2 is not consistent with the policy direction of installing weirs for the management of hatchery origin spawners, which is stated in several of the Alternatives in the DEIS. The widespread use of weirs and large-scale trapping efforts (e.g., up to 100% of a run) to remove excess hatchery fish, as recommended in the DEIS, represents a paradigm shift in fisheries management that has not been well studied. All of our existing ESA permits have strict limitations on the operation of weirs because of putative delays in migration and reduced survival associated with handling. Therefore, it is unclear how increasing the abundance of weirs, or frequency of operation required to achieve a PNI objective, will not result in an increase in adverse effects on listed species. In the upper Columbia Basin, purported deleterious habitat effects have prevented the installation of weirs on at least two recent occasions3 despite ostensible agency support (i.e.,WDFW, NMFS and USFWS). We recommend that NMFS carefully consider that constructing barriers to passage (i.e., weirs) may not improve the welfare of listed species that are almost universally affected by degraded habitat. Furthermore, the use of an invasive measure, such as a weir, to remove excess hatchery fish should be explicitly evaluated versus other equally protective alternatives such as reducing a hatchery program	See Global Response 6: Comments Addressing the Range of Draft EIS Alternatives.

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED).

Letter/ Comment #	Comment	Response
	size, changing release locations, altering the type of a hatchery program (e.g., segregated or integrated), or exploring carefully managed conservation fisheries. We also recommend that NMFS examine the habitat/ecological effects of constructing and implementing weirs and compare these to the risks associated with high proportions of hatchery origin spawners. In summary, the PUDs suggest that using weirs may cause significant negative ecological effects and, used alone, will only solve a symptom of the problem (too many hatchery spawners), not the cause (potentially too many hatchery releases).	
20/6	Recognizing that hatchery origin fish are only half of the PNI equation, and natural origin fish are the other, we question whether it is possible to effectively manage PNI in the Columbia Basin by relying on weirs (e.g., intermediate or strong performance) to remove hatchery origin fish. In other words, if harvest or other downstream factors remove a significant portion of natural-origin fish, the burden of managing for a given PNI is potentially transferred to removal of excess hatchery adults through weirs. It follows that the removal of large numbers of hatchery fish to achieve PNI will only be successful if there are sufficient numbers of natural-origin fish that have not been previously eliminated. More simply, PNI goals are rendered irrelevant if natural origin abundance is disregarded. The FEIS comprehensive analysis should also consider the effects of other factors, such as harvest, that influence the abundance and proportion of natural origin returns.	See Global Response 2: Comments Addressing the Scope of This EIS.
20/7	The DEIS does not address in detail how production will (or will not) be reduced for non-Mitchell Act hatcheries under any of the alternatives. Instead, the DEIS provides the general statement that "production levels would be reduced from levels under [the baseline] in hatchery programs designed to meet mitigation requirements only when those production levels conflicted with the ability of a hatchery program to meet performance goals." This statement is vague and provides no guidance or direction to non-Mitchell Act hatcheries. We assume it is NMFS' intent that production level reductions will occur as necessitated, if at all, through the adaptive management processes currently used to manage the Mid-Columbia PUD programs. We request that the final DEIS clarify this intent.	See Global Response 5: Comments Addressing the EIS and Its Relationship to Other Plans, Regulations, Agreements, Laws, and Executive and Secretarial Orders.

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED)

Letter/ Comment #	Comment	Response
20/8	The DEIS does not include tributary fisheries as a complement to weirs for removing excess hatchery origin fish, however, it is our understanding that the Washington Department of Fish and Wildlife is advocating these conservation fisheries as a primary tool to reduce hatchery origin spawners. The DEIS does not explain how, if at all, NMFS has taken these conservation fisheries into account.	While not identifying additional tributary fisheries as "conservation fisheries," the EIS (draft and now final) does provide alternatives (Alternative 4 and Alternative 5) that implement additional tributary-level selective fisheries as implementation measures.
20/9	NMFS states that at the DPS or ESU level, and at the Columbia Basin level, there is an interrelationship between the hatchery populations and natural populations, and that a comprehensive analysis is needed to fully understand a program within this context. We understand that a comprehensive analysis may be necessary for the NEPA process associated with Mitchell Act funded hatcheries, but it should not be used to suggest that all hatcheries are the same or that success cannot be measured for individual hatcheries. Specifically, the PUDs disagree that that the existence of interrelationships within an ESU or Columbia Basin would preclude the evaluation of a hatchery program on its own individual merits. A hatchery program's success and ESA compliance should be considered on an individual basis within the context of the program's performance and purpose.	NMFS agrees that hatchery programs should be evaluated for ESA authorization at an individual program level. Please see Global Response 2: Comments Addressing the Scope of This EIS.
20/10	The FEIS may also recommend the development of new "conservation hatchery programs" – using existing hatchery capacity – for "high risk" populations. It is unclear if NMFS intends these new programs to apply to non-Mitchell Act hatcheries. NMFS should clarify its intent with respect to any new "conservation hatchery programs."	For the purposes of the EIS analysis, new conservation programs that were applied under the implementation scenarios for the Alternative 3 through Alternative 6 were considered for both Mitchell Act-funded and non-Mitchell Act-funded hatcheries. See Table 4-15, New Hatchery Programs Assumed to be Initiated under One or More of the Alternatives' Implementation Scenarios.
20/11	The examination of the cumulative effects of hatcheries in the Columbia Basin will require an accurate accounting of production levels and currently operating facilities, such as weirs. Some of the Upper Columbia hatchery programs are missing from the DEIS or have production levels that are inaccurately depicted, or are misrepresented in some other way. Many of the current or proposed production program numbers that were not included in the document are contained in new or revised HGMPs that were submitted to NMFS over a year ago. The Technical Appendix attached	See Global Response 7: Comments Addressing the Analysis within the EIS.

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED).

Letter/ Comment #	Comment	Response
	to this letter addresses some specific information that appears to be incorrect, missing or incomplete. We recommend that NMFS use the information in the new HGMPs that were submitted to NMFS to update and correct the DEIS.	
20/12	From DEIS Appendix A: 1. Population 826 ("Methow Summer Chinook (Wells Hatchery)"). This should be Eastbank Hatchery, not Wells. The broodstock are collected at Wells Dam/Hatchery, but this is an Eastbank program. The fish are acclimated at Carlton Pond on the Methow. The future program (after 2013) will drop by 292,000 as the HCP "initial production" phase concludes for Chelan PUD. 2. Population 826 ("Methow (Twisp) Spring Chinook"). The draft Methow Spring Chinook HGMP (submitted to NMFS) specifies 100,000 smolts, not the 183,000 presented in this table. 3. Population 234 ("Methow (Methow-Chewuch) Spring Chinook). The draft Methow Spring Chinook HGMP (submitted to NMFS) specifies 450,000 smolts, not the 359,100 presented in this table. 4. Population 238 (Methow Summer Steelhead). The 420,100 is wrong. Winthrop NFH currently, and is planning to release between 100,000 and 200,000 (see their draft HGMP). The table requires two new lines to be added (see table below). The table below is based on the draft Wells Steelhead HGMP. The Twisp program has been approved by the Wells HCP Hatchery Committee and will be implemented starting in brood year 2011. < Table on page 7 of letter 20 > 5. Population 813 ("Okanogan Summer Steelhead (Wells Hatchery)"). Wells Hatchery has released about 130,000 smolts in the Okanogan. Grant PUD and the CCT plan to develop a program of up to 200,000	Thank you. The analysis and Appendix A have been updated using the information provided by the commenter and additional information provided by managers and funding entities reflecting 2010 hatchery programs.

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED)

Letter/ Comment #	Comment	Response
	smolts reared at Wells Hatchery. The draft Wells Steelhead HGMP plans to move former Douglas PUD Okanogan smolts to become part of the 300,000 mainstem release (see table above). 6. Population 247 (Wenatchee (Chiwawa) Spring Chinook. The table indicates a release size of 351,000 whereas the actual program goal is 298,000. 7. Population 252 (Wenatchee summer steelhead). The table indicates a release size of 401,000, whereas the actual current program goal is 400,000. This program is likely to drop significantly (up to 50%) after 2013, as Chelan PUDs "initial production" phase concludes. 8. Population 251 (Wenatchee sockeye). This is an experimental "pilot" program not a conservation program. The table indicates a release size of 211,000, whereas the actual goal is 280,000.	
20/13	Page 2-62, Table 2-13: Mainstem Columbia Summer Steelhead (Wells Hatchery) listed to terminate because the program receives Mitchell Act funds. This is wrong. The program is fully funded by Douglas PUD. In addition, there are currently no fish released directly into the Columbia from Wells Hatchery, although this is proposed in the draft HGMP for the Wells Summer Steelhead. This probably refers to the Ringold program that is supported by Wells Hatchery. It is incorrect to state that this is a Wells Hatchery program.	See Global Response 7: Comments Addressing the Analysis within the EIS.
20/14	Page 4-72, Line 5: Weirs do exist in this area: Twisp River, Chiwawa River, and Tumwater Dam. Twisp Weir (Methow Basin) is currently used to manage adult steelhead in the Twisp River for a PNI =0.67. A weir is planned for the Okanogan River by the CCT, primarily for summer Chinook.	See Global Response 7: Comments Addressing the Analysis within the EIS.
20/15	Appendix D: Methow Steelhead. Alternatives 2-5 appear to adopt the HSRG plan for a 100,000 smolt integrated program (and a 320,000 smolt stepping stone program in alternative 5). But, in HSRG, the 100,000 program required the removal of 75% of the hatchery adults, and if the stepping stone program was implemented, it would require the removal of 90% of hatchery adults. Furthermore, with a pHOS of about 0.5, as in the	Thank you for your comment. The analysis and Appendix D have been updated for the final EIS using this information and additional information provided by managers and funding entities reflecting 2010 programs.

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED).

Letter/ Comment #	Comment	Response
	alternatives presented, the broodstock would need to be WxW, resulting in mining more wild fish for the hatchery program than needed in a HxW program. However, this would lessen the number of hatchery fish that would need to be removed for pHOS concerns. On page 4-72, it states that no weirs exist (see comment above) and none are needed to implement the alternatives. This is unrealistic. Removing 75% or 90% of hatchery adults would require a weir(s) to remove this many fish. For reference, the conservation fishery removed about 34% in 2009/2010 with new aggressive fishery regulations directed at hatchery fish removal.	
20/16	Appendix D: The current release of steelhead into the Methow is about 420,000 combined between Wells Hatchery and Winthrop NFH. Alternatives 2, 3 and 4 release only about 100,000 smolts total in the Methow. The 320,000 stepping stone isn't included (0 smolts) in these alternatives. Douglas PUD has an obligation to produce 350,000 smolts, most of which are now released in the Methow. Where do you propose to put the extra smolts in alternatives 2-4? In addition, USFWS-WNFH (Methow) and Grant PUD (Okanogan) have steelhead programs in the Upper Columbia. In fact the number of steelhead smolts could rise to as high as 750,000 (350,000 Douglas + 200,000 WNFH + 200,000 Grant/CCT) in the Upper Columbia in the foreseeable future.	See Global Response 5: Comments Addressing the EIS and Its Relationship to Other Plans, Regulations, Agreements, Laws, and Executive and Secretarial Orders.
20/17	Appendix D: Okanogan steelhead. The 20,000 fish release from Cassimer Bar Hatchery is sustained across alternatives. The current Wells ~100,000 smolts for the Okanogan (80,000 reared for Grant PUD) are omitted from alternatives 2-4. Alternative 5 increases to 200,000, increases pHOS to an extremely high 0.92, and is now MAF? This is double the Methow release, in spite of the fact that the Okanogan has far less steelhead production potential than the Methow. That doesn't make sense.	See Global Response 5: Comments Addressing the EIS and Its Relationship to Other Plans, Regulations, Agreements, Laws, and Executive and Secretarial Orders.
20/18	Appendix C: Chief Joseph Hatchery is planned to rear spring Chinook for release in the Okanogan River. Although this hatchery has yet to be built, it seems like it should be considered for future management in the Columbia.	Thank you for your comment. The final EIS was revised to include this program in the alternatives.
20/19	Appendix C: The Douglas PUD/WDFW draft Methow Spring Chinook HGMP submitted to NMFS has a Twisp integrated release of 100,000, and a combined Methow and Chewuch integrated release of 450,000 (225,000 per river). None of the alternatives reflects these numbers. They were	Thank you. The analysis and Appendix C has been revised using this information, plus information provided by managers and funding entities reflecting 2010 programs.

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED)

Letter/ Comment #	Comment	Response
	developed using the HSRG for guidance. These numbers also reflect current combined HCP release level obligations of Douglas and Chelan PUDs.	
20/20	Appendix C: None of the alternatives reflect the HSRG guidance of 183,000 Twisp integrated smolts, and 359,000. All alternatives are below this level.	The programs modeled in the EIS alternatives represent programs that achieve the stated goals of the particular alternatives. These will not necessarily be the program sizes recommended by any particular prior hatchery review.
20/21	Appendix C: The Winthrop NFH segregated program is held constant at the current release level (601,492) throughout all alternatives. This seems inconsistent with the large Methow Hatchery reductions, particularly in Alternative 5. Fish from both facilities end up spawning in the wild, and the segregated fish pose a greater risk.	The analysis and Appendix C have been revised using information provided by managers and funding entities reflecting 2010 programs. Program corrections were used to create Alternative 6 assumptions. Winthrop Hatchery remains unchanged in the final EIS at 495,000 because return rate to the hatchery is assumed to be high (85% of fish recovered at hatchery).
20/22	Page 4-40. In the Douglas PUD/WDFW draft Methow Spring Chinook HGMP, the Twisp Weir (Twisp River) is intended to be used to manage adult escapement in the Twisp and collect broodstock toward a PNI of at least 0.67. The alternatives should reflect this.	Comment noted.
20/23	Appendix C: Methow Summer Chinook (Wells Hatchery) (ID = 826) is incorrect. These fish are reared at Eastbank Hatchery (therefore, an Eastbank program) and acclimated at Carlton Pond in the Methow drainage. They are not Wells Hatchery fish. Broodstock are collected at Wells Dam and Hatchery, however.	See Global Response 7: Comments Addressing the Analysis within the EIS.
21/1	This DEIS is very clearly founded on sound scientific principles and would represent a major step forward for hatchery reform. Given the weight of the scientific evidence that hatchery populations undermine the genetic integrity and productivity of wild stocks we believe Columbia and Snake hatcheries must be held to the "strongest" performance goals outlined in the DEIS. The combination of higher standards of performance, some reductions in hatchery supplementation and the construction of weirs at the mouths of spawning tributaries holds great promise for reducing the degree of hatchery introgression into wild populations and limiting the ecological effects of hatcheries. We understand that management on the Columbia requires balancing a difficult set of demands, from protecting and recovering ESA listed salmon to providing harvest opportunity for sport, commercial and tribal fisherman. Unfortunately the balance of decision	See Global Response 1: Comments Stating a Preference (Preferences) and/or Ideas for the EIS Preferred Alternative.

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED).

Letter/ Comment #	Comment	Response
	making has long been skewed in favor of hatchery production and harvest with little regard for wild populations. Given the fact that some of the provisions in this DEIS represent major changes in the management of the Columbia hatchery system it will undoubtedly generate some controversy, however we hope that you will remain resolved in your commitment to implementing policy guided by sound science.	
22/1	While the Mitchell Act directed the Secretary of the Interior to establish one or more salmon cultural stations in the Columbia River basin, the Secretary was also authorized to conduct biological surveys, and experiments necessary to direct and facilitate the conservation of the fishery resources of the Columbia River and its tributaries. The Mitchell Act doesn't confine itself to construction of hatcheries; it would determine the status and distribution of wild salmon, provide for unimpeded migration and conduct research. All of which benefit wild salmonid populations. This blend of purposes is important, insightful, and persists today; however, the investment in hatcheries has become the primary feature of the act.	Please see Section 1.1.1, The Mitchell Act, for a more detailed description of the Act itself, as well as current, ongoing programs used to fulfill the Act's intent.
22/2	The purpose of the Mitchell Act Environmental Impact Statement has been expanded to provide, for the first time, legal coverage for all federal hatchery operations in the Columbia River under the Endangered Species Act and other federal laws. Protecting wild salmonids, while operating a federal funded and directed hatchery program, is the key goal that the Mitchell Act EIS must accomplish.	The commenter is mistaken. The EIS is an evaluation under the National Environmental Policy Act only. Please See Global Comment 2: Comments Addressing the Scope of this EIS.
22/3	There are many assumptions in the DEIS that are taken for granted but lack proof. As with most plans the assumptions are not identified and because they are not public reviewers do not have the benefit of full disclosure. Some assumptions in the DEIS are: Intermediate and strong performance metrics protect wild populations; primary, contributing and stabilized population designations maintain the existing biological diversity species require to cope with environmental change; the HSRG formula for naturally spawning hatchery fish will protect the reproductive success of wild populations; commercial fisheries do not need to be selective to protect wild populations; selective recreational fisheries are able to protect wild populations; that hatchery reform will create the conditions needed to	NMFS disagrees with the commenter's interpretation of the information presented in the draft EIS. The EIS states clearly that the performance goals are developed as ways to reduce or minimize many of the risks that hatchery programs can have, not eliminate them. Additionally, the EIS recognizes (Section 2.3.4, Harvest, Habitat, and Hydro – the Other "H"s) that measures that hatcheries can take to reduce and minimize risks are only one piece of the solution.

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED)

Letter/ Comment #	Comment	Response
	protect wild populations.	
22/4	The DEIS subdivides the existing biological diversity of Columbia River salmon and steelhead populations into three categories (primary, contributing and stabilizing). These categories are based on genetic risk to wild salmon and steelhead populations. The proposed way to control genetic risk is to limit naturally spawning hatchery fish that can interbreed with wild salmonids. The DEIS suggests that selective harvest, reduced hatchery production, and weirs to exclude hatchery spawners can provide protection for wild populations from hatchery salmonids. The scientific basis for this strategy in the DEIS is lacking. NFS was unable to locate a discussion by independent scientists with salmon ecology or genetics expertise that reviewed the strengths or weakness of subdividing existing salmonid populations into genetic risk categories. In 2009 the Recovery Implementation Science Team (RIST) and the N.W. Fish Science Center (NWFSC) reviewed the Oregon Lower Columbia River Recovery Plan for Salmon and Steelhead, but this review was not included in the DEIS references. The RIST evaluation raises many questions about impacts of hatchery fish on wild salmonids that should have been included in the DEIS. For example, on page 5-23 of the RIST report they questioned the assumption that hatchery stray rates of 30% in some cases and 10% in others "lacked quantitative guidance for these thresholds" and "…it certainly seems that populations well below VSP cannot even support a 10% stray rate without significant negative effects." In the 2009 RIST report on Hatchery Reform Science (referenced in the DEIS) it says: "The values of pHOS (naturally spawning hatchery fish) of 0.05 and 0.10 for primary and contributing populations associated with a segregated program are arbitrary, and at lease theoretically there could be significant genetic impacts at these rates. Similarly, the PNI goals of 0.7 or 0.5 for integrated programs are also arbitrary, and may or may not be ultimately sufficiently protective to contribute to recovery of natural populations."	The commenter is confused regarding the population categorization in the EIS. First, these designations denote the goal for the population viability in recovery, i.e., primary populations typically are identified for high to very-high viability in recovery. The EIS suggests that implementation measures, including the three listed by the commenter, could be utilized to reduce the risks associated with hatchery programs for natural-origin populations. Additionally, the population categorization, for viability in recovery has been adopted in the final (2013) NOAA Fisheries Recovery Plan for Lower Columbia River Salmon and Steelhead.

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED).

Letter/ Comment #	Comment	Response
	The DEIS makes the recommendation that these stray rates, questioned by independent scientific review, provide a conservation benefit. This suggests that the DEIS fails to include relevant science in designing its alternatives and therefore could increase genetic risk to wild salmonids. The DEIS proposes to use the untested formula developed by the HSRG for integrated hatcheries. Given the fact that the purpose of the HSRG stray rate formula is to create a blend of wild and hatchery fish, there is the potential to eliminate existing wild populations in the Columbia River basin, along with their biological integrity and reproductive performance, in the search to improve hatchery operations. Research completed by Araki et al. 2008 demonstrates that the reproductive success of native broodstock fish (integrated hatchery program) is significantly lower than for wild fish. “By reconstructing a three-generation pedigree with microsatellite markers, we show that genetic effects of domestication reduce subsequent reproductive capabilities by 40% per captive-reared generation when fish are moved to natural environments. These results suggest that even a few generations of domestication may have negative effects on natural reproduction in the wild and that the repeated use of captive-reared parents to supplement wild populations should be carefully reconsidered. The general finding of low relative fitness of hatchery fish combined with studies that have found broad scale negative associations between the presence of hatchery fish and wild population performance, should give fisheries managers serious pause as they consider whether to include hatchery production in their conservation toolbox.” The DEIS provides no such pause in its recommendations to use the untested HSRG hatchery management hypothesis. In comments about this research a co-author of the study, Dr. Michael Blouin (2009), said, “"If anyone ever had any doubts about the genetic differences between hatchery and wild fish, the data are now pretty clear.	

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED)

Letter/ Comment #	Comment	Response
	The effect is so strong that it carries over into the first wild-born generation. Even if fish are born in the wild and survive to reproduce, those adults that had hatchery parents still produce substantially fewer surviving offspring than those with wild parents." It is implied in the work of Araki et al. (2008) that in order to improve the survival, reproductive success, contribution to fisheries and cost effectiveness of hatchery programs it is necessary to have access to healthy, abundant wild populations for hatcheries. Blouin (2009) also says that fish that had one parent with hatchery lineage were 87 percent as fit as the offspring of two wild fish. Research by Chilcote et al. (in press) compares the reproductive performance of wild and hatchery populations in natural conditions and found that the hatchery fish (chinook, coho, and steelhead) reproductive performance is just 13% that of the wild fish. In other words, the hatchery fish reproductive performance was 87% less than that of wild fish under natural conditions. In addition, the authors found this reduction in reproductive performance to be associated with hatchery programs regardless of their type, that is, whether they were segregated or integrated hatchery operations. < Figure on page 3 of letter 22 > The DEIS, structured as it is on an untested hypothesis advanced by the HSRG, would not protect wild salmonid populations, but would create a blend of hatchery-wild fish, calling it hatchery reform, and set the hatchery program up to erode the reproductive success exhibited by wild salmonids. By taking this action, the ESA-listed salmonid populations in the Columbia River basin would very likely not be recovered.	
22/5	The no-action alternative is the reference point, the current baseline, against which all other alternatives are developed, implying that the current condition is not an adequate response to wild salmonid protection and recovery. The alternatives are arbitrary constructions emphasizing geographical portions of the Columbia River basin (alternatives 4 and 5), or propose a minimum change in hatchery operations to protect wild	See Global Response 6: Comments Addressing the Range of Draft EIS Alternatives.

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED).

Letter/ Comment #	Comment	Response
	populations (alternative 3). Alternative 2 is the opposite of the no-action alternative where there would be no funding for Mitchell Act Hatcheries. We assume that Alternative 2 is not likely to be selected given the investment in hatcheries and the dependence that fish management agencies have for the continued investment of public funds to support hatchery programs. Missing is an alternative that combines what is known and suspected regarding hatchery impacts and associated fisheries on native, wild salmonids. Such an alternative should be applied throughout the Columbia River basin as a basic policy. In order to respond to local variations in fish life history and ecological conditions, this basic hatchery impact policy could be adapted to address local conditions as well as marine conditions such as ocean productivity. Without such an alternative to consider, the DEIS is fatally flawed. The construction of alternatives 3-5 are complex and it is difficult to determine their impact or benefit for wild populations. The proclaimed results for each of these alternatives cannot be determined for they are largely based on hypotheses that have not been tested. So selection of one alternative over another is impossible and some unknown blend of alternatives 3-5 will likely be developed. However, reduction of hatchery production may increase benefits to wild populations and four of the five alternatives support this notion. It is probable that a phantom alternative will address the entire Columbia River Basin and provide intermediate or less protection for wild salmonids. It will be designed to justify increased federal funding for hatcheries in the Columbia River Basin and be characterized as adequate protection of wild salmonids, improving recovery of ESA-listed populations.	
22/6	A prudent way to evaluate the cost effectiveness of public funds invested in hatchery programs is to conduct an economic review of the hatchery program. In 2002 the Independent Economic Advisory Board completed a partial review of selected hatcheries in the Columbia River from the mouth to the upper river tributaries and determined the cost effectiveness and	Comment noted.

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED)

Letter/ Comment #	Comment	Response
	benefit cost ratios for those hatcheries. The IEAB also, for the first time, determined the cost to produce a fish that is harvested and found that some hatcheries produced salmon that cost $63,000 or more for each fish harvested. Following this evaluation, the IEAB requested permission to complete phase II of their economic review of all hatcheries in the Columbia River basin, but the N W Power and Conservation Council and the National Marine Fisheries Service denied that request. In speaking to the fish division administrator for the Oregon Department of Fish and Wildlife this year NFS found that he did not support cost accounting for mitigation hatcheries. The reports of the IEAB can be found at: http://www.nwcouncil.org/library/ieab/ieab2002-1.htm The DEIS does not include the results of the IEAB economic evaluation and does not include it in the references. As a result, the DEIS ignores important information that should be included in the development of alternatives. While the DEIS does include a table for total annual hatchery costs of $79.5 million (Table 6-85) in 2007 dollars, there is reason to believe that this does not cover the full cost of hatchery expenditures in the Columbia River basin. According to the Bonneville Power Administration the cost for hatcheries under the Columbia River fish and wildlife program (N.W. Power Planning Council 2009) was $159,063,738. It is unclear whether these two sources of hatchery costs are combined under the BPA analysis or separate. In addition, there are also associated costs for research, monitoring and evaluation which add considerable cost to the total hatchery expenditure. In preparation for these comments, the Native Fish Society asked both the National Marine Fisheries Service and the N.W. Power Planning and Conservation Council staffs for the complete cost of the Columbia River hatchery program by all sources. Both agencies were unable to provide this information. The NFS was told that having a complete total annual cost for the Columbia River hatchery program would be important and useful. In 2009 the National Marine Fisheries Service contracted with economists from Oregon State University to conduct an economic analysis of the	

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED).

Letter/ Comment #	Comment	Response
	Mitchell Act Hatcheries (The Research Group 2009). This analysis found that cost for all species produced at Mitchell Act Hatcheries is a deficit spending program. In other words it cost more to produce the fish than their value to the fishery. The OSU economics team was fired by NMFS and a more favorable economic review was solicited. The link to their summary report is: http://www.nativefishsociety.org/documents/Radtke_Ec_Effects_and_So_Impl.pdf It is recommended that each hatchery program, on an annual basis, evaluate the cost to produce a fish that is harvested. This will provide the public and government with information that is not now available, and will help make the cost effectiveness of the hatchery program and the investment of public funds more transparent, contributing to more informed decisions about the future expenditure of public funds for hatchery programs.	
22/7	In chapter 4 the risk assessments discussed are for genetic risk, competition risk, predation risk, VSP compliance risk, weir risk, disease risk, nutrient recycling risk, and stray hatchery fish risk. In this chapter salmonids by species and sub-species are evaluated relative to these risks but the treatment is uneven and some risk assessments are totally missing. In reviewing 17 risk assessments for salmonids throughout the Columbia River basin all were evaluated for genetic risk, competition and predation risk, and VSP compliance risk, but only five of the 17 were to have new weirs constructed to exclude hatchery fish from spawning naturally with wild salmonids. As for risks associated with disease transfer, nutrient recycling, and hatchery strays ("masking") none of the 17 hatchery assessments addressed these risks. The gaps in the treatment of risks associated with hatchery programs suggest that the DEIS is incomplete. Comparing the risk assessment of two species that occupy the same watersheds within an ESU could provide information about the treatment of each species. By comparing the risk assessment for each species it is possible to evaluate the complexity of the hatchery management	Chapter 4, Environmental Consequences, provides the effects analysis, by alternative, for the affected resources. Section 4.2, Fish, explores the effects on the salmon and steelhead resources. Section 4.2.2, Methods for Analyzing Effects, explains the methods used to evaluate the effects on salmon and steelhead populations. Table 4-17 displays the method used by general risk and benefit category. This table explains the EIS analyzes the risk and benefit categories at different scales, some at the ESU/DPS-level and others at a basinwide scale. The commenter's perception that some ESUs and DPSs are not fully evaluated for all risk and benefit categories is not correct. The risk benefit categories that are analyzed at the basinwide level are included in Section 4.2.3.1, Basinwide Effects on Salmon and Steelhead, while the risk and benefit categories that are analyzed at the ESU/DPS level are in Section 4.2.3.2, Effects on Salmon ESUs and Steelhead DPSs under All Alternatives.

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED)

Letter/ Comment #	Comment	Response
	alternatives. The reviewers of the EIS are to make recommendations as to which alternative they would like to see implemented or the blend of alternatives that would best protect the wild salmonids. < Table on page 5 of letter 22 > Based on this evaluation the assumptions about genetic effects would benefit both species under Alternative 5. However, there is no agreement regarding treatment for the two species for competition and predation risk. And VSP compliance reveals an internal conflict within the alternative for productivity and abundance and between species. In addition, risks associated with disease transfer, lack of nutrient recycling, and hatchery strays are not considered in the alternatives. When this type of complexity, incompleteness and internal conflict is considered for all 17 treatments in the DEIS, recommending an alternative for managing hatcheries to protect wild salmon and steelhead is probably impossible. Thus, the EIS fails to provide a rational basis for selection of an alternative that does the best job of avoiding all risks for all species throughout the Columbia River basin.	
22/8	Harvest and hatchery programs are integrated. Most hatchery programs in the Columbia River basin are for mitigation purposes and are producing fish for harvest benefits. Since they are integrated the DEIS should evaluate both as a unit impact on native wild salmonids. Treating them as separate impacts on wild salmonids in evaluating alternatives is inappropriate for the following reasons. The DEIS does not include an evaluation of mark selective commercial fisheries; the impact on the untested assumptions of pHOS, pNOS, and PNI are not addressed for harvest impact, and harvest impact on steelhead is not addressed in appendix K or elsewhere in the DEIS.	See Global Response 2: Comments Addressing the Scope of This EIS.
22/9	Rather the DEIS assumes that selective fisheries for hatchery origin fish can be “sufficient to achieve escapement goals.” This assumption is misplaced for hatchery origin fish are less aggressive and contribute poorly to the sport fishery in tributaries. For example, on the Deschutes River the wild steelhead represent a small fraction of the population compared to the hatchery strays yet produce twice the catch compared to hatchery fish (Rob	Comment noted.

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED).

Letter/ Comment #	Comment	Response
	French, ODFW, personal communication). There is information that this is the case in the main-stem Columbia as well. Assumptions regarding incidental mortality of released wild fish, especially in warm water, may underestimate the mortality of wild fish in the sport fishery and in net fisheries. In addition, un-marked hatchery steelhead strays cannot be legally removed from the mainstem or the tributaries by the sport fishery. Also, many anglers place a high value on releasing steelhead and make no distinction between hatchery and wild fish. Many guides prefer that their clients release hatchery fish for it means more fish are left in the river to support their guided fishery. The consequence is that a large number of hatchery fish are not removed from the river by sport fisheries and are likely to spawn naturally and adversely impact wild salmonids. This means an assumption that selective fisheries will support escapement goals and control naturally spawning stray hatchery fish is wrong.	
22/10	The following hatchery and management changes are needed to improve conservation and recovery of wild salmonids in the Columbia River basin affected by hatchery operations. 1. keep wild and hatchery spawners separated 2. set specific ecological impact criteria for each hatchery on wild fish 3. establish selective harvest on hatchery fish that results in the least harm to wild fish 4. establish spawner abundance objectives by species in each watershed for wild fish 5. establish nutrient targets for each watershed from salmon carcasses 6. designate wild salmonid management watersheds in each ESU 7. evaluate the cost/benefit and cost effectiveness annually of each hatchery program 8. determine the cost to catch for each hatchery program annually 9. direct the independent economic advisory board to complete an economic review of each hatchery program in the Columbia River Basin and Puget Sound. 10. develop and implement a wild salmonid management plan for each watershed with measurable criteria for diversity, distribution,	See Global Response 1: Comments Stating a Preference (Preferences) and/or Ideas for the EIS Preferred Alternative.

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED)

Letter/ Comment #	Comment	Response
	productivity, viability, and abundance. 11. Evaluate hatcheries on their contribution to fisheries and establish a minimum contribution rate for hatchery fish that optimizes funding investment while protecting wild fish from hatchery and harvest impacts. 12. Require all hatchery fish to be externally marked and provide an internal tag to identify the hatchery of origin. 13. Establish a basin wide stock transfer policy to regulate the movement of fish and eggs among populations and ESUs/DPSs. 14. Require all hatchery origin fish be kept in sport fisheries. 15. Fully integrate agency management structure on harvest, hatchery and wild salmonid management. 16. Restructure management so that harvest and hatchery programs support natural production objectives in the Columbia River basin. 17. Require barbless hooks in all recreational fisheries in the Columbia River basin to reduce harm in mixed stock fisheries to wild juvenile and adult salmonids. 18. Develop selective fisheries to maximize harvest of hatchery fish and minimize harm to wild fish in mixed stock commercial and recreational fisheries. 19. Operate hatcheries so that hatchery effluent is regulated consistent with the Clean Water Act. 20. Reduce hatchery production to levels that support the recovery of ESA listed fish. 21. Evaluate stray rates of hatchery fish and implement measures to reduce strays in order to improve the reproductive success of the wild population.	
22/11	In response to the direction from Congress the ISAB published its Artificial Production Review in 1999. In that review the ISAB provides guidelines for hatchery operations and supporting reasons. Even though not all of these independent science recommendations were implemented, they are still relevant and should be included as direction in the DEIS for Mitchell Act Hatcheries.	See Global Response 1: Comments Stating a Preference (Preferences) and/or Ideas for the EIS Preferred Alternative.

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED).

Letter/ Comment #	Comment	Response
	1. Technology should be developed and used to more closely resemble natural incubation and rearing conditions in salmonid hatchery propagation. 2. Hatchery facilities need to be designed and engineered to represent natural incubation and rearing habitat, simulating incubation and rearing experiences complementary with expectations of wild fish in natural habitats. 3. New hatchery technology for improving fish quality and performance needs to have a plan for implementation and review of all hatchery sites to assure its application. 4. To mimic natural populations, anadromous hatchery production strategy should target natural population parameters in size and timing among emigrating anadromous juveniles to synchronize with environmental selective forces shaping natural population structure. 5. To mimic natural populations, resident hatchery production strategy should target population parameters in size and release timing of hatchery-produced resident juveniles to correspond with adequate food availability and favorable prey to maximize their post-stocking growth and survival. 6. Supplementation hatchery policy should utilize ambient natal stream habitat temperatures to reinforce genetic compatibility with local environments and provide the linkage between stock and habitat that is responsible for population structure of stocks from which hatchery fish are generated. 7. Salmonid hatchery incubation and rearing experience should use the natal stream water source whenever possible to enhance home stream recognition. 8. Hatchery release strategies need to follow standards that accommodate reasonable numerical limits determined by the carrying capacity of the receiving stream to accommodate residence needs of nonmigrating members of the release population. 9. Hatchery programs should dedicate significant effort in developing small facilities designed for specific stream sites where supplementation and enhancement objectives are sought, using local	

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED)

Letter/ Comment #	Comment	Response
	stocks and ambient water in the facilities designed around engineered habitat to simulate the natural stream. 10. Genetic and breeding protocols consistent with local stock structures need to be developed and faithfully adhered to as a mechanism to minimize potential negative hatchery effects on wild populations and to maximize the positive benefits that hatcheries can contribute to the recovery and maintenance of salmonids in the Columbia ecosystem. 11. Hatchery propagation should use large breeding populations to minimize inbreeding effects and maintain what genetic diversity is present within the population. 12. Hatchery supplementation programs should avoid using strays in breeding operations with returning fish. 13. Restoration of extirpated populations should follow genetic guidelines to maximize the potential for reestablishing self-sustaining populations. Once initiated, subsequent effort must concentrate on allowing selection to work by discontinuing introductions. 14. Germ plasm repositories should be developed to preserve genetic diversity for application in future recovery restoration projects in the basin, and to maintain a gene bank to reinforce diversity among small inbred natural populations. 15. The physical and genetic status of all natural populations of anadromous and resident fishes need to be understood and routinely reviewed as the basis of management planning for artificial production. 16. An in-hatchery fish monitoring program needs to be developed on performance of juveniles under culture, including genetic assessment to ascertain if breeding protocol is maintaining wild stock genotype characteristics. 17. A hatchery fish monitoring program needs to be developed on performance from release to return, including information on survival success, interception distribution, behavior, and genotypic changes experienced from selection between release and return. 18. A study is required to determine cost of monitoring hatchery performance and sources of funding.	

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED).

Letter/ Comment #	Comment	Response
	19. Regular performance audits of artificial production objectives should be undertaken, and where they are not successful, research should be initiated to resolve the problems. 20. The NPPC should appoint an independent peer review panel to develop a basinwide artificial production program plan to meet the ecological framework goals for hatchery management of anadromous and resident species.	
22/12	The ISAB Artificial Production Review (1999) references three previous scientific reviews of Columbia River hatcheries. Among these reviews there is a consensus which the ISAB says, "…underscores the importance of their contributions in revising the scientific foundation for hatchery policy." The ten general conclusions made by the three scientific panels are: 1. Hatcheries generally have failed to meet their objectives. 2. Hatcheries have imparted adverse effects on natural populations. 3. Managers have failed to evaluate hatchery programs. 4. Rationale justifying hatchery production was based on untested assumptions. 5. Supplementation should be linked with habitat improvements. 6. Genetic considerations have to be included in hatchery programs. 7. More research and experimental approaches are required. 8. Stock transfers and introductions of non-native species should be discontinued. 9. Artificial production should have a new role in fisheries management. 10. Hatcheries should be used as temporary refuges, rather than for long-term production. The Mitchell Act DEIS uses the current hatchery program for Columbia River basin anadromous salmonids as the baseline for the proposed alternatives which supports the premise that current hatchery programs are inadequate to protect the environment. It also indicates that previous attempts to make changes in hatchery policy based on the best available scientific information have not been implemented. Congress, the primary	Thank you for the information. NMFS is utilizing this EIS to disclose the effects of varying hatchery program operations, relative to baseline. NMFS is not aware of the Congressional request for hatchery policy adoption to which the commenter refers.

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED)

Letter/ Comment #	Comment	Response
	funding agent for hatcheries, is still waiting for the adoption of a hatchery policy it directed the region to establish in 1997. This record of resistance by the fish management agencies to adopt a hatchery policy that protects the environment is remarkable.	
22/13	The Mitchell Act DEIS seeks to provide legal coverage for Columbia River basin hatcheries, but as pointed out above, the DEIS fails in this effort. To be successful the National Marine Fisheries Service should develop a specific hatchery alternative that is based on the best scientific and economic information available that would maximize the protection of wild salmonids and provide the basis for their recovery.	See Global Response 6: Comments Addressing the Range of Draft EIS Alternatives.
23/1	the counties are very concerned with the emerging philosophy at National Marine Fisheries Service (NMFS) that mitigation hatchery production should be subsumed under the Endangered Species Act (ESA). The purposes of the Mitchell Act and the ESA are different and the two should not be conflated, nor should the Mitchell Act funding be terminated or diverted for the purposes of the ESA. The purpose of the Mitchell Act funds remains to mitigate the hydroelectric dams' impacts on fish.	See Global Response 4: Comments Asserting and Referring to the Mitchell Act's Mitigation Obligation or Calling for NMFS to Define the Obligation.
23/2	The DEIS does not have a concise history with the chronology of the program that the Mitchell Act inspired over the years. The 80 year history of the Mitchell Act started before the dams were first constructed on the Columbia River when the dams' impacts on the fishing industry were debated. The Mitchell Act was developed during a time of habitat loss that led to substantial fish loss on the main stem of the Columbia due to the hydroelectric projects. The detailed historical account should be provided as a basis for all federal reports regarding the fish program. It should be required reading for all federal employees who will deal with fish issues in the region, and it should include the various perspectives from people and groups who understand this history. Without a concise shared history it is difficult to tell how this DEIS will move the region forward.	See Global Response 4: Comments Asserting and Referring to the Mitchell Act's Mitigation Obligation or Calling for NMFS to Define the Obligation.
23/3	The DEIS options do not consider the assumption that fish will be abundant in the region.	Comment noted.

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED).

Letter/ Comment #	Comment	Response
	The area obviously cannot return to the condition it was in when the Native people were here prior to the arrival of Lewis and Clark visited 205 years ago, but there is much more that can be done during the coming years to restore the fish runs to the greatest extent possible. Hatcheries are a part of the effort in the region to restore abundance. Until such time that abundance can be restored the document should focus on how to achieve abundance through the partnerships and strengths of the system. None of the options offered in the DEIS identify this direction.	
23/4	The DEIS through the identified options pits inland, upland, recreation, commercial, coastal and Tribal fisheries against each other. The DEIS raises the discussion of who owns the fish and how much will each party get which ignores the collaboration and respect that has been established during the past 30 years. The notion of using the standard environmental impact statement process of developing options for totally new projects makes sense, but in on-going efforts such as the complex set of relationships, collaborative efforts and project found in the Columbia River system, this evaluation in the DEIS appears to ignore the on-going work. By not reflecting the existing programs, the DEIS lends very little to the current regional direction.	NMFS received many comments speaking to the inconsistencies of the programs evaluated in the draft EIS with current production. NMFS has updated the baseline production in Alternative 1 (No Action) to reflect 2010 production levels, which incorporate more recent agreements for production, in particular, under the *U.S. v. Oregon* agreement.
23/5	The DEIS does not address the funding needed to improve the hatchery system and develop opportunities for creating abundance. The assumption in the DEIS is that the resources are limited to about $12.5 million. NOAA Fisheries should lead the vast collection of agencies and individuals to identify amounts that are needed to create abundance. The production of fish in a hatchery environment is needed since habitat loss on the main stem of the Columbia River cannot be rectified without the restoration of habitat. Hatchery production is as important today as it was when the Mitchell Act was first passed.	See Global Response 6: Comments Addressing the Range of Draft EIS Alternatives.
23/6	The DEIS does not reflect the basin-by-basin efforts to restore fish runs. There are successful efforts occurring to restore fish runs. Each effort has a unique story of collaboration and most would not be possible without the	NMFS understands the need for location-specific flexibility in terms of addressing the factors that may be limiting fish recovery. However, this EIS is focused on informing the distribution of Mitchell Act money directed at hatchery actions

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED)

Letter/ Comment #	Comment	Response
	hatchery system. Without this basis by-basin review the prioritization of funding suggested by the alternatives is absolutely not possible. In each of these basins, the discussion has acknowledged that restoration may initially come at the expense of some genetic purity, but over time these problems can be addressed.	and, as such, has focused on alternatives directly related to hatchery actions. NMFS has also acknowledged that there are many other factors affecting the Columbia River Basin's fish resources (see Section 2.3.4, Harvest, Habitat, and Hydro — the other "H"s) and understands that, in most instances, addressing many, if not all, of these factors will be necessary for recovery.
23/7	The DEIS does not address current and future improvements in hatchery management. The knowledge and program improvements currently underway may address many of the concerns regarding the evaluation of mixing native and hatchery fish. With adequate funding it may be possible to address and resolve the genetic purity issues and take additional steps toward abundance.	See Global Response 6: Comments Addressing the Range of Draft EIS Alternatives.
23/8	The DEIS through NOAA-Fisheries did not sufficiently consult with counties and the local hatchery staff to develop the DEIS. Many of the counties on the Lower Columbia River have hatchery staff that includes fish biologists, technicians, and years of collaboration with the fishing industry. This is a wealth of knowledge that is available to NOAA-Fisheries at any time, but few, if any, of these individuals were consulted on the development of this document.	See Global Response 3: Comments Addressing the EIS Process.
23/9	… the joint fisheries counties located on the Lower Columbia support withdrawal of the DEIS by NOAA-Fisheries in order to provide an opportunity for a complete revision starting with rescoping in order to develop a plan that reflects a collaborative effort with all of the affected parties. The history of working together and the values we share for future abundance is too important to leave to this flawed and inadequate document.	See Global Response 3: Comments Addressing the EIS Process.
24/1	We applaud National Marine Fisheries Service (NMFS) for developing a policy that will: 1) guide NMFS distribution of Mitchell Act hatchery funds and, 2) inform NMFS future review of individual Columbia Basin hatchery programs under the Endangered Species Act (ESA). These actions provide the opportunity for clarity and consistency in Columbia River hatchery	Comment noted.

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED).

Letter/ Comment #	Comment	Response
	management and align well with the conservation of populations, sustainable harvest and treaty-trust responsibilities.	
24/2	Historically, Mitchell Act funding for hatchery programs has been directed towards meeting harvest goals. However, contemporary management now requires hatchery programs to be consistent with conservation objectives. The DEIS has correctly recognized that in most situations excessive numbers of hatchery fish on the spawning grounds pose a risk to the conservation of wild populations.	Comment noted.
24/3	It also rightly recognizes the value of applying different population designations (primary/contributing/ stabilizing) to denote the biological significance of populations for conservation.	Comment noted.
24/4	The HSRG understands why NMFS needed to develop a broad range of alternatives for analyses in the DEIS. However, we believe combining elements of these alternatives would best meet the needs of conservation, sustainable fisheries, and treaty-trust responsibilities.	See Global Response 1: Comments Stating a Preference (Preferences) and/or Ideas for the EIS Preferred Alternative.
24/5	Any preferred alternative should take a consistent regional approach to conservation of populations from all evolutionarily significant units rather than using an artificial boundary between the upper and lower sections of the river.	See Global Response 1: Comments Stating a Preference (Preferences) and/or Ideas for the EIS Preferred Alternative.
24/6	A preferred alternative would also use population designation(s) to link the biological significance of specific populations to acceptable levels of hatchery influence and apply differing standards of risk (PNI, pHOS) to those designations.	See Global Response 1: Comments Stating a Preference (Preferences) and/or Ideas for the EIS Preferred Alternative.
24/7	A preferred alternative would use the stronger performance standards for all primary populations (e.g., PNI 0.67 for integrated populations and pHOS 0.05 for segregated populations). Intermediate standards should be used for all contributing populations (e.g., PNI 0.50 for integrated populations and pHOS of 0.1 for segregated populations). In addition, for integrated populations, whether primary or contributing, pHOS should have an upper limit regardless of PNI (e.g., no more than 30%). Additional information can be found at www.hatcheryreform.us.	See Global Response 1: Comments Stating a Preference (Preferences) and/or Ideas for the EIS Preferred Alternative.
24/8	In our view, the DEIS focused primarily on the number of hatchery fish produced, use of weirs, and integrated broodstock programs, but did not adequately account for the role of selective harvest in reducing the risks	See Global Response 2: Comments Addressing the Scope of This EIS.

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED)

Letter/ Comment #	Comment	Response
	posed by hatchery-origin fish to natural populations. The final EIS should address the contributions that marine, lower Columbia River and tributary selective harvests could make toward conservation and sustainable fisheries.	
24/9	Currently, the alternatives considered lead to a significant reduction in harvest because of hatchery program reductions. The hatchery reductions proposed in the DEIS are necessary to ameliorate the negative interactions of hatchery fish on wild populations. However, the use of additional selective fisheries targeting hatchery fish, not considered in the current DEIS, could assist in meeting the performance standards while maintaining contemporary harvest.	See Global Response 2: Comments Addressing the Scope of This EIS.
25/1	The Snake River Salmon Recovery Board and our partners have reviewed the draft Environmental Impact Statement on the Columbia basin hatcheries and are providing the following comments for your consideration. To begin, we believe it is important for NMFS to understand who this comment letter is coming from. The Snake River Salmon Recovery Board (SRSRB) is comprised of County Commissioners, the Confederated Tribes of the Umatilla Indian Reservation and landowners in southeast Washington. The Board organized in 2002 for the purpose of developing and implementing a salmon recovery plan for the Snake River region within Washington. The Plan was submitted and approved as the interim recovery plan for the Snake River region within Washington by NMFS in 2005. We are currently revising the plan and will have it ready for NMFS inclusion into the comprehensive Snake River Recovery Plan for the entire Snake River basin ESU in 2011. The SRSRB is supported by a regional technical team, composed of members from the Washington State Departments of Fish and Wildlife and Ecology, as well as NMFS, US Forest Service, Confederated Tribes of the Umatilla Indian Reservation, Natural Resources Conservation Service and the US Army Corps of Engineers.	Comment noted.
25/2	We are very disappointed with the lack of engagement during the writing of the DEIS with stakeholders involved in salmon recovery within the Columbia basin. Specifically, the SRSRB or staff were never contacted during the 5-year long process of developing the DEIS. We believe that failure to inform or engage the SRSRB (or other recovery planners) on	See Global Response 3: Comments Addressing the EIS Process.

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED).

Letter/ Comment #	Comment	Response
	development of the DEIS is inconsistent with the agency's commitment to collaborate on salmon recovery.	
25/3	We recognize that NMFS seeks public input on how it should develop its preferred alternative, but this DEIS is too large and complicated to develop a well informed preferred alternative in such a short time frame.	The draft EIS was available for review and comment for a total of 120 days. See Global Response 3: Comments Addressing the EIS Process.
25/4	We believe that the range of alternatives is strongly skewed towards reducing hatchery production. It is our belief that a balanced range or continuum of alternatives between the "no-action" alternative and the severe reduction of hatchery production alternative in the DEIS needs to be developed.	See Global Response 6: Comments Addressing the Range of Draft EIS Alternatives.
25/5	We are strongly concerned that the message in the DEIS will be misinterpreted by stakeholders in many ways, including "punishment" for success (recent large return numbers), that hatcheries are currently poorly managed, and their operations are entirely inconsistent with the Endangered Species Act. This message will result in diminished public support for salmon recovery activities across our watersheds, and possibly the entire Columbia Basin.	Comment noted.
25/6	… there are errors and omissions in the report. These errors may warrant its withdrawal and re-initiation.	See Global Response 3: Comments Addressing the EIS Process.
25/7	One of the most glaring errors is the economic value of sport fishing in the Snake River region. We have estimated, based on WDFW and other co-manager input, the range of estimated annual direct and indirect income from sport fishing for salmon and steelhead in the Snake River region is from $50 million to more than $100 million per year. The estimate of $13 million reported in the DEIS is clearly in error and very misleading. Our local WDFW manager estimates that just within southeast Washington the estimate is closer to $25 million for steelhead fisheries alone. Therefore, the potential economic impacts for the action alternatives will be far more severe than purported in the DEIS.	As shown in final EIS Table 3-23, the revised estimate of personal income generated by steelhead fishing in the Lower Snake River is $24 million (the estimate in the draft EIS was $10.5 million). As explained in the revised Socioeconomics Impact Methods report (Appendix J), estimates of personal income are derived based on assumptions pertaining to catch per unit of effort (0.19 fish per trip) and personal income factors of $58.54 per trip. These factors are applied to steelhead catch estimates provided by the Mitchell Act Fishery Modeling Team. Although the comment by the Snake River Salmon Recovery Board does not describe the factors provided by WDFW used to estimate personal income generated by steelhead in the Lower Snake River, it is likely that different assumptions were made concerning either total catch, trips per unit of effort, and/or personal income per trip factors.
25/8	We are also concerned that the action alternatives in the DEIS, should they	See Global Response 5: Comments Addressing the EIS and Its

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED)

Letter/ Comment #	Comment	Response
	be adopted by NMFS, preclude meeting existing legal mandates and policies promised to basin stakeholders decades ago by the federal government. In 1976, Congress authorized the Lower Snake River Fish and Wildlife Compensation Program to produce salmon and steelhead to mitigate the impacts of the hydropower system. The primary purpose of the hatchery programs associated with the LSRCP is for harvest mitigation.	Relationship to Other Plans, Regulations, Agreements, Laws, and Executive and Secretarial Orders.
25/9	We recognize that emerging science concerning the effects of hatchery fish on natural fish suggests changes to hatchery programs. However many changes to our local hatchery programs are either planned, or in the process of being implemented but not considered in the DEIS.	See Global Response 6: Comments Addressing the Range of Draft EIS Alternatives.
25/10	We are very concerned that the action alternatives outlined in the DEIS are in conflict, or at a minimum, will compromise the region's (and Federal government's) commitment to mitigate for the hydrosystem, under existing law. We believe that pre-existing obligations to mitigate salmon losses should not be exclusively governed by the ESA; this is a very serious concern for us, and neither of these two federal obligations should exclusively govern the other. A balance is our goal and the DEIS is out of balance.	See Global Response 4: Comments Asserting and Referring to the Mitchell Act's Mitigation Obligation or Calling for NMFS to Define the Obligation.
25/11	Finally, it is very concerning that the scope of the DEIS expanded from Mitchell Act funded facilities to include all 178 hatchery or hatchery programs in the entire Columbia basin within the USA. We recognize that evaluating cumulative effects of all hatcheries is a requirement of NEPA, and that NMFS will be consulting on all hatchery programs within the Columbia Basin, but we believe that the existing DEIS overreaches with some of its conclusions. For example, the conclusion that hatchery production needs to be significantly reduced or eliminated is far too general of a conclusion for applicability to individual facilities.	See Global Response 2: Comments Addressing the Scope of This EIS.
25/12	Of greater concern is that the conclusion is too narrow to guide national hatchery policy, because NMFS hatchery policy that emerges as a result of the DEIS will in turn drive how NMFS conducts subsequent reviews of individual hatcheries. It is interesting to us that in many cases there would be no salmon or steelhead to recover if it weren't for hatchery programs. We believe that hatchery or population specific situations deserve individual assessment and remain concerned about a broad sweeping	See Global Response 2: Comments Addressing the Scope of This EIS.

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED).

Letter/ Comment #	Comment	Response
	federal policy that programmatically directs reduced production levels.	
25/13	These next few paragraphs address our concern about the premature conclusion that was reached regarding the perceived impacts from hatchery programs. We believe the conclusion is based on unproven theory about hatchery impacts in the Snake River recovery region within Washington. We are cautious with this perspective because we know of studies conducted elsewhere in the Columbia basin that have concluded the relative reproductive success of salmon/steelhead produced in hatchery programs is lower than natural populations. However, there are many variables and constraints in those studies that may or may not be applicable to the current hatchery programs in the Snake River region within southeast Washington. We therefore encourage additional research while these issues are clarified. We ask that NMFS will not categorically assume the worst of hatchery programs until these critical uncertainties are clarified.	Comment noted.
25/14	We understand that a new process is being formed, based on the supplemental FCRPS biological opinion, that will form a group of scientists (guided by NMFS) to address hatchery program critical uncertainties in the Columbia basin. We encourage NMFS to hold off on making broad sweeping conclusions regarding issues like relative reproductive success and its effects on natural-origin populations until this group comes out with recommendations or the information is collected where all stakeholders are in agreement.	Comment noted.
25/15	To continue, the DEIS should acknowledge that the perceived impacts from hatchery production may be an artifact of other factors like historic hatchery management practices, mainstem passage effects, harvest management, habitat conditions, or myriad other potential factors that lead to the conclusion that hatchery production needs to be reduced. The DEIS does not acknowledge that many hatchery programs have recently, or are in the process of, transitioning from "conventional" production programs to conservation programs. This transition is positive for ESA while continuing to support robust fisheries. Patience is necessary to monitor the outcome of these transitions on recovery and the fisheries. It should be noted that strategies to reduce pHOS have been initiated to minimize non-	See Global Response 1: Comments Stating a Preference (Preferences) and/or Ideas for the EIS Preferred Alternative.

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED)

Letter/ Comment #	Comment	Response
	local hatchery fish on the spawning grounds while maintaining fisheries in those watersheds where abundance levels are sufficient to allow the removal of non-local, or excess hatchery adults. These strategies need to be described in the DEIS and then the outcomes determined before drastic reductions in hatchery programs are recommended. Specifically, we would like to see NMFS suggest a phased approach that considers any reduction in hatchery production after certain abundance and productivity targets are reached.	
25/16	Our final concern is the unintended consequence of compromising or even reversing recent habitat improvements that have benefited natural-origin populations. This concern is very serious and warrants a bit of explanation. Using the Tucannon River as an example (but the same transformation is occurring in other rivers in the Columbia basin), environmental conditions (habitat) have improved dramatically since the 1980's. In the 1980's and 1990's the Tucannon River at Marengo (Rkm 39.9) customarily exceeded 74F° more than 30 days each year. Water temperature at that site has not reached 74F° one time in the last six years due to improved habitat conditions. Many other improvements have been documented in the Tucannon River: • Streambed embeddedness was in the 60% range in the 1990's; it is now less than 30% • Riparian areas have largely been, or are in the process of, being restored and protected • Nearly every water diversion has been properly screened to NMFS standards • And all fish passage barriers have been improved to NMFS standards. This is great progress but more remains to be accomplished. Maintaining strong relationships with landowners and other stakeholders is critical for reaching our goal of salmon recovery. These facts are important because they apply to privately owned lands where community leaders and landowners are embracing watershed health and salmon recovery on their	Thank you for your comment and concern. The EIS has included the potential effects on the fisheries as an important element for consideration when analyzing the effects of the alternatives. These effects, along with the effects on other resources evaluated, will help inform NMFS, hatchery operators, and the public of the likely effects of the alternatives.

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED).

Letter/ Comment #	Comment	Response
	own property. These community leaders and landowners are doing so because they see the benefits to wild salmon and watershed health and more importantly they want to contribute to the region's economic and cultural excitement about salmon/steelhead fishing and watershed restoration. The action alternatives in the DEIS would most likely preclude or at least significantly reduce the opportunity to fish for salmon/steelhead which will take away a major incentive for local stakeholders for restoration and protection of critical habitat on private land. As history has shown us, improvements to critical habitat can be quickly reversed. We have observed that degraded habitat conditions are a much greater threat to salmon recovery than hatchery produced salmon/steelhead. We strongly suggest that the DEIS consider this unintended consequence in the impact analysis for each of the action alternatives.	
25/17	The Snake River Salmon Recovery Board strongly requests that NMFS embrace its own commitments to collaborate on salmon recovery and to make recommendations based on complete science and complete understanding of the impacts of those recommendations. We formally request that NMFS reconsider the current DEIS and explore and develop a better continuum of alternatives in collaboration with salmon recovery partners across the entire Columbia basin that reflects the perspectives we offer in our comments.	See Global Response 3: Comments Addressing the EIS Process.
26/1	The ICA contends that this document has many flaws and should be either completely rewritten or at the very least many sections of it should.	See Global Response 3: Comments Addressing the EIS Process.
26/2	It is hard for us to believe that NOAA would be the authors of a document that didn't have at least one alternative that called for funding increases and hatchery production increases to be analyzed along with the other 5 alternatives.	See Global Response 6: Comments Addressing the Range of Draft EIS Alternatives.
26/3	We cannot support a document where 2 of the alternatives pit fishing groups against fishing groups.	Comment noted.
26/4	We cannot support status quo which under funds the Mitchell act hatcheries by at least 17 million dollars.	Comment noted.
26/5	There are many other issues in this document that we have testified to that are already in the public record so I will not repeat them at this time.	Comment noted.

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED)

Letter/ Comment #	Comment	Response
26/6	We would also at this time like to support the comments from the organization Salmon for All.	Comment noted.
26/7	… we feel we need to rewrite and improve this document to more reflect the needs of wild fish and hatchery fish.	Comment noted.
27/1	Thank you for the opportunity to review the Draft Environmental Impact Statement to Inform Columbia River Basin Hatchery Operations and the Funding of Mitchell Act Hatchery Programs (DEIS) and for extending the comment deadline to allow a full Council review. The results of this DEIS process will likely have a profound influence on the policy direction for all anadromous production within the Columbia Basin and will affect how mitigation requirements for impacts to Columbia River salmon and steelhead stocks from the Columbia River hydroelectric system will be met. These issues are extremely important to Pacific Fishery Management Council (Council) fishery management and to the future of ocean and inriver fisheries. The Council discussed the DEIS over the course of two recent Council meetings, first at the September 11-16 meeting in Boise, Idaho and most recently at the November 4-9 meeting in Costa Mesa, California. Public testimony was taken at both meetings and written statements were provided by Council advisory bodies. One of the advisory bodies was a specialized ad hoc committee established to focus on this particular issue, with a membership encompassing relevant federal, state, and tribal agency representatives. The record of Council deliberations on this matter will be provided under separate cover. The comments provided here are those of the Council and are not intended to represent the official policy positions of any of our member entities, many of whom will also separately provide additional specific comments on the DEIS. We recognize that developing the DEIS has been a laborious and complex project and that many of its descriptions and analyses are well done. In particular, we would like to recognize Mr. Robert Turner for his excellent presentations to the Council and his clear answers to questions during the Council's deliberation process. We understand and acknowledge	Comment noted.

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED).

Letter/ Comment #	Comment	Response
	the need for a National Environmental Policy Act (NEPA) review of the hatchery operations in the Columbia Basin related to the potential impacts on fish listed under the Endangered Species Act (ESA). However, we believe there are serious shortcomings in the DEIS that need attention before the process moves to the next step.	
27/2	The Council's underlying premise is that we believe the preferred alternative must achieve the Mitchell Act's original intent and purpose to address the environmental impacts and loss of salmon and steelhead spawning habitat and productivity resulting from the construction and operation of the hydro-power system in the Columbia River Basin, as well as recognizing the requirements and responsibilities of other hydro-power mitigation agreements. The devastating impacts to salmon abundance that resulted from the construction of the hydro power system that led to the passage of the Mitchell Act in 1938 have been exacerbated over time with additional dam construction. These negative environmental circumstances contributed heavily to the listings, in the late 20th and early 21st centuries, of a number of Columbia River salmon and steelhead species under the ESA. Today, there is a greater dependency than ever before on the production from Mitchell Act hatcheries by the people that participate in, and the communities that rely on, Council-managed fisheries. The Council feels strongly that the Federal Government cannot walk away from its commitments and responsibilities to the Tribes, the States, and the citizens of this region to at least partially replace the loss of salmon and steelhead production that resulted from the construction and operation of the Columbia River hydro power system.	See Global Response 1: Comments Stating a Preference (Preferences) and/or Ideas for the EIS Preferred Alternative.
27/3	The static funding for Mitchell Act since 1996 has crippled the ability of Mitchell Act funded programs to maintain production, and it is disturbing to see in this DEIS that a recent year status quo is now represented as the highest production possible in the DEIS. Current production does not meet the minimum Mitchell Act mitigation obligation when it is put in a historical perspective. As with other hatchery mitigation commitments in the Basin, additional Mitchell Act funding is necessary to meet both conservation and mitigation obligations associated with Columbia Basin hatcheries. The DEIS should not presume that additional funding will not be forthcoming to provide for the necessities to allow for increased production in a manner	See Global Response 6: Comments Addressing the Range of Draft EIS Alternatives.

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED)

Letter/ Comment #	Comment	Response
	consistent with wild stock rebuilding.	
27/4	Coordination and synchrony of Federal actions relating to ESA compliance is a key concern of the Council. The Council recommends that the Mitchell Act Hatchery Environmental Impact Statement Record of Decision be made concurrent with completion of all related ESA consultation processes. For example, National Marine Fisheries Service (NMFS) is evaluating the approval of the US v. Oregon hatchery programs under the ESA. The Council also recommends that the ESA consultation for lower river hatcheries also be made concurrently with the Record of Decision. This approach enables a preferred alternative to be informed by the policies and agreements associated with salmon and steelhead recovery that have been, and will be, developed collaboratively among the co-managers, NMFS, regional entities, and other interests in the Basin.	See Global Response 3: Comments Addressing the EIS Process.
27/5	The DEIS time baseline is obsolete to the extent that the implementation scenarios associated with Alternatives 2-5 conflict with current regional agreements on hatchery production. These DEIS scenarios are inconsistent with the 2008 – 2017 U.S. v. Oregon Management Agreement, the 2008 Federal Columbia River Power System (FCRPS) Biological Opinion commitments, and expectations of the 2008 Pacific Salmon Treaty agreement. Alternatives 2-5 result in substantial reductions in hatchery production when compared to current hatchery production levels. The Council strongly advises NMFS to ensure the final EIS accommodates sanctioning currently existing policies and agreements that were shaped by the region over the past five years, embraced by NMFS, and incorporated into broad recovery plans, Federal court orders, and international agreements.	See Global Response 1: Comments Stating a Preference (Preferences) and/or Ideas for the EIS Preferred Alternative.
27/6	The Council is concerned that none of the implementation scenarios result in an increase in hatchery production, given the potential effectiveness of combining hatchery reform practices with implementation of hatchery-selective fisheries and other adult management strategies such as enhanced weir separation of hatchery and wild origin spawners. Such increases may be possible as a result of the current and planned conservation and recovery efforts of the States and Tribes, including the lower Columbia River Recovery Plans. We believe that successful	See Global Response 6: Comments Addressing the Range of Draft EIS Alternatives.

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED).

Letter/ Comment #	Comment	Response
	implementation of these efforts will allow for increased hatchery production in certain circumstances under all of the action alternatives in the DEIS. The Council notes the reasons cited by NMFS for not including an implementation scenario that allows for an increase in production. Despite the obvious limitations and inadequacies to current Mitchell Act funding which supports production, the Council believes that a scientific basis exists to support increased or new production programs that can be properly aligned with preventing increased risks to the recovery of wild populations. NMFS should confirm that the scope of production for hatchery programs covered by Alternatives 1-5 in the DEIS include scenarios for increased production and the associated facilities necessary for that increased production to achieve both conservation and mitigation objectives, even if the funding for the needed facilities and production is not currently in hand. A scope of alternatives that includes properly aligned increased hatchery production will allow the identification of a preferred alternative in the final EIS that is consistent with these two primary objectives. Alternatively, NMFS should expand the scope of the DEIS alternatives to include appropriate increased production opportunities. As a programmatic approach, NMFS should consider how increased Mitchell Act funding and production can be harmonized with the overall hatchery mitigation and conservation commitments in the Basin.	
27/7	The final preferred policy direction must articulate clearly how conservation goals will be met. As written, this aspect of the DEIS analysis cannot be interpreted directly without assuming that descriptive features of the implementation scenarios, such as the fixed proportionate natural influence and proportion of hatchery spawners standards, are actually the goals. The DEIS needs to provide for NEPA coverage for both conservation and mitigation hatchery plans that include appropriate strategies to support recovery of the ESA-listed populations on a watershed specific basis.	See Global Response 1: Comments Stating a Preference (Preferences) and/or Ideas for the EIS Preferred Alternative.
27/8	The final preferred policy direction must reflect the differences in roles played by the evolutionary significant unit/distinct population segment	See Global Response 1: Comments Stating a Preference (Preferences) and/or Ideas for the EIS Preferred Alternative.

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED)

Letter/ Comment #	Comment	Response
	(ESU/DPS) populations in achieving recovery objectives. The DEIS alternatives compare actions taken regionally rather than on a population basis. This appears to contrast with NMFS' statement of the importance of incorporating site-specific management actions to achieve conservation and survival of the species. Regional approaches mask potential efficiencies of this site-specific or watershed-specific approach to hatchery reform. Efficiencies with implementing hatchery reform action plans that are based on distinguishing characteristics of primary, contributing, and stabilizing populations or other population viability designations are not clearly identified within the DEIS. The Council recommends that NMFS define its preferred alternative considering these population and watershed differences.	
27/9	Further, the Council is concerned that if standards or criteria for Mitchell Act funding are applied differentially by regions, then broad-based support for recovery plans by state, regional, tribal, local and private conservation entities will be undermined. If NMFS uses the NEPA process to define a preferred policy direction that provides umbrella environmental coverage for all Columbia Basin hatcheries, then that policy needs to embrace the entire variety of watershed approaches that are proposed to achieve recovery as well as opportunities for expanded hatchery production referenced above. These different approaches should not be applied only within a specific region, but should be associated with watershed-specific circumstances and approaches.	See Global Response 1: Comments Stating a Preference (Preferences) and/or Ideas for the EIS Preferred Alternative.
27/10	We recommend the preferred alternative should: • acknowledge the different roles and priorities populations can have within an ESU/DPS (e.g., primary, contributing, and stabilizing) and then allow the hatchery programs to operate consistent with genetic and demographic risks managers are willing to take; • recognize and factor in the Congressionally and legally mandated mitigation responsibility of hatchery programs in the Columbia Basin; • increase conservation effectiveness while providing for sustainable	See Global Response 1: Comments Stating a Preference (Preferences) and/or Ideas for the EIS Preferred Alternative.

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED).

Letter/ Comment #	Comment	Response
	fisheries into the future; • to the extent possible, establish a bridge towards the role of harvest in the overall implementation of effectiveness; • be consistent with legally mandated agreements governing hatchery production in the Columbia, such as the U.S. v. Oregon 2008-2017 Management Agreement and the Columbia Basin Fish Accords; • be consistent with the determination and analysis of hatchery program effects in the recent 2008 FCRPS Biological Opinion and Supplemental Comprehensive Analysis; • be consistent with adopted ESA Recovery Plans; • be consistent with or reflect the best available science; • be consistent with detailed hatchery genetic management plans developed by the comanagers for ESA consultation that consider hatchery science review group recommendations, Hatchery Review Team recommendations, Technical Review Team information, and state, tribal, and Federal policies that assess a hatchery program's effect (using empirical information – not models) on ESA-listed fish; • be flexible enough to consider new, developing, and future risk management information and strategies as they become available; • be consistent with Columbia River chinook salmon fishery mortalities and catch levels associated with the revised 2008 Pacific Salmon Treaty; and • provide opportunity for increased hatchery production and associated hatchery facilities necessary for hatchery programs that are aligned with the needs for ESA recovery goals.	
27/11	There is confusion among the public and management entities relative to the intent and purpose of this NEPA action that needs to be clarified.	Please see expanded and revised language in Section 1.2, Purpose and Need for Action.
27/12	NMFS needs to update the analysis in a manner that allows the Mitchell Act hatcheries to be evaluated separately from the rest of the facilities in the Basin where there is not a direct funding linkage to NMFS.	Table 4-100 in the final EIS allows for the comparison, across alternatives, of Mitchell Act-funded and non-Mitchell Act-funded hatchery operational costs, by operator.
27/13	As the process continues, the Council believes NMFS must increase public understanding that the preferred alternative can accommodate increased	Comment noted.

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED)

Letter/ Comment #	Comment	Response
	production, even if a supplemental DEIS is required to do so.	
27/14	Finally, NMFS should provide an opportunity for public comment on its' preferred alternative before the final EIS is completed and the Record of Decision is signed.	See Global Response 3: Comments Addressing the EIS Process.
28/1	We join with recreational, commercial and tribal fishers, in-river and ocean, from Oregon, Washington, Alaska and Idaho, with generations of experience behind us on what it takes to conduct viable fisheries, and shared concerns regarding the Mitchell Act DEIS. We are united in our agreement that all of our groups are entitled to conduct viable fisheries that sustain our communities.	Comment noted.
28/2	We share a mutual concern that, due to its many errors, lack of documentation, faulty modeling, and major omissions, the DEIS is not ready for public comment and should not have been put forth for such review. It has cost numerous fisheries organizations and fisheries and tribal agencies considerable time and money to comment on a document that is seriously flawed, and which should have been corrected by the agency before public review. These comments are contained in individual letters provided NMFS by the respective organizations and agencies. The document itself represents a significant investment by the U.S. taxpayer of approximately $1,000,000. The public has a right to expect an accurate and complete document to be presented for public review.	Comment noted. See Global Response 7: Comments Addressing the Analysis within the EIS.
28/3	We share a mutual concern that the five alternatives presented for review all result in adverse effects on harvest. NO alternative appears that is supportive of harvest. All alternatives, including status quo, will result in reduced harvest. It does not appear to us that any alternatives that might have been supportive of harvest were considered. If they were, they are not evident in the document. The Mitchell Act was intended to compensate for habitat that was destroyed due to hydro-electric and other development of the Columbia Basin. Further, its intent was mitigation to provide continued harvest opportunities to compensate for that destruction (DEIS, pp. 1-21 and 2-15). We do not believe that the five alternatives provided in the DEIS fulfill these legal obligations of the Mitchell Act.	See Global Response 6: Comments Addressing the Range of Draft EIS Alternatives.

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED).

Letter/ Comment #	Comment	Response
28/4	We share a mutual concern that the DEIS appears to subsume the Mitchell Act under the Endangered Species Act and abolish the mitigation requirements of the Mitchell Act. We are concerned that this focus might be construed as a regulatory repeal of the Mitchell Act without a Congressional vote. Fisheries along the entire west coast will be affected by the draconian cuts in harvest proposed, and we object strongly to this reorientation of the Mitchell Act. We do not believe that conservation and harvest are mutually exclusive.	See Global Response 4: Comments Asserting and Referring to the Mitchell Act's Mitigation Obligation or Calling for NMFS to Define the Obligation.
28/5	We recommend that the National Marine Fisheries Service withdraw this document, consult with our groups and the numerous agencies and tribal governments who were not consulted in the drafting of this document, and redraft a DEIS that corrects the multitude of errors and omissions noted in comments received by the agency.	See Global Response 3: Comments Addressing the EIS Process.
28/6	We also recommend that NMFS provide alternatives that are supportive of viable fisheries across all sectors, and respectful of the place of salmon and salmon fisheries in the history, economy and culture of the west coast.	See Global Response 6: Comments Addressing the Range of Draft EIS Alternatives.
28/7	We are united in our agreement that good government, good regulatory practice and good stewardship require that the current DEIS be withdrawn as requested.	See Global Response 3: Comments Addressing the EIS Process.
29/1	Salmon For All is a nonprofit trade association of commercial fishermen and processors representing the Columbia River gillnet industry. Our office is located in Astoria, Oregon, but we serve fishermen and processors residing both in Washington and Oregon. As you may be aware, most of the waters of the Columbia River are under concurrent jurisdiction, as defined in the Columbia River Compact, an agreement entered into by the states of Oregon and Washington in 1915, and ratified by an Act of Congress three years later. The majority of our fishermen reside in Clatsop County in Oregon, and Pacific, Wahkiakum, and Grays Harbor Counties in Washington, which are among the four poorest counties in either state. Due to increasingly difficult Endangered Species Act constraints, most of our fishermen have invested in portfolios of permits in offshore and distant water fisheries, since it is no longer possible to earn a living fishing for salmon on the lower	See Global Response 3: Comments Addressing the EIS Process.

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED)

Letter/ Comment #	Comment	Response
	Columbia River alone. Our fishermen predominantly are members of multi-generational fishing families — the descendants of those who immigrated here during the late 19th and early 20th centuries to pursue traditional livelihoods in the fishing industry. They continue to live here, because they have deep roots here. But if they can no longer earn a living by fishing here, there will be no point in their remaining here. If so, our struggling regional economy will no longer receive the benefits of the annual injection of incomes derived from distant water fisheries, which can be substantial. Frankly, our region cannot afford for that to happen. We are submitting a number of commentaries to the National Marine Fishery Service regarding the Mitchell Act DEIS, which we strongly believe is a deeply flawed and inadequate document. Our comments will enumerate many of the errors and mistaken assumptions represented in the DEIS. To say that the Mitchell Act DEIS is thoroughly inadequate would be an understatement. It is readily apparent it was not ready for public review. The only acceptable alternative is to withdraw the Mitchell Act DEIS, and to start over from the beginning.	
29/2	We at Salmon For All, a nonprofit trade association of Columbia River commercial fishermen and processors, are the inheritors of the legacy left by the early packers and fishermen who have struggled for decades to ameliorate the damaging effects of activities harmful to salmon, particularly hydroelectric generation on the Columbia River. Their record is hard to argue with: the first hatcheries on the Columbia River were instituted by early salmon packers; Robert Hume, an early salmon canner on the Columbia and Rogue Rivers, experimented with raising fish in his own hatchery, and published on the subject.1 Early packers, including Joseph Megler, B.A. Seaborg, J.R. Burke and Henry McGowan, in Washington, and Thomas Hodgkins and George T. Myers in Oregon, were legislators on both sides of the river and instituted the earliest salmon season and gear regulations to address the issue of over-fishing.2 The Columbia River Fishermen's Protective Union filed the first anti-pollution lawsuit on the Columbia River in the 1930s, followed by the Columbia River Packers Association, also in the 1930s, who filed a lawsuit regarding pollution on the Willamette. But by far the biggest and longest-running	Comment noted.

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED).

Letter/ Comment #	Comment	Response
	struggle remains that of trying to ameliorate the damage done by development of the Columbia Basin by hydroelectric projects, and the accompanying agricultural and industrial development. It was our forebears who fought for the Mitchell Act, and their money that funded it at its inception, and it remains a topic of intense interest and concern to us today. For a fuller discussion of the history of the Mitchell Act, we reference Irene Martin's background paper, "History of the Mitchell Act," presented to NMFS in Astoria, Oregon, September 30, 2010. (Copy attached.)	
29/3	While we are aware that certain hatchery practices have fallen into disrepute, and need to be reformed, we also believe strongly that the original purposes and original conditions which led to the Mitchell Act are present today, and that these purposes, of providing surrogate environments and production facilities for fisheries mitigation, need to be retained. The answer, we believe, is not in eliminating the hatchery programs but in reforming them when necessary, based on solid science, new and promising hatchery rearing methods, and in full funding of the Mitchell Act.	Comment noted.
29/4	The list of valuable hatchery properties in dire need of funding to address issues due to deferred maintenance is long and needs immediate attention, to say nothing of the possibility of upgrading hatchery facilities or building new facilities to meet today's standards for modern hatcheries. The need for funding assistance for these endeavors was provided to NMFS in 2005, in "Mitchell Act Hatchery Funding, A Proposal" from Idaho Department of Fish and Game, Oregon Department of Fish and Wildlife, Washington Department of Fish and Wildlife, U.S. Department of Fish and Wildlife, Confederated Tribes and Bands of the Yakama Nation, Nez Perce Tribe, Confederated Tribes of the Umatilla Indian Reservation, Shoshone-Bannock Tribes of Fort Hall, and Confederated Tribes of the Colville Reservation. We note that the DEIS does not address these possibilities, nor does it provide an inventory of hatchery capital projects that might be considered for funding in order to improve the current situation, nor does it discuss the possibility of increased hatchery production.	See Global Response 6: Comments Addressing the Range of Draft EIS Alternatives.

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED)

Letter/ Comment #	Comment	Response
29/5	The DEIS does not discuss nor analyze the effect of these reductions on harvest or hatcheries, which might have informed an analysis that needs to be done for the DEIS in terms of projecting what effect future reductions might have. NMFS needs to document the reductions in hatchery production since 1990, as well as the effects these reductions have had, both in harvest and in returns of naturally spawning fish. Without some sense of what reductions during the past two decades have accomplished, there is little point in recommending further reductions. Numbers regarding hatchery production changes are readily available from the affected agencies, and need to be included in the DEIS.	Comment noted.
29/6	Instead, the DEIS's thrust under all alternatives appears to be that hatchery programs are due for drastic curtailment, in order to give preference to naturally produced salmon. Given that preference, we would have expected to see a Mitchell Act DEIS tell us what has changed re mainstem and tributary habitat since inception of the hydro system that suggests that reducing Mitchell Act hatchery production and attempting to return to "naturally spawning" salmon will be successful in propagating salmon runs. It seems clear that despite NMFS' "no jeopardy" opinion re operation of mainstem dams, the mainstem spawners which once utilized the habitat now behind dams but which was once free-flowing river are extinct. It is also quite clear from reading various "Recovery Plans" for salmon for both Washington and Oregon that there have been major estuary and inriver and tributary changes since inception of the Mitchell Act, and that the salmonid habitat remains vastly reduced.3 These were mitigation hatcheries meant to replace lost habitat in the first place. Where is the evidence that this habitat has improved or is more supportive of salmon than it was in the late 1940s/early 1950s when the Mitchell Act hatchery system was initiated? We see no empirical evidence in the DEIS that suggests that a great deal of vastly improved habitat ready for renewed salmon production exists.	Comment noted.
29/7	We also note that for the recently listed eulachon and for the lower Columbia coho, as yet no critical habitat designations have even been made.4	Critical habitat for the eulachon was recently finalized (76 Fed. Reg. 65324, October 20, 2011), and it includes portions of the Columbia River Basin. Critical habitat for Lower Columbia River coho salmon has not yet been proposed, although NMFS is

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED).

Letter/ Comment #	Comment	Response
		currently preparing a critical habitat designation for this species (76 Fed. Reg. 1392, January 10, 2011).
29/8	Without some sort of inventory of new habitat ready for spawning and rearing purposes, there is nothing in the DEIS that says how the goal of increased naturally spawning populations is to be accomplished. This omission makes it virtually impossible for the public to comment specifically on habitat or recovery issues regarding these populations. It is clear, however, that the mainstem spawning populations that the Mitchell Act was intended to mitigate for are largely gone, along with their habitat. The mitigation obligation remains.	See Global Response 4: Comments Asserting and Referring to the Mitchell Act's Mitigation Obligation or Calling for NMFS to Define the Obligation.
29/9	The linkage between ESA and Mitchell Act set forth in the DEIS is a strained one at best. While we recognize the need to "list" some of the salmonid runs, we note that for a number of these runs, the only substantial numbers of surviving fish left are the hatchery populations, many of them in Mitchell Act hatcheries. These include LCR coho, LCR tule fall Chinook, and LCR spring Chinook. The Mitchell Act hatcheries were successful, as attested by the fact that many of the gene pools from which it is hoped to rebuild naturally spawning populations of ESA listed salmonids are to be found in those same hatcheries. What has not been so successful is the retention or expansion of habitat for the purposes of spawning and rearing of naturally spawned fish. Habitat degradation and loss continues unabated.	Comment noted.
29/10	From our perspective, the mitigation obligation of the Mitchell Act has not ended. Those benefits were promised "in perpetuity."5 If NMFS wants to cut hatchery production in the future, the agency needs to first deal with bringing the wild populations to harvestable levels, which means completing the habitat work that is long overdue.	Comment noted.
29/11	We also note that the benefits of removing hatchery fish from natural spawning areas are largely untested and hypothetical. This part of hatchery reform needs to be taken on a case-by-case basis, rather than being an over-arching policy.	Comment noted.
29/12	Since the broodstock for some of the stocks at risk reside in the hatcheries, and those stocks have not repopulated current habitat via hatchery strays, we are most concerned that the broodstock that is "banked" at the	Comment noted.

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED)

Letter/ Comment #	Comment	Response
	hatcheries not be seriously depleted until carefully monitored experiments are conducted and the habitat necessary to the re-establishment of naturally spawning runs is demonstrated to be available.	
29/13	Further, many of us fish in Alaska and have witnessed first-hand the danger of overpopulation of spawning beds in the context of limited water and habitat.6 We are concerned that the DEIS does not address how uninformed supplementation or over-escapement of naturally spawning fish, particularly in the context of limited water and streamflow and limited spawning and rearing habitat will affect production of naturally spawning fish. In other words, it is possible to have a scenario where too many naturally spawning salmon will return to a stream that does not have the spawning and/or rearing habitat to support them. We would have expected to see this issue addressed and a plan provided for how to proceed in such a situation.	Comment noted.
29/14	We see little evidence in the DEIS that the over-arching issues of habitat and water have been adequately addressed.	See Global Response 2: Comments Addressing the Scope of this EIS.
29/15	We also see little evidence in the document that a careful evaluation of current efforts to restore naturally spawning populations has occurred. Where is the empirical evidence, the science that says that current programs are working? What kind of monitoring of current programs has NMFS relied on in order to develop the policy alternatives cited in the DEIS? Without this information, it is difficult for the public to assess whether NMFS has done due diligence in examining other types of alternatives that might have been developed and presented. The public cannot be expected to comment on the alternatives provided or suggest other options, since the document does not provide adequate documentation regarding what scientific materials it actually examined to provide the current options. We note, further, that at the NMFS public hearing on the DEIS in Astoria, NMFS official Robert Jones explained that the various options were not meant to be final but were hypothetical and could be construed and interpreted in numerous ways.	Comment noted.
29/16	Operating integrated hatcheries means there must be the habitat to support the naturally spawning population that “refreshes” the hatchery brood stock. The DEIS assumes that habitat will improve, but provides no	The commenter is mistaken. The analysis in the EIS does not make assumptions that habitat will increase or improve. In the effects analysis, the EIS assumes fixed and current habitat

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED).

Letter/ Comment #	Comment	Response
	Plan B if it does not. It assumes that hatchery origin production will diminish as natural origin production increases (pp. 11-12, Exec. Summary). We do not see much attention paid to the possibility that natural origin production might not increase or might even decline.	conditions; this better isolates the effect of the alternative hatchery policies upon which the EIS is focused.
29/17	Indeed, we note on p. 2-27, Table 2-6, that if hatchery conservation programs don't meet their performance goals, they will still continue, while production hatchery programs that don't meet their performance goals will be terminated, a statement which needs more justification and explanation by NMFS than is provided on p. 2-43.	This section is now located in Chapter 4 on page 4-27. NMFS has added further clarifying language to the section to respond to the comment.
29/18	We would like to see a more substantial discussion regarding the uses of segregated and integrated hatcheries, indicating which scientific studies are being used to support the two types of hatcheries, and addressing questions of survival rates and habitat needs at both kinds of hatcheries. Has such habitat been inventoried and is it available?	Thank you for your comment. Please see Section 2.3.2, Purpose of Hatchery Programs, as well as Section 2.3.3, Hatchery Program Operational Strategies, for more detailed information of hatchery program types. Additionally, please see Section 3.2.3.1.1.2, Effects on Genetic Diversity, and Section 3.2.3.1.1.3, Current Approaches for Reducing Risks to Genetic Diversity, for a more detailed review of the science supporting the concepts of hatchery program isolation or integration.
29/19	Currently, most Mitchell Act supported hatcheries are either production-oriented, or dual-purpose, that is, production and conservation. We are at a loss to understand why NMFS would propose to close down programs that do not meet production performance goals, while retaining those that do not meet conservation goals and believe the DEIS needs to provide a much more detailed, scientifically-backed rationale for this decision before it is possible to provide comment.	See Box 4-4, Why terminate hatchery programs to meet performance metrics?, for a thorough description of the instances when conservation and or harvest hatchery programs are not terminated.
29/20	We counter the NMFS' assumptions that the habitat will be there to restore the natural production that already had been lost by World War II with the following observation: what is going on in the Columbia Basin is continued development and population expansion, industrial development and irrigated agriculture. The population in 1940 of the Columbia River Basin was 2,191,000.7 According to a document by David Fluharty, "The Pacific Northwest region had a population of about 8 million people in 1980. By 1995 it reached nearly 10 million, and by 2015 it is estimated to exceed 12 million… In Washington State alone, it is estimated that 30,000 acres of fish and wildlife habitat are lost each year…"8 While undoubtedly these figures	See Global Response 4: Comments Asserting and Referring to the Mitchell Act's Mitigation Obligation or Calling for NMFS to Define the Obligation.

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED)

Letter/ Comment #	Comment	Response
	could be updated with more recent research, the trend is clear: more population translates to less habitat for fish and wildlife. Our forebears saw this happening seventy years ago, and pushed for the Mitchell Act to help provide a surrogate environment to preserve the salmon runs at least in part. Nowhere does NMFS take this incremental habitat loss stretching back for the entire history of the Mitchell Act into account. This is an astonishing lapse, and a complete dismissal of the history of development of the Columbia Basin and accompanying environmental degradation and decline that caused the passage of the Mitchell Act in the first place, and which necessitates the continued presence of the salmon programs it funds.	
29/21	Incidentally, the Fluharty publication cited here does not appear in the DEIS list of references re socioeconomics, but it should have been consulted.	The comment does not specifically say why this document should have been consulted during preparation of the socioeconomic assessment in the draft EIS, or what, if anything, should be included from this document in the final EIS. As a result, no changes to the final EIS have been made in response to this comment.
29/22	We strongly object to the statements in Alternatives 2 and 3 that no new hatchery programs will be initiated. Such a statement presumes that hatcheries are bad per se, yet hatcheries contributed to recovery of Snake River sockeye, to use one example, and hatcheries are where the majority of some of the ESA listed species, e.g. LCR coho and tule fall Chinook, reside. We also remind the agency of the planned building of Chief Joseph hatchery in the upper river, and would appreciate knowing if NMFS is going to deny the initiation of new projects at this hatchery. We point out that hatchery technology is dynamic and constantly evolving, and suggest that we leave the door open for possible future developments that show promise. Mitchell Act hatcheries were constructed in the 1950s and 1960s. These are ageing facilities suffering from deferred maintenance, and they should not be taken as the model of what all hatcheries are like. There is no discussion in the DEIS of present-day, modern hatchery technologies and practices, and whether there are hatchery alternatives that were omitted from the DEIS but should have been considered. There is apparently no discussion we have been able to locate in the document that describes how building new facilities and embarking on innovative hatchery practices and	See Global Response 6: Comments Addressing the Range of Draft EIS Alternatives.

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED).

Letter/ Comment #	Comment	Response
	programs might be of assistance in meeting both production and conservation goals. Stating a policy that no new hatchery programs will be initiated, without providing a rationale for such a policy and without apparent consideration of recent developments in hatchery technology leaves the reader with no foundation for informed comment as to the wisdom or lack thereof of such a policy decision.	
29/23	We note that the DEIS makes no mention of innovative propagation practices that have been implemented by alternative production programs in several parts of the Columbia River basin, including those managed as part of the Select Area Fishery Enhancement project in the lower estuary, and successful tribal supplementation programs introduced by the Columbia River Treaty Tribes and the Columbia River Inter-Tribal Fish Commission. It is especially troubling that these innovative programs would be discontinued under all the options embraced by the Mitchell Act DEIS, when in fact it is these alternative production programs that appear to have among the highest potential to contribute to recovery of the Columbia River's once great salmon runs. Please see the attached Salmon For All paper, "Successful Application of Advanced Fish Culture Technologies & Practices." No alternative is examined anywhere in the DEIS as currently drafted that would in fact bring Mitchell Act hatcheries into the 21st century.	See Global Response 6: Comments Addressing the Range of Draft EIS Alternatives.
29/24	The document seems to have been produced without reference to our current economic context, in which state budgets for fish and wildlife are being slashed at a time when the DEIS is recommending wholesale and major changes. The current budget downturn is projected to last for several more years, possibly as long as 2019 in Washington. Some of the DEIS changes proposed will drive fisheries-dependent people out of work, as harvests will be slashed, and produce much less in the way of revenues to already beleaguered agencies. For many of these agencies, their hatchery system is the most significant investment they have, and are also revenue-producers, in terms of fees and taxes which accrue to the agencies from activities, such as fisheries, carried out due to hatchery production.	The EIS does disclose the economic effects on resource groups, including tribal, non-tribal commercial, and recreational fishers in the Columbia Basin and in the ocean. The draft EIS also discloses the effects on operating costs for hatchery programs under the alternatives. See Chapter 4, Environmental Consequences, for a detailed report of the analysis findings.
29/25	Hatcheries are also insurance against natural or man-made disaster, in that they maintain multiple broodstocks that can be used to re-seed areas that	Thank you for your comment. Please see Box 2-2, How can hatchery programs help conserve a salmon or steelhead

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED)

Letter/ Comment #	Comment	Response
	have been flooded or otherwise damaged in catastrophic events such as chemical spills. With the unknown future of climate change, more than ever hatcheries might be looked upon as a way to mitigate natural perturbations and maintain some stability in natural systems. The insurance intention of the Mitchell Act was solid advice. There is no discussion in the document that we have been able to find on any of these issues.	population? Additionally, please see Chapter 5, Cumulative Effects, for an evaluation of the likely future effects under climates change.
29/26	Many of us fish in Alaska, where our livelihoods come from an abundance of wild fish. We recognize that that abundance stems in turn from an unspoiled habitat, and, given our preference, would prefer to see similar abundance on the Columbia River. However, much of the habitat has been permanently lost. The DEIS itself recognizes that the Mitchell Act was specifically for mitigation for lost habitat and other impacts of hydroelectric dams, on p. 1-21 and 2-15. The genesis and history of the Mitchell Act is that of the recognition that environmental justice demanded both the preservation and conservation of the salmon runs, and the communities that depended upon them, in perpetuity. It was a debt society owed for the development of the Columbia Basin. The conservation and community contexts that led to the Mitchell Act have not changed in kind, only in degree, as habitat loss has continued and even accelerated in the intervening years since its passage.	Comment noted.
29/27	We would like to quote from Robert Lohn, former Regional Administrator, N.W. Region, NMFS, in his report before the House Subcommittee on Fisheries and Oceans Committee on Resources, May 24, 2005: "Although each hatchery program is unique, hatcheries generally have one or both of two basic goals: (1) to produce fish for harvest, including compensation for lost production due to habitat loss or degradation; (2) to help recover or conserve naturally spawned populations. Hatcheries that have the goal of producing fish for recreational, commercial, or tribal harvest, and which often were built to mitigate for losses of habitat, have been around for generations…The two goals of conservation and compensation are not mutually exclusive, and many programs strive to conserve natural populations while also producing excess fish for harvest."9 The Mitchell Act DEIS as it currently stands apparently has abandoned these precepts.	NMFS disagrees that this EIS abandons the sentiment reflected in the referenced 2005 testimony of Mr. Robert Lohn. As described in EIS Section 2.3.1, Distribution of Hatchery Programs, the Mitchell Act currently funds 35% of all of the individual hatchery programs in the basin, supporting 45% of the total number of juveniles produced annually. In all but EIS Alternative 2, Mitchell Act funding would continue to play a major role in the funding of efforts to conserve the anadromous resources of the basin through the use of both harvest directed and conservation directed hatchery programs.

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED).

Letter/ Comment #	Comment	Response
29/28	The agency "amnesia" regarding the history of Columbia Basin development and habitat loss, and NMFS' responsibilities for mitigation and salmon production under the Mitchell Act, poses a serious threat to the continuance of the fisheries that rely on salmon health and production in the Columbia Basin, as evidenced in the various alternatives presented in the DEIS, all of which will result in cutbacks in various fisheries. There appears to be no discussion or even consideration in the DEIS about what alternatives might be possible with full funding or enhanced funding of the Mitchell Act. There also appears to be a real danger of the purposes and the environmental justice intent of the Mitchell Act being lost due to these omissions, and the original environmental injustices being furthered and perpetuated by the very agency charged with administering the Mitchell Act.	See Global Response 4: Comments Asserting and Referring to the Mitchell Act's Mitigation Obligation or Calling for NMFS to Define the Obligation. Additionally, see Global Response 6.e, The EIS should include an alternative that increases funding levels.
29/29	Under NEPA, the issue of environmental justice must be addressed, and it has been in the DEIS, though with so many errors and flaws that it is impossible to comment on the section, since the data it is based on is incorrect as noted by Irene Martin. We attach here Comments re Draft Mitchell Act EIS by Irene Martin, 9/11/2010. P.O. Box 83, Skamokawa, WA 98647. 1-360-795-3920; imartin@iinet.com, for inclusion in the record. We were struck, too, at the omission of specific cultural, historical and occupational factors regarding various fisheries affected under the DEIS. There is simply no discussion regarding community and social structure perturbations that will undoubtedly occur under all five alternatives. Further, we believe that just addressing the issue of environmental justice is not sufficient, especially when an injustice will be perpetrated. The current five alternatives provided in the DEIS all adversely affect harvest, as pointed out by Robert Turner, NMFS official, in his presentation to the Pacific Fisheries Management Council on Sept. 11, 2010. No alternative that might benefit harvest is provided. That is, in itself and of itself, plainly unjust, given the Mitchell Act's history and purpose. We strongly object to NMFS' actions in this regard. Environmental justice is not just a category to be ticked off the list of things to address when drawing up an EIS under NEPA; it is a moral and legal obligation to the communities that the Mitchell Act was designed to assist. We believe that NMFS has a legal and moral obligation to the communities affected by the DEIS to produce a	Thank you for your comments. The material supplied will be published with the final EIS. NMFS disagrees with the commenter's representation of NMFS' handling of the environmental justice sections of the EIS. NMFS has included expanded sections of the environmental justice section in the final EIS, including updated data from the 2010 U.S. Census to make community of concern assessments.

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED)

Letter/ Comment #	Comment	Response
	document that does, in fact, further environmental justice.	
29/30	We want to see viable fisheries across all sectors, which would fulfill the intent of the Mitchell Act. We would like NMFS to enlarge its vision beyond its current focus on salmon genetics and the ESA to include the larger picture of the human history and varied fishing communities and constituencies dependent on healthy and abundant runs of Columbia River salmonids. The Mitchell Act did just that, and a renewed agency commitment to fulfill both the letter and spirit of this legislation would be most welcome. We have not forgotten the legacy those early fishermen and packers left us, and by this testimony, wish to refresh the memory of the National Marine Fisheries Service regarding its responsibilities in this regard.	Comment noted.
29/31	p. 2-14, seems to be attempting to integrate harvest and hatchery policy, but does not apparently do the same regarding habitat. Hatchery and habitat policy are the two variables that need to be most closely coupled in this DEIS. Harvest has little to contribute at this point. We believe that the risk analysis study by Ray Beamesderfer, "Fishery Risk Assessment for Columbia River Coho Based on Population Viability Analysis" in the LCFRB Recovery Plan, June 6, 2010, Appendix E, Chapter 13, constitutes the best science available in terms of balancing recovery risks and harvest, and urge its acceptance as the foundation for an abundance-based, rather than weak stock-based, matrix: "These analyses confirm that the Oregon harvest matrix is adequate to protect the majority of lower Columbia River coho populations in Oregon and Washington. Small fishery impact rates have little or no effect on conservation risks, even for moderately small populations. Analyses indicate that an abundance-based fishing strategy can be an effective alternative to a fixed recovery fishing rate for meeting conservation and recovery goals while balancing access to large escapements in good survival years. This analysis of fishery effects is based on relative comparisons for a given set of conditions. Relative comparisons of effects are a robust application of this modeling approach."[10]	Comment noted.

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED).

Letter/ Comment #	Comment	Response
	Beamesderfer also supports developing a similar abundance-based harvest matrix for the lower Columbia Chinook ESU, as is proposed in the Oregon Conservation and Recovery Plan. With regards to LCR tule stocks, he notes "even complete fishery closures will not increase numbers to target viability levels for small, unproductive populations."[11]	
29/32	p. 2-27. Under New Selective Fisheries, need to eliminate the phrase "in terminal areas." They could be conducted in non-terminal areas too.	Comment noted.
29/33	p. 2-37. The numbers of various salmonid species do not resemble recent returns. What dates do these numbers represent? What is the source of the numbers? Were recent record returns of spring Chinook and sockeye included in these calculations? Are these numbers for Mitchell-Act-produced fish only, or were other hatchery and wild fish included? While NMFS indicates on p. 2-37 that the biggest harvest cuts will accrue in the coho sector, in fact the coho run numbers provided appear to be out of date, and don't appear to take into account the tribal raising of coho.	Tribal salmon revenues were estimated based on modeled harvest estimates provided by the Mitchell Act Fishery Modeling Team. Although total tribal harvests of all salmon species were estimated to fall by 5,793 fish under Alternative 5, Chinook salmon harvests were estimated to increase by 9,877 fish, partially offsetting reductions in coho and steelhead harvests. The greater average per fish value of Chinook salmon ($3.61 per pound compared to $0.83 per pound for coho salmon) resulted in net revenues increasing, relative to Alternative 1 levels. Harvest estimates and fish values have been revised for the final EIS, and tribal salmon revenues have changed in the final EIS. For the final EIS, the increased value attributable to increased Chinook salmon harvests in the mid-Columbia River economic impact region again offsets the reduced values attributable to lower coho salmon harvests.
29/34	p. 2-37. What fisheries were examined in developing Table 2-11? Was any account taken of how this might affect other fisheries? For example, ocean troll and recreational fisheries take Columbia River salmon, but also take salmon headed for other watersheds all along the coast. Has there been any calculation of how catches of these other, intermingled fish would be affected by these implementation scenarios?	Please refer to Appendix K for detailed information on the fishery models used in the analysis and the methods for applying them.
29/35	p. 3-6. Another hazard to weirs is vandalism.	Thank you for your comment. Weir vandalism has been added to the risks from weir operations listed on page 3-12 of the final EIS.
29/36	pp. 3-4–3-66. Other Fish Species that Have a Relationship with Salmon and/or Steelhead. This section is apparently regarding other marine and	In response to your comments, more reasoning is provided as to why specific fish species are reviewed in Section 3.2.4, Other Fish

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED)

Letter/ Comment #	Comment	Response
	freshwater species that "may interact with salmon and steelhead in the analysis area." It is a "who's who" of ESA listed or "species of concern" designated fish, but also includes other species, such as Northern Pikeminnow. None of these species is raised in a Mitchell Act hatchery. No explanation or analysis is given as to why this section is relevant to the Mitchell Act DEIS or the purpose of including it, except that they "have a relationship with salmon and steelhead either as prey, predators, or competitors," (p. 3-40). No commentary is provided as to whether the "relationship" is more likely to affect or be affected by Mitchell-Act-produced fish than other non-Mitchell-Act- produced fish.	Species that Have a Relationship with Salmon and/or Steelhead. Fish species reviewed in this subsection have a special Federal or state listing status and/or a strong relationship with salmon and steelhead that could be affected by implementation of the alternatives. Although freshwater and anadromous fish species were reviewed in this section, saltwater fish species were not reviewed because the effects of implementing the alternatives are not expected to result in a noticeable impact or benefit to saltwater fish species. Also, see Section 4.2.4, Effects on Other Fish Species that Have a Relationship to Salmon and Steelhead, for a description of how implementation of the alternatives may affect other fish species based on each fish species' relationship with salmon and steelhead.
29/37	pp. 3-4–3-66. No rationale is given as to why certain species were chosen and others omitted. For example, no salt-water species were included, only in-river, fresh-water species, but no rationale is provided. No invasive aquatic species were considered, despite the introduction of an Asian copepod that is now displacing native copepods in the estuary. Should an explanation be forthcoming for all of these omissions, it is still unnerving to note that the species with the most potential for major interactions with Columbia River salmonids, the American shad (Alosa sapidissima) is missing from the list.	Section 3.2.5, Nonindigenous Fish Species, and Section 4.2.4.13, Nonindigenous Fish Species, were added to the final EIS to address nonindigenous fish species. This addition includes the American shad among other nonindigenous fish species. Also, see the response to letter 29, comment 36. Other nonindigenous aquatic species (such as mussels, copepods, and invasive aquatic plants) are not addressed in this EIS because implementation of the alternatives is not expected to have a noticeable effect on the distribution and/or abundance of these other nonindigenous species.
29/38	Referring to the comments re eulachon, as explained on pp. 4-90-92, we note that "implementation measures designed to improve hatcheries may also benefit eulachon by minimizing entrainment of juvenile fish and hatchery water intake screens and correcting water quality conditions in streams where hatcheries occur and eulachon pass through during migration or may spawn nearby." Aside from the mainstem Columbia, where a large portion of the annual run spawns, eulachon are known to spawn in only a few streams: Grays River, Skamokawa Creek, Elochoman River, Cowlitz River, and occasionally the Kalama, Lewis and the Sandy. There is no hatchery on the Skamokawa system; in the case of each of the others, particularly the Cowlitz River, which, aside from the Columbia, is their major spawning river, eulachon spawn many miles below any	In response to your comments, Section 4.2.4.3, Eulachon Effects under All Alternatives, has been changed to reflect that eulachon are not known to occur near hatcheries; thus, water quality and entrainment benefits may be negligible for this species.

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED).

Letter/ Comment #	Comment	Response
	hatchery water intake and area where adverse water quality conditions caused by a hatchery are likely to occur. Improving hatcheries, while laudable, is therefore not likely to have any discernible effect on eulachon. We note also there is no apparent documentation for this particular point, and suggest that the agency needs to provide some sort of evidence to back up this astonishing claim.	
29/39	Green sturgeon are included in this section, while white sturgeon are not.	White sturgeon was not included in Section 3.2.5, Nonindigenous Fish Species, because the species is not listed, as compared to green sturgeon, whose southern DPS is listed as federally threatened. Neither species has a strong relationship with salmon and steelhead. Please also refer to the response to letter 29, comment 37.
29/40	The document notes on p. 3-50 that "The primary interaction between green sturgeon and salmon and steelhead is green sturgeon bycatch in salmon and steelhead fisheries." How this constitutes an actual "interaction" between species is a mystery. No mortality rates resulting from bycatch are given, nor is the statistical significance of this factor, compared to the principal factor in the green sturgeon's population decrease, habitat decline in the Sacramento River, provided. Current information regarding mandatory release of all green sturgeon bycatch from both commercial and sport fisheries is also omitted. The relationship that supposedly was the foundation for the choice of which fish to include in this section was that of "prey, predator or competitor." Green sturgeon do not fall into any of these categories when it comes to salmon and steelhead. We suggest omitting it entirely.	In response to your comment, more information on green sturgeon bycatch is provided in Section 3.2.4.4, Green Sturgeon, Interaction with Salmon and Steelhead. Also see the response to letter 29, comment 37, regarding the species included in Subsection 3.2.4, Other Fish Species that Have a Relationship with Salmon and/or Steelhead.
29/41	pp. 4-185–198. We suggest that the sections regarding marine mammals, particularly sea lions be updated with recent research available from observations being conducted on the spring Chinook predation at Bonneville Dam. Interactions are being narrowly defined here as those that affect protected species under the Marine Mammal Protection Act. We believe this is much more of a two-way street, and that interactions from marine mammals that affect salmonids need to be discussed also. For example, we point out that the assumption on p. 4-193 is that with reduced numbers of salmonids to feed on, sea lions would relocate to areas where	Agreed, it is possible that alternatives that substantially reduce hatchery production may result in marine mammals increasing consumption of natural-origin fish. Refer to changes in Section 4.5.4.3.1, Steller Sea Lion and Section 4.5.4.3.2, California Sea Lion.

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED)

Letter/ Comment #	Comment	Response
	prey is more readily available. Such an assertion assumes that there are such areas at the time when sea lions feed on spring Chinook at Bonneville Dam, but no specific locales or species are provided. There is another alternative, not considered, and that is that the sea lions will continue to feed at Bonneville, and consume a larger percentage of the reduced numbers of salmon available, thus potentially affecting the viability of the remaining salmon runs. Figures the Joint Management Staff of the Oregon & Washington Departments of Fish & Wildlife recently shared with the Columbia River Commercial Advisory Group concerning sea lion presence at Bonneville Dam 2002–2010 indicate that although California Sea Lion numbers have somewhat decreased since 2007 and 2008, the number of Stellar sea lions at Bonneville Dam has increased dramatically. (Copy of Figures 10 and 11 attached.) Until recently, NMFS had authorization through Section 120 of the Marine Mammal Protection Act to address the issue of predation by California sea lions at Bonneville Dam, but not predations by ESA-listed Stellar sea lions. On November 23, 2010, however, the 9th Circuit Court of Appeals remanded the authorization for lethal removal of problem seas lions at Bonneville Dam back to the Oregon District Court, with instructions to vacate the decision and remand to NMFS. Upon closer analysis, the decision by the Court of Appeals did not rule the rationale for lethal removal of problem marine mammals impermissible or without reason. The ruling seems to be based on a strict interpretation of the Administrative Procedures Act (APA). Because NMFS did not include an adequate explanation for its course of action in the Administrative Record for the case, the APA dictates that no evidence can be submitted after the fact to defend or document the benefits of that course of action. The briefs submitted by the states as intervener defendants, logical and reasonable though they may have been, amount only to inadmissible post hoc rationalizations for the decision already made but inadequately explained to allow lethal removal of animals identified as problem predators at the dam. We submit that NMFS should promptly attend to providing an explanation for the lethal removal decision that will be satisfactory to the federal courts, and get it into the Administrative Record for the case before	

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED).

Letter/ Comment #	Comment	Response
	the 2011 run of upriver spring Chinook begins. The ruling from the 9th Circuit Court of Appeals specifically states, "…we do not impose an undue burden on NMFS on remand. The APA requires only a cogent explanation." (See the attached Columbia Basin Bulletin article, "Appeals Court Rejects Lethal Removal of Salmon-Eating Sea Lions.") The need for continuing this program is urgent. Evidence suggests that lethal removal of California sea lions clearly identified as repeat predators at the dam has in fact made a significant difference at the dam. (See the attached Columbia Basin Bulleting article, "Sea Lion Report.") We also note there is growing evidence that the eastern population of Stellar sea lions has recovered and no longer needs ESA protections. We strongly urge NMFS to accelerate the delisting of the eastern Stellar sea lion population so that the growing problem of Stellar sea lion predation at Bonneville Dam can be directly addressed once authorization for lethal removal is reaffirmed by the court.	
29/42	We note in the section on "Non-listed Birds," pp. 4-189-192, bald eagles are included and osprey are omitted. No rationale is provided.	Osprey were discussed in Section 3.5.4.1.2, Other Birds, and included in Table 3-30. Like many other piscivorous birds considered in this section, they do not appear to depend on salmonids at any point in their life cycle in the Columbia River Basin. Therefore, these species were not discussed in detail in the analysis in Section 4.5.4.2.2, Other Birds, although the discussion of the alternatives makes reference to other avian predators and specifically mentions osprey among the other species.
29/43	Caspian terns are included, double-crested cormorants are omitted except in passing. Data from the most recent studies that demonstrate the extent of these last two species' predation on salmon smolts, approaching twenty million annually, need to be included in this section, as this is a significant interaction among species.	NMFS agrees. The discussion of Caspian terns and double-crested cormorants in Section 3.5.4.1.2, Other Birds, was revised to indicate the importance of their interaction with salmon species on the lower and middle Columbia River. The discussion of project alternatives in Section 4.5.4.2.2, Other Birds, was revised to include double-crested cormorants.
29/44	We also note that the reference on p. 4-191, to Table 3-26, regarding gulls species, double-crested cormorants, etc., is incorrect. Table 3-26 is found on p. 3-103, and is entitled "Environmental Justice Thresholds for Reference Areas." We assume the agency is referring to the tables found on pp. 3-117–3-121.	The EIS has been updated in response to the comment. The reference has been corrected for Table 3-30.

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED)

Letter/ Comment #	Comment	Response
29/45	pp. 3-97–3-114. Environmental Justice Section. In addition to endorsing the comments made by Irene Martin regarding this section, we also wish to note that a more adequate discussion of poverty and other socioeconomic issues could have been developed by modeling this section after the 2006 NOAA Fisheries publication, Fisheries Communities of the United States, in the Fisheries Economics and Sociocultural Status and Trends Series, as updated in August 2009.12. We also bring to your attention the NOAA Fisheries publications, Fisheries Economics of the U.S. for 2006–2008.13 We recommend a thorough rewriting of this section, based on the Martin comments and consultation with the above-noted NOAA Fisheries publications, none of which appear in the document's bibliography.	The two documents cited in the comment were reviewed before preparation of the final EIS. The 2006 NOAA Fisheries publication (National Marine Fisheries Service 2009) includes demographic data from the 2000 U.S. Census similar to the data presented in draft EIS, Appendix L, Supporting Socioeconomics Data for Environmental Justice. For the final EIS, demographic data in the environmental justice section has been updated using data from the 2010 U.S. Census and the American Community Survey, which are more current than the data in the 2006 NOAA Fisheries publication. However, this document has been incorporated by reference into Section 3.4, Environmental Justice, of the final EIS for background information purposes. The NOAA Fisheries publication, Fisheries Economics of the U.S. for 2006–2008 (National Marine Fisheries Service 2010), includes economic data (e.g., commercial catch and revenue, recreational catch and fishing effort), primarily for the 1999 to 2008 period. The final EIS environmental justice analysis relies on modeled catch data for Alternative 2 through Alternative 6 and from reported catch in Columbia River Joint Staff Reports, PFMC annual reports and PSC annual reports for the baseline (Alternative 1, No Action) period of 2002-2009.
29/46	Appendix I, Draft Socioeconomics Resource Report Submitted by The Research Group to NMFS, 2008, comes with disclaimer: "This draft resource report was submitted by the Research group to NMFS in 2008. It was never completed or peer reviewed. It should not be considered a NMFS report or cited as NMFS data." Our question then becomes, "What is it doing here?" What are we to make of it? How has it been used? It is, frankly, filled with errors. Let us just point out one here: p. A-32, Table A.7, where Alternatives 1, 3, 4, and 5 show an REI for both Summer and Winter Steelhead under the Commercial Harvest of $1,000 each. There is no non-treaty commercial harvest of steelhead on the Columbia River, which other tables have recognized. The number should be 0 (zero). This is one small example of the numerous errors in the document. We do not believe it is the public's job to correct all the mistakes, nor do we believe that an incomplete document that has not been peer-reviewed, contrary to NMFS own peer-	See Global Response 7: Comments Addressing the Analysis within the EIS.

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED).

Letter/ Comment #	Comment	Response
	review policy, should have been the basis for the Socio-economic section of the DEIS in the first place. If NMFS does not consider it as a NMFS report, nor permit its citation as NMFS data, what is it doing in the DEIS?	
29/47	Appendix J, Thomas Wegge, Mitchell Act Hatchery EIS, Socioeconomics Impact Methods Appendix, March 2010, p. 12. We note that the commercial fish weights for various regions in the Columbia River Basin are listed as identical. For example, non-tribal commercial fisheries average weight for Chinook in the Lower Snake River, Upper Columbia River, Mid Columbia River and Lower Columbia River is listed as 18.4 lb., on Table A-1. Since there is no non-tribal commercial fishery in the Columbia Basin except in the Lower Columbia River, we are at a loss to explain these numbers.	Table A-1 includes weight factors incorporated into the Economic Impact Model developed for the project. Although these weight factors are shown for both tribal and non-tribal fisheries for all regions in the Columbia River Basin, it is recognized that there is no non-tribal commercial fishery upstream of the Lower Columbia River region. These weights were removed from Table A-1 in the final EIS.
29/48	Appendix J, Thomas Wegge, Mitchell Act Hatchery EIS, Socioeconomics Impact Methods Appendix, March 2010, p. 12. We checked the Sources listed at the bottom of the table, which referred us to The Research Group Mitchell Act DEIS Appendix Table B.2. However, when we looked for this document, which presumably is Appendix I, there is no table B.2. Subsequent tables in the Wegge document refer also to Appendix B.2 in The Research Group's document, but it is apparently not available for public review. Tables A-2 and A-3 in the Wegge include information regarding economic value, and again refer to non-tribal commercial fisheries occurring in places where, in fact, they do not occur in the Columbia River and again refer to Appendix I, Table B.2.	Thank you. The references in the draft EIS to Table B.2 were incorrect and have been corrected in the final EIS. As noted in the response to letter 9, comment 153 and in Global Response 7: Comments Addressing the Analysis within the EIS, The Research Group's report included as Appendix I in the draft EIS has been removed from the final EIS as an appendix due to its limited referential use in the final EIS and to reduce the level of confusion for the reader. Prices for non-tribal commercial catch in the Columbia River Basin upstream of the Lower Columbia River region have been removed from Table A-2 in Appendix J in the final EIS. No changes to Table A-3 in Appendix J are required because net economic value factors shown in this table apply to the tribal commercial fisheries in each of the four Columbia River Basin regions.
29/49	Since the Wegge document is apparently based on The Research Group's incomplete and non-peer reviewed document, it too is suspect, but again, cannot be analyzed because the baseline data are not available.	The draft EIS socioeconomic and environmental justice sections relied on several documents for information used in the analysis. The Research Group's (2009) report (draft EIS appendix I) was only one of them. Baseline catch and ex-vessel values came from PFMC and other sources used by the Mitchell Act Fishery Modeling Team to compile historical statistics on catch and ex-vessel values in the Columbia River and along the West Coast.

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED)

Letter/ Comment #	Comment	Response
29/50	"This analysis of environmental justice effects is based on evaluating environmental justice communities and groups of concern," p. 4-161.Unfortunately, much of the documentation regarding many of those communities and groups was omitted from this section of the DEIS. We must add that since this portion of the document was not adequately foot-noted and there is no complete final bibliography, tracking sources for data, citations and statements is well-nigh impossible, and certainly doesn't meet acceptable academic or scientific standards. We strongly urge the agency to upgrade the quality of the document by providing its source material via notes and a standard bibliography, in order that the reader can verify the statements made.	Thank you. In response to this and other comments on draft EIS Section 3.4, Environmental Justice, Table 3-27 and Table 3-28 in the final EIS have been expanded to include relevant demographic and economic data for environmental justice user groups and communities of concern. Additionally, tables have been footnoted to indicate the sources of data, and references have been added to Chapter 6, References, in the final EIS.
29/51	We note, for example, several works regarding tribal fisheries that should have been consulted for the DEIS, but cannot determine whether they were examined or not. These include: Meyer Resources, Inc., Tribal Circumstances and Impacts of the Lower Snake River Project on the Nez Perce, Yakama, Umatilla, Warm Springs and Shoshone Bannock Tribes (Portland, Ore., Columbia River Intertribal Fish Commission, April 1999), 2 vol., and Allan Scholz, et al., Compilation of Information on Salmon and Steelhead Total Run Size, Catch and Hydropower Related Losses in the Upper Columbia River Basin, above Grand Coulee Dam (Cheney, Wa.: Upper Columbia United Tribes Fisheries Center, Eastern Washington University, 1985). Both of these works express the magnitude of cultural dislocation and social issues regarding tribal entities included in the DEIS, as well as human health issues noted on p. 3-97 of the DEIS as being a subject of mandatory concern under the EPA. We note also the absence of material from the Pacific States Marine Fisheries Commission, particularly their EFIN program. Their West Coast Charter Boat Survey Summary, as well as other documents, might have proven useful. In particular, the coastal community document produced by Jennifer Langdon-Pollock, West Coast Marine Fishing Community Descriptions (Portland, Ore., Pacific States Marine Fisheries Commission, 2004) contains baseline data and descriptions of fishing communities along the entire west coast and should have been consulted. We note on p. 3-98 that the DEIS states, "data are not available to determine the specific user groups and communities of concern that would be affected by EIS alternatives." In fact, such data may exist in	Thank you. In response to this and other comments on draft EIS Section 3.4, Environmental Justice, additional documents cited by commenters have been reviewed, and relevant information has been added to the final EIS. Specifically, a new section was added to the final EIS that discusses the cultural, social, and historical importance of salmon to Columbia River Basin tribes, Section 3.4.4.1.1, Fish Harvests and Tribal Values. Additionally, substantial information on the cultural importance of ceremonial and subsistence harvests to tribes was added to final EIS Section 3.4.4.1.2, Ceremonial and Subsistence Harvests. Communities included in the environmental justice analysis were identified based on information in NMFS (2003), final EIS on salmon fisheries off the coasts of CA, OR, WA, and SE AK. Additionally, NMFS (2009), Fishing Communities of the United States, 2006, was reviewed and incorporated into the Section 3.4 by reference. No additional community level data were required for the environmental justice analysis. The Research Group study (TRG 2009) referenced in the comment was not used as the basis for the environmental justice analysis; however, the study provided information used to estimate harvest-related impacts, which were used as indicators of environmental justice effects.

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED).

Letter/ Comment #	Comment	Response
	PACFIN and/or RECFIN, and could also have been elicited by discussions with tribal and state fisheries agencies and the Pacific Fishery Management Council and North Pacific Fisheries Management Council, as well as various stakeholder groups. We also point out the numerous economic studies conducted in communities along the west coast by The Research Group's Dr. Hans Radtke, none of which are cited in the list of references for this section. However, a preliminary document by The Research Group, Economic and Social Analysis Sections prepared for the Mitchell Act EIS, dated 2009 (p. 6-11), is apparently the basis for the current document, although we been unable to locate a copy of it on the NMFS website. There are undoubtedly other documents that should have been included, but without proper notes or bibliography, trying to discern the formative documents for this section of the DEIS and verify the statements made in it is virtually impossible.	
29/52	We have been unable to determine where the data came from to construct Tables 3-26, 3-27 and 3-28. Page 3-102 states that the thresholds were based on 2000 census data, but the U.S. Census is not listed in the References, Chapter Six. Further, upon checking the data with the U.S. Census of 2000, we must point out that the poverty levels given in Table 3-26, p. 3-103, differ considerably from those given in the 2000 Census. The following numbers are the actual numbers from the U.S. Census of 2000: Poverty rate for California 14.2%, not the 19.5% stated; poverty rate for Idaho 11.8%, not the 15.59% stated; poverty rate for Oregon, 11.6%, not the 14.69% stated, and poverty level for Washington, 10.6%, not the 17.69% stated. We also checked the 2006-2008 U.S. Census Bureau American Community Survey 3-Year Estimates, and found similar discrepancies. We also note that the per capita incomes for the respective states as evidenced by the actual U.S. Census data do not match with what is in Table 3-26. The comparison follows: California, actual Census, 22,711, DEIS 15,815; Idaho, actual Census 17,841, DEIS 13,990; Oregon, actual Census 20,940, DEIS 16,410; Washington actual Census 22,973, DEIS 15,829 Without some explanation of the source of the numbers used in the DEIS, or how they were calculated, we are unable to provide much in the way of useful comment on this part of environmental justice issues section.	The data in draft EIS Table 3-26, Table 3-27, and Table 3-28 came from the 2000 U.S. Census and was compiled in Appendix L, Supporting Socioeconomics Data for Environmental Justice. Appendix L no longer contains this information as this information has been added directly to final EIS Table 3-27 and Table 3-28. Additionally, the local-level rates presented in the draft EIS may be significantly different than the statewide rates presented in the comment. For the final EIS, data shown in Table 3-26, Table 3-28, and Table 3-29 have been updated using information from the 2010 U.S. Census, Table DP-1, Profile of General Population and Housing Characteristics; and the American Community Survey, 5-Year Estimates (2005-2009) database. Additionally, data sources have been added to the tables.

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED)

Letter/ Comment #	Comment	Response
29/53	This is a serious matter, as some communities and entire counties were omitted from table 3-28, p. 3-113, entitled "Summary of Environmental Justice Communities of Concern." These include Clatsop and Columbia Counties in Oregon, and Cowlitz, Wahkiakum and Pacific Counties in Washington. Of these counties, Clatsop, Wahkiakum, and Pacific Counties were analyzed regarding poverty issues in Irene Martin's study, A Social Snapshot of the Columbia River Gillnet Fishery, Astoria, Salmon For All, 2005, and also in "Resilience in Lower Columbia River Salmon Communities," in Ecology and Society, vol. 13, no. 2, 2008, Article 23. www.ecologyandsociety.org/vol13/iss2/art23/.	These counties were omitted from draft EIS Table 3-28 because they did not meet the threshold criteria for environmental justice communities of concern shown in draft EIS Table 3-26. For the final EIS, all counties in the study regions have been included in Table 3-28, including Clatsop, Columbia, Cowlitz, Pacific, and Wahkiakum Counties. Inclusion in the table does not indicate that environmental justice communities of concern thresholds have been met; see Table 3-28 for more information.
29/54	The first-named also addressed human health issues, a requirement of the EPA as noted on p. 3-97.	As noted in the response to letter 29, comment 51, a discussion of tribal health issues related to subsistence fishing has been added to final EIS Section 3.4.4.1.2, Ceremonial and Subsistence Harvests. No additional changes to the final EIS are required.
29/55	Further, a recent study on Astoria, Oregon, which the DEIS indicates on p. 3-111 has a poverty rate of 15.9%, was omitted. This publication, by Jennifer Langdon-Pollock, A Pilot Study in Two West Coast Marine Fishing Communities, Astoria and Newport, Oregon: Perspectives from Fishing Community Members. Portland, Ore., Pacific States Marine Fisheries Commission, contains useful information on two communities within the purview of the Mitchell Act DEIS and should have been examined.	In the draft EIS, both Astoria and Newport were considered as part of the environmental justice analysis using demographic and economic data from the 2000 U.S. Census. The final EIS has been updated to reference 2010 U.S. Census data indicating that Astoria and Newport have current (2010) poverty rates of 16.1% and 16.7%, respectively. The commenter does not specify what additional information from the Langdon-Pollock study should be included; therefore, no specific changes to the final EIS have been made in response to this comment.
29/56	It is impossible for us to ascertain from Table 3-28 why various counties were included, as the only number which is provided consistently for each of them is per capita income. Poverty rates have been provided for 13 out of the 35 counties listed, fewer than half, although these data are readily available. In 2000, Wahkiakum and Pacific and Clatsop counties all ranked in the lowest per capita income category of the U.S. census but have been omitted from this listing. It is also impossible to know what weight each of the categories in Table 3-28 was given in order to determine a community of concern, since no explanation is given as to how the table was drawn up. We would have assumed than a county or community with a per capita income in the lowest category of the U.S. Census of 2000 and/or a poverty	Draft EIS Table 3-28 only reported data for counties that met the threshold for an environmental justice community of concern, as shown in draft EIS Table 3-26. Final EIS Table 3-28 has been updated to include all counties in the study regions, indicating demographic and economic criteria that exceed environmental justice thresholds for communities of concern. Additionally, the thresholds and data have been updated using 2010 U.S. Census data and American Community Survey data.

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED).

Letter/ Comment #	Comment	Response
	rate above that of its state might be of some concern regarding environmental justice. A more useful table would have included many more counties with the correct rates in each category for each of them, and some idea of how the various categories rank in terms of importance. It would also have been helpful to know whether the categories were left blank because there were no data, or whether there were other reasons for omitting data, such as poverty rates. All four states cited have county data derived from the U.S. Census that is readily available via the Internet. We cannot determine whether any of this data was consulted, or, if so, why so much of it was omitted with no reason given.	
29/57	We would also have assumed that counties where fisheries are a major source of income, and where Mitchell-Act funded hatcheries exist, such as Wahkiakum, Pacific and Clatsop counties, would have been included and some analysis done as to the effect the Mitchell Act has had on the economies of these areas and what effect the redirection of Mitchell Act funding and policy changes might be expected to have. It seems to us that an Environmental Impact Statement regarding the Mitchell Act should address the community context in which the Mitchell Act has been a factor for over fifty years, particularly in the areas of socioeconomics and environmental justice. Further, the publication "Fishing Communities," available on the Pacific Fishery Management Council website, www.pcouncil.org, states: "As part of the NEPA process, both economic factors…and social factors (population dynamics, social institutions, environmental justice, cultural values, community identity, history, etc.) need to be addressed in environmental assessments and environmental impact statements."	As discussed in the response to letter 29, comment 53, Clatsop, Pacific, and Wahkiakum Counties were included in the draft EIS environmental justice analysis; however, based on thresholds established for the environmental justice analysis, none of the counties met the criteria for an environmental justice community of concern. No additional analysis of effects on counties not considered environmental justice communities of concern was required. The environmental justice section, including the communities that meet community of concern thresholds, has been updated to reflect 2010 U.S. Census data and American Community Survey data.
29/58	We note NMFS own website describes criteria for community impact analysis and lists publications by Karma Norman, the agency's Northwest social scientist, who has developed community profiles for the west coast. These publications include Norman, K. C., J. A. Sepez, H. Lazrus, N. Milne, C. Package, S. Russell, K. Grant, R. Petersen Lewis, J. Primo, E. Springer, M. Styles, B. D. Tilt, I. Vaccaro. 2007. Community profiles for West Coast and North Pacific fisheries - Washington, Oregon, California, and other U.S. states. U.S. Dept. of Commerce, NOAA Tech. Memo., NMFS-NWFSC-85, 602 p. This publication might have been of assistance in identifying	Identifying effects on environmental justice user groups and communities of concern in Southeast Alaska was considered to be speculative because demographic information on the location and the extent of potentially affected fishery participants in these areas is limited. Additionally, it appears that fish produced at Columbia River hatcheries make relatively small or even negligible contributions to the tribal and personal use catch of salmon in the areas. As a result of these and other information constraints, this EIS did not include user-group-specific fisheries

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED)

Letter/ Comment #	Comment	Response
	communities potentially affected in Alaska by the DEUS. We also recommend the following publication for your reference: Sepez, J. A., K. C. Norman, R. Felthoven. 2007. A Quantitative Model for Ranking and Selecting Communities Most Involved in Commercial Fisheries. National Association for the Practice of Anthropology Bulletin, (28)43-57. We do not understand why NMFS has not used its own documents in developing this portion of the DEIS, but they do not appear in the list of references.	to analyze potential harvest effects in these areas (Appendix K, Chinook and Coho Salmon Fishery Modeling Approach for Application to the Mitchell Act EIS). For these reasons, Southeast Alaska and British Columbia are not considered part of the target area for analysis of environmental justice effects and are not discussed further in the analysis. Concerning the use of data from NMFS studies, information from NMFS's (2003) Final Programmatic Environmental Impact Statement for Pacific Salmon Fisheries Management Off the Coasts of Southeast Alaska, Washington, Oregon, and California and in the Columbia River Basin, and information from the Community Description report prepared by PFMC (1999) was used to identify communities of concern included in the analysis, as indicated on page 3-99 of the draft EIS. The information from this study was deemed to be adequate and relevant for purposes of identifying communities of concern for the EIS assessment.
29/59	On p. 3-97 the DEIS states that "EPA Guidance recommends that the environmental justice analysis also determine whether such populations or communities have been sufficiently involved in the decision-making process (EPA 1998)." While it is quite clear that many of the communities concerned have not been involved, it is particularly noteworthy that the Columbia River Intertribal Fish Commission does not appear to have been consulted, as their name does not appear in the list on p. 8-2. Since a number of the fishing-oriented counties, tribes and stakeholders with substantial economic, historical and cultural ties to fisheries (and fisheries supported by Mitchell Act hatcheries at that), have been ignored by the DEIS, we suggest a complete rewrite of this section of the DEIS with the opportunity for further comment and public input after additional research has been done. We do not believe that this section is ready for public review at this time.	See Global Response 3: Comments Addressing the EIS Process.
29/60	Mitchell Act DEIS Appendix I, "Draft Socioeconomics Resource Report Submitted by The Research Group to NMFS 2008," contains a number of indicators signaling its limited usefulness for review by any and all harvest community user groups partaking in Columbia River fisheries. The first is stated at the outset in footnote 1: "This draft resource report was	See Global Response 7: Comments Addressing the Analysis within the EIS.

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED).

Letter/ Comment #	Comment	Response
	submitted by The Research Group to NMFS in 2008. It was never completed or peer reviewed. It should not be considered a NMFS report or cited as NMFS data." This disclaimer, while duly noted, leads one to wonder why this Draft Socioeconomics Resource Report was included in the Draft Environmental Impact Statement in the first place. On the other hand, The Research Group, "Economic and Social Analysis Sections, prepared for the Mitchell Act DEIS," dated 2009, cited on p. 6-11 of the main body of the DEIS, which apparently formed the basis for many of the socioeconomic conclusions reached in the DEIS, was not included with this document, does not seem to be available on the NMFS website, nor does it seem to be available elsewhere, and thus is unavailable for public review. Considering that the alternatives outlined in the Mitchell Act DEIS are likely to pose substantial economic hardships for harvest community members, relevant and reliable economic analyses would seem to a reasonable person to be a prerequisite for putting out the DEIS for public review. Most harvest community members are not trained economists, but nearly all know how to read a balance sheet. One would think that peer review of the socioeconomics resource report by trained economists would have made the economic analysis provided therein considerably more trustworthy. The fact that the Socioeconomics Report was neither completed nor peer-reviewed does not inspire confidence in any analysis derived from it in the DEIS, nor the conclusions arrived at, nor does it meet acceptable academic or scientific standards. In fact, it fails to meet NOAA Fisheries' own policy regarding peer-reviewed science. On October 1, 2002, NOAA Fisheries adopted Information Quality Guidelines which required, among other actions, "peer review" of the agency's "highly influential scientific assessments."	
29/61	Mitchell Act DEIS Appendix I. The Research Group (TRG) has an extensive professional background in fishery economics. However, the methodology used in this report appears largely to incorporate updating previous studies with more recent economic evaluations. Given the limited nature of the data that may be available on fishery economics for more recent years, this research strategy could possibly have its merits, but is more likely to lead to false assumptions, as is the case here. For instance, it is stated on Appendix I page 22 that "The harvest modeling for the commercial and recreational	Thank you for your comment. Please See Global Response 7: Comments Addressing the Analysis within the EIS for details on the revised use of the Research Group 2009 report in the final EIS. Additionally, the harvest model was updated to incorporate revised fisheries regimes in the 2008 *U.S. v. Oregon* Management Agreement that were in place in 2009. Last, hatchery production was updated to 2010 releases. Survival rates of hatchery and natural production (and consequently

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED)

Letter/ Comment #	Comment	Response
	fisheries developed for the EIS were based on early 2000s production and exploitation rates." There seems to be no acknowledgement or recognition that Columbia River salmonid runs from 2000 to 2004 included some of the largest returns seen since dam counts began at Bonneville Dam in 1938. However, unlike previous surges in Columbia River salmonid abundance in the 1980s, the vast majority of returns in the early 2000s were hatchery fish, including those produced at Mitchell Act hatcheries.	number of fish returning to the Columbia River) were updated to levels consistent with 2008 to 2010 levels. These changes are described in a revised version of Appendix K in the final EIS, which is entitled "Chinook and Coho Salmon Fishery Modeling Approach for Application to the Mitchell Act EIS." Refer to this document for detailed changes in the modeling used for estimating harvest, including the historical time period used in the modeling. In addition, the results of the revised harvest modeling have been incorporated into Section 4.3, Socioeconomics, and Section 4.4, Environmental Justice.
29/62	Mitchell Act DEIS Appendix I. Contrasting with assumptions regarding harvest levels and exploitation rates, the calculations for Cost Per Harvestable Adult for Agency Release Strategy on Appendix I page 55 assume that average smolt-to-adult returns (SARs) are means from broodyears 1992-2001 That decade encompasses some of the lowest returns and ocean survival rates of the last fifty years, as well the beginning of the surge in the early years of the current century. On the other hand, hatchery surpluses are calculated using numbers from the decade 1998–2007. These are very technical subjects. Attempting to match up data from different decades could easily lead to false conclusions and incongruities in the analyses. It also risks introducing a large margin of error in the conclusions drawn from them.	See the response to letter 29 comment 61.
29/63	Mitchell Act DEIS Appendix I. Furthermore, at no point in any of this is there any acknowledgement of the fact that NMFS has been steadily ratcheting down exploitation rates for fall Chinook and coho in its annual guidance letters to the PFMC since 2001, which has had the effect of creating large unharvested surpluses of hatchery fish. Neither does there seem to be any recognition that with the listing of lower Columbia River coho under the ESA in 2005, and corresponding reductions in harvest, hatchery surpluses of coho have increased dramatically, since the majority of coho returning to the lower Columbia River are the result of artificial propagation efforts. Such discrepancies and the failure to recognize how developments during the past decade, including NMFS own harvest guidance letters, have changed the nature of fisheries dependent on Columbia River salmonids coast-wide, mean the socioeconomic resource report is of little value for	See Global Response 7: Comments Addressing the Analysis within the EIS.

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED).

Letter/ Comment #	Comment	Response
	any sector of the harvest community.	
29/64	Mitchell Act DEIS Appendix I. On page 31, TRG confuses the nature of Columbia River fisheries by citing Gunnar Knapp's 2005 analysis of the competitive advantage farmed salmon holds relative to Alaska wild salmon, just as TRG did in its economic report on the Select Area Fisheries Enhancement program in 2006. Quoting Knapp's observation that "wild harvests must occur during a short summer run" while production of farmed salmon "can occur over many months year-round," TRG implies its relevance to Columbia River fisheries without noting the difference between the seasonal round on the Columbia River and those of wild salmon fisheries in Alaska. This calls into question the value of TRG's socioeconomic analysis of Columbia River fisheries. Alaska fisheries, especially those in Bristol Bay, are in fact compressed over a few short weeks during the summer. However, on the Columbia River there are fisheries for Chinook salmon during spring, summer and fall seasons, as well as for sockeye and coho. Recreational fisheries are open year-round under permanent regulations. While it is true that aquaculture-raised salmon have captured a huge percentage of the overall seafood market in the United States, there also is increasing consumer recognition of the nutritional drawbacks of farm-raised fish versus the high quality and nutritional value of wild and wild-caught salmon. Columbia River spring Chinook in particular enjoys a premium position in the marketplace due to its unsurpassed quality. Failure to recognize or acknowledge that fact, especially considering that non-Indian fisheries for spring Chinook, both recreational and commercial, are entirely mark-selective, is astounding in a study that purports to analyze socioeconomic values relative to proposed changes to Mitchell Act hatchery production. Without hatchery production, there would be no non-Indian fishery for spring Chinook, commercial or recreational, and obviously, no economic value in either case, in a fishery that is the highest value fishery in both the commercial and recreational sectors. Such difficulties make this report of questionable value to anyone.	See Global Response 7: Comments Addressing the Analysis within the EIS. Limited information from the Research Group's January 2009 report was used in the socioeconomics analysis described in Section 4.3 and in the Socioeconomics Impact Methods Appendix (Appendix J). The information referred to by the commenter was not used in the economic analyses presented in the socioeconomics sections in Chapter 4 of either the draft EIS or the final EIS.
29/65	Mitchell Act DEIS Appendix I. In combination with the failure of the catch modeling efforts in Appendix K to use the correct parameters for generating harvest projections, the economic analysis in Appendix I generates values divorced from realistic harvest expectations. As noted	See Global Response 7: Comments Addressing the Analysis within the EIS.

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED)

Letter/ Comment #	Comment	Response
	previously, coho harvest projections and values derived from them are unrealistic, given the ESA listing of lower Columbia coho. Coho numbers derived from 2005 and earlier have no meaning for 2006 and beyond. Analysis of Options 2–5 on Snake River fall Chinook indicate that the result of any of these options may in fact mean an end to in-river non-Indian fisheries for fall Chinook, both recreational and commercial. Under Options 2–4, Snake River fall Chinook releases would drop from the current production of 5.9 million fish to 330,000, and under Option 5 to 110,000. This basically guarantees that the adult returns to Lower Granite dam will be reduced from 15-25,000 with 2-3,000 natural origin fish to returns of probably no more than 5,000, with probably no more than 1,000 natural origin fish. If returns of natural origin Snake River fall Chinook drop to less than 2,000 at the mouth of the Columbia River, the in-river treaty harvest rate drops to 23% and the non-treaty harvest rate drops to 4%. If the river mouth return on natural origin fish drops to less than 1,000, then the in-river treaty harvest rate drops to 20% and the non-treaty harvest rate drops to 1.5%. A 1.5% harvest rate on URB's means basically no commercial mainstem fishing and no Chinook retention for the sport fishery in the mainstem from Buoy 10 on upstream. This effectively makes the values generated by TRG meaningless.	
29/66	Mitchell Act DEIS Appendix I. The potential economic damage to significant constituencies of Columbia River harvest communities posed by the recommendations made under Options 2–5 requires that the DEIS provide useful economic analyses for the various fisheries constituencies to review. The changes proposed by the Mitchell Act DEIS pose threats to fisheries basin-wide and coast-wide. Yet the socioeconomic information provided by NMFS relies on a non-peer-reviewed and incomplete study, or on a study unavailable for public review, whether or not it was peer-reviewed, and utilizes incorrect, outdated, and inaccurate data, drawing conclusions that are not supported by factual evidence. The socioeconomic information provided by NMFS is completely inadequate for fishing constituencies and the public to assess the very real threats to fisheries.	See Global Response 7: Comments Addressing the Analysis within the EIS.
29/67	Mitchell Act DEIS Appendix K, "Chinook and Coho Salmon Modeling Approach for Application to the Mitchell Act EIS, by Lestelle and Morishima, July 2009, employs several mistaken assumptions to set up data	The reviewer does not clearly identify the "several mistaken assumptions to set up data throughput in the modeling scenarios" so that these can be addressed. With regard to the

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED).

Letter/ Comment #	Comment	Response
	throughput in the modeling scenarios. This brings into question the validity of the conclusions reached in that modeling exercise. Despite having submitted the report in July 2009, Lestelle and Morishima failed to address the changes reflected in the allocation formulae between Treaty Tribal and non-Indian fisheries in the 2008-2017 US v. Oregon Management Agreement, which was agreed to and signed by the parties to the negotiations fully a year before Lestelle and Morishima's report was submitted. Moreover, the requirement for catch-balancing between non-Indian and Treaty Tribal fisheries under the US v. Oregon Management Agreement is not reflected in the modeling approach used in the report.	rest of the comment, the fishery rules for the final EIS analysis are based on provisions of the 2008 amendments to the Pacific Salmon Treaty, updated ESA guidance given by NOAA Fisheries (through 2010), and updated provisions of the latest *U.S. v. Oregon* agreement (for the period 2008 to 2017). There have also been several corrections regarding how some calculations have been made. Aspects of these changes have been reviewed with co-manager biologists
29/68	Mitchell Act DEIS Appendix K. Further, the allocation formula applied to the non-Indian recreational and commercial fisheries for spring Chinook used by Lestelle and Morishima was outdated by the time the report was submitted. The non-Indian allocation formula used in Appendix K is a 57/43 split between the recreational and commercial fisheries, which was true for the 2006 and 2007 seasons, but was outdated by 2008. In the advent of the spring Chinook fishery for 2009, the Washington and Oregon Fish & Wildlife Commissions adopted an abundance-based matrix utilizing the new allocation tables in the 2008-2017 US v. Oregon Management Agreement, together with ODFW's Willamette spring Chinook FMEP. However, the two Commissions could not reach agreement on the base allocation formula for the matrix. The Washington Commission adopted a base formula of 65/35, recreational vs. commercial, while the Oregon Commission originally adopted a base formula of 55/45, but later compromised to 60/40. The Washington Commission was unwilling to go along, which left fishery managers with little choice but to hold 5% of the allowable catch during the non-Indian fishery for spring Chinook in reserve. Under all scenarios in the matrix, the non-Indian commercial fishery shoulders a higher percentage of the conservation burden than the recreational fishery. The lower river gillnet fleet has part of its allocated catch held in reserve as a buffer against uncertainty in the pre-season forecast. The buffer is not available until the run-size update, which generally is around May 10. Actual run sizes were significantly lower than the pre-season forecasts both in 2009 and in 2010, as a result of which there was no mainstem commercial fishery after the run-size update in either year.	See the response to letter 29, comment 67.

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED)

Letter/ Comment #	Comment	Response
29/69	Mitchell Act DEIS Appendix K. Another mistaken assumption in Appendix K is reflected in the mortality rate adopted by the US v. Oregon Technical Advisory Committee (TAC) for the non-Indian mark-selective commercial tangle net fishery for spring Chinook. Preliminary data used by TAC to set the mortality rate for the tangle net fishery in 2003 reflected an 18% mortality rate for unmarked fish released by the commercial fleet. PIT tag data gathered in 2003 later showed that the mortality rate for the tangle net was lower than originally thought. TAC adopted a new mortality rate formula of 14.7% for the 2008 fishery, which is not reflected in Lestelle and Morishima's work.	See the response to letter 29, comment 67. Also, the mortality rate on releases from tangle nets has been updated and captures the point that the reviewer has made.
29/70	Mitchell Act DEIS Appendix K. Further, Lestelle and Morishima's assumption that both the tangle net and the gillnet are used in the fishery is not likely to be true unless the commercial fishery fishes in early March, or in mid to late May, when big mesh gillnet would be the gear of choice to avoid unwanted bycatch of shad and steelhead. The assumption of an average mortality rate of 25% for the mark-select non-Indian commercial fishery for spring Chinook would only be plausible in years when there is a big-mesh gillnet fishery. In the years 2008–2010, for instance, the non-Indian mark-selective commercial fishery for spring Chinook exclusively used the tangle net. It is not reliable science to conflate the two mortality rates and determine an average mortality rate of 25%.	The net composition in the mark-selective fisheries in the lower Columbia River and mortality rates associated with the different gears being used in the final EIS are based on information contained within the updated provisions of the latest *U.S. v. Oregon* agreement (2008 to 2017), as well as on several discussions with co-manager biologists who are directly involved in managing the fisheries. Assumptions regarding these elements applied in the modeling for the final EIS have been reviewed by those biologists.
29/71	Mitchell Act DEIS Appendix K. The data on coho numbers also come up with some puzzling conclusions. The data on Youngs Bay coho shows natural production of coho in Youngs Bay of over 4,000 fish under Option 1. However, a principle rationale behind the Youngs Bay Select Area coho program is that there is almost no natural production of coho in Youngs Bay. The original coho stocks native to Youngs Bay and other lower river estuarine tributaries were late-returning Type N coho, adapted to the habitat available in rain-fed coastal watersheds of the lower estuary. Those fish were deliberately eliminated decades ago by the Oregon Department of Fisheries in favor of early-returning Type S coho in many Oregon hatchery programs, under the rationale they would migrate south along the Oregon coast, thus benefiting Oregon's economy, instead of migrating north along the Washington coast, like Type N coho. Some natural	See Global Response 7: Comments Addressing the Analysis within the EIS.

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED).

Letter/ Comment #	Comment	Response
	production of Type N coho still persists in Youngs Bay, but it is minimal at most. Natural production certainly does not account for over 4,000 fish, nor would natural production be likely to increase to over 6,700 fish under Option 2. In order for production to increase in Youngs Bay, substantial improvements in natural habitat would have to be achieved, none of which are contemplated under Mitchell Act DEIS Option 2, nor in any of the other scenarios envisioned in the document.	
29/72	Mitchell Act DEIS Appendix K. Another curious anomaly in Appendix K is that, according to the main body of the DEIS text, under Options 2–5, hatchery production of coho in Youngs Bay would be eliminated because of the risk of hatchery fish straying onto the natural spawning grounds. Yet in Appendix K, hatchery production of coho in Youngs Bay continues under Options 3–5, with no explanation for why this analysis differs from the main body of the DEIS.	The EIS has been updated in response to the comment. This table has been corrected in the final EIS to show the proper hatchery production. In addition, there were other revisions in the final EIS for Youngs Bay reflecting updates to population designations and hatchery influence.
29/73	Mitchell Act DEIS Appendix K. Since no sources for the data used in Appendix K are cited, it is difficult to discern whether the numbers have any validity. But there is sufficient reason to find the data on fish production suspect.	The commenter has not provided enough information to explain the comment. All sources of information required for fishery modeling have been referenced in Appendix K. All production levels associated with hatchery and natural production in the Columbia River are referenced elsewhere in the EIS.
29/74	Mitchell Act DEIS Appendix K. It is worthwhile to note that ODFW's Conservation and Recovery Plan for Oregon Populations of Lower Columbia River Salmon and Steelhead specifically retains the Select Area Fisheries Enhancement (SAFE) program in Youngs Bay and in the vicinity of Big Creek in recognition of the social and economic benefits the SAFE fishery provides to the local economy. Based on the bibliography for the Oregon Conservation and Recovery Plan, concerns about excessive straying of SAFE coho in the Mitchell Act DEIS could possibly be attributable to Suring et al. 2006, "Lower Columbia River Coho Status Report 2002–2004: Population abundance, run timing, and hatchery influence," (OPSW-ODFW-2006-6), in which SAFE coho stocks from the South Fork Klaskanine, which intentionally were allowed to pass through to spawn on the natural spawning grounds, were misidentified in spawning surveys as hatchery strays. Clatsop Fisheries' South Fork hatchery was switching over from coho to spring Chinook production at the time. ODFW biologists instructed Clatsop	The final EIS includes revisions for Youngs Bay reflecting updates to population designations, hatchery influence, and management objectives to retain these fisheries. Population designations for the final EIS were based on the LCFRB (2012) revised recovery plan.

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED)

Letter/ Comment #	Comment	Response
	Fisheries managers to let their early coho broodstock spawn naturally. Several thousand fish over a three-year time span went upstream to spawn. However, this resulted in almost no production whatsoever, because early-returning Type S coho are adapted to habitat in glacial and snowmelt-fed watersheds. That's not the type of habitat available in Youngs Bay. There are no glaciers in Clatsop and Columbia Counties in Oregon, or Pacific and Wahkiakum Counties in Washington. The fish noted in Suring et al. 2006 were not hatchery strays in the normal sense of the concept.	
29/75	Failure to cite the sources of data used throughout the Mitchell Act DEIS is a fatal flaw which makes it impossible to independently verify the data used, not only in harvest modeling, but also in the values to communities that will be impacted by the changes proposed for Mitchell Act hatchery production.	The commenter has not provided enough information to explain the comment. All sources of information required for fishery modeling have been referenced in Appendix K. All production levels associated with hatchery and natural production in the Columbia River are referenced elsewhere in the EIS.
29/76	Mitchell Act DEIS Appendix K. A curious anomaly inherent in modeling the proposals for Options 2–5 in the Mitchell Act DEIS is the assumption that if hatchery production is curtailed or "reformed," there will be an automatic increase in natural production. There seems to be no explanation or justification for this assumption, nor is there an outline of even the vaguest plan for restoring the natural habitat necessary for providing the kind of boost in natural production envisioned by the DEIS. The elimination of over half the original spawning habitat in the Columbia River basin by hydropower and other forms of development has not changed, nor is it likely to change. A large percentage of the habitat used by mainstem spawning fall Chinook is inundated behind federal hydropower dams. That is not likely to change either. A large percentage of the tributary habitats used by other salmonid stocks is altered, degraded, and diminished. That is not likely to change anytime soon either, nor is there any mention in any of the proposals for Options 2–5 of plans to restore the habitat necessary for increased natural production on the scale envisioned by the DEIS. So where are these fish going to come from, and how is it they are contemplated to appear? One wonders whether NMFS once again is resorting to what the 9th Circuit Court of Appeals deemed to be "analytical sleight of hand" in upholding Oregon District Court Judge James Redden's remand of the 2004 Federal Columbia River Power System Biological Opinion. Phantom fish will	Comment noted.

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED).

Letter/ Comment #	Comment	Response
	not contribute to recovery of the Columbia River's once great salmon runs.	
29/77	The more closely one examines the Mitchell Act DEIS, the clearer it becomes that this document was not ready for public review. Salmon For All wishes to join the rising chorus of fishery constituencies calling for NMFS to withdraw the Mitchell Act DEIS and to start over from the beginning with the kind of consultation with fishery constituencies and agencies that should have been pursued in the first place.	See Global Response 3: Comments Addressing the EIS Process.
29/78	It is clear that the Mitchell Act DEIS violates the spirit as well as the letter of the US v. Oregon Management Agreement, and abrogates federal treaty trust obligations.	Thank you for your comment. The EIS is not making a decision on compliance with the Federal Trust Responsibility. Rather, the EIS shows the effects that will inform NMFS' decision making on this issue by noting effects on fish, as well as environmental justice and socioeconomic effects relevant to the trust. See Global Response 5: Comments Addressing the EIS and Its Relationship to Other Plans, Regulations, Agreements, Laws, and Executive and Secretarial Orders.
29/79	For non-Indian fisheries, both offshore and in-river, sport and commercial, Options 2–5 foretell fishery failures and looming bankruptcies.	Comment noted.
29/80	By setting up Options 4 and 5 as lower river vs. inland reform scenarios, the Mitchell Act DEIS unconscionably attempts to pit regional interests against each other, including tribal against non-Indian constituencies.	Comment noted.
30/1	We believe that the approach adopted by NMFS in the DEIS squanders a valuable opportunity to acquire a comprehensive understanding of the impact of hatchery programs on Columbia River salmon and steelhead. The approach should be entirely abandoned in favor of a more comprehensive approach that is focused on recovery of ESA-listed salmonids and protection of other wild salmonid stocks.	To the extent that NMFS understands the comment, NMFS notes the commenter's opinion on another review that the commenter would like to see undertaken. As noted in Global Response 2: Comments Addressing the Scope of this EIS, this EIS does not suggest policy direction to inform future ESA review. NMFS adds this EIS provides a "comprehensive understanding of the impact of hatchery programs..." by disclosing the resource effects, including the effects on all salmon and steelhead populations, of a wide range of hatchery alternatives focused on risk reduction to the salmon and steelhead resources.
30/2	Recovery of salmon ESUs and steelhead DPSs in the Columbia River basin listed under the ESA is uncertain and by any measure likely to be a long-term and costly process (see, e.g., Doremus 2000, 2001). Hatchery programs are among the significant factors that contributed to the	The updated and revised section of the EIS addresses the commenters' concerns regarding the population fitness effects of hatchery production, Section 3.2.3.1.1, Effects on the Viable Salmonid Population Concept. The comment does not provide

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED)

Letter/ Comment #	Comment	Response
	population declines that led to the current listings and that continue to impede the rebuilding of wild populations. Hatchery reform that is intended, in part, to rectify the harmful impacts to wild populations of hatchery programs and practices has been slow to begin, at best. Even so, many elements of proposed hatchery reform follow guidelines that are of questionable validity where the fitness of wild populations is concerned. In addition, the current draft of the remanded FCRPS Biological Opinion is still before the US District Court in Oregon.	enough information for NMFS to understand the relation between the commenter's reference to the status of the FCRPS Biological Opinion and the requirements, under NEPA, for this EIS.
30/3	The circumstances that create the need for the DEIS provide a key opportunity for NMFS and the region to thoroughly re-evaluate the approach to mitigation of the hydropower system that has resulted in the region's excessive reliance on artificial production and to assess the extent to which continuation of this approach is consistent with the recovery of listed salmon and steelhead. Put simply, are hatchery programs the best way to mitigate for the loss and degradation of salmonid habitat caused by the construction of dams? We believe that this may best be a task for a Congressionally mandated independent review by the National Academy of Science. In the final EIS, NMFS should request such a review. The evaluation should include analyses whether mitigation in the Columbia River in the form in which it has been practiced a) has been successful, and b) is compatible with preservation and recovery of ESA-listed salmon and steelhead ESU and DPS's. Such analyses are needed in order to identify an appropriate policy for the distribution of MA hatchery funds. An independent and comprehensive economic analysis of the costs and benefits of hatchery programs that includes a full accounting of costs imposed on the recovery of listed populations is an essential feature of the required comprehensive analysis.	Comment noted.
30/4	The public needs to know what numbers of hatchery fish must be produced in order to satisfy mitigation obligations. Then it can be determined whether mitigation obligations can be satisfied consistent with the recovery of ESA-listed populations.	See Global Response 4: Comments Asserting and Referring to the Mitchell Act's Mitigation Obligation or Calling for NMFS to Define the Obligation.
30/5	Regardless, it should be NMFS' intention in the EIS to adopt a policy that is entirely consistent with insuring that hatchery programs do not impede recovery of listed species (see specific comments on Chapter 1). This	See Global Response 1: Comments Stating a Preference (Preferences) and/or Ideas for the EIS Preferred Alternative.

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED).

Letter/ Comment #	Comment	Response
	includes recognition of the unsustainability of the non-selective fishery techniques employed by non-tribal commercial and tribal fishers throughout the basin, as well as in the ocean. Fisheries must transition rapidly to selective fishing gears if harvest directed at hatchery fish produced in the basin is to be compatible with the survival and recovery of ESA-listed populations.	
30/6	There are, in addition, several relevant initiatives in the basin whose completion should be part of the necessary comprehensive review without which the EIS cannot provide the necessary policy direction. These include: • completion of Phase II of the review of Columbia River basin hatcheries by the Independent Economic Review Board, and • completion of the Artificial Production Review (APR) of CR hatchery programs, started in 1997, interrupted after 1999 and still unfinished. We stress that both such reviews be completed and that the membership of each group be completely free of conflict of interest, unlike the Hatchery Science Review Group (HSRG). An independent review panel should not tolerate membership of individuals who currently are, or in the recent past have been, responsible for management of any aspect of current CR basin hatchery or related salmon management programs, or who are or have recently been contracted for business in the basin by state, tribal, or federal fisheries agencies or related entities.	The comment does not provide enough information to explain the basis for the commenter's assertion that certain processes should be completed before NMFS proceeds with this EIS.
30/7	Congress did not exempt Mitchell Act facilities or activities from the environmental laws passed in the late 1960s and early 1970s. While past Endangered Species Act Section 7 consultations have reconciled Mitchell Act facilities and activities with the ESA, we submit that overall, listed species in particular and wild fish in general have gotten short shrift. In the light of ESA listings and declining anadromous fish returns, little has changed. Millions of hatchery fish are released into the Columbia and its tributaries each year, exerting a negative influence on wild fish, and unsurprisingly, wild fish populations continue to decline.	The comment appears to offer an opinion on hatchery fish in general and does not provide specific information to revise this EIS. With regard to review of hatchery programs under ESA, please see Section 1.3.3.1, Federal Agency Hatchery Actions Regarding Section 7 Consultation, for details.

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED)

Letter/ Comment #	Comment	Response
30/8	The second objective of the proposed action is to "inform NMFS' future review of individual Columbia River basin hatchery programs under the ESA" (lines 15-16 on page 1-2). This is a laudable goal, but it is difficult for us to see how the DEIS accomplishes this, as it deliberately avoids discussion of alternatives in terms that would allow an evaluation of them in light of ESA requirements. This will be discussed in the comments regarding Section 2.	See Global Response 2 Regarding the Scope of the EIS. This EIS is not a document designed to meet regulatory requirements of ESA. Please see Box 1.8, What is the relationship between the ESA and the National Environmental Policy Act (NEPA)?, as well as Section 1.3.3, Potential Future Decisions in Response to Hatchery Actions.
30/9	Section 7(a)(1) (affirmative programs to conserve listed species) is the lesser-known provision of Section 7 and since the listing of Pacific salmonids has been essentially ignored as federal action agencies and the Services (NMFS and US Fish and Wildlife Service) adjusted to the new bureaucratic structure imposed by Section 7(a)(2) (avoidance of jeopardy) obligations. Certainly, every Section 7 consultation biological opinion has a few "conservation recommendations" listed, but it appears those are nothing more than a few voluntary things the action agency was doing anyway. In this case, the entire NEPA review that NMFS is conducting on Mitchell Act-funded hatchery programs, with the expansion to include a review of all Columbia basin hatchery programs could be called a Section 7(a)(1) exercise. Unfortunately, as will be discussed below in the comments on Chapters 2 and 3, it is difficult to determine the specific positive effects to listed species from the alternatives. Overall, it is unclear what steps NMFS will actually take to conserve listed species with respect to its activities relating to Mitchell Act hatcheries, so the opportunity to fulfill Section 7(a)(1) obligations has not been realized.	See Global Response 2 Regarding the Scope of the EIS. This EIS is not a document designed to meet regulatory requirements of ESA. Please see Box 1.8, What is the relationship between the ESA and the National Environmental Policy Act (NEPA)?, as well as Section 1.3.3, Potential Future Decisions in Response to Hatchery Actions.
30/10	Sections 1.3.3.2 and 1.3.3.3. The DEIS discusses that hatchery programs qualify for an ESA Section 4(d) limitation (to the take prohibition for threatened species) if the program has fulfilled a number of steps. From our evaluation of NMFS' website (http://www.nwr.noaa.gov/Salmon-Harvest-Hatcheries/Hatcheries/HGMPs.cfm and associated pages), it does not appear that there are valid Section 10 permits or approved HGMPs for the majority of hatchery programs. It is unclear that this DEIS can set a policy direction for NMFS if it has not completed the initial requisite ESA analyses for these hatchery programs. Regardless, the final EIS should provide numbers for the hatchery programs that have current and	The comment does not provide enough information for NMFS to understand the commenter's reference to the 4(d) rule. Completion of ESA analyses for each hatchery program is not required before completion of this EIS. NEPA, as a separate Federal law, requires evaluation of the effects on the environment of major Federal actions, even in the absence of regulation under other Federal laws, such as ESA. As described in Section 1.3.3, Potential Future Decisions in Response to Hatchery Actions, this EIS will not be a substitute for any ESA analyses and/or determinations.

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED).

Letter/ Comment #	Comment	Response
	approved HGMPs or Section 10 permits.	
30/11	Section 1.7.1. The relationship between the alternatives and the US v Oregon Management Agreement is described (lines 4 -10, p. 1-42) in terms that the EIS does not assert that any alternative is consistent with the Management Agreement, and that "affected parties will exercise their authority regarding production measures following this environmental analysis in a manner that is consistent with the Management Agreement." This statement appears to give parties to the Management Agreement carte blanche to disregard any recommendations included in the final document. NMFS has given a Section 4(d) limit on take prohibitions for the US v. Oregon Management Agreement, so while the Management Agreement is compatible with the ESA, it would seem that a stronger statement is in order to ensure that the Management Agreement conforms with the policy direction set out by this effort, which is mandated by NEPA. Otherwise, what weight or authority, then, does this EIS have?	The comment is based on two inaccurate presumptions. First, the commenter states, in reference to ESA approval, that "NMFS has given a Section 4(d) limit on take prohibitions for the US v. Oregon Management Agreement" this assertion is inaccurate. NMFS has not provided an ESA section 4(d) limit on take prohibitions associated with the *U.S. v. Oregon* Management Agreement. To date, ESA review of the Management Agreement has occurred via biological opinions. The current biological opinion, like the Management Agreement, expires in 2017. Second, the commenter appears to conflate the unique purposes and standards of NEPA and ESA. As stated in the final EIS and Global Response 2.c, Scope should focus on hatchery funding decisions, not on future ESA determinations, NEPA and ESA have distinct purposes and standards. Accordingly, and most importantly, a policy direction defined under NEPA to inform the disbursement of Mitchell Act monies does not necessarily equate to a certain production level authorized under ESA or another law. Regarding the commenter's assertions about the utility of the EIS, the EIS is a programmatic review designed for NMFS planning purposes. According to Council on Environmental Quality regulations, "The NEPA process is intended to help public officials make decisions that are based on understanding of environmental consequences, and take actions that protect, restore, and enhance the enviroment" (40 CFR 1500.1(c)). Furthermore, NEPA regulations state "Agencies shall prepare [environmental impact] statements on broad actions so that they are relevant to policy and are timed to coincide with meaningful points in agency planning and decisionmaking" (40 CFR 1502.4 (b)). This EIS review is intended to ahere to these NEPA polies by presenting full public disclosure of options available to NMFS to make future policy decisions regarding Mitchell Act hatchery funding, and related environmental

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED)

Letter/ Comment #	Comment	Response
		consequences. The EIS is to be used as a planning tool.
30/12	Section 1.7.3. This is not a very clear synopsis of the Clean Water Act, and is incorrect in places. For example, lines 4-5 state that each state "approves" NPDES applications. Idaho does not have CWA Section 402 authority the USEPA issues NPDES permits for Idaho. More importantly, this section limits the CWA to "protecting water quality." While the Act does that, it also is a tool for protecting and restoring fish and wildlife. For example, protection of "beneficial uses" is a provision of each state's water quality standards (and Tribes, where Tribes have adopted their own standards). Although this provision has not been fully utilized, it remains a feature of state law that applies to hatchery facilities. This section and this DEIS should take a more expansive view of the Clean Water Act and determine the extent to which hatchery programs are impeding or advancing the attainment of Clean Water Act goals (cf. Hersh 2009).	The EIS has been revised in response to the comment. The Clean Water Act is now in Section 1.7.9. Language describing the CWA has been expanded to clarify the state-level regulation issue pointed out by the commenter. Additionally, please refer to Section 3.6, Water Quality and Quantity, for a more detailed description of CWA requirements related to hatchery facility operations.
30/13	Section 2.4 describes the development of the alternatives. The end of that section (page 2-14) lists a number of "goals and/or principles" that each alternative (policy direction) considers. However, the first goal listed is the use of weirs to control the number of hatchery-origin fish on the spawning grounds. As will be discussed below, the EIS fails to fully consider all of the measure that could be taken to reduce the negative impact of hatchery fish.	See Global Response 6: Comments Addressing the Range of Draft EIS Alternatives.
30/14	Section 2.5. Alternatives Analyzed in Detail. The DEIS offers a list of artificially constructed alternatives, including one extreme of no Mitchell Act hatcheries, and three (Alternatives 3-5) that involve minor reductions in hatchery releases and the adoption of simple performance standards for segregated and integrated hatchery programs that provide no meaningful assurance of achieving reductions in hatchery impacts on listed populations sufficient to assure recovery.	Comment noted.
30/15	In fact, even if the efficacy of the performance standards is assumed, NFMS did not construct an alternative that would have maximized the benefit to listed species using those standards. Alternative 3 has the intermediate performance standard for both recovery domains. Alternative 4 has the	See Global Response 1: Comments Stating a Preference (Preferences) and/or Ideas for the EIS Preferred Alternative.

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED).

Letter/ Comment #	Comment	Response
	"stronger" performance measure for the Willamette/Lower Columbia (W/LC) recovery domain and the "intermediate" measure for the Interior Columbia (IC). Alternative 5 applies the intermediate for the W/LC and the stronger for the IC. Why did NMFS not develop an alternative that includes the "stronger" performance measure for both recovery domains? Why are the "stabilizing populations" completely ignored in any alternative (although some positive gains are realized by stabilizing populations, the effect is incidental; there is no alternative that includes greater protection for stabilizing populations). By failing to do so, NFMS has failed in its Section 7(a)(1) ESA obligation. This is particularly well-illustrated by Table 2-10. Alternative 1 reflects the current status of the various populations. Discounting the stabilizing populations, currently 38 of 82 populations (primary and contributing) currently meet the stronger performance standard in the W/LC recovery domain, or 46%. The status quo in the IC recovery domain is 52/97 or 54%. The alternatives do little to improve this situation. Alternative 4 imposes the stronger performance standard on the W/LC and that improves the 46% to 78%. But the IC recovery domain barely improves under Alternative 4, to 57%, and increase of only 3%. Alternative 5 improves the W/LC to 59% and the IC to 82%. Again, the EIS needs an alternative that imposes the stronger performance standards on both recovery domains. The vast majority of stabilizing populations remain heavily impacted by hatchery programs and the EIS needs an alternative that improves conditions in these populations.	
30/16	Alternatives 3, 4, and 5 will provide little, if any additional assurance that harmful impacts from artificial production will be reduced sufficiently to assure recovery. These alternatives rely on simple, quantitative performance metrics, one (PNI) for integrated programs and one (pHOS) for segregated programs that are presumed to appropriately limit deleterious genetic impacts of hatchery fish interactions with wild fish. Of particular concern is the performance metric for integrated programs.	See Global Response 7.a, Confusion between the alternatives and the implementation scenarios. Additionally, please see Appendix I, RIST 2009, for a review of application of hatchery reform science.

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED)

Letter/ Comment #	Comment	Response
	Reliance on the arbitrarily-chosen values of PNI (0.5 and 0.7) is of great concern in view of the considerable recent and proposed expansion of integrated programs in the CR, despite the clear recommendation of the ISAB in 2003, 2005 to not expand hatchery programs or production in the CR until a proper region-wide evaluation of integration/supplementation had been conducted. This much-needed evaluation has not yet been started, much less completed. PNI lacks empirical validation and its suitability as a performance standard is currently based entirely on theoretical genetic considerations. These theoretical considerations provide expectations as to the levels of relative fitness of wild and hatchery fish (measured as SAR, spawner-to-adult recruit, values) attained in the long run by integrated programs that achieve specific levels of PNI. This long run is on the order of 50 generations or over 200 years for steelhead and chinook salmon. At the end of such time, a selection equilibrium is expected to be attained at which the SAR's of first generation hatchery adults spawning in the wild and naturally spawning fish will be equal. However, this says nothing about the absolute levels of the SARs at this future time when equilibrium is attained. Most importantly, the theoretical equilibrium has nothing to do with whether or not the SARs of natural spawning fish are sufficient to sustain the wild population in the absence of hatchery supplementation. Yet, it is this latter point that is of greatest importance to the recovery of listed populations. In fact, naturally spawning fitness after several generations of integration is almost guaranteed to be lower than it was when integration began, and could be half or less of what it was depending on the broodstock collection protocols as well as other key factors (see Goodman 2005). In brief, by its very nature, the hypothesis that high PNI values will result in equal fitness of hatchery and wild spawners at some future date when equilibrium is attained cannot be evaluated empirically in the short run in which it is being applied. And, even if it were assured that equal fitness will be attained at that future time, there is no reason to believe that the resulting level of wild fitness that results will be sufficient to assure	

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED).

Letter/ Comment #	Comment	Response
	population persistence (i.e., recovery). The alternative to reliance on such questionable and unverifiable a performance metric is to establish firm minimal life-stage specific transition (survival) rates that assure SARs greater than 1. NMFS' refusal to identify and employ such metrics and to rely instead on an inappropriate metric like PNI suggests that NMFS is not willing to hold hatchery programs to readily measurable standards that assure the preservation and recovery of wild CR salmon and steelhead.	
30/17	While there are good reasons and empirical evidence to support the general recommendation to keep pHOS low, there is considerably less information about absolute threshold values, such as 0.05 or 0.10 contained in alternatives 3 – 5. At best, the values contained in alternatives 3 -5 should be regarded as maximum values.	Comment noted.
30/18	Box 2-9 discusses weirs, and although it discusses the negative ecological and recreational aspects of weirs, it also says that the EIS "does not intend to fulfill any required environmental review associated with weir installation." Ecological and recreational costs associated with weir installation are separate from the costs associated with operation. Box 2-9 also speaks to the efficiency of permanent weirs at catching targeted fish (estimated at <95%) vs. a seasonal weir (estimated at <60%). The efficiency of these structures at disrupting migration and movement of wild fish is not discussed, although relevant literature documents the avoidance of instream structures by wild fish. An EIS that purports to set a "policy direction" but does not fully discuss the costs associated with one of the "goals and/or principles" that is a major part of almost every action alternative is not a complete nor relevant EIS. This EIS needs to fully recognize the adverse effects of weirs on wild fish, wildlife, and the overall ecological health of the watershed.	Information addressing this comment is included in the EIS. Please see Section 3.2.3.1.1.3, Current Approaches for Reducing Risks to Genetic Diversity, for a summary of risks to natural-origin fish as a result of weirs. These risks are also discussed throughout Section 4.2.3, Effects on Salmon and Steelhead.
30/19	Chapter 3, Affected Environment, speaks to the risk to fish from the hatchery programs. Section 3.2.3.1.2 is entitled "Current Approaches for Reducing Genetic Risks." Besides weirs, this section (page 3-6) also lists four other measures that can be taken to reduce genetic risk. Of those four (reduce number of hatchery fish produce; increase wild fish numbers	The EIS has been updated in response to this comment. Please see the updated and expanded Section 3.2.3.1.1.3, Current Approaches for Reducing Risks to Genetic Diversity. The specific actions to reduce pHOS have been expanded to include the following:

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED)

Letter/ Comment #	Comment	Response
	through habitat restoration; change hatchery smolt release timing; and implement selective fisheries), it appears that the only one outside the scope of this EIS is the increase of wild fish numbers through habitat restoration. Hatchery programs certainly have the ability to reduce the numbers they produce and modify the release of smolts. And it is not unreasonable to think that the hatchery system as a whole – the managers of all the hatchery programs – can implement greater use of selective fisheries because these same entities manage the harvest program. Excess hatchery fish are a problem, yet here NMFS thinks the only "goal and/or principle" worth considering in the alternatives is a greater use of weirs, which exact a cost from wild fish and their associated ecosystems. Reducing numbers of fish, and changing hatchery techniques, however, are two measures that put the burden of finding a solution for the problem of excess fish squarely onto the shoulders of the creators of the problem – the hatchery programs themselves.	• Improve factors limiting the productivity of the natural population to increase the number of natural-origin fish. • Reduce the number of juveniles released. • Increase the number of natural-origin fish produced through habitat restoration actions. • Release hatchery-origin smolts so that when they return as adults, they will return to the hatchery facility and not to natural spawning areas. • Implement selective fisheries to target hatchery-origin fish. • Operate weirs to trap and remove hatchery-origin fish before they spawn naturally.
30/20	We have developed a table (Table 1) of that describes the bearer of the costs associated with each of the measures described on lines 3-9, page 3-6. This table only discusses the costs and benefits to three affected environmental components, fish, wildlife, and water quality and quantity. We urge NFMS to complete such a table for all affected environmental components that evaluates the costs and benefits of all the measures that can be implemented to reduce the hatchery-origin fish on the spawning grounds, and then develop alternatives using all of these measures.	Thank you for your comment and the information you've provided. Please see Table 4-2, Table 4-84, Table 4-98, Table 4-103, Table 4-105, and Table 4-105 for a summary of the effects of each potential measure on fish, socioeconomics, environmental justice, wildlife, water quality and quantity, and human health (respectively). Details of the effects are further discussed within each resource's Chapter 4 section.
30/21	Sections 3.2.3.1.3 and 3.2.3.1.4 discuss hatchery facility risks and ways in which to reduce the risks. These sections speak mostly to water quantity and water quality issues, although the discussion is incomplete. While it may be true that "100% percent of the hatchery facilities… operate within the limits established in NPDES permits" (lines 17-18, p. 3-11), some of the facilities have antiquated permits, or have only recently had their permits re-issued. The old permit limits do not reflect current water quality conditions or modern technology. For example, the Leavenworth National Fish Hatchery discharges phosphorus and contributes to water quality exceedences in Icicle Creek and the Wenatchee River (WDOE 2009). The	The EIS does make the statement "Currently, all hatchery facilities that require NPDES permits operate within the limits established in the permits (Table 3-6)," in Section 3.2.3.1.3. The section also refers the reader to Section 3.6, Water Quality and Quantity, for more information on hatchery facility effects on water quality and quantity.

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED).

Letter/ Comment #	Comment	Response
	NPDES permit, which expired in 1979, has not yet been renewed. Even if the hatchery is complying with its "current" permit, that permit's effluent limitations have no relevance to the current ambient conditions. There may be other examples, but it is beyond the scope of Wild Fish Conservancy to point out to NMFS every exception.	
30/22	In addition, the IHOT reference given on line 18 (p 3-10) does not give effluent guidelines for hatcheries, except insofar that it states that hatcheries should comply with their NPDES permits. The description given in this section is so general and full of circular references that it is of little value.	NMFS deleted the last sentence in this paragraph because it was not accurate. Please see changes in Section 3.2.3.1.2, Hatchery Facility Risks.
30/23	The statement that only 71% of hatcheries currently allow "all migrating species of all ages" to pass through hatchery-related structures causes great concern insofar as this document promotes the construction and operation of additional weirs. And just as we are not confident that compliance with NPDES permits means that hatchery facilities have little impact on water quality, we must question not just the 71% passage number, but also the accuracy of any measure of wild fish passage by hatchery managers that have traditionally been less-than-attentive to ecosystem conditions that do not affect hatchery operations. Actual fish passage at these facilities might be very much less than 71%. In fact, many hatchery programs and facilities still believe that blocking wild fish passage is desirable from a hatchery management point of view.	Thank you for your comment. The EIS recognizes that weirs are one potential implementation measure that has been and could be employed to reduce the number of hatchery-origin spawners, when necessary. The EIS does not promote the use of weirs, as evidenced by the fact that three of the six alternatives assume no additional seasonal weirs, and four of the six alternatives assume no additional permanent weirs. The fact that not all of the hatchery facilities (only 71%) allow for fish to migrate through or be passed through the facility is of concern to NMFS as well. That is why all of the action alternatives (Alternative 2 through Alternative 6) include implementation of BMPs for facilities, which include correcting issues with fish passage related to facility operations.
30/24	Sections 3.2.3.1.6 and 3.2.3.1.8 discuss competition and predation risks. The statement in bullet 4 of 3.2.3.1.8 – "Minimize size differences between hatchery-origin fish and their natural-origin counterparts" fails to specify the quantitative limits (maximum size difference between H and W smolts) required to achieve an appropriately low risk. Nor are there any standards stated or recommended for % residualization of coho, chinook, and steelhead. Appropriate, risk-averse standards for the maximum allowable percentage or number of residualized hatchery smolts in local rearing habitats need to be established and required.	Thank you for your comment. The commenter is correct that the description of current approaches to reducing risks of predation and/or competition lack specificity. However, the EIS is not proposing to develop prescriptive operational standards for hatcheries. These sections simply describe current, generalized approaches for reducing the various risks associated with hatchery programs.
30/25	Short of terminating hatchery programs, the best way to minimize the risk of competition and predation between wild and hatchery-origin fish is to	The purpose of the EIS is not to prescribe specific, broadly-applied operational strategies. These strategies are best decided

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED)

Letter/ Comment #	Comment	Response
	raise hatchery smolts so that the distribution of size-at-release mirrors that of wild conspecifics ("natural smolt template"). The DEIS should recommend the implementation of a "natural smolt template". The natural smolt template was recommended by the HSRG as a standard early in its review of Puget Sound hatchery programs and then dropped without explanation. This standard should at least be the default requirement for all hatchery programs in the CR basin in the absence of program and release-site specific data showing that release of larger hatchery smolts measurably reduces competition during the outmigration without incurring residualization. Residualization of large hatchery spring chinook smolts is a common problem in many programs in the basin and should be avoided at all costs. We recognize that implementing a natural smolt template will likely result in reduced survival to adult return for many programs relative to current practices. Nonetheless, this should be the problem of the hatchery programs, not the wild listed fish that suffer competition and predation from hatchery smolts released at sizes larger-than the average size of wild conspecifics.	at the local, program-specific operation level.
30/26	Section 3.2.3.1.11 discusses fisheries that target hatchery-origin fish. We believe that selective fisheries are an under-utilized technique that can appreciably reduce the number of hatchery-origin fish reaching spawning grounds. If the recovery of ESA-listed populations in the CR basin is to be pursued alongside the production of large numbers of hatchery fish for harvest, it is essential that fisheries become entirely selective. Most important, commercial and tribal fisheries need to transition rapidly to selective gear, capable of permitting the safe release of all non-target species, including ESA-listed salmon, steelhead, and bull trout. Requirements for achieving the transition to selective fisheries include: • Marking of all hatchery-produced fish, including progeny from integrated production programs if any of those progeny are intended to be harvested. • Management of all fish produced by segregated programs as distinct species and all harvest directed only at these species.	Comment noted.

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED).

Letter/ Comment #	Comment	Response
	• Tailoring the production of segregated programs to the capacity of all (selective) fisheries to capture all but the minimal escapement to hatchery racks necessary to sustain the needed level of production • Management of all integrated programs to achieve PNI >= 0.7 with zero harvest on natural-origin adults, and a target pNOB = 1.0. Until the conditions for the conduct of a basin-wide evaluation of the supplementation (integration) conservation hypothesis have been implemented, reliance on PNI as a performance or monitoring metric should require a minimum of 0.7 with a universal goal of achieving pNOB = 1 (100% natural-origin adults in the annual broodstock). The combination of zero harvest on returning NOR adults combined with a pNOB = 1 in integrated programs provides the greatest assurance that the inevitable fitness decline due to integration will be kept to a minimum (Goodman 2005). In addition, all integrated programs should be required to attain average annual smolt-to-adult survival equal to that of local wild conspecifics, in order to insure that the fitness of integrated hatchery progeny is equal to that of the target local wild population at least over this significant life-stage. • Funding assistance to tribal and non-tribal commercial fishers to facilitate the timely transition to selective fishing gear • Funding for buyout of tribal and non-tribal commercial fishers to reduce fishing power so as to bring the fishing power of the new selective fishery regime into balance with the revised segregated hatchery production levels necessary to achieve compliance with the ESA-based standards of the EIS. • Develop criteria by which mitigation credits can be earned by contributing to fund the transition to selective gear or to fund the buyouts. For example, requiring upper Columbia PUD's to fund selective fishing projects will arguably contribute more to recovery as well as to the development of sustainable upper basin fisheries than requiring contributions for hatchery and tributary habitat projects. Such mitigation funding should at least be evaluated.	

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED)

Letter/ Comment #	Comment	Response
30/27	The characterization of 'mitigation' Section 4.1.2 makes no reference to any minimal number of hatchery fish that must be produced. Rather, mitigation "is in the form of …BMPs applied to hatchery programs throughout the basin under all alternatives" (page 4-2). It is, therefore, entirely within NMFS' purview to require compliance with ESA standards that insure no take and no jeopardy. As we argue throughout, this is the approach that NMFS should adopt for the EIS.	Please see revised Section 4.1.2, Mitigation. Mitigation includes actions that avoid the potential impact, minimize the impact, rectify the impact, reduce or eliminate the impact, and/or compensate for the impact by replacing or providing substitute resources (40 CFR 1508.20). In Section 4.1.2, Mitigation, NMFS describes mitigation measures to reduce or eliminate the risks of hatchery programs.
30/28	Tables 4-2 through 4-4 are less useful than they could be. We suggest rather than a simple "x" to denote whether a particular implementation measure affects a "salmon and steelhead" indicator (Table 4-4), that NMFS determine whether the affect is positive, negative, or neutral for the indicator. For example, in Table 4-4, the genetic risks to wild fish are decreased if there is a reduction in hatchery production. Without additional detail regarding how things are affected, rather than just whether they are affected, it is difficult to properly assess the effects.	We disagree. Specific implementation measures (e.g., change production levels in hatchery programs) can cause positive, negative, or neutral effects depending on the specific hatchery program, the populations the hatchery program may affect, and the specific change in production level that is being proposed.
30/29	We are concerned with the number of weirs proposed under Alternatives 3-5 (Table 4-6); as discussed above, we do not believe that this DEIS sufficiently describes the ecological costs of fish passage barriers.	The EIS has been revised in response to the comment. Please see updated and expanded Section 3.2.3.1.1.3, Current Approaches for Reducing Risks to Genetic Diversity, for a more thorough description of the effects of weir implementation.
30/30	Table 4-8. It reveals that NMFS should craft an alternative that actually results in significantly greater numbers of natural origin fish. This table also needs a breakdown by recovery domain.	See Global Response 6: Comments Addressing the Range of Draft EIS Alternatives.
30/31	As we stated above, an alternative that calls for the stronger performance measure in both recovery domains is lacking from the DEIS, and that may in fact result in higher numbers of natural origin fish.	See Global Response 1: Comments Stating a Preference (Preferences) and/or Ideas for the EIS Preferred Alternative.
30/32	We concur with the comments submitted by the Native Fish Society regarding the elements of a basic hatchery policy alternative, and repeat them here for emphasis. These should form the basis around which a completely revised DEIS should be developed. 1. keep wild and hatchery spawners separated 2. set specific ecological impact criteria for each hatchery on wild fish 3. establish selective harvest on hatchery fish that does least harm to	See Global Response 1: Comments Stating a Preference (Preferences) and/or Ideas for the EIS Preferred Alternative.

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED).

Letter/ Comment #	Comment	Response
	wild fish 4. establish spawner abundance objectives by species in each watershed for wild fish 5. establish nutrient targets for each watershed from salmon carcasses 6. designate wild salmonid management watersheds in each ESU 7. evaluate the benefit cost and cost effectiveness annually of each hatchery program 8. determine the cost to catch for each hatchery program annually 9. direct the independent economic advisory board to complete an economic review of each hatchery program in the Columbia River Basin and Puget Sound. 10. develop and implement a wild salmonid management plan for each watershed with measurable criteria for diversity, distribution, productivity, viability, and abundance. 11. evaluate hatcheries on contribution to fisheries and establish a minimum contribution rate for hatchery fish that optimizes funding investment while protecting wild fish from hatchery and harvest impacts. 12. require all hatchery fish to be externally marked and provide an internal tag to identify the hatchery of origin. 13. establish a basin wide stock transfer policy to regulate the movement of fish and eggs among populations and ESUs/DPSs. 14. require all hatchery origin fish be kept in sport fisheries. 15. fully integrate agency management structure on harvest, hatchery and wild salmonid management. 16. restructure management so that harvest and hatchery programs support natural production objectives in the Columbia River basin. 17. require barbless hooks in all recreational fisheries in the Columbia River basin to reduce harm in mixed stock fisheries on wild juvenile and adult salmonids. 18. develop selective fisheries to maximize harvest of hatchery fish and minimize harm to wild fish in mixed stock commercial and recreational fisheries. 19. operate hatcheries so that hatchery effluent is regulated consistent	

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED)

Letter/ Comment #	Comment	Response
	with the Clean Water Act. 20. reduce hatchery production, evaluate stray rates of hatchery fish and implement measures to reduce strays.	
30/33	We would add the following to this list: 21. eliminate production facilities from tributary basins and relocate them on the Columbia River mainstem. 22. implement the recommendations in the ISAB's 2003 Review of supplementation programs in the Columbia Basin and the Salmon Recovery Science Review Panel's similar recommendations regarding the statistical design necessary to evaluate supplementation programs in the basin, including closing facilities if necessary to create appropriate unsupplemented reference populations.	See Global Response 1: Comments Stating a Preference (Preferences) and/or Ideas for the EIS Preferred Alternative.
31/1	Our group 'Artists4Action' would like to express strong dissatisfaction with your proposed actions, and we would like our comments to be included and addressed by you.	Comment noted
31/2	Our group has been researching the proposed alternatives, and we would like to start by expressing our dissatisfaction with your DEIS on several levels. You have lost a great opportunity to gain a thorough understanding of Hatchery impacts on listed ESA species.	Comment noted
31/3	We believe you should completely abandon these current inadequate efforts and initiate a more comprehensive approach that focuses on real 'Recovery' of wild Salmon.	See Global Response 3: Comments Addressing the EIS Process.
31/4	We believe that the approach adopted by NMFS in the DEIS squanders a valuable opportunity to acquire a comprehensive understanding of the impact of hatchery programs on Columbia River salmon and steelhead. The approach should be entirely abandoned in favor of a more comprehensive approach that is focused on recovery of ESA-listed salmonids and protection of other wild salmonid stocks. Over the last decade there has been a significant documentation of the fact that:	The commenter does not provide enough information to explain the comment. However, to the extent that the commenter suggests the need for a comprehensive understanding of the impact of hatchery programs, this is the noted purpose of the EIS. It is intended to disclose the resource effects, including those on all salmon and steelhead populations, of a wide range of hatchery alternatives focused on risk reduction. Also unclear to NMFS is the context of the quoted language in the comment.

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED).

Letter/ Comment #	Comment	Response
	"Hatchery programs are among the significant factors that contributed to the population declines that led to the current listings and that continue to impede the rebuilding of wild populations." As such, any 'reform' should move to rectify the harmful impacts to wild populations of hatchery programs and practices. Many elements of your proposed hatchery reform follow guidelines that are of questionable validity where the fitness of wild populations is concerned.	
31/5	*** And an important fact that you seem to be neglecting is that the US District Court of Oregon still is reviewing your remanded FCRPS Biological Opinion; you should wait until their decision is in.	Comment noted.
31/6	You have missed a key opportunity for NMFS and the region to thoroughly re-evaluate the approach to mitigation of the hydropower system that has resulted in the region's excessive reliance on artificial production and to assess the extent to which continuation of this approach is consistent with the recovery of listed salmon and steelhead. -Are hatchery programs the best way to mitigate for the loss and degradation of salmonid habitat caused by the construction of dams? We believe that this may best be a task for a **Congressionally- mandated independent review by the National Academy of Science**. In the final EIS, NMFS should request such a review. Such analyses are needed in order to identify an appropriate policy for the distribution of MA hatchery funds. An independent and comprehensive economic analysis of the costs and benefits of hatchery programs that includes a full accounting of costs imposed on the recovery of listed populations is an essential feature of the required comprehensive analysis. The public needs to know what numbers of hatchery fish must be produced in order to satisfy mitigation obligations. Then it can be determined whether mitigation obligations can be satisfied consistent with the recovery of ESA-listed populations.	See Global Response 4: Comments Asserting and Referring to the Mitchell Act's Mitigation Obligation or Calling for NMFS to Define the Obligation.

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED)

Letter/ Comment #	Comment	Response
31/7	You should also include a recognition of the unsustainability of the non-selective fishery techniques employed by non-tribal commercial and tribal fishers throughout the basin, as well as in the ocean. Fisheries must transition rapidly to selective fishing gear.	Comment noted.
31/8	There are, in addition, several relevant initiatives in the basin whose completion should be part of the necessary comprehensive review without which the EIS cannot provide the necessary policy direction. These include: • completion of Phase II of the review of Columbia River basin hatcheries by the Independent Economic Review Board, and • completion of the Artificial Production Review (APR) of CR hatchery programs, started in 1997, interrupted after 1999 and still unfinished.	The comment does not provide enough information for NMFS to evaluate the studies for use in the EIS. More information is needed to be able to respond.
31/9	Both such reviews need to be completed, and we would like again to stress that the membership of each group be completely free of conflict of interest, unlike the Hatchery Science Review Group (HSRG). An independent review panel should not tolerate membership of individuals who currently are, or in the recent past have been, responsible for management of any aspect of current CR basin hatchery or related salmon management programs, or who are or have recently been contracted for business in the basin by state, tribal, or federal fisheries agencies or related entities.	The comment does not provide enough information for NMFS to evaluate the studies for use in the EIS. More information is needed to be able to respond.
31/10	Our overall comment would be: NMFS should craft a NEW Plan, that actually results in significantly greater numbers of natural origin fish.	See Global Response 1: Comments Stating a Preference (Preferences) and/or Ideas for the EIS Preferred Alternative.
31/11	The Mitchell Act must follow the ESA Section 7 requirements, but it appears that overall, listed species in particular and wild fish in general have gotten short shrift. In the light of ESA listings and declining anadromous fish returns, little has changed. Millions of hatchery fish are released into the Columbia and its tributaries each year, exerting a negative influence on wild fish, and unsurprisingly, wild fish populations continue to decline.	Mitchell Act-funded hatchery programs are have been and will continue to be reviewed under ESA. Please see Section 1.3.3, Potential Future Decisions in Response to Hatchery Actions, for more details on requirements for hatcheries under ESA.
31/12	The second objective of the proposed action is to "inform NMFS' future review of individual Columbia River basin hatchery programs under the	See Global Response 2: Comments Addressing the Scope of This

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED).

Letter/ Comment #	Comment	Response
	ESA" (lines 15-16 on page 1-2). We don't believe that you have accomplished this goal, because it would seem that you have deliberately avoided any discussion of alternatives that would allow an evaluation of them in light of ESA requirements. To the people of the Northwest nothing is more important than effectively saving the Salmon.	EIS.
31/13	There is one part of Section 7 (a)(1) that says you must consult and recommend Conservation Recommendations, but it appears those are nothing more than a few voluntary things the action agency was doing anyway. It is unclear what steps NMFS will actually take to conserve listed species with respect to its activities relating to Mitchell Act hatcheries, so the opportunity to fulfill Section 7(a)(1) obligations has not been realized.	See Global Response 2: Comments Addressing the Scope of This EIS.
31/14	Sections 1.3.3.2 and 1.3.3.3. The DEIS discusses that hatchery programs qualify for an ESA Section 4(d) limitation (to the take prohibition for threatened species) if the program has fulfilled a number of steps. From our evaluation of NMFS' website and associated pages, it does not appear that there are valid Section 10 permits or approved HGMPs for the majority of hatchery programs. It is unclear that this DEIS can set a policy direction for NMFS if it has not completed the initial requisite ESA analyses for these hatchery programs. The final EIS should provide numbers for the hatchery programs that have current and approved HGMPs or Section 10 permits.	The commenter has not provided enough information to explain the comment. Completion of ESA analyses for each hatchery program is not required before completion of an EIS. NEPA, as a separate Federal law, requires evaluation of the effects of major Federal actions on the environment, even in the absence of regulation under other Federal laws, such as ESA. As described in Section 1.3.3, Potential Future Decisions in Response to Hatchery Actions, this EIS will not be a substitute for any ESA analyses and/or determinations.
31/15	Section 1.7.1. You need to write some teeth into your proposal as it pertains to US v Oregon Management Agreement case. It appears to give the parties free rein as to whether they will follow your recommendations. Unless you strengthen this, it would give the impression that your agreement carries little if any weight or authority to enforce the recommendations. You need a strong statement to conform with any policy directions.	NMFS has added new language to Section 1.7, Relationship to Other Plans, Regulations, Agreements, Laws, and Executive and Secretarial Orders. This revision includes a re-ordering of the individual sections. NMFS has also added new introductory language to assist the reader in understanding the relationship between these plans, regulations, agreements, laws, and executive and secretarial orders and any future Mitchell Act funding decisions which use this EIS.
31/16	Section 1.7.3. This synopsis of the Clean Water Act is incorrect in places. For example, lines 4-5 state that each state "approves" NPDES applications. Idaho does not have CWA Section 402 authority the USEPA issues NPDES permits for Idaho. And the section on 'Beneficial Uses' should clearly	The EIS has been revised in response to the comment. Section 1.7.9, Clean Water Act, has been revised to clarify NPDES permits, by state. Additionally, please see Section 3.6, Water Quality and Quantity, for a more detailed explanation of CWA

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED)

Letter/ Comment #	Comment	Response
	delineate the extent to which hatchery programs are impeding or advancing the attainment of Clean Water Act goals; and we believe these to be sizable and important!	standards and how hatchery facility operations may affect them.
31/17	Section 2.4 describes the development of the alternatives, but your EIS fails to fully consider all of the measure that could be taken to reduce the substantial negative impacts of hatchery fish.	See Global Response 6: Comments Addressing the Range of Draft EIS Alternatives.
31/18	Section 2.5. Alternatives Analyzed in Detail. The DEIS offers a list of artificially constructed alternatives, including one extreme of no Mitchell Act hatcheries. We believe that this alternative should be taken seriously, and the economic and social impacts of cessing such harmful operations must be taken fully into account. We see no documentation of the monetary expenditures that could be saved if this alternative were seriously considered. In these difficult economic times, spending millions on FAILED schemes seems counter-productive and wasteful. We suggest that you need to RE-do this whole effort, and when you do please include ALL interested parties, and compile all economic ramifications of such. We can't afford to keep funding FAILED FIXES.	Thank you for your comment. NMFS does not understand the call for taking the alternatives "seriously." All of the alternatives are analyzed for their effects equally. With regard to the economic impacts of the alternatives, see Table 4-100 Estimates of Annual Hatchery Facility Costs (millions of U.S. dollars) by Alternative.
31/19	As pertains to the lower Columbia and Willamette sections, we would like to ask why NMFS did not develop an alternative that includes the "stronger" performance measure for both recovery domains? Why are the "stabilizing populations" completely ignored in any alternative (although some positive gains are realized by stabilizing populations, the effect is incidental; there is no alternative that includes greater protection for stabilizing populations). By failing to do so, NFMS has failed in its Section 7(a)(1) ESA obligation. This is particularly well-illustrated by Table 2-10. Alternative 1 reflects the current status of the various populations. Discounting the stabilizing populations, currently 38 of 82 populations (primary and contributing) currently meet the stronger performance standard in the W/LC recovery domain, or 46%. The status quo in the IC recovery domain is 52/97 or 54%. The alternatives do little to improve this situation. Alternative 4 imposes the stronger performance standard on the W/LC and that improves the 46% to 78%. But the IC recovery domain barely improves under Alternative	See Global Response 1: Comments Stating a Preference (Preferences) and/or Ideas for the EIS Preferred Alternative. Additionally, see Global Response 6: Comments Addressing the Range of Draft EIS Alternatives. Also, see Section 3.2, Fish, for updated baseline information in the final EIS, including updated estimates of natural-origin populations currently meeting performance goals.

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED).

Letter/ Comment #	Comment	Response
	4, to 57%, and increase of only 3%. Alternative 5 improves the W/LC to 59% and the IC to 82%. Again, the EIS needs an alternative that imposes the stronger performance standards on both recovery domains. The vast majority of stabilizing populations remain heavily impacted by hatchery programs and the EIS needs an alternative that improves conditions in these populations.	
31/20	Alternatives 3, 4, and 5 will provide little, if any additional assurance that harmful impacts from artificial production will be reduced sufficiently to assure recovery. These alternatives rely on simple, quantitative performance metrics, one (PNI) for integrated programs and one (pHOS) for segregated programs that are presumed to appropriately limit deleterious genetic impacts of hatchery fish interactions with wild fish. Of particular concern is the performance metric for integrated programs. Reliance on the arbitrarily-chosen values of PNI (0.5 and 0.7) is of great concern in view of the considerable recent and proposed expansion of integrated programs in the CR, despite the clear recommendation of the ISAB in 2003 & 2005 to not expand hatchery programs or production in the CR until a proper region-wide evaluation of integration/supplementation had been conducted. This much-needed evaluation has not yet been started, much less completed. The theoretical equilibrium you say will follow, really has nothing to do with whether or not the SARs of natural spawning fish are sufficient to sustain the wild population in the absence of hatchery supplementation. Yet, it is this latter point that is of greatest importance to the recovery of listed populations. By its very nature, the hypothesis that high PNI values will result in equal fitness of hatchery and wild spawners at some future date when equilibrium is attained cannot be evaluated empirically in the short run, even if it were assured that equal fitness will be attained at that future	See Global Response 7: Comments Addressing the Analysis within the EIS and See Global Response 2: Comments Addressing the Scope of This EIS. Additionally, see expanded language is Section 3.2.3.1, General Risks and Benefits of Hatchery Programs to Salmon and Steelhead Species.

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED)

Letter/ Comment #	Comment	Response
	In fact, naturally spawning fitness after several generations of integration is almost guaranteed to be lower than it was when integration began, and could be half or less of what it was depending on the broodstock collection protocols as well as other key factors. We take issue with your reliance on such questionable and unverifiable performance standards. NMFS' refusal to identify and employ adequate measures is disappointing; and to rely instead on an inappropriate metric like PNI suggests that NMFS is not willing to hold hatchery programs to readily measurable standards that assure the preservation and recovery of wild CR salmon and steelhead. In summary, there appears to be no reason to believe that the resulting level of wild fitness will be sufficient to assure population persistence (i.e., recovery).	
31/21	Box 2-9 discusses weirs, and although it discusses the negative ecological and recreational aspects of weirs, it also says that the EIS "does not intend to fulfill any required environmental review associated with weir installation"; - but these impacts could be significant! There are indeed ecological and recreational costs associated with the use of weirs. The efficiency of these structures at disrupting migration and movement of wild fish is not discussed, although relevant literature documents the avoidance of instream structures by wild fish. An EIS that purports to set a "policy direction" but does not fully discuss the costs associated with one of the "goals and/or principles" that is a major part of almost every action alternative is not a complete nor relevant EIS. This EIS needs to fully recognize the adverse effects of weirs on wild fish, wildlife, and the overall ecological health of the watershed.	See Global Response 6h: Comments addressing The use or prohibition of weirs should not be a component of the alternatives. Additionally, see Section 3.2.3.1.1.3, Current Approaches for Reducing Risks to Genetic Diversity, for a summary of risks to natural-origin fish as a result of weirs. These risks are also discussed throughout Section 4.2.3, Effects on Salmon and Steelhead.
31/22	Chapter 3, Affected Environment, speaks to the risk to fish from the hatchery programs. Section 3.2.3.1.2 is entitled "Current Approaches for Reducing Genetic Risks." Besides weirs, this section (page 3-6) also lists four other measures that can be taken to reduce genetic risk. Of those four (reduce number of hatchery fish produce; increase wild fish numbers	Thank you for your comment. Please see the updated and expanded Section 3.2.3.1.1.3, Current Approaches for Reducing Risks to Genetic Diversity. The specific actions to reduce pHOS have been expanded to include the following: • Improve factors limiting the productivity of the natural

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED).

Letter/ Comment #	Comment	Response
	through habitat restoration; change hatchery smolt release timing; and implement selective fisheries), it appears that the only one outside the scope of this EIS is the increase of wild fish numbers through habitat restoration. Hatchery programs certainly have the ability to reduce the numbers they produce and modify the release of smolts. And it is not unreasonable to think that the hatchery system as a whole -- the managers of all the hatchery programs – can implement greater use of selective fisheries because these same entities manage the harvest program. **Excess hatchery fish are a problem, yet here NMFS thinks the only "goal and/or principle" worth considering in the alternatives is a greater use of weirs, which exact a cost from wild fish and their associated ecosystems.** **Reducing numbers of fish, and changing hatchery techniques, however, are two measures that put the burden of finding a solution for the problem of excess fish squarely onto the shoulders of the creators of the problem – the hatchery programs themselves.** We urge NFMS to fully address all affected environmental components that evaluates the costs and benefits of all the measures that can be implemented to reduce the hatchery-origin fish on the spawning grounds, and then develop alternatives using all of these measures.	population to increase the number of natural-origin fish. • Reduce the number of juveniles released. • Increase the number of natural-origin fish produced through habitat restoration actions. • Release hatchery-origin smolts so that when they return as adults, they will return to the hatchery facility and not to natural spawning areas. • Implement selective fisheries to target hatchery-origin fish. Operate weirs to trap and remove hatchery-origin fish before they spawn naturally.
31/23	Sections 3.2.3.1.3 and 3.2.3.1.4 discuss hatchery facility risks and ways in which to reduce the risks. These sections speak mostly to water quantity and water quality issues, although the discussion is incomplete. While it may be true that "100% percent of the hatchery facilities… operate within the limits established in NPDES permits" but we do not believe this sufficiently protects wild fish. For example, the Leavenworth National Fish Hatchery discharges phosphorus and contributes to water quality exceedences in Icicle Creek and the Wenatchee River. Their NPDES permit, which expired in 1979, has not yet been renewed. Even if the hatchery is complying with its "current" permit, that permit's effluent limitations have no relevance to the current	See Section 3.6.3.2.1, Federal Regulations, for an expanded and updated section on the regulation of hatchery program effluent and its standards.

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED)

Letter/ Comment #	Comment	Response
	ambient conditions.	
31/24	In addition, the IHOT reference given on line 18 (p 3-10) does not give effluent guidelines for hatcheries, except insofar that it states that hatcheries should comply with their NPDES permits.	The EIS has been revised to address the comment. The noted statement been removed. Please see revised Section 3.2.3.1.2, Hatchery Facility Risks.
31/25	The description given in this section is so general and full of circular references that it is of little value.	Comment noted.
31/26	The statement that only 71% of hatcheries currently allow "all migrating species of all ages" to pass through hatchery-related structures causes great concern insofar as this document promotes the construction and operation of additional weirs. And just as we are not confident that compliance with NPDES permits means that hatchery facilities have little impact on water quality, we must question not just the 71% passage number, but also the accuracy of any measure of wild fish passage by hatchery managers that have traditionally been less-than-attentive to ecosystem conditions that do not affect hatchery operations. Actual fish passage at these facilities might be very much less than 71%. In fact, many hatchery programs and facilities still believe that blocking wild fish passage is desirable from a hatchery management point of view.	Thank you for your comment. The EIS recognizes that weirs are one potential implementation measure that has been and could be employed to reduce the number of hatchery-origin spawners, when necessary. The EIS does not promote the use of weirs, as evidenced by the fact that three of the six alternatives assume no additional seasonal weirs, and four of the six alternatives assume no additional permanent weirs. The fact that not all of the hatchery facilities (only 71%) allow for fish to migrate through or be passed through the facility is of concern to NMFS as well. That is why all of the action alternatives (Alternative 2 through Alternative 6) include implementation of BMPs for facilities, which include correcting issues with fish passage related to facility operations.
31/27	Sections 3.2.3.1.6 and 3.2.3.1.8 discuss competition and predation risks. "Minimize size differences between hatchery-origin fish and their natural-origin counterparts" fails to specify the quantitative limits (maximum size difference between H and W smolts) required to achieve an appropriately low risk. Nor are there any standards stated or recommended for % residualization of coho, chinook, and steelhead. You should've proposed appropriate, risk-aversion standards for the maximum allowable percentage or number of residualized hatchery smolts in local rearing habitats need to be established and required. At a bare minimum the DEIS should recommend the implementation of a "natural smolt template". The natural smolt template was recommended by the HSRG as a standard early in its review of Puget Sound hatchery programs -and then dropped without explanation. This standard should at least be the default requirement for all hatchery programs in the CR basin	Thank you for your comment. The commenter is correct that description of current approaches to reducing risks to predation and/or competition lack specificity. However, the EIS does not propose to develop prescriptive operational standards for hatcheries. These sections simply describe current, generalized approaches for reducing the various risks associated with hatchery programs.

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED).

Letter/ Comment #	Comment	Response
	in the absence of program and release-site specific data showing that release of larger hatchery smolts measurably reduces competition during the outmigration without incurring residualization. Residualization of large hatchery spring chinook smolts is a common problem in many programs in the basin and should be avoided at all costs. Even though implementing a natural smolt template will likely result in reduced survival to adult return for many programs, this should be the problem of the hatchery programs, not the wild listed fish that suffer competition and predation from hatchery smolts released at sizes larger-than the average size of wild conspecifics.	
31/28	We would suggest that <u>it would be much more efficient for you to terminate your current hatchery programs.</u>	Comment noted.
31/29	Section 3.2.3.1.11 discusses fisheries that target hatchery-origin fish. We believe that selective fisheries are an under-utilized technique that can appreciably reduce the number of hatchery-origin fish reaching spawning grounds<u>. If the recovery of ESA-listed populations in the CR basin is to be pursued alongside the production of large numbers of hatchery fish for harvest, it is essential that fisheries become entirely selective</u>. Additionally, commercial and tribal fisheries need to transition rapidly to selective gear, capable of permitting the safe release of all non-target species, including ESA-listed salmon, steelhead, and bull trout. Requirements for achieving the <u>transition to selective fisheries</u> include: • Marking of all hatchery-produced fish, including progeny from integrated production programs if any of those progeny are intended to be harvested. • Management of all fish produced by segregated programs as distinct species and all harvest directed only at these species. • Tailoring the production of segregated programs to the capacity of all (selective) fisheries to capture all but the minimal escapement to hatchery racks necessary to sustain the needed level of production	Comment noted.

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED)

Letter/ Comment #	Comment	Response
	• Management of all integrated programs to achieve PNI >= 0.7 with zero harvest on natural-origin adults, and a target pNOB = 1.0. Until the conditions for the conduct of a basin-wide evaluation of the supplementation (integration) conservation hypothesis have been implemented, reliance on PNI as a performance or monitoring metric should require a minimum of 0.7 with a universal goal of achieving pNOB = 1 (100% natural-origin adults in the annual broodstock). The combination of zero harvest on returning NOR adults combined with a pNOB = 1 in integrated programs provides the greatest assurance that the inevitable fitness decline due to integration will be kept to a minimum (Goodman 2005). In addition, all integrated programs should be required to attain average annual smolt-to-adult survival equal to that of local wild conspecifics, in order to insure that the fitness of integrated hatchery progeny is equal to that of the target local wild population at least over this significant life-stage. • Funding assistance to tribal and non-tribal commercial fishers to facilitate the timely transition to selective fishing gear • Funding for buyout of tribal and non-tribal commercial fishers to reduce fishing power so as to bring the fishing power of the new selective fishery regime into balance with the revised segregated hatchery production levels necessary to achieve compliance with the ESA-based standards of the EIS. • Develop criteria by which mitigation credits can be earned by contributing to fund the transition to selective gear or to fund the buyouts. For example, requiring upper Columbia PUD's to fund selective fishing projects will arguably contribute more to recovery as well as to the development of sustainable upper basin fisheries than requiring contributions for hatchery and tributary habitat projects. Such mitigation funding should at least be evaluated.	
31/30	The characterization of 'mitigation' Section 4.1.2 makes no reference to any minimal number of hatchery fish that must be produced. Rather, mitigation "is in the form of …BMPs applied to hatchery programs throughout the basin under all alternatives" (page 4-2). It is, therefore, entirely within NMFS' purview to require compliance with ESA-standards that insure no	The EIS has been revised to address the comment. Please see revised section 4.1.2, Mitigation. Mitigation includes actions that avoid the potential impact, minimize the impact, rectify the impact, reduce or eliminate the impact, and/or compensate for the impact by replacing or providing substitute resources (40 CFR

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED).

Letter/ Comment #	Comment	Response
	take and no jeopardy. As we argue throughout, this is the approach that NMFS should adopt for the EIS.	1508.20). In Section 4.1.2, Mitigation, NMFS describes mitigation measures to reduce or eliminate the risks of hatchery programs.
31/31	Tables 4-2 through 4-4 are less useful than they could be. We suggest rather than a simple "x" to denote whether a particular implementation measure affects a "salmon and steelhead" indicator (Table 4-4), that NMFS determine whether the affect is positive, negative, or neutral for the indicator. For example, in Table 4-4, the genetic risks to wild fish are decreased if there is a reduction in hatchery production. Without additional detail regarding how things are affected, rather than just whether they are affected, it is difficult to properly assess the effects.	NMFS disagrees. Specific implementation measures (e.g., change production levels in hatchery programs) can cause positive, negative, or neutral effects depending on the specific hatchery program, the populations the hatchery program may affect, and the specific change in production level that is being proposed.
31/32	We are also concerned with the number of weirs proposed under Alternatives 3-5 (Table 4-6); as discussed above, we do not believe that this DEIS sufficiently describes the ecological costs of fish passage barriers.	The EIS has been revised in response to the comment. Please see the updated and expanded Section 3.2.3.1.1.3, Current Approaches for Reducing Risks to Genetic Diversity, for a more thorough description of the effects of weir implementation.
31/33	Table 4-8 reveals that natural origin fish barely change in actual numbers through any of the action alternatives. It reveals that NMFS should craft an alternative that actually results in significantly greater numbers of **natural origin** fish.	See Global Response 6: Comments Addressing the Range of Draft EIS Alternatives.
31/34	Table 4-8. This table also needs a breakdown by recovery domain.	NMFS disagrees. This table shows the number and percentages of natural-origin and hatchery-origin salmon and steelhead emigrating through the estuary by alternative. The purpose of the table is to compare basin-wide effects of competition and predation by alternative. A comparison of the effects of competition and predation by ESU and DPS can be found in Section 4.2.3.2, Effects on Salmon ESUs and Steelhead DPSs under All Alternatives.
31/35	… an alternative that calls for the stronger performance measure in both recovery domains is lacking from the DEIS, and that may in fact result in higher numbers of natural origin fish	See Global Response 1: Comments Stating a Preference (Preferences) and/or Ideas for the EIS Preferred Alternative.
31/36	We concur with the comments submitted by the Native Fish Society regarding the elements of a basic hatchery policy alternative, and repeat them here for emphasis. These should form the basis around which a completely revised DEIS should be developed.	See Global Response 1: Comments Stating a Preference (Preferences) and/or Ideas for the EIS Preferred Alternative.

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED)

Letter/ Comment #	Comment	Response
	1. keep wild and hatchery spawners separated 2. set specific ecological impact criteria for each hatchery on wild fish 3. establish selective harvest on hatchery fish that does least harm to wild fish 4. establish spawner abundance objectives by species in each watershed for wild fish 5. establish nutrient targets for each watershed from salmon carcasses 6. designate **wild salmonid management watersheds** in each ESU 7. evaluate the benefit cost and cost effectiveness annually of each hatchery program 8. determine **the cost to catch** for each hatchery program annually 9. direct the independent economic advisory board to complete an economic review of each hatchery program in the Columbia River Basin and Puget Sound. 10. develop and **implement a wild salmonid management plan** for each watershed with measurable criteria for diversity, distribution, productivity, viability, and abundance. 11. evaluate hatcheries on contribution to fisheries and establish a minimum contribution rate for hatchery fish that optimizes funding investment while protecting wild fish from hatchery and harvest impacts. 12. require all hatchery fish to be externally marked and provide an internal tag to identify the hatchery of origin. 13. establish a basin wide stock transfer policy to regulate the movement of fish and eggs among populations and ESUs/DPSs. 14. require all hatchery origin fish be kept in sport fisheries. 15. fully integrate agency management structure on harvest, hatchery and wild salmonid management. 16. restructure management so that harvest and hatchery programs support natural production objectives in the Columbia River basin. 17. require barbless hooks in all recreational fisheries in the Columbia River basin to reduce harm in mixed stock fisheries on wild juvenile and adult salmonids.	

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED).

Letter/ Comment #	Comment	Response
	18. develop selective fisheries to maximize harvest of hatchery fish and minimize harm to wild fish in mixed stock commercial and recreational fisheries. 19. operate hatcheries so that hatchery effluent is regulated consistent with the Clean Water Act. 20. **reduce hatchery production**, evaluate stray rates of hatchery fish and implement measures to reduce strays. We would add the following to this list: You should really consider recommendations to close such facilities if necessary to create opportunities for unsupplemented reference populations.	
31/37	And lastly, we would like to echo the thoughts of the Native Americans who told you more than 50 years ago that they did NOT want the dams, that the Dams would hurt the Salmon Runs.	Comment noted.
31/38	The American Public has every right to tell you that **your system has FAILED the Salmon**. You need a complete rework and re-evaluation of your efforts. **We will NOT ACCEPT EXTINCTION, and your plans are a prescription for Extinction**. Stop your 'business as usual' approach and go back to the drawing board to bring us a REAL estimate of the harm Hatcheries and Dams are doing to our Natural Resources. The status-quo can NOT continue. <u>We expect you to really SAVE THE SALMON</u>.	Comment noted.
32/1	Thank you for the opportunity to comment on the Mitchell Act DEIS. Our charterboat association represents all the remaining for-hire vessels operating out of Westport, Washington. We numbered over 200 in the late 1970's. Today we number around 30. We are in the business of taking anglers fishing. We fish for a number of other species however salmon is our primary fishery and without a viable salmon fishery we couldn't survive. First, let me say that we agree wholeheartedly with the comment letter sent to you by the Pacific Fishery Management Council (PFMC).	Comment noted.
32/2	The current draft DEIS ignores the mitigation intent of the Mitchell Act and calls for reducing production in virtually every alternative. We believe that	See Global Response 6: Comments Addressing the Range of

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED)

Letter/ Comment #	Comment	Response
	alternatives that increase production are necessary for a full review of Mitchell Act hatchery funding.	Draft EIS Alternatives.
32/3	Second, although not necessarily highlighted but implied, is a future dependent upon "mark selective fisheries" (MSF) for recreational anglers fishing off the Washington coast. We are not philosophically opposed to MSF and we do believe it should be a tool in the tool box. However, we have been selectively harvesting hatchery Coho for 11 years now and our recent experience has not been good. In order to have publicly accepted, successful MSF fisheries, there needs to be a high proportion of marked hatchery fish in the ocean. Since we began MSF for Coho in 1999, Coho production has been declining. The encounter rate has gone down substantially. People are losing interest in taking fishing trips where they are required to release many more fish than they can retain and, in many cases, going home with no fish. As a result, MSF is fast losing favor among our fleet and the public. Now we are considering the same scenario with Chinook produced by Mitchell" Act hatcheries and DEIS alternatives that reduce production. We fear that our industry and communities cannot survive the social and economic damage that would be guaranteed with any of the current alternatives.	Thank you for your comment. The EIS does not propose any changes to the structure of the Chinook salmon fishery on the Washington Coast. The EIS does analyze the effects of tributary-level terminal selective fisheries in Alternative 4 and Alternative 5. NMFS does acknowledge and attempts to disclose the effects of the EIS alternatives on the fisheries that take place off of the Washington coast.
32/4	Finally, we are struggling with the science. We don't believe that the HSRG science is the only path available to rebuild healthy natural runs of salmon in the Northwest. Tribal managers have been very successful in the upper Columbia River using hatchery stocks to supplement wild stocks in the rebuilding process. Their proven methodology allows for both rebuilding and harvest and we believe that NMFS needs to thoroughly review both methodologies prior to travelling down a path that promises to be devastating to fishery groups and the communities that depend upon them.	See Global Response 7: Comments Addressing the Analysis within the EIS.
33/1	We appreciate the opportunity to provide comments on the Draft Environmental Impact Statement on the Mitchell Act and Columbia River Basin Hatchery Operations (DEIS). WRIA 35 membership consists of four county commissioners from southeastern Washington (SEWA), the cities of Clarkston, Asotin and Pomeroy and four conservation districts. Our area of expertise is working with private landowners installing voluntary	See Global Response 3: Comments Addressing the EIS Process.

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED).

Letter/ Comment #	Comment	Response
	restoration and protection projects for ESA listed salmonids in priority areas in Snake River tributaries. Many members also serve on the Snake River Salmon Recovery Board. We have been working on habitat projects and recovery of Snake River Chinook and steelhead over the past 20 years. With this background it should not be surprising that we are extremely disturbed with the DEIS. It is obvious that no one from SEWA was consulted or reviewed this DEIS.	
33/2	It is blatantly obvious in the economic section that little or no research was done on how important hatchery fall and spring Chinook and steelhead fishing are to SEWA. The economic figures don't even represent SEWA portion of the steelhead fishing let alone if there is Chinook and steelhead fisheries in Idaho and Oregon. The DEIS lists SEWA, Idaho and northeastern Oregon at 13 million, steelhead fishing alone in SEWA generates 20 million per year and if hatchery releases are reduced this would have adverse impacts on cities in Washington, Idaho and Oregon that rely on sport fishing like Asotin, Clarkston, Lewiston, Orofino, Riggins, Joseph and Enterprise.	See Global Response 7: Comments Addressing the Analysis within the EIS.
33/3	This region has worked with regulatory agencies to voluntarily protect and restore habitat. There are at least two populations of wild steelhead that are thriving in SEWA in Asotin and Joseph creeks. These populations could be protected and terminal fisheries for hatchery stocks could continue without impacting local economies, recreational opportunities or wild stocks.	Comment noted.
33/4	We would appreciate more local input from hatchery managers within our region. There is a wealth of knowledge regarding hatchery production, harvest and habitat in the Snake basin, yet none of these individuals were consulted. Additionally accurate numbers should have been used for the model. It doesn't appear that sound science or accurate data was used to populate the model.	See Global Response 3: Comments Addressing the EIS Process. Additionally, see Global Response 7: Comments Addressing the Analysis within the EIS.
33/5	Thanks for the opportunity to respond and WRIA 35 supports the withdrawal of the DEIS to provide for a complete rescoping and revision in order to develop a draft that reflects a collaborative effort with all the affected parties.	See Global Response 3: Comments Addressing the EIS Process.

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED)

Letter/ Comment #	Comment	Response
34/1	We represent the Washington Federation of State Employees (WFSE) within Washington State and are employed by the Washington Department of Fish and Wildlife (WDFW). Our purpose is to comment for WFSE regarding any change in Mitchell Act Funding in support of WDFW and secure an audience for WFSE to further explain, answer questions, and help reviewers make informed decisions on how to respond to the DEIS and help NOAA formulate a preferred alternative regarding the above impact statement.	Comment noted.
34/2	Mitchell act has been funding the operation of hatcheries within Washington State for over 60 years now. These hatcheries and other projects are an important part of the salmon and steelhead runs in the Columbia and Snake Rivers. Washington depends on this funding for mitigation for the hydroelectric projects in the Columbia and for recreational and commercial fishing opportunities within the state. We desire this funding to continue in the significant future.	Comment noted.
34/3	The text of the EIS lists 5 alternatives none of which fully represent the needs of our members and the fisheries resources. We wish to ensure that there is a sustainable fishery into the foreseeable future, hatcheries are and will continue to be an essential component of the fish runs and conservation efforts in the Columbia River Basin. We would request that some changes would be made to your alternatives.	Comment noted.
34/4	A preferred alternative should acknowledge the different roles and priorities populations can have within an ESU/DPS e.g. primary, contributing, and stabilizing and then allow the hatchery programs to operate consistent with risks managers are willing to take. A preferred alternative should increase conservation effectiveness while providing for sustainable fisheries into the future. A preferred alternative should reflect the prioritization of populations within each ESU/DPS, and to the extent possible establish a bridge towards the role of harvest in the overall implementation of effectiveness.	See Global Response 1: Comments Stating a Preference (Preferences) and/or Ideas for the EIS Preferred Alternative.
35/1	Coastal Conservation Association (CCA) is pleased to provide comments on the Draft Environmental Impact Statement (DEIS) to inform Columbia River Basin Hatchery Operations and the Funding of Mitchell Act Hatchery Programs. CCA believes a comprehensive review of Columbia River	See Global Response 2: Comments Addressing the Scope of This EIS.

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED).

Letter/ Comment #	Comment	Response
	hatchery programs is an essential step for NMFS to align hatchery production, and its closely related harvest management decisions, with wild salmon and steelhead recovery efforts. Our primary concern with the DEIS is that it fails to recognize the vital role of harvest in determining the composition (hatchery origin vs. wild origin) of returning adult spawners. Considering that the primary purpose of 85% of Columbia River basin hatchery production is to provide fish for commercial, recreational and tribal harvests, it seems senseless to review hatchery production without also considering harvest management. For example, despite making great progress mass-marking hatchery fish, insufficient progress has been made to increase the selectivity of harvest though mark-selective fisheries. Non-selective harvest remains widespread and continues to prevent large numbers wild salmon and steelhead from successfully spawning in the wild. These natural spawners are essential to maintaining the genetic diversity and fitness of wild populations, including the thirteen Columbia River Basin salmon and steelhead stocks listed under the ESA.	
35/2	The DEIS ignores how mark-selective fisheries can benefit wild salmon and steelhead populations. Such fisheries not only harvest excess marked hatchery fish but can also increase survival rates for returning unmarked wild stocks. Mark-selective fishing methods have the potential to harvest a far greater percentage of hatchery salmon from targeted runs than nonselective harvest methods. While the DEIS outlines the possible use of weirs, hatchery production cuts, integrated broodstock programs and reductions in harvest to keep the influence of hatchery-origin fish within scientifically acceptable levels, it omits any serious consideration of how mark-selective fisheries can also help protect wild populations. Instead of proposing drastic cuts to hatchery production and salmon harvests, NMFS should promote increased selective harvest of excess marked hatchery fish as a key strategy for sustaining hatchery production and fisheries while also protecting the fitness and productivity of wild populations.	See Global Response 1: Comments Stating a Preference (Preferences) and/or Ideas for the EIS Preferred Alternative.
35/3	There is growing evidence related to the benefits selective fisheries to meeting hatchery reform and harvest objectives. The recreational salmon	Comment noted.

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED)

Letter/ Comment #	Comment	Response
	and steelhead fishery in the Columbia River basin has largely transitioned to a mark-selective fishery. The selectivity of the recreational fishery allows it to harvest far greater numbers of hatchery-origin salmon and steelhead per wild fish impacted. This is significant in the Columbia River where limits on the number of ESA-listed fish that may be harmed frequently constrain commercial, recreational and tribal harvests. When those ESA impact limits are reached all fisheries are shut down, regardless of their effectiveness targeting excess hatchery fish. Examples of mark-selective commercial fisheries are also emerging. The Colville Tribes are well into a multi-year effort involving live capture seining. This technique provides both an opportunity for meaningful tribal harvest, but also a tool to strengthen the fitness of native populations by selectively harvesting excess marked hatchery fish before they reach the spawning grounds. This mark-selective commercial harvest is benefiting native fish populations by: l) increasing the Proportion of Natural Influence (PNI) on the spawning grounds and in hatchery programs; 2) reducing the Proportion of Hatchery Origin Fish on Spawning Grounds (pHOS); and 3) increasing the Proportion of Natural Origin Fish for Broodstock (pNOB). PNI, pHOS and pNOB are important measurements of the influence of hatcheries programs on wild salmon populations. In the Lower Columbia, the Washington and Oregon Departments of Fish and Wildlife are undertaking a similar effort to evaluate the effectiveness of mark-selective commercial fishing gear to target plentiful returns of hatchery fish. Hatchery fish vastly outnumber natural Chinook salmon populations spawning in the wild, and in most Lower Columbia populations over 70% of the fish returning to spawn are of hatchery origin (Hatchery Science Review Group, Columbia River Hatchery Reform System-Wide Report, 2009). This greatly exceeds the levels recommended by independent and agency scientists, including the Hatchery Scientific Review Group (HSRG). Unfortunately, NMFS did not consider the recent progress being made to implement selective recreational and commercial fisheries and their potential for protecting wild fish and maintaining hatchery production.	

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED).

Letter/ Comment #	Comment	Response
35/4	It is clear NMFS would like to provide various alternatives for the public to review and provide comment concerning the development of hatchery performance measures. Unfortunately, the alternatives the agency has outlined for such measures rely on a completely arbitrary distinction between Willamette/Lower Columbia and Interior Columbia populations. NMFS has provided no basis in law or science for applying different performance standards to Willamette/Lower Columbia and Interior Columbia populations. The final EIS should adopt a scientifically-based approach to applying performance measures to Columbia River basin hatcheries without this arbitrary distinction.	See Global Response 1: Comments Stating a Preference (Preferences) and/or Ideas for the EIS Preferred Alternative.
35/5	HSRG's 2009 Columbia River Hatchery Reform System-Wide Report represents an important road map to recover wild salmon and steelhead populations through the implementation of hatchery and selective fishing reforms in the Columbia River. We encourage NMFS to give the recommendations greater consideration as it develops a final EIS. For example, while NMFS included the HSRG population designations (Primary, Contributing and Stabilizing) in the DEIS, it did not prepare an alternative that proposes different performance goals and principles for integrated and segregated hatchery programs based on their influence on Primary and Contributing populations. The primary purpose of the HSRG population designations is "to link the biological significance of specific populations to acceptable levels of hatchery influence and apply differing standards of risk (PNI, pHOS) to those designations" (HSRG Comments on Mitchell Act EIS, November 15,2010). Instead of recognizing the difference between Primary and Contributing populations, the various alternatives in the DEIS apply the same standard to both the Primary and Contributing populations.	See Global Response 6: Comments Addressing the Range of Draft EIS Alternatives.
35/6	Furthermore, while the DEIS proposes the use of the PNI and pHOS measurements as the metrics within the proposed performance goals for hatchery programs, the document indicates that "NMFS is not advocating their use by hatchery managers." It is difficult to imagine the purpose of a performance measure if NMFS has no intention of encouraging its use.	The commenter is confusing the metric (PNI, pHOS) with the measure, which, in this case, would be reduction of genetic risks from a hatchery program to a natural population. PNI and pHOS are employed in the implementation scenarios as example metrics. See Global Response 7: Comments Addressing the Analysis within the EIS.
35/7	As the agency develops a final EIS we also hope NMFS will provide greater clarity on how this policy will be applied in future ESA consultations and	See Global Response 2: Comments Addressing the Scope of This EIS.

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED)

Letter/ Comment #	Comment	Response
	decisions related to the funding of Mitchell Act programs. Hatchery operators, harvest managers and the public need a clear indication of how NMFS intends to ensure that hatchery operations do not negatively impact wild salmon and steelhead recovery while remaining consistent with ESA requirements and the best available science.	
35/8	The DEIS also provides a clear picture of the economic benefit of mark-selective fishing to our region. For example, according to the DEIS the Net Economic Value (NEV) of recreational fisheries in the Columbia River basin is $35.8 million. This compares to a NEV of $2.1 million for non-tribal and tribal commercial fisheries in the Columbia River basin. When one considers that the recreational fishery catches less than one-third of the salmon harvested, these numbers indicate that it generates 17 times the economic value of the commercial fishery.	Comment noted.
35/9	In summary, the stated goal of the DEIS is to "develop a NMFS policy direction" that will "guide NMFS's distribution of Mitchell Act hatchery funds" and "inform NMFS's future review of individual Columbia River basin hatchery programs under the Endangered Species Act." While CCA has significant concerns with each of the alternatives outlined in the DEIS, we support the goal articulated by NMFS and encourage the agency to build upon on some of the positive elements contained in the document as it continues the EIS process.	Comment noted.
36/1	… we applaud your effort to institute an overarching vision and much needed policy direction for Columbia River basin hatchery production via this Mitchell Act EIS process. The findings of the Columbia River Basin Hatchery Scientific Review Group have provided NMFS a solid foundation for doing so.	Comment noted.
36/2	The implementation of a well-scoped and vetted policy direction that includes both performance goals and their metrics requires that NMFS' and the other co-managers' track and communicate progress toward meeting stated goals. While it was stated in the Draft EIS that NMFS' new policy direction will include monitoring and evaluation (p. 2-14 line 10), it is not clear from the document whether or how monitoring and evaluation methods will be improved so that progress toward meeting performance goals and metrics can be effectively or adequately tracked and	See Global Response 6: Comments Addressing the Range of Draft EIS Alternatives.

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED).

Letter/ Comment #	Comment	Response
	communicated. Therefore, when considering your new policy direction for the application of Mitchell Act funds, Long Live the Kings' asks that NMFS include the need for a more robust, unified, and explicit monitoring and evaluation approach with vastly improved data management and communications components.	
36/3	We acknowledge that there have been, and continue to be ongoing efforts to address monitoring and evaluation needs. However, the current approach to monitoring, evaluation and data management is fragmented and in many cases insufficient, with components handled by a multitude of authorities. This work and its ultimate communication out to appropriators, stakeholders and the public must be a coordinated, multi-party effort. Involving non-governmental organizations in these efforts can boost chances for success. Also, it appears specific funding mechanisms have not yet been identified, but will be critical to achieve necessary levels of coordination and efficiency.	See Global Response 6: Comments Addressing the Range of Draft EIS Alternatives.
36/4	The new "hatchery reform" salmon management paradigm NMFS is endeavoring to implement is very complex. NMFS could benefit from identifying partners that can assist in communicating the complex goals and objectives and help build public understanding and support for new approaches and improved program elements.	Comment noted.
37/1	The Lower Columbia Fish Recovery Board (LCFRB) was established by state statute to oversee and coordinate salmon and steelhead recovery efforts in the lower Columbia region of Washington. Over the past 12 years, the LCFRB has played a central role in recovery planning, watershed management, and habitat restoration efforts. In 2004, the LCFRB in cooperation with federal, state and local interests completed the WA Lower Columbia Salmon Recovery and Fish & Wildlife Subbasin Plan (Plan). National Marine Fisheries Service (NMFS) adopted the Plan as an Interim Regional Recovery Plan in 2006. In June 2010, the LCFRB adopted and submitted to NMFS a comprehensive update of the Plan. The goal of the Plan is to return our ESA-listed salmon and steelhead populations to healthy, harvestable levels. To be successful, we knew that our Plan needed to work for both the fish and the people of our region. To	Comment noted.

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED)

Letter/ Comment #	Comment	Response
	this end, we carefully evaluated the status of lower Columbia Chinook, coho, chum, and steelhead. We examined the threats to each species. Then, we worked with the many and varied interests in our region to meld biological, social, legal, and cultural factors into an integrated set of strategies, measures and actions addressing habitat, harvest, hatchery, and hydro factors in an integrated manner. We recognize and appreciate the complexity of the analysis NMFS has undertaken. We support the development of a sound policy basis for ensuring that Columbia Basin hatchery programs support sustainable fisheries and satisfy treaty-trust obligations while furthering ESA recovery efforts. However, we are concerned the breadth or depth of the analysis of the DEIS is not sufficient to effectively guide Mitchell Act hatchery funding decisions or inform future reviews of individual Columbia River basin hatchery programs under the ESA.	
37/2	Be consistent with adopted ESA recovery plans. The alternatives in the DEIS are not consistent with the goals, objectives, strategies, measures, and actions of the Plan. Specifically: a. Target performance goals for reducing the adverse impacts of hatchery fish on natural origin fish are applied on the Willamette/Lower Columbia or Interior Columbia domain level with no differentiation of species. Such an approach is inconsistent with the Evolutionarily Significant Unit (ESU) or Distinct Population Segment (DPS) basis used in making ESA listing decisions and developing recovery plans. Analysis at the domain level does little to inform hatchery decisions under the ESA. b. The same performance standards are applied to both primary and contributing populations. Doing so fails to recognize the significant differences in the recovery objectives for the two population categories. c. The DEIS applies the “stronger” and “intermediate” performance goals without regard to the individual population objectives set forth in the recovery plan. Doing so fails to recognize the population structure	See Global Response 1: Comments Stating a Preference (Preferences) and/or Ideas for the EIS Preferred Alternative.

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED).

Letter/ Comment #	Comment	Response
	needed to achieve a viable Stratum or Major Population Group (MPG) and ultimately a viable ESU or DPS. We urge NMFS to adopt the ESU or DPS approach used in recovery plans to construct and evaluate alternatives. We further urge NMFS to use the population goals, strategies and measures in the Washington Lower Columbia Recovery Plan in defining and assessing conservation actions. The selected preferred alternative should be consistent with the Washington Lower Columbia Recovery Plan and other Columbia Basin recovery plans.	
37/3	Broaden the range of alternatives evaluated to include consideration of increased hatchery production. The LCFRB recognizes the need to maintain commercial, sport, and tribal harvest opportunities while working to recover listed salmon and steelhead. The Washington Lower Columbia Plan recognizes the critical role hatcheries will play in providing such harvest opportunities and supports hatchery operations that are consistent with recovery and objectives. Given the economic and cultural significance of salmon fisheries, we believe that increased hatchery production should be analyzed. Such an analysis should assess whether increased production can be achieved without jeopardizing progress to recovery of ESA-listed populations. The analysis should include consideration of both hatchery and harvest measures that can be used to reduce the adverse effect of hatchery fish on natural origin fish.	See Global Response 6: Comments Addressing the Range of Draft EIS Alternatives.
37/4	Evaluate the impact of each alternative on the ability of hatchery programs to satisfy mitigation, treaty, and other legally mandated obligations. Making hatchery funding and operational decisions requires a clear vision of the goals or mandates hatcheries must address. While the DEIS does evaluate overall production levels, it does little to relate the various production levels analyzed to the various mitigation, conservation, and treaty obligations. Given the various interests and constituencies that could be affected by decisions based on the EIS, the EIS should provide a more detailed discussion of the impacts alternatives could have on satisfying legal mandates.	See Global Response 5: Comments Addressing the EIS and Its Relationship to Other Plans, Regulations, Agreements, Laws, and Executive and Secretarial Orders.
38/1	Northwest River Partners ("NWRP") appreciates this opportunity to submit comments on NMFS' Draft Environmental Impact Statement (DEIS) To	Comment noted. Please see Global Comment 2.c, Scope should focus on hatchery funding decisions, not on future ESA

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED)

Letter/ Comment #	Comment	Response
	Inform Columbia River Basin Hatchery Operations and the Funding of Mitchell Act Hatchery Programs (hereafter "DEIS"). NWRP is an alliance of farmers, utilities, ports and businesses that promote the economic and environmental benefits of the Columbia and Snake Rivers and salmon recovery policies based on sound science (Northwest River Partners members). We are dedicated to ensuring both the conservation of Columbia/Snake River Basin salmon and robust production of clean, renewable, and reliable electricity from the Federal Columbia River Power System ("FCRPS"). For these reasons, and because our members and their constituents contribute funding for hatcheries and other measures aimed at restoring salmon, NWRP has a significant vested interest in NMFS' development of a comprehensive and well planned and implemented hatchery policy. NWRP applauds NMFS' desire to develop a comprehensive hatchery policy to guide both NMFS' distribution of Mitchell Act funds and to inform NMFS' future review of individual Columbia River basin hatchery programs under the Endangered Species Act ("ESA"). Hatcheries play an important role in mitigating for the effects of hydropower operations, irrigation and municipal water withdrawals, commercial, recreational and tribal harvest, farming, and industrial activities in and around the Columbia Snake River Basin that have collectively harmed the region's wild salmon and steelhead populations.	determinations.
38/2	Some hatcheries are also conserving critically important salmon populations such as Snake River Sockeye. However, some hatchery practices have also been shown to have significant negative impacts on naturally spawning and ESA listed fish and have contributed to their decline. The best available science suggests that hatchery stocks impact naturally-spawning fish by increasing mixed stock harvest pressure, competing for food, territory, mates and spawning sites, and genetically mutating wild stocks. (Michael Ford presentation to the Northwest Power and Conservation Council, http://www.nwcouncil.org/news/2010/09/Default.asp; Northwest	Comment noted. Please see Section 3.2.3.1, General Risks and Benefits of Hatchery Programs to Salmon and Steelhead Species, for a comprehensive review of risks and benefits.

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED).

Letter/ Comment #	Comment	Response
	Fisheries Science Center, Recovery Implementation Science Team, Hatchery Reform Science, http://www.nwfsc.noaa.gov/trt/puget_docs/hatchery_report_april92009.pdf; and The State of the Salmon Ecological Interactions Conference; http://www.stateofthesalmon.org/conference2010/presentations.html)	
38/3	While the DEIS purports to be developing a comprehensive hatchery strategy for the Basin, it is unclear exactly how the new policy will affect existing hatchery reform efforts already underway. For example, the FCRPS 2008 Biological Opinion established a comprehensive set of hatchery reforms in the form of Reasonable and Prudent Alternatives (RPAs) 39 and 40. RPA 39 requires NMFS to adopt programmatic criteria for funding decisions related to FCRPS hatcheries which in turn will require implementation of best management practices developed by the Hatchery Scientific Review Group. RPA 40 requires NMFS to consult under ESA section 7(a)(2) on the operation of hatchery programs funded by FCRPS action agencies, and on the hatchery genetic management plans ("HGMP"s) required for the operation of each FCRPS hatchery. These RPAs are collectively expected to: "(1) integrate hatchery mitigation and conservation objectives; (2) preserve genetic resources; and (3) accelerate trends toward recovery as limiting factors and threats are fixed and natural productivity increases." FCRPS BiOp at 8-35; DEIS at 1-45 (emphasizing that FCRPS hatchery reforms are designed "to ensure against the impediment of recovery and to preserve and rebuild genetic resources through safety-net and conservation actions to reduce short-term extinction risk and promote recovery."). The DEIS mentions other hatchery programs currently being implemented under other federal programs and by publicly owned utilities but is vague as to how the policy ultimately adopted through the Mitchell Act hatchery NEPA process will affect these other hatchery programs and reform efforts already underway. See DEIS at 1-15-17; 1-21-1-45. Given that the FCRPS hatchery funding reforms have already undergone a programmatic consultation, and are already being implemented, and given that some	See Global Response 5: Comments Addressing the EIS and Its Relationship to Other Plans, Regulations, Agreements, Laws, and Executive and Secretarial Orders.

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED)

Letter/ Comment #	Comment	Response
	hatcheries are implementing HGMPs developed on the basis of best available science in coordination with NMFS and are undergoing section 7 ESA consultation, the policy ultimately derived from the Mitchell Act NEPA process must be carefully harmonized with these existing reforms, so as not to conflict with or undermine them.	
38/4	Finally, the DEIS emphasizes that the Management Agreement produced through the U.S. v. Oregon allocation process will not be analyzed or re-visited as part of the Mitchell Act EIS. Instead, "NMFS assumes that affected parties will exercise their authority regarding production measures following this environmental analysis in a manner that is consistent with the most current Management Agreement." (emphasis supplied). Because "approximately half of the production currently funded under the Mitchell Act is used to fulfill commitments of the Management Agreement" (DEIS at 1-41), it is unclear what benefit the Mitchell Act hatchery policy will ultimately have over the region's hatcheries if the new policy will not impact or potentially alter the existing harvest Management Agreement.	See Global Response 5: Comments Addressing the EIS and Its Relationship to Other Plans, Regulations, Agreements, Laws, and Executive and Secretarial Orders.
38/5	Indeed, hatchery and harvest reforms are inherently intertwined. It is impossible to address or reform one while not impacting the other. See e.g., DEIS at 1-41 ("the [Management] Agreement includes important and substantive commitments related to hatchery production. . ."). The hatchery policy adopted through this Mitchell Act NEPA process should inform the future direction of harvest in the region. The Management Agreement should not be viewed as immunized from these reform efforts. NMFS' policy, whatever it ultimately is, must inform and guide the Management Agreement and future modifications thereto, and reflect the same goals established in the FCRPS BiOp.	See Global Response 5: Comments Addressing the EIS and Its Relationship to Other Plans, Regulations, Agreements, Laws, and Executive and Secretarial Orders.
38/6	For all these reasons, NWRP urges NMFS to substantially revise the DEIS and issue a FEIS that is consistent with the comments set forth above.	Comment noted. Please see specific responses to issues identified in your letter.
39/1	The Public Power Council (PPC) represents over 100 consumer-owned utility customers of the Bonneville Power Administration (BPA). As the primary customers of BPA, PPC members and their customers fund regional fish and wildlife mitigation efforts including hatcheries, totaling approximately $800 million annually and have a vested interest in ensuring	Comment noted.

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED).

Letter/ Comment #	Comment	Response
	these efforts are efficient, cost effective, and based on sound science. While PPC appreciates the effort NMFS is making to improve the effectiveness of hatcheries and minimize their effects on wild fish, we believe the DEIS needs to be significantly revised before it can be an effective tool for directing regional hatchery policy and guiding Mitchell Act hatchery funds.	
39/2	In addition to the comments below, PPC supports comments submitted by Northwest River Partners.	Comment noted.
39/3	NMFS purports to develop a comprehensive hatchery policy for Columbia River Basin (Basin) hatcheries and Mitchell Act hatcheries but is unclear in how it will take into account the reform efforts already underway. The DEIS should clarify how it will consider the corrective actions and program modifications currently being implemented at hatcheries throughout the region as a result of other permitting and mitigation processes including the Federal Columbia River Power System (FCRPS) Biological Opinion and Endangered Species Act consultation for Federal Energy Regulatory Commission licensed projects.	See Global Response 5: Comments Addressing the EIS and Its Relationship to Other Plans, Regulations, Agreements, Laws, and Executive and Secretarial Orders.
39/4	The DEIS should evaluate the effects of Mitchell Act hatcheries on naturally produced populations of salmon and steelhead in the Basin and specify how individual programs should be operated.	Thank you for your comment. The EIS contains a comprehensive review of the effects on natural-origin salmon and steelhead populations, as well as several other resources, across a wide range of alternatives. The EIS also analyzes the effects of implementing a wide range of measures to achieve each alternative's performance goal. The EIS does not prescribe specific operating standards or protocols for hatchery operators. Successful hatchery operations must retain a level of flexibility to respond to changes in the natural environment, in funding availability, and in social priorities. Additionally, hatchery operators and NMFS need the flexibility to manage programs for many of the effects of artificial production, both beneficial and adverse.
39/5	By doing this, the DEIS could be used to develop priorities for capital improvements that more directly promote conservation of natural origin salmon and steelhead populations and potentially reduce operational costs at facilities.	Comment noted.

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED)

Letter/ Comment #	Comment	Response
39/6	The DEIS should more comprehensively consider harvest. In their 2009 report on Columbia River hatchery reform, the Hatchery Science Review Group found that without addressing the effects of harvest, hatchery reform alone would not significantly reduce impacts of hatchery fish on naturally produced populations. Mitchell Act hatchery programs support large-scale, nonselective, mixed-stock harvest. Management of this kind significantly impacts the recovery of ESA listed salmon and steelhead populations in the Basin. Without a greater consideration of harvest, the DEIS misses an important consideration of the conservation of anadromous fishery resources in the Basin.	See Global Response 2: Comments Addressing the Scope of This EIS.
39/7	Updated fish data should be used in the DEIS. NMFS is currently proposing that the DEIS alternatives be analyzed using fish passage survival rates from the 2004 FCRPS Biological Opinion. Since 2004 there have been several modifications to the configuration and operation of the FCRPS. Many of these modifications, including the installation of Surface Bypass Systems have improved survival of juvenile salmon and steelhead passing the the federal hydrosystem. This new information should be incorporated into the DEIS alternatives.	See Global Response 7: Comments Addressing the Analysis within the EIS.
40/1	Our interest in commenting on the DEIS is to reduce impacts and risks to naturally produced salmon in the Columbia River basin from hatchery operations. While we recognize that there are many social and legal issues implicit in the DEIS alternatives, our comments focus on the science and biological impacts related to hatchery programs –impacts which we believe NOAA needs to address in order to meet its obligations to ensure recovery of Columbia River salmon and steelhead ESUs listed under the Endangered Species Act.	Comment noted.
40/2	The negative effects of hatcheries on the abundance and diversity of wild salmon populations have been well documented. These effects include the loss of reproductive performance of naturally spawning populations when hatchery-origin spawners, whose fitness is determined largely by artificial rather than natural selection forces, interbreed with wild fish (e.g. Araki et al. 2007, Fraser 2008). These effects can be amplified by various broodstock practices within the hatchery system. Other significant impacts of hatchery programs on the long-term productivity and resilience of wild populations	Please see Section 3.2.3.1, General Risks and Benefits of Hatchery Programs to Salmon and Steelhead Species.

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED).

Letter/ Comment #	Comment	Response
	include ecological interaction effects due to competition (Pearsons et al. 2010, Ruggerone et al. 2010), predation (Fritts et al. 2007) and disease transmission (Foott et al. 2006) as well as overfishing of wild salmon populations in mixed stock fisheries (Kope 1992).	
40/3	The irony of these problems is that hatcheries in the Pacific Northwest and California have been routinely used in an attempt to mitigate for habitat loss from human development activities. The lessons learned are that this type of mitigation has compounded the loss of wild salmon abundance and productivity (Buhle et al. 2009) by reducing the fitness and production of wild populations not directly impacted by the habitat modification activity.	Comment noted.
40/4	In May 2010, State of the Salmon, a joint program of the Wild Salmon Center and Ecotrust, hosted over 300 attendees from across the North Pacific for the first international conference on ecological interactions between wild and hatchery salmon (http://www.stateofthesalmon.org/conference2010/). A special breakout session focused on the unique challenges and opportunities in managing wild and hatchery salmon and their interactions in the Columbia River. Although it was clear that research on wild and hatchery salmon ecological interactions in the Columbia River is at a more advanced stage compared to other regions, a number of key uncertainties were identified regarding hatchery programs within the Columbia River basin: • Sufficient data and knowledge about disease transmissions between hatchery and wild fish are lacking. • The effect of hatchery releases on predator population dynamics are poorly understood (e.g. the functional, numerical and long-term responses of predators to the abundance of hatchery-origin prey and the indirect effects on wild populations). • Salmon can have strong ecological interactions and impacts on other species, yet multi-species evaluations are rarely conducted at the hatchery production scale. • Knowledge of the density dependent effects of hatchery juveniles and adults in the freshwater environment and shared river/marine migration corridors is inadequate (i.e., the potential effects on	Comment noted.

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED)

Letter/ Comment #	Comment	Response
	wild fish population dynamics when large numbers of hatchery fish intermingle with small numbers of wild counterparts).	
40/5	In summary, our experience and the science surrounding artificial salmon production indicate that hatcheries: • have contributed directly to dramatic declines of wild stocks, reduced life history and genetic diversity, lowered productivity and reduced wild fish spawning success; • have not stabilized salmon production, a goal that reflects a naive understanding of marine and freshwater ecosystems; • have rarely "enhanced" total salmon production in spite of more than a century of effort and a huge expenditure of funds; • have not been subjected to rigorous, consistent monitoring or cost-benefit analysis despite large annual operational costs; and • have entrenched, politically influential social and economic constituencies despite the well documented negative impacts on wild fish populations.	Comment noted.
40/6	Given the known impacts and uncertainties associated with hatchery programs and their impacts on wild populations, we encourage the National Marine Fisheries Service to take a conservative and precautionary approach to funding and operating Mitchell Act hatcheries in the Columbia River basin. Specifically, we recommend that: 1. The number of hatchery salmon and steelhead released be significantly reduced by downsizing or eliminating hatchery programs that are not meeting best management practices (BMPs).	See Global Response 1: Comments Stating a Preference (Preferences) and/or Ideas for the EIS Preferred Alternative.
40/7	2. BMPs be applied to all remaining hatcheries.	See Global Response 1: Comments Stating a Preference (Preferences) and/or Ideas for the EIS Preferred Alternative.
40/8	3. No Mitchell Act funding be provided for new hatchery programs.	See Global Response 1: Comments Stating a Preference (Preferences) and/or Ideas for the EIS Preferred Alternative.
40/9	4. All Columbia River basin hatchery programs meet stronger performance goals for primary and contributing populations of salmon and steelhead.	See Global Response 1: Comments Stating a Preference (Preferences) and/or Ideas for the EIS Preferred Alternative.

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED).

Letter/ Comment #	Comment	Response
41/1	I don't agree with your biologist's assessment in cutting hatcheries in the Columbia Basin. The reason you are having trouble with wild runs is the completion of the wild fish runs by seals, other fish species, water quality and degradation of the ocean! The other problems is the over fishing techniques of foreign countries fishing in the waters just off our Coast.	Comment noted.
41/2	Wild fish runs have already been impacted by years of hatchery fish in our waters from Washington State to California. Stopping hatchery programs will only deplete down the numbers eliminating fishing all together. This seems to be the goal of the program in itself!	Comment noted.
41/3	If Wild fish are superior which I have read then they will out survive all the hatchery fish in the Columbia system.	Comment noted.
42/1	The process that you are undertaking represents a great opportunity to reverse that trend [detrimental impacts of hatchery fish on the long-term health of dwindling wild fish populations]. I believe that it's imperative that we do that now, before it is too late. To that end I would like to see NMFS adopt the most rigorous standards possible for our existing hatcheries and curtail the expansion of the hatchery program, broodstock or otherwise.	See Global Response 1: Comments Stating a Preference (Preferences) and/or Ideas for the EIS Preferred Alternative.
42/2	Whatever alternative is chosen, I would like to see the emphasis on reducing or eliminating altogether the intermingling of wild and hatchery fish within the Columbia system -- upper and lower. Reducing hatchery production and installing weirs on key tributaries are proven and essential steps in that process.	See Global Response 1: Comments Stating a Preference (Preferences) and/or Ideas for the EIS Preferred Alternative.
43/1	All the options are not an option at all. You cannot allow such a bad plan to go forward. No reduction in hatchery releases are acceptable. Where do you think the fish came from?	See Global Response 1: Comments Stating a Preference (Preferences) and/or Ideas for the EIS Preferred Alternative.
43/2	Conditioning of young fish is why they act different than a natural spawner.	Comment noted.
43/3	It is all ready hard enough to get a fish as it is. If you want to save fish stop trawls and gill nets. The commercialization of any species puts and has put them and all that have come before them under pressure they cannot maintain.	Comment noted.
43/4	Do not redirect any funds away from hatchery fish and operation.	See Global Response 1: Comments Stating a Preference (Preferences) and/or Ideas for the EIS Preferred Alternative.

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED)

Letter/ Comment #	Comment	Response
44/1	I am writing to show my full support for the proposals within the DEIS (Draft Environmental Impact Statement) for Columbia River Mitchell Act hatcheries. Wild fish numbers have significantly diminished over the years, this would help increase their numbers while maintaining a healthy economy.	Comment noted.
45/1	No more out of basin hatchery stocks planted in rivers where there are wild or self-sustaining populations of salmon and/or steelhead.	See Global Response 1: Comments Stating a Preference (Preferences) and/or Ideas for the EIS Preferred Alternative.
45/2	Weirs or some other means of separating wild from hatchery fish at the mouths of spawning tributaries is a goal worth implementing sooner rather than later.	See Global Response 1: Comments Stating a Preference (Preferences) and/or Ideas for the EIS Preferred Alternative.
45/3	Discontinue hatchery programs that do not meet the highest standards.	See Global Response 1: Comments Stating a Preference (Preferences) and/or Ideas for the EIS Preferred Alternative.
46/1	Hatcheries in the Columbia basin have for too long been concern chiefly with maximizing hatchery releases and harvest with little concern for wild productivity. Considering the lack of recovery for listed wild salmon and steelhead the best course of action going forward will include: 1)limiting hatchery releases 2)constructing weirs at the mouths of many spawning tributaries to stop genetic introgression between wild and hatchery fish 3)prohibiting out of basin plants or fish culture 4)prohibiting "integrated" stocks where wild fish are mined for hatchery production. A growing body of research indicates a loss of fitness in domesticated wild fish, even after one generation.	See Global Response 1: Comments Stating a Preference (Preferences) and/or Ideas for the EIS Preferred Alternative.
46/2	Furthermore, the ecological interactions occurring between hatchery and wild fish are very concerning and warrant significant caution when determining release numbers for hatcheries.	See Global Response 1: Comments Stating a Preference (Preferences) and/or Ideas for the EIS Preferred Alternative.
47/1	PLEASE CONSIDER REDUCING HATCHERY PRODUCTION IN THE COLUMBIA BASIN Wild fish genes are a big part of the answer to the problem.	See Global Response 1: Comments Stating a Preference (Preferences) and/or Ideas for the EIS Preferred Alternative.
48/1	Please consider the construction of weirs at the mouths of spawning tributaries, …	See Global Response 1: Comments Stating a Preference (Preferences) and/or Ideas for the EIS Preferred Alternative.
48/2	… discontinue the planting of out of basin stocks, …	See Global Response 1: Comments Stating a Preference (Preferences) and/or Ideas for the EIS Preferred Alternative.

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED).

Letter/ Comment #	Comment	Response
48/3	… and cut ALL hatchery programs that do not meet the strongest performance goal.	See Global Response 1: Comments Stating a Preference (Preferences) and/or Ideas for the EIS Preferred Alternative.
49/1	I would like to see the funds from The Mitchell Act used to help the recovery of WILD Steel head and Salmon. These fish are to valueable to let slip into the pages of history. Wild fish are stronger and better adapted to survive in the Columbia Basin. Hatchery fish only dilute the gene pool.	See Global Response 1: Comments Stating a Preference (Preferences) and/or Ideas for the EIS Preferred Alternative.
50/1	Reform	Comment noted.
51/1	Please consider reducing hatchery production in the basin. I know this is one of the most complex and controversial watersheds in the world but it has a real potential to naturally productive once again. Doing this would reduce hatchery costs, reduce recreational bycatch pressure, and limit hatchery-wild fish competition both in stream and in the ocean.	See Global Response 1: Comments Stating a Preference (Preferences) and/or Ideas for the EIS Preferred Alternative.
52/1	However, the wild salmon are suffering from the hatcheries as these hatchery fish compete with the wild salmon for their habitat and food. I fear the end of the wild salmon in other ways as well--dams, and now possibly GM fish. How many ways can wild salmon be assaulted and survive?	Comment noted.
53/1	I come from a large family and a deep tradition of fishing and hunting that has been passed on from fathers to sons and grand fathers to grand children. I have been optamistic that things where going in the right derrection. Cutting or elimanating prodution from hatcheries will not only hurt my family but families all along our shore lines. Less fish = less fisherman and in these hard times that could certanly mean the end to many small business and major losses to our econamy.	Comment noted.
53/2	Sportsman are selectivly able to remove hatchery fish with out harming wild fish. I ask you if we have so many hatchery fish returning to our rivers that it jeperdizes our wild fish, why are we not useing wild fish as brood stock for our hatcheries. Would that not protect the gene pool?	Hatchery programs that use natural-origin fish in their broodstock are currently used throughout the entire Columbia River Basin. It is also one of the measures implemented in all of the alternatives presented in the EIS. See Section 2.3.3, Hatchery Program Operational Strategies.
53/3	And if so many hatchery fish are in our rivers then why do we as sportsman get shut down or have our hands tied so often in the salt water or the lower reches of our rivers.	With the widespread prevalence of ESA-listed stocks of salmon and steelhead, impact limits on these populations are present in many of the current marine and freshwater fisheries.

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED)

Letter/ Comment #	Comment	Response
53/4	If we will ever get more wild fish to the spawning grounds we must stop the lethell harvast of our fish meaning the removal of gill nets.	Comment noted.
54/1	My parents were hard working people who believed in the American dream. They emphasized good values such as hard work, strong education, and good stewardship of our natural resources. They taught us to appreciate what we have. I do believe they were at the front lines of the recycling movement, as we were taught to never waste anything. Both were devoted to the raising their twelve children and passing on their good values to each of us. It worked! Here is why. They were able to achieve this goal, because there were plenty of natural resources at that time. When I say natural resources, I mean both fish and timber, but mostly, I mean salmon. I remember as a first grade student in Chinook, Washington, I would go to the cannery after school and hang out in the break room. If I wanted to spend time with my mom, I would go hang on her leg while she was either sliming salmon or packing them into cans. I remember the smells and the abundance and the size of the salmon. These are great memories, and eventually I grew old enough to work in the canneries as well. I remember icing troll caught salmon and filling totes that were stacked to the ceiling of Jessie's Ilwaco Fish Company. These were all great memories and lasted until I graduated from Ilwaco High in 1976. Sadly, as I grew older, I also remember more and more dams being built on the Columbia River and its estuaries. I also remember the dwindling salmon runs that were no doubt caused by the effects of these dams. This is what brings me to the point I want to make.	Comment noted.
54/2	From what I've heard and read, I agree with the majority of salmon advocates that the DEIS will not mitigate salmon to the scope in which salmon mitigation was promised when the dams were allowed to be built. The DEIS as is will not meet its promises to the citizens of this country or to the salmon. As a commercial salmon fisherman, my life depends on an abundance of salmon being produced at the hatchery level. With this in mind, I would like to ask you to rewrite the DEIS to include the promised mitigation of salmon to their pre-dam populations. I believe this is a reality that can happen and absolutely would spur our economy back to the	See Global Response 4: Comments Asserting and Referring to the Mitchell Act's Mitigation Obligation or Calling for NMFS to Define the Obligation.

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED).

Letter/ Comment #	Comment	Response
	heights of my parents' era and the days of my youth. It can be done!	
55/1	I am a commercial salmon troller and I have troll permits for Oregon, Washington and Alaska so I am deeply concerned with any issue that may impact the economics of the Pacific salmon trolling fleet and all other users of the Pacific salmon resource. I do look forward to NMFS succeeding in keeping salmon fishing viable and sustainable, and I offer these comments in the hope that I can contribute to that end.	Comment noted.
55/2	… I endorse the comments of the PFMC in their draft document F4b_SUP_MAC_NOV2010BB.	Comment noted.
55/3	I also endorse the joint comments on this DEIS from 25 organizations representing salmon fishermen, including the Washington Trollers Association and Alaska Trollers Association.	Comment noted.
55/4	Additionally, I call for the re-write of the DEIS to correct the many common flaws in the document as cataloged in comments NMFS has received from Irene Martin and Salmon for All.	See Global Response 3: Comments Addressing the EIS Process.
55/5	Salmon are prey for may animals throughout their lives. Most famously, Columbia River juvenile salmon are preyed upon by Caspian Terns and Double-crested Comorants as well as other predators as listed in the DEIS. Upon entering marine waters juvenile salmon are preyed upon by a variety of fishes including Pacific hake (Merluccius productus)1, a variety of sharks, pinnipeds and sea birds2. As larger subadults and adults, salmon become prey to larger sharks, sea lions, and dagger fish (my observations from fishing). There is an abundance of studies of predation on juvenile and adult salmon. Predator swamping, size selectivity by predators, timing of marine entry by juveniles, relative population sizes of marine forage fishes and Pacific hake and juvenile salmon and other hypotheses have been examined or modeled. Predation on adults by Southern Resident Killer Whales (SRKW) is described in the DEIS, but without stock composition data. In short, the means to conduct modeling of predation impacts on mortality and productivity exist.	Thank you for your comment. While the review you refer to is beyond the scope of this EIS, NMFS has included updated information on wildlife that have relationships with salmon and steelhead. See Section 3.5, Wildlife.
55/6	However, the DEIS fails to do even a rudimentary ecosystem based model of predation and the impact of lower hatchery production. The impact on	This EIS is not intended to make determinations under ESA. See Global Response 2.c, Scope should focus on hatchery funding

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED)

Letter/ Comment #	Comment	Response
	some predators is analyzed, but not the impact of predation on salmon populations. I offer a simplistic scenario in the next paragraph. The impact on wild and ESA listed stocks is easy to predict in the DEIS alternatives that reduce hatchery production: a greater proportion of wild and ESA listed salmon will be consumed by predators. In the case of Southern Resident Killer Whales (SRKW), the DEIS, quoting the SRK W BIOP, predicts an annual consumption of 221,000 chinook. When fewer of these chinook are of hatchery origin, more wild and ESA listed chinook will be consumed, reducing those adult populations. Avian predation of juveniles will have a higher proportion of wild and ESA listed salmon when hatchery production is reduced. Until these types of impacts are understood, the DEIS may be offering alternatives that are not feasible under the ESA. When the DEIS does not analyze the impact on salmon populations from predation, readers such as myself have no way of knowing how any of the alternatives affect survival or productivity of Columbia Basin salmon. By not accounting for the predation mortality, and how mortality may be dependent on hatchery production, the estimation of economic impacts of the alternatives is likely to be very coarse at best, and at worst a bureaucratic guess. I recommend that the DEIS be re-written to include the effects of predation so that reviewers can understand the effects the alternatives have across the marine and freshwater ecosystem.	decisions, not on future ESA determinations.
55/7	The DEIS alternatives are not analyzed under a scenario that includes the removal of the four lower Snake River dams, a possible action in the 2010 Federal Columbia River Power System (FCRPS) Biological Opinion Adaptive Management Implementation Plan. An implementation scenario that includes removal of the four lower Snake dams would be taken directly from the FCRPS BIOP and is a scenario that has as high a likelihood of occurring as the performance goals pHOS or PNI turning into BIOP requirements. Throughout the DEIS, NMFS repeats that hydro development has reduced natural spawning populations which in turn requires hatcheries to mitigate.	See Global Response 2: Comments Addressing the Scope of This EIS.

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED).

Letter/ Comment #	Comment	Response
	With dam removal occurring in the Columbia Basin (Sandy and White Salmon Rivers) and the possibility that the four lower Snake dams will be ordered removed to assure recovery of ESA listed salmon returning to the Snake Basin, the DEIS is incomplete without analyzing implementation scenarios that account for natural production increasing because of dam removal. I recommend the analysis of an alternative that reduces hatchery production as natural production rises in the Snake Basin after removal of the four lower dams.	
55/8	The DEIS conflicts with the FCRPS BIOP on mitigation obligation. The FCRPS BIOP describes NMFS' goals on page 116, section 2.3.1: "NOAA Fisheries' goal is twofold: increasing the effectiveness of hatcheries in supporting the survival and recovery of listed species and satisfying the mitigation requirements of the FCRPS." I recommend NMFS make explicit in the DEIS that they are going to fulfill the mitigation obligations as committed to in the FCRPS BIOP.	See Global Response 5: Comments Addressing the EIS and Its Relationship to Other Plans, Regulations, Agreements, Laws, and Executive and Secretarial Orders.
55/9	In response to NMFS's helpful hint to comment on the DEIS: **"Formulate a notion of what the hatchery programs should accomplish; that is, formulate a notion of the policy direction they think should guide NMFS decisions on hatchery production in the Columbia River basin."** (pA of the Executive Summary) NMFS's policy should be to mitigate fisheries to a level not less that 50% of MSY harvest of all salmon species pre dam in all portions of the basin. Since pre dam runs were on the order of 15 to 30 million salmon and steelhead, a total run including mitigation of 7.5 to 15 million would be a good place to start. Public Testimony given to NMFS in Astoria referenced a goal of the Columbia River Intertribal Fish Commission of 5 million salmon crossing Bonneville annually. Given an ocean harvest of a million or more Columbia Basin origin salmon, the 5 million over Bonneville goal is in line with 50% of pre dam MSY harvest. I recommend analysis of a goal of this magnitude of mitigation and wild run restoration.	See Global Response 1: Comments Stating a Preference (Preferences) and/or Ideas for the EIS Preferred Alternative.

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED)

Letter/ Comment #	Comment	Response
55/10	In summary, although NMFS has spent a great deal of time and money on the DEIS without collaboration with stake holders from the outset, NMFS has developed alternatives that do not meet the needs of stakeholders in the region. NMFS fails to ask stakeholders at the outset what they consider adequate mitigation for the destruction caused by the hydroelectric system.	Comment noted.
55/11	Although NMFS acknowledges the damage caused to salmon runs by dams, NMFS does not seek to analyze how mitigation needs would change as dams are removed, even though dams are being removed in the basin with more removals possible. NMFS does not attempt to apply an ecosystem wide analysis the impact of the DEIS alternatives which leaves reviewers guessing about possible outcomes from the alternatives. I recommend NMFS re-write the DEIS and resubmit it for public comment.	See Global Response 3: Comments Addressing the EIS Process.
56/1	Please restore and protect wild salmon runs!	Comment noted.
57/1	We join with recreational, commercial and tribal fishers, in-river and ocean, from Oregon, Washington, Alaska and Idaho, with generations of experience behind us on what it takes to conduct viable fisheries, and shared concerns regarding the Mitchell Act DEIS. We are united in our agreement that all of our groups are entitled to conduct viable fisheries that sustain our communities.	Comment noted.
57/2	We share a mutual concern that, due to its many errors, lack of documentation, faulty modeling, and major omissions, the DEIS is not ready for public comment and should not have been put forth for such review. It has cost numerous fisheries organizations and fisheries and tribal agencies considerable time and money to comment on a document that is seriously flawed, and which should have been corrected by the agency before public review. These comments are contained in individual letters provided NMFS by the respective organizations and agencies. The document itself represents a significant investment by the U.S. taxpayer of approximately $1,000,000. The public has a right to expect an accurate and complete document to be presented for public review.	See Global Response 7: Comments Addressing the Analysis within the EIS.
57/3	We share a mutual concern that the five alternatives presented for review all result in adverse effects on harvest. NO alternative appears that is supportive of harvest. All alternatives, including status quo, will result in	See Global Response 6: Comments Addressing the Range of Draft EIS Alternatives.

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED).

Letter/ Comment #	Comment	Response
	reduced harvest. It does not appear to us that any alternatives that might have been supportive of harvest were considered. If they were, they are not evident in the document. The Mitchell Act was intended to compensate for habitat that was destroyed due to hydro-electric and other development of the Columbia Basin. Further, its intent was mitigation to provide continued harvest opportunities to compensate for that destruction (DEIS, pp. 1-21 and 2-15). We do not believe that the five alternatives provided in the DEIS fulfill these legal obligations of the Mitchell Act.	
57/4	We share a mutual concern that the DEIS appears to subsume the Mitchell Act under the Endangered Species Act and abolish the mitigation requirements of the Mitchell Act. We are concerned that this focus might be construed as a regulatory repeal of the Mitchell Act without a Congressional vote. Fisheries along the entire west coast will be affected by the draconian cuts in harvest proposed, and we object strongly to this reorientation of the Mitchell Act. We do not believe that conservation and harvest are mutually exclusive.	See Global Response 4: Comments Asserting and Referring to the Mitchell Act's Mitigation Obligation or Calling for NMFS to Define the Obligation.
57/5	We recommend that the National Marine Fisheries Service withdraw this document, consult with our groups and the numerous agencies and tribal governments who were not consulted in the drafting of this document, and redraft a DEIS that corrects the multitude of errors and omissions noted in comments received by the agency.	See Global Response 3: Comments Addressing the EIS Process.
57/6	We also recommend that NMFS provide alternatives that are supportive of viable fisheries across all sectors, and respectful of the place of salmon and salmon fisheries in the history, economy and culture of the west coast.	See Global Response 6: Comments Addressing the Range of Draft EIS Alternatives.
57/7	We are united in our agreement that good government, good regulatory practice and good stewardship require that the current DEIS be withdrawn as requested.	See Global Response 3: Comments Addressing the EIS Process.
58/1	Hatchery steelhead are very important to my business. They help me pay my bills and run a household. Your decisions on hatchery fish impact more than just the Hatchery vs. Wild fish situation. Please consider the economic benefits that hatchery fish provide.	NMFS agrees that it is important to consider the economic effects of hatcheries. Please see Section 4.3, Socioeconomics, for an economic assessment of the EIS alternatives.
58/2	Options that cut hatchery production and diminish fisheries are not acceptable when these programs are designed to ***mitigate for fisheries***	See Global Response 1: Comments Stating a Preference (Preferences) and/or Ideas for the EIS Preferred Alternative.

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED)

Letter/ Comment #	Comment	Response
	destroyed by Federal projects. (i.e. dams, irrigation)	
58/3	Some river systems have not had wild steelhead in them for almost 100 years!! Why think that now after years of introduced fish that we can restore a wild fish. There are no true native fish in some rivers.	Comment noted.
58/4	Rather than cut production to reduce interactions between hatchery and wild fish on spawning beds, suggest better use of the select areas (terminal fisheries).	See Global Response 1: Comments Stating a Preference (Preferences) and/or Ideas for the EIS Preferred Alternative.
58/5	Why operate with the same blunt tool for everything? Some fisheries should be protected for wild fish, not all. Some fisheries should be enhanced with more hatchery fish. Create viable strong hatchery fisheries that are great for the economy and social benefits. Reserve some protected areas for wild steel head focus.	See Global Response 1: Comments Stating a Preference (Preferences) and/or Ideas for the EIS Preferred Alternative.
58/6	Please maintain or increase hatchery funding! It is the legal responsibility for the Mitchell Act and the right thing to do.	See Global Response 1: Comments Stating a Preference (Preferences) and/or Ideas for the EIS Preferred Alternative.
59/1	The hatchery programs initiated and run through the Mitchell act were intended to replenish and maintain fish populations that were declining because of habitat loss due to various mans activities, dams, aqriculture and logging. Hatcheries have done a good job of producing fish to mitigate, and therefore maintain a level of fish production that allows our ways of life, culture, heritage, tradition, and economy to survive. We depend on hatcheries to perform this vital job. the investment the government makes in hatcheries is multiplied many times in the economy and way of life of our region, in fact, the 16 million dollar yearly investment seems like a fantastic bargain. many sub species of salmon have been saved through the hatcheries, and hatchery fish have been used to reintroduce lost runs in columbia basin tributaries. Much progress has been made in habitat improvement in tributary streams, and recovery of wild spawning fish is taking place.	Comment noted.

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED).

Letter/ Comment #	Comment	Response
59/2	But now some folks come saying, "we must have wild fish. " and an assumption seems to be made that hatcheries and wild fish are not compatible, and that hatcheries may be detrimental to wild fish recover.	Comment noted.
59/3	To them I wish to point out that the habitat needed for meaningful salmon recovery is buried in lakes behind dams. The tribuatires by themselves cannot produce meaningful salmon recovery, and until the dams come down and create more of the kind of habitat that exsits on the Hanford reach of the main river hatcheries must shoulder the burden of producing healthy salmon populations.	Comment noted.
59/4	I also ask that the hatchery vs. wild issue be revisited. It seems that it is accepted science that a naturally spawned fish is different and superior to a hatchery spawned fish. I believe that this is impossible. It is like saying that you are a different person if you are born in the car on the way to the hospital, or in the hospital. The genetic makeup of the fish embryo is not changed by its location. A juvenile fish may learn different behavior in a hatchery, but it won't change its genetics. Learned behaviours can be addressed through hatchery practices. These hatchery fish prove their ability to do just fine in the ocean, they compete for food, escape predators, and migrate the same as the wild fish. They are the same fish. Hatcheries can refine their brood stock to address local population genetics issues.	Please see Section 3.2.3.1.1.2, Effects on Genetic Diversity, for an overview of recent literature on the genetic risks that hatchery-origin fish can pose to natural-origin populations.
59/5	I also wish to submit the idea that some straying of fish is a normal part of what salmon do. It should not be looked upon as such a bad thing. It is natures way of spreading some genetic diversity.	NMFS agrees that some level of between-population genetic exchange is normal and beneficial. See Section 3.2.3.1.1.2, Effects on Genetic Diversity, for more on this topic.
59/6	I'm asking the NOAA administration to operate under an alternative that boosts production of hatchery fish for meaningful salmon population. With best hatchery management practices and continued habitat recovery efforts, wild fish production will improve.	See Global Response 1: Comments Stating a Preference (Preferences) and/or Ideas for the EIS Preferred Alternative.
59/7	But it is not reasonable to drastically cut fish production at hatcheries and expect to have wild fish population expand to the extent to provide meaningful salmon populations.	Comment noted.
59/8	The 16 million dollars the government invests in hatchery production is a drop in the bucket compared to the billions spent on "fish recovery". This	Comment noted.

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED)

Letter/ Comment #	Comment	Response
	amount of money should be expanded and the prevailing policy should recognize that hatcheries are here to stay, are vital to our economy and way of life, and can work hand in hand with wild fish recovery	
60/1	As a commercial salmon troller in both Washington and Oregon, I would like to comment on the Mitchell Act DEIS. I grew up in Ilwaco, Washington and witnessed some of the last days of the truly BIG salmon runs. As more and more dams were built, I watched the huge salmon disappear. We became dependent on the government to provide hatchery fish and these hatchery programs worked. They produced a lot of salmon! Now the production at the hatcheries has been cut back to a point where there are not enough salmon to sustain all the creatures that depend on them. The DEIS must include a provision that fully mitigates for the these lost salmon runs. Our ecosystem and our livelihoods depend on it.	See Global Response 4: Comments Asserting and Referring to the Mitchell Act's Mitigation Obligation or Calling for NMFS to Define the Obligation.
60/2	Once again, I don't envy your task. From the perspective of someone who was born into the salmon industry, I know our scientist and managers can work on a solution that will satisfy the needs of every salmon user. They have in the past and they can again. Fish incubated in hatcheries are a must as long as the dams exist. Hatcheries are a necessary reality, and we cannot expect the salmon to return in abundance without them. This is not the time to decrease spending and reduce production at the hatchery level. Actually we need to increase spending and salmon output.	Comment noted.
60/3	I also believe protecting the ESA listed salmon runs is using too much time and money, and there needs to be a better balance in both spending and providing for all creatures. I realize the concern about hatchery strays mixing with the ESA listed runs, but reducing hatchery production is not the answer to helping sustain a healthy environment and sustaining natural runs.	See Global Response 1: Comments Stating a Preference (Preferences) and/or Ideas for the EIS Preferred Alternative.
60/4	We should start by eliminating all the fish farms, as we know the chemicals and diseases from these farms are having an adverse affect on our environment and all the animals that share their space or consume them.	See Global Response 1: Comments Stating a Preference (Preferences) and/or Ideas for the EIS Preferred Alternative.
60/5	We should also rethink the use of fin-clipping or what I call 'maiming' salmon as a management tool. The waste here can be counted both in	See Global Response 1: Comments Stating a Preference (Preferences) and/or Ideas for the EIS Preferred Alternative.

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED).

Letter/ Comment #	Comment	Response
	dollars and salmon. It is tragically high.	
60/6	The fact is that we would not be facing this scenario, if we had been better stewards of our environment in the first place. Clear cut logging, strip mining, damming, irrigating for both commercial and recreational use, and over fishing (in the past) have left the salmon and other species on the brink of survival. Yet, I see wonderful possibilities. Rivers like the Wenatchee and others are seeing more and more naturally spawning fish. This would not have happened without human intervention at the hatchery level. These naturally occurring runs are the result of hatchery strays fighting their way for survival. The evidence here points to the fact that hatchery fish released into the wild and stray spawners can and will reproduce and become as strong as the original stocks. If humans can intermingle with different races of humans and continue to survive, I think it is safe to say that a Columbia River Salmon can interrningle with a Frazier River or Sacramento River Salmon and still be a great fish! The same holds true for hatchery strays. The strays will eventually become a part of the natural cycle of salmon, and as we know, the strongest will survive. They have and they will continue to.	Comment noted.
60/7	I ask that you rewrite the DEIS to include an alternative that updates our hatchery systems, ramps up the production of hatchery fish, and spends more money for fish rearing programs, e.g., hatch boxes, stream enhancement, etc.... We have the science to make these necessary choices.	See Global Response 6: Comments Addressing the Range of Draft EIS Alternatives.
61/1	I would like to forward you an article that definitely lines up with the points I made about the adverse impact fish farms are having on our environment. These things left unchecked will eventually catch up to all of us. The data on these fish farms is endless, but it all points to one fact: Fish farms are bad news for both people and the environment. I hope you take the time to read this article about the East Coast Canadian fish farms. It is quite possible that the Orcas of Puget Sound are sick because of the fish farms on the West Coast of Canada and the U.S. Again, I don't envy your job, but I would be glad to relay the information I have on current issues. It really is just a matter of researching and networking, which is why we all need to work together in figuring out the best thing to do for our environment. Sadly, there is no easy answer. Here is what was forwarded to me. Thanks,	Comment noted.

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED)

Letter/ Comment #	Comment	Response
	Paul Alexander An interesting article: They pull up tarps around the pens of salmon and add the toxic chemical to kill the lice and then lower the tarps and let all this poison, toxic chemicals loose in the bay which is killing the bottom of the food chain there. Also there are test results whereas the chemical settles out to the bottom and stays there making the floor of the bay toxic to lobsters and such. It's killing life in the bay and the government says it's ok. One of the people in the article says if he released stuff like that, he'd be in jail. And he would but the farms can do it. It's a good read. < Scientific American article included on pages 2-4 of letter 61. >	
62/1	While trying to protect wild salmon and build up their runs may seem to sound good, there are a few severe flaws with the biologist's theories of eliminating the hatcheries to do this. The number one flaw that everyone is missing here is the Columbia River is no longer a "natural" river, it's a controlled river, with dams and manmade problems at every tum. Because of this, to try to build up the salmon runs based on natural means is flawed and impossible from the start. To have good runs you will always need hatcheries.	Comment noted.
62/2	The number two flaw is that much of the genetic diversity in our salmon has been diluted through 100 years of hatchery programs. To ensure no interbreeding the hatcheries have interbred the hatchery salmon with the wild salmon, and many hatchery salmon have bred with wild ones. The genetic pool is now tainted, with once diverse stock now very much alike. This is not to say that we should not try to save what is left of the genetic gene pool in these rivers or to say that the hatchery program should be run as it currently is. While the hatchery program has supplied salmon, it has, as mentioned, diluted the gene pool with its current practices. Instead of enhancing native fish runs that have certain characteristics to each river system, it has brought in fish from other systems and tailored many fish through breeding programs so they are more suitable for hatchery stock.	Comment noted.

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED).

Letter/ Comment #	Comment	Response
62/3	**So what is the solution?** Do what has already been a practice with the Snake River Sockeye Salmon, a good breeding program to build up wild stocks through the hatchery program. What most people don't know is that the Snake River Sockeye salmon were saved from extinction by pulling **all** the adult salmon out of the river in the 1990's and creating a broad stock in hatcheries up in the Manchester research facility in Clam Bay Washington. http://www.nwfsc.noaa.gov/research/facilities/manchester.cfm.This was called the **NMFS Redfish Lake Sockeye Salmon Captive Broodstock Program**. Yes, all the Snake River sockeye are hatchery fish so to speak. They took a species, built up the stock through the hatchery program, and saved it. In 1992 a single fish returned, "Lonely Larry" as he was called, and now we have over 2,000 fish returning. **This is over a 2,000% increase, a proven program.** This is what all hatcheries should do with all species of salmon on the Columbia, since the river is not natural anyway. Get rid of the current hatchery stock over time by replacing all hatchery salmon with what's left of the wild stock and use wild stock as the basis for all hatcheries. Ibat way everyone can fish for plenty of wild stock and the only cut off for all fishermen is the point to make sure that there is enough brood stock. As I said, the Columbia is no longer wild, natural, and you will never build up the salmon by relying on natural means.	See Global Response 1: Comments Stating a Preference (Preferences) and/or Ideas for the EIS Preferred Alternative.
62/4	This will also require a change in the hatcheries themselves, going from plain concrete raceways to raceways with structure in it, mimicking a river system. A study by NMFS in the 1990's at Manchester also showed that the only difference between a wild juvenile salmon in the wild and one in a raceway is its characteristics and coloring. With proper structure, shading and feeding practices (feeding from above draws the fish up instead of staying low) a hatchery raised wild juvenile salmon's survival rate dramatically improves.	See Global Response 1: Comments Stating a Preference (Preferences) and/or Ideas for the EIS Preferred Alternative.
62/5	And for those who want more salmon sooner, you can do that right away by getting rid of the man-made nesting sites of the Caspian terns and	See Global Response 1: Comments Stating a Preference (Preferences) and/or Ideas for the EIS Preferred Alternative.

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED)

Letter/ Comment #	Comment	Response
	Cormorants. These birds consume 22,000,000 smolts a year, which translates into about 1.4 million adult salmon that won't return. This year ODFW guesstimates that 2 million adult salmon (all species) will enter the Columbia River system. Had these juvenile salmon not been eaten by the terns and cormorants we would have 3.5 million salmon returns, an over 50% increase. Caspian terns were not in the Columbia River system till 1984 when they started nesting on dredge material islands. The devastation that these birds have on our salmon popUlation is much greater than the sea lions, yet sea lions are a focus of strong debate while the birds are not.	
62/6	Solutions to our salmon problems are there, if people are willing to look at the reality of our situation. As mentioned in the first paragraph, the Columbia River is no longer a "natural" river system, and in reality you have to deal with that. Treat the river as a controlled river, and fmd solutions that match that reality.	Comment noted.
63/1	My name is Kelly Reichner and I am a buyer for Fisherman's marine Supply. Mitchell act funds are vital to me and my family. Mitchell act founds provide fishing opportunities to families here in the Northwest, which in turn provided enjoyment and employment to many people in our communities. Salmon and Steelhead fishing is a tradition for many families and people here in the Northwest and we need to continue this tradition. I sincerely hope that full funding for the Mitchell act will continue.	Comment noted.
64-418/1	I am writing to urge the National Marine Fisheries Service to restore wild salmon and steelhead populations by scaling down hatchery programs in the Columbia River Basin.	See Global Response 1: Comments Stating a Preference (Preferences) and/or Ideas for the EIS Preferred Alternative.
64-418/2	As you are aware, after the federal government built dams across the Columbia River Basin—and killed most of the wild salmon and steelhead—it set up a broad network of hatcheries to boost fish harvests. But the hatchery fish have only done further harm to the wild fish. They prey on wild fish. They compete for habitat and food. And they interbreed with them, making wild fish more vulnerable to disease.	Comment noted.
64-418/3	As you also know, the Fisheries Service is now reevaluating the hatchery program. One of the four options under consideration would reduce the number of hatchery-raised fish and cut the number of salmon and steelhead harvested annually by half.	See Global Response 1: Comments Stating a Preference (Preferences) and/or Ideas for the EIS Preferred Alternative.

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED).

Letter/ Comment #	Comment	Response
	This option would most quickly restore wild fish in the Columbia River Basin and I urge you to support it.	
T1/1	Good evening. My name is Mike Matylewich and I am the manager of the Fisheries Management Department of the Columbia River Inter-Tribal Fish Commission. The Commission was formed by the Nez Perce, Warm Springs, Umatilla and Yakama Tribes in 1977 for the purpose of coordinating its member tribes' fishery policies and providing technical expertise. The tribes reserved the right to take fish at all usual and accustomed places in the treaties of 1855. In return for millions of acres of land, the federal government promised to secure that right. Following the treaties, natural salmon production declined in the Columbia Basin as development activities compromised survival. Mitchell Act hatcheries were built to mitigate for salmon losses caused by development of the hydro system and other factors. However, implementation of the Act from 1948 until 1982 focused on releasing fish below tribal fisheries by using the hatcheries primarily below the Bonneville Dam as a substitute for natural spawning and rearing in the upper Columbia. The result was a severe decline in upper Columbia and Snake River runs as harvesters focused on the abundance of lower river hatchery runs. Since 1982, tribes have implemented numerous salmon restoration and rebuilding projects to improve habitat and move production upriver to assist naturally-spawning runs. Now we see a series of alternatives from NMFS Fisheries that would reverse this progress throughout the Columbia Basin. In this regard, we are deeply dismayed that NMFS Fisheries did not consult with the Commission or its member tribes in development of this DEIS. The scope of the Mitchell Act DEIS includes all hatchery production in the Columbia Basin, including hatcheries operated by the Commission's member tribes. The document identifies alternative proposals for significant cuts and elimination of hatchery programs throughout the basin;	Comment noted.

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED)

Letter/ Comment #	Comment	Response
	programs that serve to both support important treaty fisheries and assist in the recovery of natural origin salmon populations.	
T1/2	The tribes find the document cumbersome and frustrating to review.	Comment noted.
T1/3	The range of alternatives is limited and only contains reductions in hatchery production from current programs. The cuts would impact the congressionally mandated Lower Snake River Compensation program, as well as several mitigation commitments under FERC relicensing agreements. NMFS simply cannot choose to disrupt mitigation programs designed to offset the negative impacts of the hydro-system and other development in the basin. As long as the dams remain in place, the mitigation responsibility remains.	See Global Response 6: Comments Addressing the Range of Draft EIS Alternatives.
T1/4	The tribes have spent decades negotiating agreements with the federal government on hatchery programs. Many of the identified cuts in hatchery programs are contrary to commitments in the U.S. v. Oregon Management Agreement. The DEIS only provides lip service to this Agreement, which was negotiated by NMFS and is court-ordered. From our perspective the DEIS attempts to unilaterally undo current enforceable agreements between the tribes and the United States that were based on extensive collaborative efforts.	See Global Response 5: Comments Addressing the EIS and Its Relationship to Other Plans, Regulations, Agreements, Laws, and Executive and Secretarial Orders.
T1/5	The tribes believe that the objectives for hatchery and natural fish need to be determined basin-by-basin. We have successfully invested countless resources to this end. It is inappropriate for NMFS to ignore its negotiated management agreements and now propose arbitrary and fixed standards throughout the Columbia Basin. Management decisions can and must be flexible to address differences in habitat and survival potential and different levels of risk for different populations. We have sought and established balance in the U.S. v. Oregon Management Agreement so that our efforts to fully recover natural populations can fit with the needs of people to utilize the fishery resource. The tribes view hatcheries as wild salmon nurseries that can serve to give struggling populations a boost as we work to resolve habitat and hydro system survival issues. Carefully managed hatcheries can and do provide benefits for fish recovery and, under the Endangered Species Act, recovery of naturally spawning populations in natural habitat.	See Global Response 5: Comments Addressing the EIS and Its Relationship to Other Plans, Regulations, Agreements, Laws, and Executive and Secretarial Orders.

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED).

Letter/ Comment #	Comment	Response
T1/6	Our technical staff is currently reviewing the document and they have noted many errors in the document and its analysis of the proposed alternatives. For example, we see significant errors in the harvest modeling which cause errors in both the economic impacts analysis and in the estimates of hatchery and wild fish escaping fisheries. These assumptions result in misleading conclusions in the economic impacts analysis and in the estimates of hatchery and wild fish escaping fisheries. These errors make it exceptionally difficult to judge the level of impacts on efforts to use hatcheries for conservation, mitigation efforts and fisheries. These errors make it exceptionally difficult to judge the level of adverse impacts that any of these alternatives will have on treaty and non-treaty fisheries.	See Global Response 7: Comments Addressing the Analysis within the EIS.
T2/1	Good evening. My name is N. Kathryn Brigham and I am Secretary of the Board of Trustees of the Confederated Tribes of the Umatilla Indian Reservation, also known as the CTUIR. In our Treaty of 1855 with the United States, the CTUIR reserved the right to take fish at all usual and accustomed places. The CTUIR and other Tribes have worked hard to be co-managers in the Columbia River Basin and in many areas have succeeded. The most disappointing issue to me is the approach that NOAA has taken in developing the this DEIS and how it was provided to the Columbia River Treaty Tribes who are co-managers. This approach reminds me of the 1970's. It was my hope this approach would not be repeated and here we are responding to a draft that appears to negatively impact the work we have done in restoring the fish runs.	See Global Response 3: Comments Addressing the EIS Process.
T2/2	We watched the salmon runs go down as the Columbia Basin was developed for purposes of hydropower, flood control and navigation. Current returns are less than two million salmon each year, down from untold millions in the times of my ancestors. Hatcheries were built to mitigate for the salmon losses from the hydropower and other development activities. However, most of this mitigation has not been in-place or in-kind. The Mitchell Act is a good example of this misguided implementation. The implementation of the Act	Comment noted.

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED)

Letter/ Comment #	Comment	Response
	did not follow the intent of the Act which was to mitigate for losses where the losses occurred or for the species impacted. Most of the Mitchell Act hatchery releases are downstream of The Dalles Dam and downstream of where the losses occurred. Most of releases are tule fall chinook and coho and not the other species that were damaged. The consequence of this injustice is that upriver returns and upriver fisheries suffered, while lower river and ocean fisheries benefitted and the Federal Trust Responsibility to the Tribes was not fulfilled. We are now faced with this Mitchell Act DEIS, which goes beyond the Mitchell Act funding and purports to provide a blueprint for analysis of all Columbia Basin Hatcheries under the Endangered Species Act.	
T2/3	Since the early 1980s, the tribes, states and federal agencies have worked hard to implement numerous salmon restoration and rebuilding projects to improve habitat and move production upriver to assist naturally-spawning runs and help correct the past injuries. The CTUIR has closely worked with state and federal co-managers to adapt and improve hatchery programs in NE Oregon and SE Washington tributaries over the last two decades. Hatchery programs and adjustments were based on case-by-case circumstances unique to each subbasin and hatchery program. Some recent Umatilla adaptive program improvements were, in part, the result of science review recommendations. Other programs, such as in the Grande Ronde Basin, have intentionally implemented a diversified approach to evaluate uncertainties and potential varying successes. Disrupting these specific hatchery programs and purposes with a NOAA directive to reduce hatchery production, as it appears the DEIS is paving the way for implementing the HSRG recommendations as a rule, instead of a tool to be selectively used as appropriate. The US vs. Oregon Parties reviewed the HSRG, including at TAC and PAC meetings, and agreed that the HSRG is a tool, not a rule.	Thank you for your comment. The use of HSRG metrics or measures in the EIS is only for illustrative purposes and should not be interpreted as NMFS advocating for their use. Hatchery production and its planning and implementation are long-term investments of time, effort, and resources. Successful hatchery operations must retain a level of flexibility to respond to changes in the natural environment, in funding availability, and in social priorities. Additionally, hatchery operators and NMFS need the flexibility to manage programs for many of the effects of artificial production, both beneficial and adverse.
T2/4	The DEIS also does not appear to be consistent with the immense investment of resources in past and recent hatchery management processes, which have documented successes in returning fish.	Comment noted.
T2/5	The CTUIR is proud of the successes that have been achieved in local basins where salmon were once extirpated. In the Umatilla Basin, the result is	Thank you for your comment. The alternatives in the EIS do not propose reductions in individual hatchery programs. Reductions

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED).

Letter/ Comment #	Comment	Response
	revived annual Indian and non-Indian salmon fisheries over the last 20 years and increasing naturally produced populations where there had been none for over 70 years. We are also experiencing success in the Walla Walla Basin where fish returns this year allowed for the first tribal salmon fishery in nearly 100 years. Cuts in the proposed Walla Walla Hatchery program to comply with this DEIS would undermine the very comprehensive and collaborative effort to restore salmon in the Walla Walla Basin.	in hatchery programs, when they occur in the EIS, are a function of the Implementation scenario. See Global Response 7: Comments Addressing the Analysis within the EIS.
T2/6	Now, as we examine the Mitchell Act and Columbia River Basin Hatchery Operations DEIS we are disappointed to see a series of alternatives and implementation scenarios from NOAA Fisheries that would reverse the progress discussed above, not only in the CTUIR ceded territory, but throughout the Columbia Basin. The DEIS identifies a range of alternatives and gives implementation scenarios that call for significant cuts and elimination of hatchery programs throughout the basin; programs that serve to support important treaty fisheries, help fulfill federal trust obligations, and assist in the recovery of natural origin salmon populations.	See Global Response 5: Comments Addressing the EIS and Its Relationship to Other Plans, Regulations, Agreements, Laws, and Executive and Secretarial Orders.
T2/7	The limited range of alternatives considered affects congressionally-mandated mitigation programs and indicates to us that the federal government will again fail to keep the promises made in the Treaty of 1855. NOAA Fisheries simply cannot choose to unilaterally disrupt mitigation programs. The tribes have spent decades negotiating agreements with the federal government on hatchery programs.	See Global Response 5: Comments Addressing the EIS and Its Relationship to Other Plans, Regulations, Agreements, Laws, and Executive and Secretarial Orders.
T2/8	Indeed, many of the identified cuts in hatchery programs in the implementation scenarios are contrary to commitments in the U.S. v. Oregon Management Agreement. The DEIS only provides lip service to this Agreement, which was negotiated by NOAA Fisheries and is court-ordered. From our perspective the DEIS attempts to undo current enforceable agreements between the tribes and the United States that were based on extensive collaborative efforts.	See Global Response 5: Comments Addressing the EIS and Its Relationship to Other Plans, Regulations, Agreements, Laws, and Executive and Secretarial Orders.
T2/9	It is also unthinkable that the Columbia River Treaty Tribes with a right to take 50% of the harvestable fish in the River and its tributaries were not adequately consulted on this DEIS. NOAA Fisheries says they spent nearly 5 years developing this product, yet they did not take the time to comply with their consultation obligations, including the guidance provided by	See Global Response 3: Comments Addressing the EIS Process.

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED)

Letter/ Comment #	Comment	Response
	Secretarial Order 3206, "American Indian Tribal Rights, Federal-Tribal Trust Responsibilities, and the Endangered Species Act." The very first principle of that Order provides in pertinent part: "Whenever the agencies, bureaus, and offices of the Departments are aware that their actions planned under the Act may impact tribal trust resources, the exercise of tribal rights, or Indian lands, they shall consult with, and seek the participation of, the affected Indian tribes to the maximum extent practicable. This shall include providing affected tribes adequate opportunities to participate in data collection, consensus seeking, and associated processes." Similarly, Principle 3 of the Order provides in pertinent part: "If the proposed conservation restriction is directed at a tribal activity that could raise the potential issue of direct (directed) take under the Act, then meaningful government-to-government consultation shall occur, in order to strive to harmonize the federal trust responsibility to tribes, tribal sovereignty and the statutory missions of the Departments." No meaningful government-to-government consultation took place with the CTUIR. This lack of consultation with effected Tribes that have been stewards of the resources for millennia may help explain why there are so many deficiencies in the DEIS. The DEIS list of consulted parties does not include CTUIR as a consulted entity.	
T2/10	As our staff continues to review the document, we continue to note many factual, data-related or technical errors in the information used and the analysis of the proposed alternatives. For example, we see significant errors in the harvest modeling which cause errors in both the economic impacts analysis and in the estimates of hatchery and wild fish escapement.	See Global Response 7: Comments Addressing the Analysis within the EIS.
T2/11	This is a model that the tribes and state co-managers in the basin have not agreed on and have many concerns with it.	See Global Response 7: Comments Addressing the Analysis within the EIS.

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED).

Letter/ Comment #	Comment	Response
T2/12	These errors make it exceptionally difficult to judge the level of impacts on efforts to use hatcheries for conservation, mitigation efforts and fisheries. In other words, erroneous assumptions go into the economic impacts analysis and escapement objectives, which in turn inform the socioeconomic and environmental justice sections, making those sections inadequate and unlikely to withstand legal challenge. We will provide detailed comments by the deadline.	See Global Response 7: Comments Addressing the Analysis within the EIS.
T2/13	These errors are also a symptom of the overbroad purpose and scope of this DEIS. Insead of limiting itself to Mitchell Act funding, NOAA Fisheries attempts to lay out a template for ESA coverage for all Columbia Basin Hatcheries. NOAA fisheries should narrow this EIS to just focus on Mitchell Act funding, and leave Columbia Basin hatchery practices for a more considered and fully informed NEPA product.	See Global Response 2: Comments Addressing the Scope of This EIS.
T2/14	In sum, there are significant policy, technical and legal problems with the DEIS. The policy problems go to the intended purpose and use of this DEIS. It is structured to go beyond the Mitchell Act programs and apply to all hatcheries in the Columbia Basin; the alternative and implementation scenarios selected appear to drive federal hatchery policy toward a reduction in the numbers of fish produced and returning; it appears to stake out a policy position toward the strict application of HSRG recommendations that are inappropriate for some programs; and it is based on uncertain scientific premises regarding the fitness of all hatchery fish.	See Global Response 2: Comments Addressing the Scope of This EIS. Additionally, see Global Response 7: Comments Addressing the Analysis within the EIS.
T2/15	The technical errors include inaccurate assumptions regarding the composition of current fisheries, both tribal and non-tribal, factual inaccuracies regarding the fish themselves, and omission of relevant data on other fisheries that influence the Columbia Basin harvest return.	See Global Response 7: Comments Addressing the Analysis within the EIS.
T2/16	Some of the problems that appear to make the DEIS vulnerable to legal challenge include the failure to consult with effected Tribes, and the limited scope of alternatives and implementation scenarios. While all possible alternatives and implementation scenarios need not be included, the spectrum of reasonable possibilities must be represented. The possibility of increased production, which is not only reasonable but contemplated in both the US v. Oregon Management Agreement and the Columbia Basin	See Global Response 6: Comments Addressing the Range of Draft EIS Alternatives.

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED)

Letter/ Comment #	Comment	Response
	Fish Accords, is not represented in the implementation scenarios, nor is it clearly identified in the alternatives.	
T2/17	The tribes believe that the objectives for hatchery and natural fish need to be determined basin-by-basin. We have successfully invested countless resources to this end.	See Global Response 1: Comments Stating a Preference (Preferences) and/or Ideas for the EIS Preferred Alternative.
T2/18	It is inappropriate for NMFS to ignore its negotiated management agreements and now propose arbitrary and fixed standards throughout the Columbia Basin. Management decisions can and must be flexible to address differences in habitat and survival potential and different levels of risk for different populations. We have sought and established balance in the U.S. v. Oregon Management Agreement so that our efforts to fully recover natural populations can fit with the needs of people to utilize the fishery resource. Hatcheries are wild salmon nurseries that can serve to give struggling populations a boost as we work to resolve habitat and hydro system survival issues. Carefully managed hatcheries can and do provide benefits for fish recovery and, under the Endangered Species Act, recovery of naturally spawning populations in natural habitat.	See Global Response 2: Comments Addressing the Scope of This EIS.
T2/19	The Hanford Reach is an area where using hatcheries to rebuild natural runs is a huge success and we see both Tribal and non-tribal people fishing on these stocks. I am not the one who is going to tell this area that these stocks are going to see a reduction.	Comment noted.
T3/1	Good evening. My name is Virgil Lewis, Sr. and I am Chairman of the Fish, Wildllife, and Law and Order Committee of the Yakama Tribal Council. In our treaty of June 9, 1855 with the United States, the Yakama Nation reserved the right to take fish at all usual and accustomed places. This included the right to have fish present to catch. The federal government promised to secure that right and we have been struggling ever since for the federal government to live up to its promise. For generations, we have watched as human development of the Columbia Basin has increased and salmon returns have decreased. Decisions were made, usually without tribal consultation and mostly without regard for tribal concerns, that knowingly and deliberately sacrificed wild runs of salmon in exchange for other benefits from the rivers, such as irrigated	Comment noted.

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED).

Letter/ Comment #	Comment	Response
	agriculture and hydroelectric power. Hatcheries have always been envisioned as a necessary tool to mitigate for fishery losses due to development of the hydrosystem and other aspects of the Northwest's economy. Accordingly, hatcheries represent a promise to those who have always depended on the salmon for culture, sustenance, and livelihood to replace the fish that are destroyed as a result of human development of salmon habitats.	
T3/2	Our first review of the DEIS indicates that it is riddled with numerous errors in facts and understanding of fishery management processes in the Columbia Basin. It also appears to suffer from a number of structural weaknesses. Many of these shortcomings could have been avoided through consultation with the fishery co-managers during the preparation of the DEIS.	See Global Response 7: Comments Addressing the Analysis within the EIS.
T3/3	Our technical staff is currently reviewing the document and they have noted many errors in the document and its analysis of the proposed alternatives. For example, we see significant errors in the harvest modeling which cause errors in both the economic impacts analysis and in the estimates of hatchery and wild fish escaping fisheries. These errors make it exceptionally difficult to judge the level of impacts on efforts to use hatcheries for conservation, mitigation efforts, and fisheries. It is exceptionally difficult to judge the level of adverse impacts that any of these alternatives will have on treaty and non-treaty fisheries.	See Global Response 7: Comments Addressing the Analysis within the EIS.
T3/4	We have found no analysis whatsoever as to how any of the alternatives would further the fishery development objectives envisioned in the Mitchell Act. In fact, most alternatives do just the opposite. One glaring example of interest to many in the audience here tonight is Snake River fall Chinook. Appendix C in the draft EIS documents that NOAA would reduce fall Chinook releases in the Snake River by over 95%, from a current level of approximately 5.8 million juveniles to only 100,000 to 300,000 fish annually. NOAA and many in the audience may recall that adult returns of Snake River wild/natural fall Chinook were fewer than 80 fish in 1990 prior to ESA listing. The Columbia River Treaty Tribes fought very hard to restore fish to natural habitats in the Snake by releasing Lyons Ferry hatchery fish above Lower Granite beginning in 1996. These efforts are mainly	See Global Response 7: Comments Addressing the Analysis within the EIS.

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED)

Letter/ Comment #	Comment	Response
	responsible for increasing adult returns above Lower Granite to greater than 16,600 fish in 2008. More than 25,000 fall Chinook will cross Lower Granite Dam in 2010, by far the greatest count since the dam went online in 1975. With the level of hatchery production cuts proposed by NOAA, adult returns to Lower Granite Dam would likely revert to the levels that led to ESA listing. Appendix C also documents that NMFS would reduce fall Chinook releases in the Yakima River by 1.7 million fish annually. These cuts would seriously impact valuable fisheries throughout the Columbia Basin from Buoy 10 to the popular fishing areas here around the Tri-Cities. These are but two examples. The draft EIS contains many other examples of how NOAA proposes to undo successful local recovery efforts in the mid- and upper Columbia basins that the Yakama Nation and the Confederated Tribes of the Umatilla have worked to achieve in collaboration with local stakeholders. These successes have returned salmon and salmon fisheries to our local fishing areas, in many cases for the first time in decades.	
T3/5	These successes in our local fishing areas are occurring because the tribes have worked hard to implement numerous salmon restoration and rebuilding projects to improve habitat and move production upriver to assist naturally-spawning runs and help correct the past injustices. The Yakama Nation struggled with federal and state agencies for over two decades to build the Cle Elum Hatchery in the Yakima River. The Yakama Nation overcame the obstacles to construct a facility that works in harmony with the natural environment to improve spring chinook returns. The result is healthy sustainable populations that provide fishing opportunities where there once were none. So we are disappointed to see a series of alternatives from NOAA Fisheries in the Mitchell Act and Columbia River Basin Hatchery Operations DEIS that would reverse this progress, not only in Yakama Nation ceded territory, but throughout the Columbia Basin. The document identifies a range of alternatives that call for significant cuts and elimination of hatchery programs throughout the basin; programs that serve to both support	See Global Response 7: Comments Addressing the Analysis within the EIS.

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED).

Letter/ Comment #	Comment	Response
	important treaty and recreational fisheries and assist in the recovery of natural origin salmon populations.	
T3/6	The limited range of alternatives evaluated in the DEIS also would create ripple effects across a number of important international and regional agreements that incorporate existing hatchery programs. Recent settlements of the Pacific Salmon Treaty, U.S. v Oregon Management Agreement, and the Columbia River Fish Accords assume that hatchery production levels will remain approximately at status quo levels during the term of the agreements. Any of the alternatives in the DEIS would seriously alter those programs.	See Global Response 5: Comments Addressing the EIS and Its Relationship to Other Plans, Regulations, Agreements, Laws, and Executive and Secretarial Orders.
T3/7	In addition, the alternatives would require reductions in congressionally-mandated hatchery mitigation programs, and would signal to us that the federal government may again fail to keep the promises made in the Treaty of 1855. NOAA Fisheries simply cannot choose to unilaterally disrupt mitigation programs, such as those negotiated as part of FERC relicensing agreements, designed to offset the negative impacts of the hydropower system and other development in the Columbia Basin.	See Global Response 2: Comments Addressing the Scope of This EIS.
T3/8	The tribes have spent decades negotiating agreements with the federal government on hatchery programs. Many of the identified cuts in hatchery programs are contrary to commitments in the U.S. v. Oregon Management Agreement. The DEIS only provides lip service to this Agreement, which was negotiated by NOAA Fisheries and is entered as a federal court order that is binding on the parties to this case. From our perspective the DEIS attempts to undo current enforceable agreements between the tribes and the United States that were based on extensive collaborative efforts. To the extent the hatchery programs in the Management Agreement are specifically referenced in the Columbia River Accords, forced changes to those hatchery programs would upset important terms and conditions in the Accords and cast uncertainty on its future.	See Global Response 5: Comments Addressing the EIS and Its Relationship to Other Plans, Regulations, Agreements, Laws, and Executive and Secretarial Orders.
T3/9	We also question the strength of the scientific foundation upon which the draft EIS is constructed. The analysis in the draft EIS appears to be broadly based on the scientific notion that hatchery-origin fish, regardless of parentage or the number of generations in culture, are inherently inferior to natural-origin fish and should be excluded from the spawning grounds.	See Global Response 7: Comments Addressing the Analysis within the EIS.

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED)

Letter/ Comment #	Comment	Response
	Yet this principle is contradicted by the Snake River fall Chinook success mentioned earlier, by coho returns to the mid- and upper Columbia River tributaries, and by spring Chinook returns in the Umatilla, Walla Walla, Yakima and numerous other subbasins and tributaries. Even some of NOAA's own scientists have recently delivered presentations or published papers questioning this principle, or at least its broad application. It strikes us as unacceptable public policy to completely overhaul the existing hatchery system in the Columbia Basin on the basis of new and relatively unproven science regarding the use of hatcheries in restoring natural stocks.	
T3/10	The tribes believe that the objectives for hatchery and natural fish need to be determined basin-by-basin. We have successfully invested countless resources to this end. It is inappropriate for NMFS to ignore its negotiated management agreements and now propose arbitrary and fixed standards throughout the Columbia Basin. Management decisions can and must be flexible to address differences in habitat and survival potential and different levels of risk for different populations. We have sought and established balance in the U.S. v. Oregon Management Agreement so that our efforts to fully recover natural populations can fit with the needs of people to utilize the fishery resource. The tribes view hatcheries as wild salmon nurseries that can serve to give struggling populations a boost as we work to resolve habitat and hydrosystem survival issues. Carefully managed hatcheries can and do provide benefits for fish recovery and, under the Endangered Species Act, recovery of naturally spawning populations in natural habitat.	See Global Response 2: Comments Addressing the Scope of This EIS. Additionally, See Global Response 5: Comments Addressing the EIS and Its Relationship to Other Plans, Regulations, Agreements, Laws, and Executive and Secretarial Orders.
T4/1	Good evening. My name is Bruce Jim and I am the chairman of the Fish and Wildlife Committee of the Confederated Tribes of the Warm Springs Reservation of Oregon. I am also the chairman of the Columbia River Inter-Tribal Fish Commission. The Commission was formed by the Nez Perce, Warm Springs, Umatilla and Yakama Tribes in 1977 for the purpose of coordinating its member tribes" fishery policies and providing technical expertise. The tribes reserved the right to take fish at all usual and accustomed places in the treaties of 1855.	Thank you for your comment. The EIS is not making a decision on compliance with the Federal Trust Responsibility. Rather, the EIS shows the effects that will inform NMFS' decision making on this issue by noting effects on fish, as well as environmental justice and socioeconomic effects relevant to the Federal Trust Responsibility. See Global Response 5: Comments Addressing the EIS and Its Relationship to Other Plans, Regulations, Agreements, Laws, and Executive and Secretarial Orders.

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED).

Letter/ Comment #	Comment	Response
	The subject of tonight's hearing is the Draft Environmental Impact Statement on the Mitchell Act and Columbia River Basin Hatchery Operations. Hatcheries are important and necessary tool for realizing the federal government's treaty trust responsibility. Hatcheries, including those funded under the Mitchell Act, were built to mitigate for salmon losses caused by development of the hydropower system and other development activities that destroyed salmon habitat and compromised survival. In the case of the Mitchell Act, early implementation focused on releasing fish from hatcheries primarily downstream of Bonneville Dam and downstream of tribal fisheries. The mitigation was neither in-place nor in-kind. For many years tribal fishermen suffered while non-tribal harvesters benefited from the abundance of lower river hatchery runs. The tribes have practiced conservation in their fisheries since time immemorial so that the benefits can accrue to fisheries from Alaska to Columbia River tributaries. The tribes spent decades fighting state and federal agencies to get a fair allocation of the resource and provide spawning escapement to produce fish for future generations. The tribes fought in federal court for recognition of the treaty fishing right. The co-management relationship between the tribes, federal agencies and state agencies evolved into a series of negotiated agreements that gave the co-managers a decision framework for harvest and hatchery actions.	
T4/2	In reviewing the Draft Environmental Impact Statement, the tribes find it disturbing that the analysis of alternatives does not adequately reflect regional collaborative agreements, such as the 2009-2017 U.S. v. Oregon Management Agreement. The status quo alternative reflects hatchery release in 2007. The analysis of the remaining alternatives all reflect reductions in hatchery releases, which is contrary to the commitments in the regional agreements.	NMFS received many comments speaking to the inconsistencies of the programs evaluated in the draft EIS with current production. NMFS has updated the baseline production in Alternative 1 (No Action) to reflect 2010 production levels.
T4/3	In this regard, the alternatives also indicate that NOAA Fisheries did not appropriately consult with the Columbia River tribes in development of this DEIS. We are deeply dismayed by that.	See Global Response 3: Comments Addressing the EIS Process.

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED)

Letter/ Comment #	Comment	Response
T4/4	The significant cuts in hatchery programs identified in the analysis of alternatives would be detrimental to important fisheries and recovery efforts. We find it difficult to speak to the results of the analysis on fisheries because we find that many of the underlying assumptions used in the analysis are simply not correct. The model results are misleading on the effects of harvest and economics from the fisheries. All other things equal, we do know the less hatchery fish released will result in reduced harvest opportunity for all fisheries.	See Global Response 7: Comments Addressing the Analysis within the EIS.
T4/5	The tribes have led the way on implementing numerous innovative salmon restoration and rebuilding projects to improve habitat and utilize hatchery production to assist upriver naturally-spawning runs. Now we see a series of alternatives from NOAA Fisheries that would reverse this progress throughout the Columbia Basin. NOAA Fisheries simply cannot choose to disrupt mitigation programs designed to offset the negative impacts of the hydropower system and other development in the basin. As long as the dams remain in place and habitat is destroyed, the mitigation responsibility remains.	See Global Response 4: Comments Asserting and Referring to the Mitchell Act's Mitigation Obligation or Calling for NMFS to Define the Obligation.
T4/6	The tribes, in collaboration with the other co-managers, have sought and established balance in the U.S. v. Oregon Management Agreement so that our efforts to fully recover natural populations can fit with the needs of people to utilize the fishery resource. The analyzed alternatives will have negative effects on tribal and non-tribal fishing communities. There will be no environmental justice for these communities if we allow hatchery releases to be reduced and offer little else to improve the natural runs. Hatcheries are important tool in achieving environmental justice and the tribes view hatcheries as wild salmon nurseries that can serve to give struggling populations a boost as other survival issues are addressed.	See Global Response 5: Comments Addressing the EIS and Its Relationship to Other Plans, Regulations, Agreements, Laws, and Executive and Secretarial Orders.
T4/7	As demonstrated by tribal programs, carefully managed hatcheries can and do provide benefits for fish recovery and, under the Endangered Species Act, recovery of naturally spawning populations in natural habitat.	Comment noted.
T5/1	Good evening. My name is Hobe Kytr. I am the nonprofit administrator for Salmon For All, a nonprofit trade association of Columbia River commercial fishermen and processors, representing the lower river non-Indian gillnet fleet.	Comment noted.

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED).

Letter/ Comment #	Comment	Response
	The Mitchell Act originally was enacted by congress in May of 1938 in response to the very real threat to the Columbia River's once mighty salmon runs posed by the construction of Bonneville Dam, the impending Columbia Basin Project, and the projected continuing development of the Columbia River Basin over the next several decades, including but not limited to large federal hydroelectric dam projects. By 1938, a large percentage of the once extensive habitat available to Columbia River salmonids had been lost behind dams built without fish passage. Work was continuing on Grand Coulee Dam, scheduled for completion in 1941, which would cut off the upper third of the Columbia River Basin from fish passage forever. Beginning in 1939, the Grand Coulee Fish Maintenance Program began efforts to salvage what could be saved of the salmon runs of the upper Columbia River by trapping fish at Rock Island Dam and hauling them in tanker trucks to what little habitat was still available in the Okanogan, Entiat, Methow, and Wenatchee Rivers. Fish culturists from the US Fish & Wildlife Service also sought to transform the upper river runs into composite, blended stocks suitable for artificial propagation. This is the context of desperate need in which the Mitchell Act legislation emerged. In the best of all possible worlds, one would have hoped that more care should have been taken to preserve salmonid spawning habitat in the Columbia River Basin. But that's not what happened. Hydropower development, federal and otherwise, has turned the Columbia River into the most dammed river in the world. Irrigation projects transformed the Columbia Plateau into one of the most productive agricultural regions in the world, but also lured countless millions of migrating salmonids into unscreened irrigation ditches that proved to be dead-end death traps. Logging, pollution, industrial and ever encroaching urban development all took their toll west of the Cascades as well. In desperate attempts to save lower Columbia River Chinook and coho salmon, Mitchell Act hatcheries became the repositories in which their genetic legacy still resides. Much has been said and written about what recovery of the Columbia River's populations of salmon and steelhead would look like, and what it	

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED)

Letter/ Comment #	Comment	Response
	would take to achieve that goal, insofar as it is possible. Those of us who represent various constituencies of the harvest community are perhaps the strongest proponents of Columbia River salmonid recovery. We have the most at stake in this effort, the most to gain if it succeeds, and the most to lose if it does not.	
T5/2	But, none of the five options presented in the Mitchell Act Draft Environmental Impact Statement will help us advance towards recovery. In fact, all the options presented in the Mitchell Act DEIS lead us away from Columbia River salmonid recovery.	See Global Response 6: Comments Addressing the Range of Draft EIS Alternatives.
T5/3	By defining the status quo as the conditions present in 2007, Option One undoes all the advances in hatchery reform during the past three years, including successful supplementation programs instituted by the Columbia River Treaty Tribes as co-managers of the fishery.	Thank you for your comment. The final EIS has been updated to reflect the hatchery production levels and program management in 2010. See Global Response 7: Comments Addressing the Analysis within the EIS.
T5/4	All the options presented fail to live up to federal treaty trust obligations under the 2008-2017 US v. Oregon Management Agreement and the 2008 renewal of the Pacific Salmon Treaty.	Thank you for your comment. The EIS is not making a decision on compliance with the Federal Trust Responsibility. Rather, the EIS shows the effects that will inform NMFS' decision making on this issue by noting effects on fish, as well as environmental justice and socioeconomic effects relevant to the trust. See Global Response 5: Comments Addressing the EIS and Its Relationship to Other Plans, Regulations, Agreements, Laws, and Executive and Secretarial Orders.
T5/5	Not one of the Options is consistent with Washington's updated 2010 Lower Columbia Salmon Recovery and Fish and Wildlife Subbasin Plan, or with the Conservation and Recovery Plan for Oregon's Populations of Lower Columbia Salmon and Steelhead recently approved by the Oregon Fish & Wildlife Commission.	See Global Response 5: Comments Addressing the EIS and Its Relationship to Other Plans, Regulations, Agreements, Laws, and Executive and Secretarial Orders.
T5/6	It is dispiriting to find that, all the while NMFS has been directing the states, tribes, and regional councils to engage in recovery planning, that the agency itself has been working on a Draft Environmental Impact Statement for Mitchell Act hatcheries that negates all the effort that has gone into the recovery planning mandated by NMFS.	Comment noted.
T5/7	The errors and omissions in the Mitchell Act DEIS are too numerous to reference here in any detail, but they are seriously disturbing. The coho and	See Global Response 7: Comments Addressing the Analysis within the EIS.

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED).

Letter/ Comment #	Comment	Response
	Chinook modeling in Appendix K use the wrong parameters with reference to the 2008-2117 US v. Oregon Management Agreement, the wrong allocation formulae for the non-Indian commercial and recreational mark-selective fisheries for spring Chinook, and the wrong mortality rate for the tangle net fishery.	
T5/8	Even if the data on smolt production in the Columbia basin used in Appendix K were correct, and there is good reason to suspect they are not, the conclusions derived from the calculations in the modeling exercise still would be so erroneous that they would be useless to anyone.	See Global Response 7: Comments Addressing the Analysis within the EIS.
T5/9	Appendix I, the Socioeconomic Resource Report, was never peer-reviewed nor completed, meaning that not only does it not live up to accepted academic standards, it does not meet NOAA Fisheries' own policy on peer review and data quality.	See Global Response 7: Comments Addressing the Analysis within the EIS.
T5/10	The data on environmental justice communities in Tables 3-26, 3-27, and 3-28 list the wrong census data, and omit data from the four poorest counties in the states of Washington and Oregon, where the majority of our fishermen just happen to reside.	See Global Response 7: Comments Addressing the Analysis within the EIS.
T5/11	At this point in time, it is quite clear that the Mitchell Act Draft Environmental Impact Statement was not ready for public review. We call for the National Marine Fisheries Service to withdraw the DEIS until it actually has engaged in the full consultation process that already should have taken place with the tribes, states, and agencies that co-manage Columbia River fisheries.	See Global Response 3: Comments Addressing the EIS Process.
T5/12	The data and conclusions in the Mitchell Act DEIS are of no use to those constituencies who are most likely to be affected by the draconian cuts proposed for Columbia River salmonid production levels.	Comment noted.
T5/13	We reject the listed range of options that call for far fewer fish for the Columbia River Basin, which threaten to leave us all with reduced and failing fisheries.	See Global Response 2: Comments Addressing the Scope of This EIS. Additionally, see Global Response 6: Comments Addressing the Range of Draft EIS Alternatives.
T5/14	Let us instead embrace hope, and work together for increased abundance, leading to genuine recovery for Columbia River salmonids wherever it is possible to achieve that worthy goal.	Comment noted.

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED)

Letter/ Comment #	Comment	Response
T5/15	Finally, we remind the National Marine Fisheries Service that the mitigation obligations undertaken by the federal government in 1938, which were renewed and expanded in 1946, have not ended. The dams are still there, lost habitat is still lost, degraded habitat has only begun to be rehabilitated, and the naturally spawning salmonid stocks upon which recovery depends are not yet recovered, nor will any of the options presented in the DEIS make them more likely to do so.	Comment noted.
T6/1	**Historical Background of the Mitchell Act (Public Law 75-502)** **By Irene Martin September, 2010** The Mitchell Act (Public Law 75-502) was passed by Congress on May 11, 1938, a year after passage of the Bonneville Project Act in 1937, which authorized building of Bonneville Dam for the purpose of improving navigation on the Columbia River, as well as for production and sale of electricity. News accounts during the months leading up to passage of the Mitchell Act recorded the contemporary understanding of the purpose of the Act. < See 8 pages in T6 in Appendix L3 >	Thank you for your comments and the summary of the historic political context surrounding the enactment of the Mitchell Act. This testimony will be included, in its entirety, in the Public Comments Appendix (L3).
T7/1	My name is Kent Martin. I am a commercial fisherman from Skamokawa, Wa. As a commercial salmon fisherman, who has fished 40 seasons in Alaska, I and my colleagues are very aware of the productivity of wild salmon populations. Perhaps this is why we have so stubbornly persisted on the Columbia River. Every year, even in the poor years, we see the recurring miracle of what abundance really looks like. It is not something one can capture on the printed page - it can only be experienced first hand before the printed page can have real meaning. The Columbia was once like that Alaska experience. Huge volumes of four of the five species of Pacific salmonids spawned and reared, not just in the tributaries but in the mainstem Columbia. One of the few peep-holes into that former abundance is the population of bright fall Chinook that spawn	Comment noted.

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED).

Letter/ Comment #	Comment	Response
	in the Hanford Reach of the mainstem Columbia. They only exist today because Ben Franklin Dam was never built. Because the Hanford Reach is the rare exception, rather than the norm, hatcheries were built to compensate society of the impending loss of this valuable resource. The mantra was that with hatchery production, "We can have our cake and eat salmon too." And to a great degree they were right. The genetic heritage of these populations, many of which were concreted out of their spawning and rearing habitat, would not be extant were it not for hatcheries. But now the "wild fish advocates" and NMFS say that hatcheries are the primary constraint to recovering natural spawning abundance. In so doing, they have redefined what constitutes "recovery." So instead of the 30,000 or 40,000 natural spawners that formerly returned to the Lower Snake River when I was a young man, "recovery" is now defined as a sustained return of around 8,000 fish.	
T7/2	Nowhere is this historical amnesia more in evidence that at the unveiling of the Hatchery Scientific Review Group's recommendations. Dr. Lars Mobrand, in response to a question on stream flows, stated that the HSRG did not consider stream flows in their recommendations. Moreover, it was assumed that habitat was going to be stabilized, if not improved.	Comment noted.
T7/3	The big difference between abundance here and in Alaska are these two issues: water and habitat. I have seen nothing in the behavior of NMFS or in the DEIS that would lead me to believe that this agency will take an active role in preserving water and habitat. For example, the agency withdrew from a lawsuit brought by Riverkeepers against the proposed LNG terminal at Bradwood in the lower Columbia. The project raised grave environmental concerns about mainstem rearing habitat and the bi-weekly 12 million gallon unscreened water withdrawals to re-ballast ships. Those of us involved in trying to deal with these environmental issues concerning water and habitat expected strong advocacy for the fish from NMFS, but that did not happen.	Comment noted.
T7/4	The Draft EIS suggests dramatic hatchery reductions with reduced recovery goals, which trivialize the hard work the states, tribes and other agencies	Comment noted.

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED)

Letter/ Comment #	Comment	Response
	and groups have done to facilitate meaningful recovery. The DEIS represents more of the "bait and switch" tactics that I have witnessed for the 50 years I've been fishing, where harvest is expected to shoulder the burden of a recovery that never happens.	
T7/5	Speaking of "bait and switch," I note that a centerpiece of the HSRG recommendations was a shift to selective harvest. That policy has been affirmed by NMFS. Commercial fishermen on the lower Columbia have developed the tangle net and are experimenting with other types of gear like seines in order to release unmarked natural spawning fish. NMFS personnel and HSRG members have been out on the water to observe some of these experiments. The harvest sector is doing its part in salmon recovery, but what relevance does selective harvest, sport or commercial, have if there aren't significant numbers of hatchery mitigation fish to catch?	This EIS is not intended to, nor does it propose to, present overarching harvest management alternatives for analysis. See Global Response 2: Comments Addressing the Scope of This EIS.
T7/6	No hatcheries, no habitat, no harvesters, no advocacy for fish, only press releases about a recovery that will never happen. That is the message I get from the DEIS. If NMFS is sincere about salmon recovery, hatchery production will be reduced only after natural spawning salmon recovery occurs, not before. The Mitchell Act represents Congressional recognition of the mitigation obligation owed due to development of the Columbia Basin. Mitigation and conservation are not diametrically opposed; rather, they are two sides of the same coin.	Comment noted.
T7/7	The DEIS needs to be completely rewritten to ensure that the habitat, hatchery, harvest and hydro components are brought into balance so that genuine salmon recovery can take place.	See Global Response 3: Comments Addressing the EIS Process.
T8/1	Good evening. My name is McCoy Oatman and I am the Chairman of the Nez Perce Tribal Executive Committee. In 1855 the Nez Perce Tribe signed a treaty with the federal government. That treaty reserved to the Tribe a permanent "homeland" or "Reservation," as well as the right to take fish at all usual and accustomed places. In return for millions of acres of land, the federal government promised to secure these rights.	Comment noted.

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED).

Letter/ Comment #	Comment	Response
	The Nez Perce people live in the heart of salmon country -along the Salmon, Snake, Grande Ronde, Imnaha, Clearwater and Tucannon rivers. Historically, these places were the major producers of salmon and steelhead in the Columbia River Basin. Yet as more people moved and settled in the west and as the system of dams were put in place, our people watched the salmon runs decline and become extinct and listed under the Endangered Species Act. We have witnessed the extirpation of entire populations of salmon and steelhead and the blocking and altering of thousands of miles of rivers and streams as a result of the dams. They include: Hells Canyon, Oxbow, and Brownlee on the Snake River, Wallowa Lake Dam on the Wallowa River, Dworshak Dam on the North Fork Clearwater, and before that, Lewiston Dam on the mainstem Clearwater. And then, just 40 years ago, four more dams were constructed by the United States on the Lower Snake River. Together, they make a total of eight mainstem dams that every single salmon and steelhead must somehow deal with in their migration downstream and their return from the ocean. As dam after dam was built, the United States committed to building hatcheries that would mitigate for the salmon losses they caused. The Tribe is very active in this hatchery effort. We manage two major hatchery facilities and 16 satellite facilities that release approximately eight million juvenile fish each year. These include spring, summer, and fall Chinook, coho, steelhead, and lamprey. Together, our releases make up about 30% of the 26 million salmon and steelhead in the Snake Basin. We release these fish to provide a harvest and rebuild naturally spawning runs.	
T8/2	We also work very closely with our state and federal co-managers (including NOAA Fisheries), to coordinate on and improve the combined hatchery programs in the Snake River Basin. It is understandable how we would be surprised and angry that NOAA would put forth a proposal for a "policy directive" on hatcheries without first consulting us or the other hatchery managers in the basin.	See Global Response 3: Comments Addressing the EIS Process.

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED)

Letter/ Comment #	Comment	Response
	NOAA Fisheries says they spent nearly five years developing this product, yet they did not take the time to talk to the entities producing the fish. This lack of consultation may help explain why there are so many deficiencies in the Draft EIS.	
T8/3	First, we are stunned to see a series of alternatives that would reverse the progress we have made; not only in Nez Perce territory, but throughout the Columbia Basin. The Draft EIS identifies a range of alternatives and gives "implementation scenarios" for them that call for significant cuts and elimination of hatchery programs throughout the basin. These are programs that serve to support important tribal and non-tribal fisheries; they help fulfill federal trust obligations; they are congressional mitigation obligations; and they assist in the recovery of natural origin salmon populations.	See Global Response 5: Comments Addressing the EIS and Its Relationship to Other Plans, Regulations, Agreements, Laws, and Executive and Secretarial Orders.
T8/4	For example, three of the implementation scenarios call for termination of the spring Chinook program at Rapid River hatchery. You must understand the importance of this hatchery to the area -our people faced armed SW A T teams, and went to jail to exercise their treaty rights to fish at Rapid River. It has been one of the few locations in the Snake that still provides for tribal subsistence and livelihood. In 2010 alone, tribal and non-tribal fishermen harvested over 15,000 salmon returning to Rapid River. This does not include the thousands of Rapid River salmon that are harvested downstream of Bonneville Dam.	Thank you for this comment. The public review of the draft EIS identified inaccuracies with the baseline hatchery program analyzed in the draft. Since the draft EIS, NMFS has worked with the Columbia River Basin state and tribal co-managers to update and revise the hatchery production in the final EIS to more thoroughly and accurately represent the baseline of 2010. As a result, the Rapid River Chinook salmon program has not been reduced or eliminated in any of the EIS alternatives.
T8/5	Another example is that four of the alternatives call for drastically reducing releases of Snake River fall Chinook. The Nez Perce and other Tribes had to resort to a legal challenge to have those fish released upstream of Lower Granite. At the time, fall Chinook were one of the most threatened of Snake Basin salmon. Today, they are returning in great numbers and spawning in the wild. In fact, even NOAA Fisheries has used the success of these returns to argue that the hydroelectric system is not as detrimental as most people know it to be.	Comment noted.
T8/6	In regards to these examples, we understand that NOAA wants to minimize the use of the so-called implementation scenarios. But in all honesty, what are we supposed to evaluate, other than what is put down on paper?	NMFS agrees that the implementation scenarios, as an example of each alternative for analysis, are difficult to separate from the Alternative policy directions themselves. NMFS has provided revised and expanded language in the final EIS to further clarify

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED).

Letter/ Comment #	Comment	Response
		this relationship. Please see Section 4.1.3, Implementation Scenarios.
T8/7	Our second point relates to disruption of our agreements and dealing in bad faith. The Nez Perce, Umatilla, Yakama, and Warm Springs Tribes, as well as the states of Oregon, Washington and Idaho, and the U.S. Fish and Wildlife Service, and NOAA Fisheries have spent decades negotiating legally binding agreements for hatchery programs. Indeed, we just concluded our new 10 year agreement in 2008. Many of the proposed cuts in this Draft EIS involve the same hatcheries we just reached agreement on. We are amazed that NOAA Fisheries has not compared and evaluated what it proposes in this document with the agreement it just entered into. We understand that NOAA is a large agency, but what is proposed here is of basinwide significance. It is incumbent that NOAA is aware of its agreements and legal mandates. The left hand must know what the right hand is doing.	See Global Response 5: Comments Addressing the EIS and Its Relationship to Other Plans, Regulations, Agreements, Laws, and Executive and Secretarial Orders.
T8/8	Our third point goes to the science underpinning the Draft EIS. Our staff has found many factual or technical errors in the information used and its analysis. For example, we see significant errors in the harvest modeling which results in misrepresenting both the economic impacts and the estimates of fish escapement. Furthermore, we were deeply troubled to find that the model to analyze hatchery affects has been used way beyond its intended purpose. And finally, the tone of the document and its proposed strategies, leave NOAA with no alternative but to abrogate its agreements, its Biological Opinions and congressional mandates. Because the entire analysis in the document is built on this unsupportable foundation, we don't know how it can be fixed. We strongly advise NOAA to start again.	See Global Response 7: Comments Addressing the Analysis within the EIS.
T8/9	The Nez Perce Tribe believes that the objectives for hatchery and natural fish need to be determined basin-by-basin. What works in a coastal stream in the Puget Sound certainly does not work here 500 miles from the ocean and above eight dams. Management decisions can and must be flexible to address differences in habitat and survival rates and different levels of risk for different populations. We have already sought and established balance	NMFS agrees that management of hatchery production has to consider the site-specific needs of the programs, the species affected, and the needs of the operators and recipients of the benefits from the programs.

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED)

Letter/ Comment #	Comment	Response
	in the U.s. v. Oregon Agreement. NOAA needs to follow that same path.	
T8/10	In closing, the overbroad purpose of the Draft EIS, the way it was developed without partners, its advocacy ofabrogating congressional mitigation mandates and legal agreements, and its potential real-life effects on our fishermen, call for starting over. NOAA Fisheries should narrow this EIS to just focus on Mitchell Act funding, it should use different evaluation methods in doing so, and it should leave policy direction on Columbia Basin hatchery practices for a more fully informed collaborative effort. In the end, carefully managed hatcheries provide benefits for fishermen and recovery of naturally spawning populations in their natural habitat.	See Global Response 2: Comments Addressing the Scope of This EIS.
T9/1	Good evening. My name is Joel T. Moffett. I currently serve as the treasurer for both the Columbia River Inter-Tribal Fish Commission and the Nez Perce Tribal Executive Committee. The Commission was formed by the Nez Perce, Warm Springs, Umatilla and Yakama Tribes in 1977 for the purpose of coordinating its member tribes' fishery policies and providing technical expertise. The tribes reserved the right to take fish at all usual and accustomed places in the treaties of 1855. The subject of tonight's hearing is the Draft Environmental Impact Statement on the Mitchell Act and Columbia River Basin Hatchery Operations. Hatcheries are important and necessary tools for realizing the federal government's treaty trust responsibility. The annual pre-development return of salmon and steelhead to the Columbia River is estimated at 11 to 16 million, according to a report by the Northwest Power and Conservation Council. When Congress enacted the Mitchell Act in 1938, the annual returns were still substantial. Congress had the foresight to authorize mitigation for impending salmon losses caused by development of the hydropower system and other activities, but Congress could not envision the extent of those losses. Current returns to the Columbia River are only a small fraction of the historical returns. Congress authorized the Mitchell Act as a fisheries development program and did not specify how or where the mitigation was to be realized. Early	Thank you for your comment. The EIS does not make a decision on compliance with the Federal Trust Responsibility. Rather, the EIS shows the effects that will inform NMFS' decision making on this issue by noting effects on fish, as well as environmental justice and socioeconomic effects relevant to the Federal Trust Responsibility. See Global Response 5: Comments Addressing the EIS and Its Relationship to Other Plans, Regulations, Agreements, Laws, and Executive and Secretarial Orders.

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED).

Letter/ Comment #	Comment	Response
	implementation focused on releasing fish from hatcheries primarily downstream of Bonneville Dam and downstream of tribal fisheries. The mitigation was neither in-place nor in-kind and for many years tribal fishermen suffered. The tribes spent decades fighting state and federal agencies to get a fair allocation of the resource and provide spawning escapement to produce fish for future generations. The tribes released their own report in 1982 to reform the Mitchell Act program. The tribes fought in federal court for recognition of the treaty fishing right. The co-management relationship between the tribes, federal agencies and state agencies evolved into a comanagement decision framework for harvest and hatchery actions.	
T9/2	The tribes are dismayed that the analysis of alternatives in the Draft Environmental Impact Statement does not adequately reflect regional collaborative agreements, such as the 2008-2017 U.S. v. Oregon Management Agreement. Contrary to the commitments in regional agreements, the analysis of the alternatives in the DEIS reflects substantial reductions in hatchery releases.	See Global Response 5: Comments Addressing the EIS and Its Relationship to Other Plans, Regulations, Agreements, Laws, and Executive and Secretarial Orders.
T9/3	We find it difficult to speak to the specifics of the results of the analysis because many of the technical underpinnings of the analysis are simply not correct. The tribes will more extensively address the technical issues in written comments.	See Global Response 7: Comments Addressing the Analysis within the EIS.
T9/4	The significant cuts in hatchery programs identified in the analysis of alternatives would be detrimental to important fisheries and recovery efforts. This would be particularly hard felt in Idaho, because one of the alternatives calls for substantial reductions in the Snake River fall chinook program and the closure of Rapid River Hatchery. The wild Snake River fall Chinook return at Lower Granite Dam reached a low of 78 fish in 1990. After the significant 1994 U.S. v. Oregon proceedings which focused on the Snake River fall Chinook, the tribes worked hard with co-managers to implement an innovative salmon restoration program to utilize hatchery production to assist the naturally-spawning return above Lower Granite Dam. The benefits of all this effort can be seen in the return	Thank you for this comment. The public review of the draft EIS identified inaccuracies with the baseline hatchery program analyzed in the draft. Since the draft EIS, NMFS has worked with the Columbia River Basin state and tribal co-managers to update and revise the hatchery production in the final EIS to more thoroughly and accurately represent the baseline of 2010. As a result, the Rapid River Chinook salmon program has not been reduced or eliminated in any of the EIS alternatives.

TABLE L2-1. INDIVIDUAL COMMENTS AND RESPONSES (CONTINUED)

Letter/ Comment #	Comment	Response
	of 50,000 fall chinook to Lower Granite Dam this year. Rapid River Hatchery is part of Idaho Power Company's mitigation for losses created by the construction of the Hell's Canyon Dam complex. Rapid River provides a key fishing opportunity for tribal members and non-tribal members. Tribal members risked their safety and went to jail to affirm the treaty fishing right at Rapid River. As long as the Hell's Canyon Dam complex remains standing, the mitigation obligation will remain. NOAA Fisheries turns its back on decades of regional cooperation by even proposing these actions as ways to implement the proposed alternatives.	
T9/5	NOAA Fisheries offers the same old tired policies that led to listings for protection under the Endangered Species Act. Substantially cutting hatchery programs without addressing other survival factors will not advance regional salmon recovery efforts. The result will be museum piece management that does disservice to recovery of the species and fisheries.	Comment noted.
T9/6	As demonstrated by tribal programs, carefully managed hatcheries can and do provide benefits for fish recovery and, under the Endangered Species Act, recovery of naturally spawning populations in natural habitat. The tribes have always put the needs of the resources fIrst, because our culture depends on it. The tribes stand ready to work collaboratively with the other regional co-managers to restore salmon populations throughout the Columbia Basin. Unfortunately, this Draft Environmental Impact Statement, as presently constructed, does nothing to advance the effort.	Comment noted.

This page left blank intentionally.

Appendix L3

Comment Letters and Public Testimony Received on the Mitchell Act Hatcheries Draft EIS

This appendix contains the comment letters and public testimony received on the Mitchell Act Hatcheries Draft EIS. Comment letters and public testimony are listed in the order provided below in Table L3-1.

TABLE L3-1. INDEX OF COMMENT LETTERS AND PUBLIC TESTIMONY ON THE MITCHELL ACT HATCHERIES DRAFT EIS.

LETTER NUMBER	COMMENTER	NUMBER OF COMMENTS
	FEDERAL AGENCIES	
1	Bonneville Power Administration	24
2	Department of the Interior	115
3	U.S. Environmental Protection Agency	35
	TRIBES	
4	The Confederated Tribes of the Colville Reservation	18
5	Makah Tribe	21
6	Nez Perce Tribe[1,2]	27
7	Northwest Indian Fisheries Commission	14
8	Burns Paiute Tribe	16
9	Columbia River Inter-Tribal Fish Commission[1]	180
10	Cowlitz Indian Tribe	6
11	The Shoshone-Bannock Tribes	15
12	The Tulalip Tribes	32
	STATE AGENCIES	
13	Oregon Department of Fish and Wildlife	98
14	Alaska Department of Fish and Game	26
15	Idaho Department of Fish and Game	6
16	Washington Department of Fish and Wildlife	13
	LOCAL GOVERNMENTS, UTILITIES, AND PORTS	
17	Tillamook County	7
18	Port of Bandon	6
19	County of Garfield	7
20	Chelan, Douglas, and Grant County PUDs	23

TABLE L3-1. INDEX OF COMMENT LETTERS AND PUBLIC TESTIMONY ON THE MITCHELL ACT HATCHERIES DRAFT EIS (CONTINUED).

LETTER NUMBER	COMMENTER	NUMBER OF COMMENTS
	ORGANIZATIONS	
21	Federation of Fly Fishers Steelhead Committee	1
22	Native Fish Society	13
23	Lower Columbia Fisheries Coalition	9
24	Hatchery Scientific Review Group	9
25	Snake River Salmon Recovery Board	17
26	Ilwaco Charter Association	7
27	Pacific Fishery Management Council	14
28	Fisherman's Advisory Committee for Tillamook County	7
29	Salmon for All[1,3]	80
30	Wild Fish Conservancy	33
31	Artists4Action	38
32	Westport Charterboat Association	4
33	Middle Snake WRIA 35 Watershed Planning	5
34	Washington State Federation of State Employees	4
35	Coastal Conservation Association	9
36	Long Live the Kings	4
37	Lower Columbia Fish Recovery Board	4
38	Northwest River Partners	6
39	Public Power Council	7
40	Wild Salmon Center	9
	CITIZENS	
41	Rick and Patricia Hampton	3
42	Eric Flowers	2
43	Mark Lyte	4
44	Nicholas Erler	1
45	Steve Hawley	3
46	Schuyler Dunphy	2
47	Ryan Jenkins	1
48	Jonathan Stumpf	3
49	Wes Green	1
50	Greg Cheslyn	1
51	Conrad Gowell	1
52	Margie and William Borchers	1
53	Don Butterfied	4
54	Paul Alexander	2
55	Joel Kawahara	11
56	Kim Waldman and Lynn Gilman	1
57	29 signatories to one letter	7
58	Rob Crandall, Water Time Outfitters	6
59	Nathan Rogol	8

TABLE L3-1. INDEX OF COMMENT LETTERS AND PUBLIC TESTIMONY ON THE MITCHELL ACT HATCHERIES DRAFT EIS (CONTINUED).

LETTER NUMBER	COMMENTER	NUMBER OF COMMENTS
60	Paul Alexander	7
61	Paul Alexander	1
62	Bob Horning	6
63	Kelly Reichner	1
	AMNESTY INTERNATIONAL 'CITIZEN LETTER'	
64 - 418	Numerous Commenters	3
	ORAL TESTIMONY AT THE PUBLIC MEETINGS (SEPTEMBER 20 THROUGH OCTOBER 13, 2010)	
T1	Columbia River Inter-Tribal Fish Commission[1]	6
T2	Confederated Tribes of the Umatilla Indian Reservation	19
T3	Yakama Nation	10
T4	Confederated Tribes of the Warm Springs Reservation of Oregon	7
T5	Salmon for All[1]	15
T6	Irene Martin	1
T7	Kent Martin	7
T8	Nez Perce Tribe[1]	10
T9	Columbia River Inter-Tribal Fish Commission[1]	6

[1] Commenters who provided both comment letters and testimony at one or more public meetings.

[2] See Testimony #8 for comments identified in Attachment 1 to letter.

[3] See Testimony #5 for comments identified in Appendix H to letter.

Department of Energy

Bonneville Power Administration
P.O. Box 3621
Portland, Oregon 97208-3621

Letter #1

ENVIRONMENT, FISH AND WILDLIFE

December 3, 2010

In reply refer to: KE-4

Mr. William W. Stelle, Jr.
Regional Administrator
National Marine Fisheries Service, Northwest Region
7600 Sand Point Way NE
Seattle, WA 98115

Dear Mr. Stelle:

The Bonneville Power Administration (BPA) is submitting the following comments to the National Marine Fisheries Service (NOAA Fisheries) on the Draft Environmental Impact Statement to Inform Columbia River Basin Hatchery Operations and the Funding of Mitchell Act Hatchery Programs (Draft EIS).

Overall, BPA recommends that the Draft EIS be revised to ensure better consistency with the hatchery strategy and findings in the Federal Columbia River Power System (FCRPS) Biological Opinion, the Biological Opinion on U.S. v. Oregon, and the Upper Snake Biological Opinion that are currently in place. As described below, we encourage NOAA Fisheries to reformulate the alternatives and analysis and clarify the ultimate objective: to provide for both 1) ESA directives to recover naturally spawning salmon and steelhead, and 2) commitments to produce hatchery fish under legally mandated mitigation and tribal treaty and trust obligations. Our specific comments follow. #1 #2

General EIS Approach, Purpose and Need

One way to simplify the EIS would be to focus on Mitchell Act funding only. This would scale back the EIS to a more manageable level. A more narrowly focused EIS would establish a viable Mitchell Act funding policy and still allow the individual hatchery projects to continue their present path of obtaining individual ESA compliance, and would not prohibit later National Environmental Policy Act (NEPA) efforts from considering other, focused initiatives. #3

The purpose and objectives for this EIS are unclear. Tying the EIS to specific objectives – e.g. enabling hatchery production commitments while minimizing impacts to wild fish --would build an understanding of why this EIS needs to go forward and the benefits it may provide. A clearer statement of the underlying need may also help, as the need can then be used to help define the alternatives. #4

Is the intent to inform future hatchery operations decisions under the ESA a purpose for the document, or is it a cumulative impact—i.e. a reasonably foreseeable future action—at least in a general sense and at the level of a policy-type EIS? #5

One confusing aspect is that the alternative proposed policies seem to be based upon achieving specific quantitative Endangered Species Act (ESA) performance goals, but the EIS, at the same time, seems to disassociate itself from having any use for ESA purposes (i.e., it does not contribute to conclusions about whether an alternative meets or does not meet ESA requirements). This seems contradictory and inconsistent. It is hard to understand how the alternative policies proposed, all of which would introduce significant changes to existing hatchery practices, can be analyzed without serious consideration to both ESA coverage and legal commitments to produce hatchery fish. Hatchery operators and the public need to know whether compliance with the new policy would help them achieve ESA compliance and meet the requirements of mandated US v. Oregon fishery production and harvest targets. #6

We suggest that the purpose and need statement, as well as the alternatives, be modified to include and address other mandates, such as US v. Oregon obligations and commitments, a process for achieving ESA compliance, and tribal trust responsibilities. As an example, since so much of the Mitchell Act funding is used to meet U.S. v. Oregon needs, it seems problematic to omit these obligations as a central component of the EIS. The hatchery policy and the comprehensive review of hatchery programs to inform decision-makers on how to proceed with individual hatchery programs under the ESA require a balancing of the goals of ESA against other project purposes, such as the value of meeting mitigation obligations and tribal trust responsibilities. In formulating a hatchery policy, NOAA Fisheries should undertake a comprehensive analysis that considers the various legal mandates that must be met, rather than trying to avoid making determinations of whether compliance with competing legal processes is likely to be achieved. Considering only the one purpose, without evaluating its effects upon other purposes, would likely produce a skewed approach. #7 #8

General Approach to Alternatives and Alternatives Analysis

If NOAA Fisheries decides to continue with a combined EIS approach, then we recommend that the alternatives be revisited. A fuller range of reasonable policy-level alternatives should be considered, to provide NOAA Fisheries with a better analysis and understanding of environmental impacts. In particular, the alternatives presented in the EIS tend to be too technical for the broad level of analysis NOAA Fisheries suggests it is trying to achieve, and reduce flexibility in terms of being able to incorporate changing science over time. Each of the alternatives should also incorporate an adaptive management approach in order to allow change to take place over time as new information is collected and assessed. #9 #10

The alternatives should enable NOAA Fisheries to evaluate the sometimes competing needs of mitigation and tribal trust responsibilities versus ESA compliance needs. These needs must be balanced, so that neither goal is excluded. For example, the stated purpose for the Puget Sound Chinook Harvest Resource Management Plan EIS was defined as "to ensure the sustainability of #11

Puget Sound Chinook salmon by conserving the productivity, abundance and diversity of the populations within the Puget Sound ESU while optimizing harvest of abundant Puget Sound salmon, and to meet the criteria under Limit 6 of the ESA 4(d) rule." NOAA Fisheries could take a similar approach in this EIS, emphasizing sustainability while meeting mitigation and tribal trust responsibilities. #11 #12

It is unclear why NOAA Fisheries used a seemingly arbitrary distinction between Alternatives 4 and 5, focusing on upper versus lower river hatcheries for stronger performance goals. If specific performance goals are kept in the alternatives, why not tie the need for the stronger performance goals to populations that are weaker and/or more important for recovery? Other criteria that should affect formulation of a hatchery funding policy might include importance of the hatchery's contribution to harvest objectives, its economic value, its ceremonial or subsistence value to Native Americans, the cost and ease of implementation, and the relative merit of funding on the ground improvements versus the need to fund monitoring and evaluation. While some of these criteria are presented in the draft EIS, others are not. And, for those that are presented, it is difficult to discern their relative importance in terms of your pending policy decision. NOAA Fisheries should provide its assessment of the tradeoffs, limitations, or synergistic effects these various components might offer. #13 #14

The difference between "activities not considered" and "alternatives not considered" is unclear. For example, in the Executive Summary and Purpose and Need chapter, the EIS describes "activities" that are not considered reasonable. However, in the main alternatives chapter the EIS describes "alternatives" not considered reasonable. The use of these terms should be clarified to avoid confusion. Once clarified, the section on alternatives and activities that have been considered but dismissed should be re-written to provide a better rationale as to why they were dismissed. Several of the dismissed activities seem to artificially restrict the reasonable array of alternatives (e.g. no new hatchery facilities, no hatchery practices with adverse effects, and no habitat restoration). In some instances, these types of actions or alternatives might make sense. To eliminate them completely from consideration could be seen as pre-decisional. #15 #16

Current Alternatives

Alternative 1 fails to recognize that, under present policies, there are already changes expected in hatchery operation based on the FCRPS Biological Opinion and the ESA. All hatcheries need ESA coverage, and all hatcheries are currently already preparing Hatchery and Genetic Management Plans (HGMPs). NOAA Fisheries, even without this new programmatic policy, is already in the process of reviewing those HGMPs and issuing compliance documents, which may alter hatchery operations to minimize effects on wild fish. Recognition of these efforts should be included in the EIS. #17

It is unclear why Alternative 2 should be the only alternative that contains a limitation of no new weirs or selective fisheries. The isolated application of this limitation on Alternative 2 only would seem to skew the results of the comparison. Alternatives 3, 4 and 5 all utilize new weirs and selective fisheries and are thus treated differently than Alternative 2. Overall, why would a #18

policy alternative get into such a level of technical detail? If NOAA Fisheries wants to analyze the effects of including weirs, or selective fisheries, consider doing it by including them in all alternatives where they make sense based on the definition of the alternative, and excluding them in the alternatives where they don't make sense based on the definition. Further, the EIS should explore the range of ways that can be used to minimize impacts of hatchery fish on wild fish. #18 #19

Other Comments

Cost of implementation: One criterion that does not seem to be addressed at all is the cost of implementation. While the EIS presents information on socio-economic impacts to the fisherman, and those who receive money from fisherman, it doesn't seem to consider budgetary constraints of those who would have to implement the policies, i.e. pay for the weirs, new fishing terminals, construction of new hatcheries, etc. Cost of implementation is a large factor in terms of how quickly, or even whether, some of these policies may be realistically implemented. #20

Summary of resource effects: In the summary of resource effects, it is hard to determine, based on numbers alone, if the impact is adverse or beneficial, making the comparison of alternatives more difficult. We suggest NOAA Fisheries use more qualitative descriptions of the effects in the summary, and elaborate on how these impacts to resources may affect the regulated public. Numbers of fish and dollars are not sufficient for this purpose. Of course, then they could be backed up by the numbers as appropriate. #21

Cumulative impacts: Council on Environmental Quality (CEQ) guidance suggests that only past (not present) actions should be reflected in the baseline. Present actions should be part of the cumulative impact analysis. In addition, there is some guidance that although past actions need not be analyzed individually they should be catalogued in such a way to show they were considered. Also, only past actions that have current impacts need to be considered. CEQ has produced several guidance documents, including a document entitled "Guidance on Consideration of Past Actions in Cumulative Effects Analysis." In contrast, this document states that consideration of past actions is only necessary in so far as it informs agency decision-making. In the EIS, NOAA considers both past and present actions as part of the environmental baseline and only analyzes reasonably foreseeable future actions as part of their cumulative impacts analysis, which seems inconsistent with the guidance referenced above. BPA suggests that the cumulative impact analysis be restructured accordingly. #22

Climate Change: We suggest that the impacts on greenhouse gas emission be addressed. Under NEPA, climate change is not a cumulative action but rather a range of shifting future scenarios. Combining the two can be confusing. Consider revising this section to be more in line with CEQ draft guidance. #23

Length of Time for EIS: The EIS suggests that the analysis is only good for ten years. Setting a period such as this seems arbitrary as the analysis is valid so long as the conditions warranting a supplemental EIS have not been met. These conditions include substantial changes to the #24

#24

proposed action that are relevant to environmental concerns or there are significant new circumstances or information relevant to environmental concerns (see 40 CFR 1502.9(c)).

BPA appreciates the opportunity to comment. We would be glad to meet with you to discuss our comments further, including suggestions on alternatives, as we have discussed with your staff.

Sincerely,

Lorri Bodi

F. Lorraine Bodi
Acting Vice President, Environment, Fish, and Wildlife

Letter #2

United States Department of the Interior

OFFICE OF THE SECRETARY
Office of Environmental Policy and Compliance
620 SW Main Street, Suite 201
Portland, Oregon 97205-3026

December 3, 2010

William W. Stelle, Jr.
Regional Administrator
NMFS Northwest Region
National Oceanic and Atmospheric Administration
7600 Sand Point Way NE
Seattle, Washington 98115

Subject: Mitchell Act EIS

Dear Mr. Stelle,

The Department of the Interior (Department) has reviewed the National Marine Fisheries Service (NOAA Fisheries) Draft Environmental Impact Statement (DEIS) for Columbia River Basin Hatchery Operations and the Funding of Mitchell Act Hatchery Program, Oregon, Washington, and Idaho. The programs supported by Mitchell Act funding are critically important to ensure the Federal government continues to mitigate for the natural resources lost to Federal hydropower development and other Federal activities that have harmed the nationally and internationally significant fishery resources of the Columbia River. While we have substantial policy and technical concerns with the DEIS, the Department supports the development and completion of this Environmental Impact Statement (EIS) as a means to define, focus, and strengthen the Mitchell Act program, and we offer the following comments for that purpose.

Our review of this DEIS found numerous areas in which the technical information and analysis for hatchery and harvest programs in the Columbia Basin require modification and improvement. In addition, it is our understanding that the model used in analyzing the alternatives was constructed in 1999 and that model assumptions, data inputs, and the resulting impact analyses may be in error. The DEIS does not address how the hatchery performance policy being developed correlates to the existing hatchery strategy in the 2008 Federal Columbia River Power System Biological Opinion (FCRPS BiOp); the 2008-2017 U.S. v. Oregon Management Agreement; or the Columbia River Fisheries Management Agreement (CRFMA) which was negotiated under the authority of the U.S. v. Oregon court proceedings and accepted by the Oregon Federal District Court in 2008. The U.S. Fish and Wildlife Service (Service) operates hatchery programs funded under the Mitchell Act in support of the CRFMA, and the Department believes any modifications to Mitchell Act hatchery programs that reflect the provisions of the CRFMA must be agreed upon by the U.S. v. Oregon parties. Further, the Department believes that the development of the DEIS would have benefited from the participation of the Federal, Tribal, and State Columbia Basin co-managers.

#1

#2

#3

#4

CEQ Regulations 1502.9(c)(1)(ii) direct agencies to prepare a supplemental draft or final environmental impact statement in the presence of "significant new circumstances or information relevant to environmental concerns and bearing on the proposed action or its impacts." The Department believes that issues and commitments associated with the FCRPS BiOp, U.S. v. Oregon, and the CRFMA need to be addressed and analyzed in association with the proposed action. Further, too many agreements and too many fisheries depend upon Columbia River hatchery production at current levels to make alterations without more certainty as to the validity of the modeling effort and the subsequent impacts analyses. The correction of these deficiencies will provide significant new circumstances and information that are relevant to environmental concerns and that will affect the proposed action and its impacts. The significant deficiencies in this document cannot be rectified in a Final EIS. Therefore, the Department recommends that NOAA Fisheries prepare and issue a Supplemental DEIS for further public review prior to issuing the Final EIS.

#5

Conversely, if NOAA Fisheries no longer considers funding hatchery programs appropriate Federal mitigation, a regional discussion among the Columbia Basin co-managers needs to occur on what type of mitigation would be appropriate, what levels of mitigation would be commensurate with the impacts associated with Federal water resource development, and how to secure the funding necessary to fulfill the Federal mitigation obligation.

GENERAL COMMENTS

SDEIS Scope

#6

There are two stated purposes for the proposed action in this DEIS: 1) to develop policy direction to guide future funding and direction for Mitchell Act programs and 2) to develop hatchery performance policy direction to inform subsequent Endangered Species Act (ESA) consultations. Funding hatchery programs is only part of the mitigation being provided under the Mitchell Act. Fish screens and fish passage programs are also funded under the Mitchell Act and are critically important mitigation measures for Federal water resource development in the Columbia Basin. The Department recommends that, in the SDEIS, the analysis be expanded to include all programs funded under the Mitchell Act to facilitate a better understanding of the scope of the entire program as well as allow for the identification of potential mitigation trade-offs and alternative mitigation, particularly in watersheds where NOAA Fisheries may conclude that hatchery production may affect wild salmon and steelhead and ESA recovery.

#7

When NOAA Fisheries began this process (2004), the original intent was to provide direction for distributing funding for the Mitchell Act Program. However, in 2009 the scope of the analysis was expanded to the second objective: develop hatchery performance policy for all Columbia Basin hatchery programs. The Department supported the initial scope of the EIS, as well the expansion of the analysis to all hatchery programs in the Columbia Basin as a means of providing context for the Mitchell Act programs; however, we do not support the development of policy alternatives for hatchery programs that are beyond the authority of the NOAA Fisheries to implement under this DEIS. The other hatchery programs in the Columbia Basin, except those funded under the Mitchell Act, are operated and/or administered by the Service; the States of Oregon, Washington, and Idaho; several Tribes; and numerous private entities. For those

#8

hatchery programs funded by Federal agencies - including the BPA, the Corps of Engineers, and the Bureau of Reclamation – the responsibility for program implementation and any necessary NEPA processes rests with that funding entity. The Department recommends that the analysis in the SDEIS address only those programs where NOAA Fisheries has direct authority to implement the proposed alternatives through Mitchell Act funding. Other hatchery programs in the Columbia Basin, such as the Lower Snake Compensation Plan or the John Day Mitigation Program, may be appropriate for inclusion in the analysis, but only for the purpose of providing context for the Mitchell Act programs. #8

Endangered Species Act

The Department supports engaging the Columbia Basin co-managers in a detailed discussion of ESA compliance, performance standards, and metrics that may be used in the ESA consultation process, as well as NOAA Fisheries‟ efforts to provide as much guidance as possible relative to their ESA consultation responsibilities for hatchery programs. However, it is not clear that the current DEIS outlines the specific risks and benefits in sufficient detail to make an informed decision on how these hatchery programs are affecting the environment in which they occur, or what alternatives might exist to reduce any potential adverse effects. Consequently, a site-specific and watershed-specific NEPA analysis will still be required at the time of ESA consultation, despite the inclusion of these hatchery programs in this EIS. The Department recommends that the two primary purposes of the EIS be separated and addressed under separate documents. The Department recommends that the SDEIS for the Mitchell Act eliminate references to ESA, except to state that all hatchery programs in the Columbia Basin need to be consistent with the ESA. #9

Where the ESA is concerned, NOAA Fisheries‟ adherence to the principles of Secretarial Order 3206 could have vastly improved the validity of the DEIS. None of the alternatives presented address Secretarial Order 3206 requirements to minimize ESA impacts to tribal fisheries. The Department believes that there are other alternatives that would accomplish NOAA Fisheries‟ purpose without adversely impacting tribal fisheries, and these alternatives should be formulated and properly analyzed in a SDEIS. It is not necessary to choose an alternative that reduces the number of fish available to tribal fisheries. However, there are other ways in which we believe the Secretarial Order was violated. The DEIS quotes portions of Secretarial Order 3206, but excludes an especially relevant portion regarding consultation, i.e.: #10 #11 #12

> "Whenever the agencies, bureaus, and offices of the Departments are aware that their actions planned under the Act may impact tribal trust resources, the exercise of tribal rights, or Indian lands, they shall consult with, and seek the participation of, the affected Indian tribes to the maximum extent practicable. This shall include providing affected tribes adequate opportunities to participate in data collection, consensus seeking, and associated processes."

This does not appear to be what occurred in the preparation of the DEIS. Because tribes are co-managers, possess treaty rights, that the Federal government is obliged to protect, and are staffed by biologists that are experts in their field, NOAA Fisheries should consult with the tribes immediately, and throughout the preparation of a SDEIS.

Alternative Mitigation

#13

An alternate means of providing mitigation for the lost fishery resources of the Columbia River will be necessary if hatchery programs need to be significantly modified to achieve consistency with the ESA. Mitigation for Federal water resource development is a legal responsibility and represents a commitment to the people of the Pacific Northwest, including the Native American tribes. Any reduction in the mitigation provided by the Mitchell Act hatchery programs represents a loss to the fishery resources of the Columbia River and the Pacific coastal fisheries. This loss must be offset by alternate mitigation. This could include habitat restoration, removing obsolete infrastructure from watersheds, restoring instream flows, remediating contaminated areas, long-term habitat acquisition and protection, restoring fish passage into blocked areas, and possibly opening up additional habitat to anadromous fish. As previously stated, a comprehensive evaluation of all Mitchell Act programs would facilitate this analysis.

Existing Regional Plans and Agreements

#14

The DEIS does not address how the hatchery performance policy being developed correlates to the existing FCRPS BiOp hatchery strategy. The FCRPS BiOp and Reasonable and Prudent Alternative received intense scrutiny through extensive regional collaboration, as a consequence of ongoing court challenges and, most recently, due to a change in Presidential Administration. The Obama Administration (represented by four different Cabinet-level agencies and the White House, including Dr. Jane Lubchenco for the Department of Commerce), engaged in a substantial and thorough consideration of the FCRPS BiOp that included the science on which the BiOp was based[1]. The FCRPS BiOp calls for, among other things, "implementing safety net and conservation hatchery programs to assist recovery; and ensuring that hatchery operations do not impede recovery[2]." The FCRPS BiOp includes a programmatic review of specified non-Mitchell Act hatcheries and a requirement to complete site-specific ESA consultations for each FCRPS mitigation hatchery, but it is not clear how the alternatives described in the DEIS relate to the existing hatchery strategy already encompassed in the FCRPS BiOp . The Department recommends that the SDEIS include a description of the link between the Mitchell Act DEIS, the hatchery strategy in the FCRPS BiOp, and the hatchery strategies in existing salmon plans.

#15

The 2008-2017 United States v. Oregon Management Agreement of May, 2008 (Management Agreement) was signed by all parties, including NOAA Fisheries, on May 5, 2008. The DEIS was released July 19, 2010. The DEIS includes a disclaimer stating that determinations of consistency of the "EIS analysis" with the Management Agreement are not asserted. Commitments under U.S. v. Oregon should be addressed and analyzed in the SDEIS.

#16

In addition, the Service administers hatchery programs funded under the Mitchell Act that support the CRFMA. The CRFMA is an agreement between the States of Oregon, Washington, and Idaho; the treaty Tribes of the Columbia Basin (Yakama, Warm Springs, Umatilla, and Nez

---

[1] Federal Columbia River Adaptive Management Implementation Plan, September 11, 2009.

[2] NOAA Fisheries. Supplemental Consultation on Remand for Operation of the Federal Columbia River Power system, 11 Bureau of Reclamation Projects in the Columbia Basin and ESA Section 10(a)(I)(A) Permit for Juvenile Fish Transportation Program. May 20, 2010

#16

Perce Tribes); and the U.S. Federal government. The purpose of the CRFMA is to determine how harvest and hatchery production of Pacific salmon and steelhead will be implemented in the Columbia Basin, primarily on the mainstem Columbia River. NOAA Fisheries and the Service are the Federal agencies responsible for implementing the CRFMA on behalf of the U.S. government. The provisions of the agreement (e.g., hatchery production tables) that were negotiated and agreed upon in the CRFMA are binding on the signatories, and any modifications to our Mitchell Act hatchery programs, which reflect the provisions of the CRFMA, must be agreed upon by the U.S. v. Oregon parties. The SDEIS should analyze the impact of the alternatives on CRFMA obligations.

Defining the Federal Mitigation Obligation

#17

It is well established that the Federal government has an obligation to provide mitigation for the loss of the fishery resources of the Columbia Basin that were affected by the construction and operation of the Federal Columbia River Power System (FCRPS). The Mitchell Act is one of the primary means by which Congress provides the mitigation funding associated with the FCRPS and other Federal activities; however, the Federal mitigation obligations under the Mitchell Act are not well defined. The text of the Mitchell Act does not contain specific mitigation goals or objectives. As such, NOAA Fisheries has requested, and Congress has appropriated, funding under the Mitchell Act for decades without the benefit of explicit and well defined goals and objectives. This EIS is an important opportunity to establish a framework for the Mitchell Act, including a vision, a mission statement, goals, and objectives. As part of that framework, the Department recommends that NOAA Fisheries and the co-managers, working collaboratively, define the Federal mitigation obligation under the Mitchell Act in terms of hatchery programs, production goals, fish screens, fish passage, and funding levels; articulate the goals and objective for the program; and begin the process for determining whether the Federal government is being successful, or not, in meeting its mitigation obligations. This must include input from the Columbia River treaty tribes who had no voice in early Mitchell Act program decisions but were affected by early decisions regarding Mitchell Act hatchery facilities. It is critical that integrated hatchery programs are maintained in order to insure the existence of the species into the future.

#18

#19

In that regard, the Department recommends that the SDEIS include a history of annual appropriations, previous NEPA efforts for distribution of these funds, and a historical record of the Columbia River fisheries program to help inform those mitigation obligations, vision, mission statement, and future goals and objectives for the Mitchell Act.

Hatchery Program Funding

#20

NOAA Fisheries has requested approximately the same amount of hatchery operation and maintenance funding from Congress ($11 million) for the Mitchell Act since the mid 1990's. During this time, production from Mitchell Act hatcheries decreased from about 128 million juvenile salmon and steelhead to about 60 million, and the number of hatchery facilities and rearing ponds has decreased from 25 to 17. The majority of the decreases have been a result of flat funding, continued infrastructure maintenance, and increasing costs of operations (e.g., fish feed). These factors are eroding the Service‟s capability to provide juvenile salmon and steelhead consistent with Federal obligations, such as in the CRFMA. Similarly, these factors are eroding

#20

the ability of State and Tribal partners to fulfill their hatchery obligations. This has created a scenario in which funding is essentially being cut due to inflation, production is declining, and hatchery facilities and valuable fish stocks are at risk from inadequate maintenance. This is not consistent with good hatchery management and is incompatible with the commitments in the CRFMA (section III.A.5) that requires the signatories to use their best efforts to secure sufficient funding to carry out production management measures in the agreement. It may also set the stage for conflicts if hatchery practices and production goals required by the CRFMA cannot be reconciled with the needs of ESA-listed Pacific salmon and steelhead. Likewise, we are concerned that any reductions in our Mitchell Act programs, particularly funding, could affect the ability of the Federal government to fulfill their obligations under the CRFMA.

#21

The Service receives approximately $3.75 million annually under the Mitchell Act from the NMFS to operate and maintain five National Fish Hatcheries for the production of Pacific salmon and steelhead in the Columbia River Basin. These include Carson, Little White Salmon, Willard, Spring Creek, and Eagle Creek National Fish Hatcheries. The Service hatchery programs funded under the Mitchell Act support the CRFMA. The following is a brief summary of the hatchery programs implemented by the Service at these facilities.

Spring Creek National Fish Hatchery. Spring Creek National Fish Hatchery (NFH) is located on the banks of the mainstem Columbia River near Underwood Washington. Spring Creek NFH provides "tule" fall Chinook for mitigation and harvest as part of the CRFMA, and is funded through the Mitchell Act. Fall Chinook production from Spring Creek NFH contributes significant harvest to ocean fisheries (including Washington, Oregon, and Canadian commercial and recreational fisheries) and in-river commercial, sport, and tribal fisheries. Spring Creek NFH's program has a brood stock goal of at least 8,000 tule fall Chinook (4,000 females). The adult returns are used to meet the hatchery release goal of 12.2 million sub-yearlings (10.5 million releases at Spring Creek NFH and 1.7 million releases at Little White Salmon NFH). Eggs from Spring Creek NFH (2.8 million) are transferred to Bonneville State Hatchery just downstream of Bonneville Dam for their tule fall Chinook program.

The native White Salmon River fall Chinook population was the founding source for Spring Creek fall Chinook and is considered the stock of choice for reintroduction into the White Salmon River pending Condit Dam removal.

Carson National Fish Hatchery. Carson NFH is located on the Wind River upstream from the Columbia River near Stevenson, Washington. Carson NFH's spring Chinook program operates as part of the CRFMA and is funded through the Mitchell Act to provide spring Chinook for mitigation and harvest. The purpose of the hatchery is to rear 1.17 million Spring Chinook salmon smolts for release on-station into the Wind River. In addition, Carson NFH produces 250,000 Spring Chinook smolts for transfer and release into the Walla Walla River basin as part of a Umatilla tribal restoration program. The releases are to partially mitigate for fish losses in the Columbia River Basin caused by mainstem hydropower projects and other water resource development.

Fish releases contribute to important terminal area tribal ceremonial and subsistence fisheries and non-tribal sport fisheries, as well as mainstem Columbia River tribal and non-tribal commercial

#21

and sport fisheries, while providing for adequate escapement for hatchery production. Hatchery operations strive to meet mitigation requirements of the Mitchell Act and the production commitments of the CRFMA.

Little White Salmon/Willard National Fish Hatcheries. These two hatcheries are located in the Columbia River Gorge on the Little White Salmon River near Cook, Washington. They are administered as a single Complex. Little White Salmon NFH produces 1.0 million spring Chinook salmon released on-site, 2.0 million upriver bright fall Chinook released on-site, and 1.7 million upriver bright fall Chinook transferred and released on the Yakama Nation near Toppenish, Washington. This facility also acclimates 1.7 million tule fall Chinook from Spring Creek NFH and 2.5 million upriver bright fall Chinook from Bonneville State Hatchery for release on-site. Willard NFH produces coho salmon released off-site in the Wenatchee River for the Yakama Nation using locally adapted fish stocks. Funding for the Wenatchee River coho program is shared between the Bonneville Power Administration (BPA) (60 percent) and NMFS through the Mitchell Act (40 percent).

The purpose of the Spring Chinook program is to mitigate for fish losses in the Columbia River caused from Federal hydropower projects and other Federal water resource development. These programs contribute to important terminal area tribal ceremonial and subsistence fisheries, and recreational fisheries, as well as tribal and non-tribal mainstem Columbia River commercial and sport fisheries, while providing escapement for hatchery production to meet mitigation requirements of the CRFMA.

The purpose of the fall Chinook program is to rear and release 4.5 million upriver bright and tule fall Chinook salmon into the Little White Salmon River to provide mitigation for Federal hydropower development, to meet Federal obligations under the CRFMA and to produce sub-yearlings for transfer to the Yakima River basin.

Upriver bright fall Chinook salmon are reared and released from Little White Salmon NFH as part of the John Day Dam mitigation program funded by the U.S. Army Corps of Engineers. Fall Chinook production from Little White Salmon NFH contributes harvest to ocean fisheries (including Alaska, British Columbia, Washington, and Oregon commercial and recreational fisheries) and in-river commercial, sport, and tribal fisheries. Adult upriver bright fall Chinook returning to the hatchery also provide an important fall terminal-area tribal fishery. Additional upriver bright fall Chinook adults are collected and spawned to provide eggs for the Klickitat Tribal Hatchery, which is a Mitchell Act facility operated by the Yakama Nation.

The purpose of the cooperative coho program is to assist with the development of locally adapted, naturally spawning populations of coho salmon in the Wenatchee River system. This is a cost-share program with the Yakama Nation with funding provided by the NMFS under the Mitchell Act and the BPA.

Eagle Creek National Fish Hatchery. Eagle Creek NFH is located in northwest Oregon in the Clackamas River watershed, near Portland. The purpose of Eagle Creek NFH is to mitigate for the lost and degraded habitat and fish populations caused by the construction and operation of the Columbia River hydropower projects by providing 350,000 coho salmon and 100,000 winter

#21

steelhead for on-site releases from locally adapted brood stock for sport, commercial, and international harvest. Eagle Creek NFH also supports important tribal restoration programs, including approximately 550,000 coho yearlings for the Nez Perce Tribe to the Clearwater River, Idaho, 500,000 coho yearlings for the Yakama Nation to the Yakima River, Washington using locally adapted broodstock, and provides 1.5 million coho salmon eggs to the State of Idaho to support State resident coho release programs in Idaho.

Terminating Hatchery Programs, Closing Mitchell Act Facilities

#22

The DEIS provides some discussion of the potential impacts associated with terminating hatchery programs or closing Federal, State, or Tribal hatcheries funded by the Mitchell Act. The presumption under Alternative 2 is that all Mitchell Act funded programs would cease. It also appears likely that under some of the alternatives, terminating hatchery programs and closing facilities is a potential outcome. The EIS should recognize these potential realities but, we do not recommend analyzing the environmental risks and benefits of terminating hatchery programs in this EIS. Rather, this observation strengthens our recommendation that site-specific NEPA analysis will be necessary when evaluating the environmental effects of specific hatchery programs in the watersheds in which they occur. This is particularly evident in those watersheds where hatchery production may need to be significantly modified to manage the risks associated with wild fish and hatchery fish on the spawning grounds.

Performance Metrics

#23

The current DEIS lays out a framework of alternative hatchery performance levels that define the proportion natural influence (PNI) and proportion hatchery origin spawners (pHOS) as the metrics that hatchery programs may be judged against. The DEIS analysis is then based on a set of programmatic scenarios that appear to be focused primarily on maintaining smolt release numbers and harvest at the highest possible values while, at the same time, constraining hatchery programs to the degree necessary to meet these two performance measures. Presumably, these metrics would be applied in the ESA consultation process.

Although these two performance metrics could be used as direct measures of genetic risk (higher values of pHOS and lower values of PNI imply higher genetic risk), any application of those performance measures to hatchery management would need to be performed on a program-by-program basis where the viability and status of natural populations in the local watershed can be used as primary factors for assessing those risks. For example, pHOS = 0.5 would be considered a "high risk" situation for a viable, natural population capable of sustaining itself without artificial propagation. However, pHOS = 0.5 might also be essential for a maintaining a naturally spawning population in an area incapable of supporting a viable natural population under current conditions. Further, there is no evidence presented in the DEIS as to a direct link between meeting PNI and pHOS standards and the recovery of wild fish populations.

Implementation of a specific alternative will need to assess those risks on a program-by-program or watershed-by-watershed basis. However, because the DEIS is based on a single scenario for each alternative that is then used as an example of the types of changes that could be implemented with adoptions of a preferred alternative, the quantitative outputs of those scenarios

appear to be the criteria by which NOAA Fisheries is asking reviewers to select a preferred alternative. Again, the Department recommends that NOAA Fisheries refocus the scope and analysis back to just the Mitchell Act Program in the SDEIS, with appropriate comparisons to the total basin hatchery production, including large hatchery programs such as the Lower Snake River Compensation Plan and the John Day Mitigation Program. #23

Alternatives

The No-Action Alternative presented in the DEIS does not accurately represent the baseline condition. Currently, Federally-funded Columbia River hatchery production must be consistent with ESA and all other laws and regulations. Hatchery ESA compliance is determined on a case-by-case basis through the development of Hatchery Genetic Management Plans. For example, Table 2-6, page 2-27, shows that no changes would be made under the No-Action Alternative. However, under the baseline condition, changes could be made to some or all of the measures presented on a case-by-case basis. These changes could be effected by NOAA Fisheries via the site specific ESA consultations under the FCRPS BiOp or through site-specific consultations for each of the Mitchell Act hatcheries. The Department recommends that the SDEIS revise the No-Action Alternative to acknowledge the many existing hatchery strategies that can incorporate changes, including those related to the FCRPS BiOp. #24

The Department does not believe the other alternatives presented in the DEIS are appropriate for the Mitchell Act, or any other hatchery program in the Columbia Basin at this time. The existing alternatives outline where ESA consultation and hatchery reform (Lower Columbia, Upper Columbia, both, neither) could occur, but this is premature because the goals and objectives of the Mitchell Act Program have yet to be determined. The Department recommends that new alternatives be developed and analyzed in the SDEIS. These alternatives should be developed in collaboration with the co-managers in the basin, directly relate to the mission and purpose of the Mitchell Act program, be developed in an open and transparent manner, and have a sound rationale for supporting the selection. In addition, the analyses of these alternatives should consider climate change considerations and the use of adaptive management strategies to accommodate changes as they occur. Examples of potential alternatives could include: #25

- Different funding and production between the lower Columbia Basin and the upper Basin.
- Differing funding between hatcheries, fish screens, and fish passage facilities.
- Adjusting current production programs to reflect the actual fish stocks that were lost due to Federal water resource development.
- Altering production programs to reduce the effect on natural origin spawners.
- Additional funding to fully implement existing agreements, such as the CRFMA.
- Increased appropriations for infrastructure maintenance, increased support for State and Tribal hatcheries, and increased costs of operations.

Tribal Issues

<u>Fiduciary Conduct, Treaty Tribal Rights and Tribal Consultation</u>

NOAA Fisheries, as a federal trustee to Native American people, is held to high standards of fiduciary conduct. These fiduciary standards extend beyond those encompassed by NEPA. #26

NOAA Fisheries" fiduciary conduct standards require it to keep trust property (i.e. salmon) productive for the beneficiary (Tribes with treaty fishing rights), and also require that reasonable care and skill be exercised in the way NOAA Fisheries administers the elements of the trust under its control. #26

Increasingly, treaty fisheries have had to rely on hatchery production to maintain the relevance of the treaty-fishing right. Without that mitigation, many tribal fishers would be unable to exercise their treaty rights. The DEIS fails to acknowledge this essential role that hatchery production in the Columbia River plays in enabling the tribes to exercise their treaty fishing rights. The SDEIS should analyze the connection between the federal trust responsibility and the need to keep trust property productive, and include new Alternatives that accommodate the needs of the ESA, the recovery of salmon in general, and the simultaneous maintenance of hatchery production that is so vital to sustaining treaty fishing rights. #27

Alternatives assessed on the idea that even local natural stocks reared under best management practices must be stopped from spawning in the natural environment or they will hinder recovery efforts, appears arbitrary and capricious. Given the scientific uncertainties, the Federal government's obligation to honor their treaties with Indian tribes, and Congress's clear expression of intent to mitigate for losses that badly degraded and blocked habitats have wrought, we believe NOAA Fisheries has an obligation to maintain and restore levels of Columbia River hatchery production so that moderate standards of living are sustained by tribal fishers. Treaty rights are not maintained by the analysis of divisive DEIS Alternatives that continue to avoid Mitchell Act mitigation in-kind and in-place (i.e., above Bonneville Dam where the bulk of losses have occurred). #28

In addition CEQ Memorandum of 7-28-1999 urges agencies to actively solicit the participation of Tribes as "cooperating agencies" in implementing the environmental impact statement process under the National Environmental Policy Act. This solicitation is to begin as soon as practicable, but no later than the scoping process. Invitations are to be extended to identified tribal government agencies which have jurisdiction by law or special expertise with respect reasonable alternatives or significant environmental, social or economic impacts associated with a proposed action that requires an EIS. This has not occurred. Again, the Department recommends that NOAA Fisheries consult with the tribes immediately and throughout the preparation of the SDEIS. #29

Habitat Restoration

The DEIS appears to endorse the mistaken belief that natural production can be increased by simply controlling the composition of naturally-spawning fish and does not address the role of habitat restoration as a means of protecting the genetic qualities of salmon populations in the natural environment. It is reasonably predictable that were hatchery production eliminated entirely, the sad state of unmet habitat requirements would still prevent natural salmon recovery. It may not be included in the purpose statement, but it is not possible to ignore the effects of habitat when evaluating the success of salmon restoration efforts. The SDEIS should include an analysis of the role habitat plays in restoration levels. In this way, the key component of a comprehensive recovery will be analyzed, putting into proper context the assumption that natural production can be meaningfully increased or protected by simply controlling the composition of #30

naturally-spawning fish. #30

Economic Impacts on Fishers

The DEIS does not adequately address economic impacts to fishers. There are numerous errors and omissions in the DEIS descriptions of existing hatchery programs. This includes the incorrect harvest estimates under all of the alternatives. Consequently none of the analyses of harvest differences between the alternatives are valid. Consequently, the predictions of economic impacts premised on erroneous harvest inputs are also not valid. #31

Of particular concern to the Department is that the DEIS economic analyses does not provide any meaningful discussion of the actual impacts on Native people to be expected from implementing the DEIS Action Alternatives. #32

It is not clear how the DEIS range of Alternatives, which only proposes stasis or declines in salmon released from hatcheries, will achieve a balance between populations and resource use which will permit high standards of living and a wide sharing of life‟s amenities in accordance with the requirements in NEPA #33

Few Native people and fewer treaty fishers achieve a high standard of living. The DEIS does not assess the impacts on the native communities that, while sometimes dispersed across a myriad of counties, come together and are a single class by virtue of their treaty protected livelihood. For example, 43% of Yakama Indian Nation families were in poverty by one estimate (Meyer Resources, 1999), and the majority of fishers in Zone 6 are known to be Yakama tribal members. The DEIS does not analyze the impacts on the already crushing poverty faced by these people. The SDEIS should include an analysis of the impacts on the poverty levels faced by these treaty fishers. #34

A model of Economic Analysis, although dated and written for a differing document, is the Tribal Circumstances and Perspectives report, Meyer Resources, 1999. It is summarized in Appendices I, section 5 of the Lower Snake River Juvenile Salmon Migration Feasibility Report. This document should be utilized in the development of additional alternatives in a SDEIS that address economic impacts to treaty fishers. #35

Additionally, the DEIS does not address effects of the Action Alternatives on the availability of salmon as an accessible healthy food for minorities and low income people. These groups will likely suffer disproportionate effects from the Action Alternatives. Executive Order 12898 of February 11, 1994 gives all Departments, including the Dept. of Commerce direction concerning Federal Actions affecting „Environmental Justice in Minority Populations and Low-Income Populations‟. While the DEIS acknowledges the existence of the order it does not adequately discuss the impacts to minority and low-income populations. The SDEIS should include a more detailed analysis identify differential patterns of consumption of natural resources among minority populations and low-income populations. #36

Nutrient Replacement

All of the Action Alternatives in the DEIS result in reductions in the carcasses available to the environment, via the removal of salmon from weirs, and/or reductions in the numbers of salmon #37

released from Mitchell Act and other hatcheries. There are growing indications of the ecological importance of salmon in aquatic and terrestrial ecosystems, yet the DEIS is nearly entirely silent on this topic. Section 3.5.6.5, in a single paragraph citing a carcass distribution as a means of replacing "some of the nutrients in nutrient-deficient areas where spawning salmon and steelhead are limiting or lacking." #37

Salmon-derived nutrient subsidies may have significant and wide ranging impacts on both freshwater and riparian communities and on the life histories of organisms that live there. The SDEIS needs to include a more comprehensive analysis of this nutrient distribution into the context of the severe truncation of marine-derived nutrient distribution already extant in the Columbia River basin.

Cumulative Impacts of Missing Salmon

The cumulative impacts analysis in the DEIS does not adequately address the ecological effects of diminished salmon in the Columbia Basin by utilizing a project boundary that excludes large portions of the Columbia River ecosystem accessed and influenced by salmon in the recent past. An analysis of the significance of reducing salmon abundance under DEIS Alternatives cannot be placed in context if the proportions of salmon lost is not explained. The magnitude and distribution of those losses shed light on the high significance of salmon to those areas where they are still found. #38

Historic populations of salmon in the Columbia Basin are estimated to have been 16 fold higher than in recent years. Between 10 million and 16 million salmon and steelhead are believed to have returned to the river to spawn annually prior to the 1840 (Northwest Power Planning Council. 1986. Compilation of information on salmon and steelhead losses in the Columbia River basin. Portland, OR).

In addition, the SDEIS would benefit from an analysis of the direct and indirect ecological implications of salmon depletion. The Department recommends that the following publication on the subject be considered in the development of the SDEIS: #39

> Gende, S.M., Edwards, R.T., Willson, M.F., and Wipfli, M.S. 2002. Pacific salmon in aquatic and terrestrial ecosystems. Bioscience, **52**: 917–928.

Too many agreements and too many fisheries depend upon Columbia River hatchery production at current levels to alter that production without more certainty as to the validity of the modeling effort and the subsequent impacts analyses. The loss of even small portions of the Columbia River hatchery production could alter the impacts northern fisheries have on stocks that are important to southern fisheries, making it necessary for fishery managers to impose more conservative measures on fishers in Puget Sound, coastal Washington and the Columbia River. This possibility has not been adequately assessed, and must be in a SDEIS. #40

Speculations on a detrimental effect of competition among salmon with differing rearing histories (natural or hatchery facility) also need to make mention of historic run sizes. Components of this ecosystem once supported much higher densities of salmon, and perhaps could again if these environments are restored. This needs to be addressed in the SDEIS. #41

SPECIFIC COMMENTS

The Mitchell Act DEIS includes substantial technical information on hatchery and harvest programs in the Columbia Basin. Our review indicates numerous areas for updating and improving the technical information and analysis. In addition, it is our understanding that the model used in analyzing the alternatives was constructed in 1999 and that model assumptions, data inputs, and the resulting impact analyses may be in error. Given the complexity of the various hatchery programs, and comprehensive analysis in the DEIS, we believe that correcting and clarifying the technical information is best done by experts in those specific programs. The Department, through the Department‟s bureaus (the Service, Bureau of Indian Affairs, and Bureau of Reclamation), offer our assistance to address any inconsistencies and to ensure the most up-to-date information is used in the analysis. #42

Acronyms & Abbreviations, Glossary of Key Terms, Table of Contents

Page iii

Line 15: Replace "PCFRF" with "PCSRF." #43

Line 20: Delete second reference to PNI. #44

Page viii

Line 12: Replace "rake" with "take." #45

Chapter 1, Purpose & Need for the Proposed Action

Page 1-12

Lines 8-10: Here the document states that this DEIS analyzes effects of hatchery programs on the environment, including natural-origin salmon and steelhead populations. This DEIS does not effectively analyze specific effects of each hatchery program. The Department recommends that the SDEIS include revised language to specifically state that the document provides a comparison of effects from applying different broad goals or principles to hatchery programs. #46

Box 1-6: This box explains the relationship between NOAA Fisheries and Mitchell Act funded hatchery operators. The SDEIS should include an additional box that explains the relationship between NOAA Fisheries and non-Mitchell Act funded hatchery operators and their funding agencies. The SDEIS should also include a clearer distinction between Mitchell Act funded hatcheries and hatcheries operated under other authorities such as mitigation. Mitchell Act funded hatcheries may provide the opportunity to be more flexible to different operational scenarios or hatchery actions that meet a policy direction developed through public process, whereas non-Mitchell Act funded hatcheries may not have as much flexibility or discretion in their programs. #47 #48

Box 1-6: Reverse the order of "way" and "the" in the third line in first paragraph, #49

Page 1-15

Paragraph 1.3.3.1 includes the following statements: "As mentioned above, section 7 of the ESA requires Federal agencies to consult with NOAA Fisheries on any actions that may adversely #50

affect listed salmon and steelhead. Section 7 provides a mechanism to authorize the incidental take of listed species should it be found to occur as a result of hatchery actions." #50

These statements are not correct. The Department recommends the SDEIS include revised language that reads:

> "As mentioned above, section 7 of the ESA requires Federal agencies to consult with NMFS on any actions that *they authorize, fund, or carry* out *that may affect* listed salmon and steelhead. Section 7 provides a mechanism to *exempt* the incidental take of listed species from the *prohibitions in Section 9 should it be found to occur as a result of otherwise lawful actions."*

Page 1-21

Lines 14-19: The SDEIS should include the Bureau of Reclamation or Corps of Engineers in this discussion. These entities also provide considerable funding to Columbia River hatchery programs. #51

Page 1-27

Klickitat Hatchery is operated by the Yakama Nation not WDFW. #52

Page 1-33

Funding source for "USFWS Carson NFH" "Walla Walla Spring Chinook Salmon" program is "Mitchell Act" not "Other". #53

"Upper Yakima-Naches Coho Salmon" program listed under "USFWS Little White Salmon/Willard NFH Complex" should be under "USFWS Eagle Creek NFH".

Need to include "Summer Chinook Salmon" program at "USFWS Entiat NFH" ("Harvest" "Other").

Need to include "Summer Steelhead" program at "USFWS Hagerman NFH" ("Harvest" "Other").

Delete "Umatilla Spring Chinook Salmon" program at "USFWS LWS/Willard NFH Complex". This program has been discontinued.

Chapter 2, Alternatives

Page 2-15

Lines 13-15: The bullets are not accurate as stated. They specify that "… if any money remains, MER occurs." MER has been a line item component of Mitchell Act hatchery funding since 2001 and has ranged between $1.162M and $1.7M from 2001-2009 with $1.689M designated in 2009 (see Table 1-3 on page 1-8). #54

Lines 29-30: Eliminating MA funding and closing all MA facilities would conflict with the 2008-2017 Management Agreement which outlines production commitments for most hatchery #55

programs above Bonneville Dam, a number of which are wholly or partially funded by the Mitchell Act. This should be acknowledged for Alternative 2. #55

Page 2-30
Lines 4-5: Change "Nine" to "Eight" after correction to Table 2-12 which should have "Entiat" deleted from all alternatives (summer Chinook are reared and released in-basin by Entiat NFH) and change Alternative "2" to "1". #56

Page 2-28
Should include three lines for each alternative (i.e., All hatchery programs, non-Mitchell Act funded hatchery programs, and Mitchell Act funded hatchery programs) for ease of alternative comparisons. #57

Page 2-37
Delete "Entiat" from all alternatives. Entiat NFH has transitioned from an in-basin spring Chinook salmon release program to an in-basin summer Chinook salmon release program. #58

Page 2-38
Need to include clarifying language that other non-Mitchell Act funded basin wide production is also reduced by 29% to achieve intermediate level of performance metrics (Table 2-7). #59

Lines 7-10: Numbers of programs terminated in Table 2-8 and Table 2-13 do not match across ecological provinces. #60

Line 14: Table 2-13 implies "88" programs are terminated rather than the "72" stated here and listed in Table 2-8. #61

Page 2-40
Line 1: Change "Twenty-one" to "Twenty" ("Entiat" needs to be deleted from all alternatives in Table 2-12.) #62

Page 2-42
Lines 2-5: Table 2-14 implies "10" programs are terminated rather than the "Seventeen" stated here and listed in Table 2-8. #63

Page 2-44
Line 7: Replace "(Box 2-9)" with "(Box 2-10)". #64

Page 2-46
Line 24: Add the following at the end of the sentence, "assuming facility space is available for these programs with corresponding termination of other programs that do not achieve performance metrics. #65

Lines 23-31: Program numbers in the text do not match those identified in Table 2-17. #66

Page 2-47
Lines 1-6: Number of terminated programs does not match between Table 2-8 and Table 2-15. #67

Lines 16-19: Rewrite as follows, "Of the 27 contributing populations, 11 (41 percent) would achieve or exceed target stronger performance metrics but some hatchery programs would continue operations even though they affect 8 contributing populations (30 percent) that would not meet even the intermediate performance metrics (Table 2-10)." #68

Page 2-48
Line 18: Insert "intermediate" between "target" and "performance". #69

Page 2-50
Lines 3-9: Number of new programs between Table 2-8 and Table 2-17 do not match. #70

Lines 18-21: Number of terminated programs between Table 2-8 and Table 2-16 do not match. #71

Lines 31-33 through Lines 1-2 on Page 2-51: Rewrite as follows, "Of the 22 contributing populations, 8 populations (36 percent) would achieve or exceed the target stronger performance metrics (Table 2-10). Some hatchery programs would be maintained under the implementation scenario for Alternative 5 even though 9 contributing populations (41 percent) would not achieve even the intermediate performance metrics (Table 2-10)". #72

Chapter 3, Affected Environment

Page 3-4
Line 15: Replace the first reference to "natural-origin" with "hatchery-origin". #73

Page 3-5
Line 6: Insert "be" between "not" and "that". #74

Page 3-6
Line 21: Replace "displaying" with "displacing". #75

Page 3-8
Table 3-3: It would be informative to list the ESA status for each ESU/DPS in the first column (e.g., endangered, threatened, or not warranted). #76

Page 3-20
Line 17: Replace "benefit from" with "provide benefits for". #77

Page 3-27
Line 5: Insert "summer/fall run" between "of" and "Chinook" to distinguish this run of Chinook from the spring run of Chinook which is endemic to this basin. #78

Page 3-74
Line 15: Add the following to the end of the sentence after "directive": "for federally operated, #79

#79

administered, or funded programs that produce fish for harvest".

Page 3-78 #80
Line 21: Add "occur elsewhere" to end of sentence.

Page 3-79 #81
Line 16: Delete "south of Cape Falcon, Oregon" and replace with "off California". Insert "for Chinook" between "closures" and "in the Klamath …"

Page 3-84 #82
Lines 8-9: Replace "tribal commercial" with "recreational" and likewise "recreational fisheries" with "tribal commercial" to match Table 3-11.

#83
Line 14: Delete "but only 6 percent of the tribal commercial fishery" and replace "1" with "11" relative to percent of the non-tribal commercial fishery to match Table 3-11.

#84
Line 24: Insert "northern" between "along the" and "Oregon coast".

Page 3-85 #85
Table 3-17: Should include a section for Oregon Coast-South of Cape Falcon (i.e., south of Garibaldi, Oregon (see Table 3-11).

Page 3-87 #86
Table 3-19: The average non-tribal commercial catch values of 9,375 Chinook and 4,165 coho are for the northern Oregon coast (Astoria catch area) only, not the entire Oregon coast as is implied by the table and in the preceding narrative on Page 3-86, Lines 6-8. Need to add a section for Oregon Coast-South of Cape Falcon. (See Table 3-11 and suggestion for revised Table 3-17 as stated above.)

Page 3-88 #87
Lines 2-4: Replace "66 percent" with "65 percent", "39,697,033 fish" with "149,783 fish", and "59,707,540 fish" with "228,886 fish" to correctly match Table 3-20.

Page 3-109 #88
Lines 21-31: Should note and acknowledge that no economic value has been assigned to tribal ceremonial and subsistence harvests, which from a tribal perspective have religious, social, and cultural value far above the economic value of commercial fisheries.

Page 3-112 #89
Line 28: Delete "Wheeler" from the list.

Page 3-125 #90
Lines 16-19: Should include "white sturgeon" in this list of prey species for Stellar sea lions.

Chapter 4, Environmental Consequences

General

The timeframe of analysis is not clear; therefore, the reader cannot determine whether the outputs indicate1 year into the future, 10 years, or more, which in turn makes it difficult to make any assumptions about populations and productivity. The models do not appear to account for possible population responses to stronger metrics which may occur but could take several generations to show up. For example, if a population had a fairly high pHOS, and hatchery reforms brought that down to meet the stronger metric. If the models did account for these items, it seems as though there would be fewer fish initially if the reform resulted in decreased hatchery production. The document did not, however, explore if there would be a long-term population response, i.e. initial drop and then increasing population over time due to increased productivity of natural origin spawners. The entire socioeconomic analysis is based on numbers of fish, so this analysis could affect the socioeconomic section significantly. The Department recommends that the SDEIS clarify the timeframe of analysis, discuss possible population responses to proposed reform actions in this section, and discuss the uncertainties of population numbers in the socioeconomics section. #91 #92 #93 #94

Recreational harvest and economic value is not a linear relationship, with angling economic output decreasing drastically with decreasing populations. The Department recommends that the SDEIS clarify whether or not this is incorporated into the socioeconomic analysis under recreational harvest and economic value sections. #95

Page 4-9
Line 28: Here the document states that the model outputs, as well as consequential socioeconomic analyses, are only raw numbers and not specific predictions. In the SDEIS, this should be clearly stated throughout the document, as appropriate. #96

Page 4-11
Line 19: Replace “Four” with “Three”. #97

Page 4-28
Line 15: Replace “Alternative 4” with “Alternative 5”. #98

Page 4-64
Lines 11-12: Replace “56 percent”, “8 percent”, and “24 percent” with “64 percent”, “9 percent”, and “27 percent”, respectively and correct all values in Table 4-56 for the three right-hand columns. #99

Page 4-66
Lines 15-18: Text does not match values in Table 4-59 for Alternative 5. #100

Page 4-83
Line 6: Add “except for Alternative 4 which increases by 17 percent” to the end of the sentence to match the values in Table 4-80. #101

Page 4-90
Line 3: Delete "onon" and replace with "on". #102

Page 4-119
Line 26: Delete "$113,067 for the Southeast Alaska economic impact region". This is an increase not a decrease as noted earlier in the text. #103

Page 4-202 and 4-208
Line 4: Water quality would improve under the no action alternative because facilities with National Pollution Discharge Elimination Systems (NPDES) permits and watersheds with Total Maximum Daily Loads (TMDLs) in place, or upcoming, will be required to reduce their pollutant discharge levels in order to comply with the NPDES permit or TMDL. Discharge levels for both NPDES permits and TMDLs are often revised and lowered. NPDES permits are renewed on a five to ten year basis. The Department recommends these water quality control processes be recognized and included as part of the analysis in the SDEIS. #104

Chapter 5, Cumulative Effects

Page 5-6
Line 15: Replace "Clark County" with "Multnomah County". #105
Tables and Appendices

Appendices

Appendices C through F are the most critical part of the analysis from the standpoint of impacts to the fishery resources. However, it is difficult to determine which hatchery programs might be terminated and which programs are new under each of the alternatives in those appendices. #106
Tables 2-13 through 2-17 provide this information, but cross-comparison among alternatives, as one can do in Appendices C through F, is difficult and time-consuming. Also, the number of smolts released under each of the modeled scenarios for each Alternative is not presented in the DEIS. Some of this production information is presented as pooled information (e.g., Table 2-3, Table 2-7), but the production levels for each individual program under each alternative/scenario are not presented. #107

Our recommendation is to create an additional Table or Appendix that has the same rows as Appendices C through F, categorized by "Population name", but with columnar headings under each alternative indicating (a) natural, integrated, or segregated, and (b) the number of hatchery-origin fish released from each population under each of the five alternatives. The number of hatchery-origin fish would be zero or N/A for populations categorized as "natural" under a particular alterative. For current programs that might be terminated under one or more of Alternatives 2 through 5, "Terminated" should be entered under the column labeled "Number of fish released". For new hatchery programs that currently do not exist, "New" should be entered for Alternative 1 in the column "Number of fish released". For example, if a segregated program is terminated and an integrated program is developed to replace it under Alternative 4, then the segregated "population" would show "Term." for the number of smolts released under #108

Alternative 4, the "natural" population would show "New" for the number of smolts released under Alternative 1, and "natural" would be replaced with "integrated" and the proposed or modeled number of smolts to be released under Alternative 4 would be presented. This additional table or Appendix would allow a more comprehensive assessment of the scenario modeled to illustrate each alternative. #108

In Appendices C through F, information for Alternatives 4 and 5 are presented in a separate line than information for Alternatives 1, 2 and 3. Our recommendation is to eliminate the "ESU" and "Designation" columns in Appendices C through F, and group the entries by "ESU" table headings, and present the information for all 5 Alternatives as a single row for each population. #109

The use of weirs to exclude hatchery-origin fish from natural spawning areas is a critical component of Alternatives 3, 4, and 5. However, this information is not clearly presented in a single table or location (compare Tables 2-9, 3-4, 4-6, 4-10, 4-15, 4-24, etc.). In Chapter 4 where information is presented for each ESU (e.g., Table 4-10), it is not clear whether the columnar heading "Location" refers to the mainstem of the presumed river/stream (e.g., "Elochoman") or whether "Location" refers to some location within the indicated watershed. #110 #111

Also, Mill, Abernathy, and Germany creeks are three separate streams with an existing weir on Abernathy Creek at the Service"s Abernathy Fish Technology Center. Is Alternative 4 proposing one new weir or three new weirs to control Fall Chinook in these three streams? #112

This is confusing because those three small creeks do not support native populations of Chinook salmon. Coho and steelhead inhabit these streams, with chum salmon historically spawning in the lower reaches. However, in Table 4-74, no weirs are listed for Mill, Germany, and Abernathy creek for the Lower Columbia coho ESU although approximately 50 percent of the adult coho migrating up those three streams are stray hatchery coho. #113

The Department recommends that all the information on weirs (Tables 2-9, 3-4, 4-6, 4-10, etc.) be consolidated into a single table and categorize presence/absence by watershed in the first column and not by separate tables for each Evolutionary Species Unit. In column 2 of this proposed table, all of the populations affected by an existing or new weir would then be listed; if a particular weir was going to be used to control pHOS for more than one natural population (e.g., coho, steelhead, Chinook), then all those populations would be listed under column 2. For example, under the Elochoman River, both Fall Chinook (Table 4-10) and "Late-Type N" coho would be listed. If separate weirs would be developed for each species within a particular river, then each weir would need to be listed separately. This table should clearly show all existing weirs, which of those existing weirs would be replaced or upgraded, and all new weirs for each of the Alternatives. In general, we believe the analysis of the risks associated with weirs necessitates a more detailed and comprehensive presentation, if this becomes a realistic alternative. #114

<u>Appendix I, Page 23</u>

Table 3.4: The share percentages for North of Cape Falcon Commercial Coho and Total column values appear low, perhaps by an order of magnitude. The Department recommends these numbers be validated in the SDEIS. #115

The Department appreciates the opportunity to review the DEIS for Columbia River Basin Hatchery Operations and the Funding of Mitchell Act Hatchery Program. We look forward to working with NOAA Fisheries on the development of the SDEIS. Questions regarding fish and wildlife comments may be directed to Mr. Mark Bagdovitz, U.S. Fish and Wildlife Service Pacific Region Fisheries Program, at (503) 872-2763. If you have any questions pertaining to the 2008 Federal Columbia River Power System Biological Opinion, please contact Mr. Jim Taylor, Bureau of Reclamation, at (208) 378-5081. Questions regarding Tribal Issues may be directed to Mr. Scott Aikin, Bureau of Indian Affairs, at (503) 231-6702. If you have any other questions, please contact me at (503) 326-2489.

Sincerely,

Preston A. Sleeger
Regional Environmental Officer

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 10
1200 Sixth Avenue, Suite 900
Seattle, WA 98101-3140

Letter #3

OFFICE OF
ECOSYSTEMS, TRIBAL AND
PUBLIC AFFAIRS

NOAA-NMFS
RECEIVED
DEC 0 2010
NORTHWEST REGIONAL OFFICE

December 3, 2010

William W. Stelle, Jr.
Regional Administrator
NMFS Northwest Region
National Oceanic and Atmospheric Administration
7600 Sand Point Way NE
Seattle, Washington 98115

Re: U.S. Environmental Protection Agency (EPA) comments on the Draft Environmental Impact Statement to Inform the Columbia River Basin Hatchery Operations And the Funding of Mitchell Act Hatchery Programs (EPA Project Number: 04-049-NOA)

Dear Mr. Stelle:

This review was conducted in accordance with our responsibilities under the National Environmental Policy Act (NEPA) and Section 309 of the Clean Air Act. Under our policies and procedures, we evaluate the environmental impact of the proposed action and the adequacy of the impact statement.

#1

The EIS considers four action alternatives in order to inform a National Marine Fisheries Service (NMFS) policy direction that will guide the distribution of Mitchell Act hatchery funds and inform NMFS' future review of Columbia River basin hatchery programs under the Endangered Species Act (ESA). The alternatives are crafted with the recognition that adverse effects of hatchery operations are contributing to the decline of listed salmon and steelhead in the Columbia Basin. As a result, each of the action alternatives utilizes a different suite of strategies to reduce the adverse effects of hatchery operation on natural-origin fish. We are broadly supportive of this direction, and we believe that the species recovery goals under ESA are directly in line with the "fishable/swimmable" goal of the Clean Water Act (protection and propagation of fish, shellfish, and wildlife and recreation in and on the water)[1]. We encourage NMFS to consider CWA goals in conjunction with ESA goals as a preferred alternative is crafted in the FEIS.

#2

While we are supportive of the direction being pursued in the DEIS, our review of the document raised a number of questions and concerns. Many of our concerns relate to the completeness of the DEIS with regard to the range of alternatives and implementation scenarios analyzed. We also identified concerns related to a lack of information on the economic analysis; the monitoring, evaluation and reform (MER) program; tribal consultation; and the basis for the hatchery reform principles put forward in the document. Finally, we provide a detailed review of

[1] Clean Water Act Section 101(a)(2)

the water quality sections (3.6 and 4.6) and we make some recommendations to improve the readability of the document. The attached comments provide detail on each of these question and concerns, as well as recommendations as to how they might be addressed. #2

Based on our review, we have assigned the DEIS a rating of EC-2. A copy of the EPA rating system is also enclosed. We appreciate this opportunity to comment and if you have any questions or concerns please contact Teresa Kubo of my staff at (503) 326-2859 or by electronic mail at kubo.teresa@epa.gov . #3

Sincerely,

Christine B. Reichgott

Christine B. Reichgott, Manager
Environmental Review and Sediment Management Unit

Enclosures:
EPA Detailed Comments on the Mitchell Act DEIS
EPA Rating System for Draft Environmental Impact Statements

Printed on Recycled Paper

EPA Region 10 Detailed Comments on the
Draft EIS to Inform the Columbia River Basin Hatchery Operations
And the Funding of Mitchell Act Hatchery Programs
December 3, 2010

Implementation Scenarios

#4

We appreciate the effort on the part of NMFS to expand the scope of this analysis to include all 178 hatchery programs in the Columbia River basin. The impacts associated with the operations of Mitchell Act hatcheries cannot be analyzed and understood without also considering the operations and impacts of the other hatcheries in the basin. We are challenged, however, by the implementation scenarios for a number of reasons. We recognize that the implementation scenarios were developed for the purposes of analysis only, and that the DEIS is not intending to make a determination about the operation or closure of any specific hatchery. We believe, however, that the scenarios developed and analyzed should be implementable.

#5

As noted on page 2-56 of the DEIS, NMFS does not fund or operate non-Mitchell Act funded hatcheries and, therefore, cannot mandate their termination. Further, because NMFS does not guide the disbursement of non-Mitchell Act funds, it is not clear how the non-Mitchell Act-funded hatcheries could be required to meet the performance metrics established in the DEIS. We recognize that NMFS reviews non-Mitchell Act-funded hatchery programs under the Endangered Species Act, but as noted in the DEIS, those reviews only occur in response to specific proposals for operational changes submitted by operating agencies and tribes. Given these limiting factors, it is not clear why the DEIS did not analyze an alternative that seeks to meet the established performance goals while assuming no change in non-Mitchell Act-funded hatcheries. If performance goals cannot be met without operational changes at the non-Mitchell Act-funded hatcheries, that fact should be disclosed, and carefully considered as a preferred alternative is developed.

#6

Another implementation concern has to do with how the various implementation scenarios address commitments under the 2008 Columbia River Fish Management Plan authorized in *U.S. v Oregon*. Our concerns are not that some of the implementation scenarios under certain alternatives may be inconsistent with the commitments in the Management Agreement since CEQ guidance[2] and legal precedent[3] support the development of a broad range of alternatives, and alternatives that may be outside of the legal jurisdiction of the lead agency. What is concerning, however, is the lack of clarity in the document around the process for addressing the requirements of the Management Agreement in the future. The DEIS states that, "NMFS assumes that affected parties will exercise their authority regarding production measures following this environmental analysis in a manner that is consistent with the most current Management Agreement" (DEIS p. 2-21). If parties to the agreement are to proceed with management that is consistent with the current Management Agreement, but the management direction is not consistent with what was analyzed under the EIS, it is not clear how the DEIS is supporting the decision-making process.

---

[2] http://ceq.hss.doe.gov/nepa/regs/40/40p3.htm
[3] *Natural Resources Defense Council, Inc. v. Morton, 458 F 2d 827* (D.C. Cir. 1972) (*Morton*)

Printed on Recycled Paper

Best Available Science

The performance metrics and the "primary, contributing, and stabilizing" population designations provide the underlying basis for the analyzed alternatives. The document notes that these hatchery reform concepts were developed by the Hatchery Science Review Group (HSRG), but does not provide additional information about the scientific basis for the proposed reform concepts. In order to provide agency and public reviewers with a level of confidence that the proposed metrics represent the best available science, we recommend that the FEIS provide a discussion of whether and to what extent these concepts have been peer reviewed and tested. It would also be helpful to include a discussion of hatchery reform concepts other than proportion of hatchery origin spawners (pHOS) and proportion of natural origin broodstock (pNOB), and why these were not considered in the context of alternative development. #7 #8

Monitoring Evaluation and Reform (MER)

In their report to Congress on hatchery reform in the Columbia River basin, the HSRG recommended 1) setting clear goals; 2) scientific defensibility; and 3) monitoring, evaluation and adaptive management[4]. This last recommendation is reflected in the DEIS on page 2-14, where the document states that each alternative's policy direction includes goals and/or principles related to monitoring, evaluation, and reform (MER). We support this direction agree that MER is foundational to successful hatchery reform in the basin. The document falls short, however, in elaborating on what a comprehensive, basin-wide plan for MER would look like. We recommend that the FEIS include a robust discussion of the monitoring program, including program development; key monitoring parameters; how implementation and effectiveness monitoring would be addressed; triggers for adaptation/reform; and the likely extent to which it would be adequately implemented/funded. #9

Tribal Consultation

The DEIS is very conscientious about breaking out and analyzing impacts to tribes and tribal fisheries, and we appreciate the attention given to this component of the analysis. We are concerned, however, over the lack of detail in the document around tribal consultation, and compliance with Executive Order 13175 (*Consultation and Coordination with Indian Tribal Governments*). Given the role of tribes as co-managers within the basin, and the potential ramification of the proposed alternatives to tribal fisheries and hatchery operations, it is reasonable to expect a robust discussion of consultation efforts and outcomes in the EIS. Tribal involvement is noted at the scoping phase (DEIS p. 2-11), and a number of tribal representatives are listed among the list of preparers on page 8-2, but it is not clear from these brief notations if formal consultation was pursued. We strongly recommend that the FEIS include a discussion of tribal consultation efforts and outcomes, and how tribal concerns will be addressed in accordance with federal tribal trust responsibilities. #10

Economics

The Mitchell Act Coalition has reported that the total Columbia River basin household personal income generated from Columbia Basin fisheries is about $408 million, of which $142 #11

---

[4] http://www.hatcheryreform.us/hrp_downloads/reports/columbia_river/report_to_congress/_hsrg_report_12.pdf

Printed on Recycled Paper

#11

million come from anadromous wild and hatchery salmon and steelhead[5]. Table 3-24 of the EIS puts this estimate at $46 million. We recognize that this large discrepancy may be driven in large part by the smolt to adult return (SAR) ratio utilized in the economic analysis. Appendix J of the EIS demonstrates that a higher SAR can greatly influence the results of an economic analysis. Because the overall assessment of social, economic and environmental justice impacts rests in part on the assessment of harvest-related income, we recommend that the FEIS address these conflicting estimates directly, and elaborate on the rationale behind the methodology selected.

Range of Alternatives

#12

The document analyzes four action alternatives. Alternatives four and five are distinct among these because they draw a geographical distinction between the Interior Columbia recovery domain and the Willamette/Lower Columbia recovery domain and because they apply different performance metrics in each of these domains. The analysis provides valuable insight regarding how the "intermediate" and "stronger" performance goals would affect each of these domains. The analysis does not, however, provide a rationale for applying different metrics to each domain. It also does not provide a rationale for treating the two domains separately. We find that the current construction does add value to the decision-making process, but we recommend that in the FEIS, another alternative be crafted that applies the stronger performance metric to both domains. Given the overall goal of species recovery, and the overarching direction from the HSRG to manage harvest, hatchery broodstock and natural spawning escapement to meet or exceed the HSRG standards, an alternative that applies the stronger performance metric to the entire basin seems to be a logical bookend for the purposes of analysis. If the development of such an alternative is not pursued, the rationale for that decision should be provided in the FEIS.

#13

Water Quality

#14

As noted in our cover letter, we believe that the species recovery goals under ESA are directly in line with the "fishable/swimmable" goal of the CWA[6]. We encourage NMFS to consider CWA goals in conjunction with ESA goals as a preferred alternative is crafted in the FEIS.

In our capacity as administrators of the Clean Water Act, we have reviewed the water quality sections within the DEIS (3.6 and 4.6) and offer the following specific comments. The comments are organized by section, page and line within the DEIS.

3.6.3.1

#15

Page 3-140 at 31: The DEIS states, "The water quality parameters discussed could be transported from hatcheries to the aquatic system through discharges of hatchery water used for operations (referred to as effluent), decomposition of hatchery-origin salmon carcasses placed in streams to enhance nutrient levels, and releases of large numbers of hatchery-origin salmon into receiving streams." We note that NPDES permits only address the discharge of pollutants from hatcheries,

---

[5] http://www.fws.gov/gorgefish/carson/reports/MA%20Fact%20Sheet%203_3_06.pdf
[6] Clean Water Act Section 101(a)(2)

Printed on Recycled Paper

not the planting of carcasses in the watershed, or the release of fish to the stream. The carcasses and fish are not seen as pollutants. #15

Page 3-141 at 11: The DEIS describes chemical or physical parameters associated with hatchery operation that have the potential to impact receiving waters. Among the parameters listed is "sediment". We note that in effluent, this is measured as "settleable solids" and "total suspended solids"; in the stream, it is discussed as turbidity or sediment. #16

Page 3-141 at 12: The DEIS states that some water quality parameters could also be affected by decomposition of salmon carcasses and suggests that spawned-out salmon could occur at the facility site. We note that permits usually prohibit discharge of carcasses at the hatchery. #17

Page 3-142 at 6: The DEIS states that effluent discharge permits for hatcheries specify effluent temperature limits. We note that only some permits have temperature limits; most do not. #18

Page 3-143 at 10: The DEIS states that there is a low risk of water quality violations from nutrients with adequate dilution by receiving water. We note that risk of nutrient impairment depends on the characteristics of the stream. Icicle Creek is impaired because of phosphorus, primarily from the Leavenworth National Fish Hatchery. We also note that dilution comes into play only if there is a mixing zone allowed by the state. We are not aware of any such mixing zones for the hatcheries in Washington and Idaho. #19 #20

3.6.3.1.4

Page 3-144 at 6: The DEIS states that changes in pH likely arise from primary production (algal growth via photosynthesis) within hatcheries. We recommend that NMFS consider the findings in the 2006 TMDL study of the Wenatchee River prepared by the Washington Department of Ecology. That study showed pH above the acceptable 8.5 can be caused by excess growth of periphyton in the river, which can be caused by excess nutrients from any source, including hatchery effluent. #21

3-144 at 22: The DEIS makes reference to "settling nutrients". More appropriately, the DEIS should discuss "settling solids" - which have nutrients in or on them, rather than settling nutrients as a methods to reduce solids. #22

3.6.3.2.1

Page 3-147 at 3: The DEIS states that, "for discharges from hatcheries not located on Federal or tribal lands within Oregon and Washington, the EPA has delegated its regulatory oversight to the states" and that, "Oregon, Washington, and Idaho are all responsible for certifying that NPDES-permitted projects not located on Federal or tribal lands comply with state water quality standards." We add to this with the following clarifications: Oregon has the NPDES program for federal facilities but not for tribal facilities; Washington certifies EPA written federal permits that are not on tribal land, but does not certify tribal permits; and Idaho certifies all permits (EPA written) except tribal permits. #23

Printed on Recycled Paper

3.6.3.2.2

Page 3-151 at 5: We note that there is no mention or discussion of the federal hatchery general permit which EPA issued effective August 1, 2009. It applies to 10 federal and tribal hatcheries in Washington in the Columbia River basin. EPA also issued a general permit for cold water hatcheries in Idaho, including 8 in the Columbia-Snake River basin. It was effective Dec. 1, 2007. #24

Page 3-152 at 28: We note that pH, temperature, and total ammonia as nitrogen are only required for direct discharges from offline settling basins, which is a small percentage of the facilities. #25

Page 3-152 at 31: We note that temperature monitoring is only required of warm water facilities, and that copper & hardness are only required when copper is being used. #26

Page 3-153 at 1: We note that monitoring of total inorganic nitrogen and total nitrogen is only required at one facility each. #27

4.6.3

Page 4-201 at 20: Federal regulations do not have water quantity requirements. #28

Page 4-201 at 22: The DEIS states that all hatchery programs in the analysis area are in compliance with their NPDES discharge permit. This is a broad characterization of the hatchery system. We recommend that the FEIS provide additional basis for this statement. We also recommend that consideration be given to the status of the hatchery NPDES permits. For example, the Leavenworth National Fish Hatchery is under a 35 year old permit. Efforts are ongoing to issue a new permit, but the much has changed in both the water quality and technology arena that bring into question the benefit complying with a 35-year-old permit. #29 #30

Page 4-201 at 26: The DEIS states that hatcheries have not been identified as a source of impairment to streams. Again, this is a broad characterization that cannot be applied to all hatcheries. For example, the Leavenworth National Fish Hatchery is seen as a source of impairment to Icicle Creek at least for dissolved oxygen and pH, and because of its phosphorus discharges that encourage algal growth. We recommend that the FEIS provide a more careful characterization of the water quality impacts from hatcheries. #31

Page 4-201 at 29: The DEIS states that any hatchery facility that would increase production under any of the alternatives would have to do so in compliance with an NPDES permit. We note that a standard condition of NPDES permits is that any proposed increase in discharge of pollutants must be reported to the permitting authority (which may then take action to modify a permit). Some permits, however, have mass limits on pollutants, which would limit such hypothetical increases. #32

4.6.3.1.2

Page 4-202 at 7 (and repeated throughout the document): We recommend that the FEIS utilize language consistent with water quality permitting. Water quality is not something to be "increased" or "decreased". Rather, water quality is something to either be "improved" or "degraded". #33

Printed on Recycled Paper

#34

Page 4-202 at 9: Each of the action alternatives is characterized as decreasing the contribution of hatchery facilities to the impairment of 303(d) waters. We understand the rationale behind this statement, but note that these statements conflict with previous statements in the EIS that hatcheries, "have not been identified as a source of impairment" (4.6.3 at 26). We recommend that the FEIS revisit the logical progression of these statements in order to allay confusion on the part of the reviewer.

General

#35

Enhancing public participation in government planning and decision making is fundamental to NEPA. A well developed document, written in language that can be understood by a broad range of stakeholders, is critical to ensuring successful public involvement. We found the Mitchell Act DEIS to be cumbersome to read, particularly with regard to the lack of explanation around technical concepts (such as the performance goals and metrics), and the overuse of acronyms that are not familiar to readers outside the hatchery management process. We recommend that as the FEIS is crafted, care is taken to improve the readability of the document. In particular we recommend that the discussions on page 2-22 related to the performance goals and metrics be expanded. It would also be helpful to introduce these foundational concepts before the alternatives are presented. We also recommend that the use of acronyms be scaled back.

Printed on Recycled Paper

U.S. Environmental Protection Agency Rating System for Draft Environmental Impact Statements Definitions and Follow-Up Action*

Environmental Impact of the Action

LO – Lack of Objections

The U.S. Environmental Protection Agency (EPA) review has not identified any potential environmental impacts requiring substantive changes to the proposal. The review may have disclosed opportunities for application of mitigation measures that could be accomplished with no more than minor changes to the proposal.

EC – Environmental Concerns

EPA review has identified environmental impacts that should be avoided in order to fully protect the environment. Corrective measures may require changes to the preferred alternative or application of mitigation measures that can reduce these impacts.

EO – Environmental Objections

EPA review has identified significant environmental impacts that should be avoided in order to provide adequate protection for the environment. Corrective measures may require substantial changes to the preferred alternative or consideration of some other project alternative (including the no-action alternative or a new alternative). EPA intends to work with the lead agency to reduce these impacts.

EU – Environmentally Unsatisfactory

EPA review has identified adverse environmental impacts that are of sufficient magnitude that they are unsatisfactory from the standpoint of public health or welfare or environmental quality. EPA intends to work with the lead agency to reduce these impacts. If the potential unsatisfactory impacts are not corrected at the final EIS stage, this proposal will be recommended for referral to the Council on Environmental Quality (CEQ).

Adequacy of the Impact Statement

Category 1 – Adequate

EPA believes the draft EIS adequately sets forth the environmental impact(s) of the preferred alternative and those of the alternatives reasonably available to the project or action. No further analysis of data collection is necessary, but the reviewer may suggest the addition of clarifying language or information.

Category 2 – Insufficient Information

The draft EIS does not contain sufficient information for EPA to fully assess environmental impacts that should be avoided in order to fully protect the environment, or the EPA reviewer has identified new reasonably available alternatives that are within the spectrum of alternatives analyzed in the draft EIS, which could reduce the environmental impacts of the action. The identified additional information, data, analyses or discussion should be included in the final EIS.

Category 3 – Inadequate

EPA does not believe that the draft EIS adequately assesses potentially significant environmental impacts of the action, or the EPA reviewer has identified new, reasonably available alternatives that are outside of the spectrum of alternatives analyzed in the draft EIS, which should be analyzed in order to reduce the potentially significant environmental impacts. EPA believes that the identified additional information, data, analyses, or discussions are of such a magnitude that they should have full public review at a draft stage. EPA does not believe that the draft EIS is adequate for the purposes of the National Environmental Policy Act and or Section 309 review, and thus should be formally revised and made available for public comment in a supplemental or revised draft EIS. On the basis of the potential significant impacts involved, this proposal could be a candidate for referral to the CEQ.

* From EPA Manual 1640 Policy and Procedures for the Review of Federal Actions Impacting the Environment. February, 1987.

Printed on Recycled Paper

The Confederated Tribes of the Colville Reservation
P.O. Box 150, Nespelem, WA 99155
(509) 634-2200
FAX: (509) 634-4116

December 2, 2010

Letter #4

Mr. William W. Stelle Jr.
Regional Administrator, NMFS Northwest Region
National Oceanic and Atmospheric Administration
7600 Sand Point Way NE
Seattle, Washington 98115

Re: Colville Tribes' Mitchell Act DEIS Comments

Dear Mr. Stelle:

#1

The Confederated Tribes of the Colville Reservation ("Colville Tribes" or "Tribes") appreciate the opportunity to comment on the Draft Environmental Impact Statement to Inform Columbia River Basin Hatchery Operations and the Funding of Mitchell Act Hatchery Programs ("DEIS"). The Colville Tribes see this DEIS as an important opportunity to provide much needed guidance to the region on how best to operate hatcheries and to integrate hatcheries into a fisheries management framework that could both promote conservation of the Basin's salmon populations and sustain harvest in a manner compatible with species recovery. Such guidance and clarity are long overdue.

I appreciate your having taken the time earlier this year to meet with my staff to discuss the Tribes' salmon and steelhead programs and the broader actions that are needed for recovery of our upper Columbia River anadromous fish. We will only see recovery and sustainable harvest of salmon and steelhead in the upper Columbia if NOAA and the region make sensible reforms to hatchery programs and harvest regimes concurrently with ongoing reforms of the Federal Columbia River Power System and improvements to tributary habitats.

The Colville Tribes' comments on the DEIS are attached. We request you give our comments careful consideration as NOAA drafts its policy and adopts a preferred alternative for operation of your Mitchell Act Hatchery Program. Should you or your staff have any questions regarding our comments, please do not hesitate to contact the Tribes' Fish and Wildlife Department Director, Joe Peone, at (509) 634-2110.

Sincerely,

/s/ Michael O. Finley

Michael O. Finley, Chairman
Confederated Tribes of the Colville Reservation

Cc:
R. Turner, R. Jones, L. Rutter, P. Dygert – NOAA
J. Stensgar, J. Peone, J. Marco, K. Truscott - CCT
B. Gruber – ZCVB&S
H. Wright - ONA
US v. Oregon parties
R. Peters, S. McNary, K. Puckett - FCRPS Action Agencies
Congressman N. Dicks
L. Mobrand, P. Paquet – HSRG chairs
T. Grover – NPCC

COVILLE TRIBES' COMMENTS ON
NOAA's DEIS FOR COLUMBIA RIVER BASIN HATCHERY OPERATIONS AND THE FUNDING OF MITCHELL ACT HATCHERY PROGRAMS

Introductory Comments:

#2

The Colville Tribes encourage NOAA to promptly complete this DEIS and policy process. The region has needed policy clarification and consistency on hatchery operations pursuant to the Mitchell Act and the Endangered Species Act ("ESA"). Hatchery programs throughout the Columbia River Basin need to be operated in a manner consistent with species conservation and within a framework for sustainable harvest that is also consistent with conservation. The best available scientific information is demonstrating that too many hatchery fish spawning in the wild can significantly depress the productivity of natural populations, thereby inhibiting their viability and persistence. Further, the abundance of hatchery-origin salmon in the ocean and in many runs of Columbia River salmon directly enables higher fishing mortalities on the natural-origin salmon in these mixed stock fisheries as harvest rates are often based on aggregate fish abundance.

Reforms to these hatchery programs and the fisheries they enable are available and feasible. We trust our comments will assist NOAA in directing needed reforms through a comprehensive policy implementing its authorities under the Mitchell Act, ESA, and sustainable fishery mandates in addition to NOAA's trust responsibilities for the reserved rights of Native Americans. NOAA should always remember that the underlying principle in each of these laws and responsibilities is effective salmon conservation.

Integrating Work of the Hatchery and Scientific Review Group:

#3

In developing a preferred alternative and policy, the Colville Tribes encourage NOAA to look to the work completed by the Columbia River Hatchery and Scientific Review Group ("HSRG"). The HSRG has developed hatchery standards, metrics and a flexible plan for their application that the Tribes believe offer a means to reform hatchery programs for the benefit of species conservation and sustainable harvest. The HSRG standards and metrics offer a pragmatic means for application of the pertinent and best available scientific information for the management of salmon.

#4

As proposed by the HSRG, the Colville Tribes encourage NOAA to adopt a policy applying HSRG standards and metrics flexible to salmon and steelhead populations based both on their importance to species conservation and on the need to promote sustainable tribal, sport and commercial fisheries. Managing the Mitchell Act Hatchery Program and guiding operations of other hatcheries to HSRG standards for Primary, Contributing and Stabilizing designated populations provides a justifiable strategy for addressing NOAA's multiple mandates. Stronger (i.e., more conservation oriented) standards can be applied to those Primary populations essential to species recovery and persistence. Intermediate performance standards can be applied to populations designated as Contributing. Populations designated as Stabilizing can be managed at lesser conservation standards and therefore provide locations for hatchery programs that can support important fisheries. Hatchery programs can be reformed and production adjusted or

relocated to both meet conservation needs and provide salmon for the marine and freshwater fisheries. Designation of populations within each evolutionarily significant unit ("ESU") and application of HSRG standards (or similar NOAA hatchery performance goals) should be carefully considered based in large part on recovery plans, Interior Columbia Technical Recovery Team criteria, and locations of existing hatchery programs and fisheries (particularly tribal fisheries). #4 #5

In crafting a preferred alternative, the Tribes encourage NOAA to take a regional approach and avoid a geographic boundary, such as Bonneville Dam, as the basis for applying hatchery performance goals. Performance standards should be applied consistently across all ESUs, upriver and downriver. The same principles of conservation biology apply to all ESUs regardless of locale. But, as stated above, flexibility exists within each ESU, ESA-listed or not, for application of the performance goals based on population designations. #6

Finally, with regard to integrating the work of the HSRG into a policy for Mitchell Act funding and ESA reviews, NOAA should adopt a pHOS metric for integrated populations as well as segregated populations. The HSRG recommended a pHOS not to exceed 30% for Primary and Contributing populations. #7

The Colville Tribes offer their summer/fall Chinook management plan for the Okanogan River and Chief Joseph Hatchery as a realistic example of how the HSRG principles, standards and metrics can be successfully applied for management of salmon in a Primary population. Hatchery production can be implemented, harvest increased, and natural spawning escapements improved for population health and persistence. #8

The Colville Tribes understand that developing, adopting and implementing a Basin-wide hatchery policy that directs hatchery performance standards is a daunting task. There are fiscal, political, and logistical complexities and constraints to reforms that must be considered. The policy should therefore include guidelines for prioritizing implementation. We suggest performance standards for reforming hatchery operations should generally occur first for those ESA-listed ESUs for which recovery is not evident or lagging. Second, priority should generally be given to funding reform actions needed for Primary populations within the ESA-listed ESUs to ensure conservation of the most essential populations. Also, policy priority should be given to actions that maintain ceremonial and subsistence fisheries for Native Americans. #9

Integrating Hatchery Reforms with Harvest Reforms:

The Colville Tribes offer that hatchery and harvest management and reform are inseparable and both should be addressed in the NOAA policy for two key reasons. First, necessary reduction of hatchery salmon spawning in the wild can be accomplished in significant part through converting many of the existing marine and freshwater sport and commercial fisheries over to selective methods. Additional hatchery salmon and steelhead can also be harvested by initiating new sport or tribal selective fisheries in terminal locations to harvest hatchery fish escaping the existing mainstem fisheries. Secondly, 85% of the Mitchell Act hatchery fish are produced for harvest purposes. Likewise because of other hatcheries operating in the Basin, roughly 80% of most salmon and steelhead runs consist of hatchery-origin fish. In mixed stock, #10

abundance-based fisheries, the production of these hatchery fish is directly accountable and responsible for higher harvest rates that also increase the mortality to the wild salmon for which ESA recovery and species conservation depends. #10

By concurrently improving harvest management, reforms of hatchery programs could proceed in a manner less detrimental to tribal, sport and commercial fisheries. Additional selective fishing also offers an opportunity to achieve additional value from hatchery programs by increasing harvest while lessening the numbers of hatchery strays spawning in the wild. Inclusion of selective fishing in harvest management regimes would be a more sustainable model biologically and fiscally, and, in the long term, politically. #11

Consistency Across Biological Opinions:

The Colville Tribes see significant inconsistencies in how NOAA has addressed salmon consultations for fishery management activities and those for hydroelectric projects and other actions that degrade salmon habitat. The Tribes have worked hard in sovereign forums with NOAA to improve the survival of specific salmon ESUs and their attendant populations. NOAA's science clearly supports populations as the building blocks for ESU health and viability. Mitigation actions are developed, funded and implemented through these consultations to recover specific populations of ESA-listed salmon. The success or failure of these consultations is monitored, evaluated and regulated based on resulting survival and recovery of ESUs and populations. #12

Yet in Mitchell Act hatchery operations and harvest consultations, this same concern for all ESA-listed ESUs and populations is not evident. The Columbia River hatchery/harvest management system is held to a different standard. The system and many of its component actions are not monitored, evaluated and regulated to achieve a consistent contribution to ESU recovery and sustainability. The hatchery system is operated to substantially increase aggregate salmon abundance in the ocean and in Columbia River runs; then fisheries are approved that are not tempered based on the status of the individual ESUs and populations. The biological gains and progress towards recovery of populations being made through hydropower and habitat consultations, and recovery plans can be negated by the lack of consistent hatchery and harvest management and consultation. Productivity gains for many salmon populations made through improved passage survivals can be lost to excessive spawning of hatchery fish or increased harvest of wild salmon when mixed stock fisheries are managed on the aggregate run. The policy NOAA adopts through this process should strive to achieve the needed consistency across the life cycle of the salmon to ensure recovery and sustainability throughout the Basin.[1]

New Facilities; New Programs:

The DEIS is confusing as to the future use of Mitchell Act funding for new "hatchery facilities". The Colville Tribes agree that the funding burden for hatchery and harvest reform #13

[1] As the Ninth Circuit Court of Appeals recently held in *Humane Society of the United States v. Locke*, No. 08-36038 (9th Cir. Nov. 23, 2010), it is important for the agency to achieve consistency in its evaluation of impacts to salmon populations from one review document to another.

likely does not allow for new programs in the foreseeable future. However, at the same time, new facilities are likely needed to reform existing programs and production agreements. #13

The HSRG proposed shifting some existing production from lower river hatcheries to net pen operations in off-channel, terminal fishing sites as a reform that would increase harvest of hatchery fish, reduce mortality of wild fish in mixed stock fisheries, reduce surplus hatchery returns, and reduce straying into spawning habitats. Investment in such net pen facilities should be considered as a viable action under NOAA's policy. Similarly, the Colville Tribes have proposed construction of new acclimation facilities in the terminal area below Chief Joseph Dam as a reform action to maintain harvest for others in the Basin and provide, for the first time, the Colville Tribes with a modicum of program benefits ("environmental justice"), while reducing conservation conflicts in tributary habitats. #14 #15

Use of Mitchell Act Program Funding:

The Colville Tribes obviously see the need for substantial hatchery and harvest reforms in the Columbia Basin. The Tribes believe that current management of the hatchery/harvest system is a weak link in the recovery and sustainable future for salmon and steelhead in the Columbia River Basin. For this reason, the Tribes believe Mitchell Act funding for the "…conservation of the fishery resources…" should be directed specifically towards hatchery and harvest reforms. These reforms will require substantial and carefully prioritized funding. #16

The Mitchell Act program should ensure progress towards vibrant sport, commercial and tribal fisheries that are sustainable and consistent with conservation goals by, for example, allocating Mitchell Act funds to develop and test selective fishing gears for use in fisheries enabled by the program's hatchery fish production. The Tribes do not see the flexibility to divert these needed reform funds toward other conservation endeavors, such as fish passage, habitat improvements and research. The contribution Mitchell Act funding could make to these worthwhile endeavors would be insignificant relative to the current dollars allocated from other programs.

Chum salmon:

The Colville Tribes believe a priority for the Mitchell Act Hatchery Program should be recovery of ESA-listed chum salmon populations in the lower Columbia River. Most of the historical populations are functionally extinct and require reintroduction actions from nearby, healthier populations. Artificial propagation has been shown to be an effective means of re-establishing chum populations, and chum reintroduction programs using existing hatcheries are inexpensive. #17

A Mitchell Act program specifically supporting widespread chum reintroduction is a priority to the Colville Tribes. Currently, Lake Roosevelt is drafted in the fall through spring period to support spawning flows for a portion of one chum population below Bonneville Dam. This operation degrades the lake environment on the Colville Reservation, harms the economic interests of the Colville Tribes, and reallocates storage in Lake Roosevelt that in many years can be used to support the survival of spring migrating salmon and steelhead originating from all

ESUs from the upper Columbia and Snake river basins. Drafting of Lake Roosevelt as a recovery action for lower Columbia River chum is a very inefficient and costly means for supporting one chum population at the loss to all other upper basin ESUs, particularly when other alternatives for more widespread chum recovery are readily available through the Mitchell Act program. #17

Hatchery Policy:

The Colville Tribes encourage NOAA to promptly develop and adopt a policy for hatchery and related harvest reforms for Columbia Basin salmon and steelhead. The policy should not only address the funding of Mitchell Act hatcheries and NOAA's ESA review of hatchery programs, but all of NOAA's mandates and responsibilities, particularly to the rights of Native Americans. The policy should include hatchery performance standards and measurable metrics that are flexibly applied to salmon and steelhead populations based on population designations that reflect their importance to ESU persistence and recovery. The policy's performance metrics should reflect those recommended by the HSRG. The policy should include an adaptive management process to periodically review and update metrics, if needed, based upon future scientific findings. #18

Prompt policy development and application is needed to thwart the continued declines in population productivity caused by ongoing hatchery programs, and related harvest regimes. And finally a hatchery and harvest reform policy needs to address management and recovery of ESUs and populations consistently with that of other factors affecting the life cycle of salmon and steelhead.

MAKAH TRIBE

P.O. BOX 115 • NEAH BAY, WA 98357 • 360-645-2201

Letter #5

William W. Stelle, Jr.
Regional Administrator
NMFS Northwest Region
7600 Sand Point Way NE
Seattle, WA 98115

December 2, 2010

Dear Mr. Stelle:

The Makah Tribe wishes to take this opportunity to comment on the draft environmental impact statement (DEIS) that your agency has issued on the funding and operations of the Mitchell Act hatcheries in the Columbia River basin. We have serious concerns about the content of the DEIS, as well as with the assumptions, biases and conclusions that went into its development. In addition, we are concerned with the precedent that this DEIS might set for NMFS policies and plans for the hatchery system on the Columbia River, and in the Northwest in general. #1

Our concerns focus on these areas:

- Development of EIS Alternatives
- Impacts of Hatchery Reductions on Tribal Fisheries
- Survival and Recruitment of Hatchery Fish
- Standards for Evaluating Effects on Wild Salmon
- The Role Of Hatcheries In Conservation Of Wild Stocks
- The Effect of Hatchery Reductions on the Pacific Salmon Treaty
- Federal Trust Responsibility To Tribes

Development of EIS Alternatives

#2

Of the five alternatives listed in the EIS, the current hatchery program funding – and the alternative with the highest level of hatchery production – is listed as Alternative 1, the "No Action" alternative. We do not consider the current condition to be "no action." We consider it to be hatchery production that helps to supports fisheries, while at the same time conserving wild stocks.

#3

To be fair, contributing to harvest and conserving natural stocks is mentioned in the first bullet-point in the description of this alternative on page 2-15. Yet the other seven bullet-points are written with such negative terms as to give the reader the impression that NMFS is biased from the start against these hatchery programs. This impression is further reinforced in the description of the other four alternatives, all of which involve partial or complete cuts in hatchery funding, and therefore lead to reductions in fisheries.

#4

That said, it is also important to note that the current levels of production (the *highest* levels of production among the EIS alternatives) are themselves reduced from production levels

#4

in recent decades. Mitchell Act funding for these hatcheries has been flat since the mid-1990's, while funding has been diverted to other salmon-related projects in the Columbia Basin. In that light, we ask why there is not an alternative that reflects production levels from years with adequate Mitchell Act funding.

By making the "no action" alternative the current level of funding, and then setting all the other alternatives with lower levels of funding (including one with *no* funding) you limit from the beginning the range of alternatives you consider, and you limit the analysis to alternatives with sub-optimal levels of operation. Since there were higher levels of hatchery production in the past, we suggest that to cover the full range of alternatives, you establish and analyze, at least one alternative with higher levels of funding and production than the current levels.

Impacts of Hatchery Reductions on Tribal Fisheries

#5

We appreciate the efforts of your fishery modelers, and the approach they took to comparing the alternatives listed in the EIS for their impacts on fisheries. However, as a "reality-check" we took a different approach to evaluate the importance of the Mitchell Act-funded hatcheries and programs to our troll fishery. We looked at our actual troll catches, and, using coded-wire tag data (from return years 1988 through 2008) we estimated the contribution of Mitchell Act-funded programs to our catch.

Bearing in mind the cautions that your modelers noted in Appendix K of the EIS, we found remarkable agreement between the results of the two approaches to estimating the contribution of the Mitchell Act hatcheries to our troll fishery (Table 1, below). Our estimate from the CWT data is that these hatcheries contribute 32 percent of the chinook and 6 percent of the coho taken in our treaty ocean troll fishery. The modeled estimates in the EIS amount to 33 percent of our chinook and 4 percent of our troll coho.

Table 1.
Evaluating the Impact of Alternative 2 (No Funding) on the Treaty Troll Fishery Comparing CWT Data with EIS Modeling

	% Contribution CWT Reconstruction	% Reduction EIS Modeled Estimate
Chinook	32%	33%
Coho	6%	4%

#6

Given this close agreement in the results of our two approaches, the question remains: are these reductions important? To the Makah Tribe, the answer is a resounding "yes". Under the "No Funding" Alternative 2, we could expect an average reduction in our chinook catch of 32 percent (our estimate) to 33 percent (your estimate). While the proportions of chinook and coho in our catch vary year-by-year, the value of our chinook catch, in particular, is such that reductions of that magnitude would amount to a major reduction in income to our fishermen. Reduced to simple ex-vessel value, we would expect an annual loss of more than $250,000 to our fishermen alone (using 2001-2010 average prices). Because our fishermen live in Neah Bay, and spend much of their income locally on fuel, groceries and fishing supplies, we could expect a considerably larger impact on the economy of Neah Bay as a whole.

#7

But these might be conservative estimates of the impacts on our fishery. The direct contribution of fish from Mitchell Act-funded hatcheries is not their only effect on our fishery. By diluting the impact on wild stocks, the Mitchell Act-funded hatchery fish make it possible to conduct commercial and sport fisheries without adversely affecting the wild stocks.

The effect of hatchery reductions on ocean fisheries should not be calculated simply as the reduction of hatchery fish in the catches. By increasing the abundance of fish in the ocean, hatchery production also reduces the impact of ocean fisheries on wild fish. If hatchery production is reduced on the Columbia River, there will be some years – perhaps many years – in which some weak stocks will be so vulnerable to exploitation in ocean fisheries that we will not be able to conduct a fishery at all. Our fisheries will be deprived of the opportunity to harvest not only Mitchell Act-produced fish, but also fish from other abundant hatchery runs. This is not a hypothetical scenario: our ocean troll fishery is already restricted on a nearly annual basis, as NMFS implements its ESA jeopardy standards during the PFMC process. We anticipate greater restrictions on our ocean fishery under any of the alternatives except Alternative 1.

Therefore, in years when the shortage of hatchery fish prevents us from conducting ocean fisheries, the effect of reductions would likely be considerably more than 33 percent of our chinook. It could lead to a complete closure of chinook fishing in the Washington ocean fisheries.

#8

Finally, even if we ignore the ESA-related restrictions on our fishery, as the abundance of hatchery salmon in the ocean is reduced, they will become more and more difficult to catch. Then it will take longer *per fish* for our fishermen to take what quota they can get. They will have to fish longer, burn more fuel, and incur more expenses per fish, which will further reduce the net value of our fishery.

#9

More importantly, the value of these fish to the tribes is not something that can be measured in mere dollars. These fish have a cultural value to the tribes, dating from ancestral times. This is a value that cannot be replaced if chinook abundance is allowed to decline and if our ocean fisheries cannot harvest them.

Survival and Recruitment of Hatchery *vs.* Wild Fish

#10

NMFS's arguments for reducing hatchery production rely heavily on purported problems with low survival and recruitment of hatchery fish, especially when they share habitat with wild fish. Yet the issue of hatchery and wild fish sharing rivers is not as simple as this. Numerous publications, including some from your own agency, show that this is a simplistic view of the question of relative fitness. We respectfully suggest that this problem might not be simply a function of the fish being of hatchery origin, but could be related to the selection of broodstock, and the habitat into which the hatchery fish are released.

For decades, hatchery broodstock were selected and propagated as if hatchery managers were "playing Johnny Appleseed" spreading fish around the region without regard to their ancestral origins or their genetic adaptation to certain habitats. As a consequence, many hatcheries are producing fish that, if they stray into spawning streams, are poorly suited to live in the natural habitat. This problem might be addressed to a great extent by more thoughtful selection of broodstock, rather than by wholesale reductions in hatchery production.

#11

In addition, the hatchery fish are placed at a disadvantage by the locations into which they are released. Hatcheries are not generally constructed, and hatchery fish are generally not released, at locations where the wild stocks are already thriving. If wild stocks were thriving, there would be no need for hatchery supplementation. The hatcheries on the Columbia River, in particular, were constructed to mitigate for losses due to the hydroelectric dams and other habitat degradation. The dams remain and the habitat has not been restored. In that light, is it surprising that fish do not survive and reproduce well in this habitat? Blaming this poor survival on the introduction of hatchery fish is a sad excuse for your agency to avoid the need to restore the quality of the salmon habitat in the Columbia Basin.

Standards for Evaluating Effects on Wild Salmon

#12

The EIS simplifies the question of hatchery-wild interactions by reducing them to the PNI standard, which is a function of hatchery-origin spawners in the streams and natural-origin broodstock in the hatcheries. While this metric might be easy to calculate, it oversimplifies a situation that is a function of many other conditions. As we noted above, introducing broodstock fish that aren't well adapted to a watershed is not a wise practice, but the simple presence of hatchery-origin fish on the spawning grounds does not guarantee interbreeding genetic mixing.

#13

The anti-hatchery bias in the EIS raises our concerns. To cite all instances of this bias in the EIS, we would require a document that would be considerably longer and more detailed than this letter. Overall, the perspective presented by the EIS appears to be that anything associated with a hatchery presents risks to the wild fish. The bias takes extreme proportions in Section 4.2.3.1.2, which cites among the possible risks of hatcheries to fish of natural origin, real or potential catastrophic events in hatcheries that present far more risks to the fish being raised in the hatchery. If hatchery-origin fish are such a problem, then perhaps these events should be viewed (at least by your EIS-preparers) as beneficial to wild salmon. Instead, these possibilities, too, since they are associated with hatcheries, are depicted only as risks to wild salmon.

#14

Likewise, the EIS cites the possibility of predation by hatchery-origin fish on wild fish, but ignores the possibility that juvenile wild salmon might prey on juvenile hatchery salmon – and benefit from that food source. We realize that the hatchery fish are not produced to be a food source for wild fish, but we mention this as just one more example of the anti-hatchery bias that pervades the EIS.

The Role of Hatcheries in Conservation of Wild Salmon

#15

We mentioned earlier in this letter that the hatchery-produced fish help reduce the impact of fisheries on wild stocks. This function is important, not only to support fisheries, but also to conserve wild stocks that cannot support heavy levels of fishing. In some cases, the hatcheries play a vital role in sustaining the gene pool of wild stocks when they are at critical abundance levels. The Makah Tribe is quite familiar with this function: we operate the Hoko River Hatchery, which is vital to sustaining the Hoko fall chinook, even though we have not fished this stock since the early 1980's.

The Effect of Hatchery Reductions on the Pacific Salmon Treaty

#16

After several years of negotiations, the United States and Canada last year entered into a new chinook agreement as part of the Pacific Salmon Treaty. These negotiations were conducted in the background of certain levels of chinook production in both countries. This should not be

#16

news to you. Your own agency issued a biological opinion on the consequences of that agreement. The analyses that went into that opinion also incorporate a number of assumptions about chinook production and availability.

Major reductions in Columbia River chinook production, such as are envisioned in the DEIS, would change the context from that in which the treaty was negotiated, and would likely have a number of negative consequences. Most notably, we would see increased exploitation of ESA-listed and other wild chinook stocks in fisheries managed under the Pacific Salmon Treaty. For example, with fewer Columbia River hatchery fish available to the AABM chinook fisheries on the west coast of Vancouver Island, the impacts of those fisheries would likely shift more to Puget Sound chinook.

Further, it is not impossible that in 2014 Canada would invoke the provisions of Annex IV, Chapter 3, Section 6(c) of the Treaty, and would withdraw from the chinook conservation program established in the agreement. The consequences of such a withdrawal on our ESA-listed chinook stocks are terrible to contemplate. Certainly, it would make it much more difficult for NMFS and the tribal and state co-managers to recover listed stocks.

The Federal Trust Responsibility to the Tribes

#17

The Mitchell Act hatcheries are a partial fulfillment of the federal government's obligation to the tribes to mitigate for losses of wild salmon caused by hydroelectric dams and other developments in the Columbia River basin. Any reduction in hatchery production is a violation of that commitment.

When we signed a treaty with the United States government, our people were guaranteed the right to fish. Because we fish in the ocean, our tribe has harvested chinook from the Columbia River runs, which were considerably more abundant when the treaties were signed. The construction and operation of the dams on the Columbia River diminished the value of that treaty right, but the fish produced by the Mitchell Act hatcheries have helped to partially restore it. As we noted earlier, and as your modeling shows, those hatcheries account for approximately one-third of the chinook we take in the ocean troll fishery. Closing those hatcheries, or reducing their production, would once again reduce the value of the fishing rights.

As long as the dams remain on the Columbia River system, and as long as they reduce the abundance of fish on the river, the hatcheries should remain fully operational. They should produce at their capacity, and they should be fully funded to do so.

#18

Alternatives 3, 4 and 5, while they may be well-intentioned measures aimed at recovering wild stocks, are also untried, experimental approaches. They would involve sweeping changes in the management and production of hatchery programs, and of fishing, in large areas of the Columbia Basin and in the ocean. Further, implementing them involves considerable funds, which would have to be diverted from hatchery production. Given the life span of chinook salmon, the entire salmon fishing community, sport and commercial, from Oregon to southeast Alaska, could see its catches reduced for decades, as we wait for results of these experimental techniques, and for enough data to allow scientifically valid conclusions.

#19

If NMFS wants to test some of these approaches, such as weirs or terminal selective fisheries to reduce the numbers of hatchery fish on the spawning grounds, or different choices of

broodstock, perhaps a more sensible approach would be to try them in one or two small tributaries, where the experiment would not impact the entire Columbia River system and the ocean fisheries. Treat this as the experiment it would be: collect the data for as many years as it takes, analyze the results in consultation with the co-managers, and then perhaps we can agree on an improved approach to hatchery operations on the Columbia River. #19

In closing, we see the draft EIS as an evidence of NMFS's intent to reduce hatchery production on the Columbia River. That reduction would also reduce our tribal catch, and would therefore substantially reduce the value of our treaty right. But the impacts go well beyond our fishery. Our tribal fishermen fish in the same ocean, and harvest the same stocks as non-tribal commercial and sport fishermen. We therefore believe that the impacts on our fishery will be felt by all ocean fisheries, from Alaska to Oregon, and we stand together with all ocean fishermen in opposing the reductions in Mitchell Act hatchery funding and operation. #20

We respectfully recommend that NMFS withdraw the EIS, and the proposals in it, and consult with the tribes and with non-tribal groups concerned about fisheries, about how you might take our concerns into account before you make any further decisions on the use of Mitchell Act funds. #21

Thank you for your consideration. We look forward to further productive discussions with you and your staff on this subject.

Yours sincerely,

MAKAH TRIBAL COUNCIL
Michael Lawrence, Chairman

Letter #6

Nez Perce

TRIBAL EXECUTIVE COMMITTEE
P.O. BOX 305 • LAPWAI, IDAHO 83540 • (208) 843-2253

2 December 2010

William Stelle Jr.
National Marine Fisheries Service
Regional Administrator Northwest Region
7600 Sand Point Way NE
Seattle, Washington 98115

Dear Mr. Stelle,

The Nez Perce Tribe submits these comments on the Draft Environmental Impact Statement on the Mitchell Act and Columbia River Basin Hatchery Operations (DEIS). In addition, we attach or incorporate by reference our testimony of October 13, 2010 (Attachment 1), the testimony and comments of the Columbia River Inter-tribal Fish Commission, and the comments of the Technical Advisory Committee and Production Advisory Committee of U.S. v Oregon. #1 #2 #3

As the Tribe has made clear in our testimony, we believe the DEIS is fatally flawed. The Tribe believes the overbroad purpose of the DEIS, the way it was developed without partners in the Columbia Basin, its advocacy for abrogating congressional mitigation mandates and legal agreements, and its potential real-life effects on our fishermen, all call for NOAA to start over. NOAA Fisheries should narrow this DEIS to just focus on Mitchell Act funding, it should use appropriate evaluation methods in doing so, and it should leave policy direction on Columbia Basin hatchery practices for a more fully informed collaborative effort. #4

In addition, we must take this time to draw you attention to several other errors and problems with the DEIS.

1. Mischaracterization of the Nez Perce Tribe and its Treaty Rights

It is disturbing that the DEIS openly admits that it may affect the Nez Perce Tribe (3-104) and yet the Nez Perce Tribe was only contacted at the scoping phase over five years ago and NOAA never consulted on a Government-to-Government basis with the Tribe as it prepared the DEIS. Equally disturbing, and a consequence of NOAA's failure to consult with the Tribe throughout the preparation of the DEIS, is that the DEIS' statement concerning the Tribe, the Tribe's Reservation, the Treaty-reserved fishing rights the Tribe reserved and the United States secured, and the importance of salmon to the Tribe (3-104 to 3-105) is incomplete, inaccurate, and internally inconsistent. We cannot understand #5 #6

how NOAA Fisheries would have so mischaracterized these issues considering how frequently and extensively we interact with NOAA Fisheries[1]. #6

Please replace the existing statement on pages 3-104 to 3-105 with the following:

> The Nez Perce Indian Reservation contains 770,000 acres in north-central Idaho. The Nez Perce Tribe, in its 1855 Treaty with the United States, reserved "[t]he exclusive right of taking fish in all the streams where running through or bordering said reservation is further secured to said Indians; as also the right of taking fish at all usual and accustomed places in common with citizens of the Territory…" 12 Stat. 957. Salmon and steelhead are central to the Tribe's culture, spiritual beliefs, economics, and way of life. The Tribe is committed to rebuilding salmon and steelhead to healthy, harvestable levels and fairly sharing the conservation burden so that it may fully exercise its right to take fish at all usual and accustomed fishing places. The Tribe currently conducts ceremonial, subsistence, and commercial fisheries in the mainstem Columbia "Zone 6" fishery and at its usual and accustomed fishing places throughout most of the Columbia and Snake River Basin.

2. Mischaracterization of the Shoshone Bannock Tribes and their "Hunting Rights".

It is also disturbing that the DEIS in this "Tribes" section is just as ungrounded from legal realities (including but not limited to U.S. v. Oregon) in this section as it is throughout the DEIS. The statement that "The Shoshone-Bannock Tribes have a long history of salmon fishing…in the Columbia basin, and this has been judicially affirmed" (3-107) is simply inaccurate. As the 2008-2018 U.S. v. Oregon Management Agreement – that NOAA entered into and that has been entered as a Court Order -- describes (at pp. 2-3), and as the U.S. v. Oregon court has repeatedly stated, Shoshone-Bannock fishing claims and allegations based on their treaty remain legally unestablished and undetermined in nature and scope. The statement that "Currently [SBT] tribal members do not fish the Zone 6 commercial tribal fishery (located between Bonneville and McNary Dams" is misleading as the reason for this is not provided. The reason is the Shoshone-Bannock Tribes do not fish in Zone 6 is because the United States refused to bring claims on their behalf in U.S. v. Oregon and the SBT themselves have not established any treaty-based fishing rights in this area. This is made clear by the proceedings in U.S. v. Oregon itself as well as in the 2008-2018 U.S. v. Oregon Management Agreement. The DEIS' statement that "[SBT] Tribal members fish mostly in the Salmon and Snake Rivers in Idaho" is inaccurate; there are no lawful or agreed-upon SBT fisheries in the Snake River and any that occur in the Salmon are contested by the Nez Perce Tribe. The statement that "[SBT tribal members] "plan to continue to develop fisheries in Northeast Oregon and southwest Washington is again misleading and inconsistent with status of the SBT as described in the U.S. v. Oregon proceedings and the 2008-2018 U.S. v. Oregon Management Agreement that NOAA has agreed to and has been entered as a Court #7

[1] Further, by way of informing NOAA staff, we provide Attachment 2 for further reference.

Order. Particularly with respect to Northeast Oregon, southwest Washington, and the Snake River, the United States has never adopted the SBT's allegations and theories; the DEIS appears to do so here. The Nez Perce Tribe simply requests that an accurate statement with respect to the status of the SBT's allegations and desires, similar to that found in the U.S. v. Oregon proceedings or in the U.S. v. Oregon Management Agreement is included in this description. #7

3. **Additional Flaws and Inconsistencies**

- The DEIS provides only cursory history, background and purpose information on the Mitchell Act program in less than four pages. The Mitchell Act was developed in response to significant habitat loss that led to substantial fish loss on the mainstem Columbia River due to construction of hydroelectric dams. This document should provide a concise history and a chronology of how the program was developed and has been modified over the past 80 years. It should include what the funding levels have been, what production levels have been, which hatcheries have been shut down, and what other funding sources fish managers have had to tap to keep the Mitchell Act production going. #8

- The draft alternatives are unreasonable and would call for implementing reductions in production that are not legally possible as they are inconsistent with Congressionally and legally mandated mitigation responsibility of hatchery programs in the Columbia Basin. These do NOT provide a full range of alternatives as stated in the DEIS. #9

- Further, "Alternative 1 – No Action" totally misrepresents the current status of hatchery production in the Columbia Basin as being out-of-control, mismanaged, and unmonitored. While this characterization may be true for Mitchell Act hatcheries below Bonneville Dam, it is not true for hatchery programs contained the U.S. vs. Oregon Management Agreement. This global characterization of hatchery production is erroneous, misinformed, offensive, and out-of-touch with what's happening in the Basin. #10

- The implementation scenarios for Alternatives 2-5 produce substantial reductions in hatchery production and harvest levels. The analysis done by the Production Advisory Committee (PAC) concludes that the DEIS alternatives would reduce current production in the US v. Oregon Management Agreement of 86 million juveniles to 23 million, 66 million, 69 million, and 68 million in Alternatives 2, 3, 4, and 5, respectively. These dramatic reductions are unacceptable and inconsistent with legally mandated agreements governing hatchery production in the Columbia Basin including the U.S. v. Oregon Management Agreement that NOAA agreed to and that has been entered as a court order. Any development of policy that affects U.S. v. Oregon production needs to be done in a collaborative fashion in the appropriate forum. #11 #12

- We are deeply concerned with all the errors and inaccuracies concerning the mainstem harvest information. As is detailed in the report on the DEIS prepared by the U.S. v. Oregon Technical Advisory Committee (TAC):
  - The harvest analysis appears to use the mainstem harvest rates and assumptions from 2007 rather than the 2008-2017 U.S. v.Oregon Management Agreement. All information needs to be updated to reflect the information and abundance based harvest management approach in the current Agreement and associated Biological Opinion. #13
  - Substantial errors are contained in the baseline harvest data, in the approaches used to estimate harvest rates, and in harvest assumptions used in the DEIS. All Columbia River harvest numbers (treaty, commercial and sport) in Section 3.3.5.1 have some kind of error in them. #14
  - Economic values of the various salmonids by area and stock also are not accurate. #15
  - The harvest analysis relies in part on AHA modeling which cannot use the abundance based harvest rate approaches used in most mainstem fisheries. #16
  - The incorrect data and errors in the DEIS has a compounding effect on analysis. Incorrect harvest information would result in incorrect adult escapements, which would likely affect estimates of productivity and the production performance standards in the DEIS (for example PNI and pHOS) which drive whether hatchery programs need to be adjusted to meet predefined production performance metrics. #17
- It is incredulous to us that the economic analysis model identifies an increase in tribal fishing revenue in Zone 6 of $554,000 under alternative 5 (Table 4-100) when the production under alternative 5 involves a reduction from the U.S. v. Oregon Agreement of 5 million spring Chinook, 3 million sockeye, 5 million (essentially all) Snake River fall Chinook, and 4 million steelhead (including all the B-run supplementation releases). Perhaps this conclusion is due to the substantial errors in the harvest and economic data mentioned above. #18
- We have similar concerns with harvest information in the Snake Basin; the harvest data reported and used in the DEIS is inaccurate and not up to date. The Nez Perce Tribe can provide to NOAA our estimates of tributary harvest in Snake Basin for Chinook salmon and steelhead. We request NOAA incorporate our harvest estimates and any other harvest-related items that may need to be refined. Also, the Tribe reminds NOAA that the Tribe is coordinating with other appropriate Snake Basin co-managers, including NOAA Fisheries, to develop an integrative harvest framework for treaty and non-treaty fisheries on Chinook salmon and steelhead in the basin. This coordination will be affected by this DEIS. #19 #20
- We are further amazed that the economic analysis model identifies an $23,000 increase in tribal fishing revenue in the Snake Basin under Alternative 5 (Table 4-100) when under that same Alternative the DEIS scenario terminates the release of 3 million spring Chinook from Rapid River Hatchery in the Snake Basin. #21

- The economic information in the socioeconomics section for the Nez Perce Tribe annual hatchery facility costs is also wrong (Table 4-85). The value of .9 million should be changed to 6.0 million for non-MA hatchery programs. The values for other tribal programs (Umatilla and Yakama) are also wrong and Warm Springs, Colvilles, and Sho-Ban Tribes hatchery programs should be added. #22

- The DEIS states that one of the main purposes of this document was to inform NOAA with respect to future ESA consultation. Unfortunately, the alternatives and proposed policy direction in this DEIS is inconsistent with hatchery assessments in recent ESA documents also developed by NOAA. #23

- NOAA staff also informed us that the expansion of the DEIS beyond the Mitchell Act programs to include the entire Columbia Basin would provide NEPA coverage for Section 10 or 4(d) (direct take) ESA consultations for programs in the U.S. v. Oregon Management Agreement. We question whether this NEPA document would be sufficient to provide such coverage. Further we question whether this global NEPA coverage provides much benefit. Mitchell Act fish make up 38% of the production in the U.S. v. Oregon Agreement – none of these programs involve direct take consultation. Only 16% (14 million) of the production in the Agreement involves direct take of ESA listed fish. #24

Conclusion

The Tribe is terribly disappointed with NOAA's actions in producing this DEIS the way it has. The Tribe works regularly with NOAA Fisheries, and it is incomprehensible how your agency could have proceeded with releasing such a significant document without notice and consultation with the Nez Perce, as well as other Columbia River Tribes. As a result, the document is riddled with errors and inaccuracies; it has needlessly caused alarm and misunderstandings and damaged trust. #25

NOAA Fisheries should start over; the focus of the DEIS should be narrowed to analyzing the environmental effects of congressional appropriations for the long-standing Mitchell Act program. NOAA Fisheries should leave policy direction on Columbia Basin hatchery practices for a more fully informed collaborative effort. In the end, carefully managed hatcheries provide benefits for fishermen and recovery of naturally spawning populations in their natural habitat. #26 #27

Thank you for consideration of our comments.

Sincerely,

McCoy Oatman

McCoy Oatman, Chairman

cc: Don Chapman, Department of Commerce
U.S. v Oregon parties

Attachment 1 - Testimony of the Nez Perce Tribe Concerning the Draft Environmental Impact Statement Of NOAA Fisheries on the Mitchell Act and Columbia River Basin Hatchery Operations. October 13, 2010. Lewiston, ID

Attachment 2 – A Summary of Nez Perce Fishing

Nez Perce

TRIBAL EXECUTIVE COMMITTEE
P.O. BOX 305 • LAPWAI, IDAHO 83540 • (208) 843-2253

See **Testimony #T8** for comment delineation

Testimony of the Nez Perce Tribe
Concerning the Draft Environmental Impact Statement
Of NOAA Fisheries on the
Mitchell Act and Columbia River Basin Hatchery Operations
October 13, 2010
Lewiston, ID

Good evening. My name is McCoy Oatman and I am the Chairman of the Nez Perce Tribal Executive Committee.

In 1855 the Nez Perce Tribe signed a treaty with the federal government. That treaty reserved to the Tribe a permanent "homeland" or "Reservation," as well as the right to take fish at all usual and accustomed places. In return for millions of acres of land, the federal government promised to secure these rights.

The Nez Perce people live in the heart of salmon country – along the Salmon, Snake, Grande Ronde, Imnaha, Clearwater and Tucannon rivers. Historically, these places were the major producers of salmon and steelhead in the Columbia River Basin. Yet as more people moved and settled in the west and as the system of dams were put in place, our people watched the salmon runs decline and become extinct and listed under the Endangered Species Act.

We have witnessed the extirpation of entire populations of salmon and steelhead and the blocking and altering of thousands of miles of rivers and streams as a result of the dams. They include: Hells Canyon, Oxbow, and Brownlee on the Snake River, Wallowa Lake Dam on the Wallowa River, Dworshak Dam on the North Fork Clearwater, and before that, Lewiston Dam on the mainstem Clearwater. And then, just 40 years ago, four more dams were constructed by the United States on the Lower Snake River. Together, they make a total of eight mainstem dams that every single salmon and steelhead must somehow deal with in their migration downstream and their return from the ocean.

As dam after dam was built, the United States committed to building hatcheries that would mitigate for the salmon losses they caused. The Tribe is very active in this hatchery effort. We manage two major hatchery facilities and 16 satellite facilities that release approximately eight million juvenile fish each year. These include spring, summer, and fall Chinook, coho, steelhead, and lamprey. Together, our releases make up

about 30% of the 26 million salmon and steelhead in the Snake Basin. We release these fish to provide a harvest and rebuild naturally spawning runs.

We also work very closely with our state and federal co-managers (including NOAA Fisheries), to coordinate on and improve the combined hatchery programs in the Snake River Basin. It is understandable how we would be surprised and angry that NOAA would put forth a proposal for a "policy directive" on hatcheries without first consulting us or the other hatchery managers in the basin.

NOAA Fisheries says they spent nearly five years developing this product, yet they did not take the time to talk to the entities producing the fish. This lack of consultation may help explain why there are so many deficiencies in the Draft EIS.

I will speak tonight about three major concerns.

1. First, we are stunned to see a series of alternatives that would reverse the progress we have made; not only in Nez Perce territory, but throughout the Columbia Basin. The Draft EIS identifies a range of alternatives and gives "implementation scenarios" for them that call for significant cuts and elimination of hatchery programs throughout the basin. These are programs that serve to support important tribal and non-tribal fisheries; they help fulfill federal trust obligations; they are congressional mitigation obligations; and they assist in the recovery of natural origin salmon populations.

   For example, three of the implementation scenarios call for termination of the spring Chinook program at Rapid River hatchery. You must understand the importance of this hatchery to the area – our people faced armed SWAT teams, and went to jail to exercise their treaty rights to fish at Rapid River. It has been one of the few locations in the Snake that still provides for tribal subsistence and livelihood. In 2010 alone, tribal and non-tribal fishermen harvested over 15,000 salmon returning to Rapid River. This does not include the thousands of Rapid River salmon that are harvested downstream of Bonneville Dam.

   Another example is that four of the alternatives call for drastically reducing releases of Snake River fall Chinook. The Nez Perce and other Tribes had to resort to a legal challenge to have those fish released upstream of Lower Granite. At the time, fall Chinook were one of the most threatened of Snake Basin salmon. Today, they are returning in great numbers and spawning in the wild. In fact, even NOAA Fisheries has used the success of these returns to argue that the hydroelectric system is not as detrimental as most people know it to be.

   In regards to these examples, we understand that NOAA wants to minimize the use of the so-called implementation scenarios. But in all honesty, what are we supposed to evaluate, other than what is put down on paper?

2. Our second point relates to disruption of our agreements and dealing in bad faith. The Nez Perce, Umatilla, Yakama, and Warm Springs Tribes, as well as the states of

Oregon, Washington and Idaho, and the U.S. Fish and Wildlife Service, and NOAA Fisheries have spent decades negotiating legally binding agreements for hatchery programs. Indeed, we just concluded our new 10 year agreement in 2008. Many of the proposed cuts in this Draft EIS involve the same hatcheries we just reached agreement on. We are amazed that NOAA Fisheries has not compared and evaluated what it proposes in this document with the agreement it just entered into.

We understand that NOAA is a large agency, but what is proposed here is of basin-wide significance. It is incumbent that NOAA is aware of its agreements and legal mandates. The left hand must know what the right hand is doing.

3. Our third point goes to the science underpinning the Draft EIS. Our staff has found many factual or technical errors in the information used and its analysis. For example, we see significant errors in the harvest modeling which results in misrepresenting both the economic impacts and the estimates of fish escapement. Furthermore, we were deeply troubled to find that the model to analyze hatchery affects has been used way beyond its intended purpose. And finally, the tone of the document and its proposed strategies, leave NOAA with no alternative but to abrogate its agreements, its Biological Opinions and congressional mandates. Because the entire analysis in the document is built on this unsupportable foundation, we don't know how it can be fixed. We strongly advise NOAA to start again.

The Nez Perce Tribe believes that the objectives for hatchery and natural fish need to be determined basin-by-basin. What works in a coastal stream in the Puget Sound certainly does not work here 500 miles from the ocean and above eight dams. Management decisions can and must be flexible to address differences in habitat and survival rates and different levels of risk for different populations. We have already sought and established balance in the U.S. v. Oregon Agreement. NOAA needs to follow that same path.

In closing, the overbroad purpose of the Draft EIS, the way it was developed without partners, its advocacy of abrogating congressional mitigation mandates and legal agreements, and its potential real-life effects on our fishermen, call for starting over. NOAA Fisheries should narrow this EIS to just focus on Mitchell Act funding, it should use different evaluation methods in doing so, and it should leave policy direction on Columbia Basin hatchery practices for a more fully informed collaborative effort. In the end, carefully managed hatcheries provide benefits for fishermen and recovery of naturally spawning populations in their natural habitat.

As long as the dams are here, the mitigation responsibility remains.

Thank you for the opportunity to comment.

Attachment for #6

Attachment 2. A Summary of Nez Perce Fishing

The Nez Perce Tribe has usual and accustomed fishing locations throughout the Columbia River Basin. This includes, but is not limited to, usual and accustomed fishing places on the mainstem Columbia River, and throughout the 13 million plus acres that have been found to been exclusively used and occupied by the Tribe, including areas of the Snake, Tucannon, Imnaha, Grande Ronde, Salmon and Clearwater Rivers and their drainages situated in southeast Washington, northeast Oregon, and Idaho.

Nez Perce harvest management is intertwined with the majority of artificial production programs operating in the Snake Basin. Due to the Tribe's treaty fishing rights and geography in the Snake Basin, it is necessary to ensure that our treaty harvest objectives and artificial propagation strategies are compatible with treaty rights and conserving salmon and steelhead.

Snake River Chinook salmon (spring, summer and fall runs), sockeye, and steelhead are listed under the Endangered Species Act (ESA). As a result of the declines in these runs and the ESA listings, the harvest of these runs has been significantly reduced and the Nez Perce Tribal harvest has been curtailed well below the levels anticipated and secured to the Tribe by the United States when the Tribe and the United States entered into the Treaty of 1855.

Most of the anadromous fish hatcheries in the Snake River basin are funded as mitigation for the development of hydroelectric dams. All of the returns to the Snake River Basin pass through or return to the Nez Perce Tribe's usual and accustomed fishing places.

Northwest Indian Fisheries Commission
6730 Martin Way E., Olympia, Washington 98516-5540
Phone (360) 438-1180 www.nwifc.org FAX (360) 753-8659

December 2, 2010

Letter #7

Will Stelle, Administrator
NMFS Northwest Region
7600 Sand Point Way N.E.
Seattle, Washington 98115

Dear ~~Mr. Stelle~~: Will

The member tribes of the Northwest Indian Fisheries Commission appreciate the opportunity to review the Draft Environmental Impact Statement to Inform Columbia River Basin Hatchery Operations and the Funding of Mitchell Act Hatchery Programs (DEIS), and provide the following comments:

1. Federal Trust Responsibilities

The DEIS fails to emphasize that hatchery production in the Columbia is fundamentally essential to preserving the opportunity for tribes to exercise their treaty rights. The EIS should better reflect the trust responsibilities of federal agencies in the context of implementing the ESA, and the mandate to minimize effects on tribal trust resources in pursuit of the common goals of salmon recovery. Alternatives considered by the DEIS, and their implementation scenarios, omit approaches that could maintain tribal fishing opportunity, while achieving ESA conservation standards for key salmon and steelhead stocks. #1

Until unequivocal scientific evidence quantifies the genetic and ecological aspects of interactions between hatchery- and natural-origin salmon, particularly for Chinook and coho, and offers the NMFS a factual basis for deciding whether these risks truly impede the recovery of listed or other wild populations, Federal treaties with Indian tribes, and Congressional intent to mitigate degradation of habitat, mandates that hatchery production continue at current levels to enhance fishing opportunity and to protect wild populations from extinction. #2

2. Pacific Salmon Treaty Agreements

The PST objectives for assuring equitable harvest opportunity in the U.S. and Canada are served by the large contribution of Columbia River hatchery Chinook to many coastal fisheries. Hatchery production 'dilutes' the impacts of fisheries on key wild Chinook stocks originating in B.C., Puget Sound, and the Columbia River. #3

Reduced Columbia River hatchery production, as described in Alternatives 2 – 5, may be inconsistent with the assumptions underlying the PST Chinook Agreement. Before the NMFS advocates any significant changes in Columbia River hatchery production, the potential effects on PST agreements should be more thoroughly explored. #3

3. Effects on Washington coastal and Puget Sound fisheries

We are concerned that substantial reductions in Columbia River hatchery production (particularly for Lower River fall Chinook) would have more significant consequences on Washington coastal and Puget Sound fisheries than are revealed by the harvest model used for the Mitchell DEIS. Under current conditions, Chinook abundance is generally much lower than during the model base period. Small increases in the exploitation rate on Puget Sound stocks in Alaskan, B.C., and Washington coastal fisheries could result in the need for substantial further constraint of Puget Sound fisheries to achieve exploitation rate ceilings imposed by the ESA and the Puget Sound Chinook Harvest Management Plan. Of particular concern are changes in the exploitation rate for Puget Sound Chinook stocks in critical status which greatly influence on Puget Sound fisheries management. #4

4. Genetic diversity risk

Alternatives 2 – 5 ostensibly reduce the deleterious effects of hatchery-origin spawners on natural Chinook and coho productivity, to promote their recovery. The implementation scenarios for these alternatives were intended to achieve performance goals for integrated and segregated programs that increase the proportion of natural influence (PNI), in accordance with the recommendations of the Hatchery Scientific Review Group. Substantial reduction in the number of hatchery-origin spawners, via reduction in hatchery production, is proposed as the primary means of reducing their deleterious effects on the fitness of natural-origin fish. Installation of weirs and selective fisheries are proposed as adjunct means of reducing the number of hatchery-origin spawners.

The ratio of hatchery- and natural-origin spawners (i.e. the proportionate natural influence or PNI) is a simplistic approximation of gene flow between hatchery- and natural-origin salmon. Absent a more precise understanding of the temporal, spatial and behavioral isolating mechanisms of hatchery- and natural-origin , or direct measures of gene flow, PNI as utilized in the DEIS is, at best, a coarse indicator of potential genetic risk, and is not an appropriate performance goal for hatchery management. #5

Utilization of PNI as an index of gene flow emerged from theoretical modeling of the rate of change in a single hypothetical genetic trait with defined bimodal fitness peak for hatchery and natural environments respectively (Ford 2006). Based on theoretical rate of trait change, the AHA model, using PNI, assumes the fitness of wild populations decline precipitously under the influence of hatchery programs. But AHA is unsuited to quantifying genetic risk (RIST 2009). AHA simulations typically limit fitness loss to 50 percent to prevent the modeled population from declining to extinction, indicating that the reductive model does not capture mitigating factors that occur in the real environment. Many natural populations of Chinook and coho long-influenced by hatchery programs remain productive (i.e., their fitness has not apparently declined to the extent predicted by #6

theoretical models), though many are clearly constrained by habitat condition. The AHA model allows specification of the shape of fitness curves, distance separating fitness peaks of the hypothetical trait in natural and hatchery environments, and reproductive success of hatchery fish in the natural environment and in the hatchery, but the model has usually been run with these parameters at default levels that have already been shown to produce unrealistic results. #6

There is ample evidence that domestication selection occurs among salmon in the hatchery environment, but its effect on the fitness of juvenile salmon, particularly for sub-yearling Chinook programs, is not understood. A NMFS study showed survival rates of hatchery- and natural-origin Hood Canal summer chum were similar (Berejikian et al 2009); most Chinook hatchery programs release sub-yearling smolts after a similar short period of rearing. The risk of reduced fitness in cultured fish is inferred from studies of farmed Atlantic salmon, which have been subjected to many generations of deliberate domestication, and on steelhead which have substantially different life history and longer hatchery residence than most Chinook hatchery programs. Some studies that measure gene flow directly, by estimating the similarity of wild and hatchery genotypes, indicate that wild populations of steelhead, Chinook, and Atlantic salmon (NRC 2002) retain their diversity and remain genetically distinct from co-occurring hatchery populations even after decades of hatchery production. #7

Substantial evidence also exists that wild populations are more productive (i.e., fit) in terms of smolt production or survival than suggested by the AHA model's assumptions about, although their productivity is clearly constrained by habitat conditions. Recovery and reintroduction programs, even those using stocks with a long history in the hatchery environment, have been successful in re-establishing or supplementing natural production. #8

Genetic theory suggests risks associated with effects on within- and among-population diversity, may also be associated with hatchery production. The DEIS offers no insight on the potential for improved culture practices, such as carefully designed broodstock selection and mating protocols, to mitigate these risks. Many programs have already implemented these improvements. #9

The DEIS should include a more balanced assessment that describes the potential negative effects of utilizing natural origin adults for integrated hatchery broodstock, as a means of increasing PNI. Removing natural-origin adults for use as hatchery broodstock may not be sustainable. Broodstock mining has in the past resulted in fewer natural-origin recruits as the remainder of that brood matures, and potentially forces use of an ever larger proportion of them as hatchery broodstock in subsequent years. Sequentially reducing the number of natural-origin spawners is contrary to the VSP principles of conservation, particularly when the real benefits to the fitness of hatchery-origin fish are highly uncertain. #10

5. Restoring habitat function is essential

The DEIS explains why habitat restoration measures were not specified as part of any of the Alternatives or implementation scenarios, but salmon populations will not recover unless habitat function is restored. The DEIS perpetuates the fallacy that manipulation of the composition of #11

spawners will, by itself, result in substantially increased natural productivity. Increased fitness, associated with alleviating the effects of domestication selection, may improve the productivity of natural populations to some degree, but restoring habitat function is absolutely essential to rebuilding populations to viable levels of abundance and productivity. Improved natural productivity could have a greater positive effect on PNI. #11

6. Precedents for NMFS review of Puget Sound hatchery programs

Preliminary drafts of the Puget Sound DEIS describing genetic risks and ecological interactions among hatchery and natural-origin salmon and steelhead include much greater technical detail, and a more nuanced and accurate view of how to mitigate those risks, compared with the Mitchell DEIS. If consultation regarding ESA compliance of Columbia River hatchery programs takes the simplistic approach of the Mitchell DEIS, we are concerned that precedents thus established will influence the NMFS' subsequent review of Puget Sound hatchery programs. #12

Broad scale reduction of mitigation hatchery programs, and possible constraint of recovery programs intended to conserve the diversity of ESUs, is inappropriate and unnecessary when uncertainty persists regarding the effectiveness of such measures to materially improve the status of listed salmon and steelhead stocks. Reduced hatchery production will have certain and substantial negative consequences to the economic and cultural well-being of the tribes. Tribes are attentive to the potential risks of hatchery programs to wild salmon stocks, and are engaged in scientific inquiry and adaptive management to address these risks. #13

We expect further consultation on these issues as the NMFS further develops policies to guide authorization of salmon and steelhead hatchery programs under the ESA. #14

Sincerely,

Mike Grayum,
Executive Director

CC: NWIFC Commissioners
Paul Lumley, CRITFC
Rick Cook, BIA Portland Branch
Bob Turner, NMFS

Burns Paiute Tribe

Office of the Tribal Council
100 Pasigo St
Burns, OR 97720
Phone (541)573-1910
Fax (541)573-2012

Letter #8

William W. Stelle, Jr.
Regional Administrator
NMFS Northwest Region
7600 Sandpoint Way NE
Seattle, WA 98115

RE: Mitchell Act EIS

Dear Mr. Stelle,

Please find attached, comments from the Burns Paiute Tribe regarding the draft EIS to Inform Columbia River Basin Hatchery Operations and the Funding of Mitchell Act Hatchery Programs. The Burns Paiute Tribe has reviewed the draft EIS and appreciates the efforts of NMFS to reach out to those with interests in the basin. The Tribe recognizes the need for an evaluation of the impacts to wild fish populations by hatchery operations throughout the Columbia River Basin and hopes that the following comments will be helpful in drafting the final EIS. If you have any questions or remarks concerning the Tribe's comments, please feel free to contact me at the number given above. Also, you may reach the technical contact, Drew Harper, in our Natural Resources Department at harperd@burnspaiute-nsn.gov.

Sincerely,

Diane L. Teeman
Chairperson
Burns Paiute Tribal Council

The Burns Paiute Tribe offers the following comments in response to National Marine Fisheries Service's (NMFS) Draft Environmental Impact Statement to Inform Columbia River Basin Hatchery Operations and the Funding of Mitchell Act Hatchery Programs:

Hatchery programs in the Columbia River Basin play an important role in regional economics by supplying jobs directly through hatchery operations as well as commercial and recreational fisheries. Furthermore, many of those hatcheries are in place to mitigate the effects on fisheries by dams that provide hydropower to the region. In any assessment of the Columbia River Basin hatchery programs, these benefits plus the supply of harvestable fish to tribes, recreational anglers and the commercial fishing industry cannot be overlooked. However, the impact those hatchery programs have on wild fish populations must also be considered. #1

The effects of hatchery-origin fish on wild populations have been documented in profusion and many of the documented effects would be detrimental. Concerns expressed in literature include: alteration of native population genetics, increased predation on juveniles during out-migration, increased density-dependant mortality, and decreased productivity of wild populations in the presence of large quantities of hatchery fish. These negative impacts can be largely mitigated through the implementation of a coordinated hatchery management plan. Some aspects of such a management plan are included in one or more of the alternatives proposed in the Draft EIS. If the objective here was to choose one of the alternatives listed, Alternative 5 would be the most appealing to the Tribe. #2 However, given the opportunity to provide input, the Burns Paiute Tribe offers the following comments to be considered in the development of a policy direction concerning the distribution of Mitchell Act hatchery funds and future review of individual basin hatchery programs under the ESA. #3 While the comments offered here show that the Burns Paiute Tribe supports NMFS' efforts to reduce the impacts of Mitchell Act-funded hatchery operations on wild populations, the Tribe does not feel that these efforts necessitate a reduction in the number of fish returning to the Columbia Basin.

1. **Performance Goals for Mitchell Act-funded hatchery programs should be set by NMFS.** #4
   This should be done on an individual program basis in cooperation with hatchery managers and should take into consideration both desired and undesired effects on wild populations affected by a given program. The Burns Paiute Tribe understands that setting specific performance goals is not included in the intent of the DEIS, but the notion that this should be left to hatchery managers seems to risk neglecting the stated objective of reducing impacts of Mitchell Act-funded hatchery programs on native populations. It appears to leave too much leeway for the status quo. NMFS-prescribed performance goals would allow hatchery managers to pursue all possible approaches to meet those goals while seeking to meet their production goals. In the case of a single native population being affected by multiple Mitchell Act-funded hatcheries, the prescribed performance goals would also provide

NMFS with a means of evaluating and controlling the cumulative effects of those hatcheries on that population. #4

2. **Performance Goals should be integrated with mandatory monitoring, evaluation, and reform (MER).** #5
PNI and pHOS as performance metrics seem to be a reasonable way of measuring the influence of hatchery programs on native populations and, thus, appear to be sensible means for evaluating the performance of a hatchery in regards to its prescribed goals. However, in addressing the problem posed by maintaining a prescribed PNI in integrated populations with a small number of natural-origin spawners, it may be better to reduce the output of the hatchery affecting that population rather than use the natural-origin fish for broodstock. The integration of performance goals and MER could lead to such a situation being recognized and managed in a manner that would allow production of hatchery fish (albeit at a temporarily reduced level) while maintaining the prescribed performance goals. The key idea here is adaptive management. With prescribed performance goals and mandatory MER, hatchery managers would be better informed as to both what was expected from their hatchery in regards to performance goals and the consequences of not meeting those goals.

3. **Allocation of Mitchell Act funds should reflect the performance of individual hatchery programs.** #6
NMFS should use the allocation of Mitchell Act funds to get individual hatchery programs to adhere to their respective performance goals. If an individual hatchery program does not meet its performance goals, its funding should reflect that. If a program's current funding cannot support a balance between its production and performance goals, it may be an indication that the program needs to be reevaluated. Perhaps that program's production should be curtailed while steps are taken to increase its ability to meet its performance goals. For example, a program could move funding allocations from fish production to weir installation and operation. In any case, in order to receive Mitchell Act funding, individual hatchery programs need to be accountable for their effects on native populations. The risk of funding reductions or decreased fish production would likely persuade hatchery managers meet performance goals.

#7
As previously mentioned, the above comments show that the Burns Paiute Tribe supports NMFS' efforts to reduce the impacts of Mitchell Act-funded hatchery operations on native populations, however, the Tribe does not support reducing the number of fish returning to the Columbia Basin. The Tribe feels that other options exist for lessening the impacts of hatchery operations on native populations, especially at the smolt life stage, which could be implemented with relative ease while allowing returns to remain at or near their current levels. Therefore, the Tribe offers the following comments as possible methods of decreasing the impacts of hatchery operations on native populations.

1. **Installation of weirs to control pHOS.** #8
Weirs are an effective means of controlling the number of hatchery fish on spawning grounds and should be installed whenever feasible. If natural spawning of hatchery fish is prescribed as part of a recovery plan for a native population, those fish can be passed upstream in accordance with that plan. Excess hatchery returns to a weir could be recycled downstream for increased harvest opportunities or distributed to tribes for subsistence purposes. For these reasons, weirs should be a significant component of the policy direction.

2. **Stagger releases of hatchery-reared juveniles.** #9
The negative impacts of hatchery releases of juveniles on out-migrating wild juveniles have been documented repeatedly. Large releases of juveniles from hatcheries have been cited as partly responsible for those negative impacts. One of the suggested tactics for decreasing those impacts is to stagger releases of smolts from hatcheries. This seems to be a relatively simple action that could lead to better survival of native smolts by decreasing density-dependant mortality and predation.

3. **Delay the release of hatchery-reared juveniles until native smolts have migrated downstream of the acclimation site.** #10
Again this point speaks to reducing the negative impacts of hatchery operations early in the salmonid life cycle. Though this method may involve more effort than simply staggering hatchery releases, it would do more to reduce interactions between hatchery and native smolts, thereby further decreasing density-dependant mortalities and predation.

4. **Mark 100% of hatchery-reared fish.** #11
In order to truly understand the extent of interactions between hatchery-reared fish and native populations, managers must be able to identify every fish as such. The Tribe understands that some upriver interests have concerns about fin-clipped fish destined for upriver locations being harvested in the lower river, but in order to monitor hatchery returns to much of the basin and allow for the harvest of hatchery fish, fin clips are necessary. If fish reared in upriver hatcheries are intended to return for integration with wild populations, we suggest PIT tagging as an alternative marking technique.

5. **Use Mitchell Act funds to reintroduce extirpated populations.** #12
The use of Mitchell Act funds to reintroduce extirpated populations could reduce the interaction of hatchery stocks and wild populations. By placing hatchery-raised juveniles in waters within historic habitat that are currently uninhabited by wild populations, an added benefit could be the recovery of extirpated populations. Considering the number of populations throughout the Columbia Basin extirpated by activities meant to be mitigated for by Mitchell Act funds, especially in the uppermost reaches (e.g., Snake River and

tributaries above Hell's Canyon), there are many options for such reintroduction efforts. #12

In conclusion, the Burns Paiute Tribe agrees that steps need to be taken to ensure that the negative impacts of Mitchell Act-funded hatcheries on native populations are minimized. The Tribe believes that this can be accomplished through coordinated hatchery management plans and NMFS is in a position to realize that coordination. By attentively distributing Mitchell Act funds, NMFS could effect positive changes to much of the Columbia Basin hatchery system without necessarily reducing hatchery output. That said, there are gaps in the draft EIS that should be addressed. Paramount among those gaps is NMFS' apparent reluctance to take part in the determination of performance goals for Mitchell Act-funded hatcheries. We understand that blanket performance goals would be ineffective and, in some cases counterproductive. However, NMFS should take part in establishing performance goals in conjunction with individual hatchery program managers in order to make certain that those goals are striving to minimize negative impacts of hatchery operations on wild populations. Though it would be a tedious and arduous process, the benefits could be far-reaching. Furthermore, NMFS should make MER mandatory for recipients of Mitchell Act funds. This would lead to a better understanding of how individual hatchery operations effect wild populations and which techniques are most effective for mitigating those negative effects. If NMFS were to require such MER to be reported regularly, it could facilitate idea exchange throughout a significant portion of the Columbia Basin hatchery system. Lastly, the Tribe would like to see a shift in the distribution of Mitchell Act funds to include more recovery efforts in the upper reaches of the Columbia Basin. The effects of hydroelectric dams have been most severe in the upper reaches, yet the lower river has the majority of hatcheries operated under Mitchell Act funds. We believe this distribution to be flawed and it should be addressed during the process of planning the future of Mitchell Act fund allocations. #13 #14 #15 #16

The Burns Paiute Tribe would like to express its appreciation to NMFS for opening this draft EIS up to public comment and holding a public meeting in Boise, Idaho where interests based in the upper reaches of the basin could express their interests. The Tribe understands that this is a difficult and complex undertaking and hopes that the comments proffered here are helpful in shaping the path ahead to the final EIS to Inform Columbia River Basin Hatchery Operations and the Mitchell Act funding of Mitchell Act Hatchery Programs.

COLUMBIA RIVER INTER-TRIBAL FISH COMMISSION
729 NE Oregon, Suite 200, Portland, Oregon 97232
Telephone 503 238 0667
Fax 503 235 4228

Letter #9

December 3, 2010

Via Hand Delivery to NOAA Fisheries, Portland Office

William W. Stelle, Jr.
Northwest Regional Administrator
NOAA National Marine Fisheries Service
7600 Sand Point Way NE
Seattle, WA 98115

Re: Mitchell Act Draft Environmental Impact Statement

Dear Mr. Stelle:

The Columbia River Inter-Tribal Fish Commission has reviewed the Mitchell Act Draft Environmental Impact Statement (DEIS) and believes the DEIS is fatally flawed. The Commission submits these comments and further recommends that the DEIS be narrowly focused on Mitchell Act funding with a more fully informed collaborative effort, or withdrawn. #1

The Commission was formed by the Nez Perce, Warm Springs, Umatilla and Yakama Tribes in 1977 for the purpose of coordinating its member tribes' fishery policies and providing technical expertise. The tribes reserved the right to take fish at all usual and accustomed places in the treaties of 1855. The tribes have a number of concerns with the DEIS from a policy and technical prospective. The tribes raised a number of these issues during the public hearing process.

Parties that were consulted during the development of the DEIS are listed in the document. Glaring omissions in that list include our member tribes, which were not consulted in the development of the DEIS. This lack of consultation is disturbing. As recognized by the federal courts, our member tribes are co-managers of salmon in the Columbia Basin. Our tribes are hatchery operators. The lack of consultation dismisses this relationship. #2

There are defects in the scope and purpose of the DEIS. The original scope of the DEIS was appropriately limited to funding of Mitchell Act facilities. At some point, the scope was expanded to include an analytical framework for Endangered Species Act consultations for all hatchery facilities in the Columbia Basin. The expansion of the scope #3

of the DEIS creates an awkward document that fails to give adequate treatment to the original scope. #3

Since 1982 the tribes have formally advocated for a Mitchell Act program that emphasizes in-place, in-kind mitigation, focused on the areas that have suffered the most impacts, which are above the Bonneville Dam. (See, Mitigation of Anadromous Fish Losses: Efforts Related to Columbia and Snake River Dams and a Plan for Reprogramming Hatcheries, CRITFC, August 1982.) The current structure of the DEIS makes it very difficult to identify the proposed changes to Mitchell Act funding under the proposed alternatives. Indeed, the DEIS does not recognize any mitigation responsibility whatsoever associated with the Mitchell Act. #4

Further, the DEIS does not contain a full range of alternatives (See Appendix A: Adequacy of Alternatives). The implementation scenarios in the DEIS all call for a reduction in hatchery production from the 2007 baseline.[1] There are no alternatives or implementation scenarios that include increases in total Mitchell Act or total other production upstream of Bonneville Dam. The DEIS does not appear to address new hatcheries. It does not address current programs in transition such as summer Chinook in the Entiat sub-basin or summer Chinook restoration efforts of the Yakama Nation in the Yakama sub-basin. The DEIS also does not appear to allow for completely new programs, such as reintroduction programs for sockeye or Coho in the Grande Ronde system. #5

NMFS staff has told our tribes that there is a distinction between the alternatives and the implementation scenarios. From our perspective we see no distinction. We can only comment on what is written in the DEIS. The implementation scenarios provide insight on the actions NMFS believes necessary to accomplish the alternatives. #6

The tribes believe that hatcheries are a key element of a comprehensive approach to salmon management in the Columbia Basin. The tribes have worked diligently for decades on restoration efforts that include the use of hatchery fish. The positive trend in Snake River fall Chinook returns, as well as the reintroduction of Umatilla spring Chinook, Walla Walla spring Chinook, and Coho upstream of the Klickitat River are only a few examples of successful tribal programs. The reduction in hatchery production called for in the DEIS threatens to unravel tribal restoration efforts. #7

The tribes have worked collaboratively with state and federal agencies in developing regional and international agreements that address the resource. The Columbia Basin Fish Accords, the 2008-2017 *U.S. v. Oregon* Management Agreement, and the Pacific Salmon Treaty all recognize the importance of hatchery production. The reduction in hatchery production called for in the DEIS is inconsistent with and threatens the existing federal obligations in these regional agreements. #8

---

[1] Not only does the DEIS fail to represent the full range of reasonable alternatives in the Columbia Basin, but it curiously includes alternatives dealing with possible reduction and elimination of various hatchery programs throughout the Columbia and Willamette Basins, even those that are not federally funded.

#9

Hatchery programs play an important role in conservation and mitigation. Loss of fish production due to destroyed and degraded habitat, are often mitigated through hatchery production. The DEIS calls for reduced hatchery production without offering any alternatives for mitigation. The consequence is an implicit removal of the mitigation obligation. The tribes believe this is contrary to the federal government's duty to make sure that those accountable for damages provide compensation for the losses incurred. Moreover, the loss of mitigation fish would also have a profound effect on all fisheries from southeast Alaska to the Oregon coast and inland to the Snake River through reductions and restructuring in recreational, commercial and tribal fisheries. Any major changes to the tribal fisheries must be consistent with federal case law (See Appendix B: Environmental Justice).

#10

#11

With respect to the technical substance of the DEIS, the document is plagued by a flawed analytical construct, and littered with erroneous information (See Appendix C: Section by Section Comments). The proposed evaluation metrics (PNI and pHOS) are arbitrary, static and too simplistic to capture the complexities of the sub-basin by sub-basin variations throughout the entire Columbia Basin. The invariant nature of these metrics defies the accepted need for management that is flexible and responsive to changing conditions. No evidence is presented as to why these standards are appropriate and should be fixed. Nor is there any evidence linking these standards to the recovery of wild fish populations.

#12

#13

The range of habitat conditions in the Columbia River Basin refutes the efficacy of a one-size-fits-all approach.[2] This myopic view of the effects of hatchery fish on the genetic fitness of the populations ignores the oftentimes determinative demographic risks suffered by those populations and the positive effects that hatchery supplementation can affect on abundance, spatial structure and diversity. Further, the DEIS applies this analysis to both listed and non-listed ESUs, without explanation. At best, the DEIS approach results in remnant population management. At worst, it may speed up the process of extirpation by limiting options to address demographic risk. The beneficial effect of increasing populations of weak stocks through hatchery supplementation may well outweigh any adverse genetic effects. (See Appendix D: Review of Fitness Studies.)

#14

In addition, the alternatives were analyzed using the AHA (All H Analyzer) model. The modeling exercise was simplistic and did not accurately reflect current conditions. Therefore, the ability of the AHA model to forecast future conditions is compromised. For example, harvest rates were held constant, while the current co-management agreements prescribe harvest rates that vary as abundances change. The erroneous assumptions in the harvest modeling also lead to flawed conclusions in the economic analysis. In the Hatchery section, the model is parameterized with unrealistically high

[2] To the tribes, this DEIS appears to be an effort at full implementation of the HSRG recommendations with rigid its application of PNI and pHOS standards that can severely limit escapement of supplementation fish to the spawning grounds, require naturally, reductions in hatchery production, and increase mark selective fisheries. This approach is contrary to the Policy Statement prefacing the HSRG Report and submitted to Congress, which explained that the HSRG recommendations are a "tool and not a rule," and should not be applied blindly to all programs.

#14

values for heritability and for strength of selection in the hatchery environment. The model is highly sensitive to both these parameters, and their high values over estimate what might be a deleterious effect of hatchery supplementation on natural population productivity. (See Appendix E: Genetic Risks and PNI Standard.)

#15

We have identified additional documents that should be considered by NOAA. We are providing these in a CD to be included in the record as part of CRITFC's comments.

#16

Based on policy and technical concerns, the tribes recommend that NOAA does not proceed on developing a preferred alternative and a final environmental impact statement.

Sincerely,

Babtist Paul Lumley
Executive Director

Attachments:
Appendix A-E
The Si'lailo Way by Joseph C. Dupris, Kathleen S. Hill and William H. Rodgers, Jr.
The Fight of the Salmon People by Douglas W. Dompier
Summary of Attachments
Disk of Attachments

CRITFC Comments Mitchell Act DEIS,
Appendix A: Adequacy of Alternatives

NMFS has failed to analyze a reasonable range of alternatives by not including alternatives that consider the tribes' scoping comments or implement the *United States v. Oregon* and Accords agreements and by only including alternatives (other than the no action alternative) that are counter to these agreements. #17

The DEIS suffers from two major flaws that make the scope of the alternatives analyzed in the document severely inconsistent with NEPA's requirements discussed below. #18 First the DEIS confounds implementation of the Mitchell Act hatchery program with hatchery management policy generally. Ultimately, the analysis of hatchery policy completely overshadows long-standing questions about Mitchell Act hatchery implementation. #19 Second, the hatchery policy alternatives examined by NMFS are alternatives essentially defined by the metrics of PNI and PHOS, metrics that are used throughout the DEIS and its appendices. The fact that DEIS suggests that these metrics are only one hypothetical measurement is belied by the document itself and its voluminous analyses framed by these metrics.

1. NEPA Requires a Reasonable Range of Alternatives #20

The CEQ Regulations implementing NEPA, at 40 C.F.R. §1502.14, read as follows:

> Sec. 1502.14 Alternatives including the proposed action.
>
> This section is the heart of the environmental impact statement. Based on the information and analysis presented in the sections on the Affected Environment (Sec. 1502.15) and the Environmental Consequences (Sec. 1502.16), it should present the environmental impacts of the proposal and the alternatives in comparative form, thus sharply defining the issues and providing a clear basis for choice among options by the decisionmaker and the public. In this section agencies shall:
>
> (a) Rigorously explore and objectively evaluate all reasonable alternatives, and for alternatives which were eliminated from detailed study, briefly discuss the reasons for their having been eliminated.
>
> (b) Devote substantial treatment to each alternative considered in detail including the proposed action so that reviewers may evaluate their comparative merits.
>
> (c) Include reasonable alternatives not within the jurisdiction of the lead agency.
>
> (d) Include the alternative of no action.
>
> (e) Identify the agency's preferred alternative or alternatives, if one or more exists, in the draft statement and identify such alternative in the final statement unless another law prohibits the expression of such a preference.

(f) Include appropriate mitigation measures not already included in the proposed action or alternatives. #20

As the regulations state, NEPA requires agencies to "rigorously explore and objectively evaluate all reasonable alternatives" to a proposed plan of action that has significant environmental effects. 40 C.F.R. § 1502.14(a) (2000). This is "the heart" of an EIS. *City of Carmel-by-the-Sea v. United States Dep't of Transp.*, 123 F.3d 1142, 1155 (9th Cir.1997). "The existence of a viable but unexamined alternative renders an environmental impact statement inadequate." *Citizens for a Better Henderson v. Hodel*, 768 F.2d 1051, 1057 (9th Cir.1985).

The range of reasonable alternatives is "dictated by the nature and scope of the proposed action, and [must be] sufficient to permit a reasoned choice." *Idaho Conservation League v. Mumma*, 956 F.2d 1508, 1520 (9th Cir.1992) (internal citation and quotations omitted). The "no action" alternative must also be considered in detail. *Alaska Wilderness Recreation & Tourism Ass'n v. Morrison*, 67 F.3d 726, 729 -730 (9th 1995). CEQ's guidance, *Forty Most Asked Questions Concerning CEQ's NEPA Regulations*, Fed Reg 18026 (1981), elaborates on the range of alternatives:

> Q1b. How many alternatives have to be discussed when there is an infinite number of possible alternatives?
>
> A. For some proposals there may exist a very large or even an infinite number of possible reasonable alternatives. For example, a proposal to designate wilderness areas within a National Forest could be said to involve an infinite number of alternatives from 0 to 100 percent of the forest. When there are potentially a very large number of alternatives, only a reasonable number of examples, covering the full spectrum of alternatives, must be analyzed and compared in the EIS. An appropriate series of alternatives might include dedicating 0, 10, 30, 50, 70, 90, or 100 percent of the Forest to wilderness. What constitutes a reasonable range of alternatives depends on the nature of the proposal and the facts in each case.

As discussed more below, the DEIS fails to rigorously explore a full spectrum or series of alternatives. While purporting to review Mitchell Act funding, the DEIS fails to recognize the mitigation objective of the Mitchell Act and the agreements in *U.S. v. Oregon* and the Fish Accords. These agreements and mitigation objectives render it reasonable that Mitchell Act appropriations and hatchery production might increase – a viable alternative that NMFS fails to consider. NMFS needed to consider a broader spectrum of alternatives and its failure to do so renders the DEIS inadequate.

2. The DEIS unreasonably fails to include additional alternatives that were identified through public comments. #21

Since CRITFC and the tribes provided scoping comments on the DEIS that included other alternatives, NMFS should have included some alternative to cover that range of alternatives. Since 1982, the Commission and its member tribes have called for various reforms to Mitchell

Act hatchery implementation. The Tribes' 1983 Reprogramming proposal attached to these comments reflects one such call for reform: #21

> As shown in this report, past efforts to mitigate fish losses caused by the hydro-projects have been, at best, less than complete. If this situation is to be reversed, the redirection of many hatchery programs, initiated as mitigative efforts, will be required. Primary among these programs are those receiving funds und the provisions of the Mitchell Act of 1938 (as amended in 1946) and those of the John Day Dam mitigation program.
>
> Mitigation of fish losses caused by hydro-development of the Columbia system cannot and will not occur until fish produced as mitigation are reestablished in the areas of loss.

The tribes' 1983 request was similar to the 1983 Commerce Appropriations language calling on NMFS to use the Mitchell Act to rebuild upriver salmon runs. These and subsequent calls for hatchery reform are detailed in "Fight of the Salmon People", a copy of which is being provided with these comments and request that the full text be placed in the administrative record.

These calls for Mitchell Act reform were echoed in CRITFC's scoping comments for this DEIS, wherein the tribes again requested that the Mitchell Act be directed to in-place, in-kind mitigation. The tribes' alternative calling for in place, in kind mitigation was not among the range of alternatives examined in the DEIS. It was and is a reasonable alternative, albeit one that might not be meaningfully framed or discussed within the limitations of the PNI and PHOS analytical scheme used by NMFS in the DEIS. NMFS cannot "apply a threshold test of superiority to reject alternatives before they are considered in the impact statement." *Roosevelt Campobello Int'l Park Comm'n v. EPA*, 684 F.2d 1041 (1st Cir. 1982).

3. The range of alternatives in the DEIS fail to illuminate the impacts of Mitchell Act implementation and the metrics used to frame the alternatives further obscure the effects of the Mitchell Act implementation on tribal fisheries.

The range of alternatives appears to be constrained by two underlying tacit policy determinations. First, despite decades of requests by the states of Oregon, Washington and the Commission's member tribes, the DEIS nowhere analyzes the prospect of restoring and expanding Mitchell Act hatchery programs. Instead the alternatives in the DEIS look only at options that would reduce Mitchell Act programs, which have already been reduced by years of funding attrition. NMFS could have considered alternatives that would implement the physical facilities rehabilitation agreed to by states and tribes for many years. The DEIS does not do this either. In essence, the DEIS is written as if NMFS has determined that the Mitchell Act is constrained to current budget levels. #22

The second tacit policy determination is something like "hatchery fish are bad". With this as a starting premise, NMFS essentially rejects alternatives that call for any sizeable expansion of hatchery production in the Columbia Basin. Without saying so, the DEIS constrains the policy options for restoring salmon in the Columbia River Basin to modification of harvest, hydro, and habitat management. We believe that such a consequence is inconsistent with the *U.S. v. Oregon* #23

2008-2017 Management Agreement, the Columbia Basin Accords agreements, and the Secretarial Order on ESA and Trust Responsibilities. In this regard, NMFS utter failure to consult with the Commission's member tribes on the DEIS is especially disconcerting. #23 #24

Had the DEIS considered the alternative of in place, in kind mitigation, the DEIS would have illuminated the devastating effects that mitigation failures have had on the four tribes fisheries. Instead the DEIS present an obscure picture of the role of hatcheries in the Columbia Basin, primarily disclosed in the context of PNI and PHOS. NEPA, however, requires that and agency "present complete and accurate information to the decision makers and to the public to allow an informed comparison of the alternatives considered." *Natural Res. Def. Council v. U.S. Forest Serv.*, 421 F.3d 797, 813 (9th Cir. 2005). If in fact the alternatives would allow for broader hatchery management alternatives, the DEIS fails to present such information and allow for an informed comparison. The DEIS would need to be revised to demonstrate the breadth of the alternatives. "Where the information contained in the initial EIS [is] so incomplete or misleading that the decision maker and the public [cannot] make an informed comparison of the alternatives, revision of the EIS may be necessary to provide a reasonable, good faith, and objective presentation of the subjects required by NEPA." *Animal Def. Council v. Hodel*, 840 F.2d 1432, 1439 (9th Cir. 1988), *amended by* 867 F.2d 1244 (9th Cir. 1989)(internal citation and quotations omitted). #25

CRITFC Comments on Mitchell Act DEIS, Appendix B: Environmental Justice

The DEIS Fails to Adequately Consider Environmental Justice

#26

Executive Order 12898, "Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations," provides that "each Federal agency shall make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations. " The Executive Order makes clear that its provisions apply fully to programs involving Native Americans.

In the memorandum to heads of departments and agencies that accompanied Executive Order 12898, the President specifically recognized the importance of procedures under the National Environmental Policy Act (NEPA) for identifying and addressing environmental justice concerns. The memorandum states that "each Federal agency shall analyze the environmental effects, including human health, economic and social effects, of Federal actions, including effects on minority communities and low-income communities, when such analysis is required by [NEPA]." The memorandum particularly emphasizes the importance of NEPA's public participation process, directing that "each Federal agency shall provide opportunities for community input in the NEPA process." Agencies are further directed to "identify potential effects and mitigation measures in consultation with affected communities, and improve the accessibility of meetings, crucial documents, and notices." Basically, the Executive Order says that federal agencies must to talk to affected Indian tribes and disclose the impacts to them.

The following are examples of the DEIS' failure to address Environmental Justice.

#27

- Consultation with tribes is required by Executive Order 12898 and NMFS utterly failed to consult with the Columbia River Treaty Tribes in preparing the DEIS. Had it done so, NMFS would have learned of the generational trauma that resulted from the discriminatory effects that implementation of the Mitchell Act had on tribal fisheries. Documentation of the impacts of the Mitchell Act implementation on tribal economies and culture can be found in Meyer (1999), Dupris (2006) and Dompier (2005). NMFS also would have learned of the Treaty Tribes' proposed remedies, which are nowhere meaningfully discussed in the DEIS.

#28

- The DEIS misapprehends the nature of the Treaty Tribes' fisheries. For example, the DEIS' description of Spring ceremonial fisheries fails to wholly portray the importance of ceremonial fishing ascribed separately by each of the Treaty Tribes to the maintenance of their cultures. This is but one example among many of how the DEIS is culturally encapsulated, i.e. written from a mono-cultural perspective ignorant of the diverse cultural backgrounds at stake and the effects of the proposed action on those cultures.

The DEIS is Culturally Encapsulated and Fails to Adequately Consider Tribal Culture and Cultural Impacts #29

Nowhere does the DEIS truly acknowledge the role that salmon has played and now plays in the Treaty Tribes' culture and economies or the associated generational trauma associated with the construction of the Columbia River dams and the resulting failures in mitigating impacts to the Treaty Tribes' fisheries. Generational or historical trauma is still very real for the tribal members of the Treaty Tribes. Generational trauma is explained in an article by Whitbeck et al., 2004:

> In a series of articles Brave Heart (Brave Heart, 1998; 1999a,b; Brave-Heart & DeBruyn, 1988; Brave Heart-Jordan & DeBruyn, 1995), ties the American Indian genocide, ethnic cleansing, and policies of forced acculturation to the Holocaust experience and alludes to patterns of symptoms that correspond in many respects to those experienced by Holocaust survivors and their families. The symptoms identified by Brave Heart and colleagues run the gamut of those associated with posttraumatic stress disorder (i.e., Brave Heart's symptoms of "Historical Trauma" (Brave Heart, 1998, p. 288)) to symptoms of unresolved grief (p. 291). However, many of the symptoms overlap and their number encompasses almost the entire range of psychopathology.

Documentation of the importance of salmon to the Tribes, generational trauma in the tribal peoples' own words, and the cautions associated with cultural encapsulation was readily available to NMFS. The DEIS's ignorance, is in itself, an affront to the role that salmon plays in the cultures of the Columbia River Treaty Tribes.

Meyer (1999) describes the dangers with cultural encapsulation in the context of the Columbia River Treaty Tribes as follows:

> Even today, where the tribes participate in "white man's market exchanges" voluntarily – or where such participation is sometimes forced - differing value perceptions based on differing culture still exist. In particular, tribal cultures share a strong concern for intrinsic values – both use and nonuse related - with economists of the previous century.
>
> > What kind of foods did God set aside for you, reserve for you (non-Indians)? Like salmon and deer meat and the roots and berries were set aside for us. That's what we still obtain yet. We still go out and get it. And that's what we eat today. And that's what we use for communion with God. (remarks of Hazel Miller)
> >
> > It's just that salmon are part of the country, they're part of the environment. They belong here as much as Indians belong here. And in that way they complement each other. They've become part of us because it's what we depend on to live... . You know, it becomes a part of the person's or peoples' culture. (remarks of Antone Minthorn)
>
> These differences in perception of value pose strong risks that economists may culturally encapsulate project impacts on tribes. Too often in the past, economic valuation models have misrepresented tribal effects and damaged tribal interests. Alternatively, tribal

> values have not been treated substantively - and such values have been marginalized and appendicized in related reports. This has been damaging to reasonable consideration of tribal effects.

#29

#30

The impacts of Bonneville Dam construction and hatchery mitigation are well documented, though largely ignored in the DEIS. Meyer (1999) discusses how the Treaty Tribes' traditional Indian fishing grounds at the Long Narrows and Great Cascades were flooded in 1938 when the government constructed Bonneville Dam on the Columbia River. And, that Congress passed legislation promising that the salmon and steelhead that had been destroyed would be replaced by hatchery fish (i.e., The Mitchell Act). However, the Act was implemented by establishing almost all of the hatcheries downriver from Bonneville Dam, where only non-Indians fished, instead of upriver in the tribal fishing areas.

Dompier (2005) describes how testimony before Congress reflected concern for the impacts of the dams to the middle Columbia and Snake River tributaries, but that hatchery mitigation was constructed below the dams. The timing of this hatchery development and repeated attempts to close the tribal commercial fishery above Bonneville Dam were coincident in time and well-documented. When The Dalles Dam inundated Celilo falls many non-Indians were joyful that the tribal fishery at the falls had been eliminated. And, coincidentally, discussions then began about moving Mitchell Act hatchery development to the Columbia River tributaries above McNary Dam.

Tribal spokespersons did not agree with the transformation of the Columbia/Snake system into one which produces extensive wealth associated with electricity and crops - but fewer and fewer salmon. The tribes concerns with respect to their Treaty resources were largely ignored. Meyer (1999) recounts the following tribal sentiments:

> The Indians didn't have no voice at all. Because I remember when they built the John Day Dam the fish wouldn't go up the fish ladders. And they said the fish down there just died by the thousands at The Dalles Dam, because they didn't know how to go up them ladders. Plus the water was several degrees warmer above than it was below, and they couldn't adjust to that. Everyone knew that, even white people. (Denny Williams, at Mission, October 13, 1982).

> On each reservation, the story is the same. Inadequate provision for salmon and steelhead during dam construction and operation--consequent decline of natural stocks--broken and discarded promises by hydroelectric interests respecting safeguards and compensation--and severe inroads into capability for tribal survival. These conditions have also spawned a present attitude of almost universal mistrust among Indian people, accompanied either by hopelessness or outrage--depending on the person involved.(Meyer Resources, 1983).

The DEIS's failure to adequately acknowledge these basic tribal circumstances attending dam development and the failure of the Mitchell Act implementation makes it is apparent that the DEIS is repeating the mistakes of the past, including utter disregard for tribal peoples and their culture. This failure must be remedied.

CRITFC Comments on Mitchell Act DEIS, Appendix C: Section-by-Section Comments

Following are comments to different sections of the document:

Executive Summary

#31

Page 7. The document states that it does not include any actions that would increase adverse effects on wild fish. However, the presence of hatchery fish is considered an adverse impact. Therefore, all the alternatives involve various levels of reduced hatchery production. In other words, the assumption that all hatchery fish represent a negative impact results in a document in which the only reasonable alternative is to reduce hatchery production. Such an assumption on the effects of hatchery fish is erroneous.

#32

Page 17. The structure of the DEIS contains very confusing definitions and descriptions of performance goals and performance metrics. The document claims there are two performance goals, stronger and intermediate. There are also performance metrics which are defined as PNI and pHOS standards. The DEIS states that the policy being considered is the performance goal not the performance metrics. But there is no way to understand the goal without looking at the metric that is used to define and achieve it. It appears that the stated PNI and pHOS metrics are the actual policies that are being considered. There is no flexibility stated in these policies (metrics).

Chapter 1. Purpose of and Proposed Need for Action

#33

Page 1-13. The discussion of options not considered to be within the range of reasonable alternatives is flawed. The DEIS does not consider construction of new hatcheries with Mitchell Act funding. This fails to recognize that the mitigation objectives of the Mitchell Act remain incompletely fulfilled, that additional Mitchell Act appropriations would further those mitigation purposes, and that CRITFC member tribes are actively pursuing efforts to build new facilities with using such funding sources. These new facilities include but are not limited to the proposed NE Oregon Hatchery, a summer Chinook facility in the Yakama sub-basin, a coho and fall Chinook facility in the Klickitat subbasin, and a sockeye and/or coho program in the Grande Ronde sub-basin.

#34

Also, the DEIS does not consider any hatchery practices that increase adverse effects on listed fish. This may be a result of the decision to only analyze status quo production and various versions of reduced production, which in turn appears to be based on the erroneous assumption that hatchery fish have a significant adverse effect on ESA listed wild fish. Even excepting this logic, it is unclear why the DEIS considers reductions and sometimes elimination of programs that do not have associated listed populations (e.g., Clearwater spring chinook, Klickitat coho, Upper Columbia summer fall chinook, and Round Butte spring chinook).

#35

Table 1.4, page 1-29. This list of hatchery programs would be easier to use if it were organized by either species and/or geographic area. It is unclear as structured whether this table is consistent with the program descriptions agreed to by all parties, including NOAA Fisheries, in

the 2008-2017 *US v. Oregon* Management Agreement and Court Order. The table does not include existing sockeye programs in the Wenatchee or Okanagan, Chief Joseph hatchery, or the Entiat Hatchery in the list of current hatcheries. It also does not mention the Yakama Nation summer Chinook program. Finally, it does not mention future programs such as NEOH or a coho or sockeye re-introduction program in the Grande Ronde system. #35

Page 1-41. Relationship to Other Plans, Regulations, Agreements, Laws, and Secretarial Orders The DEIS fails to discuss any mitigation agreements with Public Utility Districts,the US Fish and Wildlife Service's Lower Snake Compensation Plan, or the US Corps of Engineers' John Day Mitigation obligations. #36

Page 1-42. In its discussion of the 2008-2017 *US v. Oregon* Managemnet Agreement, the DEIS provides: #37

> *"For the purpose of analysis, NMFS developed alternatives that may or may not be viewed by any particular commenter as consistent with the current (production) commitments in the Management Agreement. Rather, NMFS assumes that affected parties will exercise their authority regarding production measures following this environmental analysis in a manner that is consistent with the most current Management Agreement."*

What does this mean? What is the purpose of proposing an assortment of production decreases/eliminations that are clearly not consistent with the *US v. Oregon* Management Agreement? Does it mean that NMFS thinks it has the authority to unilaterally force changes in the Management Agreement based on the analysis framework of a NEPA document? This approach is inconsistent with guidance NOAA previously provided to the region in 2010.

Page 1-45. FCRPS Biological Opinion. The DEIS fails to discuss the relationship between Snake River Fall Chinook production and the Columbia Basin Fish Accords. #38

Chapter 2. Alternatives

Table 2.3, page 2-6. The table uses outdated and (in some instances significantly inaccurate) hatchery production by species data. #39

Pages 2-11 - 2-13 . The hatchery performance goals are inappropriately limited to only reducing negative effects of hatchery programs on natural origin salmon and steelhead. The two performance goals are "stronger performance goal" which appears to mean a large reduction in negative effects, and an "intermediate performance goal" which appears to mean a smaller reduction in negative effects compared to either current conditions or in some cases status quo – it is not really clear. Additionally, the use of the HSRG adapted definitions of primary, contributing, and stabilizing populations are limiting, and not warranted. The DEIS provides, "*These (performance) goals are not intended to infer compliance with any legal standard, nor are they intended to be analogous to ESA terminology or threshold standards, but they are helpful in aggregating and describing the effect of multiple hatchery programs on natural-origin populations of salmon and steelhead.*" What does this statement mean? How are the goals #40 #41 #42

useful for such effects if they are not correlated with any standard of significance for the consideration of environmental impacts? Does this mean that the goals do not comply with a NEPA analysis? What purpose do they serve in a DEIS they do not infer compliance with the alleged purposes of the document? #42

Table 2-5, page 2-22. As discussed in the cover letter and elsewhere in the Appendices, the PNI and pHOS standards are arbitrary and fixed for all populations. #43

Page 2-21. The DEIS provides: #44

> *"For example, some components of these implementation scenarios may or may not be viewed as consistent with the commitments in the U.S. v. Oregon Management Agreement (Section 1.7.1, U.S. v. Oregon). The intent of the EIS analysis is not to make a determination that an alternative or its implementation scenario is or is not consistent with the U.S. v. Oregon Management Agreement, and no such assertion is made. Rather NMFS anticipates that the affected parties will ensure their hatchery plans (e.g. hatchery genetic and management plans) are consistent with the most current Management Agreement."*

NMFS' apparent claimed unfamiliarity with the *U.S. v. Oregon* Management Agreement is startling and seemingly inexcusable. It is a party to the Management Agreement, and has issued guidance to the region regarding HGMP development with explicit reference to the Management Agreement. Why does the DEIS include in its alternatives measures which clearly conflict with the Management Agreement? Such inclusion gives the appearance of duplicity, and is not faithful to the Management Agreement.

Box 2-8, page 2-23. The statement that weirs require an external mark to be able to identify hatchery-origin fish is misleading. A mark of some kind is required, but it may not need to be external. #45

Table 2-7, page 2-28. The table does not include the correct sockeye hatchery production; it omits the Wenatchee and Okanagan production. #46

Table 2-11, page 2-37. The harvest data is incorrect because of errors in projected in-river harvest. The DEIS incorporates erroneous mainstem harvest rates and incorrect tributary harvest data. This table should be re-done. #47

Table 2-12, page 2-37. This table of "no releases" is inaccurate. It does not address existing steelhead and summer Chinook programs in the Entiat River. #48

Pages 2-38 *et seq*. There are numerous factual errors in the discussion of Implementation Scenario for Alternative 2 (no Mitchell Act Funding). The document indicates there would be an existing spring Chinook program that would be continued in the White Salmon. While there is a spring Chinook program in the Little White Salmon, there is no current spring Chinook program in the White Salmon River. Similarly, the document indicates an existing spring Chinook program in the Entiat would be continued. This program was already terminated by the *U.S. v.* #49

Oregon parties. The document also references a steelhead program in the Yakima River that does not exist. Further, the document indicates harvest under Alternative 2 would be 51% of Alternative 1. This is not valid because neither Alternative 1 harvest nor Alternative 2 harvest assumptions are correct. #49

Box 2-9, page 2-41. The document does not establish that weirs help achieve performance goals. Rather, the DEIS makes arbitrary and fixed assumptions about the effectiveness of weirs at keeping hatchery fish from spawning. In so doing, it minimizes the potential risks of delaying or preventing wild fish from passing, or adverse impacts on other species and on juvenile fish. #50

Pages 2-44 *et seq.* There are also numerous errors in the discussion of Implementation Scenario for Alternative 3. The document indicates a spring Chinook program in the White Salmon and a coho program in the Hood River would be retained, but there are no such programs in these rivers. The document indicates steelhead programs would be retained in the Entiat and the Yakima River, but there are no such programs. The document indicates harvest under Alternative 3 would be 80% of Alternative 1. This is not valid because neither Alternative 1 harvest nor Alternative 3 harvest assumptions are correct. #51

Pages 2-47 *et seq.* There are also numerous errors in the discussion of Implementation Scenario for Alternative 4. The document indicates a spring Chinook program and a fall Chinook program in the White Salmon would be continued, but there are no such programs currently. The document indicates a coho program in the Hood River, and steelhead programs in the Entiat and Yakima would be continued, but there are no such programs currently. The document indicates harvest under Alternative 4 would be 89% of Alternative 1. This is not valid because neither Alternative 1 harvest nor Alternative 4 harvest assumptions are correct. #52

Pages 2-50 et seq. There are also numerous errors in the discussion of Implementation Scenario for Alternative 5. The document states that, "At least one hatchery program would be terminated in all ecological provinces, except Mountain Snake." In Table 2-16, however, the document states that three programs would be terminated in the Mountain Snake Province (South Fork Clearwater B steelhead, Rapid River spring Chinook, and East Fork Salmon B steelhead). The document indicates a steelhead program would be continued in the Entiat River, but there is no such current program. The document indicates coho programs in the Hood River and Chinook programs in the White Salmon would be continued, but there are no current programs there. The document indicates harvest under Alternative 5 would be 83% of Alternative 1. This is not valid because neither Alternative 1 harvest nor Alternative 5 harvest assumptions are correct. #53

Section 2.8. Alternatives Considered but Eliminated from Detailed Analysis. There are no alternatives discussed which move Mitchell Act production upstream of Bonneville Dam (in kind, in place mitigation). There are no alternatives discussed which presume appropriate funding of the Mitchell Act. There are no alternatives discussed which increase production based on tribal recommendations. There is no mention of tribal views or recommendations. These omissions are inappropriate. #54

Page 2-56. Alternative that Terminates Non-Mitchell Act-funded Hatchery Programs that meet Performance Metrics. The DEIS proposes eliminating Mitchell Act funding in Alternative 2 #55

even though many of the Mitchell Act programs are mandated under the 2008 Columbia River Fish Management Plan under *U.S. v. Oregon*. It fails to mention that many of the programs proposed for termination are mandated under the 2008-2017 *U.S. v. Oregon* Management Agreement, FERC agreements, the Columbia Basin Accords, and/or the Lower Snake River Compensation Plan. The DEIS dos not explain why it includes alternatives that violate these various mandates and federal obligations. The DEIS also states that because NMFS does not fund or operate non-Mitchell Act funded hatcheries, they could not mandate their termination. Why does the DEIS propose terminating programs that NMFS has no control over? #55 #56

Table 2-13, page 2-62. Hatchery Programs Terminated under the Implementation Scenario for Alternative 2. Alternative 2 addresses no Mitchell Act funding. It is not clear as to why NMFS proposes elimination of Round Butte (Deschutes) spring Chinook and several Clearwater spring Chinook programs because of stray issues. These programs do not involve Mitchell Act funding. It is also unclear what authority or justification NMFS has to set standards for strays for populations where there are no listed fish, such as spring Chinook in the Deschutes and Clearwater. #57 #58

Table 2-14, page 2-65. Hatchery Programs Terminated under the Implementation Scenario for Alternative 3. Rapid River Hatchery is proposed for termination along with other programs mandated in the *U.S. v. Oregon* Management Agreement. This is contrary to the Management Agreement that NMFS signed. #59

Table 2-15, page 2-68. Hatchery Programs Terminated under the Implementation Scenario for Alternative 4. Several upriver programs proposed for termination are also mandated in the U.S. v. Oregon Management Agreement. #60

Table 2-16. Hatchery Programs Terminated under the Implementation Scenario for Alternative 5. Page 2-69. Rapid River Hatchery is proposed for termination along with other programs mandated in the *U.S. v. Oregon* Management Agreement. #61

Table 2-17, page 2-71. New Hatchery Programs Proposed under one or more of the Implementation Scenarios. The table indicates new Klickitat steelhead programs would be started. There are already steelhead programs in the Klickitat, so these would not be new programs. The table also indicates a new steelhead program would be started for steelhead in Hells Canyon. There is already a Hells Canyon steelhead program, so this is not new. The table indicates a new spring Chinook program at Ringold. Spring Chinook have been produced there in the past, but are not currently produced there. The *U.S. v. Oregon* parties do not have current plans to produce spring Chinook there. The table indicates that a new spring Chinook program would be started at Yankee Fork in the Upper Salmon. There is already a spring Chinook program there, so this is not a new program. This table should be corrected. #62

Chapter 3. Affected Environment

3.2.3.1.1 Genetic Risks

Comments to this section are provided in a separate appendix.

3.2.3.1, page 3-13. Risks from Competition with Hatchery-origin Fish. The DEIS is critical of sub-yearling production because of unwarranted fears of competition. If hatchery fish are going to be produced like the wild fish (integrated program), we need to produce sub-yearlings. #63

3.2.3.1.7, page 3-14. Risks of Predation from Hatchery Origin Fish. There is no evidence presented that hatchery fish may eat wild fish, or that this is a problem. #64 There is no discussion that wild fish may also eat hatchery fish which could be under some circumstances of benefit to wild fish. #65

3.2.3.1.10, page 3-17. Current Approaches for Reducing the Risks of Masking. There are other ways to mark fish besides the use of adipose fin clips that are useful for monitoring the numbers and origins of hatchery fish in natural spawning areas. Otolith marks and PIT tags are examples that not only allow fish to be identified, but they can be identified by age and by origin which is something that adipose fin clips by themselves can not do. These should be discussed and favored over adipose fin clips. #66

3.2.3.1.11, page 3-17. Risks Associated with Fisheries that Target Hatchery-Origin Fish. The DEIS provides, "Efforts to focus fishing effort on harvest of hatchery-origin fish can lead to the incidental harvest of natural origin fish in excess of levels compatible with their survival and recovery." While this is theoretically a valid concern, in practice, all fisheries that impact listed fish must have ESA coverage which limits overall wild impacts to levels which NMFS has determined do not endanger them and do not adversely impact the ability to recover wild fish population levels. #67

3.2.3.1.12, page 3-18. Current Approaches for Reducing Risks Associated with Fisheries that Target Hatchery Origin Fish. The document indicates that requiring the release of all unmarked natural origin fish will reduce the risks from fisheries targeting hatchery fish. The DEIS should discuss the fact that release mortality rates can vary by gear and by temperature and by location of fisheries. Some rates can be quite high. Some fisheries do not have agreed to release mortality rates which can greatly increase the uncertainty in estimating wild harvest rates. Fish can be handled multiple times in different fisheries which may increase mortality. More accurate fish mortality rates need to be developed. #68

Using mark selective fisheries has caused increased uncertainties in harvest management due to problems associated with using CWT data from marked hatchery fish that are harvested at different rates than the wild fish they represent. #69

The document states that fisheries should be managed for cumulative harvest rates. This is not possible since many tributary sport and upstream mainstem fisheries do not have complete creel monitoring and harvest estimates are not made until voluntarily reported catch record cards are analyzed which is sometimes years after the fishery takes place. #70

The document states that fisheries should be monitored. Mark selective fisheries are more expensive and complicated to monitor than full retention fisheries. NMFS does not discuss the effects on agency budgets of the more complicated monitoring and harvest analysis associated with mark selective fisheries compared to full retention fisheries. #71

Table 3.7, page 3-22. Several of the Total Natural Spawner Abundances are low and need to be corrected. These include the Upper Columbia Summer/Fall run Chinook spawner abundance, the Snake River steelhead abundance, the Upper Columbia Steelhead and the Snake River sockeye abundance is low. Instead of relying on the flawed AHA model, NMFS should have used actual spawner abundance data for recent years. #72

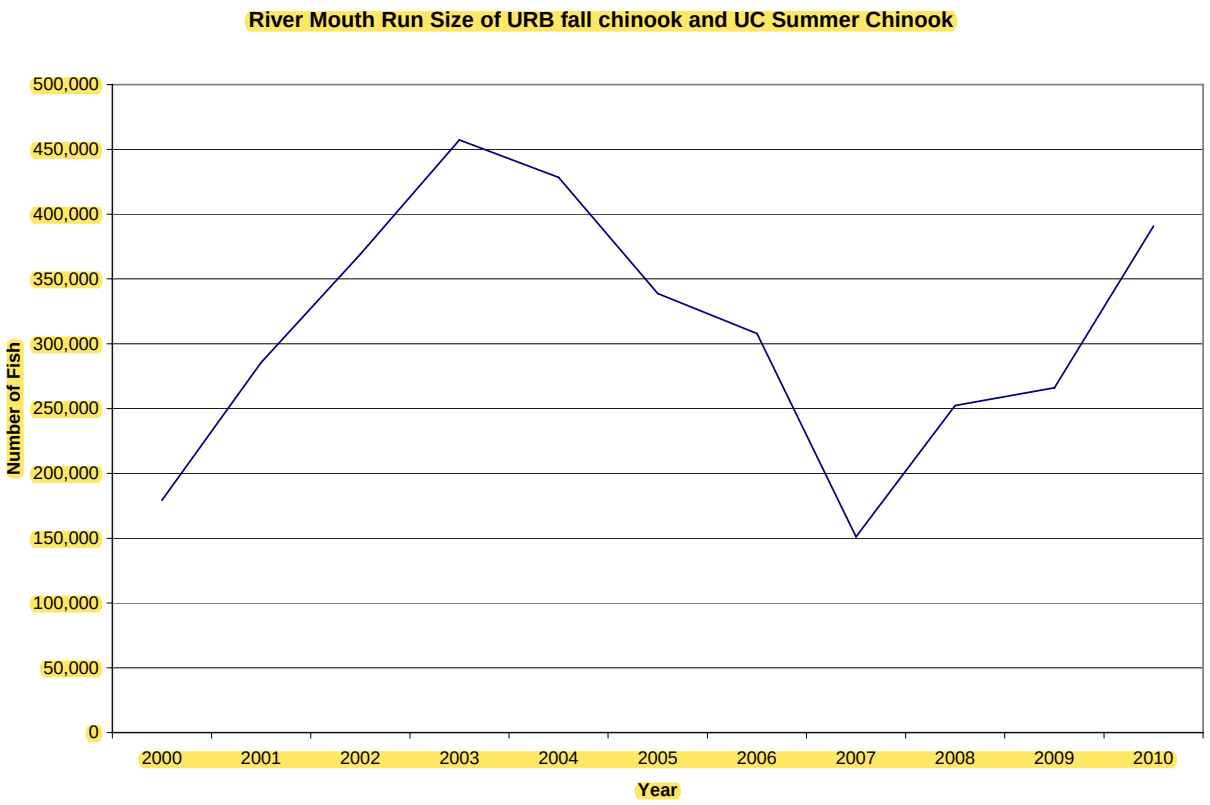
3.2.3.2, page 3-23. Status of Salmon ESU's and Steelhead DPS's. . The document states that all coho salmon in the analysis are found in one ESU. This is not correct. The document includes information on coho found upstream of the Lower Columbia ESU. The document fails to discuss the relationship of fish not included in listed ESU's such as Upper Columbia River sockeye, Clearwater Spring Chinook, Umatilla Spring Chinook and Walla Walla Spring Chinook. There are hatchery programs affecting these groups of fish. The DEIS alternatives propose cuts to some of these programs but does not clarify that these are not listed populations. The authority of NMFS to propose cuts in these programs is not specified. #73 #74 #75 #76

3.2.3.2.2, page 3-26. Mid-Columbia Spring Run Chinook Salmon ESU. The DEIS states that the spring Chinook populations in the Walla Walla and Umatilla may have been part of the ESU but are considered extinct. The DEIS fails to mention that the tribes have reintroduced spring Chinook into both basins using hatchery fish and that there are now natural spawning populations in both basins. #77

3.2.3.2.3 Deschutes River Summer Fall Chinook ESU. Under the Current Status and Recent Trend section, the text is misleading and the last sentence is incorrect. ODFW and Warm Springs have reached technical agreement on the basin returns and spawning escapement. The text uses basin return numbers which are inaccurate as an index of abundance due to tributary harvest. The DEIS appears to argue that the somewhat lower 2008 returns are indicative of a declining population. The spawning escapement estimates are a better estimate of status and should be used. From 1990-2009, there is a slight upward trend in spawner escapement, but the trend is not statistically significant. Spawning escapement in the Deschutes appears to be somewhat cyclical, with some good years and some years with poorer escapement. #78

3.2.3.2.5, page 3-28. Upper Columbia Summer/Fall Run Chinook Salmon ESU. The DEIS implies that there has been a declining trend for this ESU. This implication is inaccurate, and is based on incorrect and incomplete information. The document states, "Between 2003 and 2008, the adult returns have ranged between 114,500 and 373,200 fish (ODFW and WDFW 2009). However, a steady declining trend occurred from a high of 373,000 fish in 2003 to a low of 114,000 fish in 2007, while the 2008 return was higher at 197,300 fish." First, these are TAC estimates of the URB stock run size at the river mouth. These numbers include Deschutes fish which are not in the ESU and they also include the Snake River fall Chinook ESU. But they do not include Upper Columbia Summer Chinook which are in the ESU. Deschutes fish are a small but somewhat variable component of these numbers. There are no river mouth run size estimates for the ESU that do not also include the Deschutes. However, there is also no declining trend, especially if the last 10 years of data are used. The figure below shows URB plus upper Columbia Summer Chinook at the Columbia River mouth since 2000. 2010 data are #79

preliminary in-season estimates. This figure clearly shows the natural cyclic nature of this group of fish and indicates that there is no declining trend. #79



3.2.3.2.8, Page 3.31. Snake River Fall-run Chinook Salmon ESU. The DEIS states that the recent 10 year average abundance of natural origin Snake River fall Chinook is 1,273 fish. This is not correct. The 10 year average natural abundance is over 2,500 at Lower Granite Dam, based on TAC estimates. #80

3.2.3.2.10, page 3-33. Middle Columbia River Steelhead DPS. The DEIS fails to mention the new passage system for Steelhead at Round Butte Dam. #81

3.2.3.2.13, page 3-35. Upper Columbia River Steelhead DPS. The DEIS contains the speculative statement, "Naturally spawning hatchery-origin fish were not adapted to local conditions, which most likely limited their effectiveness and depressed the production of the population as a whole. While there are not precise means to measure the full effect of these practices, they likely contributed substantially to the current low recruits-per-spawner (R/S) productivities for naturally spawning fish." No data or citations are shown to support this claim. This statement should be removed. #82

3.2.3.2.17, page 3-39. Snake River Sockeye ESU. The DEIS provides, "The Stanley Basin Technical Oversight Committee has determined that the next step toward meeting the goal of amplifying the natural-origin population is to increase the number of smolts released." The #83

DEIS does not explain how the proposed reduction in smolt releases from the 1,000,000 target release in the *U.S. v. Oregon* Management agreement to 750,000 in Alternatives 3, 4, and 5 (as well as the elimination of the program in Alternative 2) are consistent with the concept of amplifying the natural origin population. #83

3.2.4, page 3-40. Other Fish Species that Have a Relationship with Salmon and/or Steelhead. The DEIS does not mention white sturgeon or American Shad. #84 The DEIS also indicates that hatchery rainbow trout are competitors and predators of juvenile salmon and steelhead, but fails to mention that wild rainbow trout may also be competitors and predators of juvenile salmon and steelhead. #85 The DEIS speculates that competition between native rainbows and salmon and steelhead does not occur, but does no support for this statement whatsoever. No information is provided to explain why hatchery trout would compete with juvenile salmonids, but wild trout would not.

3.3.1,page 3-67. Socioeconomics Introduction. Harvest data from 2002-2006 do not represent the best data to use for ocean and mainstem Columbia River fisheries. The economic value of the fisheries is significantly different today. #86

Table 3-11, page 3-68. Estimated Catch of Columbia River Basin Stocks as a Percentage of total harvest by area and Fishery. The table indicates no harvest of Columbia River Chinook south of Cape Falcon. This is not correct. #87

Table 3-12, page 3-74. Hatchery Production of Salmon and Steelhead in the Columbia River Basin in 2007. The sockeye release number is incomplete. The Wenatchee and Okanagan programs are not included. #88

3.3.3, page 3-74. Hatchery Program Costs. The DEIS should clarify and explain the statement that marking hatchery origin fish with either an adipose fin clip or CWT is a federal directive. Only salmon and steelhead intended for harvest only and produced by federal hatcheries or with federal money must be marked with an adipose fin clip. Fish intended for non-harvest purposes, such as recovery purposes, are not required to be marked with adipose fin clips. There is no specific federal requirement for CWT marking (although certain levels of CWT marking is required under Management Agreements and for general harvest monitoring purposes). #89

3.3.4.1, pages 3-77 and 3-78. Historical Overview – Columbia River Basin. The sections on tribal fishing are incomplete and contain numerous errors. The list of fishing gears used in mainstem fisheries is not correct. The statement that no fish are sold until ceremonial and subsistence needs are met is not correct. There is no mention of summer season fisheries. The statement that spring Chinook were only available for ceremonial purposes until 1995 is not correct. The total catches listed are not correct. There is no mention of tribal tributary fisheries. There is no mention of direct sales to the public. There is no mention of the new tribal fish processing plant. There is no mention of the commercial fish buyers in the Portland area. #90

3.3.4.2, Pages 3-78 and 3-79. Pacific Ocean and Puget Sound. There is inadequate reference to the treaty troll fishery and the buyers buying fish at tribal ports including the tribal buyer (Quinault Enterprises). #91

3.3.5.1,page 3-80. Commercial Harvest and Economic Value – Columbia River Basin. This section is inaccurate. Tribal commercial fishing occurs in the Zone 6 area between Bonneville and McNary Dams, in the tribal fishing area just downstream of Bonneville, in certain Zone 6 tributaries (Wind, Little White Salmon – Drano Lake, and Klickitat Rivers), in Icicle Creek in the Wenatchee, and in parts of the Clearwater Basin. Non-treaty commercial fishing occurs in the mainstem in Zones 1-5 as well as in the Select Areas (off channel areas of the lower river). Further, the total catch numbers in the text are not correct. Correct commercial harvest data should be used. There is no mention of tribal steelhead or treaty and non-treaty commercial sockeye catches. The DEIS should also clarify that there are significant social and and cultural benefits to tribal fishing that can not be quantified economically. The DEIS should analyze the impacts to tribal subsistence fishing in tributary areas. Base period tribal tributary harvests are not presented and should be. #92

Table 3-14, page 3-81. Columbia River Basin in-river historical (2002-2006 catch for non-tribal commercial fisheries). This table contains numerous errors. It also omits sockeye harvest. Sturgeon harvest should be included also since, sturgeon are economically important, and the availability of salmon for commercial harvest has a large impact on how and when sturgeon fishing can occur. #93

3.3.5.1 (cont.) Columbia River Basin. Page 3-81. The tribal harvest numbers are not correct and therefore the percentages by area are not correct. There is no tribal commercial mainstem fishing in the upper Columbia, nor is there tribal commercial fishing in the lower Snake River. #94

Table 3-15, page 3-82. Columbia River Basin In-river Historical Catch for Tribal Commercial Fisheries. The data in this table except for Mid Columbia coho is incorrect. The base period should use more recent years to better reflect future fishing. Sockeye harvest is missing. Winter season sturgeon fisheries should be included as there is an associated commercial steelhead catch that is dependent on sturgeon abundance. There is no commercial fishing in the upper Columbia mainstem or in the lower Snake River. Commercial fishing downstream of Bonneville, in Icicle Creek, and in the Clearwater are also missing. #95

Table 3-16. Average Annual Catch and Commercial Ex-vessel value for Tribal and Non-Tribal Fisheries in the Columbia Basin. This table has incorrect numbers in part because the average catches that it is based on are incorrect, and in part because the value per pound and average pounds per fish used is incorrect. This table as well as Appendix J should be re-done. More recent years should be used. 2002-2006 is not the best base period because of changes in fish prices since then. The DEIS should incorporate the higher value of tribal fish sold direct to the public in the economic value estimates. #96

3.3.5.2, page 3-84. Pacific Ocean and Puget Sound. For the economic value of Washington, Oregon, and California commercial fisheries, data from PFMC should be used. #97

Table 3-17, page 3-85. Historical Salmon Catch in Non-Tribal Pacific Ocean and Puget Sound Fisheries. The Oregon Coast (Astoria) Chinook and coho catches are incorrect. PFMC catch data should be used for these catches. The table should also include fisheries south of Cape #98

Falcon since Columbia River stocks contribute to these fisheries also. A more recent base period should be used to reflect current fish prices. #98

Table 3-18, page 3-86. Historical Salmon Catch in Tribal Pacific Ocean and Puget Sound Fisheries. The Washington Coast Chinook catches are incorrect. A more recent base period should be used to reflect current fish prices. #99

Table 3-19, page 3-87. Average Annual Catches and Commercial Ex-Vessel Value for Tribal and non-Tribal Commercial Fisheries for The Pacific Ocean and Puget Sound. Values for California and Oregon south of Cape Falcon should be included as Columbia River stocks do contribute to these fisheries. For the economic value of Washington, Oregon, and California commercial fisheries, data from PFMC should be used. #100

Table 3-20, page 3-88. Average Annual Catch, Number of Trips, and Trip Expenditures or Recreational Fisheries. The Upper Columbia River average Chinook harvest is too low. The lower Snake River average Chinook harvest is also too low. The table should site the source of the catch data so other catch numbers can be checked as well. These data do not correspond to the averages shown in Table 3-21. #101

Table 3-21, page 3-90. Columbia River In-River Historical Catch for Recreational Fisheries. Much of this data do not match data in ODFW and WDFW Joint Staff Reports which comprise the official public data reports. The Zone 6 coho catch is greater than zero. The Zone 6 tributary Chinook catches are higher than those shown. The DEIS should use catch data available from ODFW and WDFW. The upper Columbia River Chinook harvest shown is significantly below actual catches. The Lower Snake River Chinook harvest is incorrect. Steelhead catches are available from the states and should be included. Also, there are significant tributary sport fisheries upstream of Lower Granite Dam and in upper Columbia Tributaries that should be included. In sum, this table significantly under estimates total recreational harvest which will produce a significant under valuation of the recreational fisheries. #102

Table 3-22, page 3-92. Historical Salmon catch in Recreational Pacific Ocean and Puget Sound Fisheries. This table should include California Chinook catches which do include some impacts to Columbia River fish. #103

Additionally, the harvest of fish by non-treaty tribal groups (Shoshone Bannock, Wanapum, and Colville) should be accounted for in the DEIS. While these fish are allegedly not sold commercially, the harvest by these tribes does provide social and cultural benefits for them. #104

3.4.4.1 Native American Tribes of Concern. The four Columbia River Treaty Tribes should be discussed separately from the non-treaty tribal groups. The proper names of all four treaty tribes should be used. The descriptions of our tribes are incomplete and in-accurate. The descriptions should be revised based on information from the tribes themselves. #105

For the description of the Shoshone Bannock tribes, the DEIS should clarify that the tribe does not have established fishing rights outside the Snake Basin and there is a current legal dispute regarding their rights to fish in Northeast Oregon and Southwest Washington. For the #106 #107

description of the Cowlitz Tribe, the DEIS should clarify that the tribe has no legally established fishing rights in the Columbia Basin. #107

The DEIS should provide more complete descriptions of Makah, Quileute, Hoh, and Quinault Tribes, all of which have recognized treaty fishing rights in the ocean off the Washington Coast and all of which would be impacted by changes in Columbia River hatchery production. #108

3.4.4.1.1, page 3-109. Fish Harvests and Tribal Values. The paragraph mentions Table 3-17 which is non-treaty harvest. None of the non-commercial harvest data is presented. This non-commercial harvest is of critical importance to the tribes. There is no harvest data from the non-treaty tribes presented. There is quantifiable treaty tribe harvest that occurs downstream of Bonneville Dam. #109

3.4.4.1.2, page 3-109. Ceremonial and Subsistence Harvest. The statement that harvest of salmon for ceremonial and subsistence purposes typically occurs before fish are taken for commercial purposes is not true. Subsistence fishing occurs all year in both mainstem and tributary areas. Some fish are sold commercially in the winter season prior to the spring ceremonial fisheries. The assumptions regarding ceremonial and subsistence harvest on page 3-110 are extremely faulty and produce wildly incorrect estimates of C&S catch. The tributary C&S catch estimates should be shown as well. Actual base period estimates of C&S catch are available and should have been used. #110 #111

3.4.4.1.3, page 3-110. Tribal Salmon Fishing and Hatchery Program Revenue. Commercial sales of fish direct to the public should have been included since this is a significant source of revenue in tribal commercial fisheries and the prices paid are much higher than prices paid by wholesale fish buyers. #112

3.4.5, page 3-114. Public Outreach. The DEIS should clearly state that NMFS did not engage in any consultation with the four Columbia River Treaty Tribes as part of the development of this document and these alternatives. #113

Table 3-30, page 3-119. Status, Distribution, Habitat Association, and Trends for Bird Species in the Analysis Area that prey on Salmon. This table fails to include white pelicans. #114

Table 3-31, page 3-123. Status, Distribution, Habitat Association, and Trends for Marine Mammals of Concern. This table should include Steller sea lions since their impacts on Salmon have been increasing. #115

3.5.3.1.1, page 3-124. Killer Whales. The statement that it is reasonable to expect that southern resident killer whales likely prefer Chinook salmon is conjecture and should be omitted. If the statement on page 3-125 that hatchery fish may have produced benefits for killer whales is true, then it should also be stated that the proposed reductions in hatchery fish in the DEIS would also adversely impact killer whales. #116 #117

3.5.3.1.2, page 3-125. Steller Sea Lion. In 2010, there was an increase in sightings of Steller sea lions stealing salmon from California sea lions. The DEIS should clarify that impacts on salmon from Steller sea lions may be increasing. #118

Chapter 4. Environmental Consequences

4.2.2, page 4-4. Methods for Analyzing Effects. The AHA model should not have been used in the DEIS. It is not capable of utilizing the abundance based harvest frameworks that are used in Columbia basin fisheries and therefore provides misleading and incorrect results. The DEIS states that the AHA model allows users to input data reflecting current habitat productivity/capacity, harvest rates and hatchery facility operations. This is an incorrect statement. The AHA model does not allow users to input current abundance based harvest rates. On page 4-7, the document states that harvest conditions are assumed to represent recent average conditions. The 2002-2006 time period is not the best time period to use as a base period. Because NMFS used incorrect harvest data for this period, the average harvest for this period is also incorrect. Appendix K also uses incorrect harvest rates. This flawed harvest analysis produces incorrect information for the rest of the modeling. When flawed harvest scenarios are used, the output of numbers of hatchery and wild fish in escapement areas will be incorrect. This produces incorrect estimates of PNI and pHOS. Because NMFS has used a flawed harvest analysis, all of the information on how many populations would meet the performance metrics under the different alternatives is also incorrect. NMFS should either remove all of the information regarding which populations meet which metric under the different alternatives, or re-do the entire harvest analysis. #119 #120

4.2.3.1.1, page 4-11. Genetic Risks. The DEIS states that new selective fisheries would be established in terminal areas as a way of reducing genetic risks. The DEIS fails to state where these new fisheries would be used. The DEIS fails to discuss how the increased handle of unclipped fish would impact wild harvest rates if increased selective fisheries were to occur. This item should be removed from the DEIS for any tributary fisheries upstream of Bonneville Dam as it is not realistic. Tributary fisheries are managed cooperatively by the states and tribes with specific sharing agreements for different fisheries. It is not possible to expand current tributary sport fisheries without also expanding tribal fishing opportunity which is generally non-selective. Almost all current tributary sport fisheries are already mark selective fisheries. It is not feasible to presume that additional terminal mark selective fisheries could actually be implemented. The recommendation for building new temporary and permanent weirs also relies on a great deal of speculation about their feasibility and effectiveness. #121 #122

Table 4-17, page 4-35. Mean Percent Change in $PROD_{adj}$ and in Abundance of NOS per population in the Mid-Columbia River Spring ESU. NMFS should clarify how a reduction in abundance of natural origin fish under Alternatives 2, 3, and 5 (presuming the analysis were correct) is a benefit to the resource or to people. NMFS should also clarify why on page 1-13, they claim to have not considered options that increase adverse effects to natural origin fish when some of these alternatives apparently would result in fewer natural origin fish which should be considered an adverse effect. #123 #124

Table 4-21, page 4-38. Mean Percent Change in $PROD_{adj}$ and in Abundance of NOS per population in the Deschutes River Summer/Fall run Chinook Salmon ESU. NMFS should clarify how a reduction in abundance of natural origin fish under Alternatives 3, 4, and 5 (presuming the analysis were correct) is a benefit to the resource or to people. NMFS should also clarify why on page 1-13, they claim to have not considered options that increase adverse effects to natural origin fish when some of these alternatives apparently would result in fewer natural origin fish which should be considered an adverse effect. #125

Table 4-26, page 4-42. Mean Percent Change in $PROD_{adj}$ and in Abundance of NOS per population in the Upper Columbia spring run Chinook Salmon ESU. NMFS should clarify how a reduction in abundance of ESA listed natural origin fish under Alternatives 2, 3, and 4 (presuming the analysis were correct) is a benefit to the resource or to people. NMFS should also clarify why on page 1-13, they claim to have not considered options that increase adverse effects to natural origin fish when some of these alternatives apparently would result in fewer natural origin fish which should be considered an adverse effect. #126

Table 4-30, page 4-45. Mean Percent Change in $PROD_{adj}$ and in Abundance of NOS per population in the Upper Columbia River summer/fall run Chinook Salmon ESU. The Total NOS under Alternative 1 (status quo) is unrealistically low based on actual data for this ESU. This should be corrected. #127

Table 4-44, page 4-56. Mean Percent Change in $PROD_{adj}$ and in Abundance of NOS per population in the Snake River fall run Chinook Salmon ESU. NMFS should clarify how a reduction in abundance of ESA listed natural origin spawners under Alternatives 2, 3, 4, and 5 (presuming the analysis were correct) is a benefit to the resource or to people. NMFS should also clarify why on page 1-13, they claim to have not considered options that increase adverse effects to natural origin fish when some of these alternatives apparently would result in fewer natural origin fish which should be considered an adverse effect. #128

Table 4-67, page 4-74. Mean Percent Change in $PROD_{adj}$ and in Abundance of NOS per population in the Upper Columbia River Steelhead DPS. NMFS should clarify how a reduction in abundance of ESA listed natural origin spawners under Alternatives 2, 3, 4, and 5 (presuming the analysis were correct) is a benefit to the resource or to people. NMFS should also clarify why on page 1-13, they claim to have not considered options that increase adverse effects to natural origin fish when some of these alternatives apparently would result in fewer natural origin fish which should be considered an adverse effect. #129

4.3.2.1 Harvest Estimates. Page 4-109. In many cases, incorrect historical data was used. Appendix K also used incorrect in-river and tributary harvest rates which produces erroneous results. #130 #131

4.3.2.3. Harvest and Economic Values. Page 4-111. The value of the catch does not reflect current fish prices. NMFS did not include the value of fish sold direct to the public. NMFS also used in some cases incorrect weights per fish in economic value calculations. This combined with faulty harvest modeling makes economic comparison of the alternatives impossible. #132

4.3.4 Harvest and Economic Values. Page 4-114 through page 4-158. See Comments above. This section includes numerous errors and should either be re-done or removed from the DEIS. #133

4.4.3.1 Tribal Indicators of Environmental Justice Effects. Page 4-161. There is no discussion of the mitigation commitments made to the tribes due to the development of the Columbia River Basin. See also a full discussion of Environmental Justice Considerations submitted as a separate appendix. #134

4.4.4.2 Ceremonial and Subsistence Harvest. Page 4-166. The statement that only 12,976 fish are likely taken for ceremonial and subsistence purposes is incorrect. The DEIS should include actual average C&S catches which are significantly higher. The following statements in the DEIS are incorrect and should be removed from the document: "Because ceremonial and subsistence fish are taken first before fish are harvested for commercial harvest, changed in hatchery production would primarily affect commercial tribal fisheries. Thus, there would be a negligible impact on ceremonial and subsistence fishing for all action alternatives compared to Alternative 1." As previously stated in these comments, subsistence fishing occurs throughout the year. Also, some limited commercial fishing often occurs prior to the spring ceremonial fishing. Some tribes also utilize surplus hatchery fish for cultural purposes (funerals, etc.) Reducing hatchery production would have significant adverse impacts on tribal ceremonial and subsistence fisheries. #135 #136

Table 4-100. Tribal Fishing Revenue. Page 4-167. This table contains erroneous estimates for in-river fisheries and should be re-done. The values shown are the result of erroneous harvest modeling combined with invalid assumptions about the value of the catch. There are also no commercial fisheries in the upper Columbia mainstem or in the Lower Snake River. References to these fisheries should be removed from the DEIS. #137 #138

Chapter 5. Cumulative Effects

5.3.3.2 Ceremonial and Subsistence Harvest for Tribes. Page 5-20. The last sentence regarding "localized tribal benefit over the next 10 years" is unreasonable. Given the significant adverse impacts on the tribes from the implementation of any of the given alternatives along with possible adverse impacts from climate change, it does not seem reasonable that there would be any localized tribal benefit. #139

5.3.3.3 Tribal Fishing and Hatchery Revenue. Page 5-20. The last sentence regarding "localized tribal benefit over the next 10 years" is unreasonable. Given the significant adverse impacts on the tribes from the implementation of any of the given alternatives along with possible adverse impacts from climate change, it does not seem reasonable that there would be any localized tribal benefit. #140

Chapter 8. List of Preparers

#141

Page 8-2, Agencies Consulted. It should be specifically noted that NMFS did not consult with the four Columbia River Treaty Tribes.

Appendix A Columbia River Hatchery Programs and Facility Information.

#142

Not all Columbia Basin hatchery programs were included.

Appendix B 2008-2017 U.S. v. Oregon Management Agreement.

#143

NMFS should have relied on the harvest rate schedules in this agreement for mainstem fisheries and should provide additional information as to why they chose alternatives that are inconsistent with this agreement that NFMS entered, and which is a federal Court Order.

Appendix C Hatchery Performance and Production by Alternative for Chinook Salmon

#144

NMFS should include the review by the *U.S. v. Oregon* Production Advisory Committee in the Comparison Analysis Tables, included in the attachments.

Appendix D Hatchery Performance and Production by Alternative for Coho Salmon and Steelhead.

#145

NMFS should include the review by the *U.S. v. Oregon* Production Advisory Committee in the Comparison Analysis Tables, included in the attachments.

Appendix F Hatchery Performance and Production by Alternative for Sockeye Salmon.

#146

NMFS should include the review by the *U.S. v. Oregon* Production Advisory Committee in the Comparison Analysis Tables, included in the attachments. Information on Wenatchee and Okanagan sockeye should also be included.

#147

Appendix G Overview of the All H Analyzer.

#148

The AHA model is not appropriate for this type of analysis since it is not capable of adequately modeling Columbia Basin mainstem fisheries utilizing abundance based harvest rate frameworks. It should not be used in the DEIS. Additional comments on the All H Analyzer are provided in a separate document.

Appendix H Assessment of Operational Effectiveness of Columbia River Hatchery Programs (HPV analysis)

#149

The best management practices for hatchery programs will vary according to the goals and objectives of each program as well as the status of local wild stocks. Establishing rigid protocols applicable to all programs for best management practices is not appropriate.

Appendix I Draft Socioeconomics Report Submitted by The Research Group to NMFS 2008.

Section 3.3.4.1 Harvesting. Page 22. California fisheries should be included since Columbia Basin stocks do contribute to all coastal fisheries. #150

Table 3.5. Columbia Basin Inland Harvests by Species Population Origins and by fishery for Status Quo Alternative. Page 24. This table omits tribal C&S harvest. It also omits tribal tributary harvest. It omits sockeye harvest. The commercial harvest data source is not cited and the are not correct for a recent year average. #151

3.3.4.2.1 Processing and Markets. Processing. Page 27. Tribal direct sales to the public are not adequately included but should be, as they make up a significant percentage of tribal commercial fishing revenue. #152 The statement that lower river caught fish typically fetch higher prices than the catch in upriver tribal fisheries is no longer true. Prices paid by wholesale buyers in tribal fisheries are often equal and sometimes higher than in the lower river. #153

Table 3.8. Columbia River Salmon Commercial Harvest Real Ex-vessel Price, Value, and Pounds. Page 28. These data are not correct. PacFIN apparently does not have complete final data. Data should be obtained directly from the states and tribes. Prices should be broken out for spring and summer fisheries separately as they are significantly different. Fall Chinook prices need to be separated by bright and tule since the prices for each are very different and the proportion of the total fall Chinook catch varies significantly. #154

3.3.4.3. Economic Contributions. Page 35. The statement that no fish of any run are sold for commercial purposes until ceremonial and subsistence needs are met is not correct. Allocating sufficient fish for ceremonial and subsistence harvest takes priority over commercial harvest, but this does not mean that in all cases the C&S catch comes before the commercial harvest. Tributary subsistence catch often occurs well after the conclusion of mainstem commercial fishing. #155

Appendix J Mitchell Act Hatchery EIS Socio Economics Impact Methods Appendix

Table A-1 Average Pounds per Fish (commercial) Page 12. The average pounds shown for in-river fisheries are not correct. Spring season, summer season, and fall season bright and tule groups should all be separated as the average pounds varies for each group. The average steelhead and sockeye weights are significantly high. Average weights from actual fish tickets should have been used. Using the wrong average weights produces errors in other parts of the economic analysis. This should be corrected. #156

Table A-2. Ex-vessel price per pound. Page 13. The prices shown for tribal and non-tribal commercial fisheries are not correct. Chinook prices should be broken out by spring, summer, and fall bright and fall tule prices as they are very different. This produces errors in the economic analysis and should be corrected. #157

Appendix K Chinook and Coho Salmon Fishery Modeling Approach for Application to the Mitchell Act EIS.

There are some serious issues with how NMFS modeled fisheries in Appendix K. NMFS develop a model that works with the AHA model as inputs linked to some of the modeling principles of the ocean FRAM. The AHA model is flawed as a tool to do Columbia Basin harvest modeling. The accessory model developed has several problems. #158

1. The catch modeling relies on smolt outmigrants that come out of the AHA model as a starting point and then applies some sort of maturation rates and ocean survival. The problem is in the number of smolts going out. Because the modeling relies on inaccurate estimates of spawners, they will have estimated the wrong numbers of outmigrating smolts. #159

2. For in -river fisheries, NMFS used the wrong harvest rates. They used the harvest rate schedules in the 2007 *U.S. v Oregon* Management Agreement, not the current one. So they didn't incorporate catch balancing into spring chinook. NMFS did not use the abundance based fall chinook schedule. NMFS based the fall harvest rates on the Bonneville run size not the river mouth run size. And NMFS applied the URB harvest rate to the tules and the MCB's which is wrong. For summer chinook, they did not use a mark selective sport fishery, and they applied a scalar to the summer harvest rates schedule that presumes that treaty and non-treaty fisheries cant catch all the summer Chinook allowed which is completely untrue. For coho they used average Bonneville based harvest rates, but they started with the wrong average catch. Since NMFS doesn't predict realistic fisheries, then incorrect escapement of hatchery and wild fish are estimated. Incorrect escapements will result in erroneous estimates of pHOS. Predicting pHOS incorrectly will result in incorrect decisions on how much hatchery production to cut (even presuming NMFS made a reasonable standard on PNI and pHOS). #160

3. They applied a completely incorrect percentage for C&S vs Commercial catch for the tribal fishery. This produces additional errors in the economic analysis. #161

4. They also failed to do any economic analysis of ocean troll (or sport)catches of Columbia River stocks occurring on the Oregon Coast south of cape falcon or any of the California fisheries that also have some impacts on Columbia River stocks. So they are underestimating the economic impact on those fisheries of reducing Columbia Basin hatchery production. #162

5. As far as their economic analysis, they made some mistakes in the treaty troll chinook harvest. They also drastically underestimated all the tributary sport harvest. (The sport harvest data is also used to estimate average tributary harvest, so they got their harvest modeling wrong there too). So, the current economic value of fisheries is simply not correct. And their predictions of economic impacts of any of the alternatives are not valid. There is no way to read the DEIS and get a realistic understanding about how badly any of the alternatives will affect any particular fishery. #163

6. NMFS is proposing reducing the Snake River fall chinook program from its current releases of 5.9million fish anually to 330,000 under Alternatives 2-4 and reducing it to 110,000 under Alternative 5. This almost certainly guarantees reductions in the adult returns to Lower #164

#164

Granite from 15-25,000 with 2-3,000 natural origin fish to returns of probably no more than 5,000 with probably no more than 1,000 natural origin fish. If river mouth returns of natural origin Snake River fall chinook drop to less than 2,000, then the in-river treaty harvest rate drops to 23% and the non-treaty harvest rate drops to 4%. If the river mouth return on natural origin fish drops to less than 1,000, then the inriver treaty harvest rate drops to 20% and the non-treaty harvest rate drops to 1.5%. A 1.5% harvest rate on URB's effectively means no commercial mainstem fishing and no chinook retention for the sport fishery in the mainstem from Buoy 10 on upstream.

#165

NMFS staff were asked for detailed steelhead modeling assumptions that were done for the DEIS, but this information was not provided.

#166

There is ample evidence in this appendix that the harvest and economic analysis is completely inadequate and useless. The most appropriate action would be for NMFS to withdraw this DEIS start over with their harvest modeling and economic analysis. The DEIS can not be adequately analyzed for impacts to tribal or other economies.

Appendix L Supporting Demographic and Socioeconomic Data for the Analysis of Environmental Justice Impacts

#167

Instead of just reservation population data, the actual numbers of enrolled tribal members should have been reported along with information that many tribal members live along the Columbia River in various communities and not simply on the reservations themselves. Additional comments are provided in a separate appendix.

CRITFC Comments on Mitchell Act DEIS, Appendix D: Review of Fitness Studies

Review of Studies Providing Measures of Relative Fitness and Relative Reproductive Success

#168

Analyses and the proposed alternatives presented in draft environmental impact statement (DEIS) for the Mitchell Act (MA) rely heavily on use of the proportionate natural influence (PNI) and the proportion of hatchery-origin spawners (pHOS) standards proposed by the Hatchery Scientific Review Group (HSRG 2009). Strict application of these standards can put severe restrictions on the scale of hatchery programs, and on the numbers of hatchery-origin fish that are permitted to augment abundance of a natural spawning population. Hence, all of the proposed alternatives in the MA DEIS, other than Status Quo, require moderate to substantial reductions in current and proposed hatchery programs in the basin.

Justification for the PNI and pHOS standards are based on the presumption that hatchery rearing will affect a substantial negative effect on fitness of a natural population that is receiving hatchery-origin adults, and that this effect is genetically-based. This presumption is derived from assessment of results of studies that provide quantified measures of relative fitness (RF) or relative reproductive success (RRS) of the hatchery-origin (HO) versus natural-origin (NO) fish. In particular, two recent studies of Hood River steelhead (Araki et al. 2007b and 2009) are widely cited as "proof" that hatchery programs have dramatically large deleterious effects on natural population productivity, and that even over a small number of generations, these effects will rapidly accumulate so as to render natural fitness of the affected population significantly reduced.

We feel that this conclusion is exaggerated and misrepresents the scientific data that exists across the breadth of studies that have examined the issue. Further, focus on this single aspect to drive hatchery management policy in the Columbia basin ignores benefits that hatcheries may have on other viable salmonid population (VSP) parameters – abundance, spatial structure and diversity (McElhany et al. 2000), and completely disregards the associated legal, social and political issues related to fisheries and mitigation responsibilities for operation of the hydrosystem. It is for these reasons, as summarized in the cover letter to our comments, that the tribes recommend that NOAA not proceed on developing a preferred alternative and a final environmental impact statement based on the proposed document.

#169

In this document, however, we concentrate solely on the rationale behind our conclusion that the presumption that use of hatcheries to supplement natural salmonid populations will significantly depress population fitness is exaggerated and misrepresents the available data. We provide synopses of all (to our knowledge) currently available information from studies of anadromous salmonids that have derived quantified measures of RF and RRS, then have summarized these data in a table and series of figures. The data were compiled from published manuscripts, technical reports and oral presentations made at scientific meetings. Results for several of these reports were previously presented within Table 1 of Araki et al. (2008) and/or in Figure 4 of the report Hatchery Reform Science by the Recovery Implementation Science Team (RIST 2009),

#169

copied below. Information from additional studies, many of them recently described for ongoing programs, are also presented.

Of note, substantial caution is required in interpreting these results, especially when illustrated together within a graph such as RIST (2009) Figure 4, whose format was followed in the summary graphs. The data are not necessarily directly comparable. The methodologies used to obtain the RF and RRS measures differ greatly among studies, and the management schemes followed by the hatchery programs vary dramatically in terms species, source of the broodstock, broodstock management, and hatchery rearing and juvenile release practices. These issues and how they affect the resulting RF/RSS data are described in more detail below, followed by the synopses, and table and graphs.

a) Some of the measures are of RF, representing differential survival between various life stages of HO and NO fish, while other studies are of RRS, involving differential natural spawning success plus survival to various life stages.
b) Results for six different species are represented among these studies. However, the substantial differences in life histories among species will undoubtedly have varying impact on how hatchery rearing may affect reproductive fitness and survival. For example, except for one study each of Atlantic and Chinook salmon, the studies (limited to those using local broodstock sources) that provided the lowest measures of RF/RRS were of steelhead (Figures 2a and 2b).
c) Some of the studies compare performance of hatchery stocks from non-local sources – often following several generations of deliberate selection for altered run/spawn timing, growth and/or behaviors relative to the natural population to which they were compared. When the objective is to assess effects of Supplementation hatchery programs (e.g., as described by Cuenco et al. 1993) for the purposes of rebuilding depressed populations, results from these studies using non-local hatchery stocks must necessarily be excluded (as was done in Figures 3 and 4).
d) Some of the studies involve hatchery programs which followed segregated broodstock management (only HO adults were incorporated into the broodstock), while others integrated NO fish into the broodstock (from small proportions to 100%, depending on the program) each generation. The two approaches will have obvious impacts on the extent to which genetically-based impacts on fitness may accumulate over generations.
e) The majority of the studies are indicated as "Confounded" within the "Effect on RF/RRS" column in the summary table. That is, results of the comparison between performance of HO and NO fish does not solely represent a genetically-based effect on fitness, but instead represents possible genetic effects <u>plus</u> confounding non-heritable environmental effects associated with the different spawning and juvenile life histories experienced by the fish being compared. If it possible to parse out the environmental effects from the overall RF/RRS measure, the resulting estimate for heritable RF/RRS would be closer to 1.0, and the data points for measures <1.0 would shift upwards. To illustrate this, the RF and RRS data from studies indicated as Confounded and < 1.0 were recalculated on the presumption that 50% of this difference was due to non-genetic effects. Graphing of the modified data (Figures 4a and 4b) provides a much more moderated impression of the magnitude might be of a deleterious effect of hatchery rearing that could accumulate (due to its heritable/genetic nature) over generations. Of note, even in those studies whose "Effect on RF/RRS" in the summary table is indicated

as "Genetic" (studies whose "common garden" designs permitted comparison of RF or RRS of fish with similar immediate rearing histories, but with differential natural versus hatchery genetic backgrounds), there are invariably additional confounding environmental effects that may have influenced results of the studies, typically to the detriment of the HO fish. #169

f) In Figures 3 and 4, results from the Araki et al. (2007a and b, 2009) for Hood River (HR) steelhead are differentiated from those of other studies using local source broodstock. These results from Araki et al 2007b and 2009 (although not those from2007a, as they indicate non-significant effects on natural fitness following a generation of hatchery rearing), as indicated above, have been widely referenced to support the view that hatchery effects on natural population fitness are substantially negative and threaten their viability, and that hatchery programs must therefore be reduced in scope and duration. However, examining the compiled results for all of the studies presented here, it is evident that the RRS measures for HR steelhead are at the extreme low end of the range for reported data. In light of the "outlier" nature of these HR steelhead data, normal scientific caution requires that they be noted as cause for concern, but that to the extent that one is permitted to make generalized statements, it would be that the magnitude of heritable effects of a properly managed hatchery supplementation program will likely of a much reduced magnitude relative to that indicated by the HR steelhead studies.

g) Again, a reminder is appropriate that recommendations on how salmonid hatchery programs are scaled and managed – in particular for supplementation of depressed natural stocks - must not be based solely on possible deleterious fitness effects, but must also consider counteracting positive effects on the other VSP parameters - population abundance, diversity and spatial structure. Additionally, decisions of how best to manage hatchery programs within the Columbia basin must not be made in isolation from the social, political and legal issues associated with fisheries mitigation and alternative actions (restoration of freshwater habitat, changes in hydrosystem management to reduce mortality, and harvest management) that might be effective in rebuilding the basin's salmon stocks.

In view of the substantial variation among study designs and the great dispersion of the resulting RF/RRS data, one cannot justifiably draw a general conclusion as to the magnitude of the effect that hatchery rearing may have on productivity of a natural population. The data do imply, however, that appropriate management of a hatchery program can diminish negative effects on reproductive fitness, both of an environmental and a genetic basis. Instead of imposing a single set of management standards (PNI and pHOS), hatchery programs need to be designed on a species and river-specific basis. The management plans must also be adaptive in nature so as to respond to environmental variation and to changes in population VSP parameters.

Abbreviations:

H - hatchery
W - wild
HO - hatchery-origin
NO - natural-origin

References #169

Hatchery Scientific Review Group (HSRG). 2009. Columbia River hatchery reform system-wide report. (http://www.hatcheryreform.us/hrp/reports/system/welcome_show.action)

McElhany, P., M. H. Ruckelshaus, M. J. Ford, T. C. Wainwright, and E. P. Bjorkstedt. 2000. Viable salmonid populations and the recovery of evolutionarily significant units. U.S. Dept. Commer., NOAA Tech. Memo. NMFS-NWFSC-42,156 p. (http://www.nwfsc.noaa.gov/publications/techmemos/tm42/tm42.pdf)

Recovery Implementation Science Team (RIST). 2009 RIST (Recovery Implementation Science Team). 2009. Hatchery Reform Science. National Marine Fisheries Service (NMFS) Northwest Regional Office, Salmon Recovery Division, Portland OR. (http://www.nwfsc.noaa.gov/trt/index.cfm)

#169

Table 1 - Araki et al. 2008 Evolutionary Applications 1(2): 342-355

Table 1. Conditions, methodologies and estimated relative fitness (RF) in studies that compared the relative fitness hatchery and wild salmonids. Genetic effects are presumed where hatchery and natural adults were artificially spawned and the fitness of the resulting offspring was compared (assumes environmentally-mediated maternal effects of rearing from egg to smolt have no effect on offspring fitness). All paternal effects are also assumed to be genetic (assuming no grandparental maternal effects). Genetic and environmental effects are considered confounded where hatchery-born and wild-born fish are directly compared because they experienced very different juvenile environments. The duration of the hatchery fish in captivity is expressed in the number of generations in captivity (NGC), which was approximated as years of hatchery operation divided by modal age at sexual maturity. In integrated programs, where either wild fish are spawned in the hatchery or hatchery-origin fish spawn in the natural environment, the ancestry of hatchery and wild fish may differ by only a single generation, even if the duration of the hatchery program is much longer.

I. Completed Study	Species	Life History segment	Method	Effect on RF	NGC	RF*
Broodstock of nonlocal origin						
Chilcote et al. (1986) Leider et al. (1990)	Steelhead (*Oncorhynchus mykiss*)	Lifetime	Group genetic mark	Confounded	6	0.13
Fleming and Gross (1993)	Coho (*O. kisutch*)	Adult-to-fry	Individual behavior	Confounded	5	(m) 0.62 (f) 0.82
McLean et al. (2003)	Steelhead	Lifetime	Mixed stock analysis	Confounded	10+	0.02–0.11
McLean et al. (2004)	Steelhead	Adult-to-smolt	Mixed stock analysis	Confounded	10+	0.04–0.07
Araki et al. (2007a)	Steelhead (winter-run)	Lifetime	Pedigree	Confounded	10+	(m) 0.06 (f) 0.11
Araki et al. (2007a)	Steelhead (summer run)	Lifetime	Pedigree	Confounded	10+	(m) 0.35 (f) 0.37
Scenario 2: Local origin						
Reisenbichler and McIntyre (1977)	Steelhead	Egg-to-parr	Group genetic mark	Genetic	2	0.8
Reisenbichler and Rubin (1999)	Steelhead	Fry to age-1	Group genetic mark	Genetic	6	0.8
Fleming et al. (1997)	Atlantic salmon (*Salmo salar*)	Adult to fry	Individual behavior	Environment	1	(m) 0.48 (f) ~1.0
Dannewitz et al. (2004)	Brown trout (*S. trutta*)	Egg-to-parr	Pedigree	Genetic	7	1.27
McGinnity et al. (2004)	Atlantic salmon	Egg-to-adult	Pedigree	Genetic	5	~1.0
Dahl et al. (2006)	Brown trout	Parr to parr (1 year in stream channel)	Nose tag	Genetic	7	~1.0
Ford et al. (2006)	Coho	Adult-to-smolt	Pedigree	Confounded	25	(m) 1.01 (f) 0.74
Araki et al. (2007a,b)	Steelhead (winter-run, integrated)	Lifetime	Pedigree	Confounded	1	(m) 0.70 (f) 0.88
					2	(m) 0.32 (f) 0.30
				Genetic	1 vs 2†	(m) 0.55 (f) 0.55

*m, male, f, female, when the relative fitness (RF) was estimated separately for each sex of parent.
†Hatchery fish having one wild parent and one first-generation hatchery parent (NGC-2) compared to hatchery fish having two wild parents (NGC-1).

#169

RIST Figure 4

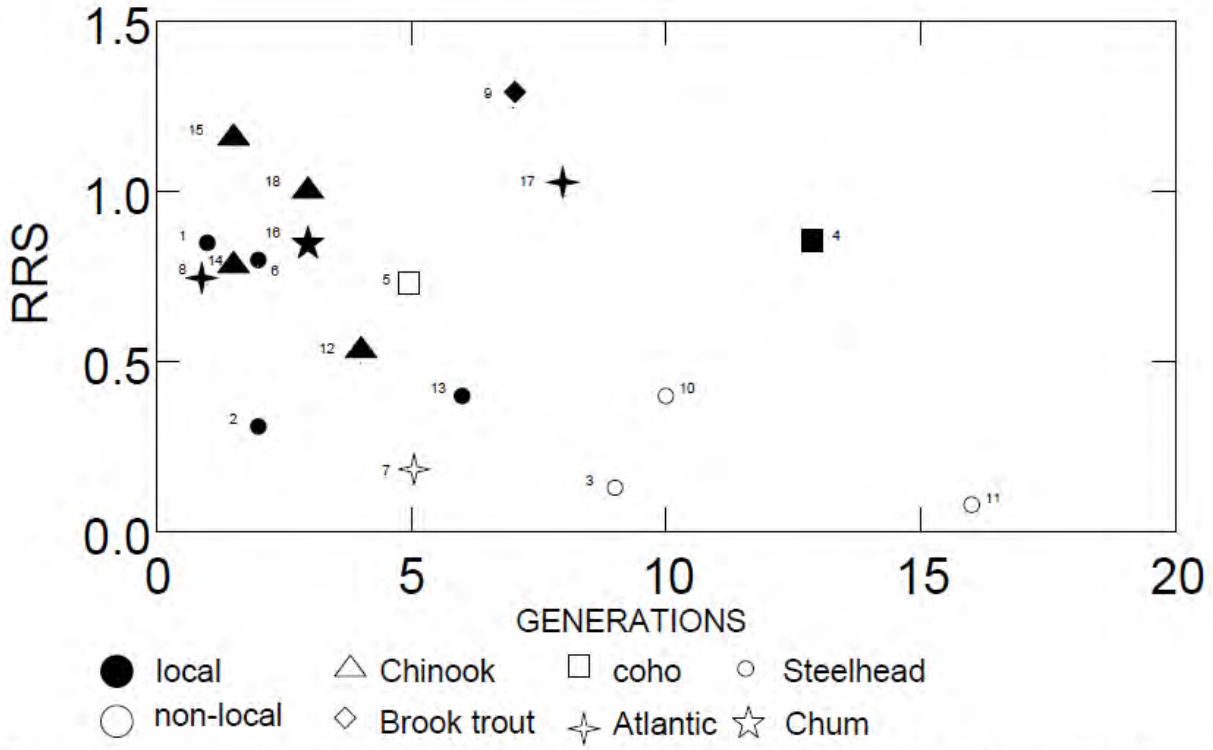


Figure 4 -- Summary of relative fitness estimates by species, broodstock origin, and generations in the hatchery (compiled by Berejikian, NWFSC). 1 - Araki et al. (2007b)), 2 - Araki et al. (2007b), 3 - Leider et al. (1990), 4 - Ford et al. (2006), 5 - Fleming and Gross (1993), 6 - Reisenbichler and McIntyre (1977), 7 - Fleming et al. (2000), 8 - Fleming et al. (1997), 9 - Dannewitz et al. (2003), 10 - Araki et al. (2007a), 11 - Araki et al. (2007a), 12 - Murdoch et al. (2008), 13 - Moran and Waples (2007), 14 - P. Moran (NWFSC, personal communication), 15 - P. Moran (NWFSC, personal communication), 16 – Berejikian et al. (2008), 17 - McGinnity et al. (1997.), 18 – Leth (2005).

#169

Hatchery broodstock of Non-Local origin

Leider, S. A., P. L. Hulett, J. J. Loch, and M. W. Chilcote. 1990. Electrophoretic comparison of the reproductive success of naturally spawning transplanted and wild steelhead trout through the returning adult stage. Aquaculture 88:239-252.

(preceded by: Chilcote, M.W., S.A. Leider, and J.L. Loch. 1986. Differential reproductive success of hatchery and wild summer-run steelhead under natural conditions. Transactions of the American Fisheries Society 115:726-735.)

- Electrophoretically identifiable Skamania (out-of-basin, segregated) stock Steelhead smolts stocked into the Kalama River in 4 successive broodyears
- Returning adults, beginning 2 years later, identified, and smolt production (Chilcote et al 1986) then adult production (Leider et al 1990) estimated for naturally spawning Skamania stock versus wild Kalama stock
- Relative productivity of Skamania stock was 75-79% for adult-to-smolt production (originally reported as 28% by Chilcote?), and 11-13% for adult-to-adult production
- Note: Poorer performance of Skamania stock was to have been expected – this hatchery stock differed from the Kalama River steelhead in life history, including altered timing for adult return, spawning timing, timing of seaward migration, and number of years spent at sea. These changes were the result of generations of intentional artificial selection and stock mixing. Additionally, there is the confounding environmental factor of comparing natural spawning performance of two groups of fish with different juvenile life history experience – hatchery rearing versus natural rearing – which should bias results against HO fish.

Fleming, I. A., and M. R. Gross. 1993. Breeding success of hatchery and wild coho salmon (*Oncorhynchus kisutch*) in competition. Ecological Applications 3:230-245.

- Adult Quinsam Hatchery coho (segregated for 4-5 generations) stocked into an artificial stream with 2 groups of wild returning adults from nearby rivers in 1988 and in 1989
- Time of capture and pre-stocking handling similar between stocks within years; fish were size-matched between stocks
- Compared spawning behaviors and estimated egg production per individual as a measure of breeding success
- Breeding success of hatchery females = 82%, and of hatchery males = 62% relative to wild
- Hatchery-reared females did experience greater delays in the onset of breeding, suffered more injuries, and nest site locations were significantly different from wild-reared females, but had a longer life span in the multiple density experiments. The delays in the onset of breeding and the longer life span may be due to their inability to directly compete with wild females for optimal territory, or could be a tactic to reduce the likelihood of nest superimposition
- Hatchery males in the multiple density experiments were more submissive, less aggressive, and incurred more injuries than did wild fish
- Note: RRS was evaluated in competition, therefore cannot determine if difference was attributable to competition and/or to inherent differences in productivity between stocks; is unclear if traits in hatchery stock had undergone directed selection during segregated

breeding. Additionally, there is the confounding environmental factor of comparing natural spawning performance of two groups of fish with different juvenile life history experience – hatchery rearing versus natural rearing – which should bias results against HO fish #169

McGinnity, P., Stone, C., Taggart, J.B., Cooke, D., Cotter, D., Hynes, R., McCamley, C., Cross, T. and A. Ferguson. 1997. Genetic impact of escaped farmed Atlantic salmon (*Salmo salar* L.) on native populations: use of DNA profiling to assess freshwater performance of wild, farmed and hybrid progeny in a natural river environment. J. Marine Sci. 54: 998-1008.

- Study designed to control for confounding environmental factors, to compare eyed-egg to parr/smolt survival of progeny from wild versus farmed stock adults in a natural river
- Wild = native Burrishoole stock (Ireland), and Farmed = Norwegian Mowi strain (6 to 8 generations intense segregated selective breeding for net-pen culture)
- In 2 years (1993 and 1994), between 6 to 15 adults per stock (wild versus farmed) and per sex were factorially mated, and the eggs reared to the eyed-stage
- Known numbers of viable eye-eggs per cross were pooled, then placed in egg boxes and planted into a stream devoid of other salmon
- Parr sampled by electroshocking and smolts collected in traps
- Relative total number of juveniles collected: WxW > WxH > HxW > HxH; however, even the maximum difference (HxH = 83% and 81% of WxW) was not statistically different
- Note: By making the crosses artificially and out-planting viable eyed-eggs, the study design avoids confounding environmental effects of differential homing and spawning success and differential survival to the eyed-stage. The Farmed stock was of out-of-basin source and had been in segregated intensive selective breeding for 6 to 8 generations for net-pen rearing.

Fleming, I. A., K. Hindar, I. B. Mjolnerod, B. Jonsson, T. Balstad, and A. Lamberg. 2000. Lifetime success and interactions of farm salmon invading a native population. Proceedings of the Royal Society, Series B Biology 267:1517-1523.

- 22 out-of-basin Norway National Breeding Program farm stock adult Atlantic salmon and 17 native wild salmon placed upstream of weir in small (1 km) river for natural spawning in Nov 1993; fish were homozygous for alternative MEP-2 alleles;
- 0+ parr sampled by electrofishing fall 1994, and out-migrating smolts captured in trap in 1995 and 1996; and juveniles genotyped for MEP-2
- The proportions of WW, WH and HH were similar for parr versus smolt (therefore no observation of progressive decrease in productivity beyond parr); essentially all hybrid fish had W mothers
- Relative fitness: WW = 68%, WH = 26%, HH = 6%, approximately; therefore RRS ≈ 18% [= (6x2 + 26)/22 / (68x2 + 26)/17 = 38/22 / 162/17], although the manuscript indicates lifetime RRS was 16%
- Observations of spawning behavior indicated that farm males had 24% the "spawning success" relative to wild males - courted fewer females and participated in fewer spawnings

- Farm females constructed fewer nests and had significantly smaller eggs, and showed only 32% "spawning success" relative to wild females #169
- Note: Oddly, the # of males and females within each group of adults was not provided, so RRS could not be estimated within sexes. The total number of adult progeny for the 39 broodfish on which this assessment was based only 26 fish. However, RRS ≈ 0.16 was similar when measured at the age 0 stage (122 fish) and at out-migration (352 fish), giving greater credence to the determination for the adult RRS measure in spite of it being based on such a small sample size. While results of this study might be applicable to assessing productivity of farmed fish following escape from net-pens, it is not appropriate for inferring effects of hatchery supplementation. The farmed stock being tested had undergone intense selective breeding over 5 generations, for improved growth in net-pen rearing and fecundity (likely related to the smaller egg size of farm females?), making it predictable that there might be a reduction in natural reproductive performance. Reduced egg size is associated with selection for high fecundity, which typically occurs in a selective breeding program for farmed stock, and small egg size (and smaller size of fry) is known to correlate positively with small fry size, and small fry size with reduced fry survival in nature. The design is severely confounded in that natural reproductive performance of NO fish was being compared to adult fish coming straight out of farm net-pens – held 1 month in round tanks, then "dumped" into the river.

McLean, J. E., P. Bentzen and T. P. Quinn. 2004. Differential reproductive success of sympatric, naturally spawning hatchery and wild steelhead, *Oncorhynchus mykiss*. Environmental Biology of Fishes 69: 359–369.

- Forks Creek hatchery stock created with Bogacheil Hatchery stock derived from Bogacheil R + Chambers Creek hatchery stock) – 10 generations of segregated hatchery rearing
- Smolts released and adults allowed to spawn naturally in Forks Creek for two years (1996 and 1997); thereafter, HO fish culled at the weir
- Hatchery stock is genetically distinct, and has been deliberately selected for early return and spawn timing
- Age 1+ juveniles sampled and mixed stock analysis used to assign them to hatchery or wild parents; presumed little or no hybrid crosses due to large (2+ month) differences in average return timing (and presumably spawn timing) between hatchery and wild
- 1996 smolts per female: W=18.8, H = 1.07, H/W = 0.57
- 1997 smolts per female: W=24.5, H = 1.33, H/W = 0.54
- But, W females generally larger/more fecund than H females; after adjusting for size/fecundity, 1996 H/W = 0.043 (… how was this lower than before adjustment???), and 1997 H/W = 0.071
- Note: Poor performance of the hatchery fish is entirely to be expected, given the manner in which they were deliberately selected for return/spawn timing that is altered from that of wild stock. Additionally, there is the confounding environmental factor of comparing natural spawning performance of two groups of fish with different juvenile life history experience – hatchery rearing versus natural rearing – which should bias results against HO fish.

#169

McLean, J. E., P. Bentzen and T. P. Quinn. 2003. Differential reproductive success of sympatric, naturally spawning hatchery and wild steelhead trout (*Oncorhynchus mykiss*) through the adult stage. Canadian Journal of Fisheries and Aquatic Sciences 60: 433-440.

- Examination of adult returns from the 1996 and 1997 broodyears described above in McLean et al. (2004)
- Broodyear of adult progeny assigned according to scale age
- Hatchery stock is genetically distinct, and has been deliberately selected for early return and spawn timing (see above)
- Adult progeny assigned to hatchery or wild parents using mixed stock analysis; presumed no hybrid crosses due to large (2+ month) differences in average return timing (and presumably spawn timing) between hatchery and wild
- 1996 average adult progeny per female: W=3.73, H = 0.41, H/W = 0.110
- 1997 average adult progeny per female: W=6.70, H = 0.16, H/W = 0.024
- Note: As stated above (McLean et al 2004), poor performance of the hatchery fish is entirely to be expected, given the manner in which they were deliberately selected for return/spawn timing that is altered from that of wild stock. Additionally, there is the confounding environmental factor of comparing natural spawning performance of two groups of fish with different juvenile life history experience – hatchery rearing versus natural rearing – which should bias results against HO fish.

Araki, H., W. R. Ardren, E. Olsen, B. Cooper, and M. S. Blouin. 2007a. Reproductive success of captive-bred steelhead trout in the wild: evaluation of three hatchery programs in the Hood River. Conservation Biology 21 (1), 181-190.

- See below: Hatchery broodstock on Local origin – Integrated broodstock management

Hatchery broodstock of Local origin – Segregated broodstock management

Reisenbichler, R. R., and J. D. McIntyre. 1977. Genetic differences in growth and survival of juvenile hatchery and wild steelhead trout, *Salmo gairdneri*. Journal of the Fisheries Research Board of Canada 34:123-128.

- Deschutes River HO and NO adult steelhead were captured and artificially spawned such that their progeny were electrophoretically identifiable
- Equal numbers of HH, HW and WW eyed-eggs or unfed fry were then stocked into sections of 4 natural streams or a hatchery pond
- periodic samples of surviving fry collected by electrofishing or in traps
- in 5 of 12 samples collected in the four natural streams: (2 of 4, 1 of 3, 0 of 3, and 2 of 2), WW fry survived significantly better than HH, and HW was intermediate; in the other 7 of 12 samples there was no statistical difference
- in the hatchery pond, in contrast, HH fish survived significantly better than WW, with HW intermediate
- Note: The HO population had gone through 2 generations of apparently non-random segregated hatchery breeding (there was already noted a difference in spawn timing

#169

between HO and NO steelhead – although spawning for this study was conducted on the same day) which potentially biases results against the HO fish. Additionally, the study was conducted in competition, without comparisons of performance under separate rearing. The conclusion that the HH fish were "genetically different" overstates the weight of the data, but if the HH fish are genetically different, isn't it likely due to broodstock management and not to an unavoidable effect of hatchery rearing?

Reisenbichler, R. R., and S. P. Rubin. 1999. Genetic changes from artificial propagation of Pacific salmon affect the productivity and viability of supplemented populations. IC ES Journal of Marine Science 56:459-466.

- This manuscript reviews several published reports on relative fitness of HO and NO, but also provides data on an study, indicated as "in progress", that the authors are conducting on Clearwater River (Idaho) summer steelhead (although no subsequent publication was found in the literature …?)
- For the latter, very few details of the study design were provided
- In two broodyears, adults of hatchery-origin (North Fork Clearwater origin, 6 generations in segregated rearing) and wild-origin (Middle Fork Clearwater) were apparently artificially spawned, and their eggs reared to the eyed-stage prior to "release" (in a natural stream environment …?)
- Age 1+ parr apparently captured and identified as H vs. W by some means (?)
- Survival of the eyed-eggs to age 1+ parr for hatchery compared to wild – RF was approx. 0.8 (average for the 2 broodyears? - indicated simply as a data point in Figure 1)
- Note: The lack of details and data on study design, and the inability to find a subsequent published report/manuscript cast doubt on the reliability of these data. The hatchery stock, while derived from a nearby wild population, had apparently been in segregated rearing for 6 generations.

McGinnity, P., P. Prodohl, N. O. Maoileidigh, R. Hynes, D. Cooper, N. Baker, B. O'Hea and A. Ferguson.. 2004. Differential lifetime success and performance of native and non-native Atlantic salmon examined under communal natural conditions. Journal of Fish Biology 65(Suppl. A):173–187.

- compare relative survival: A) eyed-egg to smolt survival, and B) eyed-egg to adult - of wild (W) versus native ranched stock (R) versus wild non-native (nN) Owenmore River stock released in a natural river
- Wild = native Burrishoole stock (Ireland), and sea-ranched = native Burrishoole stock after 18 generations of segregated rearing, non-native -= wild Owenmore River stock (80 km north)
- A) eyed-egg to smolt: known number of eyed eggs for each cross type planted in artificial redds, and progeny sampled as parr and smolts by electrofishing and in out-migrant trap
- A) Relative survival eyed-egg to smolt: R = 98% and nN = 81%; the R stock did, however, show greater early out-migration as 1+ pre-smolts and a higher proportion that were mature

- B) smolt to adult: smolts for each cross type were reared in the hatchery, microtagged, and released; survival to adult stage measured by sampling in fishery and in in-migrant trap #169
- B) Relative survival smolt to adult (after accounting for estimated capture rate in coastal fishery): R = 104% (11.8% / 11.3%) and nN = 27% (3.1% / 11.3%); also, R showed a sex-ratio of returning adults significantly skewed in favor of females while W was 1:1, and time of freshwater entry for R was significantly delayed relative to W
- The low nN survival to adult did not appear to be due to straying
- Note: Common garden rearing eliminates primary confounding environmental effects. Despite 18 generations of segregated hatchery spawning/juvenile rearing, the sea-ranched stock (derived from wild Burrishoole stock) showed no differences in survival. In contrast, the wild non-native stock showed significant reduction in survival, despite the fact that its native coastal stream was only 80 km distant

Dannewitz, J., E. Petersson, T. Prestegaard, and T. Järvi. 2003. Effects of sea-ranching and family background on fitness traits in brown trout *Salmo trutta* reared under near-natural conditions. Journal of Applied Ecology 40:241-250.

- Comparisons of eyed-egg to parr survival of eyed-eggs planted in egg boxes within an artificial stream (110 m, 345m^2)
- factorial matings (in 1997 and 1999) of wild stock (W), versus sea-ranched stock (S) (local origin, 7 generations segregated), versus reciprocal hybrids (WxS and SxW); 10 females and 10 males each per stock
- Stream drained and 0+ parr collected and assigned parentage via microsatellite analyses
- In both years, survival to parr was numerically greater for SxS versus WxW, and in one year survival of hybrids was lower than for intra-stock crosses, and was greater for hybrids with S female parent
- After accounting for family effects (wide variation in survival between families) no significant difference in survival between crosses
- Note: HO fish were from a segregated hatchery stock; NO and HO fish both created by artificial spawning and planting of eggs in egg boxes – therefore eliminating confounding environmental effect of comparing fish with differing juvenile life histories

Dannewitz, J., E. Petersson, J. Dahl, T. Prestegaard, A. Lofs and T. Järvi. 2004. Reproductive success of hatchery-produced and wild-born brown trout in an experimental stream. Journal of Applied Ecology 41: 355-364.

- In 2000, 6 females and 6 males each from a wild stock (W) and a sea-ranched stock (S) (local origin, 7 generations segregated) stocked into an artificial stream (110 m, 345m^2) for natural spawning
- Stream drained and 0+ parr collected and assigned parentage
- Parr production was greater for the hatchery stocks, although difference was not significant; of note, there was great disparity in individual parentage, with a single WxS mating producing the majority of parr
- No assortative mating observed

- Reproductive success was not significantly different between stocks; RRS reported as 1.27 in Table 1 (Araki et al. 2008), although am unsure how this was calculated …? #169
- Note: The sea-ranched stock was segregated for 7 generations, and there is the confounding environmental factor of comparing natural spawning performance of two groups of fish with different juvenile life history experience – hatchery rearing versus natural rearing – both conditions should bias results against sea-ranched stock
- (Experiment was repeated in 2001 with S (7th generation) and new first generation - created from wild parents - hatchery stock; first generation hatchery males fathered more progeny than seventh generation males, although no difference observed between females

Dahl, J., E. Petersson, J. Dannewitz, T. Jarvi, and A. C. Lof. 2006. No difference in survival, growth and morphology between offspring of wild-born, hatchery and hybrid brown trout (*Salmo trutta*). Ecology of Freshwater Fish 15:388–397.

- Comparison of juvenile FW survival (age1 to age 2 parr)
- 10 matings each made in fall 1998 of wild stock (W), sea-ranched stock (S) (local origin, 7 generations segregated), and reciprocal hybrids (WxS and SxW); 10 females and 10 males each per stock
- After 1 year rearing under hatchery conditions (size was similar among cross types) the parr were nose tagged and stocked into an artificial stream (110 m, 345m^2) for an additional 1 year FW rearing under natural conditions
- At harvest, no differences among cross types – neither for survival (approx. 40%) nor for growth
- Note: As for the 2 Dannewitz studies of this same stock, segregated rearing of this sea-ranched (hatchery) stock affected no difference in survival

<u>Hatchery broodstock of Local origin – Integrated broodstock management</u>

Araki, H., W. R. Ardren, E. Olsen, B. Cooper, and M. S. Blouin. 2007a. Reproductive success of captive-bred steelhead trout in the wild: evaluation of three hatchery programs in the Hood River. Conservation Biology 21 (1), 181-190.

- A study comparing RRS of traditional (out-of-basin segregated) summer run (Skamania – 1995 & 1996) and winter run (Big Creek - 1991) hatchery stocks used to supplement the depressed wild Hood River steelhead.
- Also, compared RRS of new integrated winter run hatchery fish (1995 to 1997) to wild Hood River steelhead
- Microsatellite and parentage analysis performed on DNA extracted from archived scales collected since 1991 on all natural origin fish arriving at Powerdale Dam (and passed upstream for natural spawning), and all hatchery origin fish that were passed upstream
- RRS Big Creek (1991) females = 0.11, males = 0.06
- RRS Skamania (1995 & 1996 – average of values with and without consideration of estimated angling upstream of Powerdale Dam) females = 0.37 and males = 0.35
- RRS of first generation hatchery reared fish produced from wild origin broodfish (1995 to 1997 – average of values with and without consideration of estimated angling upstream of Powerdale Dam) females = 1.08 and males = 0.98

- Quote from Abstract: "These are the first data to show that a supplementation program with native broodstock can provide a single-generation to the boost to the size of a natural steelhead population without obvious short-term fitness costs." #169
- However, they also caution: "On the other hand, crosses between hatchery fish of either type (traditional or supplementation) were less fit than expected, suggesting a possible interaction effect."
- Note: see below

Araki, H., B. Cooper, and M. S. Blouin. 2007b. Genetic effects of captive breeding cause a rapid, cumulative fitness decline in the wild. Science 318:100-103.

- As described above, a supplementation hatchery (captive, C) program for winter-run steelhead in the Hood River began in 1991, using only wild (W) fish as parents. Substantial numbers of returning adult progeny (C) began in 1995.
- Beginning in 1995, the supplementation hatchery program used some of these HO returning adults as broodstock (in each case crossing them to wild fish to produce second generation of HO fish - C(CxW), as well as additional crosses with only wild x wild broodstock - C(WxW); and wild crosses – W(WxW) - also occurred each BY
- In 1998, 1999 and 2000, these second and first generation HO fish, and the wild fish, were allowed to spawn naturally. Their adult progeny were detected in run years beginning in 2001, and RRS calculated relative to wild fish, and relative to each other - C(CxW) vs. C(WxW).
- RRS of C(WxW) vs. wild (involves a difference associated with 1 generation of hatchery rearing): females = 0.77 and males = 0.49 (average for the 3 BYs). This comparison is confounded by environmental effect of the two groups of fish having experienced different spawning and juvenile rearing experiences.
- RRS of C(CxW) vs. wild (involves a difference associated with 1.5 generations of hatchery rearing): females = 0.30 and males = 0.32 (average for the 3 BYs). This comparison is confounded by environmental effect of the two groups of fish having experienced different spawning and juvenile rearing experiences.
- RRS of C(CxW) vs. C(WxW) (involves a difference associated with 0.5 generations of hatchery rearing): females = 0.55, and for males = 0.55 (average for the 3 BYs). This design is <u>not</u> confounded by environmental effects, as both groups were spawned and reared in the common hatchery environment. Therefore, the observed reduction in fitness is apparently due entirely to a genetic influence derived from a single generation of hatchery rearing in one of the grandparents.
- Note: see below

Araki, H., B. Cooper, and M. S. Blouin. 2009. Carry-over effect of captive breeding reduces reproductive fitness of wild-born descendants in the wild. Biology Letters doi: 10.1098/rbsl.2009.0315 (http://rsbl.royalsocietypublishing.org/content/5/5/621.full.pdf+html)

- the Hood River began in 1991, using only wild fish as parents for the winter run steelhead supplementation program. Substantial numbers of returning adult progeny (C) began in 1995.

#169

- Beginning in 1995, some of these returning HO adults spawned naturally with each other - W(CxC) or with a wild fish -W(CxW), as well as additional wild x wild crosses - (WxW) - occurred
- In 1998, 1999 and 2000, these fish were allowed to spawn naturally, and their adult progeny were detected in run years beginning in 2001, and RRS calculated relative to wild fish, and relative to each other - W(CxC) vs. W(CxW) vs. W(WxW)
- RRS for W(CxW) vs. W(WxW), involving 0.5 generation difference in hatchery rearing, was: females = 0.84, and males = 0.92
- RRS for W(CxC) vs. W(WxW), involving 1 generation difference in hatchery rearing, was: females = 0.42, and males = 0.31
- This design, because the fish were all spawned and reared in the common natural environment, effectively limits observed differences in productivity to genetic causes
- Note: see below

Notes regarding Araki et al studies of Hood River steelhead:

- The authors report a series of RRS estimations following analysis of data from different subsets of BYs, involving a) comparisons of hatchery origin fish to wild fish which are confounded by environmental effects due to the fish having experienced differing spawning and juvenile rearing backgrounds, or b) comparisons of fish with NO vs. HO differences in grand-parentage, but similar parentage (common parental spawning and rearing environments), such that observed productivity differences can be attributed solely to genetic effects.
- The differences attributable to genetic effects in the latter studies are dramatic, and generally increase in magnitude with increase in the number of generations of hatchery rearing in the background of the fish. And, it is these results in particular which have been highly publicized and are cited by the HSRG and in the Mitchell Act draft EIS, as providing the rationale for (greatly) reducing the scale of current hatchery supplementation programs, and for impeding initiation of new programs.
- On the other hand, RRS measures reported in these studies for the comparisons that are confounded by environmental effects tend to be of a (much) lower magnitude. There is an apparent contradiction between these results, which the authors have not adequately addressed.
- Concerning these RRS comparisons which are confounded by environmental effects, in Araki et al. (2007a) the authors state: "Wild and hatchery fish experience very different freshwater environments. Thus, any fitness differences we observed could have a genetic or environmental origin, and a lack of difference *(RRS in their 2007a study was not significantly different from 1.0)* could conceivably include environmental deviations that are the <u>opposite</u> of genetic effects." The authors anticipate that genetic effects associated with hatchery rearing will be negative, therefore the environmental effects must be positive??? By what mechanism(s) do the authors suspect that spawning and juvenile rearing in a hatchery improves natural spawning success and productivity of these hatchery-origin fish when they reach the adult stage? Common sense, and data from other studies, would indicate that these environmental effects will also likely be negative, and would be additive to negative genetic effects. Therefore, if one observes a measure of RRS that is not significantly different from 1.0 in a study where the genetic and

#169

environmental influences on productivity are confounded, one must conclude that the portion attributable solely to genetic effects was even smaller, and certainly insignificant. Likewise, for a measure of RRS that is lower than 1.0, if the proportion of the reduction attributable to environmental effects could be subtracted from the overall reduction, the RRS value would increase, and the RRS measure is graphed such as in RIST Figure 4, the data point would shift upwards towards 1.0, such as illustrated in Figures 3a and 3b.

- And, not only are the RRS measures from the genetic-effect only designs of a larger magnitude than expected relative to their RRS measures for their confounded designs, they are also at the extreme low end for the array of RF and RRS measures observed in other studies (not including those studies which made comparisons involving non-local stocks, which would be invalid if the intent is to assess impacts of a hatchery supplementation program, *sensu* Cuenco et al 1993).
- While there is no denying the "elegance" of the designs in Araki et al. 2007b and Araki et al. 2009 that restrict observed productivity differences to genetic effects, taken in context with results across the breadth of published studies, scientific caution dictates that one be much more reticent presuming the generalized predictions of dramatic and rapid fitness loss associated with supplementation that have resulted from the manner by which the authors' results have been publically presented and vaunted.
- One additional potentially confounding factor to these Araki et al. studies relates to the manner by which broodstock for the winter run steelhead program were chosen. These fish were sampled from among the winter run adults upon their return to the fish trap at Powerdale Dam. However, the Hood River also has a run of summer run steelhead, and there is overlap in return timing between stocks, and managers are certain that some level of misidentification has occurred in the past. The summer and winter runs have differing spawning and juvenile rearing life histories, such that hybridization between stocks will likely result in fish maladapted for one life history or the other. This situation was discussed by Matala et al (2009), and a relatively reliable molecular genetics test to distinguish between ecotype was described. To assure the readers that the differences that they are not, at least in part, attributable to the artifact of use of misidentified or hybridized individuals among the winter-run broodstock, Araki et al need to test and report that such was or was not the case.

  Matala, A. P., R. French, E. Olsen and W. R. Ardren. 2009. Ecotype distinctions among steelhead in Hood River, Oregon, allow real-time genetic assignment of conservation broodstocks. Transactions of the American Fisheries Society 138: 1490-1509.

Fleming, I. A., A. Lamberg, and B. Jonsson. 1997. Effects of early experience on the reproductive performance of Atlantic salmon. Behavioral Ecology 8:470-480.

- Study to assess the environmental effects of juvenile rearing on spawning success - differences between wild reared adults and adults that were hatchery reared
- Salmon from a "common genetic background" (achieved by mixing wild-origin and sea-ranch hatchery-origin fish both in the river for natural spawning and in the hatchery broodstock … am unclear as to how equivalent the genetic background would be …?) were produced by natural spawning and rearing, and by artificial spawning and hatchery rearing

- Upon smolting, the sea-ranched smolts were released into the river with the wild smolts #169
- Adults were captured after 1 year (90%) or 2 years (10%) in the ocean, then stocked into experimental spawning arenas at varying densities and sex-ratios
- Observations made on spawning behaviors, and on number of eyed-eggs produced
- Sea ranched and wild males differed in competitive and reproductive performance, with wild males having significantly higher reproductive success
- There were few differences in competitive and reproductive performance between sea ranched and wild females
- Body size was shown to play a key role in competition in both sexes, with larger individuals being more aggressive
- A few of the large males in each arena dominated spawning, and attained considerably higher reproductive success that all other males
- For females, larger body size principally provided higher fecundity, but also influenced competitive behavior and early egg survival, likely through the effects on nest quality. In males, body size was highly correlated with aggressive behavior
- RRS for males averaged approx. 0.48; RRS for females was approx. 1.0
- Therefore, because the fish were from a common genetic background, "our results suggest that the differences in reproductive performance may be ascribed to early juvenile experience and related to the development of specialized skills important for not only early life, but also later river life". This study indicates that environmental conditions may account for some (a large?) portion of the observed differences in reproductive success of HO versus NO – at least among males, rather than hatchery-dependent genetic changes.

Leth, B. D. 2005. Reproductive success of hatchery and natural origin Chinook salmon (Oncorhynchus tshawytscha) in a stream with a history of supplementation management. Master's thesis. University of Idaho, Moscow, Idaho.

- RRS comparison of juvenile recruits per spawner for BY 2002 Pahsimeroi River spring/summer Chinook for BY 2002 NO and HO (first generation - produced from wild parents) adults
- Chi square analysis, within sexes, of observed and expected numbers of progeny
- For both males and females, no significant differences –RRS:

	95% assignment	80% assignment	average
Females	0.89	1.11	1.00
Males	1.21	1.23	1.22

- Acclimation site downstream, but not dramatically, of the primary spawning area
- Spawning area surveys showed similar distribution and spawn-timing of HO and NO adults
- There was no evidence of assortative mating
- Note: HO fish from an only partially integrated stock – they were 3rd generation, with 1st generation being 50% segregated HO fish, crossed to NO fish in the 2nd generation; additionally, there is the confounding environmental factor of comparing natural spawning performance of two groups of fish with different juvenile life history experience – hatchery rearing versus natural rearing – which should bias results against HO fish

#169

Ford, M., H. Fuss, B. Boelts, E. LaHood, J. Hard, and J. Miller. 2006. Changes in run timing and natural smolt production in a naturally spawning coho salmon (*Oncorhynchus kisutch*) population after 60 years of intensive hatchery supplementation. Canadian Journal of Fisheries and Aquatic Sciences 63:2343-2355.

- Minter Creek coho salmon have undergone approx. 25 generations of supplementation following a segregated (?) hatchery program that used a broodstock of local origin, but with no restrictions (culling) of HO spawners (so the wild population was integrated)
- In 2000 and 2001, similar numbers of NO and HO adults were passed upstream of hatchery weir for natural spawning
- Size and run-timing similar between HO and NO, but run-timing much earlier than historic timing
- RRS not significantly different from 1.0 for both sexes: males = 1.01, females = 0.74
- Note: The wild population was integrated and so the NO fish tested had an unknown proportion of hatchery ancestry (as inferred by the altered run timing). The authors speculate that the lack of difference in RRS is most likely due to fitness of the NO stock having already been substantially reduced due to effects of their hatchery ancestry, such that the additional generation of hatchery rearing in the HO resulted in a reduction in fitness that was too small to be detected within the power of the study design and analysis. There is also the additional confounding environmental factor in the design of comparing natural spawning performance of two groups of fish with different juvenile life history experience – hatchery rearing versus natural rearing – which should bias results against HO fish.

Berejikian, B. A., D. M. Van Doornik, J. A. Scheurer, R. Bush. 2009. Reproductive behavior and relative reproductive success of natural - and - hatchery - origin Hood Canal summer chum salmon (*Oncorhynchus keta*). Canadian Journal of Fisheries and Aquatic Sciences, 66:781-789.

- In both 2004 and 2005, NO and HO (3 generations, integrated) Quilcene River (Puget Sound WA) adult chum salmon were collected and stocked into an artificial stream – 12 fish per sex for both stocks
- Spawning behavior observed, and fry collected and genotyped for parentage assignment
- Similar spawning behaviors between stocks
- RRS not significantly different from 1.0 (males = 1.03; females = 0.72)
- Note: there is the confounding environmental factor of comparing natural spawning performance of two groups of fish with different juvenile life history experience – hatchery rearing versus natural rearing – which should bias results against HO fish

Schroder, S. L., C. M. Knudsen, T. N. Pearsons, T. W. Kassler, S. F. Young, C. A. Busack, and D. E. Fast. 2008. Breeding Success of Wild and First-Generation Hatchery Female Spring Chinook Salmon Spawning in an Artificial Stream. Transactions of the American Fisheries Society, 137:1475-1489.

- Report of 7 trials in which ripe wild-origin and first generation hatchery-origin females

#169

and males were stocked into an artificial stream for spawning

- Observations were made on spawning behaviors and redd characteristics, and fry were collected to assess relative adult-to-fry reproductive success via microsatellite DNA parentage analysis
- No differences detected in the egg deposition rate; subtle differences between hatchery and wild females in redd abandonment, egg burial, and redd location choice
- Average RRS for females = 0.94
- Geomean RRS calculated as the straightforward ratio of progeny identified with a H or W female parent divided by the total number of H or W female parents =0.86 (from Table 8 in Schroder et al. 2010)
- Note: Artificial stream design eliminates confounding influences attributable to differential homing and spawning distribution of HO and NO fish. In 6 of the 7 trials the W females were larger than the H females, although "body weight had no effect on egg deposition, egg-to-fry survival, or on the capacity to convert absolute fecundity to fry".

Schroder, S. L., C. M. Knudsen, T. N. Pearsons, T. W. Kassler, S. F. Young, E.P. Beall, and D. E. Fast. 2010. Behavior and Breeding Success of Wild and First-Generation Hatchery Male Spring Chinook Salmon Spawning in an Artificial Stream. Transactions of the American Fisheries Society, 139:989-1003.

- Report of 7 trials in which ripe wild-origin and first generation hatchery-origin females and males were stocked into an artificial stream for spawning
- Observations were made on spawning behaviors, and fry were collected to assess relative adult-to-fry reproductive success via microsatellite DNA parentage analysis
- Male breeding success increased with weight, and wild males were on average slightly larger than hatchery origin males
- RRS calculated as the straightforward ratio of progeny identified with a H or W male parent divided by the total number of H or W males parents (adult + jack + precocious parr); geomean for RRS was 0.95
- Note: Artificial stream design eliminates confounding influences for differential homing and spawning distribution. RRS was not significantly different from 1.0, even without removing confounding effects

Williamson, K. S. A. R. Murdoch, T. N. Pearsons, E. J. Ward, and M. J. Ford. 2010. Factors influencing the relative fitness of hatchery and wild spring Chinook salmon (Oncorhynchus tshawytscha) in the Wenatchee River, Washington, USA. Canadian Journal of Fisheries and Aquatic Sciences 67: 1840-1851.

(Replaces: Murdoch, A., T. Pearsons, T. Maitland, M., and K. Williamson. 2008. Monitoring the reproductive success of naturally spawning hatchery and natural spring Chinook salmon in the Wenatchee River. BPA Project No. 2003-039-00. Bonneville Power Administration, Portland, Oregon. http://pisces.bpa.gov/release/documents/documentviewer.aspx?doc=P106770. Department of Energy, Bonneville Power Administration.)

- Report of RRS results for two BYs (2004 and 2005) of wild and hatchery origin Wenatchee/Chiwawa River spring Chinook, based on juvenile (out-migrating age 1 smolts) per spawner

#169

- Integrated hatchery supplementation program in 4th generation (began 1989)
- Average RRS for females = 0.52, and for males = 0.32
- However, analyses showed significant confounding environmental effects:
    - females – very large effect for spawning location (concentration in lower river due to homing to acclimation site – higher spawner density and poorer habitat) and lesser effects for age/size (in part attributable to accelerated growth in hatchery) and for run-timing
    - males – very large effects for spawning location (concentration in lower river due to homing to acclimation site – higher spawner density and poorer habitat) and for age/size (tendency to return higher % of jacks, attributable to accelerated growth in hatchery), and lesser for run-timing
- Note: because these confounding effects are in large part environmental (non-heritable effects associate with hatchery rearing practices), RRS attributable to genetic effects is much closer to 1.0 (when using spawning location as a predictor in two alternative statistical models, the effect of origin diminished in both, becoming non-significant in one of them) Additional non-genetic confounding factors associated with the different juvenile life history experience – hatchery rearing versus natural rearing –could bias results against HO fish

Sharpe, C. S, P. L. Hulett, C. W. Wagemann, M. P. Small and A. R. Marshall 2010. Natural Reproductive Success of First-generation Hatchery Steelhead Spawning in the Kalama River: A Progress Report. Washington Department of Fish and Wildlife, Fish Program, Fish Science Division FPA 09-07.

- Progress report with nearly complete RRS data for 2003 broodyear of Kalama River summer run steelhead
- Hatchery stock initiated with wild adults from 1998 to 2000 run years; age 1 smolts (a portion acclimated) and released
- Adult returns (progeny) sampled in 2007, and assigned parentage to via microsatellite analyses
- RRS for progeny assigned with 2 BY 2003 parents = 1.0
- RRS for progeny assigned with only 1 BY 2003 parent = 0.55
- Note: This study is ongoing, and these data should be updated annually. Recruits per spawner were low of 873 HO and 897 NO parents, only 70 (two parents) + 66 (one parent) progeny were identified among the 2007 returns.

Baird, M. E. Berntson E., T. Hoffnagle, S. Boe, J. Harbeck, R. Carmichael and P. Moran. 2008. Relative Reproductive Success in Spring Chinook Lostine River, Grande Ronde Basin. Oral presentation at the Lower Snake River Compensation 2008 Annual Meeting. (http://www.fws.gov/lsnakecomplan/Happings/2008AnnualMeeting.html)

- Catherine Creek spring Chinook hatchery program
- RRS reported for 4 BYs (2002 to 2005) based on juvenile (parr) recruits per spawner
- Slide 9: Females – geomean (1.88, 1.16, 1.55, 0.94) = 1.34
- Slide 9: Males – geomean (1.11, 0.58, 0.81, 1.33) = 0.91

- Note: The study design has the confounding environmental factor of comparing natural spawning performance of two groups of fish with different juvenile life history experience – hatchery rearing versus natural rearing – which should bias results against HO fish. The PPT presentation also provides RRS information on Lostine River spring Chinook and Little Sheep Creek steelhead – however, more recent information for these two programs is provided in the presentations described below. #169

Bernston, E. 2009. Relative Reproductive Success in Spring Chinook Lostine River, Grande Ronde Basin. Oral presentation at the Nez Perce Tribe, Department of Fisheries Resources Management, 2009 Symposium on Salmon Supplementation. (http://www.nezperce.org/~dfrm/Research/2009%20Symposium.html)

- Lostine River spring Chinook hatchery program initiated as a captive broodstock program with captured wild parr in 1996, followed by integrated supplementation program with returning adults in 1997 – 1.5 generations
- RRS reported for BY 2001, 2002 and 2005, based on juvenile (parr) recruits per spawner
- Slide 8: Females - geomean (1.13, 2.12, 0.84) = 1.26
- Slide 8: Males - geomean (0.76, 0.90, 1.91) = 1.09
- Note: The study design has the confounding environmental factor of comparing natural spawning performance of two groups of fish with different juvenile life history experience – hatchery rearing versus natural rearing – which should bias results against HO fish.

Bernston et al. Coastwide Salmon Genetics Meeting 2010 presentation
(submitted: Berntson, E.A., R.W. Carmichael, M.W. Flesher, E.J. Ward and P. Moran *In Review*. Swimming against the current: diminished reproductive success of hatchery fish complicates the use of supplementation in Snake River steelhead recovery. Submitted to Transactions of the American Fisheries Society)
(replaces: Moran, P., and R. S. Waples. 2007. Monitor and evaluate the genetic characteristics of supplemented salmon and steelhead. Project number 1989-096-00. Research Progress Report Oct 5, 2007. Report to Bonneville Power Administration.
http://pisces.bpa.gov/release/documents/documentviewer.aspx?doc=P107430)

- Reports RRS results for Little Sheep Creek steelhead – integrated supplementation program initiated in 1982 – 5 generations
- All adults passed above the weir were tissue sampled, and juveniles were collected annually
- Geomean RRS for adult-to-juvenile (2000 to 2005) = 0.39 for females, and 0.51 for males
- Geomean RRS for adult-to-adult (2000 to 2003) = 0.32 for hatchery females, and 0.50 for males
- RRS adult-to-juvenile and adult-to-adult very similar
- Note: Hatchery juveniles undergo accelerated rearing for release at age 1+, whereas naturally spawned and reared juveniles do not out-migrate until age 2+ or 3+, which no doubt affects differences in age and size of the adults. Data for location of juvenile

capture indicated that hatchery fish spawned primarily in the lower reaches (likely a homing response to acclimation location), while wild fish spawned more evenly throughout the river, including upper reaches where spawner densities were lower and habitat quality was higher. Is some (substantial?) proportion of lowered productivity of hatchery fish attributable to these effects? The study design has additional confounding environmental factors associated with comparing natural spawning performance of two groups of fish with different juvenile life history experience – hatchery rearing versus natural rearing – which should bias results against HO fish. #169

Relative Fitness (RF) and Relative Reproductive Success (RRS) from published and reported studies: **November 30, 2010**

Referenced in:	Completed Study	Species	Hatchery Program	Life History segment	Method	Effect on RF/RRS	NGC graph	(diff. in) NGC	Sex	RF*/RRS
Broodstock of non-local origin										**Non-Local**
1, 2	Chilcote et al. (1986), followed by Leider et al (1990)	summer Steelhead (Kalama R, Skamania Hatchery)	segregated	Lifetime	Group genetic mark	Confounded	6	6	combined	0.13
1, 2	Fleming and Gross (1993)	Coho (Quinsam R Hatchery, Oyster R & Black Cr, Vancouver Island)	segregated sea-ranched	Adult-to-egg	observed spawning and estimated	Confounded	5	5	female	0.82
							5	5	male	0.62
2	McGinnity et al. (1997)	Atlantic salmon (Burrishoole R and Norwegian Mowi farm stock)	segregated	eyed-egg to smolt	Pedigree	Genetic (6to8)	7	7	combined	0.82
1	Fleming et al. (2000)	Atlantic salmon (wild River Imsa versus out-of-basin Norwegian National Breeding Program farm stock)	segregated	Adult to parr	Pedigree	Confounded	5	5	combined	0.16
1, 2	McGinnity et al. (2004) (see below)	Atlantic salmon (wild Burrishoole R and wild out-of-basin Owenmore R stocks; and see below)	segregated vs wild out-of-basin	eyed-egg to adult	Pedigree	Genetic	0	0	combined	0.27
	McLean et al. (2004)	Steelhead (Bogachiel + Chambers Cr hatchery stock, wild Forks Cr)	segregated	Adult-to-smolt	Mixed stock analysis	Confounded (10+)	10.1	10	female	0.06

#169

2	McLean et al. (2003)	Steelhead (Bogachiel + Chambers Cr hatchery stock, wild Forks Cr)	segregated	Adult-to-smolt	Mixed stock analysis	Confounded (10+)	9.9	10	female	0.07	
1, 2	Araki et al. (2007a)	Steelhead (Hood R winter-run and Big Creek hatchery stock - 1991)	segregated	Lifetime	Pedigree	Confounded (10+)	10	10	female	0.11	
							9.9	10	male	0.06	
		Steelhead (Hood R summer run and Skamania Hatchery stock - avg. 1995, 1996)	segregated	Lifetime	Pedigree	Confounded	10.1	10	female	0.37	
							9.9	10	male	0.35	
						horizontal line at 1	0	0			1
							25	25			1
Broodstock of Local origin - Segregated							**Native**	**Native**		**Local - Segregated**	**IF RF/RRS reduction = 50% environ-mental Local - Segregated**
1, 2	Reisenbichler and McIntyre (1977)	summer steelhead (Deschutes R, Round Butte Hatchery)	segregated	Egg-to-parr	Group genetic mark	Genetic	2	2	combined	0.80	0.80
2	Reisenbichler and Rubin (1999)	summer steelhead Middle Fork Clearwater and N Fork Clearwater hatchery stock	segregated	eyed-egg to age 1 parr		environmental	6	6	combined	0.80	

#169

1, 2	McGinnity et al. (2004)	Atlantic salmon (wild Burrishoole R, segregated Burrishoole sea-ranch hatchery stocks; and see above)	segregated sea-ranched	eyed-egg to smolt, and smolt to adult	Pedigree (smolts) and microtags (adutls)	Genetic	18	18	combined	1.04	1.04
1	Dannewitz et al. (2003)	Brown trout (River Dalalven wild and sea-ranch stocks)	segregated	Egg-to-parr	Pedigree	Genetic	7	7	combined	1.2	1.2
2	Dannewitz et al. (2004) (an error, should be 2003?)	Brown trout (River Dalalven wild and sea-ranch stocks)	segregated	Adult-to-parr	Pedigree	Genetic	7	7	combined	1.27	1.27
2	Dahl et al. (2006)	Brown trout (River Dalalven wild and sea-ranch stocks)	segregated	Parr to parr (age1 to age 2)	Nose tag	Genetic	7	7	combined	1.0	1.0

Broodstock of Local origin - Integregated/Wild

										Local - Integrated/ Wild	
1, 2	Araki et al. (2007a)	Steelhead (Hood R winter-run - 1995 to 1997)	integrated	Lifetime	Pedigree	Confounded	1	1	female	1.08	1.08
							1	1	male	0.96	0.98
1, 2	Araki et al. (2007b)	Steelhead (Hood R winter-run - 1998 to 2000)	integrated	Lifetime	Pedigree	Confounded	1	1	female	0.77	0.89
							1.1	1	male	0.49	0.75
						Confounded	1.6	1.5	female	0.30	0.65
							1.4	1.5	male	0.32	0.66
						Genetic (†)	0.6	0.5	female	0.55	0.55
							0.4	0.5	male	0.55	0.55
	Araki et al. (2009)	Steelhead (Hood R winter-run - 1999 to 2001)	integrated	Lifetime	Pedigree	Genetic (‡)	0.5	0.5	female	0.84	0.84
							0.5	0.5	male	0.92	0.92
						Genetic (‡)	1	1	female	0.42	0.42
							1	1	male	0.31	0.31
1, 2	Fleming et al. (1997)	Atlantic salmon (River Imsa wild x sea-ranched crosses)	integrated	Adult to eyed-egg	Individual behavior	environ-mental	1.1	1	female	1.00	
							0.9	1	male	0.48	

#169

1	Leth (2005)	spring/summer Chinook (Pahsimeroi R)	integrated	Adult-to-smolt	Pedigree	Confounded	3.1	3	female	1.00	1.00
							3	3	male	1.22	1.22
2	Ford et al. (2006)	Coho (Minter Ck, Puget Sound WA)	integrated	Adult-to-smolt	Pedigree	Confounded	25	25	female	0.74	0.87
							25	25	male	1.01	1.01
1	Berejikian et al. (2009)	Chum salmon (Quilcene R, Puget Sound WA)	integrated	Adult-to-fry	Pedigree	Confounded	3	3	female	0.72	0.86
							2.9	3	male	1.03	1.03
	Schroder et al. 2008	spring Chinook (upper Yakima R)	integrated	Egg to fry	Pedigree	Confounded	1	1	female	0.86	0.93
	Schroder et al. 2010	spring Chinook (upper Yakima R)	integrated	Adult to fry	Pedigree	Confounded	1	1	male	0.95	0.98
1	Williamson et al (2010)	spring Chinook (Wenatchee R)	integrated	Adult to age 1 smolt	Pedigree	Confounded	4	4	female	0.52	0.76
							4	4	male	0.32	0.66
	Sharpe et al. 2010	summer steelhead (Kalama R)	wild	Lifetime	Pedigree (two parents assigned)	Confounded	0.9	1	combined	1.00	1.0
					Pedigree (only 1 parent assigned)		1	1	combined	0.55	0.78
	Baird et al. 2008 PPT presentation	spring Chinook (Catherine Cr)	integrated	Adult to parr	Pedigree	Confounded	1.5	1.5	female	1.34	1.34
							1.5	1.5	male	0.91	0.96
	Bernston 2009 PPT presentation	spring Chinook (Lostine R)	integrated	Adult to parr	Pedigree	Confounded	1.5	1.5	combined	1.26	1.26
							1.5	1.5	combined	1.09	1.09
	Bernston et al. 2010 PPT presentation (replaces Moran & Waples 2007)	summer steelhead (Little Sheep Cr)	integrated	Adult to fry	Pedigree	Confounded	5	5	female	0.39	0.70
							5.1	5	male	0.51	0.76
				Adult to Adult	Pedigree	Confounded	5	5	female	0.32	0.66
							4.9	5	male	0.50	0.75

#169

Referenced:

1 - RIST Figure 4

2 - Araki et al 2008 Table 1

* m, male, f, female, when the relative fitness (RF) was estimated separately for each sex of parent.

† Hatchery fish having one wild parent and one first-generation hatchery parent (difference in NGC = 0.5) compared to hatchery fish having two wild parents compared to hatchery fish having two wild parents (difference in NGC = 1).

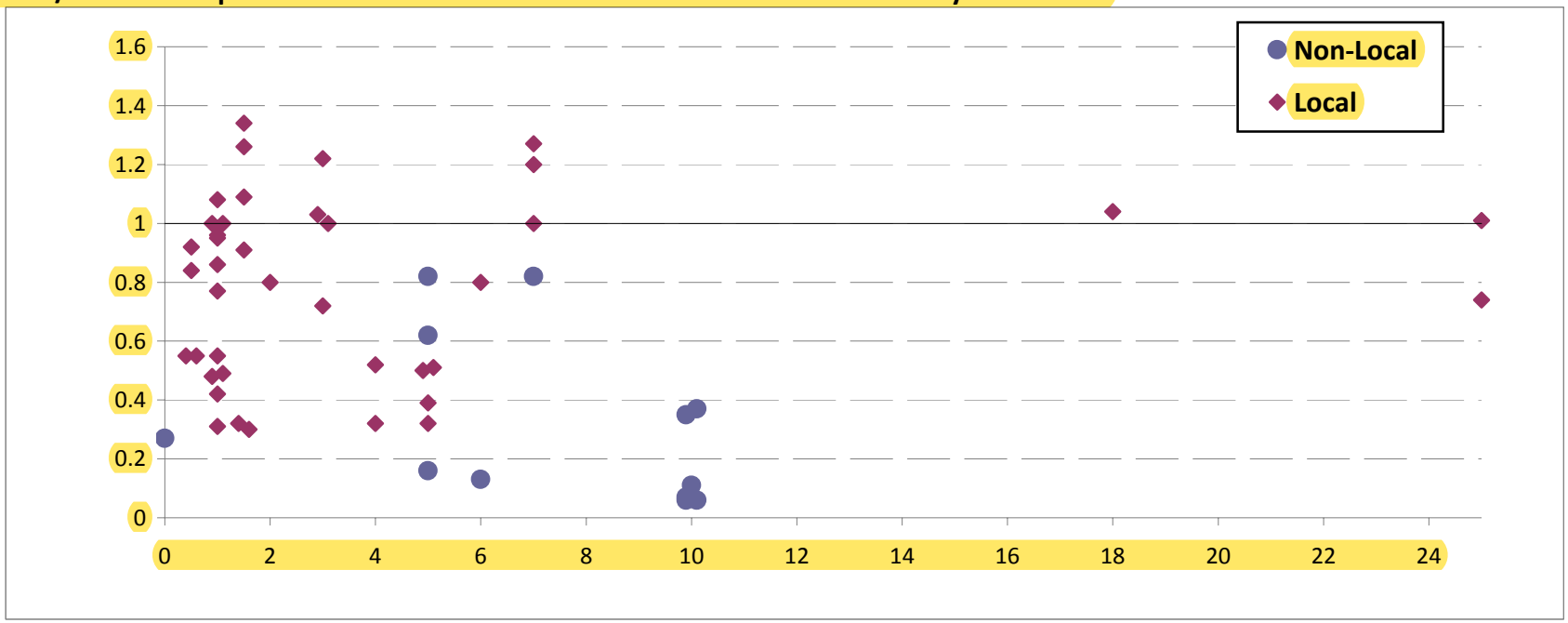
‡ Wild fish with two wild parents and one wild grandparent and one first-generation hatchery grandparent (difference in NGC = 0.5), or two wild parents (difference in NGC = 1) compared to wild fish having wild parents and grandparents

	Geomean:
Non-Local	**0.21**
Local	**0.70**
Local - segregated	**0.73**
Local - Intergrated (HR steelhead)	**0.57**

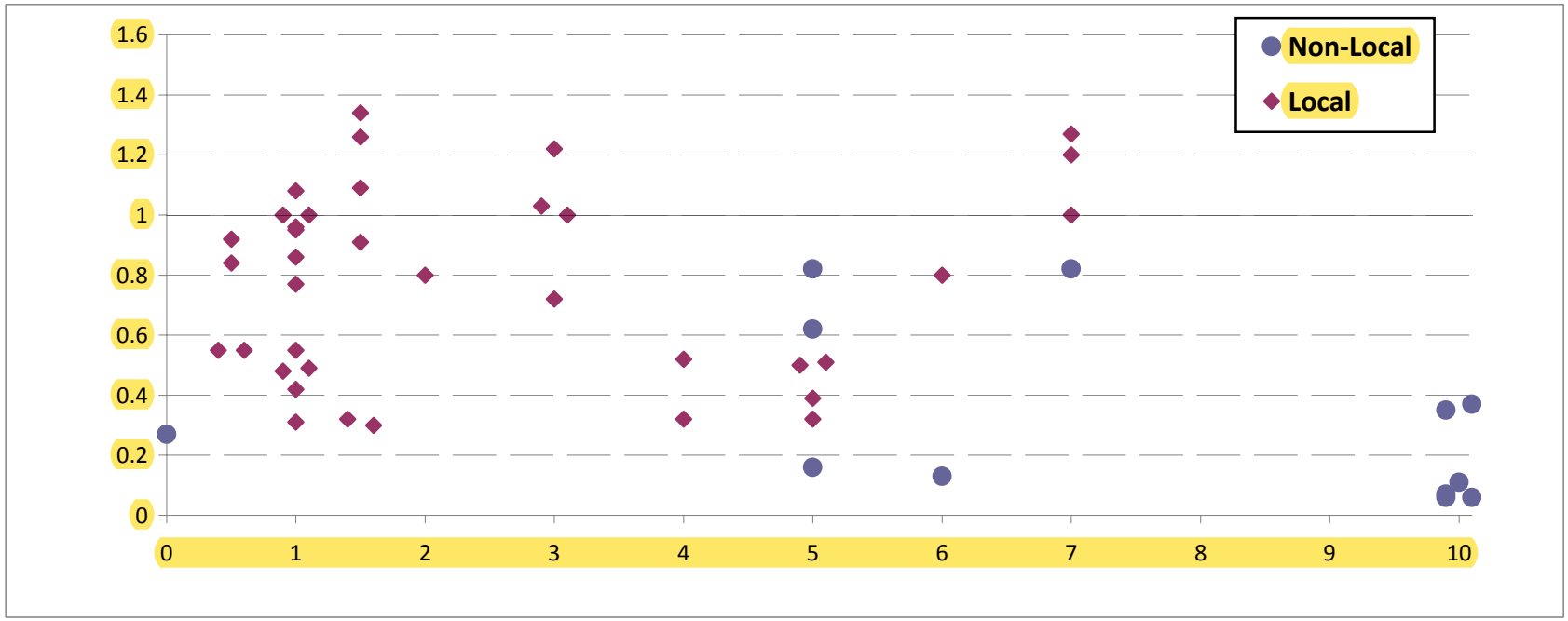
#169

Figure 1 - RF/RRS for comparisons with both Non-Local and Local Sources for hatchery broodstock

1a



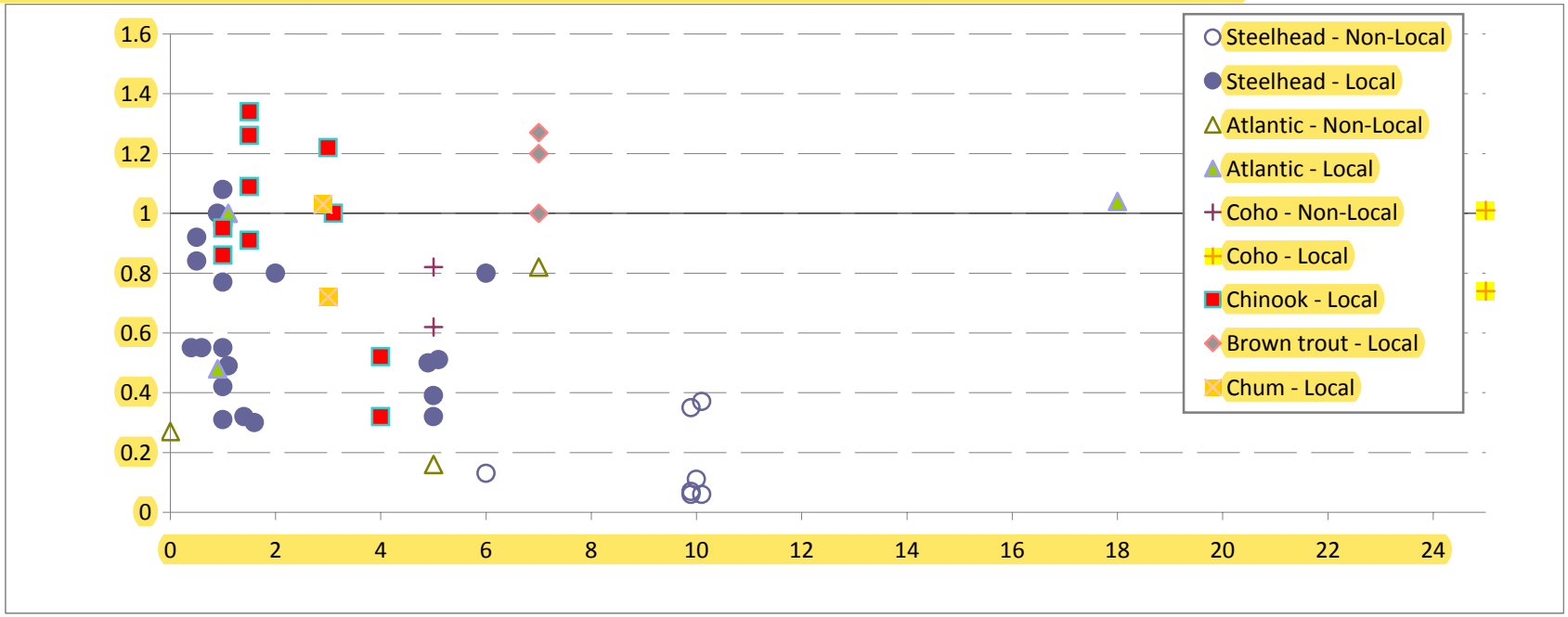
1b



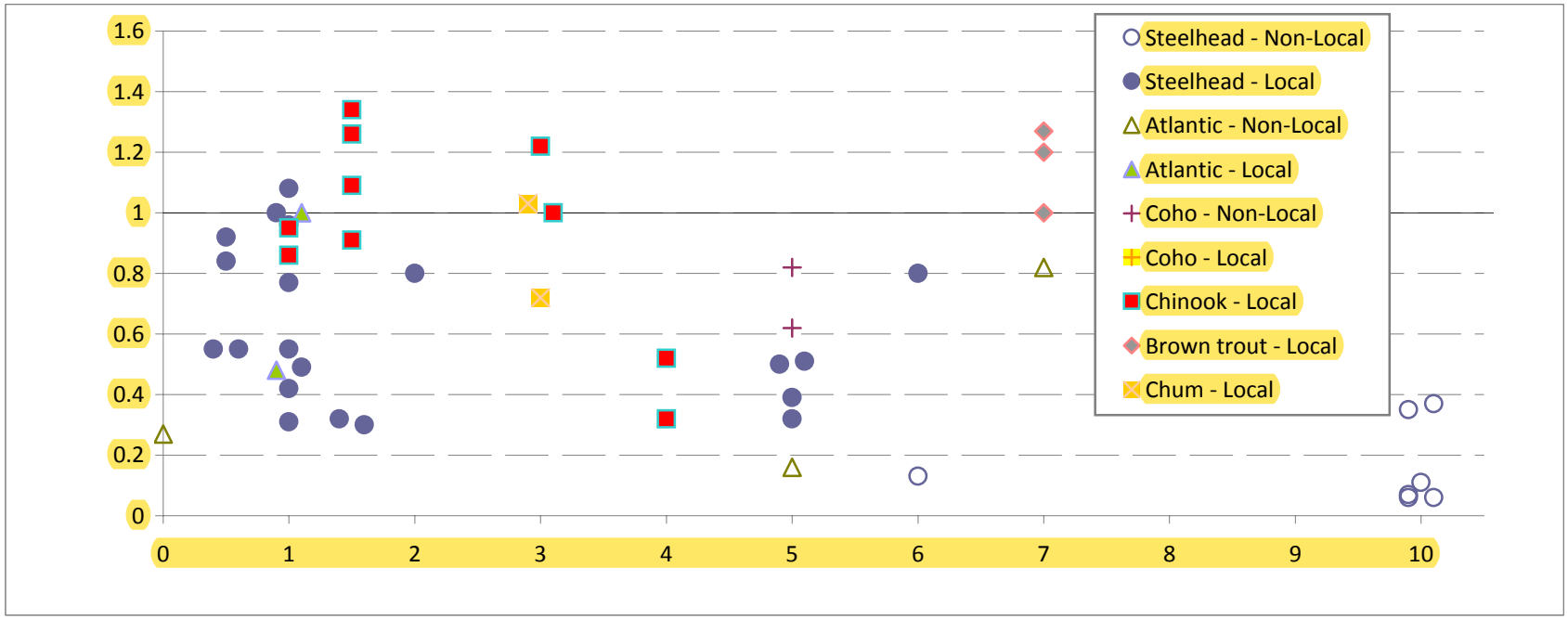
#169

Figure 2 - RF/RRS for comparisons by species with both Non-Local and Local Sources for hatchery broodstock

2a



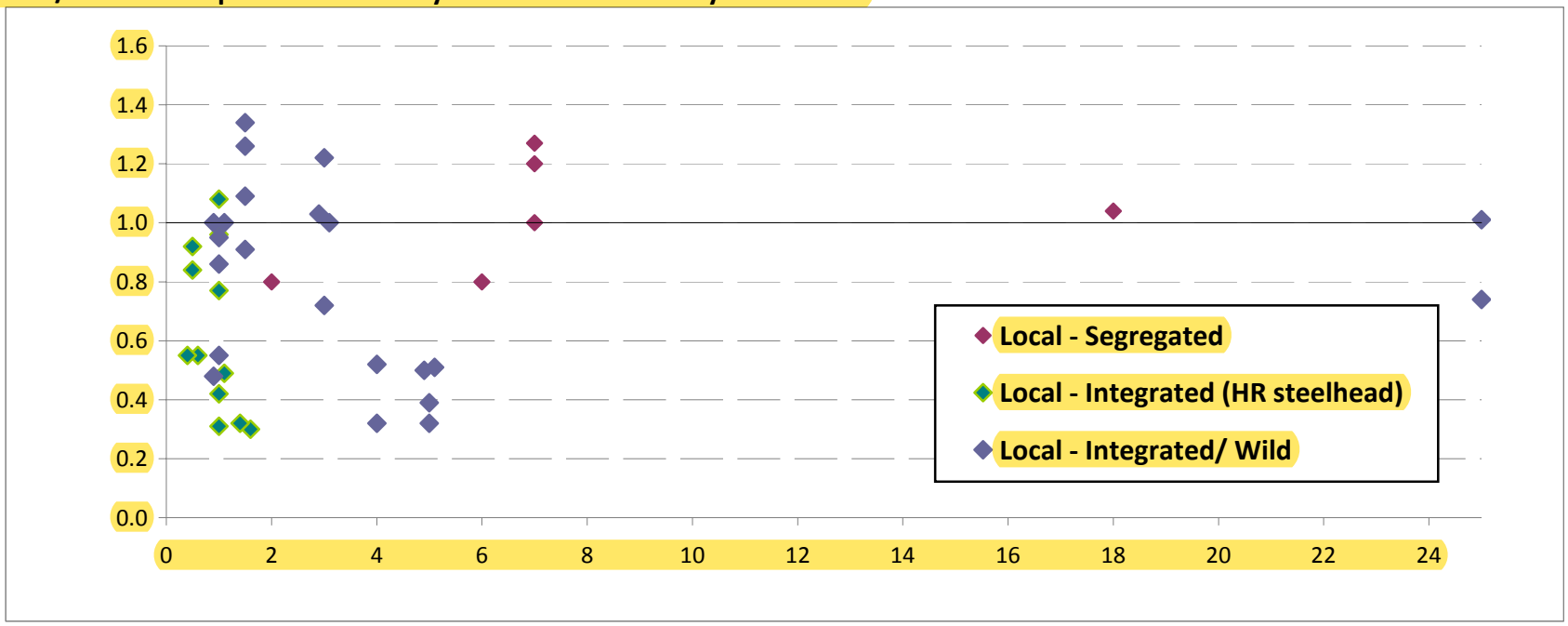
2b



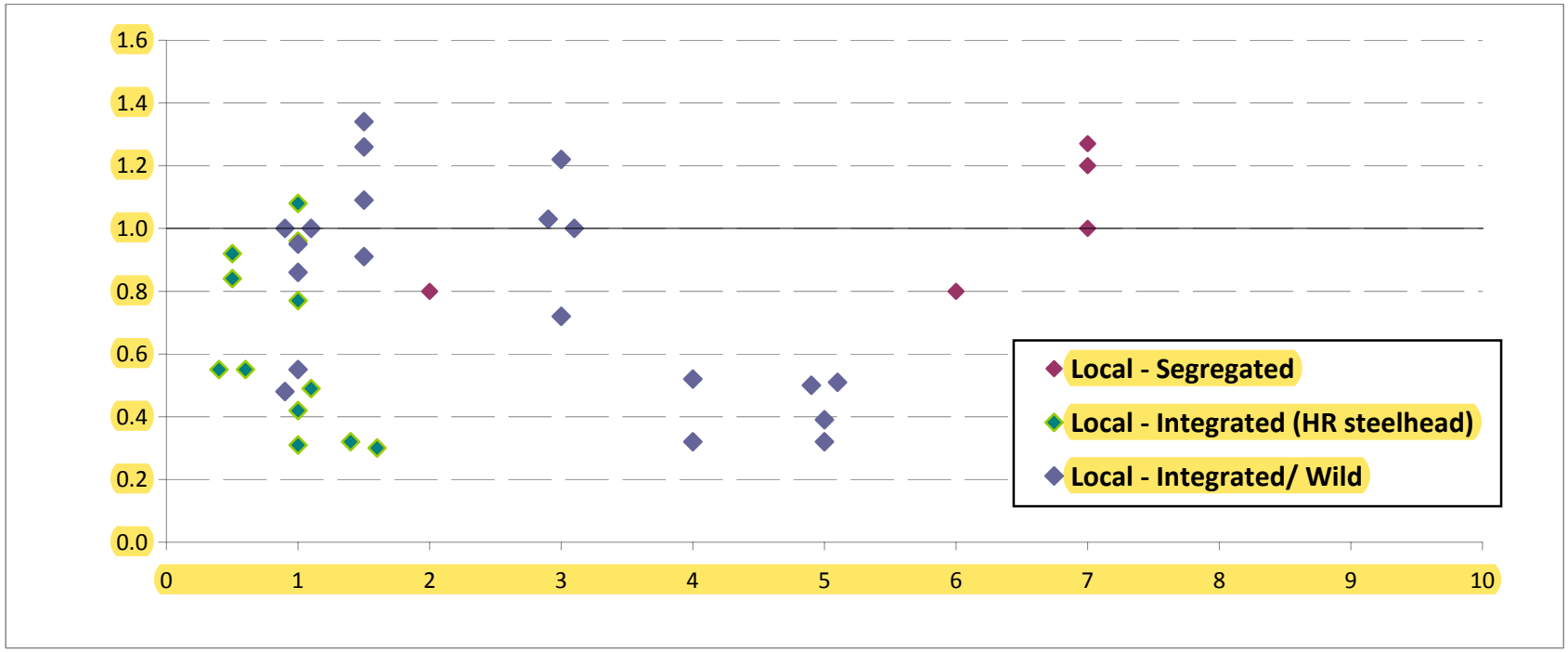
#169

Figure 3 - RF/RRS for comparisons with only Local Source hatchery broodstock

3a



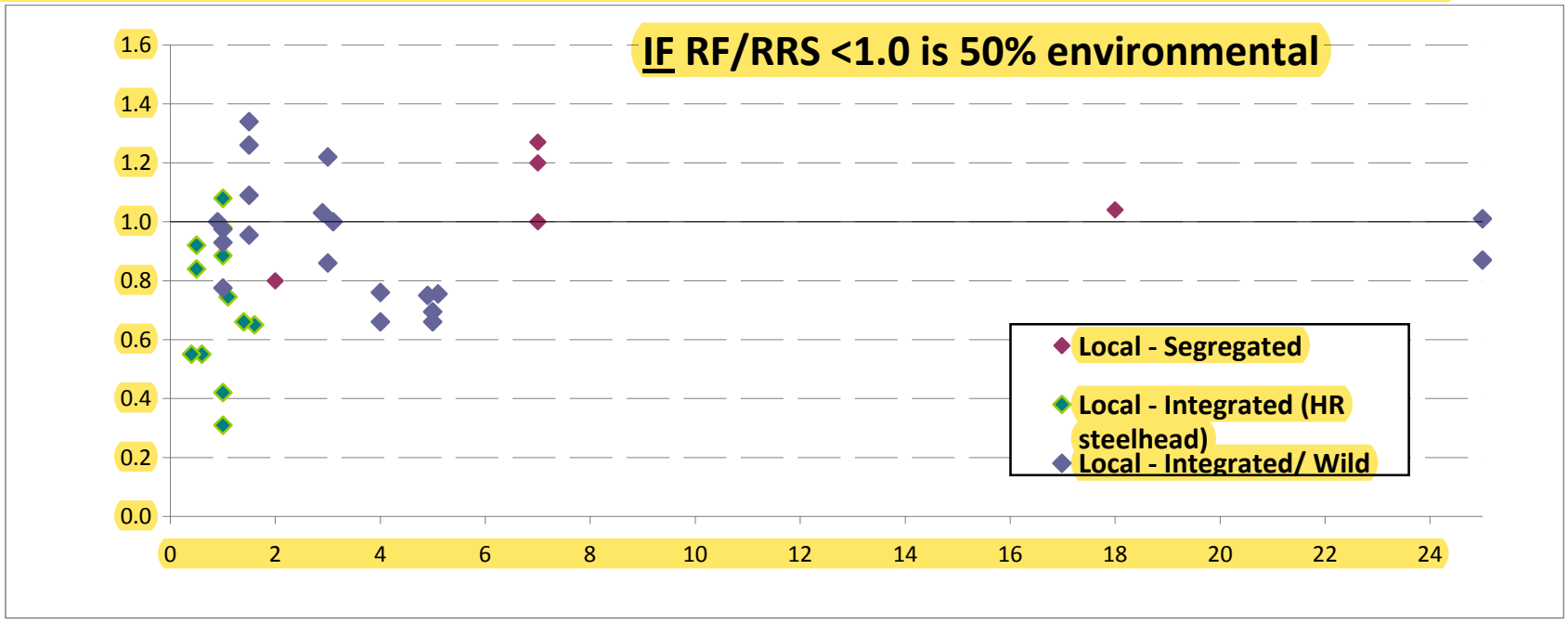
3b



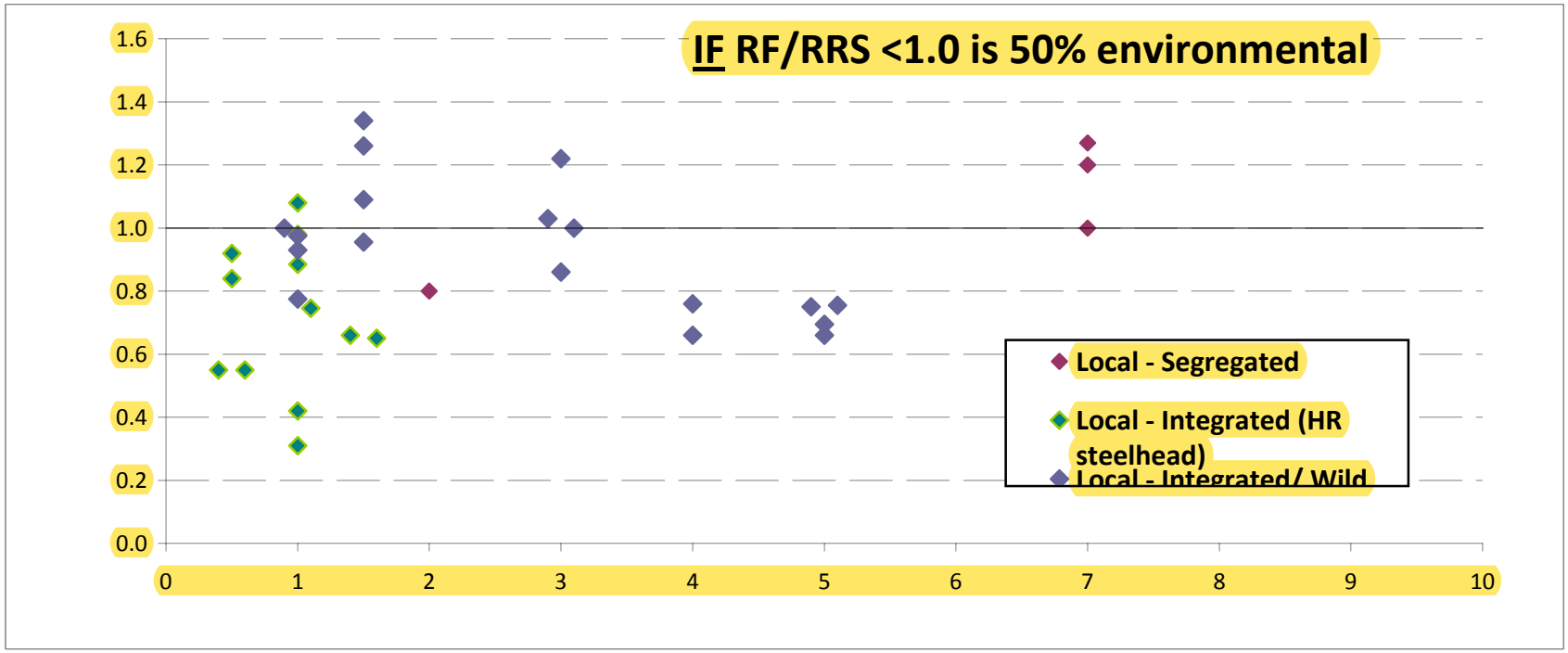
#169

Figure 4 - RF/RRS after subtracteing a 50% environmental effect, for comparisons with only Local Source hatchery broodstock

4a



3b



#169

CRITFC Comments on Mitchell Act DEIS, Appendix E: Genetic Risks and PNI Standard

Comments regarding Genetic Risks and Adoption of HSRG PNI Standard in the Mitchell Act DEIS

- PNI is a useful metric for assessing hatchery programs. #170
- The rationale behind the HSRG's promotion of improved (higher) PNI in hatchery-affected populations, which was incorporated into the MA DEIS, is scientifically sound – any deleterious genetic effects to natural productivity associated with hatchery rearing will be increasingly reduced as an integrated supplementation program can be managed for an increasingly high PNI.

However, there exist several problems with the basic assumptions and approach in the DEIS, and on its use of the iterative AHA modeling results. Problems with this approach include:

- The productivity estimates (R/S) for natural origin (NO) and hatchery origin (HO) fish spawning naturally remain fixed in the model, whereas realistically, these values, and their ratio will, will vary over time in response to changes in relative abundance of the fish (pNOS and pHOS) and to changes in the pNOB-pHOB ratio – which together determine PNI #171
- The pNOB-pHOB ratio also remains fixed in the model, whereas change in this ratio in response to changes in NO escapement, as recommended below, can have dramatic effects on PNI #172
- The heritability (h2) estimate for change in fitness in the model is fixed at 0.5. This is much too high an estimate, especially for a fitness character, and even more so when it is repetitively used in the model over multiple generations. Use of a lower, more realistic value for h2 (0.5, 0.1) will dramatically slow down modeled depressive fitness effects associated with hatchery rearing. #173
  - The model was run with Natural Selection Strength and Hatchery Selection Strength both set at: $\omega 2 = 10x\sigma 2$, implying strong selection pressure in both environments. While strong selection against "hatchery traits" in a natural setting (where juvenile mortality is quite high) may be appropriate, a presumption of strong selection against "natural traits" in the hatchery setting is not appropriate, especially when broodstock is representatively chosen from among the NO and HO return run each successive broodyear. Unlike the natural stream setting, mortality in a hatchery is purposefully quite low, making an explanation for how and when strong selection against "natural traits" difficult to formulate. Use of a relatively lower value for Hatchery Selection Strength will slow down modeled depressive fitness effects associated with hatchery rearing #174
- Another problem with the HSRG analysis (which was adopted in the MA DEIS) is apparent in a sentence within Appendix C of the HSRG report – Analytical Methods and Information Sources, p.11 (http://www.hatcheryreform.us/hrp_downloads/reports/columbia_river/system-wide/4_appendix_c_analytical_methods_and_info_sources.pdf), which is repeated almost word for word as Appendix G – Overview of the All H Analyzer (also p.11; http://www.nwr.noaa.gov/Salmon-Harvest-Hatcheries/Hatcheries/upload/MA-DEIS-AppG.pdf): "All hatchery adults not recovered in fisheries or at hatchery racks or weirs at their point of release are considered strays." (underlining for emphasis) #175

#175

In the supplementation model, a hatchery program uses integrated broodstock management to produce fish with the express intent to have them return as adults to augment the depressed number of naturally spawning fish. Yet, according to the analysis, they are nonetheless considered as "strays" …? Merriam-Webster defines "stray" (used as an adjective) as: "1. having strayed or escaped from a proper or intended place, 2 occurring at random or sporadically , 3. not serving any useful purpose". This is more than a problem of semantics, but bears witness to an inherent bias in the analysis which deems all hatchery programs as having a negative effect on the well-being of natural salmon populations, and disregards potential demographic benefits, in addition to the social and legal rationales for creation of the hatchery programs.

#176

- The MA DEIS adopts the HSRG recommendations, but it is unclear - in both the HSRG report and in the Mitchell Act DEIS - how these PNI goals/standards are to be practically applied to each particular hatchery program.
- It is reasonable to consider the PNI standards as goals to be worked towards over time, through a combination of reform measures to hydrosystem management and freshwater habitat restoration, in addition any needed hatchery management reforms.
- On the other hand, strict annual application of these standards is untenable from all standpoints – scientific, social, and legal. From a scientific standpoint, a strict application of a PNI standard to an integrated supplementation program operating in a population which is at depressed levels, will necessarily restrict the escapement of hatchery origin (HO) fish to the spawning grounds and will restrict the number of broodstock that can be spawned in a given year, to reflect the level of natural escapement. That is, when natural origin (NO) escapement is low, very few hatchery origin fish will be allowed upstream to supplement the naturally spawning population, and the number of broodstock spawned in the hatchery must likewise be limited (thus reducing the number supplementation juveniles that can be produced from that broodyear). This situation negates the ability of supplementation to provide a needed boost to population abundance. A strict application of a PNI standard will also likely run counter to public expectations vis a vis fisheries opportunities, and to production levels agreed upon in the US v Oregon process.

#177

- Culling of HO fish at a weir: It is reasonable to prevent excessive escapement of fish from a segregated harvest augmentation program to natural spawning grounds. However, for a reasonably scaled and managed integrated supplementation program, it is neither necessary nor advisable to preclude HO fish from the spawning grounds. These fish will be sufficiently similar genetically, and their exclusion will diminish the demographic boost obtainable through supplementation, thus slowing down the rebuilding process. If the hatchery program is reasonably scaled, as NO escapement rebuilds, the number of HO fish may remain relatively stable, but pHOS will diminish – resulting in an increase in PNI. Also, culling will preclude the contribution of marine derived nutrients to the ecosystem that these fish would bring. (Exceptionally, if total escapement does greatly surpass carrying capacity, and if it is deemed socially desirable to cull a portion of the HO escapement to provide fish for a food bank, one should prioritize males, particularly jacks.)

#178

- While short-term PNI goals for primary and contributing populations may be different – all populations should be considered as having a long-term PNI goal of 1.0 - a population that has been restored to a level of natural productivity and abundance, such that a supplementation program is no longer deemed necessary and may be reduced in scale and eventually eliminated.

<u>Recommendations:</u>

#179

- Do not cull returning HO fish from the spawning population, unless from a segregated harvest augmentation program.

#180

- As opposed to adopting for each integrated hatchery program an invariant PNI standard = 0.5 or 0.67 and an invariant guideline for pNOB and pNOB, a sliding scale adaptive broodstock management scheme should be developed. The sliding scale will provide a pNOB value that goes from 0% to 100% as NO escapement increases from near zero, to a population level for escapement of NO fish beyond which pNOB will be 100%. PNI will necessarily be low when NO escapement is low, but supplementation will therefore not be restricted from affecting a needed demographic boost to population abundance. As NO escapement increases, pNOB can increase and pHOS will decline, and program PNI will increase to and eventually beyond the PNI = 0.5 or 0.67 standards defined in the HSRG report and MA DEIS. A sliding scale broodstock management scheme should be established for programs in both populations classified as primary or contributing, with this difference taken into consideration in decisions on scale of the supplementation program and on the chosen rate for increase in pNOB in the sliding scale. An example, provided below, is that of the management scheme utilized in the Lostine River spring Chinook supplementation program, agreed upon by the Nez Perce Tribe and ODFW, to which we added the final column showing the Minimum PNI value that results from its application.

Lostine River Sliding Scale Broodstock Management Scheme

NO Return	Maximum % of NO Return selected for broodstock	Number of NO in broodstock	Minimum pNOB	Maximum pHOS	Minimum PNI
<8	0	0	NA	NA	
8-74	50%	4-37	NA	NA	
75 - 149	40%	30-60	20%	70%	0.22
150 – 249	40%	60-100	25%	60%	0.29
250 - 499	30%	75-150	30%	50%	0.38
500 - 749	30%	150-225	40%	40%	0.50
750 - 999	25%	188-250	50%	25%	0.67
>1,000	25%	>250	100%	<10%	0.91

CRITFC Comments on Mitchell Act DEIS, Attachments

I. Comments on MA DEIS from Tribal Agency representatives

- Oatman, McCoy. 10 March 2010. Letter to Barry A. Thom, NMFS and Robyn Thorson, USFWS addressing tribal concerns for including aspects of the U.S. V Oregon Agreement and 2008 Columbia Basin Fish Accords in the revisions to the Hatchery Genetic Management Plans.
- Turner, Robert. 23 September 2010. Letter to Paul Lumley summarizing meeting on the draft MA-DEIS and the fact that NMFS will ensure that the proposed alternatives 1) will be consistent with increasing production levels, starting new hatchery programs and building new hatchery facilities and 2) NMFS is and will continue to be accountable to the U.S. V. Oregon Management Agreement. Letter submitted on September 23, 2010.
- NMFS. 2010. Consultation Letter on evaluation process of the northwest fishery and hatchery plans in compliance with the ESA. Letter submitted on April 28, 2010.
- Thom, Barry. 06 April 2010. Letter in response to McCoy Oatman's letter dated March 10, 2010.
- Lumley, Paul. 04 April 2010. Letter in response to the Barry Thom's letter dated April 6, 2010.
- National Wildlife Federation, et al. and State of Oregon Versus National Marine Fisheries Service, U.S. Army Corps of Engineers, and U.S. Bureau of Reclamation. Declaration of William J. Bosch in support of the memorandum of Amici Warms Springs, Umatilla, and Yakama Tribes in opposition to motions for summary judgment. Case No. 01-0640-RE

II. PAC (Production Advisory Committee) and TAC (Technical Advisory Committee) Documents - this series of documents includes pertinent information to the MA-DEIS made available from members of the committees that include representatives from the regulatory management agencies and tribes and regulatory fish harvest technicians, respectively

- Pac Certification Documents YN(Yakama Nation)
  - U.S. V. Oregon Production Advisory Committee Hatchery and Genetics Management Plan Certification for Spring Chinook, Fall Chinook, and Coho Salmon.
- TAC Sub-Group Report to the U.S. v. Oregon Policy Group Technical Assessment of Harvest Elements of the Draft Mitchell Act EIS (DEIS)
- PAC Briefing Paper on Mitchell Act NEPA/EIS
- Spreadsheet showing the cost and other implications of the alternatives specified in the MA-DEIS for all species.
- Spreadsheet showing the cost and other implications of the alternatives specified in the MA-DEIS for all non Endangered Species Act (ESA)- listed species.

III. Referenced Presentations, Reports and Journal Articles

- A bibliography of journal articles, and technical reports and PowerPoint presentations (plus copies of 83 of these articles/reports/presentations) that summarize studies on use of hatchery supplementation for rebuilding of depressed salmonid populations, and on relative reproductive success of hatchery-origin versus natural-origin salmonids
- PPT presentations to the NWPCC
  - Ford, Michael J. 2010. Some Trends in Hatchery Effects Science. Presented at the September meeting of the NWPCC, Portland OR.
  - Bosch, Bill. 2010. Empirical Data in Support of Supplementation Science. Presented at the November meeting of the NWPCC, Portland OR.
- CRITFC Proposal for Reprogramming of Hatcheries, August 1982.
- Dupris, J. C., K. S. Hill and W. H Rodgers, Jr. 2006. The Si'lailo Way. Carolina Academic Press, Durham NC. (see attached hard copy)
- Dompier, D. W. 2005.The fight of the salmon people: Bl;ending tribal tradition with modern science to save sacred fish. Xlibris Corporation, USA. (see attached hard copy)

Cowlitz Indian Tribe

Letter #10

December 3, 2010

William W. Stelle, Jr.
Regional Administrator
NMFS Northwest Region
7600 Sand Point Way NE
Seattle, Washington 98115

RE: Mitchell Act Draft EIS

Mr. Stelle:

The Cowlitz Indian Tribe has lived in Southwest Washington since time immemorial. We are a Salmon People and are very proud of our cultural heritage. As Salmon People we have grave concerns over aspects of National Marine Fisheries Service's (NMFS) Draft Mitchell Act Environmental Impact Statement (DEIS). We feel that any option that cuts hatchery production in the Columbia Basin is of great concern to our Tribe. We appreciate the need to protect endemic Salmon populations and fully support efforts to return our Salmon populations to pre-dam numbers, but we do not want Salmon availability to suffer because of this. Our Tribe relies on the hatcheries to provide us with fish for our ceremonial and subsistence needs. The Salmon are already in short supply and further limiting their availability is unacceptable to us. It appears that the DEIS focuses on the negative effects of hatchery Salmon on natural fish run and does not take into consideration the potential for modern hatchery practices to help save our endangered stocks while providing for adequate harvest opportunities. We feel it is possible to bolster Salmon numbers while protecting endangered fish.

#1

#2

The inclusion and over focus on the 'negatives' of hatchery fish is the first problem with the DEIS. The second problem with the current DEIS is that it missing two very important ideas:

#3

- Inclusion of modern techniques for hatcheries such as incubation and rearing that closely resembles natural conditions. Also, size and release timing that mimics natural populations (i.e. using the same environmental cues that natural fish use) etc.

Cowlitz Indian Tribe
1055 9th Avenue ~ P.O. Box 2547 ~ Longview, WA 98632 ~ 360-577-8140 ~ Fax: 360-577-7432
www.cowlitz.org

- Supporting an environment of collaboration and cooperation amongst stakeholders and management agencies. As written, the current DEIS places sports (inland, upland etc), commercial and Tribal Fisheries at odds with each other. #4

The Tribe would recommend that the DEIS be rewritten to address both areas of concern mentions above. We do not support a reduction in hatchery production in the Columbia Basin. If the DEIS addresses these areas of concern, the alternatives to lower hatchery production should no longer be necessary. We feel that natural and hatchery fish can co-exist if we plan adequately, use modern techniques and work together for the good of our Salmon. #5 #6

Thank you for your time and consideration.

Sincerely,

William Iyall, P.E.

William Iyall
Chairman
Cowlitz Indian Tribe
360.577.8140
wiyall@cowlitz.org

The SHOSHONE-BANNOCK TRIBES

FORT HALL INDIAN RESERVATION
PHONE (208) 478-3700
FAX # (208) 237-0797

FORT HALL BUSINESS COUNCIL
P.O. BOX 306
FORT HALL, IDAHO 83203

Letter #11

December 3, 2010

William W. Stelle, Jr.
Regional Administrator
NMFS Northwest Region
7600 Sand Point Way NE
Seattle, WA 98115

RE: Comments of the Shoshone-Bannock Tribes regarding the Draft Environmental Impact Statement to Inform Columbia River Basin Hatchery Operations & the Funding of Mitchell Act Hatchery Programs (Mitchell Act DEIS).

Introduction

The Shoshone-Bannock Tribes (Tribes) acknowledge the efforts of the National Oceanic and Atmospheric Administration, National Marine Fisheries Service (NOAA/NMFS) personnel for providing a public hearing on the Mitchell Act EIS in Boise, Idaho and would like to offer the following written comments on behalf of the Shoshone-Bannock Tribes. These written comments are intended to supplement those given at the public hearing held in Boise, Idaho on October 27, 2010.

Generally speaking, the comments below are intended to elucidate the fact that the Tribes find numerous issues with each of the presented alternatives. The Tribes expect full consideration of the following issues, leading to the development of a new alternative that would provide a consistent and equitable policy direction for the distribution of Mitchell Act funds. As stated in the DEIS, the preferred policy direction could be crafted from a combination of some of the alternatives listed in the DEIS and/or some of the public comments received on the document.[1] A global check for the accuracy of the figures presented in the tables should be performed due to the multiple inaccuracies throughout the document, in particular with regard to the harvest schedules and the economic estimates for the value of salmonids in the northwest.

#1

#2

Overview

The National Environmental Policy Act (NEPA, 42 U.S.C. 4321-4347, January 1, 1970) requires federal agencies to provide a process which results in a more comprehensive and strategic approach to decision-making; integrating environmental considerations into proposed federal actions to achieve a "productive harmony" among our various social, economic and environmental objectives. The stated goal of the Mitchell Act DEIS is to "develop a NMFS policy direction that will 1) guide NMFS' distribution

#3

[1] Mitchell Act DEIS, Chapter 1, page 1-15.

of Mitchell Act Hatchery funds and 2) inform NMFS future review of individual Columbia River basin hatchery programs under the ESA."[2] It is critical that the development of any future NFMS policy direction regarding the distribution of Mitchell Act funding be informed by a detailed analysis in the Final Mitchell Act EIS and Record of Decision of the direct, indirect and cumulative impacts to Tribal rights and resources. #3

The various bands of the Shoshone and Bannock people occupied a wide geographic area throughout the Great Basin, Snake Basin and the Intermountain region. Prior to non-Indian settler's entry into the region, Indians utilized the vast rich natural resources, and enjoyed the cultural traditions and lifestyles unique to our people. The various bands of Shoshone and Bannock peoples were subject to wars, starvation, imprisonment and forced removal to military forts and ultimately, to Indian reservations far from the natural resources that formed the basis for subsistence foods, and traditional cultural practices. #4

During this period a series of treaties were negotiated with the various tribes; most of which included some reserved rights to harvest natural resources and maintain traditional livelihoods. The Treaty with the Eastern Shoshone and Bannocks, July 3, 1868 was the only treaty ratified by Congress between the Shoshone and Bannock peoples.[3] The language from the 1868 Fort Bridger Treaty Article IV states:

> *The Indians herein named agree, when the agency-house and other buildings shall be constructed on their reservations named, they will make said reservations their permanent home, and they will make no permanent settlement elsewhere; but they shall have the right to hunt on the unoccupied land of the United States so long as game may be found thereon, and so long as peace subsists among the whites and Indians on the borders of the hunting districts.*

Article IV is one mechanism for the Tribes to maintain a cultural, social and spiritual link to our ancestral homelands through exercising subsistence-based traditional cultural practices. In order to ensure that subsistence resource continue to be found in abundant and harvestable quantities, the Tribes actively engage in resource management activities throughout the Columbia and Snake basins for the benefit of fish and wildlife. Through the Tribes' Fish and Wildlife Department numerous programs are administered using funds from the Bonneville Power Administration, NOAA/NMFS, the Lower Snake River Compensation Plan-Program, Bureau of Indian Affairs and the Tribes' general funds. The Tribes remain committed to ensuring that the right to harvest anadromous fish off-reservation is upheld and that the stocks of fish are both sustainable and harvestable.

Government to Government Consultation

When the final Environmental Impact Statement (EIS) is completed, prior to the signing of the Record of Decision (ROD), it would be appropriate for the NOAA/NMFS decision-makers and appropriate staff to engage the Tribes; Fort Hall Business Council in formal session, to satisfy the requirements of government to government consultation. Tribal input is a necessary part of the NEPA process because it helps decision-makers effectively consider Tribal rights and issues; prior to implementing a decision. Without effective consultation the Tribes often bear the burden of conservation activities or the adverse impacts from federal management decisions. The Tribes request, consistent with guidance from the Executive branch, that the proper Government to Government Consultation protocol be established and followed with regard to the analysis and decision on this EIS. #5

---

[2] Mitchell Act DEIS, page 3.

[3] *Treaty with the Eastern Shoshone and Bannock 1868*, 15 Stat. 673, (Ratified 1869)

Congressional Intent of the Mitchell Act

#6

Congress enacted the Mitchell Act in 1938 to conserve anadromous fish resources throughout the Columbia River basin, specifically authorizing and directing the Secretary of Commerce to "...establish one or more salmon-cultural stations in the Columbia River Basin in each of the States of Oregon, Washington, and Idaho."[4] Today there are 25 hatcheries (10 in Oregon and 15 in Washington) that produce fish utilizing those funds. Of the three states mentioned in the act, only Idaho has not been true a beneficiary of these funds. Mitchell funds were used to construct a couple of holding ponds at Pahsimeroi Fish Hatchery and on the South Fork Salmon River weir, but not a single hatchery was constructed with Mitchell funds and there is not one hatchery operated under these funds. The clear intent of the Act was to equitably distribute congressionally appropriated funds to all Columbia Basin watersheds, but for the better part of a century, the Snake River basin has been virtually ignored in favor of downstream interests; mainly programs to benefit fisheries below Bonneville Dam. The downriver benefits for both tribal and sportsmen speak volumes as to the benefits of the program, and reflect the impact of the funding disparity between downriver harvest and terminal harvest in Idaho.

The mere fact that Idaho has been excluded from funding opportunities over the past seventy years demonstrates that the current policy direction of NOAA/NMFS in distributing Mitchell Act funds defeats the intent of the legislation. Because there is not an existing Mitchell Act hatchery facility in Idaho, and the DEIS eliminates any alternative that would propose new Hatchery Facilities using Mitchell Act funds, there is an almost certain outcome that future hatchery operations will not include Idaho as a significant recipient of Mitchell Act funds.[5] The Shoshone-Bannock Tribes request that NOAA/NMFS select a policy direction, based on a modified alternative, which encompasses the intent of Congress and does not unfairly exclude Idaho from consideration for additional Mitchell Act funding.

Setting a policy direction for the distribution of funding should be based on meeting the intent and spirit of the original legislation, not maintaining existing facilities; in particular, those facilities that have had an adverse impact on natural-origin stocks of anadromous fish. It is indicated at the outset of this document that operations will not include new facilities that actually improve or contribute to salmon recovery in Idaho, and the Tribes firmly request that a new alternative be developed that actually analyzes the potential impacts of constructing new facilities and expending additional funds in Idaho. Without this analysis it would be extremely difficult for an objective and legally defensible decision to be made about the current policy direction for Mitchell Act funds.

---

[4] 16 U.S.C § 755. (The Secretary of Commerce is authorized and directed to establish one or more salmon-cultural stations in the Columbia River Basin in each of the States of Oregon, Washington, and Idaho. Any sums appropriated for the purpose of establishing such stations may be expended, and such stations shall be established, operated and maintained, in accordance with the provisions of the Act entitled "An Act to provide for a five-year construction and maintenance program for the United States Bureau of Fisheries", approved May 21, 1930, ch. 306, 46 Stat. 371, insofar as the provisions of such Act are not inconsistent with the provisions of this section and sections 756 and 757 of this title.

[5] Mitchell Act DEIS, Executive Summary, page 7. "**Construction of New Hatchery Facilities with Mitchell Act Funds.** Current and reasonably foreseeable appropriations under the Mitchell Act for hatchery production would preclude this option. All reasonably foreseeable decisions for the use of Mitchell Act funding at anticipated levels would also preclude this option.

Under the current system, only those hatchery facilities that are a part of the Mitchell system are allocated funding, leaving existing programs in the interior Columbia basin without funding to implement necessary reforms that would directly contribute to the recovery of listed anadromous fish. With the increases in hatchery costs, efforts to maintain effective hatchery programs has been severely constrained, with the members of the Shoshone-Bannock Tribes and the sportsmen of Idaho shouldering the burden of conservation, without the requisite support for interior fisheries from Mitchell funds. While several of Idaho's hatchery facilities are contributing to salmon recovery, there is a demonstrated need to include additional programs that would have positive system-wide benefits for anadromous fish in the Snake River basin. This is particularly obvious when one considers that the Snake River basin significantly contributes to downriver harvest, but is forced to curtail fisheries each season due to low adult escapement to the tributaries. #6

The Tribes specifically request that a new alternative be developed that would permit the construction and operation of at least one facility in Idaho; with the necessary funds being shifted from downriver facilities and operations. While this may seem unreasonable to request that downriver hatcheries tighten their fiscal belts, it should be noted that in order to meet the congressional intent of the Mitchell Act; it is a requirement that the Secretary perform this function. The Tribes are unwilling to support any NEPA document as adequate, without first making a detailed and objective analysis of the potential impacts, both positive and negative, of shifting funds from downriver to Idaho.

In addition to this analysis, the Tribes also support and request a specific allocation for retrofitting existing hatchery facilities in Idaho to help meet hatchery reform goals for salmon recovery in the Salmon River sub-basin. This may require allocating funds to construct new components of existing hatcheries such acclimation ponds, holding facilities and other acceptable hatchery projects that contribute to the recovery of listed stocks. #7

The Tribes' support the expenditure of funds to improve and propagate listed stocks to maintain the fisheries in the Columbia River basin, consistent with the principles of sound biological science. If the current funding levels are inadequate to meet the congressional intent of the Mitchell Act, and NOAA/NMFS is unable to secure additional appropriations to meet a policy direction that ensures interior fisheries share in the benefits of funding, then there must be an evaluation of the current funding appropriations and a commensurate shift of those funds to the interior. #8

Assumptions in the EIS

As indicated by the *US v. Oregon* TAC and other entities throughout the Columbia River basin, the Tribes share concerns about both the assumptions used to develop the alternatives and how to objectively evaluate the Mitchell Act DEIS. NOAA/NMFS emphasizes in the DEIS that the implementation scenarios are not intended to represent on the ground regional scenarios, but are intended to be illustrative of some reasonable scenarios resulting from the selected policy direction. Accordingly, it remains unclear as to how the Tribes will conduct an objective evaluation of the document without assuming that the features of the implementation scenarios, such as the fixed PNI and pHOS standards, are actually the goals under each alternative. #9

The assumptions used to evaluate each of the alternatives in the DEIS should accurately and consistently match the general management direction that is found in the NPCC Fish and Wildlife Program, the *US .v Oregon* Management Agreement, and/or the Columbia Basin Fish Accords. Without appropriately estimating population level harvest impacts for both main-stem and terminal fisheries, the Tribes find it #10

difficult to truly gage the impact of any of the alternatives. Any error in the estimates for adult returns could have serious implications for the actual impact of any given alternative. #10

Impacts to Current Management and Recovery Scenarios for Specific Populations

The current management and recovery paradigms depend on an evaluation of the relative success of individual populations within an Evolutionary Significant Unit (ESU) or Distinct Population Segment (DPS) and have been prioritized based on a hierarchical framework developed by the managers. These priority populations have been noted by both the Technical Recovery Team documents and the managers for the role they play in stabilizing and rebuilding the ESU/DPS. This analysis is further complicated by the fact that there are not many stabilizing populations above the mid-Columbia region and any new production would require an investment of funds that we are told by the DEIS, does not exist. Overall, the fish managers of the Columbia have agreed on some fundamental principles for salmon recovery that would require a shift in the policy direction of Mitchell Act funds to implement. In Alternatives 3-5, the targets for recovery would be shifted without the requisite realignment of production and supplementation programs. Specifically, the Tribes remain concerned about the potential impact that changing the current stock make-up would have on the continued harvest of anadromous fish in the terminal areas. This change may lead to impacts for Tribal fisheries and the Tribes' ability to effectively manage tributary fisheries. #11

Notwithstanding our objections to the relevant *US v. Oregon* Management Agreement (Agreement) provisions, the DEIS should have objectively evaluated and developed an alternative that encompassed the obligations and goals of the managers for each specific population. While the Tribes have only agreed to the administrative portions of the Agreement, opting out of the provisions governing harvest and production due to technical and policy level objections in some parts, it would benefit the analysis by including some on the ground data from the relevant managers. The analysis for Alternatives 2-5 reveals a significant reduction of production capacity in direct conflict with the programs proposed for the next ten years of the Agreement. #12

In addition to the Agreement, the DEIS should also include in that evaluation the commitments made in the Columbia Basin Fish Accords[6], the Lower Snake Compensation Plan and the 2008 Biological Opinion for the Federal Columbia River Power System. It should be noted that while the focus of these programs is primarily addressing mitigation measures, the purpose of the Mitchell Act funds has been to conserve fisheries. These two goals are intended to complement one another, and not be made in lieu of each other. While the DEIS states that there is no intended conflict, the Tribes are having trouble seeing the value of a hypothetical evaluation of funding priorities when an objective analysis would include the actual program framework. #13

Alternative 5

Notwithstanding the above mentioned uncertainties, modifying Alternative 5 would seem to present NOAA/NMFS with an opportunity to change its funding priorities and shift Mitchell funds to those programs in the interior Columbia basin that meet the goals of recovery and provide additional opportunities to harvest fish for the Tribes. The Tribes recognize that there is a substantial investment that was made in downriver hatchery programs, but that does not justify a funding system that virtually #14

---

[6] This refers to the intergovernmental agreements entered into by the Bonneville Power Administration, Bureau of Reclamation, and Army Corps of Engineers with the States of Idaho, Montana, and the Confederated Tribes of the Umatilla, Warm Springs, Yakama, Colville, and Shoshone-Bannock Tribes.

ignores the significant recovery needs of distinct populations within interior Columbia basin. In selecting a priority for funds that improve interior Columbia River goals, NOAA/NMFS could improve the delivery of Mitchell Act funds to programs that will contribute to salmon recovery in the tributaries, where additional funding could implement much needed changes at existing facilities. #14

In advocating for a modified Alternative 5, the Tribes posit that it would be the only alternative that would meet the congressional intent of the Mitchell Act, the harvest demands of the Snake basin and the recovery needs of distinct population segments within the interior Columbia basin. The Shoshone-Bannock Tribes request a fundamental shift in the priorities for Mitchell Act funds to include actions that: 1) improve the segregation of hatchery produced fish from spawning gravels, consistent with HSRG recommendation; 2) implement new or modify existing conservation hatchery programs for populations deemed at high risk of extinction; 3) improve the existing performance standards to improve the return of wild fish, proportionate to returning hatchery stocks; and, 4) provide management flexibility for entities to determine the appropriate treatment methods for individual stocks with an ESU. While this policy direction would require a shift of funds from existing facilities, the change in funding would demonstrate NOAA/NMFS commitment to the full implementation of the original intent of the Mitchell Act and those funds appropriated for salmon recovery.

Conclusion

The Shoshone-Bannock Tribes support the current NEPA evaluation of the NOAA/NMFS policy direction for disbursing Mitchell Act funds, but remain concerned that these valid issues will go unaddressed if there is not a corresponding commitment from Congress and NOAA/NMFS to force a change in the program. The Snake basin and the excellent programs run by the various co-managers, stands ready to implement effective Mitchell Act programs that truly contribute to the recovery of fish; not simply sustain commercial fisheries below Bonneville Dam and in the main-stem Columbia River. The Tribes will continue to work diligently to implement programs that directly contribute to recovery of struggling stocks of wild fish in the interior basin, but require the support envisioned over seventy years ago when the Mitchell Act was passed. The Tribes repeat our stance that an objective evaluation of the program, the intent of Congress, and the needs of the interior Columbia will inescapably lead to the conclusion that a paradigm shift to include the interior basin in Mitchell operations is appropriate. #15

Please direct all policy level questions regarding this communication and/or to set up formal government to government consultations with the Fort Hall Business Council by contacting Claudeo Broncho, Fish and Wildlife Policy Representative, (208) 239-4563 or email at cbroncho@sbtribes.com . Direct all technical questions regarding this communication to Daniel Stone, Fish and Wildlife Policy Analyst, (208) 239-4555 or email at dstone@sbtribes.com . Thank you for your consideration of these comments.

Sincerely,

Nathan Small

Nathan Small, Chairman
Fort Hall Business Council, Shoshone-Bannock Tribes

CC: File
Chad Colter, SBT
Claudeo Broncho, SBT

Daniel Stone, SBT
Lytle Denny, SBT
Attorney's Office, SBT

THE TULALIP TRIBES

Board of Directors:

Mel Sheldon - Chairman
Marlin J. Fryberg, Jr. - Vice-Chairman
Chuck James - Treasurer
Marie Zackuse - Secretary
Glen Gobin - Board Member
Don Hatch - Board Member
Tony Hatch - Board Member
Paula Cortez - Acting General Manager

6406 Marine Drive
TULALIP, WA 98271-9694
(360) 716-4000
FAX (360) 716-0264

The Tulalip Tribes are the successors in interest to the Snohomish, Snoqualmie, and Skykomish Tribes and other tribes and bands signatory to the Treaty of Point Elliott

Letter #12

December 3, 2010

William W. Stelle, Jr.
Northwest Regional Administrator
National Oceanic and Atmospheric Administration
Fisheries Service
7600 Sand Point Way NE
Seattle, WA 98115-0070

Dear Will:

I am responding on behalf of the Tulalip Tribes to the draft Environmental Impact Statement to Inform Columbia River Basin Hatchery Operations and the Funding of Mitchell Act Hatchery Programs (CRDEIS). Although the usual and accustomed fishing areas of the Tulalip Tribes are entirely within the Salish Sea, we must pay attention to salmon management coast-wide in order to protect our people's treaty-reserved rights. Furthermore, I am very concerned that precedents set by your agency's actions in the Columbia River will be extended to other areas, such as Puget Sound. Because we feel strongly that some of the ideas underlying the CRDEIS could jeopardize the success of salmon recovery, it is important to make our concerns clear now. We have several areas of major concern with both process by which the 1,132–page (including appendices and supplementals) CRDEIS (http://www.nwr.noaa.gov/Salmon-Harvest-Hatcheries/Hatcheries/MA-EIS.cfm) was developed as well as with its content. I will discuss some of these below for your information and for the record. I would also like to request a meeting with you at your earliest convenience to discuss how our concerns can be addressed, especially insofar as it affects the ability of the Tulalip Tribes and its members to exercise treaty-reserved rights as well as the potential effects of these actions on the success of salmon recovery.

Process Concerns

#1

1. **None of the Columbia River or Puget Sound Treaty Tribes were adequately consulted during all phases of development of the CRDEIS**

The Nez Perce, Umatilla, Warm Springs and Yakama Tribes, as well as all of the Puget Sound Treaty Tribes, were not consulted in the development of the CRDEIS. This goes against the regulations and guidance of the Council on Environmental Quality (CEQ) requiring Federal agencies to contact Indian tribes and provide them with opportunities to participate at various stages as cooperating agencies with Federal agencies in NEPA reviews and preparation of EAs or EISs. Particularly, Section 40 CFR 1501.2(d)(2) requires that Federal agencies consult with Indian Tribes early in the NEPA process. Other sections also refer to interacting with Indian Tribes while implementing the NEPA process (see Part 1.B.2 in WH-IAEWG 2009; NEPA Guidance 2004).

The process under which the CRDEIS was developed is not consistent with Treaty Rights, circumvented the Tribal Trust relationship, and does not recognize the co-management authority of the tribes or the responsibilities of the federal government in ensuring that those relationships be honored.

#2

2. The CRDEIS relies on the work of the Hatchery Scientific review Group (HSRG) and other advisors who have no management authority

As you are aware, the tribes, state and federal governments have well-established co-management roles and intergovernmental relationships specifically documented through numerous orders (U.S. v. Washington, 759 F.2d 1353, 1358-59 (9th Cir. 1985); resulting in current law such as the Puget Sound Salmon Management Plan (PSSMP), developed by the comanagers and adopted as an order of the Federal Court in 1985.

In all watersheds, the state, tribes and the federal government operate jointly-coordinated hatchery, harvest and research programs in compliance with ESA opinions, permits and exemptions and there can be no separate goals or policies that are incompatible with the other key entities and agencies that depend upon them. Our joint management process does not single out hatchery- or fishery-only actions but instead requires an "all-H"approach closely coordinated between the co-managers on all of our regional goals, policies and guidelines because our programs are so closely coordinated and entirely interdependent and inseparable. Within our area, this integrated management approach is legally mandated under the PSSMP, which includes the Equilibrium Brood Document. Also, all of the coordinated hatchery, harvest, and habitat programs that are currently exempted from take and authorized by NOAA Fisheries under the ESA call for integrated management of the Hs.

Content Concerns

#3

1. None of the CRDEIS alternatives are adequate; either separately or in combination

The lack of consultation with the tribes likely was the cause of tribal concerns not being taken into account when identifying, considering, and analyzing the alternatives. We are especially concerned about important alternatives that should have been included but were not (see "Habitat alternative left out" under "Items missing from the alternatives presented" and our comments pertaining to maintaining or increasing hatchery production under alternative 1 below).

The inevitable result from any of alternatives 2-5 as proposed will be either a requirement for numerous takes of natural spawners – removals of listed fish of either hatchery or natural origins, from spawning grounds or at weirs, in violation of the ESA; or greatly reducing or eliminating mitigation hatchery production and dismantling the trust responsibility and the promise made to the tribes when the dams were built and the habitat destroyed. None of these options is acceptable to the Tulalip Tribes, nor we would expect, to any of the tribes, and they aren't compatible with NEPA mitigation requirements in Section 6.9 Mitigation of WH-IAEWG (2009). "Mitigation involves taking steps to avoid, minimize, rectify, reduce, eliminate, or compensate for the impact of an analyzed alternative (40 CFR 1508.20)." "Mitigation measures discussed in an EIS must cover the range of impacts of the analyzed alternatives, and such measures should be considered even for impacts that by themselves would not be considered "significant" (Question 19a, "CEQ's Forty Questions").

#4

#5

Alternative 1 is the no-action alternative. However, the CRDEIS implies that the current programs under this alternative are not adequate to conserve the listed populations under the ESA. In fact, current production could be maintained or increased, in combination with innovative hatchery strategies and effective habitat protection and restoration, while supporting salmon recovery. This obvious alternative was left out of the CRDEIS. Funding for all of the Mitchell Act Hatcheries would be eliminated under Alternative 2, which is unacceptable. Hatchery production is cut, with varying levels of additional weirs and selective fisheries implemented, in Alternatives 3 through 5, under the guise of conservation. These last three alternatives are based on untested and unsupported assumptions and are also unacceptable.. NMFS

#6

#7

#8

#8

has further stated that no one alternative proposed will likely be adopted anyway but instead some compromise. Even if the alternatives proposed were acceptable to tribal policy or treaty rights, we are convinced the best available science was not used in the development of the alternatives, which are not scientifically defensible.

2. Important considerations were ignored in all of the alternatives

#9

2.1. Habitat alternative left out: Addressing genetic risks from hatchery fish introgression by increasing natural production through habitat protection and active restoration as the preferred alternative

Perhaps the biggest oversight of the CRDEIS in our opinion was the decision to exclude habitat restoration and protection as one of the alternatives, or as a part of all alternatives, since this is necessary to support both hatchery and wild production in the Columbia River basin. A chief conservation concern of the EIS was to address risks to genetic fitness that may reduce productivity to wild fish, but also to reduce potential ecological risks to wild fish posed by high proportions of hatchery-origin fish relative to natural-origin fish. We need to state up front that we believe that habitat is by far the primary factor limiting productivity, not hatchery fish introgression. The actions proposed in alternatives 3-5 that seek to increase the productivity of natural spawners without including habitat as their primary element will only result in reducing viability; any improvements conferred to productivity will not be realized because the fish will still be unable to utilize the degraded habitat, which is the current condition.

#10

The relative gene flow between the composite wild-hatchery population can be expressed through the equation of proportionate natural influence (PNI), which, like any fraction, can be increased by decreasing the denominator (decreasing the hatchery fish proportion). The proposed alternatives seek to reduce the denominator of the PNI equation by reducing hatchery fish proportions by reducing Mitchell Act Hatchery production, installing weirs and implementing selective fisheries. However, the more obvious and also more sustainable alternative to address the problem of reducing the fraction of hatchery fish is to increase the numerator of the fraction (increase the natural fish proportion). Not including this extremely basic and obvious solution does not comport with NEPA regulations, which require that alternatives analysis …"Rigorously explore and objectively evaluate all reasonable alternatives and for alternatives which were eliminated from detailed study, discuss the reasons for their having been eliminated." http://www.fhwa.dot.gov/environment/alts.htm.

#11

Will, as you know and have heard me say for years, the primary goal of the Tulalip Tribes is to protect and restore the habitat necessary to produce robust natural runs at a level necessary to support treaty rights and other benefits. Our primary management objective has always been natural production of all species of fish in all of the watersheds that we manage. It is the cornerstone to our recovery plans. Increasing natural spawner abundance, productivity, spatial structure and diversity through implementing salmon recovery efforts and associated habitat protection and restoration actions is the obvious solution to reducing the fraction of hatchery fish on the spawning grounds. Not placing the primary focus on implementing habitat actions and increasing natural spawners flies directly in the face of NOAA Fisheries' and the co-manager's mandate to implement salmon recovery plans using an all-H approach. Hatchery reform is destined to fail if it is not implemented with a consideration of all of the Hs.

#12

We understand the reason stated in the CRDEIS was that its purpose was to evaluate funding of Mitchell Act Hatcheries and because habitat restoration funding falls under a different source (the Pacific Coastal Salmon Recovery Fund); it was not included in the CRDEIS for that reason. However, hatchery and harvest reform and salmon recovery cannot be evaluated, much less performed or achieved, in isolation from habitat protection and restoration, especially when habitat quantity and quality are the primary factors

for the decline and the primary factors limiting the recovery of self-sustaining salmonid populations in the Pacific Northwest. #12

Soon after the EIS was first initiated, NOAA decided to expand its scope to include many other hatcheries throughout the basin that are not funded by the Mitchell Act because it made sense to evaluate the entire hatchery production, which we agree makes logical sense. However, this train of logic refutes the reason given why habitat was omitted because the EIS was limited to the evaluation of funding for the Mitchell Act hatcheries. We would also agree that evaluating harvest in the context of hatchery reform also makes good sense. What we don't understand, at all, is how reform of habitat protection and restoration can be omitted as an alternative in this CRDEIS? #13

We were recently informed that you were told directly that habitat is not the problem; that it isn't as important to recovery as is the threat to wild fish posed by hatchery fish on the spawning grounds. WDFW recently similarly stated in responses to comments received on their Hatchery and Fishery Reform Policy (Appleby 2009) that, "The scientific literature and analyses of the HSRG clearly indicate that reducing pHOS is a much more effective and sustainable approach for achieving a desired PNI than increasing pNOB". WDFW went on to state, "We agree and believe it is implied in the policy (Policy Guidelines Item 2. "Use the principles, standards and recommendations of the Hatchery Scientific Review Group (HSRG) to guide the management of hatcheries operated by the Department."). #14

All of this is highly disturbing and unacceptable. We strongly doubt that simply culling hatchery fish is the most sustainable or effective approach to achieve a desired PNI as opposed to increasing self-sustaining natural production. More importantly, we strongly disagree that hatchery fish pose a larger threat to salmon recovery than does the continued loss of habitat and ask NOAA Fisheries to clarify its position on that issue as well. All of this greatly damages and minimizes many years of work and expense we have devoted toward our habitat protection and restoration efforts, which the Tribes are dedicated to achieve no matter what obstacles we may encounter on the way. We know this to be the key to recovering ALL of our salmon populations. All of the evidence, including all of the "All-H" integrated AHA modeling that we have done to date, shows that habitat is the primary limiting factor to recovery of the listed populations we work with. Undoubtedly this would be found to be true for most of the other populations throughout the state where it has been estimated that the vast majority of the freshwater rearing and spawning habitat has been lost and the remainder severely qualitatively degraded.

Habitat protection and restoration, if effectively implemented, continue to generate fish sustainably over the long term, while continued habitat degradation will result in continued natural production declines. Given that the primary limiting factors are habitat-related, that sustainable recovery requires meaningful and effective habitat protection and active restoration actions, and that not doing so is allowing the same mistake to occur over and over again, the CRDEIS absolutely must include habitat actions and a strong commitment and approach to "All-H" management, habitat protection and active habitat restoration (if not, see next paragraph). This will be absolutely necessary for NOAA Fisheries to implement the salmon recovery plans and achieve the recovery goals. The CRDEIS has to be re-done to include habitat and salmon recovery actions incorporated into a primary alternative. Any future we envision that includes a sustainable salmon resource must include a greatly improved approach to habitat management than we now see; "habitat reform", if you will. #15

One thing we often hear from opponents to salmon recovery is that the habitat in the Columbia basin, with its dams, irrigation and other habitat problems, along with other particularly degraded watersheds, cannot be restored much less even realistically, adequately protected. Meanwhile, we realize that NOAA Fisheries must still protect the fish because it is your responsibility under the ESA. However, when the opposition makes that argument, it is circular and either illogical and even nonsensical, or deceptive and intentionally obfuscating. This decline in the salmon runs was anticipated when the government built the dams and #16

#16

developed the Mitchell Act to compensate for the natural production loss caused by the degraded and lost habitat. Now the concern is that there are too many hatchery fish, relative to natural fish, on the spawning grounds, so we now have to reduce the Mitchell Act hatchery production… Of course there are! That's why we built them! We either need to fix and protect the habitat or operate the mitigation hatcheries as required and promised. We can't have it both ways. The dams came with the hatcheries, and they go with the hatcheries. It's as simple as that really.

#17

In chapter 4, the CRDEIS categorizes the Columbia River salmonid populations into three categories (Primary, Contributing and Stabilizing). Genetic risks are to be controlled by limiting pHOS interacting with NOS. The background technical documentation to support the assertion made in the CRDEIS that cutbacks in mitigation hatchery production, installing weirs and implementing selective fisheries to cull hatchery fish will provide conservation benefits to natural wild populations from hatchery populations is not given. Please supply quantitative data that shows the justification and rationale for subdividing the salmonid populations into these categories and the benefits of their associated management strategies toward achieving viability and recovery goals. These designations are similar to the tiered approach in the Population Recovery Approach (PRA) for watershed prioritization. We are extremely concerned that these classifications are being used to make decisions about which watersheds or salmonid populations to leave behind, which should receive the necessary improvements, and protections, which can be expected to achieve recovery, and how stringent the HSRG guidelines should be applied based on those designations. We understand the PRA approach is also being proposed for the Puget Sound DEIS alternatives.

In Appleby (2009), it is stated that the HSRG wants full implementation of all of the PNI and pHOS standards within five years for all populations, whether Primary, Contributing, or Stabilizing (essentially, the tiered approach in PRA) and says that the endorsement of the HSRG's guidelines by NOAA's Recovery Implementation Science Team (RIST) "…reinforces the need for rapid implementation of hatchery reforms.". This is also highly disturbing and is another show stopper approach to the tribes.

Through our Hatchery Action Coordination Committee (HACC) process we will be asking the Puget Sound Recovery Implementation Technical Team (RITT) and the Recovery Implementation Science Team (RIST), to evaluate, from a technical standpoint, the Primary, Contributing, and Stabilizing (PCS) approach and the PRA approach to watershed and population prioritization. We will be requesting them to evaluate whether they endorse "full implementation of all of the PNI and pHOS standards within five years for all populations, whether Primary, Contributing, or Stabilizing" through rapid implementation of hatchery reforms and how those takes off of the spawning grounds are being addressed in our integrated harvest, hatchery, and habitat management and salmon recovery plans. We will also need to get the final policy, technical, and treaty rights perspective on PRA, PCS watershed and population designations and rapid implementation of the HSRG's guidelines from the tribes.

#18

2.2. Disease risk assessments are not adequately emphasized

Risk assessments in Chapter 4 include competition, predation, viability parameters, fish removals from weir placements, disease, nutrient recycling, and stray hatchery fish risks. However, disease risks were not adequately considered in the alternatives. Recently, the Pacific Northwest Fish Health Protection Committee (PNFHPC), a consortium of fish health experts from multiple agencies from all of the Pacific Northwest States and Canada, all agreed to a resolution to control the spread of IHN virus and other fish pathogens of concern at fish hatcheries in the Pacific Northwest coastal region with major emphasis on the Columbia River basin.

The resolution recognizes that there has been a recent increase in the number of detections of the steelhead-specific MD subgroup of IHN virus in juvenile and adult steelhead stocks on the Washington Coast. The virus has appeared in six watersheds that were negative for this virus before 2007. IHN virus and other

#18

pathogens of concern have caused significant losses to hatchery stocks and their dependent harvest programs in the Columbia River basin and more recently along the Washington coast. Since IHN virus and other serious fish pathogens increase the threat of disease to Endangered Species Act-listed steelhead and other wild salmonid populations of concern, these at-risk populations are more sensitive to local extinction due to disease, so the emergence of serious fish pathogens such as the MD subgroup of IHN virus into new geographical regions has far-reaching implications that affect domestic and international hatchery and fishery programs including US-Canadian fishery management and the ESA.

Since there is no effective treatment to control IHN epidemics, fish health experts are in agreement that the most effective strategy to control IHN virus or other pathogens of concern in susceptible hatchery populations is to prevent them from being introduced into a facility by implementing strict bio-security measures that include, first and foremost, securing the influent water supply where the majority of these outbreaks come about in facilities with surface water supplies in which fish are naturally present. The PNFHPC, an organization devoted to safeguarding the health of aquatic animals in the Pacific Northwest, concluded that securing the water supplies in the region's hatcheries would dramatically decrease pathogen outbreaks and the possible amplification of pathogens.

Fish health experts representing all of the state, tribal, and federal agencies are currently disseminating a survey to all of the respective hatcheries throughout the Columbia River basin to determine what it would cost to disinfect their hatchery water supplies to make them pathogen-free. The survey is to be completed by March of 2011. The PNFHPC will provide policy advisors in western Washington with a letter that entails a short explanation of the problem, the proposed strategy to correct it that eliminates virus or other pathogens of concern from rearing facilities influents and the associated costs to retrofit water intakes to make them pathogen-free.

This major problem and effort being made to address it was not even mentioned in the CRDEIS but needs to be added, recognizing the great benefits it will provide to both wild and hatchery fish production and the improvements to fish health that will result by implementing this effort. This effort should be an overarching concern to all conservation agencies in the Northwest and in our opinion, should take priority over the genetic risks reviewed here and given such weight throughout the CRDEIS. We urge NOAA Fisheries to work together with the PNFHPC in solving this problem. This should be a priority for hatchery reform communicated to elected officials, which has been supported and signed by all of the parties, agencies, and entities in three different states. Disease prevention is another ESA mandate that has been largely ignored in what has been called "Hatchery Reform".

#19

2.3. Pinniped predation risk assessments are not adequately emphasized

Also, the recent decision to remand the authorization for lethal removal of problem sea lions at Bonneville dam was not adequately considered in the alternatives. Interactions from marine mammals that affect salmonids were not quantified in terms of total mortality or the effects on wild fish viability in the CRDEIS in the first place. Reduced hatchery production and removal of natural spawners for broodstock could easily result in higher proportions of natural-origin listed salmonids predated upon at Bonneville. When this CRDEIS was sent out for comment, NMFS still had authorization through the Marine Mammal Protection Act to address the issue of predation by California sea lions at Bonneville Dam. Now, however, since November of this year, the 9th Circuit Court of Appeals remanded the authorization for lethal removal of problem seas lions at Bonneville Dam back to the Oregon District Court, which, combined with the proposed hatchery reductions in the alternatives and the apparent lack of evaluation of predation, all combine to form a very significant threat that is not being adequately evaluated. The need for continuing sea lion eradication is urgent and the need to consider the recent decision with the effects of the various alternatives is going to be required and poses another significant risk to salmon recovery and ESA protections of listed fish.

#20

3. Some alternatives actually call for physical removal of wild and hatchery fish from natural spawning areas

This seems to directly contravene the requirements of the ESA to protect listed fish. These fish removals are also not compatible with the comanagers' salmon recovery goals. The alternatives include natural spawner removals to meet arbitrary genetic broodstock integration, hatchery-origin spawner (pHOS) limits, and PNI guidelines; employing selective fisheries for the sole purpose of adjusting hatchery:wild ratios, installing weirs, and cutting mitigation hatchery production to reduce pHOS and increase PNI. These arbitrary, but significant, natural spawner removals are not adequately substantiated or supported by conclusive science. Hatchery-origin natural spawner removals are also direct takes because there are numerous hatchery populations that are designated as part of the listed ESU, which cannot be distinguished from other non-listed hatchery-origin fish and not all are adipose fin mass-marked either. We have not seen quantitative data that document the justification and rationale for determining the apparently arbitrary threshold pHOS limits of 0.05 and 0.10 for primary and contributing populations and the PNI goals of 0.7 or 0.5 for integrated programs. We are not aware of any documentation that these methods have worked to improve population viability.

#21

The argument has been made that wild fish removals from the spawning grounds for hatchery broodstock integration aren't direct takes because they produce hatchery progeny that mitigate for the removals. While it may be true that they will be used to make hatchery progeny, they only replace other existing hatchery broodstock and thus provide no net increased production or benefit beyond theoretical improved fitness of hatchery stocks, which depends on available productive habitat. We reject that this is necessarily the best use of those natural spawners. Rather, any removal of any/either natural- or hatchery-origin listed salmonids from natural spawning grounds must only be done when the benefit to the resource has clearly been shown to exceed the cost of losing a natural spawner. We are concerned that mining wild populations to replace other already available hatchery-origin broodstock fish often reduces all four aspects of population viability.

We are concerned that this strategy could backfire and instead of protecting the extant naturally-spawning wild salmonid populations, it could erode their reproductive success and viability and harm salmon recovery efforts. The science does not appear to have been conclusively substantiated across varying life history types, across the associated varying hatchery programs, with their varying rearing durations, methods, and release strategies. We would like to see the conclusive evidence that mitigates these direct takes and guarantees increased productivity of the integrated hatchery stocks, particularly given the current state of the habitat, including subyearling and fry release programs, without reducing wild population viability and reproductive success.

#22

We reiterate that, while these comments mainly pertain to the Columbia River DEIS, we are concerned that broad application of simple PNI guidelines will set further precedent and inevitably result in the inappropriate removal of natural-origin fish elsewhere as well, further impacting the spatial structure, diversity and abundance of listed populations with questionable benefits to productivity that simply put, do not justify the other numerous and severe reductions in viability. Without detailed, watershed-specific analyses, efforts to improve hatchery broodstocks will directly counteract our other efforts toward salmon recovery. The important point is that management decisions should be made specific to the situation in each watershed.

#23

With regard to integrating at PNI > 0.7 for all Primary populations, we looked at what this would mean in the Snohomish basin and first noted that all of the populations in the Snohomish system are designated as Primary (HAIP 2009). Just to integrate broodstock only for the on-station portion of the Wallace-Tulalip

#23

hatchery program, this would require 93.3% of the broodstock to be of natural origin (≥ 700 wild, listed Chinook salmon would have to be removed from the spawning grounds annually).

We also looked at what it would mean to meet the pHOS < 5% guideline (we now understand it is 2%, but we looked at 5%) in the Snoqualmie and < 30% for the integrated Skykomish population. Using historic NOS/HOS breakouts with 100% marking and tagging from 1998-2000, this would have required the additional removal of, on average, 32.% of the estimated Skykomish population natural spawning escapement for these years.

To illustrate how this is not consistent with salmon recovery goals, the combined removals to meet the HSRG policy for both natural-origin brood stock integration and hatchery-origin spawners throughout the Snohomish basin would amount to taking approximately 50%, or more than 2,000 fish, out of the natural Snohomish basin spawning escapement in each of the years from 1998-2000. If these removals were calculated the same as exploitation rates, they would be more than double the allowable exploitation. This approach would have left only 48.0%, 50.3%, and 53.0% of the original escapements, for 1998, 1999, and 2000, respectively.

This level of reduction of natural escapement would be unacceptable and may jeopardize NOAA Fisheries 4(d) Exemption from take issued for the co-managers' harvest management plan. Compensation for any takes to meet the guidelines under any of the alternatives in terms of RERs or recovery plan objectives was never addressed in the CRDEIS. Under the 4(d) Rule, NOAA Fisheries has exempted the hatchery, harvest, and salmon recovery/research activities for listed Chinook salmon populations as they are stated in the harvest plan, the HGMPs, RMPs and salmon recovery plans. We are concerned that these large natural spawner removals might significantly affect NOAA Fisheries' ESA assessment of the effects on listed populations under the harvest plan and other permitted salmon recovery, hatchery and research programs.

#24

4. There is too much reliance on concerns about deleterious genetic interactions between hatchery and wild fish with a lack of documentation and use of best available science

Estimating gene flow on the basis of carcass surveys is indirect at best, perhaps not even indicating whether hatchery fish and natural fish even died in similar locations, not indicating the degree to which they were spawning in the same location at the same time. Genetic data can be used to infer gene flow between hatchery and natural populations, and furthermore they can be tested to determine whether there is sufficient statistical power in a given data set to make specific inferences. The Ford (2002) model, from which the concept of PNI was derived, relies on several simplifying assumptions in modeling the fitness effects of hatchery integration. Spawner surveys and carcass sampling are expanded out according to the hypothesized run distribution to estimate pHOS. This method can only produce a point estimate with no measure of the uncertainty around the point estimate (a confidence interval).

This estimate of pHOS therefore cannot be evaluated as to whether it provides a statistically valid representation of the actual relative distribution of hatchery- and natural-origin fish in a river system. And that is before tackling the question of whether the fish are alive in the same time and place that spawning occurs. These pHOS estimates are then used to indirectly estimate effects on fitness of natural populations. Thus, using pHOS estimates as a proxy to estimate gene flow inserts an additional set of simplifying assumptions between observations and management outcomes. The large but unknowable uncertainty and error inherent in the escapement estimates and carcass sampling has been extensively documented in the literature and in annual survey data. If the variance on escapement estimates of hatchery- and natural-origin fish could even be known in order to be introduced into the estimate of the proportion of natural- and hatchery-origin fish on the spawning grounds, differences in run-timing, spawn-timing, assortative mating, and reproductive success of the hatchery- and natural-origin fish would remain.

#24

Preliminary analyses of genetic data in the Snohomish indicate that gene flow may be substantially less than carcass surveys alone would support. Blanket management of hatchery program size and constitution according to a single parameter (pHOS) with unknowable uncertainty should not be conducted without rigorous evaluation of data that can address the same question but with knowable uncertainty. The results of multiple independent analyses can then be compared in order to produce a better-informed estimate of what is actually happening in the river.

#25

Numerous studies show that, when done right, supplementation with hatchery fish can boost natural production. Techniques such as random, representative selection of local broodstock and factorial mating to maintain diversity, low rearing densities, underwater feeders and exposure to live feed can train fish to recognize and capture prey, camouflage coloration of rearing vessels, in-stream and overhead cover and subsequently of fish, combined with exercising fish and exposure to predators during rearing can help fish to evade predators after their release, some or all of which can be incorporated depending on practicality of rearing locations to more closely mimic natural rearing conditions. Tests of different rearing/release strategies and growth regimes that mimic natural rearing may have the potential to further increase survival.

#26

Meanwhile, the AHA model inaccurately assumes that all hatchery fish are the same and all have the same negative effects on natural population productivity and viability. Recent studies have been purported to indicate that the reproductive fitness of hatchery-origin fish and of natural salmon with which they interbreed with decreases through time and in some cases quite rapidly. Most of these studies were done on steelhead; however, we do not think that steelhead are a representative species to make broad-based claims about hatchery fish. A review of those studies brings up several confounding factors that need to be accounted for. Hatchery steelhead from non-local sources with a multi-generational record of domestication should not be compared to the productivity of wild fish, particularly in consideration of the fact that supplementation guidelines and most current supplementation programs require the use of local natural populations as the source for hatchery broodstock. Most steelhead stocks have been deliberately or inadvertently, selected for characteristics that diverge from those of native populations that may be maladaptive such as altered run timing, hatchery selection of age and stage of development at release not representative of the age at which natural-origin steelhead migrate to sea. Also, inadvertent hybridization of winter and summer populations in hatcheries is not representative of these different races and runs that remain reproductively isolated in nature. Using steelhead to make broad-based claims about the reduced productivity to a composite hatchery-natural population caused by hatchery fish is disingenuous.

#27

Likewise there can be confounding environmental effects, other than genetic, that cause reduced fitness in hatchery fish. Comparing natural-origin spawning in optimal habitat with hatchery fish spawning in less ideal conditions is a biased comparison and does not consider important life history and behavioral effects. As one example, natural spawners have evolved in, colonized, and are better imprinted on the available productive habitat remaining, resulting in higher homing affinity back to the productive spawning and rearing habitats; displacing hatchery fish that are instead released at various points in watersheds often lacking productive habitats. Even if they were released only into productive spawning and rearing habitats, wild fish have the advantage simply due to the fact that they already occupy those habitats making it harder for the hatchery fish to spawn and rear with the same relative productivity.

#28

Our concern here is that salmon recovery efforts may actually be impeded if properly-operated hatchery programs that use local natural stocks (that may or may not be integrated with natural-origin fish depending on the assessed impacts on viability in each particular case) that are in fact making valuable contributions to recovery are all treated the same and culled regardless of their differences and potential benefits or threats they may have associated.

#29

Also, it appears that there have been very few studies of gene flow that have demonstrated reduced productivity, particularly in F2 or subsequent generations or for most subyearling hatchery programs, particularly of listed subyearling Chinook that comprise most of the life history types in the populations that NOAA is responsible to protect and recover.

#30

While the Policy itself is certain to reduce abundance, diversity and spatial structure, limited DNA data suggests that it will not improve productivity or fitness either, which is driven by gene flow influenced primarily by relative effective populations size. Causing direct takes, reducing viability, and violating jeopardy standards in this CRDEIS is incompatible with Endangered Species Act NEPA requirements in Section 6.8.1 of the Federal Tribal Consultation Statutes, Orders, Regulations, Rules, Policies, Manuals, Protocols and Guidance (WH-IAEWG 2009). The policy states that, "Section 7 of the Endangered Species Act (ESA) directs all Federal agencies to use their existing authorities to conserve threatened and endangered species and, in consultation with the Fish and Wildlife Service (FWS) or the National Marine Fisheries Service (NMFS), to ensure that their actions do not jeopardize listed species or destroy or adversely modify critical habitat."

5. The DEIS overemphasizes the economic impacts of fisheries while de-emphsizing cultural benefits

#31

While we understand that the economic analysis and the fishery modeling it was based upon have numerous technical errors that would take an entire separate analysis to address, we are very concerned that the reduced production from Mitchell Act hatcheries that is likely to result from this CRDEIS will increase impacts on listed natural populations. This is particularly concerning because past baseline stock abundances modeled were much higher than they are currently, which has the potential to further underestimate future fishery impacts. Plans for "fishery reform" and to "fully implement selective fisheries" will undoubtedly further exacerbate the effects on natural populations if Mitchell Act hatchery production is decreased under the proposed alternatives due to increased encounter rates and increased hook and release mortality on unmarked fish. This will also further increase our uncertainty in modeling the impacts of selective fisheries.

#32

However, while we remain very concerned about the effects of this CRDEIS on fisheries, we are most concerned about the over-emphasis on the economic value of these hatcheries. As far as we are concerned, the real value of these fish to the tribes is cultural. This CRDEIS does not recognize any mitigation responsibility associated with the Mitchell Act and seeks to further diminish Treaty Fishing Rights to access fish that has already been greatly diminished by the loss of natural resources. We have been dismayed to read some economic evaluations and comments that completely ignore the tribes altogether focusing solely on the negative cost:benefit ratio or putting price tags on the value of these fish. These hatcheries provide a way of life for Tribal members to maintain the culture and knowledge of fishing during the long period that we will be working on restoring the natural production required for the full realization of the Treaty right to fish in all usual and accustomed areas. And, of course, the value of that fishing to the Tribes greatly transcends any monetary values.

I look forward to discussing these matters further with you.

Sincerely,

Terry R. Williams

Terry R. Williams
Commissioner of Fisheries and Natural Resources

Cc: Billy Frank, Chairman, Northwest Indian Fisheries Commission
Mike Grayum, Executive Director, Northwest Indian Fisheries Commission
Paul Lumley, Executive Director, Columbia River Intertribal Fish Commission
Shawn Yannity, Chairman, Stillaguamish Tribe
Rick Cook, Bureau of Indian Affairs
Phil Anderson, Director, Washington Department of Fish and Wildlife
Aaron Reardon, Snohomish County Executive
Snohomish County Council
Dow Constantine, King County Executive
King County Council members
Snohomish Watershed Forum members
Stillaguamish Recovery Council members
Mason Morisset, Esq.
Tim Brewer
Mel Sheldon, Chairman
Tulalip Tribes Board of Directors
Raymond Fryberg, Sr.
Kit Rawson
Mike Crewson

References

Appleby, A. 2009. Public Comments and WDFW Responses. Draft Hatchery and Fishery Reform Policy C3619. Compiled by Andy Appleby, WDFW, Hatcheries Division, 6/15/2009. 54pp.

HAIP 2009. Crewson, M., K. Dimmitt, D. Hatfield, A. Hoffmann, K. Rawson, J. Scott, and A. Spidle. Snohomish Region Hatchery Action Implementation Plan (HAIP). September 4, 2009 DRAFT. 55pp.

NEPA 2004. NEPA Guidance: Revised Recommendations for the Preparation of Environmental Assessments and Environmental Impact Statements (the Green Book). Office of NEPA Policy and Compliance. Secretarial Officers and Heads of Field Organizations Recommendations for the Preparation of Environmental Assessments and Environmental Impact Statements. Second Edition. December 2004. U.S. Department of Energy. Environment, Safety and Health.

White House – Indian Affairs Executive Working Group (WH-IAEWG). 2009. Federal Tribal Consultation Statutes, Orders, Regulations, Rules, Policies, Manuals, Protocols and Guidance, January 2009. Prepared by the Consultation and Coordination Advisory Group (CACAG). Federal Tribal consultation statutes, orders, regulations, policies, manuals, and protocols that specify procedures as to how Departments, agencies and bureaus are to carry out consultation. Laws, orders, regulations and policies requiring that government-to-government relationships with tribes be carried out.

Letter #13

Comments on the "*Draft Environmental Impact Statement to Inform Columbia River Basin Hatchery Operations and the Funding of Mitchell Act Hatchery Programs*"
Oregon Department of Fish and Wildlife
November 22, 2010

The Oregon Department of Fish and Wildlife (ODFW) offers the following comments on the "*Draft Environmental Impact Statement to Inform Columbia River Basin Hatchery Operations and the Funding of Mitchell Act Hatchery Programs*" (DEIS):

1. **The scope of the DEIS should focus primarily on the action of Mitchell Act funding.**

   The DEIS attempts to serve two different functions:

   A. Provide National Environmental Policy Act (NEPA) coverage for the specific action of providing Mitchell Act funding for hatchery programs.

   B. Provide NEPA coverage for Hatchery Genetic Management Plan (HGMP) permitting by serving as a broad programmatic EIS.

   Although a programmatic EIS might be the most efficient approach for providing NEPA coverage for HGMP permitting, NOAA Fisheries' attempt to address two different purposes in a single EIS falls short of adequately accomplishing either objective. In fact, by broadening the initial scope to something beyond Mitchell Act funding decisions and by failing to provide clear and explicit policy alternatives for the region to consider, NOAA Fisheries caused general confusion about the intent of the DEIS, as evidenced by the overwhelmingly negative public response to it. As such, the development of a set of final NOAA Fisheries policies to guide HGMP permitting will require additional discussion and coordination with fisheries managers and the public. This effort will and should take more time than that currently allotted by NOAA Fisheries for completion of the DEIS. NOAA Fisheries should pursue the more complicated programmatic EIS only after it completes the necessary dialogue on the development of a regional hatchery policy. #1

   The DEIS should focus on its original scoping, i.e. only address the action of Mitchell Act funding. As such, the preferred alternative must achieve the Mitchell Act's original intent and purpose, as well as recognize the requirements and responsibilities of other agreements, in addressing the environmental impacts and loss of salmon spawning habitat and productivity resulting from the construction of the hydro-power system in the Columbia River Basin.

   In addition, the Mitchell Act Hatchery EIS Record of Decision should be made concurrent with completion of ESA consultation processes for critical hatchery programs throughout the Columbia Basin, including those specifically included in the 2008-2017 *United States v. Oregon* Management Agreement, as well as lower river hatcheries. This approach enables a preferred alternative to be informed by the policies and agreements associated with salmon and steelhead recovery that have been, and will be, developed collaboratively among the co-managers, NOAA Fisheries, regional entities, and other interests in the Basin. #2

#3

In late October and early November 2010, ODFW met with NOAA Fisheries to gain a better understanding of the policy choices NOAA Fisheries intended to represent by each alternative in the DEIS. These meetings were necessary because, as pointed out above, these choices are not explicitly presented and described within the DEIS. Instead the alternatives describe key elements of corresponding implementation scenarios, the details of which significantly influence the results and outcomes of the DEIS. As a result of these meetings, NOAA Fisheries described the policy choices for each alternative as:

a. Alternative 1 (Status quo as of 2007): Do not appreciably change the current (as of 2007) risks from interactions between hatchery- and naturally-produced salmon and steelhead throughout the Columbia River Basin. Maintain current harvest opportunities and uses of hatchery fish to achieve ESA recovery goals.

b. Alternative 2: Eliminate hatchery production currently funded under the Mitchell Act.

c. Alternative 3: Reduce the risks from interactions between hatchery- and naturally-produced salmon and steelhead in primary and contributing populations throughout the Columbia River Basin by better integrating and segregating hatchery fish, depending on management intent. Minimize effects on harvest opportunities and uses of hatchery fish to achieve ESA recovery goals.

d. Alternative 4: Reduce the risks from interactions between hatchery- and naturally-produced salmon and steelhead in primary and contributing populations throughout the Columbia River Basin by better integrating and segregating hatchery fish, depending on management intent, with an emphasis on minimizing the level of interaction for populations in the Upper Willamette/Lower Columbia domains. Preserve or enhance harvest opportunities and the uses of hatchery fish to meet ESA goals for populations downstream from Bonneville Dam.

e. Alternative 5: Reduce the risks from interactions between hatchery- and naturally-produced salmon and steelhead in primary and contributing populations throughout the Columbia River Basin by better integrating and segregating hatchery fish, depending on management intent, with an emphasis on minimizing the level of interaction for populations in the Interior Columbia domain. Preserve or enhance harvest opportunities and the uses of hatchery fish to meet ESA goals for populations upstream from Bonneville Dam.

#4

Although NOAA Fisheries' intent was to have the alternatives represent the full array of choices regarding the use of Mitchell Act funds to meet hatchery mitigation commitments in the Columbia River Basin, none of these choices acknowledge the fact that static funding since 1996 has crippled the ability of Mitchell Act-funded programs to maintain production, nor do they include a viable alternative for remedying the problem. Current production does not meet the minimum Mitchell Act mitigation obligation when it is put in a historical perspective. As with other hatchery mitigation commitments in the Basin, additional Mitchell Act funding is necessary to meet both conservation and mitigation obligations associated with Columbia Basin hatcheries.

Because ODFW recommends that NOAA Fisheries focuses the DEIS on the specific action of Mitchell Act funding for hatchery programs, our comments focus on the identification of a preferred alternative for that action. However, because we reviewed the entire DEIS, ODFW provides general comments on the programmatic elements in Appendix A. These may prove useful to NOAA Fisheries when completing a programmatic EIS.

2. The Preferred Alternative for the provision of Mitchell Act funding for hatchery programs should be consistent with Oregon policies and commitments under the Endangered Species Act (ESA), existing mitigation agreements, and the 2008-2017 *United States v. Oregon* Management Agreement (*US v Oregon* Agreement).

A. As it applies to Mitchell Act-funded hatchery programs in Oregon, a preferred alternative should include the following: #5

a. Annual operation and maintenance (O&M). In Oregon, Mitchell Act funds annual O&M for six salmon hatcheries operated by the Oregon Department of Fish and Wildlife. These are the Big Creek, Bonneville, Cascade, Clackamas, Oxbow, and Sandy hatcheries. These hatcheries are involved in the propagation, rearing and liberation of spring and fall Chinook salmon, summer and winter steelhead, coho salmon and sockeye salmon for use in conservation and/or harvest augmentation management programs. Some specific activities include:

1. *Salmonid propagation, rearing and liberation*. This includes program administration, equipment and infrastructure maintenance, public outreach, education, and planning.
2. *Pathology services*. This includes providing diagnostic fish health services, including, but not limited to periodic fish health monitoring, exams and treatment recommendations during disease outbreaks, and pre-release fish health checks.
3. *Fish distribution activities*. This includes moving fish between hatcheries and, where necessary, transporting them to remote release sites.
4. *Alternative uses of excess hatchery adults*. This includes the disposition of adults, including providing food quality fish to food banks and tribes and placing carcasses in streams as nutrient sources.

b. Annual monitoring and evaluation. Annual monitoring and evaluation addresses uncertainties associated with hatchery production and operations, hatchery risks to wild populations, selective harvest, and natural production monitoring. Some specific activities include:

1. *Fish identification*. This includes:

a. Marking fish with fin clips and/or coded wire tags or PIT tags.

b. Procuring and maintaining marking and tag recovery equipment.

c. Operating tag retrieval facilities, including a coded wire tag laboratory. #5

2. *Selective harvest*. This includes:

   a. Implementing mass marking.

   b. Developing live-capture commercial gear and techniques.

   c. Conducting release mortality studies.

   d. Conducting studies detailing when various species/stocks are present in different river sections for the purpose of refining harvest selectivity (non-target avoidance). This could be accomplished through telemetry or PIT tag studies of migrating adult fish or through tagging of naturally-produced juvenile fish to assess differential fishery/harvest impacts, migration timing, and survival.

   e. Bringing current terminal sites to full production potential.

   f. Investigating new terminal sites to better accommodate all existing fishers. Funding would be needed for expansion of infrastructure (net pens, pilings, etc.).

   g. Implementing and monitoring new live capture recreational and commercial fisheries as deemed effective and appropriate, using location, timing and mark-selective methods. Implementing monitoring programs to quantify release numbers and release mortalities.

   h. Funding to maintain fishery management, planning, oversight and monitoring.

3. *Abundance monitoring*. This includes habitat use, distribution, spawning ground surveys and other abundance monitoring of lower Columbia River wild fish populations, including fall and spring Chinook, chum, and coho salmon and winter steelhead.

4. *Hatchery program evaluation*. This includes annual assessments of stray rates, survival to adults, contribution to fisheries, hatchery fractions on natural spawning grounds, interactions between wild and hatchery fish, hatchery program risks to wild populations, and investigations into efficacy of integrated and segregated hatchery programs to evaluate consistency with program objectives and recovery of ESA-listed species.

c. Hatchery reforms. General recommendations for how best to mitigate risks hatchery programs pose to wild fish have been provided by the Hatchery Scientific Review Group (HSRG), in ESA recovery plans, in other state and federal policies and regulations, and in the scientific literature. These recommendations will guide reforms for Oregon's Mitchell Act hatchery programs, although specific hatchery reform actions will require local solutions customized to solve local problems. Hatchery reform actions, which would require special funding, or other associated activities as deemed appropriate, may include: #6

#6

1. *Installation of sorting weirs in tributaries.* The purpose of the weirs would be to exclude hatchery fish from natural spawning areas.

2. *Development of new conservation hatchery programs*. Programs would be unique and specific to certain stocks and areas, for example, a chum program that can be used for reintroductions.

3. *Capital improvement activities that facilitate hatchery reform*. Mitchell Act funding in Oregon supports capital improvements to facilities aimed at decreasing risks to wild populations. Examples include:

    a. Improvements in water intake screens,

    b. Improvements in fish passage at hatchery weirs,

    c. Facilities for improved broodstock collection and management,

    d. New acclimation facilities.

#7

d. Coordination with other funding partners. Mitchell Act funded programs in Oregon are part of several cooperative programs that include additional funding from the Bonneville Power Administration, the US Army Corps of Engineers, the State of Idaho, Tribal Accords, the State of Oregon, Portland General Electric, and the City of Portland. These cooperative programs include recovery of Snake River sockeye, reintroduction of coho in cooperation with Columbia Basin treaty tribes, the John Day Mitigation program, and mitigation for hydropower and water supply developments in the Sandy and Clackamas basins. These programs are obligations by Oregon and are dependent on Mitchell Act funding.

B. The preferred alternative should be consistent with Oregon policies regarding the recovery of ESA-listed Columbia Basin salmon and steelhead. These policies are reflected in existing recovery plans, two of which have been adopted by Oregon.

#8

a. Mid-Columbia Steelhead Recovery Plan (available at http://www.dfw.state.or.us/fish/CRP/mid_columbia_river_plan.asp). Hatchery programs that affect the Mid-Columbia steelhead Distinct Population Segment (DPS) are described in Section 8.6 (p. 8-124 to 8-145) and under the individual population viability assessments in Appendix B. Stray hatchery adults from Columbia Basin hatchery programs outside of the DPS have been identified as a high risk factor for several populations. Recommended hatchery strategies to mitigate hatchery risks are described in Section 9.7 (p. 9-206 to 9-218). Hatchery strategies in the Mid-Columbia Steelhead Recovery Plan are generally consistent with HSRG recommendations (p. 12-14).

#9

b. Lower Columbia Recovery Plan (available at http://www.dfw.state.or.us/fish/CRP/lower_columbia_plan.asp). Hatchery risk standards are defined in Table 4-5 (page 68). Hatchery programs and their associated

#9

risk factors that affect the three Lower Columbia Evolutionarily Significant Units (ESUs) (coho, Chinook, and chum) and one DPS (steelhead) are described in Chapter 5, "Limiting Factors" (starting on p.79). Hatchery risks specific to each ESU/DPS are described in Section 5.4 and Table 5-5 (coho), Section 5.5 and Table 5-7 (Chinook), Section 5.6 and Table 5-11 (steelhead) and Section 5.7 and Table 5-14. (chum). Actions to mitigate hatchery risks are included in Chapter 7 (pages 211-294), and summarized in Tables 7-3A through E, with additional information on each action in Table 9-3.

#10

C. The preferred alternative should be consistent with obligations under the 2008-2017 *United States v. Oregon* Management Agreement.

The *US v. Oregon* Agreement establishes obligations related to harvest and hatchery production. Production principles and agreements are detailed in section III (pages 62-83) and Tables B1 through B7. Particular attention should be paid to Section III.5, page 67, which specifically addresses Mitchell Act funding for hatchery programs.

D. The preferred alternative should promote hatchery reforms that are consistent with the protection of wild fish populations. NOAA Fisheries should consider the following principles when promoting hatchery reform actions:

#11

a. Differences in roles played by the evolutionary significant unit/distinct population segment (ESU/DPS) populations in achieving recovery objectives. It is important that the preferred alternative incorporates site-specific goals, management actions, and standards to achieve conservation and survival of naturally-producing native fish species. Regional approaches mask potential efficiencies of this site-specific or watershed-specific approach to hatchery reform. Efficiencies with implementing hatchery reform action plans that are based on distinguishing characteristics of primary, contributing, and stabilizing populations or other population viability designations are not clearly identified within the DEIS. The preferred alternative should consider these population and watershed differences.

#12

b. Use of best management practices to mitigate hatchery risks. Various resources, including the HSRG, the ESA Technical Recovery Teams, Recovery Plans, other state and federal policies and regulations, and the scientific literature provide general recommendations for how best to mitigate risks.

#13

c. Custom designs to address specific problems. While general resources provide valuable guidance, program-specific hatchery reform may require novel approaches to manage specific problems.

#14

d. Flexibility in hatchery risk management strategies. Approaches to hatchery risk management should remain flexible enough to consider new, developing and future risk management information and strategies as they become available. Where

#14

differences exist in how to best mitigate risks because of uncertainty in the underlying science upon which recommendations for best management practices are based (noted above), the preferred alternative should allow for flexibility and avoid being prescriptive with specific strategies. Some risk abatement strategies will need to be tested for effectiveness.

#15

e. Integration with harvest management. Hatchery reform actions will need to be integrated with harvest management, including the use of fisheries that are selective with regard to location, timing, and marked hatchery fish

#16

f. Sufficient funding to implement and evaluate hatchery reform actions. The preferred alternative should allow for flexibility and avoid being prescriptive with regards to the distribution of funding for specific risk-management strategies. Also, because it is anticipated that the costs of implementing new hatchery reform actions, along with research, monitoring and evaluation of these actions, will exceed current Mitchell Act funding levels, the preferred alternative should include additional funding to implement and evaluate hatchery reform actions.

3. Each alternative for Mitchell Act funding included in the DEIS should be subjected to an accurate and comprehensive analysis.

#17

The biological and socioeconomic analyses of the alternatives in the DEIS should use accurate and current information about hatchery production levels, hatchery risks, harvest assumptions, harvest data, and wild fish population status. The analysis in the current DEIS is based on out-dated information and includes some significant errors. The following information sources are pertinent to and contain data and assessments necessary for the analysis of alternatives:

a. ODFW's most recent Fish Propagation Report (available at http://www.dfw.state.or.us/fish/hatchery/docs/2009%20Fish%20Propogation%20Annual%20Report.pdf), which identifies current hatchery production and releases in Oregon, as of 2009.

b. The most current Columbia River Joint Staff and recreational fisheries reports, which identify mainstem Columbia River catch data through 2009:
   - 2010 Spring Joint Staff Report (available at http://www.dfw.state.or.us/fish/OSCRP/CRM/reports/10_reports/2010springjsr.pdf)
   - 2010 Fall Joint Staff Report (available at http://www.dfw.state.or.us/fish/OSCRP/CRM/reports/10_reports/2010julyfalljsr.pdf)
   - 2008 Lower Columbia River and Buoy 10 Recreational Fisheries (available at http://www.dfw.state.or.us/fish/OSCRP/CRM/reports/08_reports/08_col_sport_report.pdf)

#17

c. The most recent Select Area Fisheries Evaluation (SAFE) Annual Reports, which describe the current fishery and hatchery management strategies, including operational considerations and monitoring and evaluation, for the SAFE programs in the lower Columbia River.
   - FY 2007-08 Annual Report (available at http://www.dfw.state.or.us/fish/OSCRP/CRM/reports/08_reports/SAFE_07_08AnnRept.pdf)
   - FY 2009 Annual Report (Enclosed)

d. The 2008 *US v Oregon* Biological Assessment for Columbia River Harvest (Enclosed), which describes Columbia River fisheries impact limits, harvest assumptions and monitoring and evaluation. We also recommend that the analysis be consistent with the terms of 2008-17 *US v Oregon* Management Agreement, which was included as Appendix B in the DEIS but apparently did not influence the analysis.

#18

ODFW also recommends that the hatchery risk assessment and best management strategies in the DEIS be based on the best available science. The peer-reviewed literature on hatchery risks is extensive. The DEIS should be substantiated by this literature, and should include either a thorough literature review, or at least a concise but comprehensive summary.

A short list of recent review papers is included[1], which should provide enough sources to initiate a literature review.

Additional reference information is available from

a. The Hatchery Scientific Review Group, available at http://www.hatcheryreform.us/hrp/reports/system/welcome_show.action (accessed October 6, 2010).
b. The US Fish and Wildlife Federal Hatchery Review, available at http://www.fws.gov/Pacific/fisheries/hatcheryreview/reports.html (accessed October 6, 2010).

---

[1] Araki, H. et al. 2009. Carry-over effect of captive breeding reduces reproductive fitness of wild-born descendants in the wild. Biol. Lett. DOI:10.1098/rsbl.2009.0315

Araki, H. et al. 2008. Fitness of hatchery-reared salmonids in the wild Evolutionary Applications DOI:10.1111/j.1752-4571.2008.00026.x

Ford, M. 2002. Selection in captivity during supportive breeding may reduce fitness in the wild. Conserv. Biol. 16:815-925.

Fraser, D.J. 2008 How well can captive breeding programs conserve biodiversity? A review of salmonids Evolutionary Applications DOI:10.1111/j.1752-4571.2008.00036.x

Kostow, K. 2009 Factors that contribute to the ecological risks of salmon and steelhead hatchery programs and some mitigating strategies. Rev. Fish. Biol. Fisheries 19:9-31.

Morbrand, L.E. et al. 2005. Hatchery reform in Washington State: Principles and emerging issues. Fisheries 30:11-23.

Naish, K.A. et al. 2008. An Evaluation of the Effects of Conservation and Fishery Enhancement Hatcheries on Wild Populations of Salmon. Advances in Marine Biology, Volume 53 DOI: 10.1016/S0065-2881(07)53002-6

Appendix A

Comments on the "*Draft Environmental Impact Statement to Inform Columbia River Basin Hatchery Operations and the Funding of Mitchell Act Hatchery Programs*"

Oregon Department of Fish and Wildlife

November 22, 2010

Executive Summary; Chapter 1-Introduction; Chapter 2-Alternatives.

1. Table 1-4 contains errors (e.g. Klaskanine Hatchery programs are not current, Clatsop County's hatchery facility is not listed). ODFW's Propagation Report (attached as Appendix D) should be the source for current ODFW programs. #19
2. The preferred alternative should be consistent with adopted recovery plans, or if a federal recovery plan is not yet adopted, with a state recovery plan that has been accepted by NOAA Fisheries. Currently, none of the alternatives are consistent with these plans. #20 #21
3. Alternative 1 (Status Quo) reflects conditions in 2007 and not the present. For example the implementation scenario assumed that hatchery fractions on natural spawning grounds could not be controlled. In fact, hatchery fractions are being controlled in many current hatchery programs. A true "Status Quo" alternative should reflect the hatchery reforms that have already been implemented, and are anticipated for near-term implementation, even without any further NOAA policy development. #22
4. Although there are references to policies the alternatives represent, the document does not clearly describe them. For example, there are references to policies that guide the use of hatchery weirs and for sizing and termination criteria for conservation hatcheries. There also appears to be an anticipated basin-wide monitoring, evaluation and hatchery reform plan, and guidance for implementing Best Management Practices. #23
5. The policy alternatives should provide direction for meeting regional management objectives for Mitchell Act funded hatchery programs. Instead, they appear to focus on technical issues such as the use of hatchery weirs. #24
6. Regional policies for implementing hatchery reform actions should provide guidance for setting and achieving management objectives for Mitchell Act funded hatchery programs. The policies should also maintain considerable flexibility on technical details about how to meet the objectives. General recommendations for how best to mitigate risks hatchery programs pose to wild fish have been provided by the Hatchery Scientific Review Group (HSRG), in ESA recovery plans, in other state and federal policies and regulations, and in the scientific literature. These recommendations are intended to guide reforms for Mitchell Act hatchery programs. However, program-specific hatchery reform may require novel approaches customized to manage and solve specific problems. Also hatchery risk management will need to remain flexible enough to consider new, developing and future risk management strategies as they become available. Some risk abatement strategies will need to be tested for effectiveness. #25

7. There are different perspectives across the region about integrated vs. segregated hatchery programs. One perspective is that listed wild populations should not be used for integration into a harvest augmentation hatchery program, and likewise, integration into such a program does not make it a conservation hatchery program. Rather than organizing the draft Environmental Impact Statement (DEIS) based on integrated and segregated hatchery programs, NOAA Fisheries should make distinctions between hatchery program objectives (i.e., harvest augmentation and conservation) since brood type and program objective are not interchangeable. An example of this is that the overarching standards/criteria in Table 2-5 do not mention a pHOS rate for integrated programs, which is necessary if the program is for augmentation. #26
8. There seems to be a focus on using weirs to control pHOS (e.g. Table 2-9). Weirs require infrastructure and staff investments beyond what may be sustainable into the future with unknown or unstable funding sources. The DEIS should consider how much Mitchell Act funding would be required for weir construction, operation, and/or maintenance. #27
9. Alternative 2 eliminates Mitchell Act funding, but anticipates continuation of conservation hatchery programs. It is unclear whether this implies that Mitchell Act funding would actually continue in these cases, or whether some other funding would be anticipated. #28
10. The DEIS applies "intermediate" or "strong" performance goals under alternatives 3-5. The DEIS definitions of these goals are similar to the HSRG performance standards, but they are applied differently. The "intermediate" performance goal corresponds to the HSRG recommendations for contributing populations, while the "strong" performance goal corresponds to the HSRG recommendations for primary populations. However, the HSRG recommends these standards be applied as stated to all primary or contributing populations within an ESU. The DEIS applies them geographically, applying "strong" standards in some ESUs, but only "intermediate" standards in others. The DEIS should explain why it would be scientifically sound to treat some ESUs/DPSs one way, while treating others a different way. #29
11. As evidenced in Tables 2-14, 2-15, and 2-16, the DEIS does not consider the desired status of wild populations determined in the recovery planning processes. For example, the DEIS indicates that the Big Creek coho hatchery program will be terminated because strays adversely affect the local population. This is fundamentally inconsistent with the plans desired status for that population, which is to treat it as a sustaining population for the express purpose of maintaining the harvest opportunities supported by the hatchery program. Thus, there was no pHOS standard denoted for this population (as opposed to other extinction risk levels and populations where there were standards), allowing unlimited stray rates. Other examples exist as well. #30
12. As evidenced in Tables 2-14, 2-15, 2-16, and 2-17, the DEIS does not consider the actions or approach called for in recovery plans. Contrary to recovery plans, the DEIS implementation scenarios appear to call for segregated programs to be replaced by integrated ones. #31
13. The DEIS should recognize that hatchery programs may have different goals. As such, additional performance metrics, besides pHOS, should be evaluated (e.g. SARs, contribution to harvest, escapement to hatchery). #32

14. The HSRG recognized the management relationship between hatcheries and harvest. For example the HSRG recommended the use of selective and terminal fisheries as part of a hatchery management scenario, and recommended that some programs be expanded. The DEIS alternatives have some of these same hatchery programs being eliminated. #33
15. In Tables 2-13 – 2-16, the DEIS should better explain and provide evidence for terminating programs because straying problems prevent the programs from meeting performance standards. The DEIS does not clearly describe the source of the straying rate information it used in its analyses and whether the information is current or historic. #34
16. Under the implementation scenarios analyzed for Alternatives 4 and 5 new hatchery programs would be initiated, and/or existing hatchery programs would be changed to better support harvest opportunities. The difference between the alternatives is in which recovery domain these changes would occur. Increased production in the Upper Willamette/Lower Columbia domains will have little benefit to fisheries occurring upstream of Bonneville Dam. However, the reverse is not true. Added production in the Interior Columbia domain can and would provide fishery benefits for areas downstream of Bonneville Dam, including ocean fisheries. The DEIS should explain that under Alternative 5, fishery benefits may accrue throughout the Columbia Basin. #35
17. Because the analysis of the alternatives relies on the technical details of the associated implementation scenarios, the DEIS should ensure those details accurately reflect the intent of each alternative. Each implementation scenario contains data errors and questionable assumptions that appear to influence the results for both the biological effects and socio-economic effects of the associated alternative. The DEIS should better document and assess those details which most significantly affect the analyses. #36
18. The DEIS should describe how the alternatives and implementation scenarios relate to the management objectives for affected hatchery programs and to recovery goals for listed salmon and steelhead stocks. As recommended by the HSRG, by the USFWS Hatchery Review, and by the literature (e.g. Kostow 2009[1]) the first step in a "best management practices" scenario is to identify the management objectives. #37
19. In Box 2-8, a statement is made that weirs require an external mark to be able to identify hatchery-origin fish. Although a mark of some kind is required, it may not need to be external. For example, the U.S. Army Corps of Engineers (USACE) has proposed sorting equipment that uses blank coded-wire tags (CWTs) to detect hatchery-origin fish. The external mark may be most appropriate for most situations where weirs would be manually operated, but it should not be the only identification method considered. #38
20. The DEIS appears to target segregated hatchery programs and harvest for reductions, even though these programs can be consistent with conservation and recovery goals. The DEIS should embrace and endorse a flexible management approach in which hatchery and harvest management decisions are left to local interest as long as the recommended standards are met. #39

[1] Kostow, K. 2009 Factors that contribute to the ecological risks of salmon and steelhead hatchery programs and some mitigating strategies. Rev. Fish. Biol. Fisheries 19:9-31.

21. Harvest level (number of fish harvested) is expected to decline across all alternatives compared to the status quo (Alternative 1). The DEIS should explain why, since many of the harvest rates are now limited by ESA impact rates on wild fish abundance. In many cases, selective and adaptively managed fisheries can be used to catch as many hatchery fish as possible while staying within the ESA impacts on wild fish. For example, the HSRG scenarios recommended that mark-selective and terminal harvests be coupled with hatchery management in order to optimize the return of hatchery fish to harvests. As a result, harvest levels often *increased* if the HSRG recommendations were followed. #40
22. In Box 2-9, paragraph 3, last sentence, the DEIS should clarify whether it means "permanent weirs" rather than "seasonal weirs". #41

Chapter 3-Affected Environment

1. The hatchery risk assessment and best management strategies in the DEIS should be based on the best available science. The review of hatchery risks in Chapter 3 can be and should be redone to reflect the extensive peer-reviewed literature on the subject and should include a thorough literature review, or a concise but comprehensive summary. A short list of recent review papers is appended[2], which should provide enough sources to initiate a literature review. Additional reference information is available from the Hatchery Scientific Review Group, available at: http://www.hatcheryreform.us/hrp/reports/system/welcome_show.action (accessed October 6, 2010); and the US Fish and Wildlife Federal Hatchery Review, available at: http://www.fws.gov/Pacific/fisheries/hatcheryreview/reports.html (accessed October 6, 2010). #42
2. The DEIS, in section 3.2.3.1 says: "Data on current risks … (are) …developed from literature and through modeling". Data are normally considered to be an input to models, rather than a derivative. If model out-puts are used instead of actual data, the DEIS should define such applications as "simulations", rather than "data". #43
3. There is a lot of discussion of metrics for pHOS and PNI throughout the document, but there are no cited references in the text that identify the source of these metrics. The DEIS should better document and cite its sources, especially since the metrics are thoroughly discussed by the HSRG. #44
4. The language on Pg 3-12 and 3-13, lines 21, and 1-2 is potentially misleading. Although hatchery fish can increase the total number of fish and therefore the competition effects, #45

---

[2] Araki, H. et al. 2009. Carry-over effect of captive breeding reduces reproductive fitness of wild-born descendants in the wild. Biol. Lett. DOI:10.1098/rsbl.2009.0315

Araki, H. et al. 2008. Fitness of hatchery-reared salmonids in the wild Evolutionary Applications DOI:10.1111/j.1752-4571.2008.00026.x

Ford, M. 2002. Selection in captivity during supportive breeding may reduce fitness in the wild. Conserv. Biol. 16:815-925.

Fraser, D.J. 2008 How well can captive breeding programs conserve biodiversity? A review of salmonids Evolutionary Applications DOI:10.1111/j.1752-4571.2008.00036.x

Kostow, K. 2009 Factors that contribute to the ecological risks of salmon and steelhead hatchery programs and some mitigating strategies. Rev. Fish. Biol. Fisheries 19:9-31.

Morbrand, L.E. et al. 2005. Hatchery reform in Washington State: Principles and emerging issues. Fisheries 30:11-23.

Naish, K.A. et al. 2008. An Evaluation of the Effects of Conservation and Fishery Enhancement Hatcheries on Wild Populations of Salmon. Advances in Marine Biology, Volume 53 DOI: 10.1016/S0065-2881(07)53002-6

competition would occur whether those high numbers of fish were of hatchery-origin or not. Having large numbers of hatchery fish present can have effects in addition to competition, however those effects are a separate issue from the abundance issue. The DEIS should replace the existing language with "competition will be highest at very high abundances, a condition large hatchery escapements may exacerbate". #45

5. The DEIS Table 3.3 reports how many populations, by ESU, meet their "strong" or "intermediate" criteria under the baseline. The HSRG report (2009) also lists the number of populations that currently meet their HSRG criteria. The HSRG recognizes that there are primary, contributing and stabilizing populations and corresponding criteria, so "meeting the criteria" means the population met or exceeded the criteria for the category the population is in. The DEIS appears to evaluate whether the "strong" or "intermediate" criteria are met, regardless of the category the population is in. A comparison of the results from these two sources for one ESU, Lower Columbia Coho, demonstrates significant discrepancies between the DEIS and HSRG findings, even though they apparently considered the same populations: #46
    a. The DEIS says that only three populations in this ESU meet their "strong" criteria, while another three meet their "intermediate" criteria, out of 17 populations. Stabilizing populations are apparently ignored.
    b. The HSRG says that 15 out of 29 populations currently meet or exceed the HSRG criteria as appropriate for the population designation (primary, contributing or stabilizing), including three that exceed their criteria (i.e. a contributing or stabilizing population meets the criteria for a primary population).
    c. The HSRG says that 6 out of 29 populations currently meet their criteria for a primary population (which is the same criteria as the DEIS "strong" criteria).
    d. The HSRG says that 2 out of 29 populations currently meet their criteria for a contributing population (which is the same criteria as the DEIS "intermediate" criteria).
    e. As an example of a specific error: in the Willamette, the Middle Fork spring Chinook population is listed as "contributing". The current draft of the recovery plan has it as "primary".

   The DEIS should resolve, or at least explain these discrepancies. Note that while the HSRG report lists results for individual populations, the DEIS table is a summary count of populations by ESU/DPS so it is not possible to determine if the same populations are ranked and evaluated the same way.

6. The DEIS appears to be heavily reliant on the use of weirs as a tool to reduce pHOS in natural populations. Because of the uncertainty associated with the effectiveness of weirs, especially in highly dynamic systems such as coastal area tributaries, the DEIS should consider a suite of measures tailored to specific hatchery programs and/or natural populations. #47
7. Although the DEIS lists some best management practices for various risk factors, the lists fall far short of what is available from the literature. If an intent of the DEIS is to have a policy #48

of encouraging best management practices, it should include a comprehensive set of practices. #48

8. Although the DEIS makes repeated references to increasing selective terminal fisheries as a component of the alternatives, it is unclear whether the effect of increased selective terminal fisheries was modeled for the options. Appendix K does not explicitly indicate that they were. #49
9. The DEIS identifies harvest on hatchery fish as a risk factor and provides some best management practices to manage the risks. However, these practices do not mesh with NOAA's own harvest biological opinion; nor do they really fall in line with the HSRG harvest recommendations. #50
10. Although the DEIS cites the Biological Opinion for the Federal Columbia River Power System (FCRPS) as the source of status data in Table 3-7, there appears to be significant discrepancies between the data in the table and that in the recently released FCRPS supplemental Biological Opinion. For example, for the Upper Columbia Spring Chinook ESU the DEIS says total abundance for this ESU is 1,104 fish, and average productivity (R/S?) is 1.4. The supplemental Biological Opinion says the abundance for the 1994-03 period was 461 (sum of the three populations), with an R/S of 0.73 (average of the three populations); while the updated data for the 1999-08 period is an abundance of 861 (again a sum) and an R/S of 0.62 (again an average). It appears that the DEIS used the AHA model to get their numbers. If so the information in the table is the result of simulations, and is not status data. The DEIS should explain why these differences exist and whether the information in Table 3-7 is actual data or modeling results. #51
11. The DEIS sections on status of each ESU are not well documented (few to no citations), so it is difficult to determine if they are accurate and complete. NOAA Fisheries has the original regional reviews (which are old now, but very comprehensive), biological opinions, the 2005 Biological Review Team (BRT) reviews (when all listings were reviewed and reconfirmed), new data from the current BRT review, and various recovery plans to cite and draw from. #52
12. The DEIS sections describing status of other species (chub, dace, lamprey, etc.) are also not well documented. #53
13. On page 3-77, lines 17-18, steelhead, coho, and white sturgeon should be listed as fish routinely harvested for commercial sale (treaty). #54
14. On page 3-79, lines 18-19, references to ocean harvest reductions cite only those in California. Reductions occurred coast-wide. The DEIS should drop the word "California". #55
15. On page 3-79, line 20, the DEIS should not refer to the 1900 + firms affected by ocean harvest reductions as a "relatively small number". #56
16. All Columbia River harvest numbers in Section 3.3.5.1 have some kind of error in them (treaty, commercial and sport). It is unknown what the implications of this are, but they likely effect subsequent analyses, including the economic calculations. Also, it appears that the harvests in Section 3 are largely from historical documents for "current" catches, but are derived from modeling for harvests under the alternatives. If harvests for alternatives were derived only from modeling and harvest rates provided to HSRG for AHA, and were used in #57 #58

any way to generate future catches under alternatives, they need to be recalculated from the start due to the substantial errors found in Chapter 3. #58

17. The footnote for Table 3-20 (recreational values) in Section 3.3.6 says the average catch numbers came from Table 3-18. However, Table 3-18 is historic ocean tribal fishery catches, which has no relation to recreational economic catches or values. It appears to be the wrong citation. Given this, it is impossible to see where the catch numbers used in 3-20 actually came from, and therefore to evaluate the adequacy or appropriateness of using those numbers in the economic analysis. #59
18. The description of the boundary between Buoy 10 and lower Columbia River recreational fishing areas on page 3-88, lines 1-2 is incorrect. The Tongue Point/Rocky Point line is the boundary not the Astoria-Megler Bridge. #60
19. Table 3-14 and 3-21 have significant errors in them. Citations of the Joint Staff Reports (JSRs) appear to be inaccurate, as many of the values shown in these tables are not contained in the JSRs. Where they are included in JSRs, the values differ from those in the DEIS. #61
20. In Table 3-21, the DEIS should replace "Z1-5" with "Mouth to Bonneville" and "Zone 6" with "Bonneville to McNary". Z1-5 and Z6 are commercial fishing boundary definitions only. #62
21. The DEIS should define the "terminal areas" referenced on page 3-89, line 11. As is, the definition is open for interpretation. #63
22. The number of harvest-related jobs (part- and full-time) listed in Table 3-24 is unbelievably low. Further explanation is necessary to support the claim that only 18 and 23 jobs (non-tribal and tribal, respectively) are supported by commercial harvest. #64
23. Throughout the socio-economic section, the DEIS should: #65
    a. Carry any issues already discussed regarding catches through to the economic analyses;
    b. Make sure that all harvest assumptions are up-to-date (i.e. which fisheries are selective, what harvest rates to use, etc);
    c. Make sure hatchery production data are up to date. For Oregon releases, the DEIS should refer to the ODFW 2009 Fish Propagation Report.
    d. Make sure the economic data is up-to-date. Some of the sources are 10-years old (circa 2000).
24. The sources of much of the information in Chapter 3 are undocumented, even though the necessary documentation is available. In those instances where citations are provided, it is not always clear whether the documents cited were actually used because the data does not match what it in the cited document (the harvest data in the DEIS compared with the cited ODFW/WDFW Joint Staff Reports is an example). The DEIS should also cite primary sources of data, when available, For example, a report by someone with Yakima County is used as the source for tribal catches in the Columbia Basin. #66
25. The DEIS should explain why Clatsop and other lower river counties appear to be excluded from the analyses in the environmental justice section. #67

Chapters 4-Environmental Consequences and Chapter 5-Cumulative Effects

1. In Chapter 4 the DEIS states "The alternatives (from Chapter 2) are based on goals and principles that together form a policy direction". However, the DEIS does not, but should explicitly describe the goals, principles or policy direction. #68
2. Under section 4.1.2 "Mitigation", paragraph 3 (page 4-3) the DEIS states that under the status quo (Alternative 1) "…BMPs applied by hatchery operators would not specifically be intended to mitigate for negative effects on salmon and steelhead…" However, practices have been and continue to be put in place to reduce and mitigate for negative impacts on salmon and steelhead. The DEIS should explicitly acknowledge and describe those practices. #69
3. In the introductory material for Chapter 4, the DEIS states that "… the adherence of each hatchery program to Hatchery Scientific Review Group [HSRG] BMPs would increase under Alternative 2 through Alternative 5 compared to Alternative 1." However, the alternatives 2-5, as stated in Chapter 2, are explicitly inconsistent with the HSRG recommendations. #70
4. There is a lot of discussion of new selective fisheries in terminal areas, however it is unclear in the DEIS whether new selective fisheries are included in any of the proposed alternatives. The DEIS should identify those alternatives that include new selective fisheries and describe the kinds of fisheries, how they were modeled in the implementation scenarios (catch rates, encounter rates, post-release mortality assumptions, mark rates, etc.), and whether production would be moved from existing areas to new terminal areas to increase fishery access, or whether the intent is to add new fisheries to areas with existing production. #71
5. In Section 4.2.2 the DEIS states that the AHA model was used "for evaluating individual hatchery programs in the context of harvest rates, habitat conditions, and fish passage through the Columbia River hydroelectric system." The section goes on to say "Outputs from AHA are used to make relative comparisons of genetic, competition, predation, and Viable Salmonid Population (VSP) effects." While the AHA model is a useful tool, it has several limitations and it cannot address some of the factors that are claimed here. Specifically:
    a. The AHA model can only use single point estimates for harvest. Although it is able to model mark-selective fisheries and recognize separate ocean, mainstem and terminal fisheries, it cannot deal with the variable abundance-based harvest schedules that are in the 2008-2017 *United States v. Oregon* Management Agreement. Therefore out-puts from it are inappropriate for evaluating the effects of these actions on harvest and associated socioeconomic impacts. The DEIS appears to recognize this problem and so employs a separate harvest model. #72
    b. The AHA model explicitly does not deal with any ecological risks of hatchery programs, including competition and predation. It deals only with genetic risks. The DEIS apparently tried to use a ratio of the natural-origin to hatchery-origin juveniles from the AHA model as a way of talking about ecological risks. This is not a credible approach. #73
    c. The AHA model deals with abundance and productivity as related to habitat carrying capacity by incorporating a Beverton-Holt model. It does not address #74

viability/extinction probabilities, spatial distribution or diversity. Outputs of the AHA model were apparently used as inputs to a viability analysis, while a gross estimate of status of populations across ESUs was used to address spatial distribution and diversity (i.e. some percent of the populations in an ESU having some level of abundance and productivity). #74

d. There are assumptions about hydropower operations and habitat implicit in the AHA model. It is not real clear what these assumptions were in the DEIS. #75

6. The DEIS appears to rely heavily on an "HPV" model, which was apparently developed a few years ago by the HSRG. This model, which is described in Appendix H, addresses some factors that the AHA cannot, and compares current management practices with some Best Management Practices. #76
7. The methods in the DEIS analysis should be better explained. It is not clear how the "HPV" and AHA results were integrated. There is no indication how the lists of variables or Best Management Practices are supposed to affect pHOS or PNI. #77
8. The DEIS should explain why it had to rely on qualitative analysis for other species. #78
9. The DEIS does not, but should explain whether harvest estimates used in modeling the economic sections were outputs from the modeling described in Appendix K or came from analyses included in Chapter 3. Modeling in Appendix K generally appears to be properly conducted, while the information in Chapter 3 contains large errors in multiple locations. #79
10. In Chapter 5 the DEIS should not only discuss climate change effects for in-river issues, but also for ocean issues and issues affecting returning adults (i.e. increased water temps = higher mortality of adults returning). #80

Appendicies:

Appendix G

1. The DEIS does not, but should describe the differential harvest rates used for mark-selective fisheries and how they were derived. #81
2. The DEIS does not, but should describe the "proposed harvest plans and recommendations" from which it estimated future harvests. #82

Appendix H

1. The list of "Best Management Practices" (BMPs) that are identified in the DEIS should be better described and more comprehensive, given their use as a basis for assessing hatchery programs. #83
2. The DEIS should not just rely on a determination of whether a hatchery program employs the array of "Best Management Practices" listed in the DEIS to assess hatchery programs. The risks posed by a particular program may largely be solved, even though the hatchery does not follow this prescription. Original actions may be needed to solve unique problems. New ideas might come along. Any list of BMPs should be viewed as general guidance rather than a specific prescription and assessments should focus on results, not just actions. #84

3. The DEIS should better describe and cite sources for the "…current genetics theory..." it relies on regarding pHOS and PNI criteria. The HSRG has a comprehensive White Paper available to cite and other sources of information are available. It is especially important to describe in detail the scientific basis for these criteria, given that they are key factors in DEIS determinations of the fate of various programs under each alternative. #85

Appendix I

1. In Tables 3-5 and 3-8 the tribal catch of coho and steelhead looks much too high in some years. The DEIS should better explain and document the basis for its estimates, including whether they assume some increased harvest due to recovery or reintroduction efforts. #86
2. The DEIS should provide a much more detailed description of the methods used in its analysis of harvest, given its significance to the entire DEIS. Some of the implementation scenarios show substantial increases in Mitchell Act harvests – but there is no discussion of how that occurs. The DEIS should explain whether harvest are a result of changes in production, faster recovery, and/or reallocation of production by area and the resultant changes in fishery access. #87 #88
3. In Table 3-14, the DEIS shows a 38% decline in total salmon value for the non-treaty gillnet fishery under Alternatives 4 and 5, despite an increase of 122% for spring Chinook and 26% for fall Chinook. It is very unlikely that these increases would be negated by the corresponding decrease for coho assumed under each alternative. The DEIS should better explain how the changes it assumes in fisheries value are derived and relate to each other. #89
4. In Table A-5 of the DEIS, the success rates for fall fisheries seem too high. It appears the rates include all salmonid species (Chinook, steelhead, coho) combined. The DEIS should base its assessments on species-specific success rates, as presented in the ODFW lower Columbia River recreational fisheries reports it cites. This issue is discussed more in comments on Appendix J. #90

Appendix J

1. The DEIS does not, but should describe the basis for the CPUEs it lists in Appendix J tables. In general, they appear to be higher than observed. For coho, except for Buoy 10, the CPUEs in A-4 appear too high. In particular, CPUEs for areas upstream of the lower Columbia appear to be more than double that which would be deemed reasonable. For Chinook, CPUEs appear to be too high across the board. #91
2. In Appendix J the DEIS apportions the pooled CPUEs calculated in Appendix I evenly across all species and all areas. Although the DEIS pooled CPUEs by area because CPUE data for the area upstream from Bonneville Dam was lacking, it should acknowledge the flaws in the approach, i.e. that the pooled CPUEs are not accurate and likely over-optimistic. Catch card data is available for Oregon and Washington and may alleviate the need to pool areas. #92

   The DEIS should not pool CPUEs by species, but instead use the original CPUEs that are available by species. Pooled CPUEs may be significantly biased. For example, catches of coho upstream of Buoy 10 are historically very low and CPUEs are small. By pooling the CPUE of coho with higher values typically observed for Chinook and/or steelhead, catch and

economic contribution per produced fish would be the same for each species. In fact CPUEs for coho are likely less than half that of Chinook and correspondingly so is the economic contribution coho make to the recreational fishery. #92

3. In Table A-2 and A-3 of the DEIS, the economic values of the various salmonids by area are not accurate. Prices per pound decline substantially for all species as the run moves upstream. Prices in Zone 6 are never as high as they are in Zones 1-5. The DEIS does not, but should explain whether the dollar value attributed to the commercial harvest of steelhead pertains only to Treaty harvest. Retention and sale of steelhead in commercial fisheries downstream of Bonneville Dam was outlawed in 1975. #93 #94
4. Footnotes for Table A-3 of the DEIS indicate that the price on Chinook is a weighted annual average of fall and spring. Prices for the two stocks are radically different, and modeling of future effects should be done separately for each stock. Models should estimate catches of fall Chinook and spring Chinook separately for each alternative and apply differential values accordingly. Using an average based on historic proportions will be invalid if the modeled alternatives result in substantially different proportions of fall/spring catches than historic. #95
5. Because the values in the tables in Appendix J appear to be used in subsequent analyses –any problems with the information in them would propagate through this section and should be addressed. #96

Appendix K

1. The general methodology as described in Appendix K of the DEIS appears appropriate. However, most of the interim results of the models are not shown – only the final rollups – so it is not possible to verify the results with the information given. The DEIS should rectify this situation. #97
2. Many of the harvest rates in the models used in the DEIS are outdated– largely due to the 2008-2017 *United States v Oregon* Management Agreement, but also because of recent catch balancing agreements and implementation of mark-selective recreational fisheries for summer Chinook. Although the DEIS used a 15% rate for LCN coho that is likely close to an average rate, the sliding scale used to manage LCN coho was available and could have been used. #98

STATE OF ALASKA

DEPARTMENT OF FISH AND GAME

OFFICE OF THE COMMISSIONER

SEAN PARNELL, GOVERNOR

P.O. BOX 115526
JUNEAU, AK 99811-5526
PHONE: (907) 465-4100
FAX: (907) 465-2332

December 3, 2010

Letter #14

Mr. William W. Stelle, Jr.
Regional Administrator
NMFS Northwest Region
7600 Sand Point Way, NE
Seattle, WA 98115

Dear Mr. Stelle:

The Alaska Department of Fish and Game (ADFG) is submitting comments on the National Marine Fisheries Service (NMFS) "Draft Environmental Impact Statement to Inform Columbia River Hatchery Operations and the Funding of Mitchell Act Hatchery Programs" (DEIS). The expansion of scope of the DEIS in 2009 from the original focus on the Mitchell Act hatcheries to the entire Columbia Basin system of hatcheries has resulted in confusion and made it difficult to provide meaningful input. #1

Through membership on the Pacific Fishery Management Council (Council), ADFG participated in the Council's discussion and actions, including work on the Mitchell Act Committee at the November Council meeting. We support the Council's letter of November 22, 2010, outlining some of the concerns with the DEIS. ADFG's answers to a number of questions posed by the Council to assist with consideration of the DEIS at the November meeting are attached. #2

As noted in the Council letter and in the comments submitted by ADFG and other management entities that assisted the Mitchell Act Committee's development of the Council's comments, there are many areas of concern with the current DEIS. In addition to the general confusion in the scope and purpose of the DEIS noted above, these concerns include: the lack of proper recognition of mitigation responsibilities of hatcheries in the Columbia Basin; the virtually exclusive focus on, and indiscriminate application of, genetic standards for facilities in the Columbia Basin that we do not believe have been adequately analyzed and peer reviewed; the failure to address the broad suite of actions that should be considered in meaningful hatchery reform; significant problems with the data and framework (temporal and other) that was used in the analysis; and a need for more complete economic analysis to fully recognize the impacts that hatchery production from the Columbia Basin has on the regional economies.

We appreciated Mr. Bob Turner's participation in the discussions of the DEIS at the November Pacific Fishery Management Council meeting. We take heart from the acknowledgement of the need for NMFS to provide a document (or documents) for review based on updated analyses that provide the clarity needed for management entities and the public to understand the purpose and scope of proposed actions and adequately recognizes the implications for mitigation responsibilities #3

and the economic impacts of the alternatives. We believe that this could best be accomplished by refocusing the DEIS on the original scope of analyzing Mitchell Act hatchery facilities and helping guide future funding. The broader reach into Columbia Basin hatchery operations with regard to ESA considerations should be the subject of a significantly revised Supplemental EIS, or be addressed outside of the focus on the Mitchell Act program. #3 #4

Thank you for the opportunity to provide comments. Given the alterations to habitat present in the Columbia Basin from the hydro system and other anthropogenic impacts, the production from hatchery facilities is critical to meeting mitigation requirements and supporting affected user groups and economies on the Pacific Coast from Oregon to Alaska. We look forward to continuing to work with NMFS and a broad range of interests on the Pacific Coast toward development of appropriate alternatives for hatchery operations in the Columbia Basin.

Sincerely,

Cora Campbell

Cora Campbell
Acting Commissioner

Enclosure

ALASKA DEPARTMENT OF FISH AND GAME RESPONSE TO PFMC QUESTIONS ON MITCHELL ACT HATCHERY DRAFT ENVIRONMENTAL IMPACT STATEMENT (DEIS)

A September 23, 2010 memorandum from Executive Director Don McIsaac posed a number of questions to salmon management agencies and entities with regard to the NMFS *"Draft Environmental Impact Statement to Inform Columbia River Hatchery Operations and the Funding of Mitchell Act Hatchery Programs."* The following are Alaska Department of Fish and Game responses to questions suggested for input from Alaska. Additional input will be provided through Alaska's participation in the November Council meeting process:

1. *Have the population and fishery impacts methodologies used in the analysis been peer reviewed, and is there agreement with the States and Tribes that it represents the best available science?* **(WA, OR, ID, Tribes, AK, NMFS)**

#5

Alaska does not have detailed knowledge regarding the level of peer review that the EIS fishery modeling detailed in Appendix K has undergone by other agencies. However, the modeling exercise is based upon standard and accepted algorithms that are components of the PSC Chinook Model and the PFMC FRAM Model, albeit in simplified form. Chinook stock groupings were manipulated; many stocks were aggregated to estimate the ocean fishery impacts using the PSC Chinook Model stock structure. These groupings were then disaggregated before estimating the fishery impacts within the Columbia River. Assuming that the stock group aggregations and disaggregations were done in a manner that was representative and consistent with the stock group representation in the PSC Chinook Model, this portion of the modeling of the fishery impacts seems appropriate.

Although the method employed could provide plausible estimates of the fishery impacts to the Columbia River stocks under different NEPA alternatives, there are several issues that are not adequately addressed in the analysis. First, the analysis is overly simplistic by assuming production from non-Columbia River stocks in the ocean is constant and totally independent from the Columbia River stocks. Second, the analysis simulates harvest rates in the ocean fisheries during the 1999 PST Agreement, which are higher than those currently allowed in the 2008 PST Agreement. Lastly, the analysis relies heavily on stock production parameters for Columbia River stocks that are not adequately explained in Appendix K. Also, model data sets have been created for virtually all Columbia River populations of Chinook and coho, whether they are entirely natural, entirely hatchery (segregated), or an integrated composite of natural and hatchery fish. The derivations of production parameters for each stock and the inherent assumptions behind them are never fully explained. This issue is vital regardless of the NEPA harvest alternative since one of the major factors that will determine the long term health of each of the stocks is its' production potential. Does the AHA model take into account the interaction of the wild and hatchery fish as the level of hatchery production goes up or down? Will the production parameters of the *hatchery fish change as hatchery practices change? For example,*

#6 #7 #8 #9 #10

will the introduction of more wild fish into the hatchery broodstock change the production parameters for the hatchery fish? The assumptions about the underlying productivity of the stocks are a major part of this analysis that deserves more scrutiny. #10 #11

2. *Are the mitigation requirements and responsibilities under the Mitchell Act adequately described in the DEIS?* **(WA, OR, ID, Tribes, AK)** #12

No. We do not find that the EIS adequately addresses the mitigation requirements and responsibilities within the Columbia River Basin. These requirements and responsibilities are not limited to the Mitchell Act, but also include a large number of other programs that are the subject of "policy direction" under the DEIS. The document should recognize the range of mitigation purposes of enhanced production and describe how actions / policies identified in the DEIS may impact the variety of mitigation requirements and responsibilities in both the short and long-term.

3. *What are the other alternatives that meet the purpose and need of the proposed action that were not included in the DEIS?* **(USFWS, NMFS)**

4. Can hatchery reform concepts other than percent of hatchery origin spawners (PHOS) and percent of natural origin broodstock (PNOB), such as natural rearing strategies, be used to develop alternatives that meet the purpose and need of the DEIS but maintain more production than Alternatives 3-5? **(Tribes, AK, OR, WA, ID)** #13

While reform of Columbia River basin hatcheries is widely considered to be a beneficial and desired action, focusing only on the genetics and intent to implement genetic standards as described in the draft Mitchell Act EIS is disappointing. The single minded focus on this technical issue and recommended application of the proposed genetic standards to all Columbia River basin hatcheries represents a failure by NMFS to address reform of Columbia River basin hatchery programs in a meaningful manner. Other technical issues (for example disease prevention and transmission, water quality and quantity) are completely ignored in the alternatives. There are a number of hatchery reforms that need to be evaluated and utilized in developing alternatives that meet the purpose and need while maintaining more production than those identified in the DEIS.

5. *What fisheries are assumed in the analysis to be mark-selective, and at what point in time?* **(OR, WA, ID, Tribes, AK, NMFS)** #14

Appendix K provides some detail regarding the mark-selective fisheries (MSFs) that were incorporated into the EIS fishery models for coho and Chinook. It gives a more detailed description of the assumptions used in the MSFs for coho than for Chinook. It also states that the model incorporates "*MSF only for spring chinook fisheries in the Columbia River below*

Bonneville Dam." Thus the modeling does not reflect recent expansion of MSF into ocean fisheries in 2010 or potential impacts that may result if the "policy direction" of significantly expanded MSFs were to be implemented. There is currently increasing concern over the mark rates experienced in MSFs. If hatchery production is reduced, the issues with observed mark rates and mortalities of wild stock release (potentially multiple releases in several fisheries) will be exacerbated. #14

6. *Were Native American tribes engaged in government to government consultations in development of the DEIS, including but not limited to the four Washington coastal treaty tribes and the four Columbia River treaty tribes?* **(Tribes)**

7. Are the impacts to all ocean fisheries in areas under management authority of the Pacific Council, the Pacific Salmon Commission, and the State of Alaska included in the analysis of each alternative in DEIS (harvest impacts to individual fishery strata, socioeconomic impacts, and the environmental justice analyses)? **(STT)**

   • If not, what is the list of fisheries not included and what is the relationship of Mitchell Act hatchery production to the stock composition of those fisheries? **(STT)**

As explained in the response to question 1 with the noted caveats, the approach taken appears to be a reasonable one for estimating the stock impacts that occur in the ocean fisheries. In other words, the model structure itself seems reasonable. However, the assumptions about the independence of the production from Columbia River and non-Columbia River stocks; the choice of ocean harvest rates derived from years under the 1999 PST Agreement instead of the 2008 PST Agreement; the estimated impacts from MSFs; and the AHA production parameters for Columbia River stocks could influence the model results for each of the NEPA harvest alternatives and should be investigated further. #15

8. *Are impacts in all Columbia River basin fisheries included in the DEIS, including tributary ceremonial and subsistence and recreational fisheries?* **(Tribes, OR, WA, ID)**

9. *Is production from all Columbia Basin hatcheries included in the analysis?* **(USFWS, OR, WA, ID, Tribes)**

10. *Is the methodology describing economic impacts complete and proper, including the use of consistent metrics?* **(SSC Economic and Salmon Subcommittees)**

11. *Were expected benefits to fisheries from increased wild production included in the economic analyses?* **(WA, OR, ID, Tribes, AK)** #16

No. The DEIS does not appear to include any substantive discussion of underlying assumptions with increased wild production in either the technical or economic analyses. The lack of focus on how recommended actions may actually benefit the wild salmon stocks of the Columbia River Basin or the users of these natural resources is a serious deficiency in the document. #16

12. *Were current fishery and hatchery management agreements used to estimate impacts (e.g., US v Oregon, Pacific Salmon Treaty Chinook Annex, US v Washington, Hoh v Baldrige, etc.)?* **(WA, OR, ID, Tribes, AK)** #17

The DEIS uses the 1999 Pacific Salmon Treaty (PST) agreement rather than the provisions contained in the 2008 revision. Thus the Chinook impacts under the current PST Chinook fishery provisions may not be estimated correctly. As detailed in Appendix K, the DEIS uses relatively simple models to project marine fishery catch levels and run sizes to the mouth of the Columbia River. There are 30 model stock groups in the PSC Chinook Model, 10 of which are from the Columbia River. The modeling of the 5 alternatives assumed constant abundance for the 20 non-Columbia River stock groups, while the 10 aggregated Columbia Rivers stocks were allowed to vary and various assumptions were applied to them, such as survival. #18

The analysis in Appendix K uses a harvest-rate as the center piece of the simplified approach as noted above. However, the 2008 PST agreement does not specify an underlying harvest-rate approach for the three Aggregate Abundance Based Management fisheries: West Coast Vancouver Island (WCVI), North BC (NBC) and Southeast Alaska (SEAK). Catch limits in all three are now tied to relative abundance, rather than a harvest-rate, e.g., at a given abundance index, a catch limit is the accounting benchmark and the harvest rate is whatever postseason analysis deems it to be. In addition, at all abundance levels the catch limits in WCVI and SEAK under the 2008 agreement are currently reduced by 30% and 15% respectively as compared to those in the 1999 agreement. #19 #20

13. *Were impacts to commitments and expectations in the PST, US v Oregon, US v Washington, Hoh v Baldrige properly described in the DEIS?* **(WA, OR, ID, Tribes, AK)** #21

Under the PST Agreement, if any of the four alternatives in the DEIS other than alternative #1 are implemented, changes in Columbia River hatchery production of Chinook salmon will likely be inconsistent with expectations in the PST. For example, catch limits in the WCVI AABM fishery were cut by 30%, but it was agreed that no further reductions would be applicable to the table used to calculate this fishery's annual abundance-based catch limits. Changes in abundance of the Columbia River hatchery or wild stocks could significantly change the overall abundance and stock-age mixture in the WCVI fishery. Catches of Chinook in this fishery are dominated by Columbia River and Puget Sound stocks. Impacts on Puget Sound stocks, which are listed under the U.S. ESA, would most likely increase.

The approach in the MA-DEIS does not reflect what may happen if any but alternative #1 is implemented. For the other alternatives, effects on stock abundance, catch levels, exploitation rates and impacts to fisheries, fishers and economies are unknown. It appears to be a trial and #22

error approach and could deliver very deleterious impacts to coastal fisheries and communities. #22

14. *Are there relevant sources of information omitted from socioeconomic analysis?* **(SSC Economic and Salmon Subcommittees)**

15. *Is the temporal scale of the impact assessment adequate?* **(WA, OR, Tribes, ID, AK)** #23

This question is somewhat vague. Does it mean to address whether a sufficient number of years were modeled or whether there was a sufficient stratification of time periods within each year? Since the PSC Chinook Model operates on a yearly time step, it is unlikely that the DEIS fishery model which is based upon it would be able to estimate impacts down to a finer scale than a year. In addition, the DEIS model was not set up to make yearly projections of future fishery impacts so it does not address that issue either.

16. *Are the natural salmon populations targeted for restoration, particularly those that become limiting factors in hatchery production, appropriately identified?* **(WA, OR, ID, Tribes, Council Staff)**

17. *Recognizing recent changes in the hatchery practices that have already occurred, what is the period used to decide the status quo alternative?* **(OR, USFWS, NMFS)**

18. *Are the DEIS alternatives consistent with adopted state recovery plans?* **(OR, WA, ID)**

Additional ADFG Comments:

Benefits from Mitchell Act Hatchery EIS Alternatives

A remarkable void in the NMFS draft Mitchell Act Hatchery EIS is a listing or description of possible benefits from the suggested alternatives. The three action alternatives (3-5) all involve setting genetic brood stock standards for hatcheries in the Columbia River basin. However, there is no description, either qualitative or quantitative that describes potential benefits were these standards achieved. Would productivity of natural spawners increase; if so, to what degree? The document devotes a small amount of text to the genetic risks that hatchery salmon pose to natural spawning salmon; yet devotes no effort to describing benefits to ESA-listed or non-ESA-listed salmon stocks were these standards adhered to by hatcheries within the Columbia River basin. #24

Appendix C:

Technical staff has spent time attempting to review Appendix C1. Hatchery Performance by

Alternative for Chinook Salmon and the following questions/issues have been raised:

#25

The color coding indicating **Supporting**, **Consistent**, and **Not Consistent** needs explanation in the context of this DEIS. Are these ratings intended to convey current conditions or conditions under the proposed alternative at some time in the future; if so when? The concept behind the color coding and the terms: **Primary**, **Contributing**, and **Supporting** have an implied meaning for salmon stocks listed under the Endangered Species Act as described elsewhere in the EIS document. However, these same terms are used to label hatchery production associated with non-ESA listed stocks as well. For instance, the entries listed under Upper Columbia River Summer/Fall-run Chinook are all listed as primary, contributing, or stabilizing and yet these fish are not ESA listed. Federal labeling of these stocks in an ESA context is not appropriate. Details concerning individual hatchery programs can only be gleaned from information listed in Appendix C, yet the labeling and color coding provided is inadequate for review.

Scope:

#26

We believe that the scope of the EIS should be scaled back to its original intent of providing guidance for utilization of Mitchell Act funds. The expansion of the document in 2009 to consider all hatchery programs in the Columbia River Basin has led to much confusion and an inferior document. Future examination of facilities and policies in the basin could be based on much better analysis of the overall operations of individual hatcheries, the mitigation requirements and responsibilities associated with facilities, and the variety of factors (habitat, water, etc) that must be taken into account to determine potential benefits to wild salmon production from hatchery actions.

Letter #15

IDAHO DEPARTMENT OF FISH AND GAME
600 South Walnut/P.O. Box 25
Boise, Idaho 83707

C.L. "Butch" Otter / Governor
Cal Groen / Director

December 3, 2010

Mr. William Stelle, Jr.
National Marine Fisheries Service
Regional Administrator, Northwest Region
7600 Sand Point Way NE
Seattle, WA 98115

Re: IDFG Comments on Draft Environmental Impact Statement to Inform Columbia River Basin Hatchery Operations and the Funding of Mitchell Act Hatchery Programs

Dear Mr. Stelle:

The Idaho Department of Fish and Game (Department) provides the following comments about NMFS' Draft Environmental Impact Statement to Inform Columbia River Basin Hatchery Operations and the Funding of Mitchell Act Hatchery Programs.

Decisions regarding Columbia Basin anadromous fish hatchery programs are of significant interest to Idaho because of the potential important effects to conservation programs for Endangered Species Act (ESA)-listed and depressed populations, as well as mitigation hatcheries that support salmon and steelhead fishing opportunity in Idaho.

Since 1978 the only anadromous Chinook salmon fishing opportunity Idaho has been able to provide to its sport anglers is that supported by hatcheries. Hatcheries have been built to mitigate for either lost production habitat or increased mortality, both of which resulted from the construction of hydropower dams on the Snake River.

There are existing mitigation hatchery programs operated under formal agreements (*e.g.*, Lower Snake River Compensation Plan and Hell's Canyon Settlement Agreement) and related legal agreements, particularly the U.S. v Oregon 2008 – 2017 Management Agreement. The Department supports a preferred alternative and implementation scenarios that recognize these agreements and this base level of mitigation production and do not require or encourage reductions in that production. #1

The programmatic approach used in the draft EIS includes all Columbia Basin hatchery programs. However, the range of alternatives in the draft EIS does not include a reasonable option for accommodating new conservation programs within the capacity of the existing mitigation hatchery program. New conservation programs being implemented by the Department rely on increasing production from existing hatchery programs to jointly satisfy existing mitigation agreements while attempting to restore depressed natural populations and reducing potential impacts of hatchery fish to ESA-listed fish. #2

Idaho was the leader in implementing fishery conservation measures for steelhead in the early 1980s, years before they were listed under the ESA, by adipose-clipping hatchery-produced fish and restricting harvest to only those fish in sport fisheries. The next phase of conservation and restoration actions we are implementing are supplementation and integrated brood stock strategies that put additional fish-rearing space demands on the existing hatchery infrastructure. None of the implementation scenarios used in the draft EIS address situations where fish production at a facility may increase to maintain mitigation production and initiate new conservation/production programs. The draft EIS goes so far as to state (page 2-19 lines 4 & 5, page 2-20 lines 7-8) "new conservation hatchery programs would be initiated.....using existing hatchery capacity." This limitation on alternatives and implementation scenarios is unreasonably restrictive. #3

Idaho has a sincere interest in fish conservation programs and believes those should be implemented in addition to fish production occurring under existing mitigation agreements, not in replacement of that mitigation production. The range of alternatives and implementation scenarios in the final EIS should explicitly include production scenarios where production is increased to support both mitigation and conservation objectives. For example, NMFS could analyze scenarios for increased production that are clearly described in Hatchery and Genetic Management Plans being prepared by the Department. The Department discussed these scenarios with NMFS during their development. #4

The Department supports evaluation of these scenarios and the selection of a preferred alternative that allows protection for existing levels of mitigation production and provides for increased production to initiate new conservation programs. Such a preferred alternative would best support the conservation and harvest outcomes we strive to achieve in Idaho and the Snake River Basin. We encourage NMFS to consider our comments and incorporate them into the final EIS for Columbia River Basin hatchery operations. #5

Respectfully,

Cal Groen
Director

#6

#	Pop ID	Population/Program Name	Column Name	Comment
1	455	Rapid River Chinook	# Fish Rel	Release number should be 3.0 million
			Release Location	Release locations are Rapid River, Little Salmon and Snake River downstream of Hells Canyon dam
			Supportijg Facilities	Oxbow could also be listed since some incubation occurs there
2	523	SFSR-McCall	Species/Race	Should be "summer" run
			Program type	The program is mostly segregated, but does have an integrated component
			Purpose	Program purpose should be both harvest and conservation
			Release Location	Fish are transported to SFSR and direct released without acclimation. No longer using Stolle Pond
3	508	Lochsa spring chinook	# Fish Rel	Release number should be 400,000
4	785	Lower Selway spring chinook	primary facility	Primary facility is be NPTH
5	535	Pahsimeroi Summer Chinook	Species/Race	Should be listed as summer run
			Program type	Program has both segregated and integrated componenets
			Purpose	Program purpose is **both** harvest and conservation
			# Fish Rel	Release number should be rounded to 1.0 million
6	518	Lower Selway spring chinook	Purpose	Program purpose should be both harvest and conservation
			Hatchery operating agency	Operating agency should be identified as IDFG/NPT
			# Fish Rel	Release number is 400,000
			Release Location	Fish are released into the mainstem Selway River near Meadow Creek
7	788	Upper Salmon Mainstem (Saw)	Program type	Program has both segregated and integrated componenets
			Purpose	Program purpose should be both harvest and conservation
			# Fish Rel	Release number should be 1.5 milllion (1.3 million segregated and 0.2 million integrated)
8	786	Upper Selway Chinook		No Changes
9	828	SF Clearwater-Newsome Creek	Hatchery operating agency	Operating agency should be NPT, not IDFG
			primary facility	Primary facility should be NPTH, not Clearwater
10	519	South Fork Clearwater		No Changes
11	439	Lolo Creek	primary facility	Primary facility should be NPTH, not Clearwater
			Release Location	These are subyearlings and they are transported from NPTH
12	228	Hells Canyon Dam -spring chinook	Hatchery operating agency	Should be IDFG and not include ODFW
13	461	Redfish Lake Sockeye	Funding source	No Changes
14	550	Little Salmon- steelhead	primary facility	Both Pahsimeroi and Oxbow for brood collection and spawning
			Supportijg Facilities	Niagara Springs and Magic Valley hatcheries for rearing
			Release Location	Smolts are transported from Niagara Springs and Magic Valley hatcheries
15	791	Little Salmon- B steelhead		No Changes
16	790	Lemhi summer sthd	Supporting Facilities	Should be Magic Valley Hatchery
17	539	Pahsimeroi Summer steelhead	# Fish Rel	Should be 830k
			primary facility	Sould be Pahsimeroi Hatchery for brood collection and spawning
			Supporting Facilities	Sould be Niagara Springs Fish Hatchery
18	467	East Fork Salmon R- summer sthd	# Fish Rel	Should be 170k
			Supporting Facilities	Should be Hagerman National Fish Hatchery for final incubation and rearing
			Release Location	Fish are transported from Hagerman National Fish Hatchery
19	792	East Fork Salmon R- B-sthd	# Fish Rel	Should be 275k
			Supporting Facilities	Remove Hagerman NFH as a supporting facility
20	814	East Frok Salmon-sthd	# Fish Rel	Should be 120k
			Release Location	Need to remove Tunnel rock- no longer releasing fish there
21	465	Upper Salmon steelhead	# Fish Rel	Shoud be 1,190,000
			supporting facilities	Remove Magic Valley, all rearing is at Hagerman NFH
			Release Location	Remove Valley and Slate creeks; no longer released there
22	466	Upper Salmon B-sthd (dwor)	Release Location	All fish direct released, no acclimation at Squaw Creek.
23	793	Upper Salmon B-sthd (upper salmon)	# Fish Rel	Should be 120k
			Release Location	Should be at Pahsimeroi Hatchery, no longer at Squaw Creek
24	230	Hells Canyon Dam -steelhead	Hatchery operating agency	Remove ODFW
25	449	SF Clearwater-steelhead	Program type	Should be SEG, not INT
			Purpose	Should be both harvest and conservation
			Hatchery operating agency	Should be IDFG/NPT
			Release Location	Should be Newsome Creek, Red River and Crooked River
			# Fish Rel	Shoud be 333k
26	827	SF Clearwater-steelhead	Program type	Should be SEG, not INT
			Hatchery operating agency	Should be IDFG
			# Fish Rel	Shoud be 510k
			Release Location	Should be mainstem SF Clearwater at Peasley Creek and Red House Hole
27	789	SF Clearwater-steelhead	Hatchery operating agency	Shoud be USFWS
			# Fish Rel	Shoud be 400k
			supprting facilities	Remove Clearwater Hatchery
			Release Location	Fish are transported from Dworshak Hatchery
28	744	Lolo Summer Steelhead	Program type	Currently a segregated program but moving towards integration
			Hatchery operating agency	Should be USFWS/NPT
			# Fish Rel	Should be 200k
			primary facility	Should be Dworshak Hatchery
29	450	NF Clearwater Steelhead	Hatchery operating agency	Should be USFWS
30	738	Lower Clearwater Steelhead	Hatchery operating agency	Should be USFWS
			primary facility	Should be Dworshak Hatchery
			Supporting Facilities	Remove Hagerman NFH, Red River and Crooked river as supporting facilities

Letter #16

State of Washington
DEPARTMENT OF FISH AND WILDLIFE
Mailing Address: 600 Capitol Way N • Olympia, WA 98501-1091 • (360) 902-2200, TDD (360) 902-2207
Main Office Location: Natural Resources Building • 1111 Washington Street SE • Olympia, WA

December 3, 2010

William W. Stelle, Jr.
Regional Administrator
National Marine Fisheries Service - Northwest Region
7600 Sand Point Way NE
Seattle, WA 9815

RE: Washington response to Mitchell Act DEIS/NEPA document

Dear Mr. Stelle,

Thank you for the opportunity to provide comments on the draft Environmental Impact Statement (DEIS) developed to inform Columbia River Basin hatchery operations and the funding of Mitchell Act Hatchery Programs. The Washington Department of Fish and Wildlife (Department) understands and supports a National Environmental Policy Act (NEPA) review of the hatchery programs in the Columbia Basin related to the potential impacts on fish listed under the Endangered Species Act. We anticipate that the results from this review will inform a broad range of policy decisions and will affect mitigation programs implemented to address the loss of salmon and steelhead production in the Columbia Basin resulting from the hydro-power system and habitat degradation.

Our comments identify foundational concepts of the DEIS that we support and components that we believe must be strengthened or refocused in the final Environmental Impact Statement (EIS). Many of our comments build on topics addressed in the letter from the Pacific Fishery Management Council. We conclude by providing some process suggestions for completing the NEPA process and permitting of hatchery programs.

The thrust of our comments is three-fold. First, we believe it is imperative that the preferred alternative be consistent with the Mitchell Act's original intent to address the environmental impacts and loss of salmon and steelhead production resulting from the construction of the hydro-power system and environmental degradation. Second, hatchery actions must be implemented as part of an "all-H" strategy that integrates hatchery, harvest, and habitat actions. Finally, our management decisions must be informed by our best scientific understanding of the effects of hatchery programs. In particular, we should promote the achievement of hatchery goals through management based on a structured monitoring, evaluation, and research program.

#1

#2

#3

#4

The devastating impacts to salmon production that resulted from the construction of the hydro-power system and habitat degradation led to the passage of the Mitchell Act in 1938. The state of Washington's Columbia River and coastal communities have been historically dependent on fishing the Columbia River salmon runs, and now depend on fish produced from the Mitchell Act hatcheries and other mitigation programs. Despite the obvious limitations and inadequacies to current Mitchell Act funding, we believe that a scientific basis exists to support increased or new production programs. NMFS should confirm that the scope of production for hatchery programs covered by the final EIS include scenarios for increased production and the associated facilities necessary for that increased production to achieve conservation and mitigation objectives, even if the funding for the needed facilities and production is not currently in hand. A scope of alternatives that includes properly aligned, increased hatchery production will allow the identification of a preferred alternative in the final EIS that is consistent with conservation and sustainable fisheries.

#5

We are concerned that the DEIS alternatives compare actions taken regionally rather than on a population basis. We encourage NMFS to develop a preferred policy direction that directly reflects the differences in roles played by the evolutionary significant unit/distinct population segment (ESU/DPS) populations in achieving recovery objectives. The preferred policy should support the implementation of existing, recovery plans and regional hatchery reform action plans that are based on distinguishing characteristics of primary, contributing, and stabilizing populations.

#6

We suggest that the final EIS include analyses that identify a broader use of selective harvest of hatchery fish. Broader use of selectivity in fisheries can also result in reducing the risk hatchery fish pose to naturally produced fish, but without necessarily having to rely only on significant reductions in hatchery production. This is an important aspect given the original intent of the Mitchell Act. If the conservation objectives can be achieved through another means besides simply reducing hatchery production, then these strategies must be considered first.

#7

#8

We realize in order to complete the DEIS analysis, a specific point in time needed to be identified and used as the base reference. However, hatchery programs and harvest management have undergone some important changes to enhance the conservation measures. Several hatchery programs funded under the Mitchell Act have undergone significant changes in operation since 2007 to align better with regional priorities and recovery needs as identified in the Lower Columbia Salmon Recovery Plan. In addition, fishery impacts, particularly within the Pacific Fishery Management Council, waters have been reduced since 2007. It is our hope that the final EIS includes these measures in an analysis to help inform the public about the contribution and credit due to each towards recovery.

#9

Finally, we would like to provide comment on the distribution of Mitchell Act funding in general. Based upon analysis presented in the DEIS, Mitchell Act appropriations for hatchery programs represent less than 15% of the entire Columbia River basin expenditures on like activities. We contend that the FCRPS BiOp and associated commitments go a long way toward meeting the federal mitigation obligations and conservation of hatchery programs upstream of

Bonneville Dam. Given contemporary needs and agreements e.g. Lower Columbia River Salmon Recovery Plan, Pacific Salmon Treaty, *US v Oregon*, we would contend that elimination or broad redistribution of the Mitchell Act funds would be hurtful overall to the region and undermine several of the long term management plans and strategies the region has in place. Given the 2008 FCRPS Biological Opinion and Accords have focused funding of mitigation and conservation needs on hatchery program operations upstream of Bonneville Dam, we believe that a more equitable distribution of Mitchell Act funds would be achieved with a preferred policy direction that resulted in a higher share of total funding applied to mitigate for fishery resources below Bonneville Dam. #9

We generally support the scientific assessment of the genetic, facility, and ecological effects of hatchery programs included in the DEIS, and the use of performance metrics such as the Proportionate Natural Influence (PNI). We emphasize, however, that it is important to develop watershed-specific action plans that systematically implement hatchery actions as part of a comprehensive, integrated (All-H) strategy for meeting conservation and fishery goals at the watershed and Evolutionarily Significant Unit/Distinct Population Segment level. These plans should rely upon watershed specific monitoring information and an adaptive management program. #10

In closing, we acknowledge NMFS has important work ahead in order to finalize this process and we encourage NMFS to move forward with the DEIS/NEPA process. However, the process has generated confusion about the intent and purpose of the MA DEIS/NEPA and the potential misinterpretation of alternatives 2 – 5. We encourage NMFS to initiate a process to help clarify these for the public and management entities before finalizing the EIS. Recognizing how significant the preferred policy direction will be to the region for future Mitchell Act funding, we also request that NMFS identify a preferred alternative and seek public comment before the final EIS is completed. #11 #12

Coordination and synchrony of Federal action relating to ESA compliance remains a concern of the Department. We recommend that the Mitchell Act Hatchery Environmental Impact State Record of Decision be made concurrent with completion of all related ESA consultation processes. For example, NMFS is evaluating the approval of the US v. Oregon hatchery programs under the ESA. The Department also recommends that the ESA consultation for lower river hatcheries also be made concurrently with the Record of Decision. This approach enables a preferred alternative to be informed by the policies and agreements associated with salmon and steelhead recovery that have been, and will be, developed collaboratively among the co-managers, NMFS regional entitities, and other interest in the Basin. #13

Thank you again for the opportunity to comment and the communication NMFS has had with the Department as we have worked to review and provide input on the Mitchell Act DEIS/NEPA document.

Sincerely,

Philip Anderson
Director

cc: Senator Murray
Senator Cantwell
Representative Dicks
Representative Hastings
Jim Scott
Sara LaBorde

Tillamook County

Board of Commissioners
Mark Labhart. Charles J. Hurliman. Tim Josi.
201 Laurel Avenue
Tillamook, Oregon 97141
Phone 503-842-3403
Fax 503-842-1384
TTY Oregon Relay Service

Land of Cheese, Trees and Ocean Breeze

Letter #17

November 24, 2010

William Stelle Jr
Regional Administrator
NMFS Northwest Region, NOAA
7600 Sand Point Way NE
Seattle WA 98115

RE: Mitchell Act EIS

Dear Mr. Steele:

We, the Tillamook County Commissioners wish to voice our opinion regarding the Draft Environmental Impact Statement (DEIS) to Inform Columbia River Basin Hatchery Operations and the Funding of Mitchell Act Hatchery Programs.

#1

We join with recreational, commercial and tribal fishers, in-river and ocean, from Oregon, Washington, Alaska and Idaho, with generations of experience behind us on what it takes to conduct viable fisheries, and shared concerns regarding the Mitchell Act DEIS. We are united in our agreement that all of our groups are entitled to conduct viable fisheries that sustain our communities.

#2

We share a mutual concern that, due to its many errors, lack of documentation, faulty modeling, and major omissions, the DEIS is not ready for public comment and should not have been put forth for such review. It has cost numerous fisheries organizations and fisheries and tribal agencies considerable time and money to comment on a document that is seriously flawed, and which should have been corrected by the agency before public review. These comments are contained in individual letters provided NMFS by the respective organizations and agencies. The document itself represents a significant investment by the U.S. taxpayer of approximately $1,000,000. The public has a right to expect an accurate and complete document to be presented for public review.

#3

We share a mutual concern that the five alternatives presented for review all result in adverse effects on harvest. NO alternative appears that is supportive of harvest. All alternatives, including status quo, will result in reduced harvest. It does not appear to us

that any alternatives that might have been supportive of harvest were considered. If they were, they are not evident in the document. The Mitchell Act was intended to compensate for habitat that was destroyed due to hydro-electric and other development of the Columbia Basin. Further, its intent was mitigation to provide continued harvest opportunities to compensate for that destruction (DEIS, pp. 1-21 and 2-15). We do not believe that the five alternatives provided in the DEIS fulfill these legal obligations of the Mitchell Act. #3

We share a mutual concern that the DEIS appears to subsume the Mitchell Act under the Endangered Species Act and abolish the mitigation requirements of the Mitchell Act. We are concerned that this focus might be construed as a regulatory repeal of the Mitchell Act without a Congressional vote. Fisheries along the entire west coast will be affected by the draconian cuts in harvest proposed, and we object strongly to this reorientation of the Mitchell Act. We do not believe that conservation and harvest are mutually exclusive. #4

We recommend that the National Marine Fisheries Service withdraw this document, consult with our groups and the numerous agencies and tribal governments who were not consulted in the drafting of this document, and redraft a DEIS that corrects the multitude of errors and omissions noted in comments received by the agency. We also recommend that NMFS provide alternatives that are supportive of viable fisheries across all sectors, and respectful of the place of salmon and salmon fisheries in the history, economy and culture of the west coast. We are united in our agreement that good government, good regulatory practice and good stewardship require that the current DEIS be withdrawn as requested. #5 #6 #7

Sincerely,

BOARD OF COMMISSIONERS FOR
TILLAMOOK COUNTY, OREGON

_____
Mark Labhart, Chair

_____
Charles J. Hurliman, Vice Chairperson

_____
Tim Josi, Commissioner

Letter #18

PORT OF BANDON

P.O. BOX 206 • BANDON, OR 97411 • (541) 347-3206 • FAX (541) 347-4645

November 29, 2010

William Stelle Jr.
Regional Administrator
NMFS Northwest Region, NOAA
7600 Sand Point Way NE
Seattle, WA 98115

RE: Mitchell Act EIS

Dear Mr. Steele:

The Port of Bandon Commission is registering an opinion regarding the Draft Environmental Impact Statement (DEIS) to the Columbia River Basin Hatchery Operations and the funding of the Mitchell Act Hatchery Program.

Along with Oregon, Washington, Alaska and Idaho and all recreational, commercial and tribal fishers of in-river and ocean fishing we stand united in agreement that all of these groups are entitled to conduct viable fisheries that sustain our communities. We share in the concern that errors, lack of documentation, faulty modeling along with major omissions, makes the DEIS not ready for public comment or review. #1 #2

The public has the right to expect an accurate and complete document for review, particularly following the significant investment of US taxpayer's funds totaling approximately $1,000,000.00. The five alternatives presented for review all result in negative effects on harvest. There is no alternative that appears supportive of harvest. It appears that none of the alternatives that might have been supportive of harvest were even considered. #3

We highly recommend that National Marine Fisheries Service withdraw this document and consult with the numerous agencies and groups who were not consulted. We also highly recommend that NMFS provide viable alternatives of this fishery, which are respectful of the place salmon and the salmon fisheries hold in the history, economy and highly regarded culture of the west coast. #4 #5

NOAA-NMFS
RECEIVED
DEC 03 2010
NORTHWEST REGIONAL OFFICE

#6

Good government, good stewardship and good regulatory practices require NMFS to withdraw the current Draft Environmental Impact Statement. We do not believe that conservation and harvest are mutually exclusive.

Sincerely,

Gina Dearth, manager

Port of Bandon Commission
Robert S. Miller III, President
Donny Goddard
Reg Pullen
Steve Martizia
Rick Goche

Robert K. Johnson-District 1 • Wynne McCabe-District 2 • Dean D. Burton-District 3

Board of County Commissioners

County of Garfield

P.O. Box 278 • Pomeroy, Washington 99347 • (509) 843-1391 • Fax: (509) 843-3941

November 30, 2010

William Stelle Jr.
7600 Sand Point Way NE
Seattle, WA 98115

Letter #19

Dear Mr. Stelle,

The Garfield County Board of Commissioners appreciates the opportunity to provide comments on the Draft Environmental Impact Statement on the Mitchell Act (DEIS). Members of our Board serve on local watershed planning units and the Snake River Salmon Recovery Board. Our farming and ranching communities have implemented many restoration projects to help protect and preserve steelhead habitat within Garfield County.

#1 We are extremely disturbed with the DEIS. #2 Sport fishing on the mainstream Snake River is a huge economic benefit to communities and very important for local moral. #3 Farmers and ranchers are constantly being identified in recovery plans as contributing to the problems that face salmonids in their freshwater life stages. You continue to look at the historic practices and have failed to recognize the projects that have been completed in the past 20 years that are protecting riparian habitat, reducing soil erosion and increasing stream length and complex habitat in local streams. #4 The economic section of the DEIS is not accurate for southeastern Washington and #5 more importantly if hatchery production is reduced we will see a decrease in fishing opportunities, which will penalize locals who have been restoring critical habitat for juvenile and adult salmonids. We need to continue building partnerships and maintaining trust and credibility, not reducing fishing opportunities for tribal or sport fishermen.

#6 We would appreciate more local input from hatchery managers within our region. There is a wealth of knowledge regarding hatchery production, harvest and habitat in the Snake basin, yet none of these individuals were consulted. #7 Thanks for the opportunity to respond and the Garfield County Board of Commissioners supports the withdrawal of the DEIS to provide for a complete rescoping and revision in order to develop a draft that reflects a collaborative effort with **all** the affected parties.

NOAA-NMFS RECEIVED NORTHWEST REGIONAL OFFICE

Respectfully
Robert Johnson- Garfield County Commissioner

Robert K Johnson

CHELAN COUNTY POWER
327 N. Wenatchee Avenue
P.O. Box 1231
Wenatchee, WA 98807-1231

1151 Valley Mall Parkway
East Wenatchee, WA 98802

Grant County PUBLIC UTILITY DISTRICT
30 C Street SW
P.O. Box 878
Ephrata, WA 98823

12/02/2010

Letter #20

William W. Stelle, Jr.
Regional Administrator
NMFS Northwest region
National Oceanic and Atmospheric Administration
7600 Sand Point Way NE
Seattle, WA 98115

Submitted via email to MitchellActEIS.nwr@noaa.gov

Dear Administrator Stelle:

#1

This letter represents the collective response of the Chelan, Douglas and Grant County Public Utility Districts (Mid-Columbia PUDs) to the National Marine Fisheries Service's (NMFS) *Draft Environmental Impact Statement to Inform Columbia River Basin Hatchery Operations & the Funding of Mitchell Act Hatchery Programs* (DEIS). We applaud NMFS' efforts to identify conservation approaches in the DEIS that may benefit listed species. The effort to consolidate such a broad range of conservation goals and objectives for analysis and public review is noteworthy and ambitious.

#2

The Mid-Columbia PUDs have been proponents of NMFS' implementation of performance standards for hatchery programs, combined with a structured, adaptive approach to hatcheries management. Accordingly, we have a direct and significant interest in the development and implementation of hatchery policies in the Columbia River Basin. Indeed, the adaptive approach being employed in our programs is *currently* integrating the best science and most recent policy directives into the management of our hatchery programs. Our comments here are not only provided to assist NMFS in formulating a preferred alternative for publication in the Final Environmental Impact Statement (FEIS) and Record of Decision, but also to highlight how our programs, as currently implemented, are in harmony with (i) the general goals established by the Hatchery Scientific Review Group (HSRG), (ii) the goals set forth in the DEIS, and (iii) to encourage NMFS to ensure that the approach set forth in a FEIS remains consistent with the ongoing and adaptive approach being employed by the Mid-Columbia PUDs' programs.

#3

The Mid-Columbia PUDs supply power to thousands of individuals and businesses in a large geographic range that includes Chelan, Douglas, and Grant counties and extends across Washington State. We collectively generate clean hydroelectric energy from a total of 5 hydroelectric projects on the Columbia River. These include the Priest Rapids, Wanapum, Rock Island, Rocky Reach and Wells hydroelectric

CHELAN COUNTY POWER
327 N. Wenatchee Avenue
P.O. Box 1231
Wenatchee, WA 98807-1231

1151 Valley Mall Parkway
East Wenatchee, WA 98802

Grant County PUBLIC UTILITY DISTRICT
30 C Street SW
P.O. Box 878
Ephrata, WA 98823

#3

projects. We have undertaken an innovative and adaptive approach to Endangered Species Act (ESA) compliance in our operation of these hydroelectric projects. For example, Chelan PUD and Douglas PUD operate under Habitat Conservation Plans (HCPs) implemented pursuant to Section 10 of the ESA. These were developed in accordance with the ESA's goals of conserving and facilitating the recovery of natural populations. The overarching goal of the HCPs, as well as Grant PUD's Priest Rapids Project Salmon and Steelhead Agreement (SSA) — is to achieve no-net impact (NNI) on anadromous salmonids as they pass through our hydroelectric projects. A key component of the HCPs and SSA is the operation and maintenance of conservation hatchery programs, the primary goal of which is to meet NNI (mitigation goals) in a manner consistent with the objective of rebuilding natural populations.

The Mid-Columbia PUD hatchery programs are managed through the active participation of State, Federal, and Tribal signatories in defined "hatchery committees," utilizing adaptive management principles and robust monitoring and evaluation (M&E) programs. The HCPs and SSA set forth the specific standards, rules, and guidelines applicable to the operations of the hatchery committees and their adaptive management mandate. The hatchery committee members, including NMFS, ensure that the Mid-Columbia PUD hatchery programs incorporate the best available science to meet program objectives and ESA compliance. The Mid-Columbia PUDs have been leaders in collecting comprehensive M&E data to support adaptive, conservation-based decision making. Moreover, we have already begun incorporating many of the goals or principles indentified in the "stronger performance" categories identified in the DEIS into our hatchery programs. As an example, the Mid-Columbia PUDs (in coordination with their respective hatchery committees) have already begun implementing the Hatchery Scientific Review Group (HSRG) conservation recommendations and have voluntarily submitted Hatchery Genetic Management Plans (HGMPS) that are based on HSRG principles. Both Chelan PUD and Grant PUD have developed HGMPs in coordination with NMFS that have been published in the federal register and are currently undergoing Section 7 consultation. Similarly, Douglas PUD submitted a Methow Basin spring Chinook HGMP to NMFS in March 2010 and is currently working with the HCP Hatchery Committee on a new HGMP for Wells Hatchery Steelhead.

These HGMPs are consistent with the best available science and HSRG recommendations, and are at the forefront of NMFS' developing comprehensive hatchery policy for the Columbia Basin. In addition, these ongoing HGMP processes derive from, and are consistent with, the hatchery reform goals set forth in the FCRPS 2008 Biological Opinion, Reasonable and Prudent Alternatives (RPAs) 39 and 40. Some of the adaptive changes we anticipate incorporating as a result of our current program reviews are significant reductions in program sizes for some stocks, managing for Proportionate Natural Influence (PNI) levels consistent with conservation, targeted reproductive success studies, and conservation-based release strategies.

CHELAN COUNTY POWER
327 N. Wenatchee Avenue
P.O. Box 1231
Wenatchee, WA 98807-1231

1151 Valley Mall Parkway
East Wenatchee, WA 98802

Grant County PUBLIC UTILITY DISTRICT
30 C Street SW
P.O. Box 878
Ephrata, WA 98823

#4

It is our understanding that NMFS intends the DEIS to reflect a comprehensive basin-wide approach to the management of Columbia River hatchery programs. Specifically, the DEIS explains that *"NMFS' purpose for the action is to develop a policy direction related to Columbia River basin hatchery production that will 1) guide its decisions about the distribution of funds for hatchery production under the Mitchell Act ; and 2) inform its future review of individual Columbia River hatchery programs under the ESA."*[1] The DEIS further explains that NMFS "anticipates adopting a policy direction that identifies general goals for NMFS to pursue with regard to Columbia River basin hatchery production and a series of recommendations for hatchery operators to consider and adopt when developing plans for their individual hatchery programs." This "policy direction" will apparently be generated from a combination of two or more of the alternatives set forth in the DEIS and will be aimed to "develop standards that will reduce the adverse effects of hatcheries on natural origin fish." It is our understanding that the policy direction developed in the DEIS is intended by NMFS to reflect and harmonize the policies and standards currently being implemented in our programs in accordance with NMFS' HGMP policy. However, while NMFS suggests in the DEIS that it is documenting a comprehensive hatchery strategy for the Columbia River Basin, it does not clearly and specifically express how this strategy incorporates or affects existing hatchery reform efforts such as those currently being employed in the PUD programs, which are not funded by the Mitchell Act but are governed by existing Federal Energy Regulatory Commission license requirements and HCPs (i.e., Chelan and Douglas PUDs HCPs) or SSA (Grant PUD) contained therein.

We recognize NMFS' desire to document a comprehensive approach to hatchery management for potential use in future reviews. Nonetheless, NMFS should ensure that that development of the selected approach incorporates and reflects current policy and programs, and will be adaptively implemented in our hatchery programs. The approach set forth in the DEIS should not limit our hatchery programs' adaptive flexibility or otherwise modify terms and conditions set forth in the HCPs, Section 10 permits, or agreements contained in our FERC licenses.

We assume that the approach set forth in the DEIS is intended to be consistent with, and to document, the current hatchery reform efforts being employed adaptively in our programs, and that the FEIS will maintain this consistency. If this assumption is incorrect, we request that NMFS clarify its intent in the FEIS or in its responses to comments. In summary, the Mid-Columbia PUDs strongly suggest that NMFS continue to develop its hatchery policy direction, as reflected in the DEIS, in a manner consistent with the conservation agreements contained within our FERC licenses, which endorse an adaptive approach based on the best and most current science.

[1] p. 6 of Executive Summary of *Draft Environmental Impact Statement to Inform Columbia River Basin Hatchery Operations & the Funding of Mitchell Act Hatchery Programs*

CHELAN COUNTY POWER
327 N. Wenatchee Avenue
P.O. Box 1231
Wenatchee, WA 98807-1231

1151 Valley Mall Parkway
East Wenatchee, WA 98802

Grant County PUBLIC UTILITY DISTRICT
30 C Street SW
P.O. Box 878
Ephrata, WA 98823

The following comments address our technical interpretation of the DEIS where relevant to our hatchery programs.

#5

Technical Comment 1: The statement "*Implementation of hatchery practices that would increase adverse effects on listed species when compared to existing practices is not considered in this draft EIS*"[2] is not consistent with the policy direction of installing weirs for the management of hatchery origin spawners, which is stated in several of the Alternatives in the DEIS. The widespread use of weirs and large-scale trapping efforts (e.g., up to 100% of a run) to remove excess hatchery fish, as recommended in the DEIS, represents a paradigm shift in fisheries management that has not been well studied. All of our existing ESA permits have strict limitations on the operation of weirs because of putative delays in migration and reduced survival associated with handling. Therefore, it is unclear how increasing the abundance of weirs, or frequency of operation required to achieve a PNI objective, will not result in an increase in adverse effects on listed species. In the upper Columbia Basin, purported deleterious habitat effects have prevented the installation of weirs on at least two recent occasions[3] despite ostensible agency support (i.e.,WDFW, NMFS and USFWS). We recommend that NMFS carefully consider that constructing barriers to passage (i.e., weirs) may not improve the welfare of listed species that are almost universally affected by degraded habitat. Furthermore, the use of an invasive measure, such as a weir, to remove excess hatchery fish should be explicitly evaluated versus other equally protective alternatives such as reducing a hatchery program size, changing release locations, altering the type of a hatchery program (e.g., segregated or integrated), or exploring carefully managed conservation fisheries. We also recommend that NMFS examine the habitat/ecological effects of constructing and implementing weirs and compare these to the risks associated with high proportions of hatchery origin spawners. In summary, the PUDs suggest that using weirs may cause significant negative ecological effects and, used alone, will only solve a symptom of the problem (too many hatchery spawners), not the cause (potentially too many hatchery releases).

#6

Technical Comment 2: Recognizing that hatchery origin fish are only half of the PNI equation, and natural origin fish are the other, we question whether it is possible to *effectively* manage PNI in the Columbia Basin by relying on weirs (e.g., intermediate or strong performance) to remove hatchery origin fish. In other words, if harvest or other downstream factors remove a significant portion of natural-origin fish, the burden of managing for a given PNI is potentially transferred to removal of excess hatchery adults through weirs. It follows that the removal of large numbers of hatchery fish to achieve PNI will only be successful if there are sufficient numbers of natural-origin fish that have not been previously eliminated. More simply, PNI goals are rendered irrelevant if natural origin abundance is

[2] p. 7 of Executive Summary of *Draft Environmental Impact Statement to Inform Columbia River Basin Hatchery Operations & the Funding of Mitchell Act Hatchery Programs*

[3] Since 2006, plans for a White River weir in Chelan County and a Chewuch River weir in Okanogan County have been cancelled or postponed because of purported habitat effects

CHELAN COUNTY POWER
327 N. Wenatchee Avenue
P.O. Box 1231
Wenatchee, WA 98807-1231

1151 Valley Mall Parkway
East Wenatchee, WA 98802

Grant County PUBLIC UTILITY DISTRICT
30 C Street SW
P.O. Box 878
Ephrata, WA 98823

disregarded. The FEIS comprehensive analysis should also consider the effects of other factors, such as harvest, that influence the abundance and proportion of natural origin returns. #6

Technical Comment 3: The DEIS does not address in detail how production will (or will not) be reduced for non-Mitchell Act hatcheries under any of the alternatives. Instead, the DEIS provides the general statement that "production levels would be reduced from levels under [the baseline] in hatchery programs designed to meet mitigation requirements only when those production levels conflicted with the ability of a hatchery program to meet performance goals." This statement is vague and provides no guidance or direction to non-Mitchell Act hatcheries. We assume it is NMFS' intent that production level reductions will occur as necessitated, if at all, through the adaptive management processes currently used to manage the Mid-Columbia PUD programs. We request that the final DEIS clarify this intent. #7

Technical Comment 4: The DEIS does not include tributary fisheries as a complement to weirs for removing excess hatchery origin fish, however, it is our understanding that the Washington Department of Fish and Wildlife is advocating these conservation fisheries as a primary tool to reduce hatchery origin spawners. The DEIS does not explain how, if at all, NMFS has taken these conservation fisheries into account. #8

Technical Comment 5: NMFS states that at the DPS or ESU level, and at the Columbia Basin level, there is an interrelationship between the hatchery populations and natural populations, and that a comprehensive analysis is needed to fully understand a program within this context. We understand that a comprehensive analysis may be necessary for the NEPA process associated with Mitchell Act funded hatcheries, but it should not be used to suggest that all hatcheries are the same or that success cannot be measured for individual hatcheries. Specifically, the PUDs disagree that that the existence of interrelationships within an ESU or Columbia Basin would preclude the evaluation of a hatchery program on its own individual merits. A hatchery program's success and ESA compliance should be considered on an individual basis within the context of the program's performance and purpose. #9

Technical Comment 6: The FEIS may also recommend the development of new "conservation hatchery programs" – using existing hatchery capacity – for "high risk" populations. It is unclear if NMFS intends these new programs to apply to non-Mitchell Act hatcheries. NMFS should clarify its intent with respect to any new "conservation hatchery programs." #10

Technical Comment 7: The examination of the cumulative effects of hatcheries in the Columbia Basin will require an accurate accounting of production levels and currently operating facilities, such as weirs. Some of the Upper Columbia hatchery programs are missing from the DEIS or have production levels that are inaccurately depicted, or are misrepresented in some other way. Many of the current or proposed production program numbers that were not included in the document are contained in new or #11

CHELAN COUNTY POWER
327 N. Wenatchee Avenue
P.O. Box 1231
Wenatchee, WA 98807-1231

1151 Valley Mall Parkway
East Wenatchee, WA 98802

Grant County PUBLIC UTILITY DISTRICT
30 C Street SW
P.O. Box 878
Ephrata, WA 98823

revised HGMPs that were submitted to NMFS over a year ago. The Technical Appendix attached to this letter addresses some specific information that appears to be incorrect, missing or incomplete. We recommend that NMFS use the information in the new HGMPs that were submitted to NMFS to update and correct the DEIS. #11

Thank you for the opportunity to comment on the Mitchell Act DEIS. If you have any questions about the content of this letter, please contact one of the following PUD hatchery representatives: Joe Miller at Chelan PUD (509) 661-4473, Greg Mackey at Douglas PUD (509) 881-2489, or Todd Pearsons at Grant PUD (509) 754-0500.

Sincerely,

Gregg Carrington
Managing Director-Energy & Natural Resources
Chelan County Public Utility District

Shane Bickford
Natural Resources Supervisor
Public Utility District No. 1 of Douglas County

Tom Dresser
Fish, Wildlife & Water Quality Manager
Public Utility District No. 2 of Grant County

CHELAN COUNTY POWER
327 N. Wenatchee Avenue
P.O. Box 1231
Wenatchee, WA 98807-1231

DOUGLAS COUNTY P.U.D.
1151 Valley Mall Parkway
East Wenatchee, WA 98802

Grant County PUBLIC UTILITY DISTRICT
30 C Street SW
P.O. Box 878
Ephrata, WA 98823

TECHNICAL APPENDIX

The comments in this appendix refer to specific sections in the DEIS. The comments are intended to provide supplemental information but are not considered to be comprehensive or address all errors in the DEIS.

From DEIS Appendix A: #12

1. Population 826 ("Methow Summer Chinook (Wells Hatchery)"). This should be Eastbank Hatchery, not Wells. The broodstock are collected at Wells Dam/Hatchery, but this is an Eastbank program. The fish are acclimated at Carlton Pond on the Methow. The future program (after 2013) will drop by 292,000 as the HCP "initial production" phase concludes for Chelan PUD.
2. Population 826 ("Methow (Twisp) Spring Chinook"). The draft Methow Spring Chinook HGMP (submitted to NMFS) specifies 100,000 smolts, not the 183,000 presented in this table.
3. Population 234 ("Methow (Methow-Chewuch) Spring Chinook). The draft Methow Spring Chinook HGMP (submitted to NMFS) specifies 450,000 smolts, not the 359,100 presented in this table.
4. Population 238 (Methow Summer Steelhead). The 420,100 is wrong. Winthrop NFH currently, and is planning to release between 100,000 and 200,000 (see their draft HGMP). The table requires two new lines to be added (see table below). The table below is based on the draft Wells Steelhead HGMP. The Twisp program has been approved by the Wells HCP Hatchery Committee and will be implemented starting in brood year 2011.

Methow	Methow (Twisp) Summer Steelhead	Steelhead	Summer Steelhead	Int	Both	WDFW	Other	48,858	WDFW Wells Hatchery			Twisp River Acclimation Pond
Upper Columbia	Upper Middle Columbia Summer Steelhead (Wells Hatchery)	Steelhead	Summer Steelhead	Seg	Both	WDFW	Other	300,000	WDFW Wells Hatchery			Columbia River from Wells Hatchery

5. Population 813 ("Okanogan Summer Steelhead (Wells Hatchery)"). Wells Hatchery has released about 130,000 smolts in the Okanogan. Grant PUD and the CCT plan to develop a program of up to 200,000 smolts reared at Wells Hatchery. The draft Wells Steelhead HGMP plans to move former Douglas PUD Okanogan smolts to become part of the 300,000 mainstem release (see table above).
6. Population 247 (Wenatchee (Chiwawa) Spring Chinook. The table indicates a release size of 351,000 whereas the actual program goal is 298,000.

CHELAN COUNTY POWER
327 N. Wenatchee Avenue
P.O. Box 1231
Wenatchee, WA 98807-1231

1151 Valley Mall Parkway
East Wenatchee, WA 98802

Grant County PUBLIC UTILITY DISTRICT
30 C Street SW
P.O. Box 878
Ephrata, WA 98823

7. Population 252 (Wenatchee summer steelhead). The table indicates a release size of 401,000, whereas the actual current program goal is 400,000. This program is likely to drop significantly (up to 50%) after 2013, as Chelan PUDs "initial production" phase concludes. #12
8. Population 251 (Wenatchee sockeye). This is an experimental "pilot" program not a conservation program. The table indicates a release size of 211,000, whereas the actual goal is 280,000.

Upper Columbia Steelhead

Page 2-62, Table 2-13: Mainstem Columbia Summer Steelhead (Wells Hatchery) listed to terminate because the program receives Mitchell Act funds. This is wrong. The program is fully funded by Douglas PUD. In addition, there are currently no fish released directly into the Columbia from Wells Hatchery, although this is proposed in the draft HGMP for the Wells Summer Steelhead. This probably refers to the Ringold program that is supported by Wells Hatchery. It is incorrect to state that this is a Wells Hatchery program. #13

Page 4-72, Line 5: Weirs do exist in this area: Twisp River, Chiwawa River, and Tumwater Dam. Twisp Weir (Methow Basin) is currently used to manage adult steelhead in the Twisp River for a PNI =0.67. A weir is planned for the Okanogan River by the CCT, primarily for summer Chinook. #14

Appendix D: Methow Steelhead. Alternatives 2-5 appear to adopt the HSRG plan for a 100,000 smolt integrated program (and a 320,000 smolt stepping stone program in alternative 5). But, in HSRG, the 100,000 program required the removal of 75% of the hatchery adults, and if the stepping stone program was implemented, it would require the removal of 90% of hatchery adults. Furthermore, with a pHOS of about 0.5, as in the alternatives presented, the broodstock would need to be WxW, resulting in mining more wild fish for the hatchery program than needed in a HxW program. However, this would lessen the number of hatchery fish that would need to be removed for pHOS concerns. On page 4-72, it states that no weirs exist (see comment above) and none are needed to implement the alternatives. This is unrealistic. Removing 75% or 90% of hatchery adults would require a weir(s) to remove this many fish. For reference, the conservation fishery removed about 34% in 2009/2010 with new aggressive fishery regulations directed at hatchery fish removal. #15

Appendix D: The current release of steelhead into the Methow is about 420,000 combined between Wells Hatchery and Winthrop NFH. Alternatives 2, 3 and 4 release only about 100,000 smolts total in the Methow. The 320,000 stepping stone isn't included (0 smolts) in these alternatives. Douglas PUD has an obligation to produce 350,000 smolts, most of which are now released in the Methow. Where do you propose to put the extra smolts in alternatives 2-4? In addition, USFWS-WNFH (Methow) and Grant PUD (Okanogan) have steelhead programs in the Upper Columbia. In fact the number of steelhead #16

CHELAN COUNTY POWER
327 N. Wenatchee Avenue
P.O. Box 1231
Wenatchee, WA 98807-1231

1151 Valley Mall Parkway
East Wenatchee, WA 98802

Grant County PUBLIC UTILITY DISTRICT
30 C Street SW
P.O. Box 878
Ephrata, WA 98823

smolts could rise to as high as 750,000 (350,000 Douglas + 200,000 WNFH + 200,000 Grant/CCT) in the Upper Columbia in the foreseeable future. #16

Appendix D: Okanogan steelhead. The 20,000 fish release from Cassimer Bar Hatchery is sustained across alternatives. The current Wells ~100,000 smolts for the Okanogan (80,000 reared for Grant PUD) are omitted from alternatives 2-4. Alternative 5 increases to 200,000, increases pHOS to an extremely high 0.92, and is now MAF? This is double the Methow release, in spite of the fact that the Okanogan has far less steelhead production potential than the Methow. That doesn't make sense. #17

Upper Columbia Spring Chinook

1. Appendix C: Chief Joseph Hatchery is planned to rear spring Chinook for release in the Okanogan River. Although this hatchery has yet to be built, it seems like it should be considered for future management in the Columbia. #18
2. Appendix C: The Douglas PUD/WDFW draft Methow Spring Chinook HGMP submitted to NMFS has a Twisp integrated release of 100,000, and a combined Methow and Chewuch integrated release of 450,000 (225,000 per river). None of the alternatives reflects these numbers. They were developed using the HSRG for guidance. These numbers also reflect current combined HCP release level obligations of Douglas and Chelan PUDs. #19
3. Appendix C: None of the alternatives reflect the HSRG guidance of 183,000 Twisp integrated smolts, and 359,000. All alternatives are below this level. #20
4. Appendix C: The Winthrop NFH segregated program is held constant at the current release level (601,492) throughout all alternatives. This seems inconsistent with the large Methow Hatchery reductions, particularly in Alternative 5. Fish from both facilities end up spawning in the wild, and the segregated fish pose a greater risk. #21
5. Page 4-40. In the Douglas PUD/WDFW draft Methow Spring Chinook HGMP, the Twisp Weir (Twisp River) is intended to be used to manage adult escapement in the Twisp and collect broodstock toward a PNI of at least 0.67. The alternatives should reflect this. #22

Upper Columbia Summer/Fall Chinook

Appendix C: Methow Summer Chinook (Wells Hatchery) (ID = 826) is incorrect. These fish are reared at Eastbank Hatchery (therefore, an Eastbank program) and acclimated at Carlton Pond in the Methow drainage. They are not Wells Hatchery fish. Broodstock are collected at Wells Dam and Hatchery, however. #23

Subject: Mitchel Act EIS
From: William Atlas <wiatlas@gmail.com>
Date: Wed, 03 Nov 2010 11:28:22 -0700
To: MitchellActEis.Nwr@noaa.gov

Letter #21

621 16th Ave E
Seattle, WA 98112

William W. Stelle, Jr
Regional Administrator
NMFS Northwest Region
7600 Sand Point Way NE
Seattle, WA 98115

Dear Administrator Stelle,

We are writing you today regarding the future of the Mitchell Act hatcheries and hatchery reform on the Columbia River. This DEIS is very clearly founded on sound scientific principles and would represent a major step forward for hatchery reform. Given the weight of the scientific evidence that hatchery populations undermine the genetic integrity and productivity of wild stocks we believe Columbia and Snake hatcheries must be held to the "strongest" performance goals outlined in the DEIS. The combination of higher standards of performance, some reductions in hatchery supplementation and the construction of weirs at the mouths of spawning tributaries holds great promise for reducing the degree of hatchery introgression into wild populations and limiting the ecological effects of hatcheries. We understand that management on the Columbia requires balancing a difficult set of demands, from protecting and recovering ESA listed salmon to providing harvest opportunity for sport, commercial and tribal fisherman. Unfortunately the balance of decision making has long been skewed in favor of hatchery production and harvest with little regard for wild populations. Given the fact that some of the provisions in this DEIS represent major changes in the management of the Columbia hatchery system it will undoubtedly generate some controversy, however we hope that you will remain resolved in your commitment to implementing policy guided by sound science. Thank you for your hard work. #1

Sincerely,

Will Atlas
Co-Chair
FFF Steelhead Committee

Scott Hagen
Co-Chair
FFF Steelhead Committee

Letter #22

COMMENTS ON MITCHELL ACT HATCHERY DEIS

By Bill Bakke, Native Fish Society

The Purpose of this Review:

This review by the Native Fish Society (NFS) is aimed at assessing the alternatives to determine if there is one or more alternatives that protect wild salmon and steelhead from hatchery program impacts in the Columbia River basin. The following two questions were used to evaluate the draft EIS:

1. Does the draft EIS provide hatchery management alternatives for the protection of wild salmonids that are based on the best available scientific evidence?

2. Is the draft EIS internally logical, complete, and consistent.

The following assessment is an attempt to answer these two questions.

Purpose of the Mitchell Act:

The purpose of the act is "To provide for the conservation of the fishery resources of the Columbia River…" and "To perform all other activities necessary for the conservation of fish in the Columbia River basin in accordance with the law."

When Congress passed the Mitchell Act 72 years ago, it was assumed that hatchery production could replace wild salmon and their habitats. The growth in hatchery construction in the Columbia River basin is based on the assumption that hatchery mitigation works. In 1960 Milo Moore wrote a report for the Washington Department of Fisheries that said, "…with new simplified methods of salmon egg incubation…plus the impoundment of migrating salmon at or near the rearing ponds for the artificial taking of spawn, may provide the reality – salmon without a river."

#1

While the Mitchell Act directed the Secretary of the Interior to establish one or more salmon cultural stations in the Columbia River basin, the Secretary was also authorized to conduct biological surveys, and experiments necessary to direct and facilitate the conservation of the fishery resources of the Columbia River and its tributaries. The Mitchell Act doesn't confine itself to construction of hatcheries; it would determine the status and distribution of wild salmon, provide for unimpeded migration and conduct research. All of which benefit wild salmonid populations. This blend of purposes is important, insightful, and persists today; however, the investment in hatcheries has become the primary feature of the act.

#2

The purpose of the Mitchell Act Environmental Impact Statement has been expanded to provide, for the first time, legal coverage for all federal hatchery operations in the Columbia River under the Endangered Species Act and other federal laws. Protecting wild salmonids, while operating a federal funded and directed hatchery program, is the key goal that the Mitchell Act EIS must accomplish.

Assumptions In the DEIS:

#3

There are many assumptions in the DEIS that are taken for granted but lack proof. As with most plans the assumptions are not identified and because they are not public reviewers do not have the benefit of full disclosure.

Some assumptions in the DEIS are: Intermediate and strong performance metrics protect wild populations; primary, contributing and stabilized population designations maintain the existing biological diversity species require to cope with environmental change; the HSRG formula for naturally spawning hatchery fish will protect the reproductive success of wild populations; commercial fisheries do not need to be selective to protect wild populations; selective recreational fisheries are able to protect wild populations; that hatchery reform will create the conditions needed to protect wild populations.

Performance Metrics:

Background:
In chapter 4 the evaluation of salmon ESUs and steelhead DPSs is based in part on estimated performance metrics, whether they would be "stronger performance metrics" or "intermediate performance metrics." These metrics are associated with genetic risk to the wild salmonids affected by the hatchery program.

On page 2-19 of the DEIS it says, "Stronger performance goals would be applied to all Columbia River basin hatchery programs that affect primary and contributing salmonid populations in the Interior Columbia River recovery domain.

"Primary populations have a low level of biological risk to their continued existence, contributing populations have a more moderate level of biological risk, and stabilizing populations will be maintained at their level of biological risk."

These designations were developed by the Lower Columbia River Fish Recovery Board in 2004. The Hatchery Scientific Recovery Group (USFWS) adopted these designations in their hatchery review throughout the Columbia River basin after discussion only with hatchery managers.

The Problem:

#4

The DEIS subdivides the existing biological diversity of Columbia River salmon and steelhead populations into three categories (primary, contributing and stabilizing). These categories are based on genetic risk to wild salmon and steelhead populations. The proposed way to control genetic risk is to limit naturally spawning hatchery fish that can interbreed with wild salmonids. The DEIS suggests that selective harvest, reduced hatchery production, and weirs to exclude hatchery spawners can provide protection for wild populations from hatchery salmonids.

The scientific basis for this strategy in the DEIS is lacking. NFS was unable to locate a discussion by independent scientists with salmon ecology or genetics expertise that reviewed the strengths or weakness of subdividing existing salmonid populations into genetic risk categories. In 2009 the Recovery Implementation Science Team (RIST) and the N.W. Fish Science Center (NWFSC) reviewed the Oregon Lower Columbia River Recovery Plan for Salmon and Steelhead, but this review was not included in the DEIS references. The RIST evaluation raises many questions about impacts of hatchery fish on wild salmonids that should have been included in the DEIS. For example, on page 5-23 of the RIST report they questioned the assumption that hatchery stray rates of 30% in some cases and 10% in others "lacked quantitative guidance for these thresholds" and "…it certainly seems that populations well below VSP cannot even support a 10% stray rate without significant negative effects."

In the 2009 RIST report on Hatchery Reform Science (referenced in the DEIS) it says: "The values of pHOS (naturally spawning hatchery fish) of 0.05 and 0.10 for primary and contributing populations associated with a segregated program are arbitrary, and at lease theoretically there could be significant genetic impacts at these rates. Similarly, the PNI goals of 0.7 or 0.5 for integrated programs are also arbitrary, and may or may not be ultimately sufficiently protective to contribute to recovery of natural populations."

The DEIS makes the recommendation that these stray rates, questioned by independent scientific review, provide a conservation benefit. This suggests that the DEIS fails to include relevant science in designing its alternatives and therefore could increase genetic risk to wild salmonids.

The DEIS proposes to use the untested formula developed by the HSRG for integrated hatcheries. Given the fact that the purpose of the HSRG stray rate formula is to create a blend of wild and hatchery fish, there is the potential to eliminate existing wild populations in the Columbia River basin, along with their biological integrity and reproductive performance, in the search to improve hatchery operations.

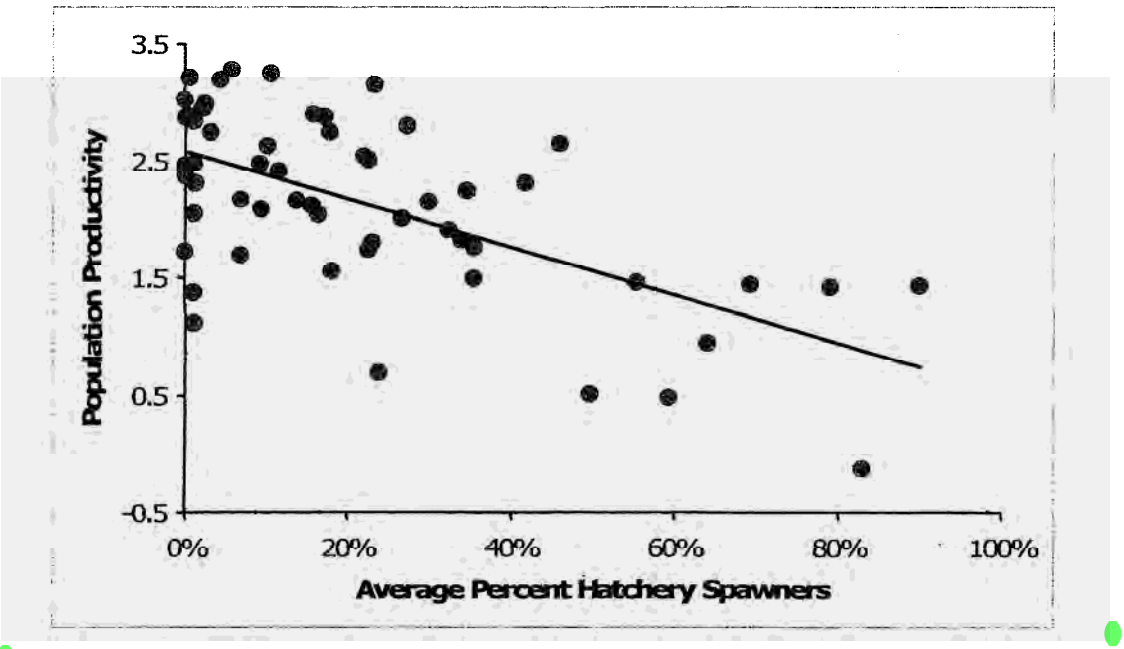
#4

Research completed by Araki et al. 2008 demonstrates that the reproductive success of native broodstock fish (integrated hatchery program) is significantly lower than for wild fish. "By reconstructing a three-generation pedigree with microsatellite markers, we show that genetic effects of domestication reduce subsequent reproductive capabilities by ≈40% per captive-reared generation when fish are moved to natural environments. These results suggest that even a few generations of domestication may have negative effects on natural reproduction in the wild and that the repeated use of captive-reared parents to supplement wild populations should be carefully reconsidered. The general finding of low relative fitness of hatchery fish combined with studies that have found broad scale negative associations between the presence of hatchery fish and wild population performance, should give fisheries managers serious pause as they consider whether to include hatchery production in their conservation toolbox."

The DEIS provides no such pause in its recommendations to use the untested HSRG hatchery management hypothesis.

In comments about this research a co-author of the study, Dr. Michael Blouin (2009), said, ""If anyone ever had any doubts about the genetic differences between hatchery and wild fish, the data are now pretty clear. The effect is so strong that it carries over into the first wild-born generation. Even if fish are born in the wild and survive to reproduce, those adults that had hatchery parents still produce substantially fewer surviving offspring than those with wild parents."

It is implied in the work of Araki et al. (2008) that in order to improve the survival, reproductive success, contribution to fisheries and cost effectiveness of hatchery programs it is necessary to have access to healthy, abundant wild populations for hatcheries. Blouin (2009) also says that fish that had one parent with hatchery lineage were 87 percent as fit as the offspring of two wild fish. Research by Chilcote et al. (in press) compares the reproductive performance of wild and hatchery populations in natural conditions and found that the hatchery fish (chinook, coho, and steelhead) reproductive performance is just 13% that of the wild fish. In other words, the hatchery fish reproductive performance was 87% less than that of wild fish under natural conditions. In addition, the authors found this reduction in reproductive performance to be associated with hatchery programs regardless of their type, that is, whether they were segregated or integrated hatchery operations.



Relationship between population productivity, expressed as the natural log of the "a" parameter in the Beverton-Holt recruitment model, and the mean proportion of the natural spawning population that were hatchery fish for 58 populations of steelhead, coho, and chinook in Oregon. (ODFW 2010)

The DEIS, structured as it is on an untested hypothesis advanced by the HSRG, would not protect wild salmonid populations, but would create a blend of hatchery-wild fish, calling it hatchery reform, and set the hatchery program up to erode the reproductive success exhibited by wild salmonids. By taking this action, the ESA-listed salmonid populations in the Columbia River basin would very likely not be recovered. #4

Alternatives:

Alternatives 2 – 5 include some reduction in hatchery production in order to improve conservation of wild salmonids in the Columbia River Basin. The protection of wild populations is the priority expressed in these alternatives. The no-action alternative is the reference point, the current baseline, against which all other alternatives are developed, implying that the current condition is not an adequate response to wild salmonid protection and recovery. The alternatives are arbitrary constructions emphasizing geographical portions of the Columbia River basin (alternatives 4 and 5), or propose a minimum change in hatchery operations to protect wild populations (alternative 3). Alternative 2 is the opposite of the no-action alternative where there would be no funding for Mitchell Act Hatcheries. We assume that Alternative 2 is not likely to be selected given the investment in hatcheries and the dependence that fish management agencies have for the continued investment of public funds to support hatchery programs. #5

Missing is an alternative that combines what is known and suspected regarding hatchery impacts and associated fisheries on native, wild salmonids. Such an alternative should be applied throughout the Columbia River basin as a basic policy. In order to respond to local variations in fish life history and ecological conditions, this basic hatchery impact policy could be adapted to address local conditions as well as marine conditions such as ocean productivity. Without such an alternative to consider, the DEIS is fatally flawed.

The construction of alternatives 3-5 are complex and it is difficult to determine their impact or benefit for wild populations. The proclaimed results for each of these alternatives cannot be determined for they are largely based on hypotheses that have not been tested. So selection of one alternative over another is impossible and some unknown blend of alternatives 3-5 will likely be developed. However, reduction of hatchery production may increase benefits to wild populations and four of the five alternatives support this notion. It is probable that a phantom alternative will address the entire Columbia River Basin and provide intermediate or less protection for wild salmonids. It will be designed to justify increased federal funding for hatcheries in the Columbia River Basin and be characterized as adequate protection of wild salmonids, improving recovery of ESA-listed populations.

Cost Accounting in the EIS:

A prudent way to evaluate the cost effectiveness of public funds invested in hatchery programs is to conduct an economic review of the hatchery program. In 2002 the Independent Economic Advisory Board completed a partial review of selected hatcheries in the Columbia River from the mouth to the upper river tributaries and determined the cost effectiveness and benefit cost ratios for those hatcheries. The IEAB also, for the first time, determined the cost to produce a fish that is harvested and found that some hatcheries produced salmon that cost $63,000 or more for each fish harvested. Following this evaluation, the IEAB requested permission to complete phase II of their economic review of all hatcheries in the Columbia River basin, but the N W Power and Conservation Council and the National Marine Fisheries Service denied that request. In speaking to the fish division administrator for the Oregon Department of Fish and Wildlife this year NFS found that he did not support cost accounting for mitigation hatcheries. The reports of the IEAB can be found at: http://www.nwcouncil.org/library/ieab/ieab2002-1.htm #6

The DEIS does not include the results of the IEAB economic evaluation and does not include it in the references. As a result, the DEIS ignores important information that should be included in the development of alternatives.

While the DEIS does include a table for total annual hatchery costs of $79.5 million (Table 6-85) in 2007 dollars, there is reason to believe that this does not cover the full cost of hatchery expenditures in the Columbia River basin. According to the Bonneville Power Administration the cost for hatcheries under the

#6

Columbia River fish and wildlife program (N.W. Power Planning Council 2009) was $159,063,738. It is unclear whether these two sources of hatchery costs are combined under the BPA analysis or separate. In addition, there are also associated costs for research, monitoring and evaluation which add considerable cost to the total hatchery expenditure. In preparation for these comments, the Native Fish Society asked both the National Marine Fisheries Service and the N.W. Power Planning and Conservation Council staffs for the complete cost of the Columbia River hatchery program by all sources. Both agencies were unable to provide this information. The NFS was told that having a complete total annual cost for the Columbia River hatchery program would be important and useful.

In 2009 the National Marine Fisheries Service contracted with economists from Oregon State University to conduct an economic analysis of the Mitchell Act Hatcheries (The Research Group 2009). This analysis found that cost for all species produced at Mitchell Act Hatcheries is a deficit spending program. In other words it cost more to produce the fish than their value to the fishery. The OSU economics team was fired by NMFS and a more favorable economic review was solicited. The link to their summary report is: http://www.nativefishsociety.org/documents/Radtke_Ec_Effects_and_So_Impl.pdf

It is recommended that each hatchery program, on an annual basis, evaluate the cost to produce a fish that is harvested. This will provide the public and government with information that is not now available, and will help make the cost effectiveness of the hatchery program and the investment of public funds more transparent, contributing to more informed decisions about the future expenditure of public funds for hatchery programs.

Hatchery Associated Risk Assessment:

#7

In chapter 4 the risk assessments discussed are for genetic risk, competition risk, predation risk, VSP compliance risk, weir risk, disease risk, nutrient recycling risk, and stray hatchery fish risk. In this chapter salmonids by species and sub-species are evaluated relative to these risks but the treatment is uneven and some risk assessments are totally missing. In reviewing 17 risk assessments for salmonids throughout the Columbia River basin all were evaluated for genetic risk, competition and predation risk, and VSP compliance risk, but only five of the 17 were to have new weirs constructed to exclude hatchery fish from spawning naturally with wild salmonids. As for risks associated with disease transfer, nutrient recycling, and hatchery strays ("masking") none of the 17 hatchery assessments addressed these risks. The gaps in the treatment of risks associated with hatchery programs suggest that the DEIS is incomplete.

Comparing the risk assessment of two species that occupy the same watersheds within an ESU could provide information about the treatment of each species. By comparing the risk assessment for each species it is possible to evaluate the complexity of the hatchery management alternatives. The reviewers of the EIS are to make recommendations as to which alternative they would like to see implemented or the blend of alternatives that would best protect the wild salmonids.

Species	Genetic Effects	Competition Predation	VSP Compliance
Spring Chinook	<Alt. 2-5	< Alt. 3-4	> productivity Alt. 2
	Greatest benefit Alt. 5	> Alt. 2	< abundance Alt 2-4
Summer Steelhead	<Alt. 5	<Alt. 2	> productivity Alt. 2-5
		> Alt. 3-5	< abundance Alt. 2-5

Based on this evaluation the assumptions about genetic effects would benefit both species under Alternative 5. However, there is no agreement regarding treatment for the two species for competition and predation risk. And VSP compliance reveals an internal conflict within the alternative for productivity and abundance and between species. In addition, risks associated with disease transfer, lack of nutrient

#7

recycling, and hatchery strays are not considered in the alternatives. When this type of complexity, incompleteness and internal conflict is considered for all 17 treatments in the DEIS, recommending an alternative for managing hatcheries to protect wild salmon and steelhead is probably impossible. Thus, the EIS fails to provide a rational basis for selection of an alternative that does the best job of avoiding all risks for all species throughout the Columbia River basin.

HARVEST

#8

Harvest and hatchery programs are integrated. Most hatchery programs in the Columbia River basin are for mitigation purposes and are producing fish for harvest benefits. Since they are integrated the DEIS should evaluate both as a unit impact on native wild salmonids. Treating them as separate impacts on wild salmonids in evaluating alternatives is inappropriate for the following reasons. The DEIS does not include an evaluation of mark selective commercial fisheries; the impact on the untested assumptions of pHOS, pNOS, and PNI are not addressed for harvest impact, and harvest impact on steelhead is not addressed in appendix K or elsewhere in the DEIS.

#9

Rather the DEIS assumes that selective fisheries for hatchery origin fish can be "sufficient to achieve escapement goals." This assumption is misplaced for hatchery origin fish are less aggressive and contribute poorly to the sport fishery in tributaries. For example, on the Deschutes River the wild steelhead represent a small fraction of the population compared to the hatchery strays yet produce twice the catch compared to hatchery fish (Rob French, ODFW, personal communication). There is information that this is the case in the main-stem Columbia as well. Assumptions regarding incidental mortality of released wild fish, especially in warm water, may underestimate the mortality of wild fish in the sport fishery and in net fisheries. In addition, un-marked hatchery steelhead strays cannot be legally removed from the main-stem or the tributaries by the sport fishery. Also, many anglers place a high value on releasing steelhead and make no distinction between hatchery and wild fish. Many guides prefer that their clients release hatchery fish for it means more fish are left in the river to support their guided fishery. The consequence is that a large number of hatchery fish are not removed from the river by sport fisheries and are likely to spawn naturally and adversely impact wild salmonids. This means an assumption that selective fisheries will support escapement goals and control naturally spawning stray hatchery fish is wrong.

Elements of a Basic Hatchery Policy Alternative:

#10

The following hatchery and management changes are needed to improve conservation and recovery of wild salmonids in the Columbia River basin affected by hatchery operations.

1. keep wild and hatchery spawners separated
2. set specific ecological impact criteria for each hatchery on wild fish
3. establish selective harvest on hatchery fish that results in the least harm to wild fish
4. establish spawner abundance objectives by species in each watershed for wild fish
5. establish nutrient targets for each watershed from salmon carcasses
6. designate wild salmonid management watersheds in each ESU
7. evaluate the cost/benefit and cost effectiveness annually of each hatchery program
8. determine the cost to catch for each hatchery program annually
9. direct the independent economic advisory board to complete an economic review of each hatchery program in the Columbia River Basin and Puget Sound.
10. develop and implement a wild salmonid management plan for each watershed with measurable criteria for diversity, distribution, productivity, viability, and abundance.
11. Evaluate hatcheries on their contribution to fisheries and establish a minimum contribution rate for hatchery fish that optimizes funding investment while protecting wild fish from hatchery and harvest impacts.
12. Require all hatchery fish to be externally marked and provide an internal tag to identify the hatchery of origin.
13. Establish a basin wide stock transfer policy to regulate the movement of fish and eggs among populations and ESUs/DPSs.
14. Require all hatchery origin fish be kept in sport fisheries.

15. Fully integrate agency management structure on harvest, hatchery and wild salmonid management. #10
16. Restructure management so that harvest and hatchery programs support natural production objectives in the Columbia River basin.
17. Require barbless hooks in all recreational fisheries in the Columbia River basin to reduce harm in mixed stock fisheries to wild juvenile and adult salmonids.
18. Develop selective fisheries to maximize harvest of hatchery fish and minimize harm to wild fish in mixed stock commercial and recreational fisheries.
19. Operate hatcheries so that hatchery effluent is regulated consistent with the Clean Water Act.
20. Reduce hatchery production to levels that support the recovery of ESA listed fish.
21. Evaluate stray rates of hatchery fish and implement measures to reduce strays in order to improve the reproductive success of the wild population.

Artificial Production Review Recommendations for Hatcheries in the Columbia River Basin:

In July 1997, Congress directed the Northwest Power Planning Council, with the assistance of the Independent Scientific Advisory Board (a panel of 11 scientists who advise both the Council and the National Marine Fisheries Service on scientific issues related to fish and wildlife), to conduct a thorough review of all federally funded artificial production programs in the Columbia River basin. Congress directed the Council to recommend a coordinated policy for future operation of artificial production programs and to provide recommendations for how to obtain such a policy (N.W. Power Planning Council 1999).

Information from the N.W. Power Planning and Conservation Council staff (personal communication Oct. 7, 2010), confirms that direction by Congress in 1997 to develop a hatchery policy for the Columbia River basin has not been done, but plans are in place to have one developed in 3-4 years or 13 years since Congress called for a hatchery policy to be adopted.

In response to the direction from Congress the ISAB published its Artificial Production Review in 1999. In that review the ISAB provides guidelines for hatchery operations and supporting reasons. Even though not all of these independent science recommendations were implemented, they are still relevant and should be included as direction in the DEIS for Mitchell Act Hatcheries. #11

1. Technology should be developed and used to more closely resemble natural incubation and rearing conditions in salmonid hatchery propagation.

2. Hatchery facilities need to be designed and engineered to represent natural incubation and rearing habitat, simulating incubation and rearing experiences complementary with expectations of wild fish in natural habitats.

3. New hatchery technology for improving fish quality and performance needs to have a plan for implementation and review of all hatchery sites to assure its application.

4. To mimic natural populations, anadromous hatchery production strategy should target natural population parameters in size and timing among emigrating anadromous juveniles to synchronize with environmental selective forces shaping natural population structure.

5. To mimic natural populations, resident hatchery production strategy should target population parameters in size and release timing of hatchery-produced resident juveniles to correspond with adequate food availability and favorable prey to maximize their post-stocking growth and survival.

6. Supplementation hatchery policy should utilize ambient natal stream habitat temperatures to reinforce genetic compatibility with local environments and provide the linkage between stock and habitat that is responsible for population structure of stocks from which hatchery fish are generated.

7. Salmonid hatchery incubation and rearing experience should use the natal stream water source whenever possible to enhance home stream recognition. #11

8. Hatchery release strategies need to follow standards that accommodate reasonable numerical limits determined by the carrying capacity of the receiving stream to accommodate residence needs of non-migrating members of the release population.

9. Hatchery programs should dedicate significant effort in developing small facilities designed for specific stream sites where supplementation and enhancement objectives are sought, using local stocks and ambient water in the facilities designed around engineered habitat to simulate the natural stream.

10. Genetic and breeding protocols consistent with local stock structures need to be developed and faithfully adhered to as a mechanism to minimize potential negative hatchery effects on wild populations and to maximize the positive benefits that hatcheries can contribute to the recovery and maintenance of salmonids in the Columbia ecosystem.

11. Hatchery propagation should use large breeding populations to minimize inbreeding effects and maintain what genetic diversity is present within the population.

12. Hatchery supplementation programs should avoid using strays in breeding operations with returning fish.

13. Restoration of extirpated populations should follow genetic guidelines to maximize the potential for re-establishing self-sustaining populations. Once initiated, subsequent effort must concentrate on allowing selection to work by discontinuing introductions.

14. Germ plasm repositories should be developed to preserve genetic diversity for application in future recovery restoration projects in the basin, and to maintain a gene bank to reinforce diversity among small inbred natural populations.

15. The physical and genetic status of all natural populations of anadromous and resident fishes need to be understood and routinely reviewed as the basis of management planning for artificial production.

16. An in-hatchery fish monitoring program needs to be developed on performance of juveniles under culture, including genetic assessment to ascertain if breeding protocol is maintaining wild stock genotype characteristics.

17. A hatchery fish monitoring program needs to be developed on performance from release to return, including information on survival success, interception distribution, behavior, and genotypic changes experienced from selection between release and return.

18. A study is required to determine cost of monitoring hatchery performance and sources of funding.

19. Regular performance audits of artificial production objectives should be undertaken, and where they are not successful, research should be initiated to resolve the problems.

20. The NPPC should appoint an independent peer review panel to develop a basinwide artificial production program plan to meet the ecological framework goals for hatchery management of anadromous and resident species.

The ISAB Artificial Production Review (1999) references three previous scientific reviews of Columbia River hatcheries. Among these reviews there is a consensus which the ISAB says, "…underscores the importance of their contributions in revising the scientific foundation for hatchery policy." The ten general conclusions made by the three scientific panels are: #12

1. Hatcheries generally have failed to meet their objectives.

2. Hatcheries have imparted adverse effects on natural populations. #12
3. Managers have failed to evaluate hatchery programs.
4. Rationale justifying hatchery production was based on untested assumptions.
5. Supplementation should be linked with habitat improvements.
6. Genetic considerations have to be included in hatchery programs.
7. More research and experimental approaches are required.
8. Stock transfers and introductions of non-native species should be discontinued.
9. Artificial production should have a new role in fisheries management.
10. Hatcheries should be used as temporary refuges, rather than for long-term production.

The Mitchell Act DEIS uses the current hatchery program for Columbia River basin anadromous salmonids as the baseline for the proposed alternatives which supports the premise that current hatchery programs are inadequate to protect the environment. It also indicates that previous attempts to make changes in hatchery policy based on the best available scientific information have not been implemented. Congress, the primary funding agent for hatcheries, is still waiting for the adoption of a hatchery policy it directed the region to establish in 1997. This record of resistance by the fish management agencies to adopt a hatchery policy that protects the environment is remarkable.

The Mitchell Act DEIS seeks to provide legal coverage for Columbia River basin hatcheries, but as pointed out above, the DEIS fails in this effort. To be successful the National Marine Fisheries Service should develop a specific hatchery alternative that is based on the best scientific and economic information available that would maximize the protection of wild salmonids and provide the basis for their recovery. #13
The Native Fish Society stands ready to assist in developing such an alternative.

References:

Araki, Hitoshi, Barry A. Berejikian, Michael J. Ford, and Michael S. Blouin. 2008. Fitness of hatchery-reared salmonids in the wild. Blackwell Publishing Ltd. 1:342-355.

Blouin, Michael. June 13, 2009. Hatchery Fish May Hurt Efforts To Sustain Wild Salmon Runs. Science Daily

Chilcote et al. 2010 (in press)

French, Rob. 2010. personal communication.

Moore, Milo, Ken McLeod and Don Reed. 1960. Fisheries: Fish Farming and Fisheries Management. Washington State Department of Fisheries. Olympia, Washington.

Independent Scientific Advisory Board. 1999. Artificial Production Review. Northwest Power Planning Council. Council document 99-15. Portland, Oregon

ODFW. 2010. Draft Lower Columbia River Salmon and Steelhead Recovery Plan.

Recovery Implementation Science Team (RIST). April 9, 2009. Hatchery Reform Science. National Marine Fisheries Service. Seattle, Washington.

The Research Group. 2009. Preliminary 2.1 economic and social analysis sections prepared for the Mitchell Act EIS. Prepared for NOAA Fisheries. Northwest Regional Office Salmon Recovery Division. Corvallis, Oregon.

Letter #23

Lower Columbia Fisheries Coalition

Pacific and Wahkiakum Counties, Washington
Clatsop and Columbia Counties, Oregon

November 12, 2010

NOAA-NMFS
RECEIVED
NOV 17 2010
NORTHWEST REGIONAL OFFICE

William W. Stelle, Jr.
Regional Administrator
NMFS Northwest Region
7600 Sand Point Way NE
Seattle, Washington 98115

Subject: Draft Mitchell Act EIS

Mr. Stelle:

The four counties of Clatsop and Columbia in Oregon and Pacific and Wahkiakum in Washington are the local stewards of the Lower Columbia River estuary. Our residents live here so that they can be close to the Columbia River and the Pacific Ocean for fishing, recreation, and inspiration. The county boards meet regularly to share information and understand the on-going issues, and to learn about fish issues.

The Draft Mitchell Act Environmental Impact Statement (DEIS) is a huge document that is filled with information. This letter reflects the consensus of the four counties regarding the concerns and issues we believe are important to mention. Each individual County may offer additional input regarding the DEIS in addition to this letter.

First, the counties are very concerned with the emerging philosophy at National Marine Fisheries Service (NMFS) that mitigation hatchery production should be subsumed under the Endangered Species Act (ESA). The purposes of the Mitchell Act and the ESA are different and the two should not be conflated, nor should the Mitchell Act funding be terminated or diverted for the purposes of the ESA. The purpose of the Mitchell Act funds remains to mitigate the hydroelectric dams' impacts on fish. #1

Second, we have the following comments regarding the DEIS:

- The DEIS does not have a concise history with the chronology of the program that the Mitchell Act inspired over the years. #2

The 80 year history of the Mitchell Act started before the dams were first constructed on the Columbia River when the dams' impacts on the fishing industry were debated. The Mitchell Act was developed during a time of habitat loss that led to substantial fish loss on the main stem of the Columbia due to the hydroelectric projects. The detailed historical account should be provided as a basis for all federal reports regarding the fish program. It should be required reading for all federal employees who will deal with fish issues in the region, and it should

include the various perspectives from people and groups who understand this history. Without a concise shared history it is difficult to tell how this DEIS will move the region forward. #2

- The DEIS options do not consider the assumption that fish will be abundant in the region. #3

The area obviously cannot return to the condition it was in when the Native people were here prior to the arrival of Lewis and Clark visited 205 years ago, but there is much more that can be done during the coming years to restore the fish runs to the greatest extent possible. Hatcheries are a part of the effort in the region to restore abundance. Until such time that abundance can be restored the document should focus on how to achieve abundance through the partnerships and strengths of the system. None of the options offered in the DEIS identify this direction.

- The DEIS through the identified options pits inland, upland, recreation, commercial, coastal and Tribal fisheries against each other. #4

The DEIS raises the discussion of who owns the fish and how much will each party get which ignores the collaboration and respect that has been established during the past 30 years. The notion of using the standard environmental impact statement process of developing options for totally new projects makes sense, but in on-going efforts such as the complex set of relationships, collaborative efforts and project found in the Columbia River system, this evaluation in the DEIS appears to ignore the on-going work. By not reflecting the existing programs, the DEIS lends very little to the current regional direction.

- The DEIS does not address the funding needed to improve the hatchery system and develop opportunities for creating abundance. #5

The assumption in the DEIS is that the resources are limited to about $12.5 million. NOAA-Fisheries should lead the vast collection of agencies and individuals to identify amounts that are needed to create abundance. The production of fish in a hatchery environment is needed since habitat loss on the main stem of the Columbia River cannot be rectified without the restoration of habitat. Hatchery production is as important today as it was when the Mitchell Act was first passed.

- The DEIS does not reflect the basin-by-basin efforts to restore fish runs. #6

There are successful efforts occurring to restore fish runs. Each effort has a unique story of collaboration and most would not be possible without the hatchery system. Without this basis-by-basin review the prioritization of funding suggested by the alternatives is absolutely not possible. In each of these basins, the discussion has acknowledged that restoration may initially come at the expense of some genetic purity, but over time these problems can be addressed.

- The DEIS does not address current and future improvements in hatchery management. #7

The knowledge and program improvements currently underway may address many of the concerns regarding the evaluation of mixing native and hatchery fish. With adequate funding it

may be possible to address and resolve the genetic purity issues and take additional steps toward abundance. #7

- The DEIS through NOAA-Fisheries did not sufficiently consult with counties and the local hatchery staff to develop the DEIS. #8

Many of the counties on the Lower Columbia River have hatchery staff that includes fish biologists, technicians, and years of collaboration with the fishing industry. This is a wealth of knowledge that is available to NOAA–Fisheries at any time, but few, if any, of these individuals were consulted on the development of this document.

Finally, the joint fisheries counties located on the Lower Columbia support withdrawal of the DEIS by NOAA–Fisheries in order to provide an opportunity for a complete revision starting with rescoping in order to develop a plan that reflects a collaborative effort with all of the affected parties. The history of working together and the values we share for future abundance is too important to leave to this flawed and inadequate document. #9

Thank you for your consideration.

Sincerely,

BOARD OF COUNTY COMMISSIONERS
FOR CLATSOP COUNTY

Jeff Hazen, Chairperson,

John Raichl, Vice-Chair

Patricia Roberts, Commissioner

Dirk Rohne, Commissioner

Robert Mushen, Commissioner

Signed this 9th day of November 2010.

PACIFIC COUNTY
BOARD OF COMMISSIONERS

Jon C. Kaino, Chairperson

Norman B. Cuffel, Commissioner

Clay Harwood, Commissioner

ATTEST:

Kathy Noren, Clerk of the Board

Signed this 9 day of Nov., 2010.

WAHKIAKUM COUNTY
BOARD OF COMMISSIONERS

Blair H. Brady, Chairperson

Daniel L. Cothren, Commissioner

Lisa Marsyla, Commissioner

Signed this 8th day of November, 2010.

BOARD OF COUNTY COMMISSIONERS
FOR COLUMBIA COUNTY, OREGON

By: _____
Anthony Hyde, Chair

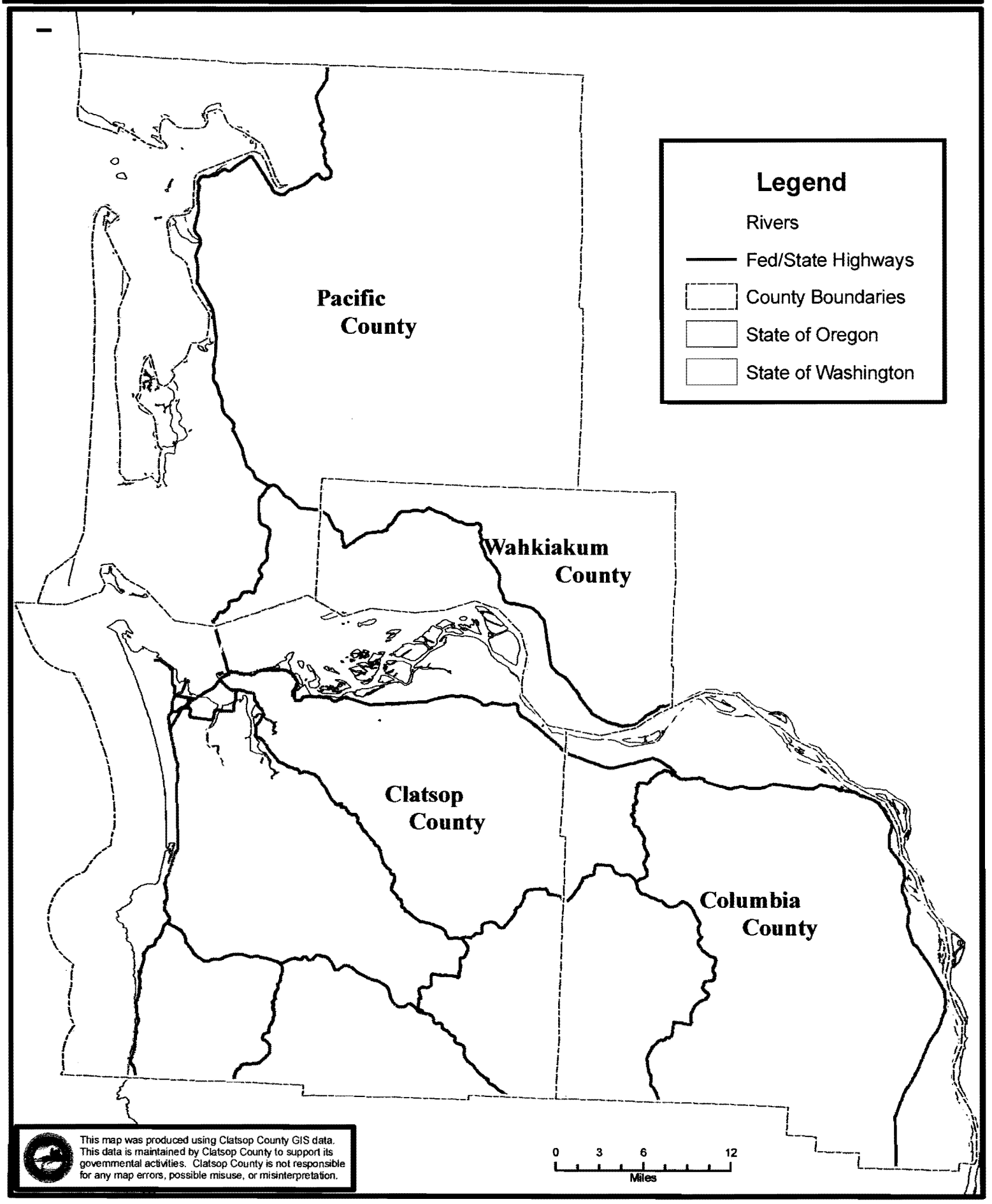
By: _____
Earl Fisher, Commissioner

By: _____
Rita Bernhard, Commissioner

Enclosure

Cc: Ed Wegner
Ed Bowles
Micah Russell
Rudy Salakory
Mark Ellis
Mark Ellsworth
Jeff Feldner
Senator Merkley
Senator Johnson
Senator Wyden
Congressman Wu
Representative Witt

LOWER COLUMBIA FISHERIES COALITION



This map was produced using Clatsop County GIS data. This data is maintained by Clatsop County to support its governmental activities. Clatsop County is not responsible for any map errors, possible misuse, or misinterpretation.

Hatchery Scientific Review Group
Pacific Salmon Hatchery Reform
www.hatcheryreform.us

HSRG
Andy Appleby
John Barr
Heather Bartlett
Lee Blankenship
Dr. Ken Currens
Mike Delarm
Dr. Trevor Evelyn
Dr. Dave Fast
Paul Kline
Dr. Lars Mobrand
George Nandor
Dr. Peter Paquet
Stephen Smith

November 15, 2010

Letter #24

William Stelle Jr.
National Marine Fisheries Service
Regional Administrator Northwest Region
7600 Sand Point Way NE
Seattle, Washington 98115

Dear Mr. Stelle,

We are pleased to provide comments on the draft Environmental Impact Statement (DEIS) to inform Columbia River Basin hatchery operations and the funding of Mitchell Act Hatchery Programs. Those who participated in the review are listed above; some members recused themselves from this review due to their status as federal employees or related factors. Our comments are general in nature and address the overall scope of the DEIS and the alternatives considered. In addition, we have suggested components that a preferred alternative should include.

We applaud National Marine Fisheries Service (NMFS) for developing a policy that will: 1) guide NMFS distribution of Mitchell Act hatchery funds and, 2) inform NMFS future review of individual Columbia Basin hatchery programs under the Endangered Species Act (ESA). These actions provide the opportunity for clarity and consistency in Columbia River hatchery management and align well with the conservation of populations, sustainable harvest and treaty-trust responsibilities. #1

Historically, Mitchell Act funding for hatchery programs has been directed towards meeting harvest goals. However, contemporary management now requires hatchery programs to be consistent with conservation objectives. The DEIS has correctly recognized that in most situations excessive numbers of hatchery fish on the spawning grounds pose a risk to the conservation of wild populations. It also rightly recognizes the value of applying different population designations (primary/contributing/ stabilizing) to denote the biological significance of populations for conservation. #2 #3

The HSRG understands why NMFS needed to develop a broad range of alternatives for analyses in the DEIS. However, we believe combining elements of these alternatives would best meet the needs of conservation, sustainable fisheries, and treaty-trust responsibilities. #4

Any preferred alternative should take a consistent regional approach to conservation of populations from all evolutionarily significant units rather than using an artificial boundary between the upper and lower sections of the river. A preferred alternative would also use population designation(s) to link the biological significance of specific populations to acceptable levels of hatchery influence and apply differing standards of risk (PNI, pHOS) to those designations. #5 #6

A preferred alternative would use the stronger performance standards for all primary populations (e.g., PNI 0.67 for integrated populations and *p*HOS 0.05 for segregated populations). Intermediate standards should be used for all contributing populations (e.g., PNI 0.50 for integrated populations and pHOS of 0.1 for segregated populations). In addition, for integrated populations, whether primary or contributing, pHOS should have an upper limit regardless of PNI (e.g., no more than 30%). Additional information can be found at www.hatcheryreform.us. #7

In our view, the DEIS focused primarily on the number of hatchery fish produced, use of weirs, and integrated broodstock programs, but did not adequately account for the role of selective harvest in reducing the risks posed by hatchery-origin fish to natural populations. The final EIS should address the contributions that marine, lower Columbia River and tributary selective harvests could make toward conservation and sustainable fisheries. #8

Currently, the alternatives considered lead to a significant reduction in harvest because of hatchery program reductions. The hatchery reductions proposed in the DEIS are necessary to ameliorate the negative interactions of hatchery fish on wild populations. However, the use of additional selective fisheries targeting hatchery fish, not considered in the current DEIS, could assist in meeting the performance standards while maintaining contemporary harvest. #9

A preferred alternative that includes the above actions would provide a better conservation and harvest outcome than the alternatives proposed in the DEIS. We hope that NMFS gives serious consideration to these suggestions, acts promptly in completing the EIS process, and adopts a regional hatchery policy that addresses all NMFS' mandates.

Respectfully,

Lars E Mobrand, Ph. D.
Chair HSRG-Washington

Peter Paquet, Ph.D
Chair HSRG-Columbia River

Cc:

Bonneville Power Administration
Shoshone-Bannock Tribes
Congressman Norm Dicks
Rob Jones
Bob Turner
Oregon Dept. of Fish & Wildlife
Colville Nation
Idaho Department of Fish and Game
Nez Perce Nation
NW Power & Conservation Council
Umatilla Nation
U.S. Army Corps of Engineers
U.S. Bureau of Reclamation
U.S. Fish and Wildlife Service
Yakama Nation
Warm Springs Tribes
Washington Dept. of Fish & Wildlife

Snake River Salmon Recovery

410 B East Main
Dayton, WA 99328

phone: 509.382.4115
fax: 509.382.4116

www.snakeriverboard.org

November 16, 2010

Letter #25

William W. Stelle, Jr.
Regional Administrator
NMFS Northwest Region
7600 Sand Point Way NE
Seattle, Washington 98115

Subject: Draft Mitchell Act EIS

Mr. Stelle:

#1

The Snake River Salmon Recovery Board and our partners have reviewed the draft Environmental Impact Statement on the Columbia basin hatcheries and are providing the following comments for your consideration. To begin, we believe it is important for NMFS to understand who this comment letter is coming from. The Snake River Salmon Recovery Board (SRSRB) is comprised of County Commissioners, the Confederated Tribes of the Umatilla Indian Reservation and landowners in southeast Washington. The Board organized in 2002 for the purpose of developing and implementing a salmon recovery plan for the Snake River region within Washington. The Plan was submitted and approved as the interim recovery plan for the Snake River region within Washington by NMFS in 2005. We are currently revising the plan and will have it ready for NMFS inclusion into the comprehensive Snake River Recovery Plan for the entire Snake River basin ESU in 2011. The SRSRB is supported by a regional technical team, composed of members from the Washington State Departments of Fish and Wildlife and Ecology, as well as NMFS, US Forest Service, Confederated Tribes of the Umatilla Indian Reservation, Natural Resources Conservation Service and the US Army Corps of Engineers.

#2

#3

We are very disappointed with the lack of engagement during the writing of the DEIS with stakeholders involved in salmon recovery within the Columbia basin. Specifically, the SRSRB or staff were never contacted during the 5-year long process of developing the DEIS. We believe that failure to inform or engage the SRSRB (or other recovery planners) on development of the DEIS is inconsistent with the agency's commitment to collaborate on salmon recovery. We recognize that NMFS seeks public input on how it should develop its preferred alternative, but this DEIS is too large and complicated to develop a well informed preferred alternative in such a short time frame. Nonetheless, we have compiled our initial reaction to the alternatives presented in the DEIS that we hope will influence the basis for how NMFS formulates its preferred alternative or decides whether or not to move forward with adoption of the DEIS at this time.

#4

We believe that the range of alternatives is strongly skewed towards reducing hatchery production. It is our belief that a balanced range or continuum of alternatives between the

Voting Board Members: Commissioner *Perry Dozier, Yancey Reser, Stuart Durfee, Dick Ducharme, Commissioner Dick Jones, Roland Schirman, Commissioner Doug Mattoon, Jay Holzmiller, Jerry Hendrickson, Commissioner Bob Johnson, Billy Bowles, Del Groat, Commissioner Michael Largent, Kelly Farnsworth, Gary Thorgaard, Confederated Tribes of Umatilla Indian Reservation.*

"no-action" alternative and the severe reduction of hatchery production alternative in the DEIS needs to be developed. #4

We are strongly concerned that the message in the DEIS will be misinterpreted by stakeholders in many ways, including "punishment" for success (recent large return numbers), that hatcheries are currently poorly managed, and their operations are entirely inconsistent with the Endangered Species Act. This message will result in diminished public support for salmon recovery activities across our watersheds, and possibly the entire Columbia Basin. #5

Next, we have identified, and NMFS staff has acknowledged, that there are errors and omissions in the report. These errors may warrant its withdrawal and re-initiation. One of the most glaring errors is the economic value of sport fishing in the Snake River region. We have estimated, based on WDFW and other co-manager input, the range of estimated annual direct and indirect income from sport fishing for salmon and steelhead in the Snake River region is from $50 million to more than $100 million per year. The estimate of $13 million reported in the DEIS is clearly in error and very misleading. Our local WDFW manager estimates that just within southeast Washington the estimate is closer to $25 million for steelhead fisheries alone. Therefore, the potential economic impacts for the action alternatives will be far more severe than purported in the DEIS. #6 #7

We are also concerned that the action alternatives in the DEIS, should they be adopted by NMFS, preclude meeting existing legal mandates and policies promised to basin stakeholders decades ago by the federal government. In 1976, Congress authorized the Lower Snake River Fish and Wildlife Compensation Program to produce salmon and steelhead to mitigate the impacts of the hydropower system. The primary purpose of the hatchery programs associated with the LSRCP is for harvest mitigation. We recognize that emerging science concerning the effects of hatchery fish on natural fish suggests changes to hatchery programs. However many changes to our local hatchery programs are either planned, or in the process of being implemented but not considered in the DEIS. We are very concerned that the action alternatives outlined in the DEIS are in conflict, or at a minimum, will compromise the region's (and Federal government's) commitment to mitigate for the hydrosystem, under existing law. We believe that pre-existing obligations to mitigate salmon losses should not be exclusively governed by the ESA; this is a very serious concern for us, and neither of these two federal obligations should exclusively govern the other. A balance is our goal and the DEIS is out of balance. #8 #9 #10

Finally, it is very concerning that the scope of the DEIS expanded from Mitchell Act funded facilities to include all 178 hatchery or hatchery programs in the entire Columbia basin within the USA. We recognize that evaluating cumulative effects of all hatcheries is a requirement of NEPA, and that NMFS will be consulting on all hatchery programs within the Columbia Basin, but we believe that the existing DEIS overreaches with some of its conclusions. For example, the conclusion that hatchery production needs to be significantly reduced or eliminated is far too general of a conclusion for applicability to individual facilities. Of greater concern is that the conclusion is too narrow to guide national hatchery policy, because NMFS hatchery policy that emerges as a result of the DEIS will in turn drive how NMFS conducts subsequent reviews of individual hatcheries. It is interesting to us that in many cases there would be no salmon or steelhead to recover if it weren't for hatchery programs. We believe that hatchery or population specific situations deserve individual assessment and remain concerned about a broad sweeping federal policy that programmatically directs reduced production levels. #11 #12

#13

These next few paragraphs address our concern about the premature conclusion that was reached regarding the perceived impacts from hatchery programs. We believe the conclusion is based on unproven theory about hatchery impacts in the Snake River recovery region within Washington. We are cautious with this perspective because we know of studies conducted elsewhere in the Columbia basin that have concluded the relative reproductive success of salmon/steelhead produced in hatchery programs is lower than natural populations. However, there are many variables and constraints in those studies that may or may not be applicable to the current hatchery programs in the Snake River region within southeast Washington. We therefore encourage additional research while these issues are clarified. We ask that NMFS will not categorically assume the worst of hatchery programs until these critical uncertainties are clarified.

#14

We understand that a new process is being formed, based on the supplemental FCRPS biological opinion, that will form a group of scientists (guided by NMFS) to address hatchery program critical uncertainties in the Columbia basin. We encourage NMFS to hold off on making broad sweeping conclusions regarding issues like relative reproductive success and its effects on natural-origin populations until this group comes out with recommendations or the information is collected where all stakeholders are in agreement.

#15

To continue, the DEIS should acknowledge that the perceived impacts from hatchery production may be an artifact of other factors like historic hatchery management practices, mainstem passage effects, harvest management, habitat conditions, or myriad other potential factors that lead to the conclusion that hatchery production needs to be reduced. The DEIS does not acknowledge that many hatchery programs have recently, or are in the process of, transitioning from "conventional" production programs to conservation programs. This transition is positive for ESA while continuing to support robust fisheries. Patience is necessary to monitor the outcome of these transitions on recovery and the fisheries. It should be noted that strategies to reduce pHOS have been initiated to minimize non-local hatchery fish on the spawning grounds while maintaining fisheries in those watersheds where abundance levels are sufficient to allow the removal of non-local, or excess hatchery adults. These strategies need to be described in the DEIS and then the outcomes determined before drastic reductions in hatchery programs are recommended. Specifically, we would like to see NMFS suggest a phased approach that considers any reduction in hatchery production after certain abundance and productivity targets are reached.

#16

Our final concern is the unintended consequence of compromising or even reversing recent habitat improvements that have benefited natural-origin populations. This concern is very serious and warrants a bit of explanation. Using the Tucannon River as an example (but the same transformation is occurring in other rivers in the Columbia basin), environmental conditions (habitat) have improved dramatically since the 1980's. In the 1980's and 1990's the Tucannon River at Marengo (Rkm 39.9) customarily exceeded 74F° more than 30 days each year. Water temperature at that site has not reached 74F° one time in the last six years due to improved habitat conditions. Many other improvements have been documented in the Tucannon River:

- Streambed embeddedness was in the 60% range in the 1990's; it is now less than 30%
- Riparian areas have largely been, or are in the process of, being restored and protected
- Nearly every water diversion has been properly screened to NMFS standards
- And all fish passage barriers have been improved to NMFS standards.

#16

This is great progress but more remains to be accomplished. Maintaining strong relationships with landowners and other stakeholders is critical for reaching our goal of salmon recovery. These facts are important because they apply to privately owned lands where community leaders and landowners are embracing watershed health and salmon recovery on their own property. These community leaders and landowners are doing so because they see the benefits to wild salmon and watershed health and more importantly they want to contribute to the region's economic and cultural excitement about salmon/steelhead fishing and watershed restoration. The action alternatives in the DEIS would most likely preclude or at least significantly reduce the opportunity to fish for salmon/steelhead which will take away a major incentive for local stakeholders for restoration and protection of critical habitat on private land. As history has shown us, improvements to critical habitat can be quickly reversed. We have observed that degraded habitat conditions are a much greater threat to salmon recovery than hatchery produced salmon/steelhead. We strongly suggest that the DEIS consider this unintended consequence in the impact analysis for each of the action alternatives.

Our comments speak to three significant concerns (1) lack of collaboration combined with scope creep, errors and omissions, and an insufficient review and comment period, (2) premature conclusions that are based on unproven theory, especially for hatchery programs in the Snake River region within Washington and, (3) unintended consequence of compromising or even reversing recent habitat improvements that have benefited natural-origin populations.

#17

The Snake River Salmon Recovery Board strongly requests that NMFS embrace its own commitments to collaborate on salmon recovery and to make recommendations based on complete science and complete understanding of the impacts of those recommendations. We formally request that NMFS reconsider the current DEIS and explore and develop a better continuum of alternatives in collaboration with salmon recovery partners across the entire Columbia basin that reflects the perspectives we offer in our comments.

If you have questions or comments please direct them to our Executive Director, Steve Martin, at 509-382-4115 or by email at steve@snakeriverboard.org.

Respectfully submitted,

Del Groat

Del Groat, Chairman SRSRB

cc: U.S. Senator Patty Murray
U.S. Senator Maria Cantwell
U.S. House Representative Jay Inslee
U.S. House Representative Rick Larsen
U.S. House Representative Brian Baird
U.S. House Representative Doc Hastings
U.S. House Representative Cathy McMorris Rogers
U.S. House Representative Norm Dicks
U.S. House Representative Jim McDermott
U.S. House Representative Dave Reichert
U.S. House Representative Adam Smith

Ilwaco Charter Association

P. O. Box 9
Ilwaco, WA 98624

Letter #26

November 22, 2010

NOAA-NMFS
RECEIVED
NOV 29 2010
NORTHWEST REGIONAL OFFICE

William Stelle Jr.
Regional Administrator,
NMFS Northwest Region, NOAA,
7600 Sand Point Way NE
Seattle, WA. 98115

Subject: Mitchell Act EIS

The Ilwaco Charter Association (ICA) has testified three previous times on the Mitchell Act EIS, once at the Sept. PFMC meeting , once at the Astoria public hearing and at the Nov. PFMC council meeting and our testimony has not changed. The ICA contends that this document has many flaws and should be either completely rewritten or at the very least many sections of it should. #1

It is hard for us to believe that NOAA would be the authors of a document that #2 didn't have at least one alternative that called for funding increases and hatchery #3 production increases to be analyzed along with the other 5 alternatives. We cannot support a document where 2 of the alternatives pit fishing groups against fishing groups. #4 We cannot support status quo which under funds the Mitchell act #5 hatcheries by at least 17 million dollars. This is not acceptable. There are many other issues in this document that we have testified to that are already in the public record so I will not repeat them at this time. #6 We would also at this time like to support the comments from the organization Salmon for All. They will have a much more detailed testimony to give you.

You will also be receiving an historical letter from fishermen, tribes, processors, and other user groups from the entire west coast including Alaska. In my 25 years on working on these kinds of issues I have never seen something that has galvanized the entire west coast like this issue has.

In closing we feel we need to rewrite and improve this document to more reflect #7 the needs of wild fish and hatchery fish.

Sincerely,

Butch Smith
Pres. Ilwaco Charter Association

Pacific Fishery Management Council
7700 NE Ambassador Place, Suite 101, Portland, OR 97220-1384
Phone 503-820-2280 | Toll free 866-806-7204 | Fax 503-820-2299 | www.pcouncil.org
Mark Cedergreen, Chairman Donald O. McIsaac, Executive Director

November 22, 2010

Letter #27

William W. Stelle, Jr.
Regional Administrator
NMFS Northwest Region
7600 Sandpoint Way NE
Seattle, WA 98115

Re: Mitchell Act DEIS

Dear Mr. Stelle:

#1

Thank you for the opportunity to review the Draft Environmental Impact Statement to Inform Columbia River Basin Hatchery Operations and the Funding of Mitchell Act Hatchery Programs (DEIS) and for extending the comment deadline to allow a full Council review. The results of this DEIS process will likely have a profound influence on the policy direction for all anadromous production within the Columbia Basin and will affect how mitigation requirements for impacts to Columbia River salmon and steelhead stocks from the Columbia River hydroelectric system will be met. These issues are extremely important to Pacific Fishery Management Council (Council) fishery management and to the future of ocean and inriver fisheries.

The Council discussed the DEIS over the course of two recent Council meetings, first at the September 11-16 meeting in Boise, Idaho and most recently at the November 4-9 meeting in Costa Mesa, California. Public testimony was taken at both meetings and written statements were provided by Council advisory bodies. One of the advisory bodies was a specialized ad hoc committee established to focus on this particular issue, with a membership encompassing relevant federal, state, and tribal agency representatives. The record of Council deliberations on this matter will be provided under separate cover.

The comments provided here are those of the Council and are not intended to represent the official policy positions of any of our member entities, many of whom will also separately provide additional specific comments on the DEIS. We recognize that developing the DEIS has been a laborious and complex project and that many of its descriptions and analyses are well done. In particular, we would like to recognize Mr. Robert Turner for his excellent presentations to the Council and his clear answers to questions during the Council's deliberation process. We understand and acknowledge the need for a National Environmental Policy Act (NEPA) review of the hatchery operations in the Columbia Basin related to the potential impacts on fish listed under the Endangered Species Act (ESA). However, we believe there are serious shortcomings in the DEIS that need attention before the process moves to the next step. While the primary focus of our comments has been to identify those aspects of the DEIS which we believe need to be changed or strengthened, we also offer recommendations in other associated areas.

#2

The Council's underlying premise is that we believe the preferred alternative must achieve the Mitchell Act's original intent and purpose to address the environmental impacts and loss of salmon and steelhead spawning habitat and productivity resulting from the construction and operation of the hydro-power system in the Columbia River Basin, as well as recognizing the requirements and responsibilities of other hydro-power mitigation agreements. The devastating impacts to salmon abundance that resulted from the construction of the hydro power system that led to the passage of the Mitchell Act in 1938 have been exacerbated over time with additional dam construction. These negative environmental circumstances contributed heavily to the listings, in the late 20th and early 21st centuries, of a number of Columbia River salmon and steelhead species under the ESA. Today, there is a greater dependency than ever before on the production from Mitchell Act hatcheries by the people that participate in, and the communities that rely on, Council-managed fisheries. The Council feels strongly that the Federal Government cannot walk away from its commitments and responsibilities to the Tribes, the States, and the citizens of this region to at least partially replace the loss of salmon and steelhead production that resulted from the construction and operation of the Columbia River hydro power system.

#3

The static funding for Mitchell Act since 1996 has crippled the ability of Mitchell Act funded programs to maintain production, and it is disturbing to see in this DEIS that a recent year status quo is now represented as the highest production possible in the DEIS. Current production does not meet the minimum Mitchell Act mitigation obligation when it is put in a historical perspective. As with other hatchery mitigation commitments in the Basin, additional Mitchell Act funding is necessary to meet both conservation and mitigation obligations associated with Columbia Basin hatcheries. The DEIS should not presume that additional funding will not be forthcoming to provide for the necessities to allow for increased production in a manner consistent with wild stock rebuilding.

#4

Coordination and synchrony of Federal actions relating to ESA compliance is a key concern of the Council. The Council recommends that the Mitchell Act Hatchery Environmental Impact Statement Record of Decision be made concurrent with completion of all related ESA consultation processes. For example, National Marine Fisheries Service (NMFS) is evaluating the approval of the *US v. Oregon* hatchery programs under the ESA. The Council also recommends that the ESA consultation for lower river hatcheries also be made concurrently with the Record of Decision. This approach enables a preferred alternative to be informed by the policies and agreements associated with salmon and steelhead recovery that have been, and will be, developed collaboratively among the co-managers, NMFS, regional entities, and other interests in the Basin.

#5

The DEIS time baseline is obsolete to the extent that the implementation scenarios associated with Alternatives 2-5 conflict with current regional agreements on hatchery production. These DEIS scenarios are inconsistent with the 2008–2017 *U.S. v. Oregon* Management Agreement, the 2008 Federal Columbia River Power System (FCRPS) Biological Opinion commitments, and expectations of the 2008 Pacific Salmon Treaty agreement. Alternatives 2-5 result in substantial reductions in hatchery production when compared to current hatchery production levels. The Council strongly advises NMFS to ensure the final EIS accommodates sanctioning currently existing policies and agreements that were shaped by the region over the past five years,

embraced by NMFS, and incorporated into broad recovery plans, Federal court orders, and international agreements. #5

The Council is concerned that none of the implementation scenarios result in an increase in hatchery production, given the potential effectiveness of combining hatchery reform practices with implementation of hatchery-selective fisheries and other adult management strategies such as enhanced weir separation of hatchery and wild origin spawners. Such increases may be possible as a result of the current and planned conservation and recovery efforts of the States and Tribes, including the lower Columbia River Recovery Plans. We believe that successful implementation of these efforts will allow for increased hatchery production in certain circumstances under all of the action alternatives in the DEIS. #6

The Council notes the reasons cited by NMFS for not including an implementation scenario that allows for an increase in production. Despite the obvious limitations and inadequacies to current Mitchell Act funding which supports production, the Council believes that a scientific basis exists to support increased or new production programs that can be properly aligned with preventing increased risks to the recovery of wild populations. NMFS should confirm that the scope of production for hatchery programs covered by Alternatives 1-5 in the DEIS include scenarios for increased production and the associated facilities necessary for that increased production to achieve both conservation and mitigation objectives, even if the funding for the needed facilities and production is not currently in hand. A scope of alternatives that includes properly aligned increased hatchery production will allow the identification of a preferred alternative in the final EIS that is consistent with these two primary objectives. Alternatively, NMFS should expand the scope of the DEIS alternatives to include appropriate increased production opportunities. As a programmatic approach, NMFS should consider how increased Mitchell Act funding and production can be harmonized with the overall hatchery mitigation and conservation commitments in the Basin.

The final preferred policy direction must articulate clearly how conservation goals will be met. As written, this aspect of the DEIS analysis cannot be interpreted directly without assuming that descriptive features of the implementation scenarios, such as the fixed proportionate natural influence and proportion of hatchery spawners standards, are actually the goals. The DEIS needs to provide for NEPA coverage for both conservation and mitigation hatchery plans that include appropriate strategies to support recovery of the ESA-listed populations on a watershed specific basis. #7

The final preferred policy direction must reflect the differences in roles played by the evolutionary significant unit/distinct population segment (ESU/DPS) populations in achieving recovery objectives. The DEIS alternatives compare actions taken regionally rather than on a population basis. This appears to contrast with NMFS' statement of the importance of incorporating site-specific management actions to achieve conservation and survival of the species. Regional approaches mask potential efficiencies of this site-specific or watershed-specific approach to hatchery reform. Efficiencies with implementing hatchery reform action plans that are based on distinguishing characteristics of primary, contributing, and stabilizing populations or other population viability designations are not clearly identified within the DEIS. #8

The Council recommends that NMFS define its preferred alternative considering these population and watershed differences. #8

Further, the Council is concerned that if standards or criteria for Mitchell Act funding are applied differentially by regions, then broad-based support for recovery plans by state, regional, tribal, local and private conservation entities will be undermined. If NMFS uses the NEPA process to define a preferred policy direction that provides umbrella environmental coverage for all Columbia Basin hatcheries, then that policy needs to embrace the entire variety of watershed approaches that are proposed to achieve recovery as well as opportunities for expanded hatchery production referenced above. These different approaches should not be applied only within a specific region, but should be associated with watershed-specific circumstances and approaches. #9

We recommend the preferred alternative should: #10

- acknowledge the different roles and priorities populations can have within an ESU/DPS (e.g., primary, contributing, and stabilizing) and then allow the hatchery programs to operate consistent with genetic and demographic risks managers are willing to take;
- recognize and factor in the Congressionally and legally mandated mitigation responsibility of hatchery programs in the Columbia Basin;
- increase conservation effectiveness while providing for sustainable fisheries into the future;
- to the extent possible, establish a bridge towards the role of harvest in the overall implementation of effectiveness;
- be consistent with legally mandated agreements governing hatchery production in the Columbia, such as the *U.S. v. Oregon* 2008-2017 Management Agreement and the Columbia Basin Fish Accords;
- be consistent with the determination and analysis of hatchery program effects in the recent 2008 FCRPS Biological Opinion and Supplemental Comprehensive Analysis;
- be consistent with adopted ESA Recovery Plans;
- be consistent with or reflect the best available science;
- be consistent with detailed hatchery genetic management plans developed by the co-managers for ESA consultation that consider hatchery science review group recommendations, Hatchery Review Team recommendations, Technical Review Team information, and state, tribal, and Federal policies that assess a hatchery program's effect (using empirical information–not models) on ESA-listed fish;
- be flexible enough to consider new, developing, and future risk management information and strategies as they become available;
- be consistent with Columbia River chinook salmon fishery mortalities and catch levels associated with the revised 2008 Pacific Salmon Treaty; and
- provide opportunity for increased hatchery production and associated hatchery facilities necessary for hatchery programs that are aligned with the needs for ESA recovery goals.

In closing, we note there are clearly important updates to the analysis that need to be considered and incorporated into a final EIS. #11 There is confusion among the public and management entities relative to the intent and purpose of this NEPA action that needs to be clarified. #12 NMFS needs to update the analysis in a manner that allows the Mitchell Act hatcheries to be evaluated separately

from the rest of the facilities in the Basin where there is not a direct funding linkage to NMFS. #12
As the process continues, the Council believes NMFS must increase public understanding that the preferred alternative can accommodate increased production, even if a supplemental DEIS is required to do so. #13
Finally, NMFS should provide an opportunity for public comment on its preferred alternative before the final EIS is completed and the Record of Decision is signed. #14

Thank you again for this opportunity to comment.

Sincerely,

Mark Cedergreen
Chairman

Cc: Council Members
Senator Maria Cantwell
Senator Patty Murray
Senator Jeff Merkley
Senator Ron Wyden
Senator Barbara Boxer
Senator Dianne Feinstein
Representative Norm Dicks
Representative Cathy Rogers
Representative Doc Hastings
Representative Jaime Herrera
Representative Raul Labrador
Representative David Wu
Representative Earl Blumenauer
Representative Greg Walden
Representative Kurt Schrader
Representative Peter DeFazio
Mr. Robert Turner
Mr. Peter Dygert
Dr. Donald McIsaac
Dr. John Coon
Mr. Chuck Tracy
Ms. Jennifer Gilden

FISHERMAN'S ADVISORY COMMITTEE of TILLAMOOK

Letter #28

William Stelle Jr.,
Regional Administrator,
NMFS Northwest Region, NOAA,
7600 Sand Point Way NE,
Seattle, Wa. 98115.

Subject: **Mitchell Act EIS**

The undersigned organization(s) wish to voice our opinion regarding the Draft Environmental Impact Statement (DEIS) to Inform Columbia River Basin Hatchery Operations and the Funding of Mitchell Act Hatchery Programs.

#1

We join with recreational, commercial and tribal fishers, in-river and ocean, from Oregon, Washington, Alaska and Idaho, with generations of experience behind us on what it takes to conduct viable fisheries, and shared concerns regarding the Mitchell Act DEIS. We are united in our agreement that all of our groups are entitled to conduct viable fisheries that sustain our communities.

#2

We share a mutual concern that, due to its many errors, lack of documentation, faulty modeling, and major omissions, the DEIS is not ready for public comment and should not have been put forth for such review. It has cost numerous fisheries organizations and fisheries and tribal agencies considerable time and money to comment on a document that is seriously flawed, and which should have been corrected by the agency before public review. These comments are contained in individual letters provided NMFS by the respective organizations and agencies. The document itself represents a significant investment by the U.S. taxpayer of approximately $1,000,000. The public has a right to expect an accurate and complete document to be presented for public review.

#3

We share a mutual concern that the five alternatives presented for review all result in adverse effects on harvest. NO alternative appears that is supportive of harvest. All alternatives, including status quo, will result in reduced harvest. It does not appear to us that any alternatives that might have been supportive of harvest were considered. If they were, they are not evident in the document. The Mitchell Act was intended to compensate for habitat that was destroyed due to hydro-electric and other development of the Columbia Basin. Further, its intent was mitigation to provide continued harvest opportunities to compensate for that destruction (DEIS, pp. 1-21 and 2-15). We do not believe that the five alternatives provided in the DEIS fulfill these legal obligations of the Mitchell Act.

#4

We share a mutual concern that the DEIS appears to subsume the Mitchell Act under the Endangered Species Act and abolish the mitigation requirements of the Mitchell Act. We are concerned that this focus might be construed as a regulatory repeal of the Mitchell Act without a Congressional vote. Fisheries along the entire west coast will be affected by the draconian cuts in harvest proposed, and we object strongly to this reorientation of the Mitchell Act. We do not believe that conservation and harvest are mutually exclusive.

We recommend that the National Marine Fisheries Service withdraw this document, consult with our groups and the numerous agencies and tribal governments who were not consulted in the drafting of this document, and redraft a DEIS that corrects the multitude of errors and omissions noted in comments received by the agency. We also recommend that NMFS provide alternatives that are supportive of viable fisheries across all sectors, and respectful of the place of salmon and salmon fisheries in the history, economy and culture of the west coast. We are united in our agreement that good government, good regulatory practice and good stewardship require that the current DEIS be withdrawn as requested.

#5

#6

#7

Signed Linda Buell ; Craig Wenrick

Date: 11-24-10

Name__Linda Buell , Craig Wenrick
Co-Chairs: Fisherman's Advisory Committee for Tillamook County (FACT): 26 member Advisory Group to County Commissioners representing all fishing sectors in Tillamook County, OR_____

Address: PO Box 556_____

Garibaldi, OR 97118

Telephone503-965-2238_____Email :
fishon@garibaldicharters.com_____

Letter #29

November 24, 2010

William W. Stelle, Jr.
Regional Administrator
NMFS Northwest Region
7600 Sand Point Way NE
Seattle, WA 98115-6349

Subject: Mitchell Act Draft Environmental Impact Statement (DEIS)

Dear Mr. Stelle,

#1

Salmon For All is a nonprofit trade association of commercial fishermen and processors representing the Columbia River gillnet industry. Our office is located in Astoria, Oregon, but we serve fishermen and processors residing both in Washington and Oregon. As you may be aware, most of the waters of the Columbia River are under concurrent jurisdiction, as defined in the Columbia River Compact, an agreement entered into by the states of Oregon and Washington in 1915, and ratified by an Act of Congress three years later.

The majority of our fishermen reside in Clatsop County in Oregon, and Pacific, Wahkiakum, and Grays Harbor Counties in Washington, which are among the four poorest counties in either state. Due to increasingly difficult Endangered Species Act constraints, most of our fishermen have invested in portfolios of permits in offshore and distant water fisheries, since it is no longer possible to earn a living fishing for salmon on the lower Columbia River alone. Our fishermen predominantly are members of multi-generational fishing families — the descendants of those who immigrated here during the late 19th and early 20th centuries to pursue traditional livelihoods in the fishing industry. They continue to live here, because they have deep roots here. But if they can no longer earn a living by fishing here, there will be no point in their remaining here. If so, our struggling regional economy will no longer receive the benefits of the annual injection of incomes derived from distant water fisheries, which can be substantial. Frankly, our region cannot afford for that to happen.

We are submitting a number of commentaries to the National Marine Fishery Service regarding the Mitchell Act DEIS, which we strongly believe is a deeply flawed and inadequate document. Our comments will enumerate many of the errors and mistaken assumptions represented in the DEIS. To say that the Mitchell Act DEIS is thoroughly inadequate would be an understatement. It is readily apparent it was not ready for public review. The only acceptable alternative is to withdraw the Mitchell Act DEIS, and to start over from the beginning.

Sincerely,

Hobe Kytr, Administrator
Salmon For All

P O Box 56 • Astoria, Oregon 97103-0056 • (503) 325-3831 • FAX (503) 325-2725
info@salmonforall.org • www.salmonforall.org

TABLE OF CONTENTS

A: Salmon For All Mitchell Act Statement

B: The Mitchell Act History by Irene Martin, Skamokawa, WA

C: Successful Applications of Advanced Fish Culture Technologies & Concepts

D: Mitchell Act Comments on Environmental Justice, Section 4.4, by Irene Martin

E: SFA Commentary on Mitchell Act DEIS Appendices I & K

F: Marine Mammals at Bonneville Dam 2002-2010, Figures 10 & 11

G: CRITFC Presentation to NPCC, 11-09-2010

H: Salmon For All Testimony on the Mitchell Act DEIS, September 30, 2010

I: CBB, Appeals Court Rejects Lethal Removal of Salmon-Eating Sea Lions

J: CBB, Sea Lion Report

K: Columbian, Study Gauges Success of Wild Fish Rescue

L: Sea Resources in Chinook Observer, 11-16-10

M: CBB, Tribes Detail Success, Promise of Supplementation

Abbreviations & Acronyms Used Above

CBB: Columbia Basin Bulletin

CRITFC: Columbia River Inter-Tribal Fish Commission

NPCC: Northwest Power & Conservation Council

SFA: Salmon For All

#2

We at Salmon For All, a nonprofit trade association of Columbia River commercial fishermen and processors, are the inheritors of the legacy left by the early packers and fishermen who have struggled for decades to ameliorate the damaging effects of activities harmful to salmon, particularly hydroelectric generation on the Columbia River. Their record is hard to argue with: the first hatcheries on the Columbia River were instituted by early salmon packers; Robert Hume, an early salmon canner on the Columbia and Rogue Rivers, experimented with raising fish in his own hatchery, and published on the subject.[1] Early packers, including Joseph Megler, B.A. Seaborg, J.R. Burke and Henry McGowan, in Washington, and Thomas Hodgkins and George T. Myers in Oregon, were legislators on both sides of the river and instituted the earliest salmon season and gear regulations to address the issue of over-fishing.[2] The Columbia River Fishermen's Protective Union filed the first anti-pollution lawsuit on the Columbia River in the 1930s, followed by the Columbia River Packers Association, also in the 1930s, who filed a lawsuit regarding pollution on the Willamette. But by far the biggest and longest-running struggle remains that of trying to ameliorate the damage done by development of the Columbia Basin by hydroelectric projects, and the accompanying agricultural and industrial development. It was our forebears who fought for the Mitchell Act, and their money that funded it at its inception, and it remains a topic of intense interest and concern to us today. For a fuller discussion of the history of the Mitchell Act, we reference Irene Martin's background paper, "History of the Mitchell Act," presented to NMFS in Astoria, Oregon, September 30, 2010. (Copy attached.)

#3

While we are aware that certain hatchery practices have fallen into disrepute, and need to be reformed, we also believe strongly that the original purposes and original conditions which led to the Mitchell Act are present today, and that these purposes, of providing surrogate environments and production facilities for fisheries mitigation, need to be retained. The answer, we believe, is not in eliminating the hatchery programs but in reforming them when necessary, based on solid science, new and promising hatchery rearing methods, and in full funding of the Mitchell Act.

#4

The list of valuable hatchery properties in dire need of funding to address issues due to deferred maintenance is long and needs immediate attention, to say nothing of the possibility of upgrading hatchery facilities or building new facilities to meet today's standards for modern hatcheries. The need for funding assistance for these endeavors was provided to NMFS in 2005, in "Mitchell Act Hatchery Funding, A Proposal" from Idaho Department of Fish and Game, Oregon Department of Fish and Wildlife, Washington Department of Fish and Wildlife, U.S. Department of Fish and Wildlife, Confederated Tribes and Bands of the Yakama Nation, Nez Perce Tribe, Confederated Tribes of the Umatilla Indian Reservation, Shoshone-Bannock Tribes of Fort Hall, and Confederated Tribes of the Colville Reservation. We note that the DEIS does not address these possibilities, nor does it provide an inventory of hatchery capital projects that might be considered for funding in order to improve the current situation, nor does it discuss the possibility of increased hatchery production.

#5

The DEIS does not discuss nor analyze the effect of these reductions on harvest or hatcheries, which might have informed an analysis that needs to be done for the DEIS in terms of projecting what effect future reductions might have. NMFS needs to document the reductions in hatchery production since 1990, as well as the effects these reductions have had, both in harvest and in returns of naturally spawning fish. Without some sense of what reductions during the past two decades have accomplished, there is little point in recommending further reductions. Numbers regarding hatchery production changes are readily available from the affected agencies, and need to be included in the DEIS.

Instead, the DEIS's thrust under all alternatives appears to be that hatchery programs are due for drastic curtailment, in order to give preference to naturally produced salmon. Given that preference, we would have expected to see a Mitchell Act DEIS tell us what has changed re mainstem and tributary habitat since inception of the hydro system that suggests that reducing Mitchell Act hatchery production and attempting to return to "naturally spawning" salmon will be successful in propagating salmon runs. It seems clear that despite NMFS' "no jeopardy" opinion re operation of mainstem dams, the mainstem spawners which once utilized the habitat now behind dams but which was once free-flowing river are extinct. It is also quite clear from reading various "Recovery Plans" for salmon for both Washington and Oregon that there have been major estuary and inriver and tributary changes since inception of the Mitchell Act, and that the salmonid habitat remains vastly reduced.[3] These were mitigation hatcheries meant to replace lost habitat in the first place. Where is the evidence that this habitat has improved or is more supportive of salmon than it was in the late 1940s/early 1950s when the Mitchell Act hatchery system was initiated? We see no empirical evidence in the DEIS that suggests that a great deal of vastly improved habitat ready for renewed salmon production exists. We also note that for the recently listed eulachon and for the lower Columbia coho, as yet no critical habitat designations have even been made.[4] Without some sort of inventory of new habitat ready for spawning and rearing purposes, there is nothing in the DEIS that says how the goal of increased naturally spawning populations is to be accomplished. This omission makes it virtually impossible for the public to comment specifically on habitat or recovery issues regarding these populations. It is clear, however, that the mainstem spawning populations that the Mitchell Act was intended to mitigate for are largely gone, along with their habitat. The mitigation obligation remains.

#6 #7 #8

The linkage between ESA and Mitchell Act set forth in the DEIS is a strained one at best. While we recognize the need to "list" some of the salmonid runs, we note that for a number of these runs, the only substantial numbers of surviving fish left are the hatchery populations, many of them in Mitchell Act hatcheries. These include LCR coho, LCR tule fall Chinook, and LCR spring Chinook. The Mitchell Act hatcheries were successful, as attested by the fact that many of the gene pools from which it is hoped to rebuild naturally spawning populations of ESA listed salmonids are to be found in those same hatcheries. What has not been so successful is the retention or expansion of habitat for the purposes of spawning and rearing of naturally spawned fish. Habitat degradation and loss continues unabated.

#9

From our perspective, the mitigation obligation of the Mitchell Act has not ended. Those benefits were promised "in perpetuity."[5] If NMFS wants to cut hatchery production in the future, the agency needs to first deal with bringing the wild populations to harvestable levels, which means completing the habitat work that is long overdue. We also note that the benefits of removing hatchery fish from natural spawning areas are largely untested and hypothetical. This part of hatchery reform needs to be taken on a case-by-case basis, rather than being an over-arching policy. Since the broodstock for some of the stocks at risk reside in the hatcheries, and those stocks have not repopulated current habitat via hatchery strays, we are most concerned that the broodstock that is "banked" at the hatcheries not be seriously depleted until carefully monitored experiments are conducted and the habitat necessary to the re-establishment of naturally spawning runs is demonstrated to be available.

#10 #11 #12

Further, many of us fish in Alaska and have witnessed first-hand the danger of overpopulation of spawning beds in the context of limited water and habitat.[6] We are concerned that the DEIS does

#13

not address how uninformed supplementation or over-escapement of naturally spawning fish, particularly in the context of limited water and streamflow and limited spawning and rearing habitat will affect production of naturally spawning fish. In other words, it is possible to have a scenario where too many naturally spawning salmon will return to a stream that does not have the spawning and/or rearing habitat to support them. We would have expected to see this issue addressed and a plan provided for how to proceed in such a situation. #13

We see little evidence in the DEIS that the over-arching issues of habitat and water have been adequately addressed. #14 We also see little evidence in the document that a careful evaluation of current efforts to restore naturally spawning populations has occurred. #15 Where is the empirical evidence, the science that says that current programs are working? What kind of monitoring of current programs has NMFS relied on in order to develop the policy alternatives cited in the DEIS? Without this information, it is difficult for the public to assess whether NMFS has done due diligence in examining other types of alternatives that might have been developed and presented. The public cannot be expected to comment on the alternatives provided or suggest other options, since the document does not provide adequate documentation regarding what scientific materials it actually examined to provide the current options. We note, further, that at the NMFS public hearing on the DEIS in Astoria, NMFS official Robert Jones explained that the various options were not meant to be final but were hypothetical and could be construed and interpreted in numerous ways.

Operating integrated hatcheries means there must be the habitat to support the naturally spawning population that "refreshes" the hatchery brood stock. #16 The DEIS assumes that habitat will improve, but provides no Plan B if it does not. It assumes that hatchery origin production will diminish as natural origin production increases (pp. 11-12, Exec. Summary). We do not see much attention paid to the possibility that natural origin production might not increase or might even decline. #17 Indeed, we note on p. 2-27, Table 2-6, that if hatchery conservation programs don't meet their performance goals, they will still continue, while production hatchery programs that don't meet their performance goals will be terminated, a statement which needs more justification and explanation by NMFS than is provided on p. 2-43. #18 We would like to see a more substantial discussion regarding the uses of segregated and integrated hatcheries, indicating which scientific studies are being used to support the two types of hatcheries, and addressing questions of survival rates and habitat needs at both kinds of hatcheries. Has such habitat been inventoried and is it available? #19 Currently, most Mitchell Act supported hatcheries are either production-oriented, or dual-purpose, that is, production and conservation. We are at a loss to understand why NMFS would propose to close down programs that do not meet production performance goals, while retaining those that do not meet conservation goals and believe the DEIS needs to provide a much more detailed, scientifically-backed rationale for this decision before it is possible to provide comment.

We counter the NMFS' assumptions that the habitat will be there to restore the natural production that already had been lost by World War II with the following observation: what is going on in the Columbia Basin is continued development and population expansion, industrial development and irrigated agriculture. #20 The population in 1940 of the Columbia River Basin was 2,191,000.[7] According to a document by David Fluharty, "The Pacific Northwest region had a population of about 8 million people in 1980. By 1995 it reached nearly 10 million, and by 2015 it is estimated to exceed 12 million… In Washington State alone, it is estimated that 30,000 acres

of fish and wildlife habitat are lost each year…"[8] While undoubtedly these figures could be updated with more recent research, the trend is clear: more population translates to less habitat for fish and wildlife. Our forebears saw this happening seventy years ago, and pushed for the Mitchell Act to help provide a surrogate environment to preserve the salmon runs at least in part. Nowhere does NMFS take this incremental habitat loss stretching back for the entire history of the Mitchell Act into account. This is an astonishing lapse, and a complete dismissal of the history of development of the Columbia Basin and accompanying environmental degradation and decline that caused the passage of the Mitchell Act in the first place, and which necessitates the continued presence of the salmon programs it funds. Incidentally, the Fluharty publication cited here does not appear in the DEIS list of references re socioeconomics, but it should have been consulted. #20 #21

We strongly object to the statements in Alternatives 2 and 3 that no new hatchery programs will be initiated. Such a statement presumes that hatcheries are bad per se, yet hatcheries contributed to recovery of Snake River sockeye, to use one example, and hatcheries are where the majority of some of the ESA listed species, e.g. LCR coho and tule fall Chinook, reside. We also remind the agency of the planned building of Chief Joseph hatchery in the upper river, and would appreciate knowing if NMFS is going to deny the initiation of new projects at this hatchery. We point out that hatchery technology is dynamic and constantly evolving, and suggest that we leave the door open for possible future developments that show promise. Mitchell Act hatcheries were constructed in the 1950s and 1960s. These are ageing facilities suffering from deferred maintenance, and they should not be taken as the model of what all hatcheries are like. There is no discussion in the DEIS of present-day, modern hatchery technologies and practices, and whether there are hatchery alternatives that were omitted from the DEIS but should have been considered. There is apparently no discussion we have been able to locate in the document that describes how building new facilities and embarking on innovative hatchery practices and programs might be of assistance in meeting both production and conservation goals. Stating a policy that no new hatchery programs will be initiated, without providing a rationale for such a policy and without apparent consideration of recent developments in hatchery technology leaves the reader with no foundation for informed comment as to the wisdom or lack thereof of such a policy decision. #22

We note that the DEIS makes no mention of innovative propagation practices that have been implemented by alternative production programs in several parts of the Columbia River basin, including those managed as part of the Select Area Fishery Enhancement project in the lower estuary, and successful tribal supplementation programs introduced by the Columbia River Treaty Tribes and the Columbia River Inter-Tribal Fish Commission. It is especially troubling that these innovative programs would be discontinued under all the options embraced by the Mitchell Act DEIS, when in fact it is these alternative production programs that appear to have among the highest potential to contribute to recovery of the Columbia River's once great salmon runs. Please see the attached Salmon For All paper, "Successful Application of Advanced Fish Culture Technologies & Practices." No alternative is examined anywhere in the DEIS as currently drafted that would in fact bring Mitchell Act hatcheries into the 21st century. #23 See App. C

The document seems to have been produced without reference to our current economic context, in which state budgets for fish and wildlife are being slashed at a time when the DEIS is recommending wholesale and major changes. The current budget downturn is projected to last #24

#24

for several more years, possibly as long as 2019 in Washington. Some of the DEIS changes proposed will drive fisheries-dependent people out of work, as harvests will be slashed, and produce much less in the way of revenues to already beleaguered agencies. For many of these agencies, their hatchery system is the most significant investment they have, and are also revenue-producers, in terms of fees and taxes which accrue to the agencies from activities, such as fisheries, carried out due to hatchery production. Hatcheries are also insurance against natural or man-made disaster, in that they maintain multiple broodstocks that can be used to re-seed areas that have been flooded or otherwise damaged in catastrophic events such as chemical spills. With the unknown future of climate change, more than ever hatcheries might be looked upon as a way to mitigate natural perturbations and maintain some stability in natural systems. The insurance intention of the Mitchell Act was solid advice. There is no discussion in the document that we have been able to find on any of these issues.

#25

#26

Many of us fish in Alaska, where our livelihoods come from an abundance of wild fish. We recognize that that abundance stems in turn from an unspoiled habitat, and, given our preference, would prefer to see similar abundance on the Columbia River. However, much of the habitat has been permanently lost. The DEIS itself recognizes that the Mitchell Act was specifically for mitigation for lost habitat and other impacts of hydroelectric dams, on p. 1-21 and 2-15. The genesis and history of the Mitchell Act is that of the recognition that environmental justice demanded both the preservation and conservation of the salmon runs, and the communities that depended upon them, in perpetuity. It was a debt society owed for the development of the Columbia Basin. The conservation and community contexts that led to the Mitchell Act have not changed in kind, only in degree, as habitat loss has continued and even accelerated in the intervening years since its passage.

#27

We would like to quote from Robert Lohn, former Regional Administrator, N.W. Region, NMFS, in his report before the House Subcommittee on Fisheries and Oceans Committee on Resources, May 24, 2005: "Although each hatchery program is unique, hatcheries generally have one or both of two basic goals: (1) to produce fish for harvest, including compensation for lost production due to habitat loss or degradation; (2) to help recover or conserve naturally spawned populations. Hatcheries that have the goal of producing fish for recreational, commercial, or tribal harvest, and which often were built to mitigate for losses of habitat, have been around for generations…The two goals of conservation and compensation are not mutually exclusive, and many programs strive to conserve natural populations while also producing excess fish for harvest."[9] The Mitchell Act DEIS as it currently stands apparently has abandoned these precepts.

#28

The agency "amnesia" regarding the history of Columbia Basin development and habitat loss, and NMFS' responsibilities for mitigation and salmon production under the Mitchell Act, poses a serious threat to the continuance of the fisheries that rely on salmon health and production in the Columbia Basin, as evidenced in the various alternatives presented in the DEIS, all of which will result in cutbacks in various fisheries. There appears to be no discussion or even consideration in the DEIS about what alternatives might be possible with full funding or enhanced funding of the Mitchell Act. There also appears to be a real danger of the purposes and the environmental justice intent of the Mitchell Act being lost due to these omissions, and the original environmental injustices being furthered and perpetuated by the very agency charged with administering the Mitchell Act.

#29

Under NEPA, the issue of environmental justice must be addressed, and it has been in the DEIS, though with so many errors and flaws that it is impossible to comment on the section, since the data it is based on is incorrect as noted by Irene Martin. We attach here Comments re Draft Mitchell Act EIS by Irene Martin, 9/11/2010. P.O. Box 83, Skamokawa, WA 98647. 1-360-795-3920; imartin@iinet.com, for inclusion in the record. We were struck, too, at the omission of specific cultural, historical and occupational factors regarding various fisheries affected under the DEIS. There is simply no discussion regarding community and social structure perturbations that will undoubtedly occur under all five alternatives. Further, we believe that just addressing the issue of environmental justice is not sufficient, especially when an injustice will be perpetrated. The current five alternatives provided in the DEIS all adversely affect harvest, as pointed out by Robert Turner, NMFS official, in his presentation to the Pacific Fisheries Management Council on Sept. 11, 2010. No alternative that might benefit harvest is provided. That is, in itself and of itself, plainly unjust, given the Mitchell Act's history and purpose. We strongly object to NMFS' actions in this regard. Environmental justice is not just a category to be ticked off the list of things to address when drawing up an EIS under NEPA; it is a moral and legal obligation to the communities that the Mitchell Act was designed to assist. We believe that NMFS has a legal and moral obligation to the communities affected by the DEIS to produce a document that does, in fact, further environmental justice.

#30

We want to see viable fisheries across all sectors, which would fulfill the intent of the Mitchell Act. We would like NMFS to enlarge its vision beyond its current focus on salmon genetics and the ESA to include the larger picture of the human history and varied fishing communities and constituencies dependent on healthy and abundant runs of Columbia River salmonids. The Mitchell Act did just that, and a renewed agency commitment to fulfill both the letter and spirit of this legislation would be most welcome. We have not forgotten the legacy those early fishermen and packers left us, and by this testimony, wish to refresh the memory of the National Marine Fisheries Service regarding its responsibilities in this regard.

We list here specific comments we believe about errors in the DEIS that we believe NMFS needs to address:

#31

p. 2-14, seems to be attempting to integrate harvest and hatchery policy, but does not apparently do the same regarding habitat. Hatchery and habitat policy are the two variables that need to be most closely coupled in this DEIS. Harvest has little to contribute at this point. We believe that the risk analysis study by Ray Beamesderfer, "Fishery Risk Assessment for Columbia River Coho Based on Population Viability Analysis" in the LCFRB Recovery Plan, June 6, 2010, Appendix E, Chapter 13, constitutes the best science available in terms of balancing recovery risks and harvest, and urge its acceptance as the foundation for an abundance-based, rather than weak stock-based, matrix:

> "These analyses confirm that the Oregon harvest matrix is adequate to protect the majority of lower Columbia River coho populations in Oregon and Washington. Small fishery impact rates have little or no effect on conservation risks, even for moderately small populations. Analyses indicate that an abundance-based fishing strategy can be an effective alternative to a fixed recovery fishing rate for meeting conservation and recovery goals while balancing access to large escapements in good survival years. This

analysis of fishery effects is based on relative comparisons for a given set of conditions. Relative comparisons of effects are a robust application of this modeling approach."[10] #31

Beamesderfer also supports developing a similar abundance-based harvest matrix for the lower Columbia Chinook ESU, as is proposed in the Oregon Conservation and Recovery Plan. With regards to LCR tule stocks, he notes "even complete fishery closures will not increase numbers to target viability levels for small, unproductive populations."[11]

p. 2-27. Under New Selective Fisheries, need to eliminate the phrase "in terminal areas." They could be conducted in non-terminal areas too. #32

p. 2-37. The numbers of various salmonid species do not resemble recent returns. What dates do these numbers represent? What is the source of the numbers? Were recent record returns of spring Chinook and sockeye included in these calculations? Are these numbers for Mitchell-Act-produced fish only, or were other hatchery and wild fish included? While NMFS indicates on p. 2-37 that the biggest harvest cuts will accrue in the coho sector, in fact the coho run numbers provided appear to be out of date, and don't appear to take into account the tribal raising of coho. What fisheries were examined in developing Table 2-11? Was any account taken of how this might affect other fisheries? For example, ocean troll and recreational fisheries take Columbia River salmon, but also take salmon headed for other watersheds all along the coast. Has there been any calculation of how catches of these other, intermingled fish would be affected by these implementation scenarios? #33 #34

p. 3-6. Another hazard to weirs is vandalism. #35

pp. 3-4–3-66. Other Fish Species that Have a Relationship with Salmon and/or Steelhead. This section is apparently regarding other marine and freshwater species that "may interact with salmon and steelhead in the analysis area." It is a "who's who" of ESA listed or "species of concern" designated fish, but also includes other species, such as Northern Pikeminnow. None of these species is raised in a Mitchell Act hatchery. No explanation or analysis is given as to why this section is relevant to the Mitchell Act DEIS or the purpose of including it, except that they "have a relationship with salmon and steelhead either as prey, predators, or competitors," (p. 3-40). No commentary is provided as to whether the "relationship" is more likely to affect or be affected by Mitchell-Act-produced fish than other non-Mitchell-Act- produced fish. No rationale is given as to why certain species were chosen and others omitted. For example, no salt-water species were included, only in-river, fresh-water species, but no rationale is provided. No invasive aquatic species were considered, despite the introduction of an Asian copepod that is now displacing native copepods in the estuary. Should an explanation be forthcoming for all of these omissions, it is still unnerving to note that the species with the most potential for major interactions with Columbia River salmonids, the American shad (*Alosa sapidissima*) is missing from the list. Informed public comment is impossible with an incoherent presentation such as this section, but we do note a couple of significant issues below: #36 #37

a) Referring to the comments re eulachon, as explained on pp. 4-90-92, we note that "implementation measures designed to improve hatcheries may also benefit eulachon by minimizing entrainment of juvenile fish and hatchery water intake screens and correcting water quality conditions in streams where hatcheries occur and eulachon pass through during migration #38

#38

or may spawn nearby." Aside from the mainstem Columbia, where a large portion of the annual run spawns, eulachon are known to spawn in only a few streams: Grays River, Skamokawa Creek, Elochoman River, Cowlitz River, and occasionally the Kalama, Lewis and the Sandy. There is no hatchery on the Skamokawa system; in the case of each of the others, particularly the Cowlitz River, which, aside from the Columbia, is their major spawning river, eulachon spawn many miles below any hatchery water intake and area where adverse water quality conditions caused by a hatchery are likely to occur. Improving hatcheries, while laudable, is therefore not likely to have any discernible effect on eulachon. We note also there is no apparent documentation for this particular point, and suggest that the agency needs to provide some sort of evidence to back up this astonishing claim.

#39 #40

b) Green sturgeon are included in this section, while white sturgeon are not. The document notes on p. 3-50 that "The primary interaction between green sturgeon and salmon and steelhead is green sturgeon bycatch in salmon and steelhead fisheries." How this constitutes an actual "interaction" between species is a mystery. No mortality rates resulting from bycatch are given, nor is the statistical significance of this factor, compared to the principal factor in the green sturgeon's population decrease, habitat decline in the Sacramento River, provided. Current information regarding mandatory release of all green sturgeon bycatch from both commercial and sport fisheries is also omitted. The relationship that supposedly was the foundation for the choice of which fish to include in this section was that of "prey, predator or competitor." Green sturgeon do not fall into any of these categories when it comes to salmon and steelhead. We suggest omitting it entirely.

#41

pp. 4-185–198. We suggest that the sections regarding marine mammals, particularly sea lions be updated with recent research available from observations being conducted on the spring Chinook predation at Bonneville Dam. Interactions are being narrowly defined here as those that affect protected species under the Marine Mammal Protection Act. We believe this is much more of a two-way street, and that interactions from marine mammals that affect salmonids need to be discussed also. For example, we point out that the assumption on p. 4-193 is that with reduced numbers of salmonids to feed on, sea lions would relocate to areas where prey is more readily available. Such an assertion assumes that there are such areas at the time when sea lions feed on spring Chinook at Bonneville Dam, but no specific locales or species are provided. There is another alternative, not considered, and that is that the sea lions will continue to feed at Bonneville, and consume a larger percentage of the reduced numbers of salmon available, thus potentially affecting the viability of the remaining salmon runs. Figures the Joint Management Staff of the Oregon & Washington Departments of Fish & Wildlife recently shared with the Columbia River Commercial Advisory Group concerning sea lion presence at Bonneville Dam 2002–2010 indicate that although California Sea Lion numbers have somewhat decreased since 2007 and 2008, the number of Stellar sea lions at Bonneville Dam has increased dramatically. (Copy of Figures 10 and 11 attached.)

Until recently, NMFS had authorization through Section 120 of the Marine Mammal Protection Act to address the issue of predation by California sea lions at Bonneville Dam, but not predations by ESA-listed Stellar sea lions. On November 23, 2010, however, the 9th Circuit Court of Appeals remanded the authorization for lethal removal of problem seas lions at Bonneville Dam back to the Oregon District Court, with instructions to vacate the decision and remand to NMFS. Upon closer analysis, the decision by the Court of Appeals did not rule the

#41

rationale for lethal removal of problem marine mammals impermissible or without reason. The ruling seems to be based on a strict interpretation of the Administrative Procedures Act (APA). Because NMFS did not include an adequate explanation for its course of action in the Administrative Record for the case, the APA dictates that no evidence can be submitted after the fact to defend or document the benefits of that course of action. The briefs submitted by the states as intervener defendants, logical and reasonable though they may have been, amount only to inadmissible *post hoc* rationalizations for the decision already made but inadequately explained to allow lethal removal of animals identified as problem predators at the dam. We submit that NMFS should promptly attend to providing an explanation for the lethal removal decision that will be satisfactory to the federal courts, and get it into the Administrative Record for the case before the 2011 run of upriver spring Chinook begins. The ruling from the 9th Circuit Court of Appeals specifically states, "…we do not impose an undue burden on NMFS on remand. The APA requires only a cogent explanation." (See the attached Columbia Basin Bulletin article, "Appeals Court Rejects Lethal Removal of Salmon-Eating Sea Lions.") The need for continuing this program is urgent. Evidence suggests that lethal removal of California sea lions clearly identified as repeat predators at the dam has in fact made a significant difference at the dam. (See the attached Columbia Basin Bulleting article, "Sea Lion Report.") We also note there is growing evidence that the eastern population of Stellar sea lions has recovered and no longer needs ESA protections. We strongly urge NMFS to accelerate the delisting of the eastern Stellar sea lion population so that the growing problem of Stellar sea lion predation at Bonneville Dam can be directly addressed once authorization for lethal removal is reaffirmed by the court.

#42

#43

We note in the section on "Non-listed Birds," pp. 4-189-192, bald eagles are included and osprey are omitted. No rationale is provided. Caspian terns are included, double-crested cormorants are omitted except in passing. Data from the most recent studies that demonstrate the extent of these last two species' predation on salmon smolts, approaching twenty million annually, need to be included in this section, as this is a significant interaction among species. We also note that the reference on p. 4-191, to Table 3-26, regarding gulls species, double-crested cormorants, etc., is incorrect. Table 3-26 is found on p. 3-103, and is entitled "Environmental Justice Thresholds for Reference Areas." We assume the agency is referring to the tables found on pp. 3-117–3-121.

#44

#45

pp. 3-97–3-114. Environmental Justice Section. In addition to endorsing the comments made by Irene Martin regarding this section, we also wish to note that a more adequate discussion of poverty and other socioeconomic issues could have been developed by modeling this section after the 2006 NOAA Fisheries publication, Fisheries Communities of the United States, in the Fisheries Economics and Sociocultural Status and Trends Series, as updated in August 2009.[12]. We also bring to your attention the NOAA Fisheries publications, Fisheries Economics of the U.S. for 2006–2008.[13] We recommend a thorough rewriting of this section, based on the Martin comments and consultation with the above-noted NOAA Fisheries publications, none of which appear in the document's bibliography.

#46

Appendix I, Draft Socioeconomics Resource Report Submitted by The Research Group to NMFS, 2008, comes with disclaimer: "This draft resource report was submitted by the Research group to NMFS in 2008. It was never completed or peer reviewed. It should not be considered a NMFS report or cited as NMFS data." Our question then becomes, "What is it doing here?" What are we to make of it? How has it been used? It is, frankly, filled with errors. Let us just point out one here: p. A-32, Table A.7, where Alternatives 1, 3, 4, and 5 show an REI for both

Summer and Winter Steelhead under the Commercial Harvest of $1,000 each. There is no non-treaty commercial harvest of steelhead on the Columbia River, which other tables have recognized. The number should be 0 (zero). This is one small example of the numerous errors in the document. We do not believe it is the public's job to correct all the mistakes, nor do we believe that an incomplete document that has not been peer-reviewed, contrary to NMFS own peer-review policy, should have been the basis for the Socio-economic section of the DEIS in the first place. If NMFS does not consider it as a NMFS report, nor permit its citation as NMFS data, what is it doing in the DEIS? #46

Appendix J, Thomas Wegge, Mitchell Act Hatchery EIS, Socioeconomics Impact Methods Appendix, March 2010, p. 12. We note that the commercial fish weights for various regions in the Columbia River Basin are listed as identical. For example, non-tribal commercial fisheries average weight for Chinook in the Lower Snake River, Upper Columbia River, Mid Columbia River and Lower Columbia River is listed as 18.4 lb., on Table A-1. Since there is no non-tribal commercial fishery in the Columbia Basin except in the Lower Columbia River, we are at a loss to explain these numbers. We checked the Sources listed at the bottom of the table, which referred us to The Research Group Mitchell Act DEIS Appendix Table B.2. However, when we looked for this document, which presumably is Appendix I, there is no table B.2. Subsequent tables in the Wegge document refer also to Appendix B.2 in The Research Group's document, but it is apparently not available for public review. Tables A-2 and A-3 in the Wegge include information regarding economic value, and again refer to non-tribal commercial fisheries occurring in places where, in fact, they do not occur in the Columbia River and again refer to Appendix I, Table B.2. Since the Wegge document is apparently based on The Research Group's incomplete and non-peer reviewed document, it too is suspect, but again, cannot be analyzed because the baseline data are not available. #47 #48 #49

Notes

---

1 Robert D. Hume. *Salmon of the Pacific Coast*. San Francisco, CA: Schmidt Lithograph and Label, 1893.

2 Irene Martin and Roger Tetlow. *Flight of the Bumble Bee, The Columbia River Packers Association and a Century in the Pursuit of Fish*. Long Beach, WA; Chinook Publishing Co., 2010, p. 171; Henry Wendler. "Regulation of Commercial Fishing Gear and Seasons on the Columbia River from 1859-1963." Fisheries Research Papers, Washington Dept. of Fisheries, vol. 2, no. 4, Dec. 1966, pp. 19-31.

3 Lower Columbia Fish Recovery Board, "Lower Columbia Salmon Recovery and Fish & Wildlife Subbasin Plan," June 6, 2010. http://www.lcfrb.gen.wa.us/Recovery%20Plans/March%202010%20review%20draft%20RP/RP%20Frontpage.htm (accessed Nov. 16, 2010). Oregon Department of Fish & Wildlife. "Lower Columbia River Conservation and Recovery Plan for Oregon's Populations of Salmon & Steelhead," Final draft, Aug. 6, 2010. http://www.dfw.state.or.us/fish/CRP/docs/lower-columbia/OR_LCR_Plan_ExecSummary%20-%20Aug_6_2010_Final.pdf, (accessed Nov. 16, 2010).

4 http://www.nwr.noaa.gov/Other-Marine-Species/eulachon.cfm, and http://www.nwr.noaa.gov/ESA-Salmon-Listings/Salmon-Populations/Coho/COLCR.cfm (both accessed Nov. 16, 2010).

5 Washington Dept. of Fisheries, U.S. Fish and Wildlife Service. Lower Columbia River Fisheries Development Program Planning Reports, Grays River Area and Elokomin Area. Olympia, WA: August 1951. Grays River Report, p. 16.

[6] Clark, Robert, et al. "Biological and Fishery-Related Overescapement in Alaskan Sockeye Salmon, Oncorhynchus nerka," Anchorage, AK, Alaska Dept. of Fish Wildlife, Dec. 2007. Special Publication 07-17. http://www.sf.adfg.state.ak.us/fedaidpdfs/Sp07-17.pdf (accessed Sept. 18, 2010).

[7] U.S. Secretary of the Interior. "The Columbia River, A Comprehensive Report on the Development of the Water Resources of the Columbia River Basin for Irrigation, Power Production and Other Beneficial Uses in Idaho, Montana, Nevada, Oregon, Utah, Washington and Wyoming." Washington, DC: U.S. Dept. of the Interior, Feb. 1947, p. 19.

[8] Fluharty, David. "Characterization and Assessment of Economic Systems in the Interior Columbia Basin: Fisheries," (Portland, Ore., U.S. Forest Service Portland Office, April 2000), p. 47. http://www.fs.fed.us/pnw/pubs/gtr451.pdf (accessed Nov. 16, 2010).

[9] http://www.ogc.doc/gov/ogc/legreg/testimony/109f/Lohn052405.htm, (accessed Sept. 6, 2010).

[10] LCFRB, Recovery Plan, June 6, 2010, Appendix E, Chapter 13, p.19.

[11] LCFRB, Recovery Plan, June 6, 2010, Appendix E, Chapter 14, p. 22.

[12] http://www.st.nmfs.noaa.gov/st5/publication/fisheries_communities.html (accessed November 17, 2010).

[13] http://www.st.nmfs.noaa.gov/st5/publication/fisheries_economics_2008.html (accessed November 17, 2010).

Letter 29, Comment #2

Historical Background of the Mitchell Act (Public Law 75-502)
By Irene Martin
September, 2010

The Mitchell Act (Public Law 75-502) was passed by Congress on May 11, 1938, a year after passage of the Bonneville Project Act in 1937, which authorized building of Bonneville Dam for the purpose of improving navigation on the Columbia River, as well as for production and sale of electricity. News accounts during the months leading up to passage of the Mitchell Act recorded the contemporary understanding of the purpose of the Act.

- Astorian Budget, Mar. 11, 1938 p. 1. "Status of the congressional bill to appropriate $500,000 for construction of fish culture stations on the Columbia River claimed the attention of Oregon, Washington and Idaho fish and game bodies meeting here today." The Columbia River Salmon Conservation Association is named in the article as lobbying for the bill in Congress.
- Astorian Budget, April 14, 1938, p. 1. "Columbia River salmon and what should be done to conserve them and save the fishing industry from destruction occupied the time of the house committee on merchant marine and fisheries today."
- Astorian Budget, April 21, 1938, p. 1. When the bill ran into budget challenges, the Astorian Budget reported that proponents of the bill were able to convince budget director Donald Bell, "that the Columbia river bill was worthy in that the situation here is of an emergency nature and that the government, by its construction of Bonneville dam, has contributed to the situation which makes the bill necessary."
- Astorian Budget, April 26, 1938, p. 1. The newspaper reported that the measure was scheduled for a vote. "The bill authorizes appropriations in the sum of $500,000 for establishment of hatcheries on the tributaries of the Columbia and for other fish conservation measures. Its intention is to compensate for the damage to Columbia fisheries by the building of Bonneville and Grand Coulee Dams."

The Congressional Record for the House Hearing of Senate Bill 2307, the authorizing legislation for the Mitchell Act, May 2, 1938, also provides the context and understanding for the legislation in the following excerpt:

Mr. Bland. ...the situation is that an emergency has developed by reason of conditions, not only because of the construction of the Bonneville Dam, but also because of the construction of irrigation plants and reclamation projects, and all that sort of thing, so that there was brought before the committee maps showing a large area that was affected and we had to take the matter as a practical proposition, a condition that was confronting us, threatening the fisheries of the Northwest, and we had to meet it the best way we could…

Mr. Rich. Then the gentleman will admit that the statements made that the Bonneville Dam and the Grand Coulee Dam were not going to interfere with the salmon fisheries in the Columbia River were not correct, and the gentleman also admits that a

mistake was made by building those dams because it will ruin the salmon industry in the Columbia River.

Mr. Bland. I do not know that I would go so far in my admission. I admit there is serious danger of ruining the salmon fisheries there, and they are being damaged…" [1]

These accounts and numerous others of a similar nature reveal both the environmental setting the Mitchell Act developed in, the era of construction of large mainstem dams, and its understood purpose, to conserve Columbia River salmon runs and compensate for damage being done to fisheries that depended upon the runs that were being affected by the environmental changes occurring due to development in the Columbia Basin.

According to the Northwest Power and Conservation Council's website, the Mitchell Act "is intended to mitigate the impacts to fish from water diversions, dams on the mainstem of the Columbia River, pollution and logging. Primarily, though, the mitigation is accomplished through fish hatcheries and the installation of juvenile fish diversion screens at irrigation water withdrawals." [2] The same website notes that the initial appropriation of funding for purposes of the act was $500,000. These funds came from payments received by the federal government between 1905-1931 from leases with commercial fishing interests on the lower Columbia River for seining grounds on Sand Island and Peacock Spit, among others, in the lower Columbia estuary. The Council's website states: "Through the authorization, Congress intended to invest money received by the government for the use of fishing grounds in efforts to rebuild and conserve the fish runs. The Act recognized that anadromous fish populations were in a serious decline, and that the decline was caused by impacts on spawning and rearing habitat from deforestation, pollution, hydroelectric dams and diversion of water for irrigation."

Continuing concerns regarding development of the Columbia Basin surfaced frequently in fisheries agencies following passage of the Act. The Oregon Fish Commission's top scientist, Dr. Willis Rich, noted prior to the end of World War II that "Several federal agencies are planning extensive engineering developments for the Columbia Basin that will involve numerous large dams and water diversions. This program will undoubtedly be initiated early in the post-war period as part of a nation-wide 'make-work' program designed to prevent unemployment during the reconversion from war-time to peace-time economy. These developments will seriously affect the salmon resources of the Columbia River and, conceivably, may so reduce them as to destroy the commercial fishery. It is of obvious importance to the State to see that adequate consideration is given to the salmon resources and that every reasonable effort is made to provide for their maintenance." [3] Hugh Mitchell, Director of the Dept. of Fish Culture for the Oregon Fish Commission, stated that "Because of the great dams already constructed in the Columbia River or its tributaries and the very large number of proposed dams in the Columbia and its tributaries, it is generally agreed by scientists and all others concerned that the hope of maintaining and supporting the salmon runs in the Columbia River Basin will rest largely upon artificial means of production." [4]

Richard Neuberger, at the time a member of the Oregon legislature and a writer, wrote an article for the Saturday Evening Post, published Sept. 13, 1941, describing the

experimental nature of attempts to save fish runs on the on the Columbia. Excerpts indicate issues being faced:

"Last year, up a labyrinth of ladders and stairways and chutes at Bonneville, 391,595 ascending Chinooks were counted. Is this number large or small? Who knows? The biologists do not. They have no basis of comparison; never before have the fish in a vast stream been counted at all…the Federal Government has begun a prodigious experiment…to determine if salmon whose forebears have spawned in the Columbia's last, lingering reaches can be schooled to consummate their lives at least 500 miles downstream [below Grand Coulee Dam]. Frank A. Banks, chief engineer at Grand Coulee, calls the scheme Uncle Sam's Fish College…Will this idea work… Will [the salmon] continue on to Grand Coulee, over the route their ancestors traveled, and perish buffeting its cement ramparts? Of will they wind off toward their new habitats?"

The article goes on to describe the various features of development of the Northwest that were inimical to salmon, the efforts of biologists and others to try to find a way to preserve at least some part of the salmon resource, and the experimental, even speculative nature of many of these attempts. [5]

The original Act was amended on several occasions subsequent to its original passage. In 1946 it was amended to, among other things, authorize the Secretary of the Interior to conduct investigations and surveys regarding conservation of the Columbia's fisheries resources. In 1947, the Secretary of the Interior issued The Columbia River, A Comprehensive Report on the Development of the Water Resources of the Columbia River Basin for Irrigation, Power Production and Other Beneficial Uses in Idaho, Montana, Nevada, Oregon, Utah, Washington and Wyoming. [6] The following quotation from this document outlines in stark terms just exactly the circumstances under which the Mitchell Act hatcheries were born:

"Construction of potential main stream dams will convert the Columbia and Lower Snake Rivers into a series of lakes. This, together with construction of additional dams on tributaries will create anadromous fish problems of such magnitude that, despite remedial measures growing from investigations listed above, runs to upper waters of the basin may be seriously depleted or even eliminated in entirety. Losses of such runs would be particularly serious because of the superior quality of the salmon migrating to and spawning in headwater streams and lakes. In the event that upper-river runs should be permanently reduced to small volume or eliminated, maintenance of the runs of anadromous fish in the Columbia River would depend principally or exclusively upon the tributaries of the lower river. Compensating increases of runs into those lower tributaries would require years to develop. Since some of the mainstem dams are now scheduled for early construction, immediate steps should be taken to carry out the proposal for the development of lower-river fishery resources.

"The development of the fisheries of the lower river is not proposed as a complete solution to the problem of fish maintenance in the Columbia, and in no sense is a substitute for maintaining the high-valued fish populations which spawn in the upper river. The proposal is in the nature of insurance to protect the fishery resources if, at some unpredictable time, fish-protective devices fail in their purpose…" [7]

The same document also proposed a detailed study and economic evaluation of the basin's fisheries, including commercial, sport, Indian fisheries and the offshore troll fishery extending from southeastern Alaska to northern California. [8] A special edition of The Bumble Bee in April of 1947 listed a coalition comprising the Oregon Fish Commission, Washington Dept. of Fisheries, Idaho Fish and Game Commission, Columbia River Salmon and Tuna Packers Ass'n., International Fishermen and Allied Workers of America, Washington Legislative Fisheries Interim Committee, Oregon Legislative Fisheries Interim Committee, Izaak Walton League of America, Oregon Division, Oregon Game Commission, Washington Dept. of Game, Columbia River Fishermen's Protective Union, Northwest Federation of Indians, Indian Tribal Council, Washington States Sports Council, Oregon Wild Life Federation and Mid-Columbia Fisheries Association, formed to pressure for consideration of the fishery resource in the face of continued development of the Columbia Basin, and for compensation for damage to the fishery resource.

In 1949 the U.S. Dept. of the Interior issued a special study, A Survey of the Columbia River and Its Tributaries with Special Reference to the Management of its Fishery Resources. [9] The Lower Columbia River Fishery Development Program became the vehicle for implementing the recommendations from the survey. Planning Reports were developed for a number of lower Columbia streams, including the Grays River and the Elochoman, which recommended hatchery facilities be developed and other fish enhancement efforts, such as controlling logging activities and pollution, be implemented. "In summation, the State will continue to manage in so far as possible the various factors as they effect (sic) the fish life produced by these streams to gain the maximum public benefit <u>in perpetuity</u> (emphasis added)." [10] The Planning Reports presented numbers regarding both the present and projected production of these facilities, along with costs and benefits resulting from increased production and harvest in various fisheries. [11]

It is quite clear from the documents cited that a major goal of the Mitchell Act from its inception was to develop production facilities that would mitigate the damage to the environment created by numerous activities, including logging, development, irrigation, gravel-mining, hydro-electric facilities, etc., and provide fish for harvest, specifically mentioning recreational, tribal and commercial harvest, both off-shore and inriver. It is also quite clear from the location of most of the hatcheries below Bonneville Dam that the environmental consequences of development of the upper Columbia, including fish passage, unscreened irrigation ditches and loss of mainstem spawning habitat were recognized at that time as major obstacles to healthy fish runs. It is also quite clear from numerous documents of the time that the Lower Columbia Development Program was recognized as not sufficient to replace what was being lost. The Bumble Bee, the house organ of the Columbia River Packers Association, expressed the view of the affected fishing industry: "The industry feels that the results of this proposed program…should be considered only moderate reparation for the damage already done to the resource by government built dams which have cut off thousands of miles of good salmon spawning area and destroyed many races of salmon which were once abundant in the river… The

'Lower River Plan' will be of great help and assistance in curtailing the losses occasioned by dams, but it cannot suffice to save the salmon resource as we know it today, if the great upriver spawning areas are lost through blockade or submersion in deep water." [12]

Further, as described by Michael Blumm and Lorraine Bodi, "This [the Lower Columbia Development Plan], unfortunately, produced unfair distributional consequences, as upper basin fishers, including Indian tribes and Idahoans, bore the brunt of the dam-related losses with little or no compensation for many years." [13] In 1951 the Oregon Fish Commission produced a document, The Indian Dip Net Fishery at Celilo Falls on the Columbia River, which evaluated the tribal subsistence and commercial fisheries in that locale, recognizing that "The Dalles Dam, when built, will eradicate the entire Indian fishery at Celilo Falls." [14] A fuller description of what occurred in tribal fisheries due to development of the Columbia Basin may be found in Cain Allen's article, "Replacing Salmon, Columbia River Indian Fishing Rights and the Geography of Fisheries Mitigation." [15] In 1956 Congress ordered that a program similar to the Lower Columbia River Fishery Development Program be extended above McNary Dam, as well as below it, and Idaho was included in 1957, at which time the word "Lower" was eliminated.

As the Secretary of the Interior's 1947 document stated, the Mitchell Act funded hatcheries as a form of "insurance" to protect fisheries resources in case of further damage due to the failure of "fish-protective devices." As was clear in the Planning Documents cited above, this public benefit was expected to continue "in perpetuity." Those public benefits, according to the various sources cited above, included tribal, commercial and recreational fisheries, both in-basin and coastal.

The early Mitchell-Act-funded hatchery programs were successful in turning around some of the dramatic declines in a number of native fish populations that were being experienced in the 1940s and 1950s. This is certainly the case with LCR coho, LCR tule fall Chinook, and LCR spring Chinook, among others. In 1957 the Big Creek Hatchery in Oregon was refurbished under the Mitchell Act, raising fall Chinook, coho, steelhead and cutthroat trout. According to its Operations Plan for 2010, "Big Creek Hatchery programs are harvest programs, used to mitigate for fishing and harvest opportunities lost due to habitat loss and migration blockage resulting from the Columbia Basin hydropower system."[16] In 1952, on Washington's Elochoman River, where splash dams and significant logging activity had extensively affected the watershed, "native stocks of fall chinook, once abundant, had been reduced to extreme lows, with coho also at low ebb." The Elochoman Hatchery, built in 1954 with Mitchell Act funds, in its first year of operation had only 13 fall Chinook salmon which "were checked at the racks in the lower river. All of these were males and no eggs were taken." By 1976 fall Chinook returns were 2,643; coho were up to 11,872 fish. Another Mitchell Act hatchery, the Washougal, completed in 1958 was put in place because "the Washougal was one of the first streams to have its salmon runs depleted by man-made obstruction, with power dams put in the river in early days… [it was] designed to rebuild the denuded runs of fall Chinook and coho salmon in the Washougal River and adjacent areas."[17] It should be noted that many of the gene pools from which it is hoped to rebuild naturally spawning ESA-listed

populations of Columbia River salmon such as LCR coho and tule fall Chinook, reside in these same Mitchell Act hatcheries today.

In 2005 a document entitled "Mitchell Act Hatchery Funding" was issued by the Idaho, Washington and Oregon Fish and Wildlife departments, U.S. Fish and Wildlife Service, and the Yakama, Nez Perce, Umatilla, Colville and Shoshone-Bannock tribes. The document outlined the scope of the Mitchell Act since the years of its inception and stated: "The program is a valuable resource in the protection of natural and hatchery produced fish. However, funding for the entire Mitchell Act program has not been sufficient to maintain the basic service level; maintenance of facilities has been deferred, facilities have been closed, facilities have shifted to non-Mitchell Act production and funding, funds have not been available for needed monitoring or assessment, construction of needed screens or fishways has not occurred, federally required mass marking programs, ESA related evaluation programs and the ability to respond to biological or social needs has not been possible." [18] The agencies stated that "A regional proposal is being advanced that uses the most recent scientific advice to manage Mitchell Act fish hatcheries in a genetically friendly, recovery oriented and sustainable manner." [19] They warned that "This must be accomplished without abandoning the federal responsibility to mitigate for populations depressed due to development since the latter part of the 19th century. The programs developed for the individual hatcheries will depend upon their locations, water supplies, facilities' designs, rearing conditions, and other factors relating to their capabilities. Some people refer to this as 'hatchery reform,' it may be better expressed as, 'Program assessment, improvement and alignment to address current needs and expectations of the program.'" [20] The agencies provided a list of different hatcheries and programs funded by the Mitchell Act at that time.

In 2010, the National Marine Fisheries Service issued a Draft Environmental Impact Statement "pursuant to NEPA to assess the environmental impacts associated with NOAA proceeding to develop a NMFS policy direction that will 1) guide NMFS distribution of Mitchell Act funds and 2) inform NMFS future review of individual Columbia River basin hatchery programs under the Endangered Species Act." [21] While the agency includes a discussion in the Executive Summary, entitled "What is the relationship between the ESA and the National Environmental Policy Act (NEPA)?" no corresponding discussion regarding the relationship between NEPA and the Mitchell Act is in evidence.

The Mitchell Act's original intent and purpose was that of addressing an environmental injustice by establishing a means for conservation of salmon coupled with mitigation for fisheries affected by development of the Columbia basin. The DEIS does not discuss this history or intent, nor even say much about the Mitchell Act and how it is implemented, except in regard to the Endangered Species Act. The DEIS also does not say much about the continuing environmental pressures occurring in the Columbia basin due to the ongoing development that was initiated in the 1930s and resulted in the passage of the Mitchell Act at that time. The circumstances that resulted in passage of the Mitchell Act have not gone away, and neither have the fisheries that depended upon the successful implementation of the Act. Indeed, it could be argued that the same circumstances that

resulted in passage of the Mitchell Act also contributed to the listings, in the late 20th and early 21st centuries, of a number of Columbia River salmon species under the Endangered Species Act.

Notes

1. Congressional Record, 83rd Congress, House of Representatives, May 2, 1938, p. 6075.

2. www.nwcouncil.org/history/MitchellAct.asp, accessed Sept. 6, 2010.

3. Oregon Fish Commission. Biennial Report of the Fish Commission of the State of Oregon. Salem, OR: State Printing Dept., 1945, p. 38.

4. Ibid., p. 41.

5. Neuberger, Richard. "The Great Salmon Mystery." The Saturday Evening Post, Sept. 13, 1941.

6. U.S. Secretary of the Interior. The Columbia River, A Comprehensive Report on the Development of the Water Resources of the Columbia River Basin for Irrigation, Power Production and Other Beneficial Uses in Idaho, Montana, Nevada, Oregon, Utah, Washington and Wyoming. Washington, DC: U.S. Dept. of the Interior, Feb. 1947.

7. Ibid., p. 380

8. Ibid., p. 380

9. Bryant, Floyd. A Survey of the Columbia River and Its Tributaries with Special Reference to the Management of its Fishery Resources: Washington Streams from the Mouth of the Columbia River to and including the Klickitat River (Area I). Washington, DC: U.S. Dept of the Interior, 1949, Special Scientific Report No. 62.

10. Washington Dept. of Fisheries, U.S. Fish and Wildlife Service. Lower Columbia River Fisheries Development Program Planning Reports, Grays River Area and Elokomin Area. Olympia, WA: August 1951. Grays River Report, p. 16.

11. See pp. 8-11 of the Grays River Planning Report, ibid.

12. The Bumble Bee, vol. 4, no. 8, Nov. 1949, p. 2. In April 1947, CRPA devoted an entire issue of The Bumble Bee to the issue of dams and fish.

13. Cone, Joseph and Sandy Ridlington. The Northwest Salmon Crisis, A Documentary History, Corvallis, OR: Oregon State University Press, 1996, p. 105.

14. Schoning, Robert, T.R. Merrell, Jr., and D.R. Johnson. The Indian Dip Net Fishery at Celilo Falls on the Columbia River. Portland, OR: Oregon Fish Commission, Nov. 1951, p. 32. Contribution No. 17.

15. Allen, Cain. "Replacing Salmon: Columbia River Indian Fishing Rights and the Geography of Fisheries Mitigation." Oregon Historical Quarterly, vol. 104, no. 2, Summer 2003, pp. 196-227.

16. Oregon Dept. of Fish and Wildlife, Big Creek Hatchery Operations Plan, 2010, p. 3. See also Columbia Basin Anadromous Propagation Hatchery Information, on the Columbia Basin Research website, http://www.cbr.washington.edu/dart/hatch/ accessed 9/21/2010.

17. Washington Dept. of Fisheries, Salmon and Salmon Hatcheries, Olympia, WA: Washington Dept. of Fisheries, Oct. 1978, pp. 37, 38, 49-50.

18. Idaho Dept. of Fish and Game, Oregon Dept. of Fish and Wildlife, Washington Dept. of Fish and Wildlife, U.S. Dept. of Fish and Wildlife, Confederated tribes and Bands of the Yakama Nation, Nez Perce Tribe, Confederated Tribes of the Umatilla Indian Reservation, Shoshone-Bannock Tribes of Fort Hall, Confederated Tribes of the Colville Reservation. Mitchell Act Hatchery Funding, A Proposal… for a Multi-Year Regional Approach to Management and Funding of Actions Authorized under Public Law 75-502, Mitchell Act. June 20, 2005, p. 1.

19. Ibid., p. 2.

20. Ibid., p. 2.

21. National Marine Fisheries Service. Draft Environmental Impact Statement to inform Columbia River Basin Hatchery Operations and the Funding of Mitchell Act Hatchery Programs. Silver Spring, MD: U.S. Dept. of Commerce, NMFS Northwest Region, 2010. Cover letter from Paul Doremus.

Irene Martin,
P.O. Box 83,
Skamokawa, Wa. 98647.
360-795-3920; imartin@iinet.com

Letter 29, Comment #23

Successful Applications of Advanced Fish Culture Technologies & Concepts

In sharp contrast to the assumption reflected in the Mitchell Act DEIS that hatchery and supplementation programs in the Columbia River basin are necessarily bad and need to be reduced or eliminated altogether, significant innovations in artificial propagation technology and concepts have been introduced by forward thinking hatchery managers in alternative production programs in several places in the Columbia River basin. Among the programs using such innovations are some that all the options embraced by the Mitchell Act DEIS propose should be eliminated, such as the Select Area Fishery Enhancement (SAFE) project cooperatively managed by the Oregon and Washington Departments of Fish & Wildlife and the Clatsop Fisheries program, with funding largely provided by the Bonneville Power Administration. Contrary to the dim view of the SAFE program in the DEIS, when the SAFE program was reviewed by the Hatchery Scientific Review Group (HSRG), it received a far different assessment:

> "Several white papers were prepared by the HSRG and included as an appendix to address topics relevant to hatchery reform and provide background, documentation, and explanations not included in the body of the HSRG's report. White Paper No. 1, Selective Fishing, authored by Stephen H. Smith uses the Select Area fisheries as an example of an effective selective commercial fishery. Later in this same document he recommends considering additional or expanded terminal fisheries to increase both harvest and conservation benefits.
>
> "Another white paper included in the appendix (White Paper No. 8, authored by Dr. Donald Campton) titled Outplanting and Net-Pen Release of Hatchery-Origin Fish recognizes that while 'outplanting and net-pen releases can pose significant genetic and ecological risks to naturally spawning populations, many of these programs support important tribal, commercial, and/or recreational fisheries. As a result, significant tradeoffs may be needed between the fishery benefits of such programs and the risks they pose to naturally spawning populations. Comprehensive assessments of the benefits and risks of each program, on a case-by-case basis, are necessary to understand the potential tradeoffs and make informed decisions.'"[1]

Among the innovations described in the SAFE 2007-2008 Annual Report is the successful testing and installation of Low Head Oxygenators (LHOs) at ODFW's Gnat Creek Hatchery, which produces spring Chinook for the Select Area program. For several years, SAFE hatchery managers had to cope with early release of spring Chinook smolts because of low water conditions at the Gnat Creek Hatchery, which led to intractable issues with diseases:

> "Like all Pacific Northwest coastal streams, Gnat Creek experiences its lowest flow period during the late summer/early fall. The low flow period that occurs during the months of August, September, and the first part of October has created a significant challenge for rearing fish there…

---

[1] Whisler, Geoffrey, et al. "Select Area Fishery Enhancement Project, FY 2007-08 Annual Report, October 2006 – September 2008," BPA Project # 199306000, US Dept. of Energy, Bonneville Power Administration, October 2009, p. 10. http://www.dfw.state.or.us/fish/OSCRP/CRM/reports/08_reports/SAFE_07_08AnnRept.pdf (accessed November 9, 2010).

> "In 2005, in an effort to alleviate this problem, staff at Gnat Creek Hatchery worked closely with staff at CCF to conduct a literature review into methods that may allow Gnat Creek to keep the spring Chinook at that facility during the annual low-water conditions. Oxygen supplementation appeared to show some promise. As Clark (2003) noted, 'Oxygen injection is an effective means of increasing dissolved oxygen concentrations, reducing effluent solids loading, and increasing raceway carrying capacity.'"[2]

Initial tests conducted in 2005 looked promising. Former Gnat Creek Hatchery manager Roger Warren and Tod Jones, retired manager of the Clatsop Fisheries program, applied to the Oregon Department of Fish and Wildlife's Restoration and Enhancement (R&E) Board for and received the funding for full implementation of LHOs at Gnat Creek:

> "During the summer/fall of 2007 subsequent installation of additional LHOs driven by OG20 oxygen concentrators demonstrated that spring Chinook pre-smolts can be held through the low-water periods. The 2006 brood pre-smolts were not transported to the estuary net pens during the low-water period and fish health was excellent.
>
> "The oxygen supplementation system was completed in the fall of 2008. The system is now fully operational for all fifteen raceways at Gnat Creek. The 2007 brood pre-smolts were again held at the hatchery through the low-water period. The expectation is for increased overall adult spring Chinook returns at all SAFE locations because the fish will no longer be transported to the net pens before the receiving water quality is optimal. This will significantly reduce the risk for disease-related mortality."[3]

The effect of the LHOs on Gnat Creek's production of spring Chinook for the SAFE program was dramatized by a huge upswing in landed catch during the 2010 Select Area spring season. The total landed catch in SAFE fisheries amounted to nearly 24,000 spring Chinook in 2010, compared to about 4,200 in 2009, and not quite 4,500 in 2008. This was achieved not by increasing production, but by raising healthier fish, releasing them at the proper time, doing so at night to decrease avian production, and staying within the program objectives:

1. "Progress toward project release goals (not necessarily hard numbers but general strategies for what is appropriate at each site)
2. Progress toward increasing harvest in Select Area fisheries
3. Progress toward improving smolt-to-adult survival rates (SARs)
4. Maintain low impact rates on adult ESA-listed salmonids from incidental harvest in Select Area fisheries
5. Minimize straying of adult fish produced by the SAFE Project
6. Monitor the contribution of Select Area commercial harvest to total non-Indian commercial harvest in the Columbia River Basin
7. Minimize the potential for competitive interaction of SAFE juveniles with wild salmonids migrating through the Columbia River Estuary
8. Minimize negative effects of Select Area production on the environment"[4]

---

2 Ibid, p. 13.
3 Ibid, p. 14.
4 Ibid, p. 6.

It is noteworthy that the SAFE program objectives bear a striking similarity to the overall recommendations of the HSRG:

> "…In February of 2009, the HSRG completed their Columbia River Hatchery Reform System-Wide Report. As stated in this report, the HSRG reached several critical, overarching 10 conclusions regarding areas where current hatchery and harvest practices need to be reformed. Fisheries managers should:
>
> - Manage hatchery broodstocks to achieve proper genetic integration with, or segregation from, natural populations;
> - Promote local adaptation of natural and hatchery populations;
> - Minimize adverse ecological interactions between hatchery-and natural-origin fish;
> - Minimize effects of hatchery facilities on the ecosystem in which they operate; and
> - Maximize the survival of hatchery fish and make the primary performance measure total adults produced per spawner rather than number of smolts released.
>
> "It is interesting to note that the last three conclusions they drew closely mirror the SAFE project's stated goals and objectives. The HSRG made seventeen specific system-wide recommendations as well as specific recommendations for each population. They were supportive of the Select Area fisheries concept as a means to utilize hatchery production in an efficient manner by concentrating adult returns in terminal areas where they can be subject to high harvest rates thereby maximizing fishery benefits and minimizing escapement to spawning areas. In fact they single out the SAFE project as a solution to their system-wide recommendation 9 (manage the harvest to achieve full use of hatchery-origin fish). They also recommend that the Select Area fisheries be an exception to their recommendation 10 (ensure all hatchery programs have self-sustaining broodstocks) since the project intent is to harvest all returning adults."[5]

In reviewing the 2007-2008 Annual Report on the Select Area Fishery Enhancement program, one comes to the inescapable conclusion that this is a well-managed and closely monitored program, which has undergone intensive scrutiny by multiple agencies. Funding requirements placed on the program by the Northwest Power and Conservation Council have included independent review and analysis by the Independent Scientific Review Panel (ISRP) and the Independent Economic Advisory Board (IEAB), as well as by the HSRG. Requirements put in place by the Oregon and Washington Departments of Fish & Wildlife have made this program, and the fishery which it serves, among the most closely monitored in the entire Columbia basin. Harvests are analyzed for stock and age composition, which verify that the intensive fishery in the Select Areas is not only ESA compliant, but its terminal fisheries operate with minimal impacts to listed stocks. In an era in which increasing importance is being placed on selectivity, SAFE commercial fisheries are arguably the most selective fisheries in the basin. Spawning ground surveys help to structure net pen placement and release timing that is adaptively managed to minimize straying, while maximizing homing of stocks released from the program. Telemetry studies have demonstrated that smolts released from the program quickly disperse offshore, limiting competition with naturally spawning stocks. Environmental monitoring reveals that the program is run with minimal degradation of water quality. The list goes on and on.

---

5 Ibid, pp. 9 & 10.

What the sum total of the analysis of the SAFE program shows is that this is a program that delivers a tremendous value for the local economy of a region hard hit by reductions in harvest opportunities in the Columbia River main stem due to ESA restrictions. And the value goes far beyond the fishing industry to affect the general welfare of the community. In recognition of this, the Lower Columbia River Conservation and Recovery Plan for Oregon Populations of Salmon & Steelhead approved by the Oregon Fish & Wildlife Commission in August 2010 specifically seeks to retain the SAFE program in the Youngs Bay and Big Creek watersheds in order to maintain the economic and social benefits of the Select Area fisheries.

One of the great benefits of the SAFE program is the degree to which it is a collaborative process built upon inter-agency cooperation. This includes educational outreach to the local school districts. Both Astoria High School and Warrenton High School maintain aquatic biology hatchery laboratories, which have proven to be effective training grounds for potential young fishery biologists. And the relationship between the SAFE program and the high school hatchery programs works both ways. The high school students offer a steady supply of eager young volunteers, and the SAFE program offers expertise and training. Retired hatchery manager Roger Warren and Clatsop Fisheries manager Tod Jones have contributed to dramatic improvements in the Warrenton High School aquatic biology hatchery laboratory in Warrenton, Oregon. After lapsing into non-existence for several years, the hatchery program at the high school was reorganized and restarted several years ago by young Henry Balensifer III, president and CEO of Warrenton High Fisheries, Inc. But, disease issues due to poor water quality from the water supply obtained in the tidally influenced Skipanon River hindered the success of the program. Balensifer has been quoted as saying, “Students affectionately call it alder tea.” The tea colored water has been a problem plaguing that program for years. Brainstorming with Roger Warren and Tod Jones, the group came up with a plan to run an enclosed hatchery system relying primarily on rain water as its source, and using slow sand filtration equipment and LHOs to ensure crystal clear water quality with high oxygen content. “It’s the first rain-powered hatchery in the state,” said Roger Warren.

Balensifer, who restarted the hatchery program as a sophomore, is now a Warrenton graduate enrolled at George Fox University. He continues as president and CEO of Warrenton High Fisheries, Inc. This year, he and his fellow students and Warrenton graduates applied for a grant from the ODFW R&E Board, and made an inspirational presentation to the review committee which landed them the funding to make the desired improvements to Warrenton High School’s aquatic biology hatchery lab: http://www.dailyastorian.com/main.asp?Search=1&ArticleID=72654&SectionID=2&SubSectionID=398&S=1 (accessed November 9, 2010). Also posted at the website of radio station KVAL: http://www.kval.com/news/tech/101198554.html.

In addition, Henry Balensifer and his mentor Tod Jones gave presentations at the 2009 ODFW Salmon Trout Enhancement Program (STEP) conference:

Eyed Egg Planting
Tod Jones, fisheries biologist, Clatsop Economic Development Council Fisheries Project
Message: A brief history and overview of various agencies using a variety of methods to plant fertilized salmon eggs in streams around the Pacific Rim. The discussion will include a comparison of the advantages and disadvantages of these methods, followed by a description of a new method and device that Mr. Jones invented to overcome past limitations. A backpack mounted egg planter will be on display during and after this presentation.

Passion and Perseverance
Henry A. Balensifer III, founder and CEO of Warrenton High Fisheries, Inc.
Message: How a 15 year old kid founds a non-profit and raises $485,000 in a town of 4,000 people. Talk will focus on community building, fundraising, and networking.[6]

The Astoria High School aquatic biology hatchery laboratory program run by teacher Lee Cain uses another innovation introduced by Tod Jones: a mist incubator box of the type designed by his colleague Brain Ashton in Alaska, who holds the patent on the device. The mist incubator operates using a small amount of water recycled, filtered, sterilized by ultraviolet light, and reused many times. The mist sprays from the top of the incubator through successive layers of incubator trays. By controlling the temperature of the water in time increments, the system can create a bar code on the otolith, which indelibly identifies the fish as coming from this laboratory program. Once developed to the eyed-egg stage, the hatchlings can be transferred to high school rearing ponds, or using the improved egg-implantation device mentioned above, outplanted to grow naturally in the gravel. One potential use for this technology would be to boost the numbers of naturally spawning late-returning coho stocks persisting in the Youngs Bay watershed. The Oregon Department of Fisheries deliberately replaced late coho stocks decades ago with early-returning coho stocks from glacially fed watersheds elsewhere in the basin. It was thought at the time that since early coho stocks tend to turn south along the coast of Oregon, they would be of more benefit to Oregon's economy. But a small remnant population of late coho still persists in the Lewis and Clark River, a tributary of Youngs Bay. Recovery of the naturally spawning population of late coho would take decades without some way to boost their survival and their numbers. It is thought that the mist incubator and egg-implantation process could perhaps accelerate that process dramatically. Smart use of advanced hatchery technology without actually raising the fish in the hatchery environs could be used to boost the odds of recovering natural spawning populations in areas such as Youngs Bay.

Another interface between hatchery technology and naturally spawning coho is highlighted in an article from the Vancouver *Columbian* for Thursday November 18, 2010: "Study gauges success of wild fish rescue." (Copy attached.) While volunteer coho rescuer Dave Brown extols the desirability of naturally spawning coho and believes they are a better way to propagate fish than provided by hatcheries, retired state biologist Lee Blankenship isn't so sure. "It won't replace hatcheries, in my opinion," Blankenship said. "You couldn't get to a large enough scale." The point is well-taken. Brown's rescue operation was necessitated by habitat degradation on Mill Creek, near Battleground, Washington, which required his intervention to put juvenile coho threatened with drying up in the creek into spring-fed holding ponds on his property in order for them to survive the dry season. The situation described in the article typifies habitat issues throughout the lower Columbia subbasin. It could be that the coho stocks returning to Mill Creek are of the wrong variety for that habitat to support, which could mean that they are in fact the product of hatchery coho on the natural spawning grounds, and probably are, whether they are early or late-returning coho. But it is also likely that the habitat is no longer completely viable for natural production to succeed without some form of human intervention to give the fish the assistance they need to survive.

Brown's rescue operation for Mill Creek coho is not the only place where low technology hatchery concepts are being used to aid salmonid survival, and restore naturally spawning populations. A

6 http://www.dfw.state.or.us/news/2009/august/082409b.asp (accessed November 9, 2010).

prime example is provided by the Sea Resources program in rural southwest Washington. Quoting from the Sea Resources website at www.searesources.org (accessed November 19, 2010):

> "Sea Resources is a nonprofit, community-based education and watershed restoration organization situated on the Chinook River in Southwestern Washington. It was originally established in the mid-60s by local fishing families and interested community members as a vocational program in fishery technology.
>
> "Currently, Sea Resources' program emphasizes watershed restoration and demonstrates how a community project can teach a variety of disciplines and skills necessary for salmon recovery. This is the core of its education program. It strives to improve student performance and understanding while improving the ecological processes of the Chinook watershed."

Sea Resources, located in Pacific County, which perennially ranks among the bottom tier of the counties in Washington in terms of per capita income, operates out of the oldest hatchery facility in the state of Washington. Established by Alfred Houchen in the late 19th century, the Chinook River hatchery now operated by Sea Resources at first blush does not look like a facility set up to implement advanced salmonid restoration activities. But appearances can be deceiving. In the 1990s, under the leadership of former executive director Brent Davies, now with EcoTrust in Portland, Sea Resources embarked upon a 100-year plan to restore the Chinook River watershed. The ambitious and far-thinking plan ran into stiff opposition from local landowners, who feared the effects of flooding should tidal influences be allowed to return to the Chinook valley. (The valley is predominantly diked-and-drained wetlands.) But a hundred years is a long time; steady progress has been made since the plan first was announced, including implementation of projects to protect local landowners from the return of tidal influence to the watershed. Recently, the Columbia River Estuary Taskforce (CREST) and Sea Resources announced that work would begin shortly to replace a culvert under US 101 near the tunnel under Fort Columbia State Park. When the highway was constructed, little thought was given placement of the culvert under the road. The culvert largely blocked tidal flow to the estuarine wetland between the highway and Scarborough Hill, and was placed too high for fish passage. Installation of a larger, fish-friendly culvert at the proper elevation will restore fish passage. And tidal influence will help the degraded habitat in the Sitka spruce wetland adjacent to the highway, which had been slowly dying for decades, return to its proper ecological function.

Departing from the normal hatchery paradigm, Sea Resources uses it hatchery facility as the repository of the gene pool for restoring natural production to the Chinook valley. An article in *Chinook Observer* of Long Beach, Washington dated Tuesday November 16 highlights the fish ladder recently constructed above the old hatchery ponds to allow natural spawning escapement into restored habitat above the hatchery. (Copy attached.) The hatchery facility now also boasts a nursery for raising native plant, shrub, and tree species, which are being used in the slow process of replacing non-native invasive plants. Snorkel surveys of the Chinook River have established that the restored habitat in the valley is not only being used by the tule fall Chinook, coho, and chum salmon reared by Sea Resources, but by stocks of all descriptions from every part of the Columbia River Basin. Restoring the Chinook watershed is of benefit to every salmonid species throughout the Columbia River Basin.

Similar technological and ecological leaps to those referred to above, including restoration efforts to return degraded habitat to a state of viability, are being used by the Columbia River

Inter-Tribal Fish Commission (CRITFC) biologists for the tribal supplementation program that has successfully reintroduced coho to the Yakima and Klickitat River watersheds (a Yakama Nation project) and the Snake River watershed (a Nez Perce Tribe project). CRITFC's supplementation projects, which all five of the options embraced by the Mitchell Act DEIS would undo, also have raised the abundance of Snake River fall Chinook dramatically. All the programs outlined above employ advanced fish culture technologies and concepts to improve the chances of recovering weak stocks, or in the case of reintroduction programs, stocks extirpated entirely. These programs exemplify what is positive about fish culture techniques when they are used in an enlightened manner. An article in the Columbia Basin Bulletin for Friday, November 19, 2010 gives further details of the tribal supplementation program, and outlines the scientific evidence for why the program has been successful. (Copy attached.) The presentation made by Yakama Nation biologist Bill Bosch to the Northwest Power and Conservation Council (NPCC) on November 9, 2010 directly counters the presentation made by Michael Ford of NOAA's Northwest Fisheries Science Center at the NPCC's September Meeting in Bend, Oregon. Bosch's presentation to the NPCC, along with the accompanying bibliography documenting the science behind the success of tribal supplementation programs, is appended.[7]

None of the recommendations embraced by the Mitchell Act DEIS would improve Mitchell Act hatcheries by bringing them up to 21st century standards. Perhaps it is time for NMFS to start thinking about improving Mitchell Act hatcheries, operating them more intelligently, and bringing them up to date. The conditions that prompted Congress to pass the Mitchell Act in 1938, and then expand it in the decades that followed have not disappeared. The need to mitigate for damage done in the Columbia River Basin by blocking passage and inundating mainstem spawning habitat remains.

SAFE Program Bibliography

BPA. "Lower Columbia River Terminal Fisheries Research Project: Final Environmental Assessment," Bonneville Power Administration. DOE/BP-2576 (Portland, 1995).

BPA. "Youngs Bay Salmon Rearing and Release Program: Final Environmental Assessment," Bonneville Power Administration. DOE/EA-0852 (Portland, 1993).

Clark, Michael L. and L.A. Helfrich. "Comparison of Water Quality and Rainbow Trout Production in Oxygenated and Aerated Raceways," North American Journal of Aquaculture, vol. 68 Issue 1, 2003, pp 41-46.

Eaton, Bob, et al. "Lower Columbia River Salmon Business Plan for Terminal Fisheries, Final Report," Bonneville Power Administration. DOE/BP-39254-1 (Portland, 1996).

Hill, J.M. and Olson, T. "Evaluation of a Low-Cost Salmon Production Facility, Annual Report 1988," Bonneville Power Administration, DOE/BP-11887-5 (Portland, 1988).

[7] http://www.nwcouncil.org/news/2010/11/1.pdf (accessed November 22, 2010).

Hirose, Paul, et al. "Columbia River: Select Area Fishery Evaluation Project, 1995–96 Annual Reports," Bonneville Power Administration (Portland, 1998).

HSRG (Hatchery Scientific Review Group) Columbia River Hatchery Reform System-Wide Report / February, 2009, and White Papers No. 1 and No. 8. http://www.hatcheryreform.us (accessed November 19, 2010).

ISRP. "Preliminary Review of FY 2007-09 Proposals for the Columbia River Basin Fish and Wildlife Program," Independent Scientific Review Panel, ISRP 2006-4, June 2006.

ISRP & IEAB. "Review of the Select Area Fishery Evaluation Project, 1993–2003 Final product Completion Report (J. North et al. June 2004) Project #1990-060-00." ISRP & IEAB 2005-8. March, 2005.

ISRP & IEAB. "Review of the Select Area Fishery Evaluation Project Reports: Final Completion Report, October 1993 to October 2005 (April 2006) and Economic Analysis Study (November 2006) Project #1993-060-00." Independent Scientific Review Panel and Independent Economic Advisory Board." ISRP & IEAB 2007-3. April 11, 2007.

Jenkins, K. "Washington Columbia River and Tributary Stream Survey Sampling Results, 2007, Columbia River Progress Report," WDFW, Vancouver, WA, 2008.

Jenkins, K. "Washington Columbia River and Tributary Stream Survey Sampling Results, 2006. Columbia River Progress Report," WDFW, Vancouver, WA, 2007.

Joint Columbia River Management Staff. "2007 Joint Staff Report: Stock Status and Fisheries for Fall Chinook Salmon. Coho Salmon, Chum Salmon, Summer Steelhead, and White Sturgeon," ODFW & WDFW, 2007.

Litton, Rod. Youngs Bay Benthic Invertebrate Study. Prepared for Oregon Department of Environmental Quality under Permit No. 101767, 2007.

Miller, Marc, et al. "Select Area Fishery Evaluation Project, 1997–2000 Annual Reports," Bonneville Power Administration (Portland, 2002).

North, John, et al. "Select Area Fishery Evaluation Project, 1993–2005 Final Report," Bonneville Power Administration (Portland, 2006). DOE/BP-00004121-1 http://www.dfw.state.or.us/fish/OSCRP/CRM/reports/06_reports/safe_final.pdf (accessed November 12, 2010).

ODFW. "1994 Youngs Bay Spring Chinook Fishery Fact Sheet & Recommendations," 1994.

ODFW. Project Proposal Request for FY 2007-2009 Funding (Revised Summer 2006): Proposal 199306000: Select Area Fisheries Enhancement Project.

Radtke, Hans, and Davis, Shannon. "Lower Columbia River/Youngs Bay Terminal Fisheries Expansion Project: Study of an Expanded Salmon Smolt Acclimation and Release Program in the Lower Columbia River/Youngs Bay Area." Salmon For All, January 1996.

Takata, Tanna T. "Oregon lower Columbia River Fall and Winter Chinook Spawning Ground Surveys, 1952-2006, Focus on 2006." Oregon Dept. of Fish & Wildlife, Columbia River Management, 2006.

Takata, Tanna T. "Oregon lower Columbia River Fall and Winter Chinook Spawning Ground Surveys, 1952-2007, Focus on 2007," Oregon Dept. of Fish & Wildlife, Columbia River Management, 2007.

Takata, Tanna T. "Oregon lower Columbia River Fall and Winter Chinook Spawning Ground Surveys, 1952-2008, Focus on 2008," Oregon Dept. of Fish & Wildlife Columbia River Management, 2008.

The Research Group. "Select Area Fishery Evaluation Project, Economic Analysis Study, Final Report." Prepared for Bonneville Power Administration, Washington Department of Fish and Wildlife, and Oregon Department of Fish and Wildlife. November 2006.

Vreeland, R. and R. Wahle. "Homing behavior and contribution to Columbia River fisheries of marked coho salmon, *Oncorhynchus kisutch*, released at two Columbia River locations." Fishery Bulletin Vol. 81, No. 1. 1983.

Vreeland, R.R. et al. "Homing behavior and contribution to Columbia River fisheries of marked coho salmon released at two locations." Fishery Bulletin U.S. 73:717–725.

Warren, Robert unpublished. "Emigration Rate of Net-pen Reared Spring Chinook Salmon from Youngs Bay, Oregon and an Investigation of the Relationship of Gill ATPase on Migratory Behavior, Draft Summary Report," prepared for Salmon For All. Cooperators: B. Ebberts, Portland District, U.S. Army Corps of Engineers; T. Jones, Clatsop Economic Development Council; C. Schreck, Oregon State University.

Whisler, Geoffrey, et al. "Select Area Fishery Evaluation Project, 2006 Annual Report," BPA Project #199306000, US Dept. of Energy, Bonneville Power Administration, Portland, Oregon, September 2006.

Whisler, Geoffrey, et al. "Select Area Fishery Enhancement Project, FY 2007-08 Annual Report, October 2006 – September 2008," BPA Project # 199306000,US Dept. of Energy, Bonneville Power Administration, October 2009. http://www.dfw.state.or.us/fish/OSCRP/CRM/reports/08_reports/SAFE_07_08AnnRept.pdf (accessed November 9, 2010).

Mitchell Act Comments, by Irene Martin, 9/11/2010

Environmental Justice, Section 4.4, pp. 4-159 through 4-174

#50

"This analysis of environmental justice effects is based on evaluating environmental justice communities and groups of concern," p. 4-161.Unfortunately, much of the documentation regarding many of those communities and groups was omitted from this section of the DEIS. We must add that since this portion of the document was not adequately foot-noted and there is no complete final bibliography, tracking sources for data, citations and statements is well-nigh impossible, and certainly doesn't meet acceptable academic or scientific standards. We strongly urge the agency to upgrade the quality of the document by providing its source material via notes and a standard bibliography, in order that the reader can verify the statements made.

#51

We note, for example, several works regarding tribal fisheries that should have been consulted for the DEIS, but cannot determine whether they were examined or not. These include: Meyer Resources, Inc., Tribal Circumstances and Impacts of the Lower Snake River Project on the Nez Perce, Yakama, Umatilla, Warm Springs and Shoshone Bannock Tribes (Portland, Ore., Columbia River Intertribal Fish Commission, April 1999), 2 vol., and Allan Scholz, et al., Compilation of Information on Salmon and Steelhead Total Run Size, Catch and Hydropower Related Losses in the Upper Columbia River Basin, above Grand Coulee Dam (Cheney, Wa.: Upper Columbia United Tribes Fisheries Center, Eastern Washington University, 1985). Both of these works express the magnitude of cultural dislocation and social issues regarding regarding tribal entities included in the DEIS, as well as human health issues noted on p. 3-97 of the DEIS as being a subject of mandatory concern under the EPA. We note also the absence of material from the Pacific States Marine Fisheries Commission, particularly their EFIN program. Their West Coast Charter Boat Survey Summary, as well as other documents, might have proven useful. In particular, the coastal community document produced by Jennifer Langdon-Pollock, West Coast Marine Fishing Community Descriptions (Portland, Ore., Pacific States Marine Fisheries Commission, 2004) contains baseline data and descriptions of fishing communities along the entire west coast and should have been consulted. We note on p. 3-98 that the DEIS states, "data are not available to determine the specific user groups and communities of concern that would be affected by EIS alternatives." In fact, such data may exist in PACFIN and/or RECFIN, and could also have been elicited by discussions with tribal and state fisheries agencies and the Pacific Fishery Management Council and North Pacific Fisheries Management Council, as well as various stakeholder groups. We also point out the numerous economic studies conducted in communities along the west coast by The Research Group's Dr. Hans Radtke, none of which are cited in the list of references for this section. However, a preliminary document by The Research Group, Economic and Social Analysis Sections prepared for the Mitchell Act EIS, dated 2009 (p. 6-11), is apparently the basis for the current document, although we been unable to locate a copy of it on the NMFS website. There are undoubtedly other documents that should have been included, but without proper notes or bibliography, trying to discern the formative documents for this section of the DEIS and verify the statements made in it is virtually impossible.

We have been unable to determine where the data came from to construct Tables 3-26, 3-27 and 3-28. Page 3-102 states that the thresholds were based on 2000 census data, but the U.S. Census is not listed in the References, Chapter Six. Further, upon checking the data with the U.S. Census of 2000, we must point out that the poverty levels given in Table 3-26, p. 3-103, differ considerably from those given in the 2000 Census. The following numbers are the actual numbers from the U.S. Census of 2000: Poverty rate for California 14.2%, not the 19.5% stated; poverty rate for Idaho 11.8%, not the 15.59% stated; poverty rate for Oregon, 11.6%, not the 14.69% stated, and poverty level for Washington, 10.6%, not the 17.69% stated. We also checked the 2006-2008 U.S. Census Bureau American Community Survey 3-Year Estimates, and found similar discrepancies. We also note that the per capita incomes for the respective states as evidenced by the actual U.S. Census data do not match with what is in Table 3-26. The comparison follows: California, actual Census, 22,711, DEIS 15,815; Idaho, actual Census 17,841, DEIS 13,990; Oregon, actual Census 20,940, DEIS 16,410; Washington actual Census 22,973, DEIS 15,829 Without some explanation of the source of the numbers used in the DEIS, or how they were calculated, we are unable to provide much in the way of useful comment on this part of environmental justice issues section. #52

This is a serious matter, as some communities and entire counties were omitted from table 3-28, p. 3-113, entitled "Summary of Environmental Justice Communities of Concern." These include Clatsop and Columbia Counties in Oregon, and Cowlitz, Wahkiakum and Pacific Counties in Washington. Of these counties, Clatsop, Wahkiakum, and Pacific Counties were analyzed regarding poverty issues in Irene Martin's study, A Social Snapshot of the Columbia River Gillnet Fishery, Astoria, Salmon For All, 2005, and also in "Resilience in Lower Columbia River Salmon Communities," in Ecology and Society, vol. 13, no. 2, 2008, Article 23. www.ecologyandsociety.org/vol13/iss2/art23/. The first-named also addressed human health issues, a requirement of the EPA as noted on p. 3-97. Further, a recent study on Astoria, Oregon, which the DEIS indicates on p. 3-111 has a poverty rate of 15.9%, was omitted. This publication, by Jennifer Langdon-Pollock, A Pilot Study in Two West Coast Marine Fishing Communities, Astoria and Newport, Oregon: Perspectives from Fishing Community Members. Portland, Ore., Pacific States Marine Fisheries Commission, contains useful information on two communities within the purview of the Mitchell Act DEIS and should have been examined. #53 #54 #55

It is impossible for us to ascertain from Table 3-28 why various counties were included, as the only number which is provided consistently for each of them is per capita income. Poverty rates have been provided for 13 out of the 35 counties listed, fewer than half, although these data are readily available. In 2000, Wahkiakum and Pacific and Clatsop counties all ranked in the lowest per capita income category of the U.S. census but have been omitted from this listing. It is also impossible to know what weight each of the categories in Table 3-28 was given in order to determine a community of concern, since no explanation is given as to how the table was drawn up. We would have assumed than a county or community with a per capita income in the lowest category of the U.S. Census of 2000 and/or a poverty rate above that of its state might be of some concern regarding environmental justice. A more useful table would have included many more counties with the correct rates in each category for each of them, and some idea of how the various #56

categories rank in terms of importance. It would also have been helpful to know whether the categories were left blank because there were no data, or whether there were other reasons for omitting data, such as poverty rates. All four states cited have county data derived from the U.S. Census that is readily available via the Internet. We cannot determine whether any of this data was consulted, or, if so, why so much of it was omitted with no reason given. #56

We would also have assumed that counties where fisheries are a major source of income, and where Mitchell-Act funded hatcheries exist, such as Wahkiakum, Pacific and Clatsop counties, would have been included and some analysis done as to the effect the Mitchell Act has had on the economies of these areas and what effect the redirection of Mitchell Act funding and policy changes might be expected to have. It seems to us that an Environmental Impact Statement regarding the Mitchell Act should address the community context in which the Mitchell Act has been a factor for over fifty years, particularly in the areas of socioeconomics and environmental justice. Further, the publication "Fishing Communities," available on the Pacific Fishery Management Council website, www.pcouncil.org, states: "As part of the NEPA process, both economic factors…and social factors (population dynamics, social institutions, environmental justice, cultural values, community identity, history, etc.) need to be addressed in environmental assessments and environmental impact statements." #57

We note NMFS own website describes criteria for community impact analysis and lists publications by Karma Norman, the agency's Northwest social scientist, who has developed community profiles for the west coast. These publications include Norman, K. C., J. A. Sepez, H. Lazrus, N. Milne, C. Package, S. Russell, K. Grant, R. Petersen Lewis, J. Primo, E. Springer, M. Styles, B. D. Tilt, I. Vaccaro. 2007. Community profiles for West Coast and North Pacific fisheries - Washington, Oregon, California, and other U.S. states. U.S. Dept. of Commerce, NOAA Tech. Memo., NMFS-NWFSC-85, 602 p. This publication might have been of assistance in identifying communities potentially affected in Alaska by the DEUS. We also recommend the following publication for your reference: Sepez, J. A., K. C. Norman, R. Felthoven. 2007. A Quantitative Model for Ranking and Selecting Communities Most Involved in Commercial Fisheries. National Association for the Practice of Anthropology Bulletin, (28)43-57. We do not understand why NMFS has not used its own documents in developing this portion of the DEIS, but they do not appear in the list of references. #58

On p. 3-97 the DEIS states that "EPA Guidance recommends that the environmental justice analysis also determine whether such populations or communities have been sufficiently involved in the decision-making process (EPA 1998)." While it is quite clear that many of the communities concerned have not been involved, it is particularly noteworthy that the Columbia River Intertribal Fish Commission does not appear to have been consulted, as their name does not appear in the list on p. 8-2. Since a number of the fishing-oriented counties, tribes and stakeholders with substantial economic, historical and cultural ties to fisheries (and fisheries supported by Mitchell Act hatcheries at that), have been ignored by the DEIS, we suggest a complete rewrite of this section of the DEIS with the opportunity for further comment and public input after additional research has been done. We do not believe that this section is ready for public review at this time. #59

#60

Mitchell Act DEIS Appendix I, "Draft Socioeconomics Resource Report Submitted by The Research Group to NMFS 2008," contains a number of indicators signaling its limited usefulness for review by any and all harvest community user groups partaking in Columbia River fisheries. The first is stated at the outset in footnote 1: "This draft resource report was submitted by The Research Group to NMFS in 2008. It was never completed or peer reviewed. It should not be considered a NMFS report or cited as NMFS data." This disclaimer, while duly noted, leads one to wonder why this Draft Socioeconomics Resource Report was included in the Draft Environmental Impact Statement in the first place. On the other hand, The Research Group, "Economic and Social Analysis Sections, prepared for the Mitchell Act DEIS," dated 2009, cited on p. 6-11 of the main body of the DEIS, which apparently formed the basis for many of the socioeconomic conclusions reached in the DEIS, was not included with this document, does not seem to be available on the NMFS website, nor does it seem to be available elsewhere, and thus is unavailable for public review. Considering that the alternatives outlined in the Mitchell Act DEIS are likely to pose substantial economic hardships for harvest community members, relevant and reliable economic analyses would seem to a reasonable person to be a prerequisite for putting out the DEIS for public review. Most harvest community members are not trained economists, but nearly all know how to read a balance sheet. One would think that peer review of the socioeconomics resource report by trained economists would have made the economic analysis provided therein considerably more trustworthy. The fact that the Socioeconomics Report was neither completed nor peer-reviewed does not inspire confidence in any analysis derived from it in the DEIS, nor the conclusions arrived at, nor does it meet acceptable academic or scientific standards. In fact, it fails to meet NOAA Fisheries' own policy regarding peer-reviewed science. On October 1, 2002, NOAA Fisheries adopted Information Quality Guidelines which required, among other actions, "peer review" of the agency's "highly influential scientific assessments."

#61

The Research Group (TRG) has an extensive professional background in fishery economics. However, the methodology used in this report appears largely to incorporate updating previous studies with more recent economic evaluations. Given the limited nature of the data that may be available on fishery economics for more recent years, this research strategy could possibly have its merits, but is more likely to lead to false assumptions, as is the case here. For instance, it is stated on Appendix I page 22 that "The harvest modeling for the commercial and recreational fisheries developed for the EIS were based on early 2000s production and exploitation rates." There seems to be no acknowledgement or recognition that Columbia River salmonid runs from 2000 to 2004 included some of the largest returns seen since dam counts began at Bonneville Dam in 1938. However, unlike previous surges in Columbia River salmonid abundance in the 1980s, the vast majority of returns in the early 2000s were hatchery fish, including those produced at Mitchell Act hatcheries.

#62

Contrasting with assumptions regarding harvest levels and exploitation rates, the calculations for Cost Per Harvestable Adult for Agency Release Strategy on Appendix I page 55 assume that average smolt-to-adult returns (SARs) are means from broodyears 1992-2001 That decade encompasses some of the lowest returns and ocean survival rates of the last fifty years, as well the beginning of the surge in the early years of the current century. On the other hand, hatchery surpluses are calculated using numbers from the decade 1998–2007. These are very technical subjects. Attempting to match up data from different decades could easily lead to false conclusions and incongruities in the analyses. It also risks introducing a large margin of error in the conclusions drawn from them. Furthermore, at no point in any of this is there any

#63

#63

acknowledgement of the fact that NMFS has been steadily ratcheting down exploitation rates for fall Chinook and coho in its annual guidance letters to the PFMC since 2001, which has had the effect of creating large unharvested surpluses of hatchery fish. Neither does there seem to be any recognition that with the listing of lower Columbia River coho under the ESA in 2005, and corresponding reductions in harvest, hatchery surpluses of coho have increased dramatically, since the majority of coho returning to the lower Columbia River are the result of artificial propagation efforts. Such discrepancies and the failure to recognize how developments during the past decade, including NMFS own harvest guidance letters, have changed the nature of fisheries dependent on Columbia River salmonids coast-wide, mean the socioeconomic resource report is of little value for any sector of the harvest community.

#64

On page 31, TRG confuses the nature of Columbia River fisheries by citing Gunnar Knapp's 2005 analysis of the competitive advantage farmed salmon holds relative to Alaska wild salmon, just as TRG did in its economic report on the Select Area Fisheries Enhancement program in 2006. Quoting Knapp's observation that "wild harvests must occur during a short summer run" while production of farmed salmon "can occur over many months year-round," TRG implies its relevance to Columbia River fisheries without noting the difference between the seasonal round on the Columbia River and those of wild salmon fisheries in Alaska. This calls into question the value of TRG's socioeconomic analysis of Columbia River fisheries. Alaska fisheries, especially those in Bristol Bay, are in fact compressed over a few short weeks during the summer. However, on the Columbia River there are fisheries for Chinook salmon during spring, summer and fall seasons, as well as for sockeye and coho. Recreational fisheries are open year-round under permanent regulations. While it is true that aquaculture-raised salmon have captured a huge percentage of the overall seafood market in the United States, there also is increasing consumer recognition of the nutritional drawbacks of farm-raised fish versus the high quality and nutritional value of wild and wild-caught salmon. Columbia River spring Chinook in particular enjoys a premium position in the marketplace due to its unsurpassed quality. Failure to recognize or acknowledge that fact, especially considering that non-Indian fisheries for spring Chinook, both recreational and commercial, are entirely mark-selective, is astounding in a study that purports to analyze socioeconomic values relative to proposed changes to Mitchell Act hatchery production. Without hatchery production, there would be no non-Indian fishery for spring Chinook, commercial or recreational, and obviously, no economic value in either case, in a fishery that is the highest value fishery in both the commercial and recreational sectors. Such difficulties make this report of questionable value to anyone.

#65

In combination with the failure of the catch modeling efforts in Appendix K to use the correct parameters for generating harvest projections, the economic analysis in Appendix I generates values divorced from realistic harvest expectations. As noted previously, coho harvest projections and values derived from them are unrealistic, given the ESA listing of lower Columbia coho. Coho numbers derived from 2005 and earlier have no meaning for 2006 and beyond. Analysis of Options 2–5 on Snake River fall Chinook indicate that the result of any of these options may in fact mean an end to in-river non-Indian fisheries for fall Chinook, both recreational and commercial. Under Options 2–4, Snake River fall Chinook releases would drop from the current production of 5.9 million fish to 330,000, and under Option 5 to 110,000. This basically guarantees that the adult returns to Lower Granite dam will be reduced from 15-25,000 with 2-3,000 natural origin fish to returns of probably no more than 5,000, with probably no more than 1,000 natural origin fish. If returns of natural origin Snake River fall Chinook drop to less than

2,000 at the mouth of the Columbia River, the in-river treaty harvest rate drops to 23% and the non-treaty harvest rate drops to 4%. If the river mouth return on natural origin fish drops to less than 1,000, then the in-river treaty harvest rate drops to 20% and the non-treaty harvest rate drops to 1.5%. A 1.5% harvest rate on URB's means basically no commercial mainstem fishing and no Chinook retention for the sport fishery in the mainstem from Buoy 10 on upstream. This effectively makes the values generated by TRG meaningless. #65

The potential economic damage to significant constituencies of Columbia River harvest communities posed by the recommendations made under Options 2–5 requires that the DEIS provide useful economic analyses for the various fisheries constituencies to review. The changes proposed by the Mitchell Act DEIS pose threats to fisheries basin-wide and coast-wide. Yet the socioeconomic information provided by NMFS relies on a non-peer-reviewed and incomplete study, or on a study unavailable for public review, whether or not it was peer-reviewed, and utilizes incorrect, outdated, and inaccurate data, drawing conclusions that are not supported by factual evidence. The socioeconomic information provided by NMFS is completely inadequate for fishing constituencies and the public to assess the very real threats to fisheries. #66

Mitchell Act DEIS Appendix K, "Chinook and Coho Salmon Modeling Approach for Application to the Mitchell Act EIS, by Lestelle and Morishima, July 2009, employs several mistaken assumptions to set up data throughput in the modeling scenarios. This brings into question the validity of the conclusions reached in that modeling exercise. Despite having submitted the report in July 2009, Lestelle and Morishima failed to address the changes reflected in the allocation formulae between Treaty Tribal and non-Indian fisheries in the 2008-2017 *US v. Oregon* Management Agreement, which was agreed to and signed by the parties to the negotiations fully a year before Lestelle and Morishima's report was submitted. Moreover, the requirement for catch-balancing between non-Indian and Treaty Tribal fisheries under the *US v. Oregon* Management Agreement is not reflected in the modeling approach used in the report. #67

Further, the allocation formula applied to the non-Indian recreational and commercial fisheries for spring Chinook used by Lestelle and Morishima was outdated by the time the report was submitted. The non-Indian allocation formula used in Appendix K is a 57/43 split between the recreational and commercial fisheries, which was true for the 2006 and 2007 seasons, but was outdated by 2008. In the advent of the spring Chinook fishery for 2009, the Washington and Oregon Fish & Wildlife Commissions adopted an abundance-based matrix utilizing the new allocation tables in the 2008-2017 *US v. Oregon* Management Agreement, together with ODFW's Willamette spring Chinook FMEP. However, the two Commissions could not reach agreement on the base allocation formula for the matrix. The Washington Commission adopted a base formula of 65/35, recreational vs. commercial, while the Oregon Commission originally adopted a base formula of 55/45, but later compromised to 60/40. The Washington Commission was unwilling to go along, which left fishery managers with little choice but to hold 5% of the allowable catch during the non-Indian fishery for spring Chinook in reserve. Under all scenarios in the matrix, the non-Indian commercial fishery shoulders a higher percentage of the conservation burden than the recreational fishery. The lower river gillnet fleet has part of its allocated catch held in reserve as a buffer against uncertainty in the pre-season forecast. The buffer is not available until the run-size update, which generally is around May 10. Actual run sizes were significantly lower than the pre-season forecasts both in 2009 and in 2010, as a result of which there was no mainstem commercial fishery after the run-size update in either year. #68

#69

Another mistaken assumption in Appendix K is reflected in the mortality rate adopted by the *US v. Oregon* Technical Advisory Committee (TAC) for the non-Indian mark-selective commercial tangle net fishery for spring Chinook. Preliminary data used by TAC to set the mortality rate for the tangle net fishery in 2003 reflected an 18% mortality rate for unmarked fish released by the commercial fleet. PIT tag data gathered in 2003 later showed that the mortality rate for the tangle net was lower than originally thought. TAC adopted a new mortality rate formula of 14.7% for the 2008 fishery, which is not reflected in Lestelle and Morishima's work. Further, Lestelle and Morishima's assumption that both the tangle net and the gillnet are used in the fishery is not likely to be true unless the commercial fishery fishes in early March, or in mid to late May, when big mesh gillnet would be the gear of choice to avoid unwanted bycatch of shad and steelhead. The assumption of an average mortality rate of 25% for the mark-select non-Indian commercial fishery for spring Chinook would only be plausible in years when there is a big-mesh gillnet fishery. In the years 2008–2010, for instance, the non-Indian mark-selective commercial fishery for spring Chinook exclusively used the tangle net. It is not reliable science to conflate the two mortality rates and determine an average mortality rate of 25%.

#70

#71

The data on coho numbers also come up with some puzzling conclusions. The data on Youngs Bay coho shows natural production of coho in Youngs Bay of over 4,000 fish under Option 1. However, a principle rationale behind the Youngs Bay Select Area coho program is that there is almost no natural production of coho in Youngs Bay. The original coho stocks native to Youngs Bay and other lower river estuarine tributaries were late-returning Type N coho, adapted to the habitat available in rain-fed coastal watersheds of the lower estuary. Those fish were deliberately eliminated decades ago by the Oregon Department of Fisheries in favor of early-returning Type S coho in many Oregon hatchery programs, under the rationale they would migrate south along the Oregon coast, thus benefiting Oregon's economy, instead of migrating north along the Washington coast, like Type N coho. Some natural production of Type N coho still persists in Youngs Bay, but it is minimal at most. Natural production certainly does not account for over 4,000 fish, nor would natural production be likely to increase to over 6,700 fish under Option 2. In order for production to increase in Youngs Bay, substantial improvements in natural habitat would have to be achieved, none of which are contemplated under Mitchell Act DEIS Option 2, nor in any of the other scenarios envisioned in the document. Another curious anomaly in Appendix K is that, according to the main body of the DEIS text, under Options 2–5, hatchery production of coho in Youngs Bay would be eliminated because of the risk of hatchery fish straying onto the natural spawning grounds. Yet in Appendix K, hatchery production of coho in Youngs Bay continues under Options 3–5, with no explanation for why this analysis differs from the main body of the DEIS. Since no sources for the data used in Appendix K are cited, it is difficult to discern whether the numbers have any validity. But there is sufficient reason to find the data on fish production suspect.

#72

#73

#74

It is worthwhile to note that ODFW's Conservation and Recovery Plan for Oregon Populations of Lower Columbia River Salmon and Steelhead specifically retains the Select Area Fisheries Enhancement (SAFE) program in Youngs Bay and in the vicinity of Big Creek in recognition of the social and economic benefits the SAFE fishery provides to the local economy. Based on the bibliography for the Oregon Conservation and Recovery Plan, concerns about excessive straying of SAFE coho in the Mitchell Act DEIS could possibly be attributable to Suring et al. 2006, "Lower Columbia River Coho Status Report 2002–2004: Population abundance, run timing, and hatchery influence," (OPSW-ODFW-2006-6), in which SAFE coho stocks from the South Fork

#74

Klaskanine, which intentionally were allowed to pass through to spawn on the natural spawning grounds, were misidentified in spawning surveys as hatchery strays. Clatsop Fisheries' South Fork hatchery was switching over from coho to spring Chinook production at the time. ODFW biologists instructed Clatsop Fisheries managers to let their early coho broodstock spawn naturally. Several thousand fish over a three-year time span went upstream to spawn. However, this resulted in almost no production whatsoever, because early-returning Type S coho are adapted to habitat in glacial and snowmelt-fed watersheds. That's not the type of habitat available in Youngs Bay. There are no glaciers in Clatsop and Columbia Counties in Oregon, or Pacific and Wahkiakum Counties in Washington. The fish noted in Suring et al. 2006 were not hatchery strays in the normal sense of the concept. Failure to cite the sources of data used throughout the Mitchell Act DEIS is a fatal flaw which makes it impossible to independently verify the data used, not only in harvest modeling, but also in the values to communities that will be impacted by the changes proposed for Mitchell Act hatchery production.

#75

#76

A curious anomaly inherent in modeling the proposals for Options 2–5 in the Mitchell Act DEIS is the assumption that if hatchery production is curtailed or "reformed," there will be an automatic increase in natural production. There seems to be no explanation or justification for this assumption, nor is there an outline of even the vaguest plan for restoring the natural habitat necessary for providing the kind of boost in natural production envisioned by the DEIS. The elimination of over half the original spawning habitat in the Columbia River basin by hydropower and other forms of development has not changed, nor is it likely to change. A large percentage of the habitat used by mainstem spawning fall Chinook is inundated behind federal hydropower dams. That is not likely to change either. A large percentage of the tributary habitats used by other salmonid stocks is altered, degraded, and diminished. That is not likely to change anytime soon either, nor is there any mention in any of the proposals for Options 2–5 of plans to restore the habitat necessary for increased natural production on the scale envisioned by the DEIS. So where are these fish going to come from, and how is it they are contemplated to appear? One wonders whether NMFS once again is resorting to what the 9th Circuit Court of Appeals deemed to be "analytical sleight of hand" in upholding Oregon District Court Judge James Redden's remand of the 2004 Federal Columbia River Power System Biological Opinion. Phantom fish will not contribute to recovery of the Columbia River's once great salmon runs.

#77

The more closely one examines the Mitchell Act DEIS, the clearer it becomes that this document was not ready for public review. Salmon For All wishes to join the rising chorus of fishery constituencies calling for NMFS to withdraw the Mitchell Act DEIS and to start over from the beginning with the kind of consultation with fishery constituencies and agencies that should have been pursued in the first place. It is clear that the Mitchell Act DEIS violates the spirit as well as the letter of the *US v. Oregon* Management Agreement, and abrogates federal treaty trust obligations. For non-Indian fisheries, both offshore and in-river, sport and commercial, Options 2–5 foretell fishery failures and looming bankruptcies. By setting up Options 4 and 5 as lower river vs. inland reform scenarios, the Mitchell Act DEIS unconscionably attempts to pit regional interests against each other, including tribal against non-Indian constituencies. We'll have none of it. The best solutions for Columbia River salmonid recovery are those that benefit everybody, not those that benefit some at the expense of others.

#78

#79

#80

Letter 29, Comment #41

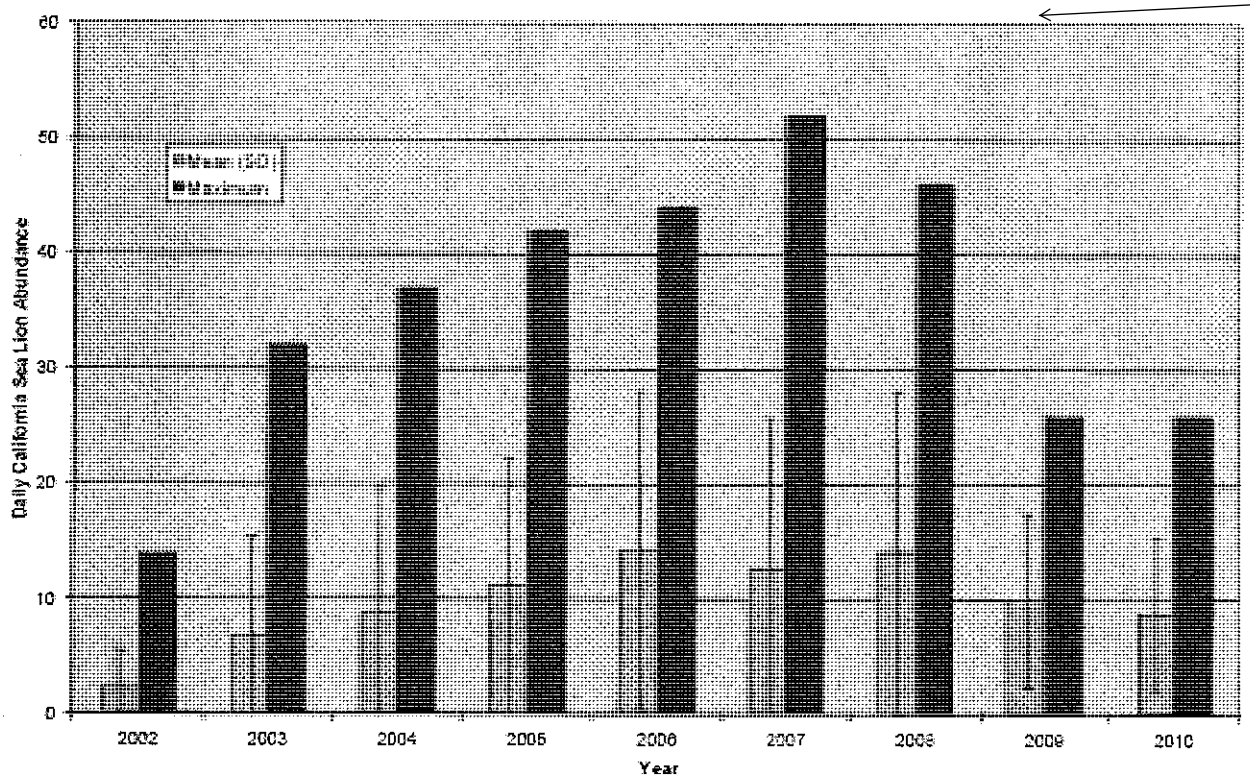


Figure 10. Mean (and SD) and maximum daily estimated number of California sea lions present at Bonneville Dam between January 1 and May 31, 2002-2010. USACE data.

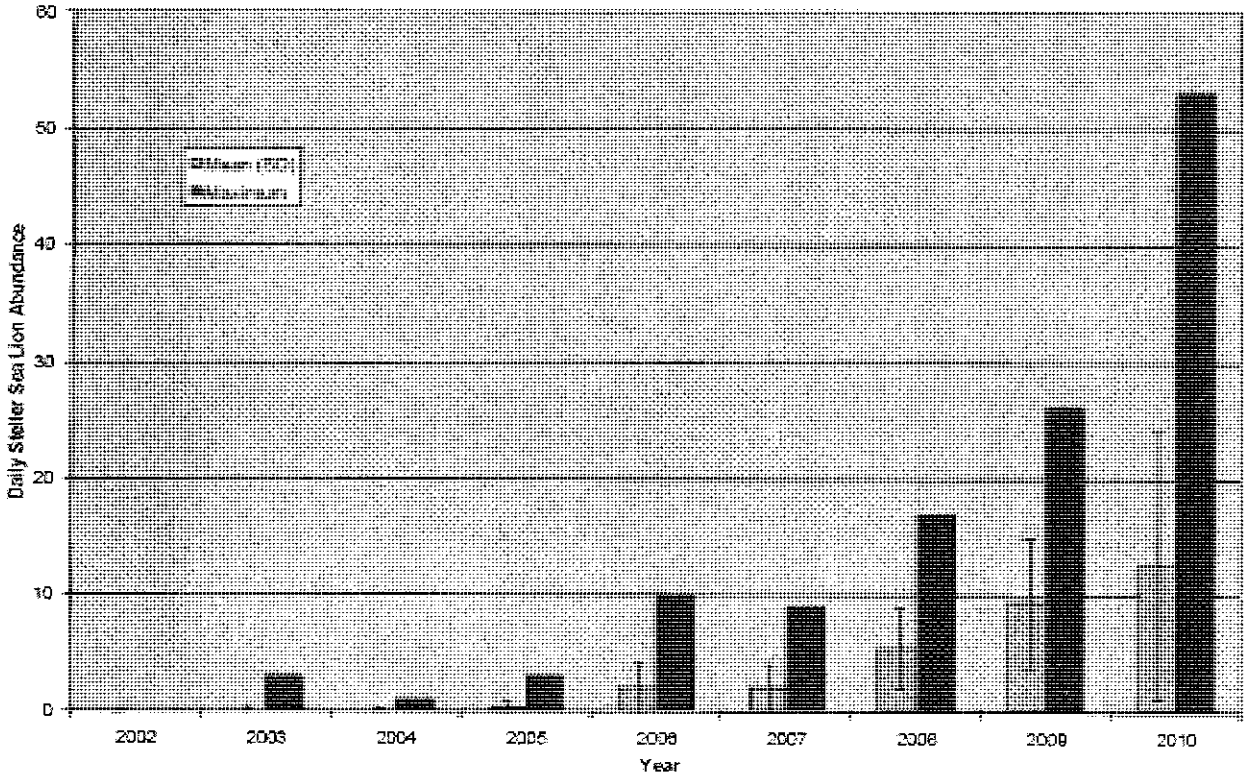


Figure 11. Mean (and SD) and maximum daily estimated number of Steller sea lions present at Bonneville Dam between January 1 and May 31, 2002-2010. USACE data.

Bruce A. Measure
Chair
Montana

Rhonda Whiting
Montana

W. Bill Booth
Idaho

James A. Yost
Idaho

Northwest Power and Conservation Council

Dick Wallace
Vice-Chair
Washington

Tom Karier
Washington

Melinda S. Eden
Oregon

Joan M. Dukes
Oregon

October 28, 2010

Letter 29, Comment #23

MEMORANDUM

TO: Council Members

FROM: Tony Grover

SUBJECT: **Columbia River Intertribal Fish Commission Presentation on Hatchery Science and Policy Developments**

Bill Bosch, Yakama Indian Nation, representing the Columbia River Inter-Tribal Fish Commission, will present empirical data in support of supplementation science. Paul Lumley, Executive Director, CRITFC, will discuss policy issues related to salmon and steelhead hatcheries. Both will share perspectives on current hatchery review processes now underway.

851 S.W. Sixth Avenue, Suite 1100
Portland, Oregon 97204-1348

Steve Crow
Executive Director

503-222-5161
800-452-5161

www.nwcouncil.org

Fax: 503-820-2370

Empirical Data in Support of Supplementation Science

Yakama Nation Fisheries
Columbia River Inter-Tribal Fish Commission

Bill Bosch – YN/YKFP

Regional Assessment of Supplementation Project (1992)

"Supplementation is the use of artificial propagation in an attempt to maintain or increase natural production while maintaining the long term fitness of the target population, and keeping the ecological and genetic impacts on nontarget populations within specified limits".

Purpose: Present Information Relevant to Three Questions

1. Can supplementation maintain or increase natural production?

2. Can supplementation hatcheries be managed to maintain the long-term fitness of wild/natural populations?

3. If there are negative hatchery effects, are they reversible?

Hatchery Programs are needed because:

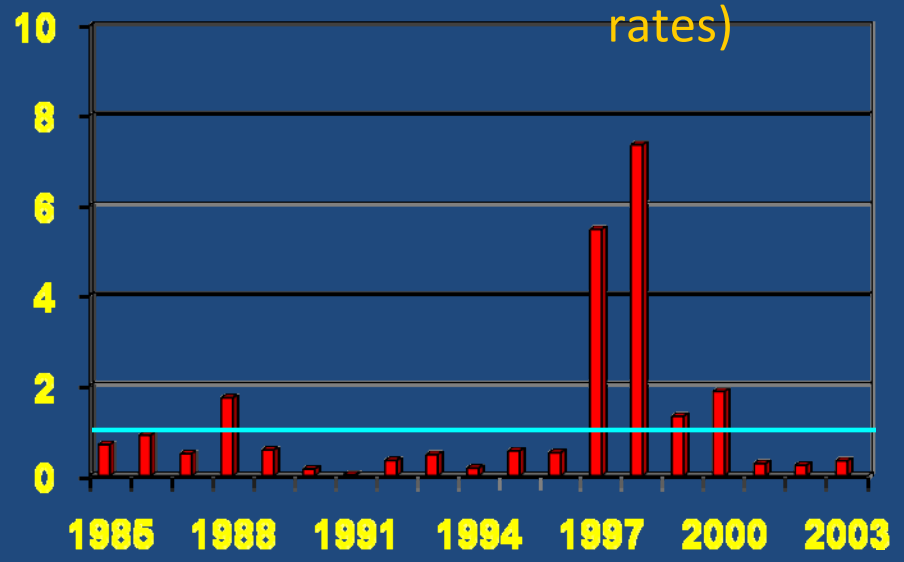
- 8 or more dams continue to diminish survival and limit passage to and from “usual and accustomed” fishing areas, and

- Population growth and incumbent development needs continue to put pressure on shared habitat and water resources

Meaning that …

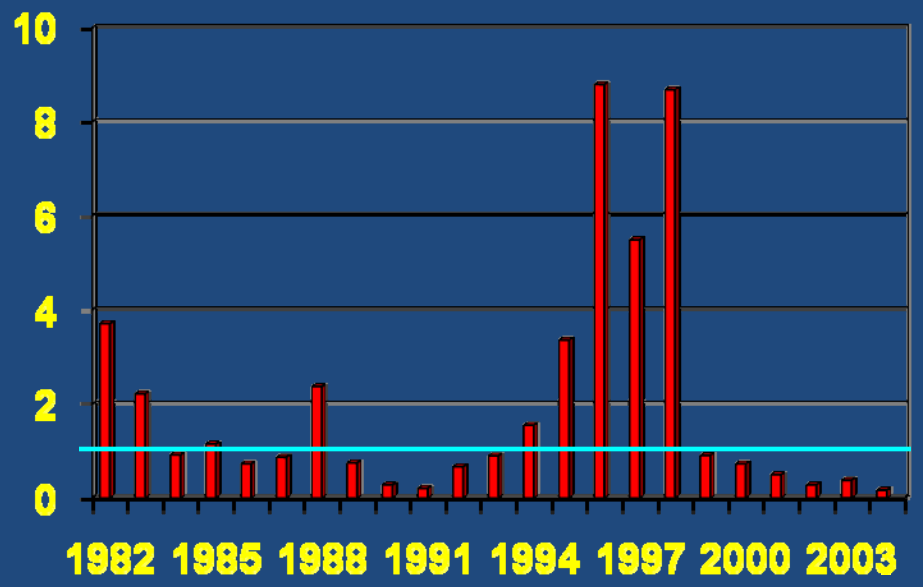
Natural-Origin Stocks are not Replacing Themselves

(Adult-to-Adult return rates)



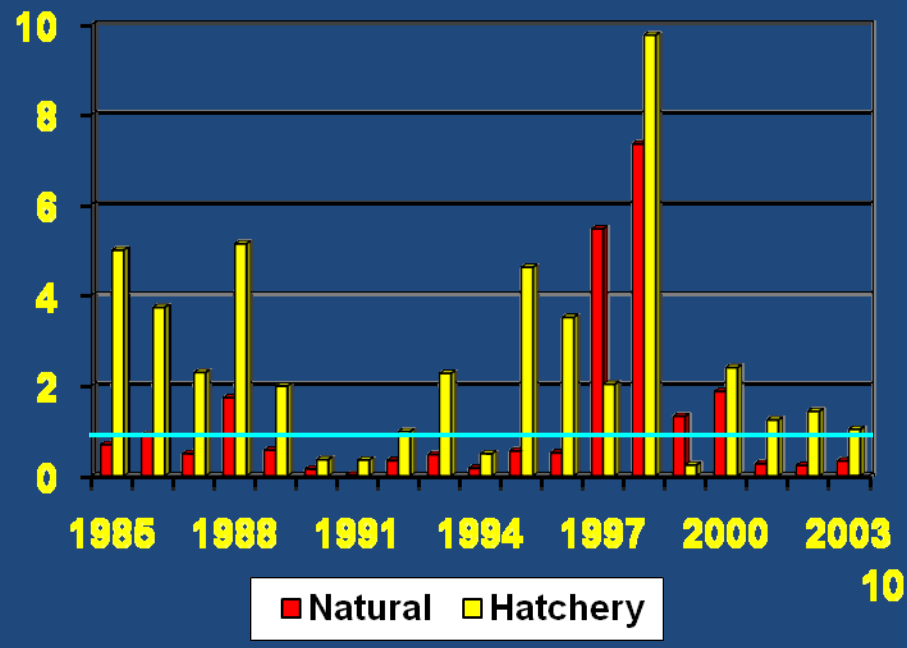
Tucannon River Sp. Chin.: 14 of 19 years at or below replacement

Yakima River Sp. Chin.: 15 of 23 years at or below replacement



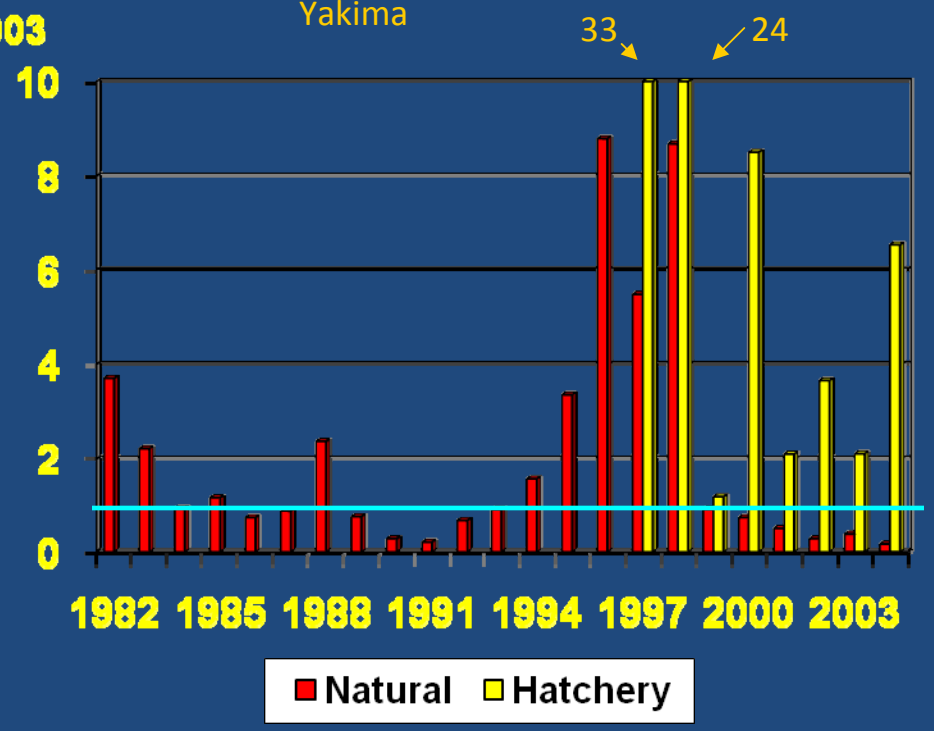
How do Hatchery Programs help?

Spring Chinook Return-per-Spawner Rates



Tucannon

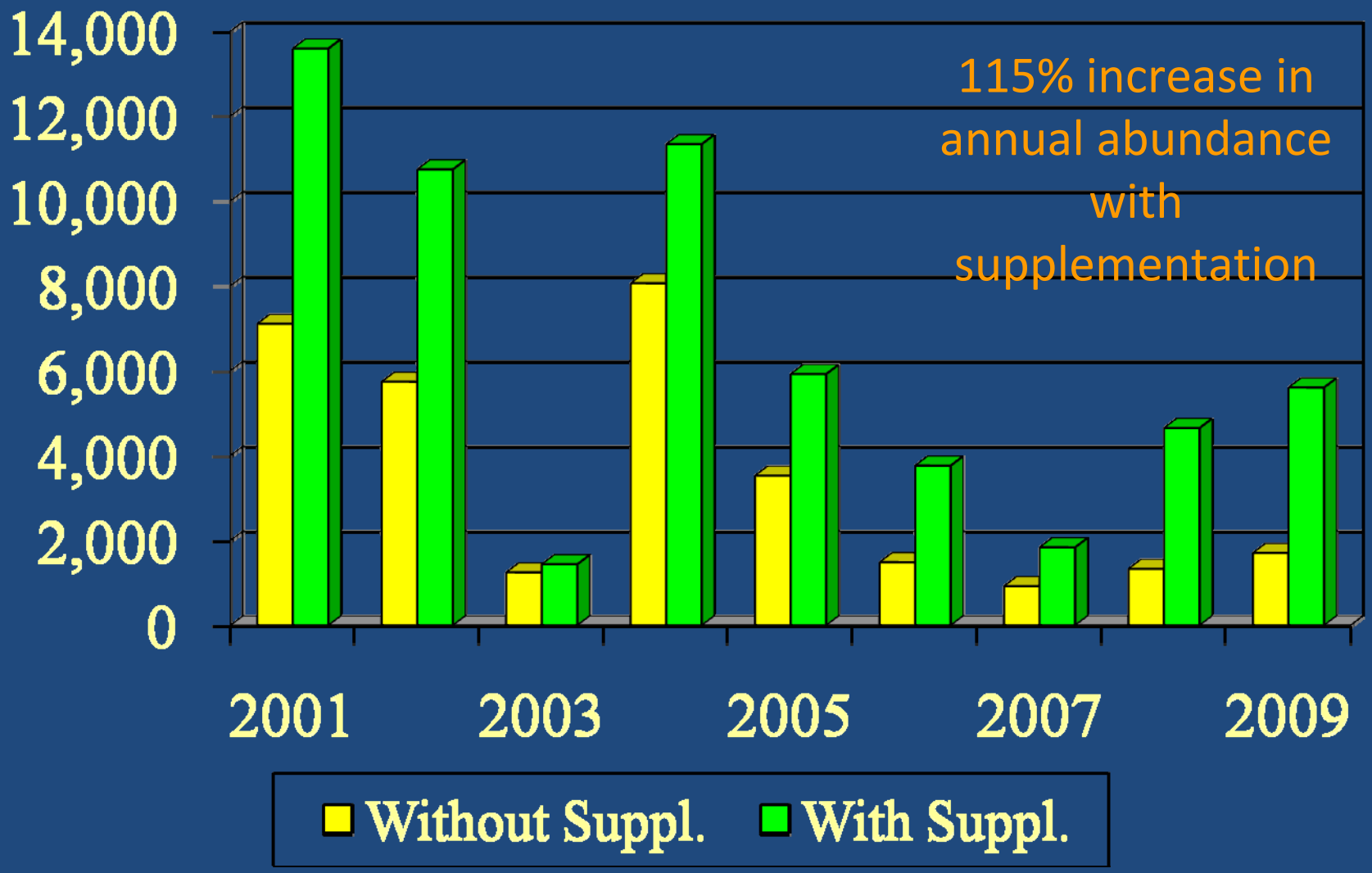
Yakima



"In many ways the hatchery program has helped conserve the natural population by returning adults to spawn in the river"

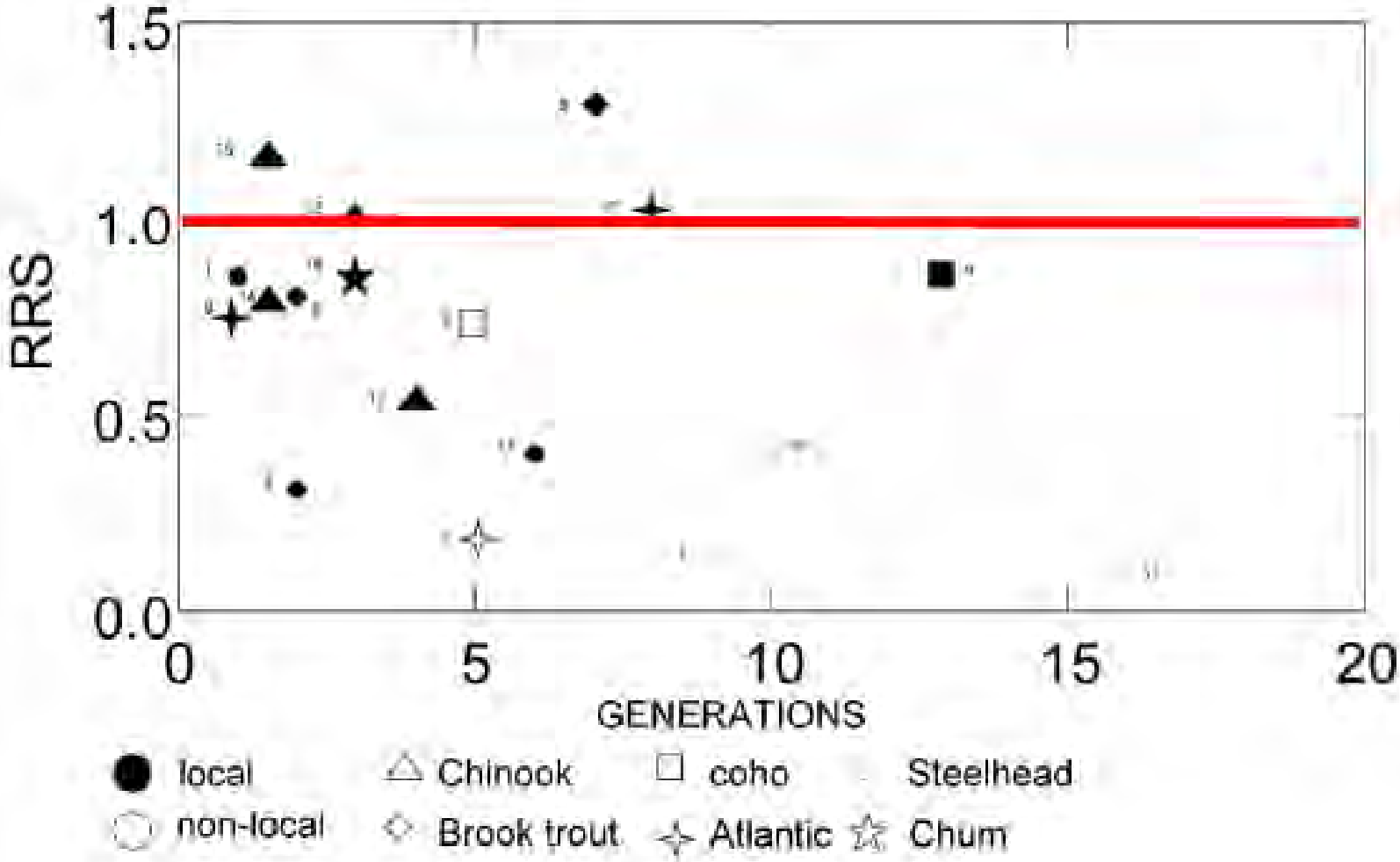
Gallinat and Ross, WDFW, 2007 Annual Report

Upper Yakima Spring Chinook
Age 4 Returns with and without Supplementation

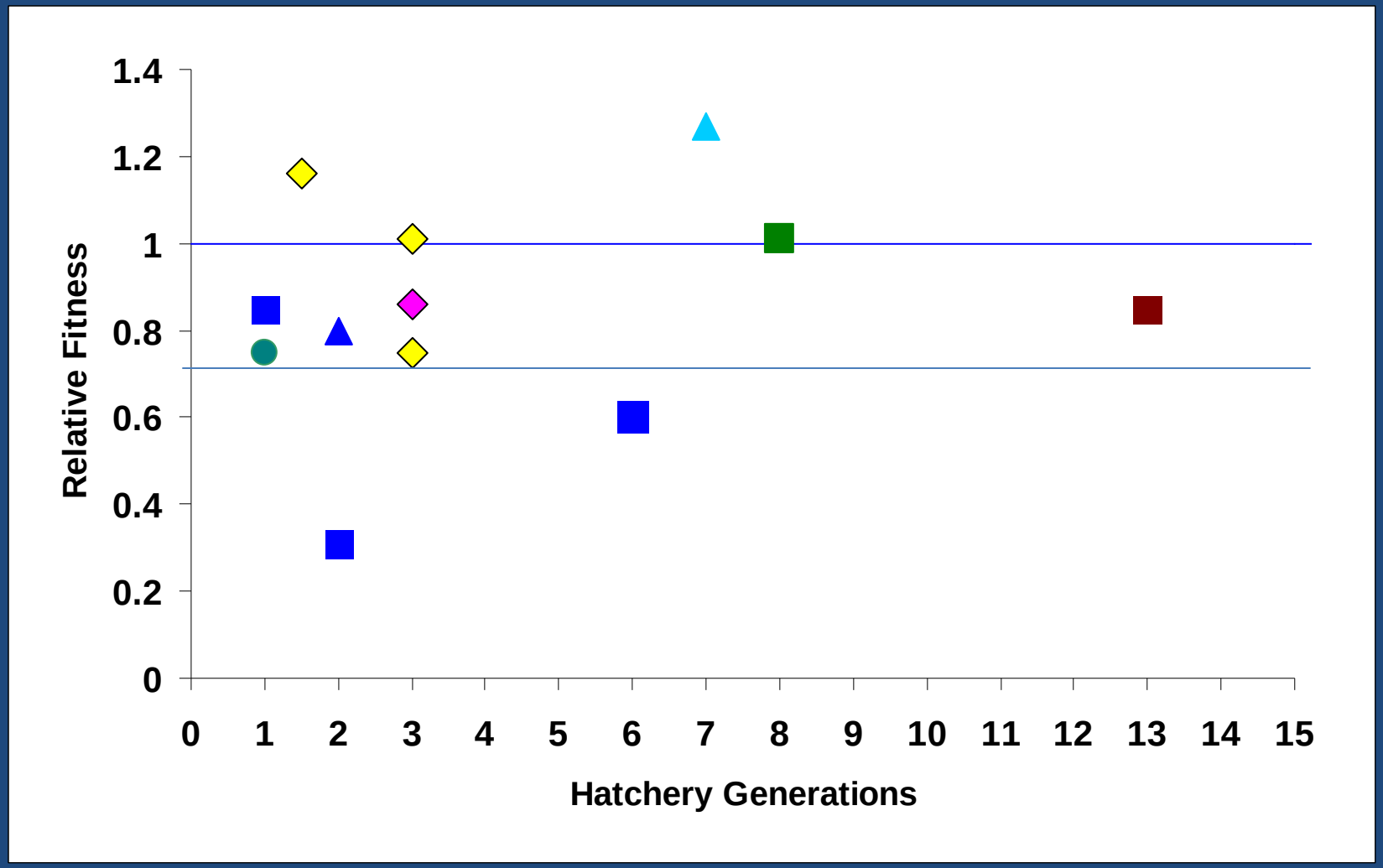


Emerging Trends in Hatchery-Origin Reproductive Success

How general is low hatchery fitness?



Evidence of Hatchery-Origin Reproductive Success: RRS Studies using locally derived brood sources



Colors and shapes denote different species and life stages

Competing Hypotheses: Ford et al. 2006

Smolt production 1940-1955: ~28,000

Smolt production 2002-2003: ~15,000-19,000

Hatchery effects

OR

Habitat effects?

Steelhead Study Issues: Mackey et al. 2001

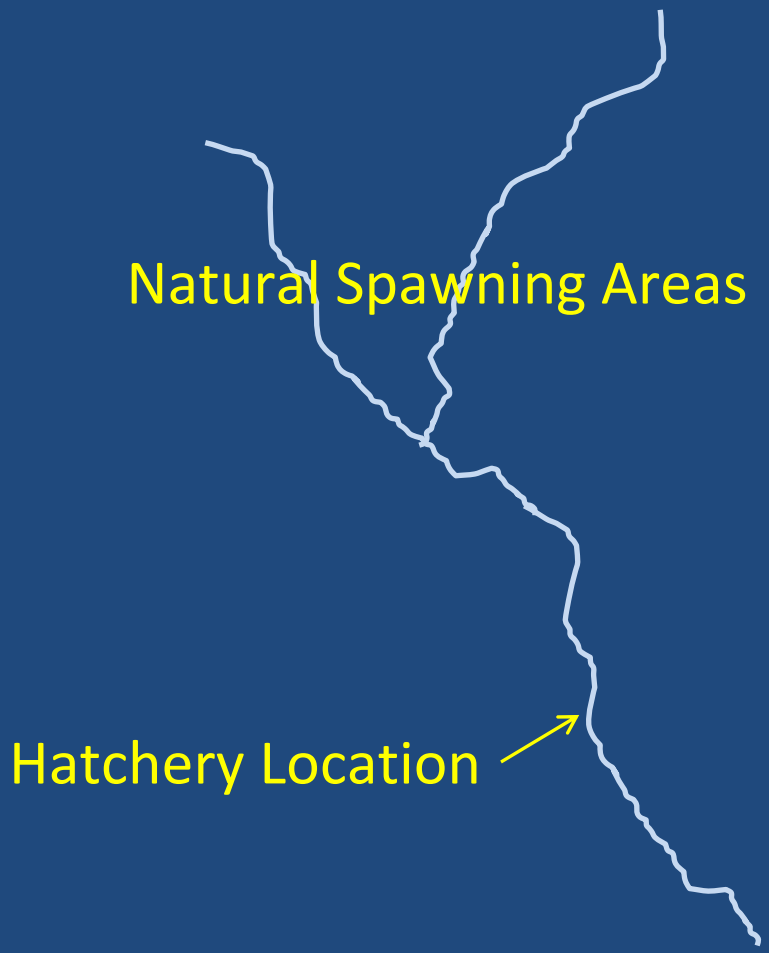
"In Washington State, the approach to management of wild and hatchery steelhead trout *Oncorhynchus mykiss* has been to separate the timing of return and spawning by the two groups through selective breeding for early timing in hatchery fish."

Other Steelhead Study Issues

- wild/natural fish migrate to sea after 1 to 3 years in freshwater
- nearly all steelhead hatcheries operate to produce age-1 smolts
- unique winter and summer populations
- inadvertent hatchery hybrids?

Other Study Issues

- rearing and release locations
- density dependence



Tribal Management Practices aka Hatchery Reform / Best Management Practices

- random, representative broodstock selection
- local broodstock
- use natural broodstock if possible
- factorial mating to maintain diversity
- low rearing densities
- underwater feeders and cover to encourage natural behavior
- intensive disease monitoring
- acclimation sites in natural spawning areas
- state-of-the-art marking strategies for M&E
- test different rearing/release strategies to increase survival

Behavior and Breeding Success of Wild and First-Generation Hatchery Male Spring Chinook Salmon Spawning in an Artificial Stream

S.L. Schroder, C.M. Knudsen, T.N. Pearsons, T.W. Kassler, S.F. Young, E.P. Beall and D.E. Fast

Transactions of the American Fisheries Society, 139:989-1003

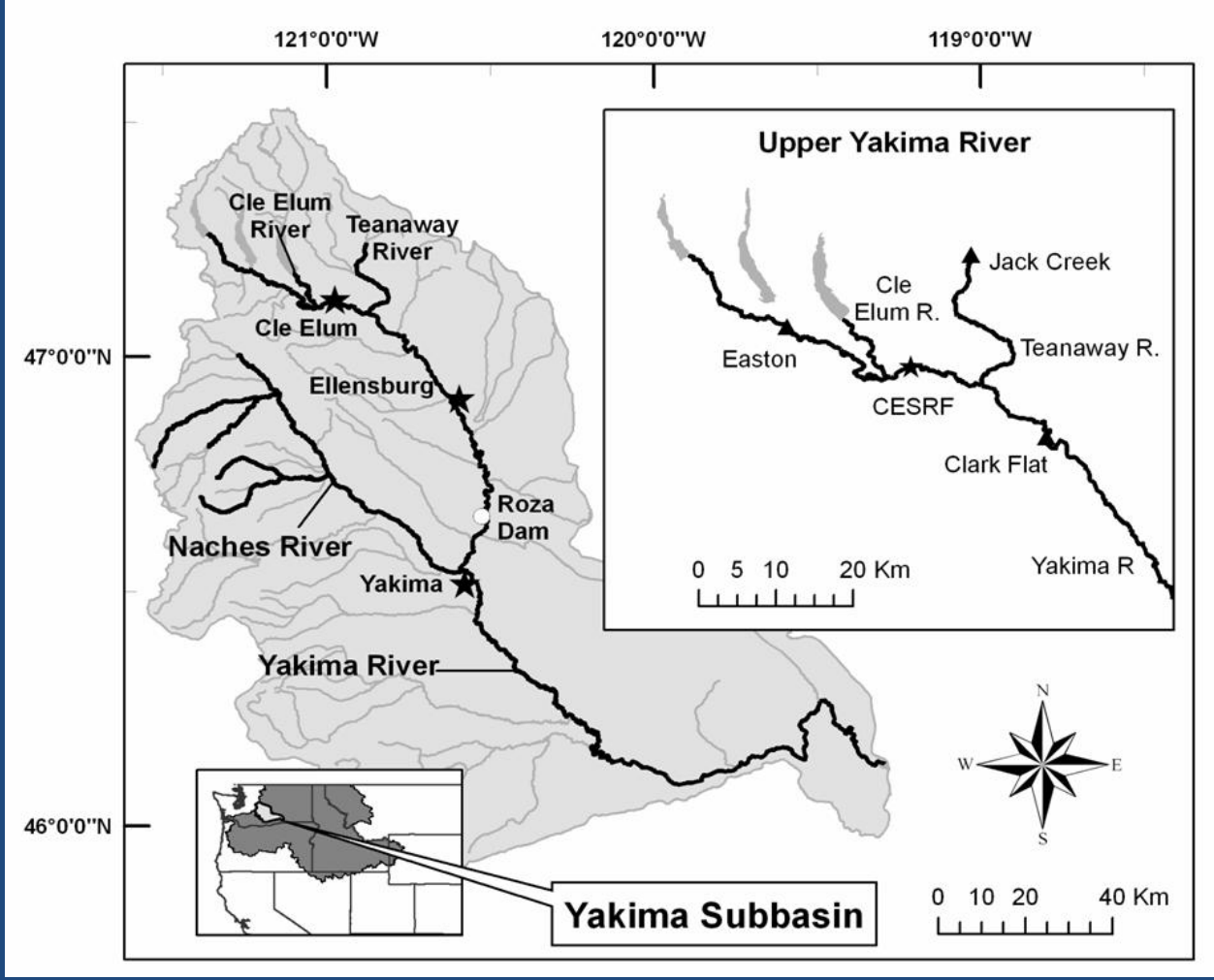
"Pedigree analyses based on DNA showed that hatchery and wild males had comparable breeding success values."

Breeding Success of Wild and First-Generation Hatchery Female Spring Chinook Salmon Spawning in an Artificial Stream

S.L. Schroder, C.M. Knudsen, T.N. Pearsons, T.W. Kassler, S.F. Young, C.A. Busack, and D.E. Fast

Transactions of the American Fisheries Society, 137:1475-1489

"No differences were detected in the egg deposition rates of wild and hatchery females. Pedigree assignments based on microsatellite DNA, however, showed that the eggs deposited by wild females survived to the fry stage at a 5.6% higher rate than those spawned by hatchery females."



1st Brood

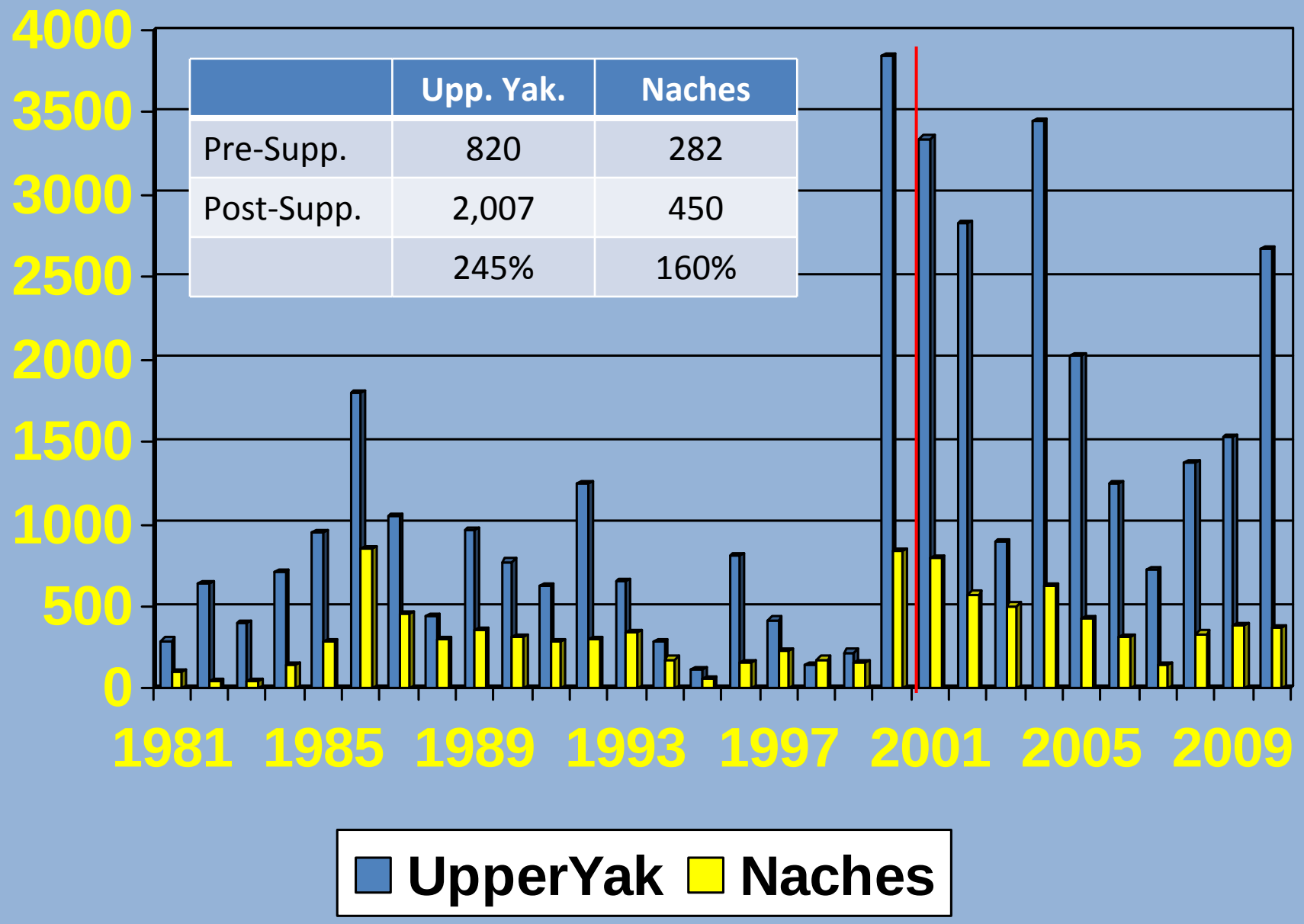
Integrated HxW spawning in the wild

Integrated F1 progeny return

Integrated F2 progeny return

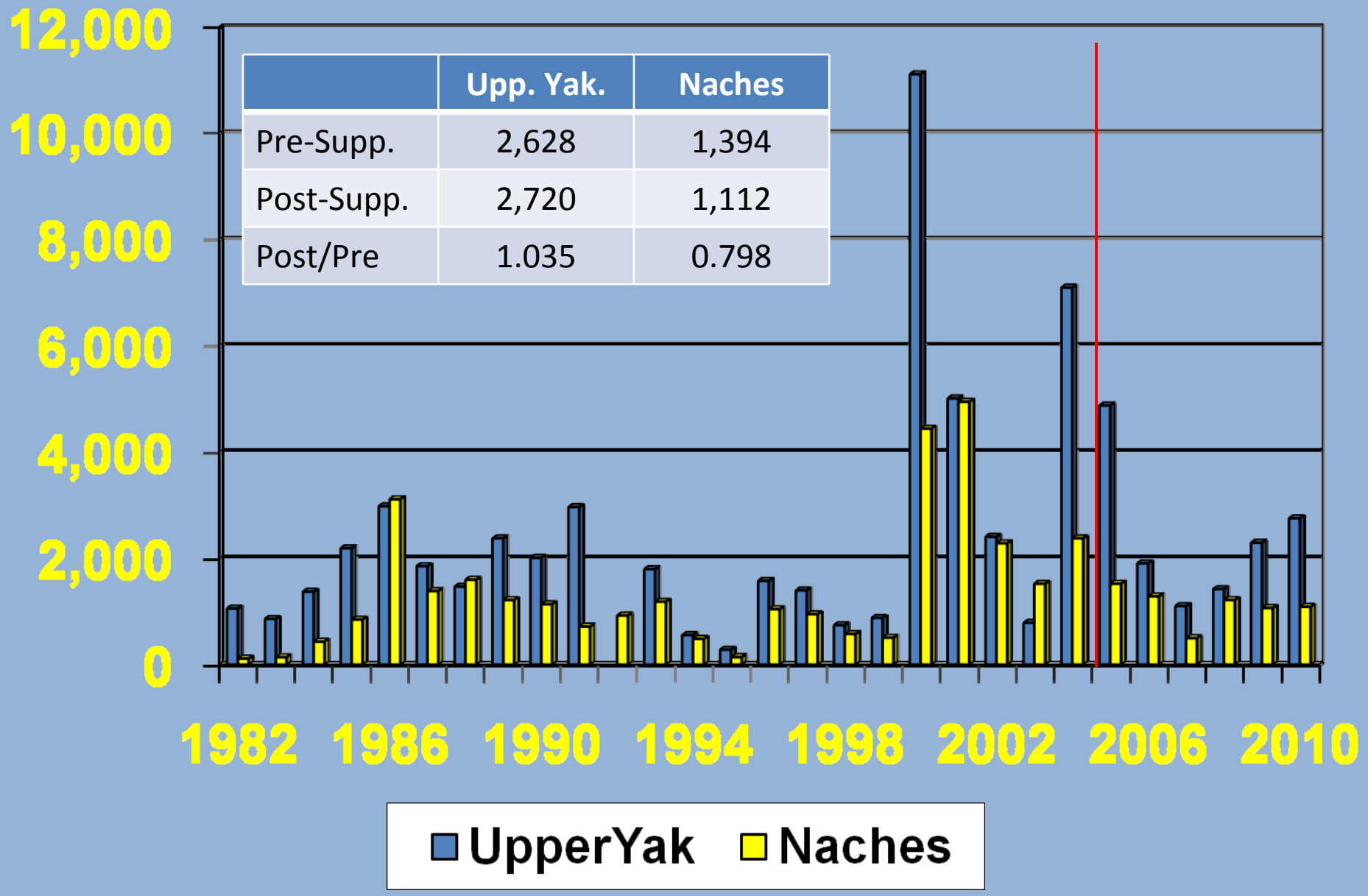
1997 2001 2005 2009 2013

Upper Yakima vs Naches Redds, 1981-2010



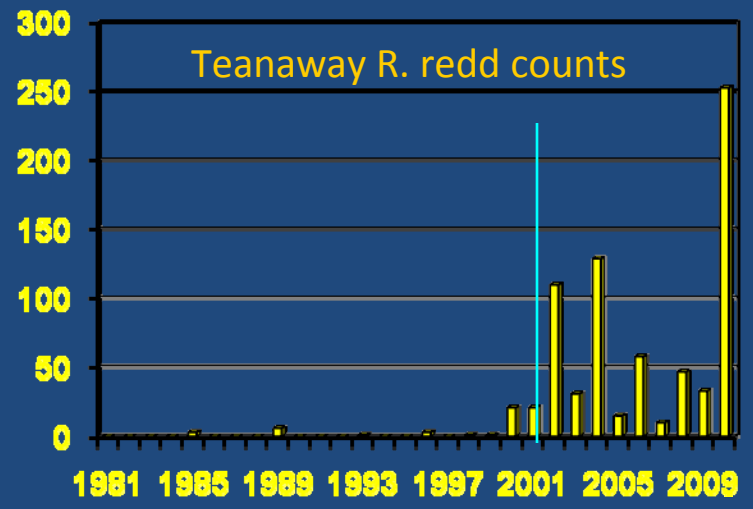
	Upp. Yak.	Naches
Pre-Supp.	820	282
Post-Supp.	2,007	450
	245%	160%

Upper Yakima vs Naches Natural-Origin Returns, 1982-2010



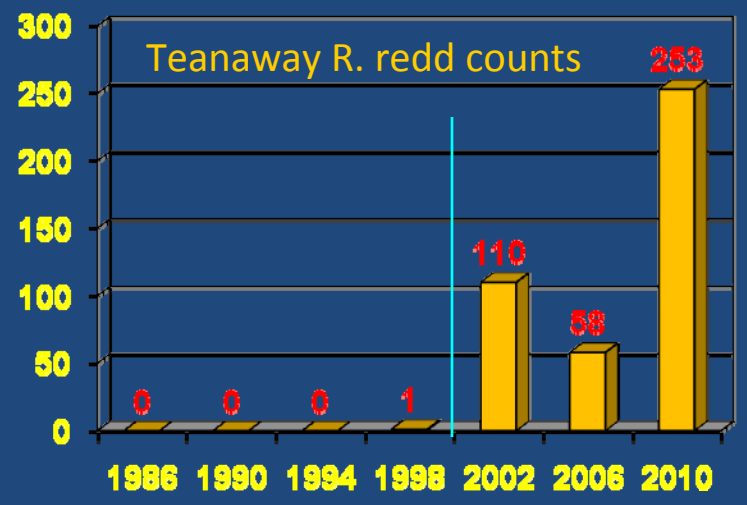
	Upp. Yak.	Naches
Pre-Supp.	2,628	1,394
Post-Supp.	2,720	1,112
Post/Pre	1.035	0.798

Evidence of Hatchery-Origin Reproductive Success: Teanaway R. Spring Chinook



- pre-supplementation average: 3
- post-supplementation average: 76

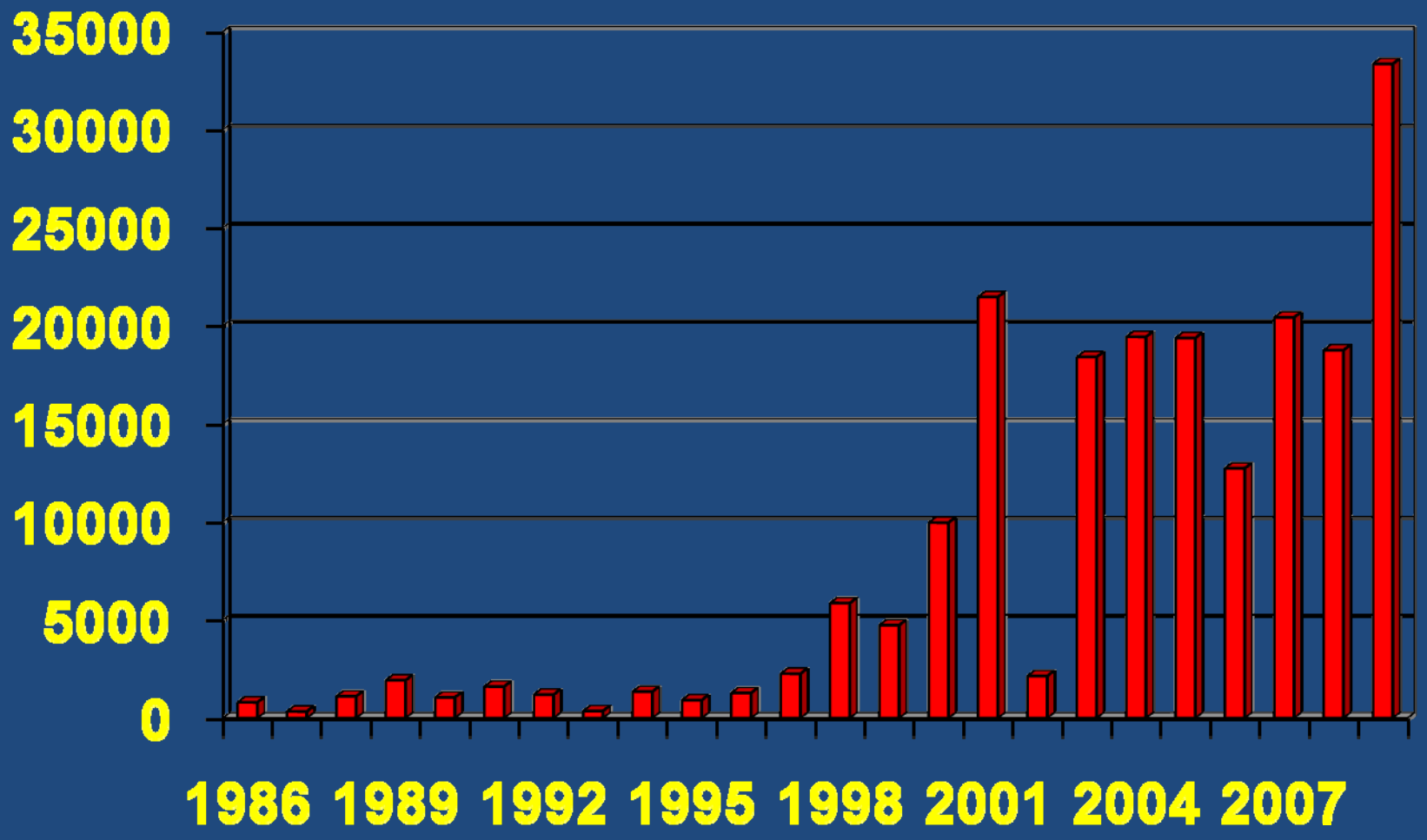
Let's look at one 4-year brood cycle:



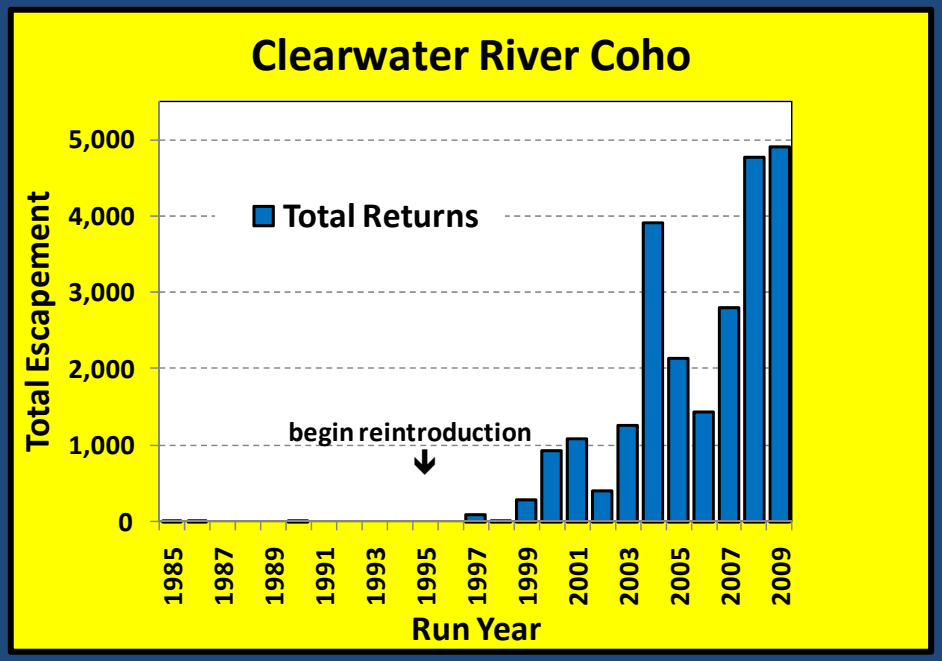
- 1st HO returns in 2002
- 17-fold increase in % of NO carcasses from 2002 to 2006
- Parents were NO, progeny are NO

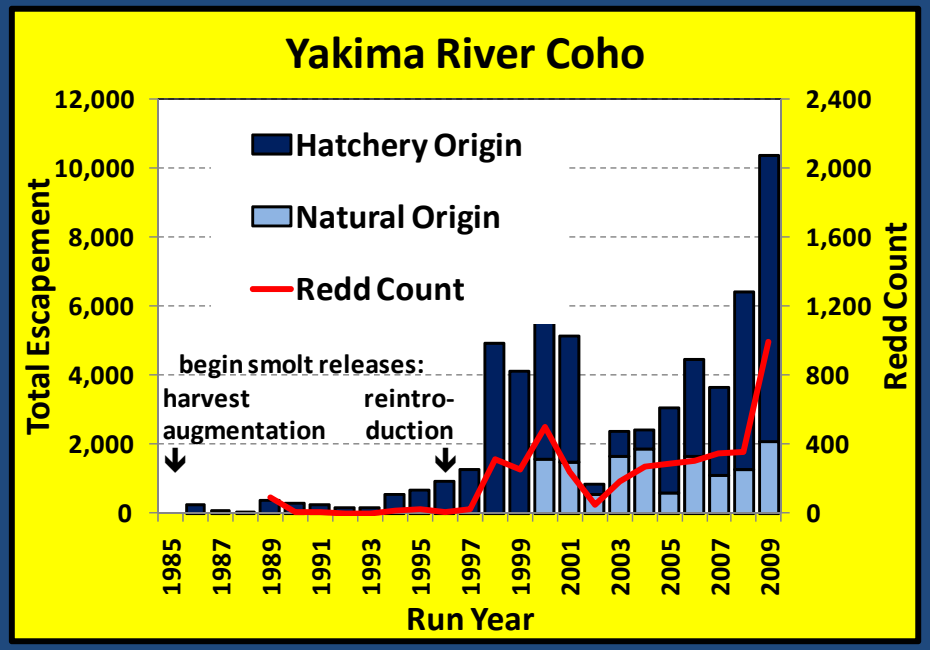
McNary Dam Adult Coho Counts, 1986-2009

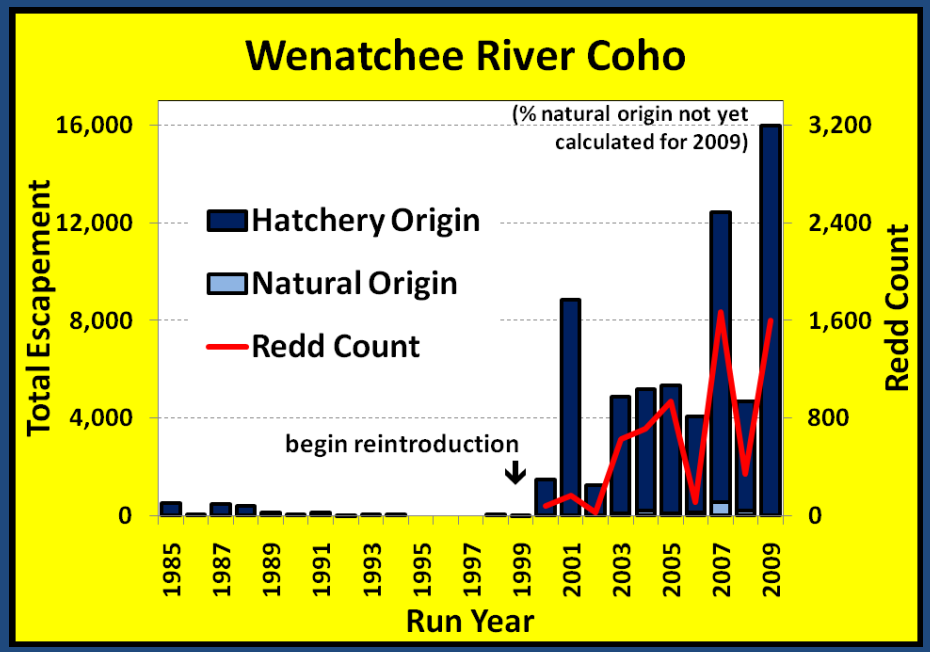
Includes fish destined to Yakima, Snake, and Upper Columbia



Tribal Coho Reintroduction







Evaluating the Feasibility of Reestablishing a Coho Salmon Population in the Yakima River, Washington

W.J. Bosch, T.H. Newsome, J.L. Dunnigan,
J.D. Hubble, D. Neeley, D.T. Lind, D.E. Fast, L.L. Lamebull, and J.W. Blodgett

North American Journal of Fisheries Management 27:198-214

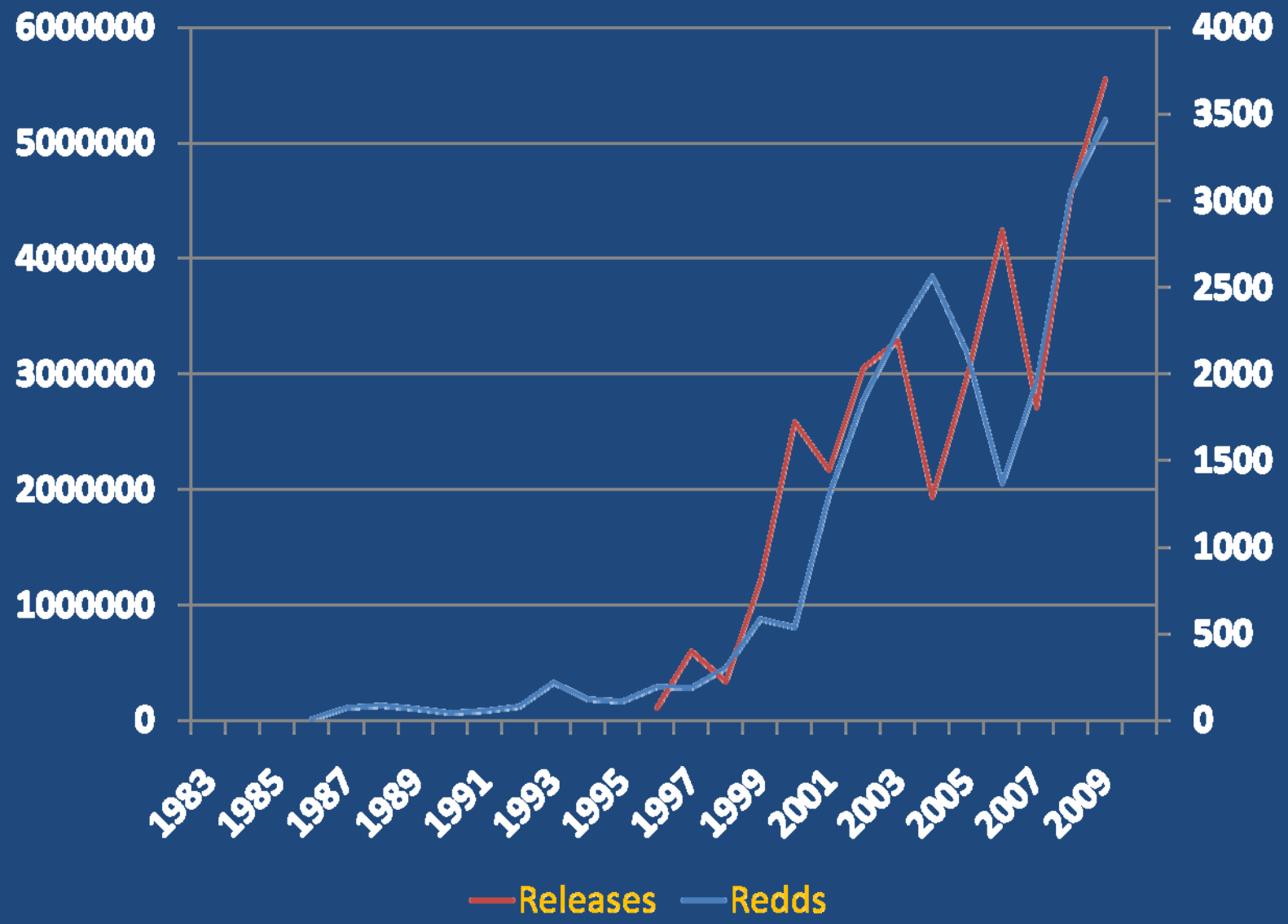
"We conclude that hatchery-origin coho, with a legacy of as many as 10 to 30 generations of hatchery influence, demonstrated their ability to reestablish a naturalized population after as few as 3 to 5 generations of outplanting in the wild."

Evidence of Hatchery-Origin Reproductive Success: Willamette Falls Coho

- not native
- first hatchery-origin releases in 1952
- intensive stocking program from 1964-1974
- Thirteen different hatcheries and variety of stocks used for program

- **hatchery-origin releases stopped in 1998**
- **2009 adult count : 25,300**
- **Projected 2010 adult count : > 30,000**
- **30,000 NO spawners in just 4 generations!!**

Snake River Fall Chinook – Correlation of Supplementation Releases with Redds in recent years.



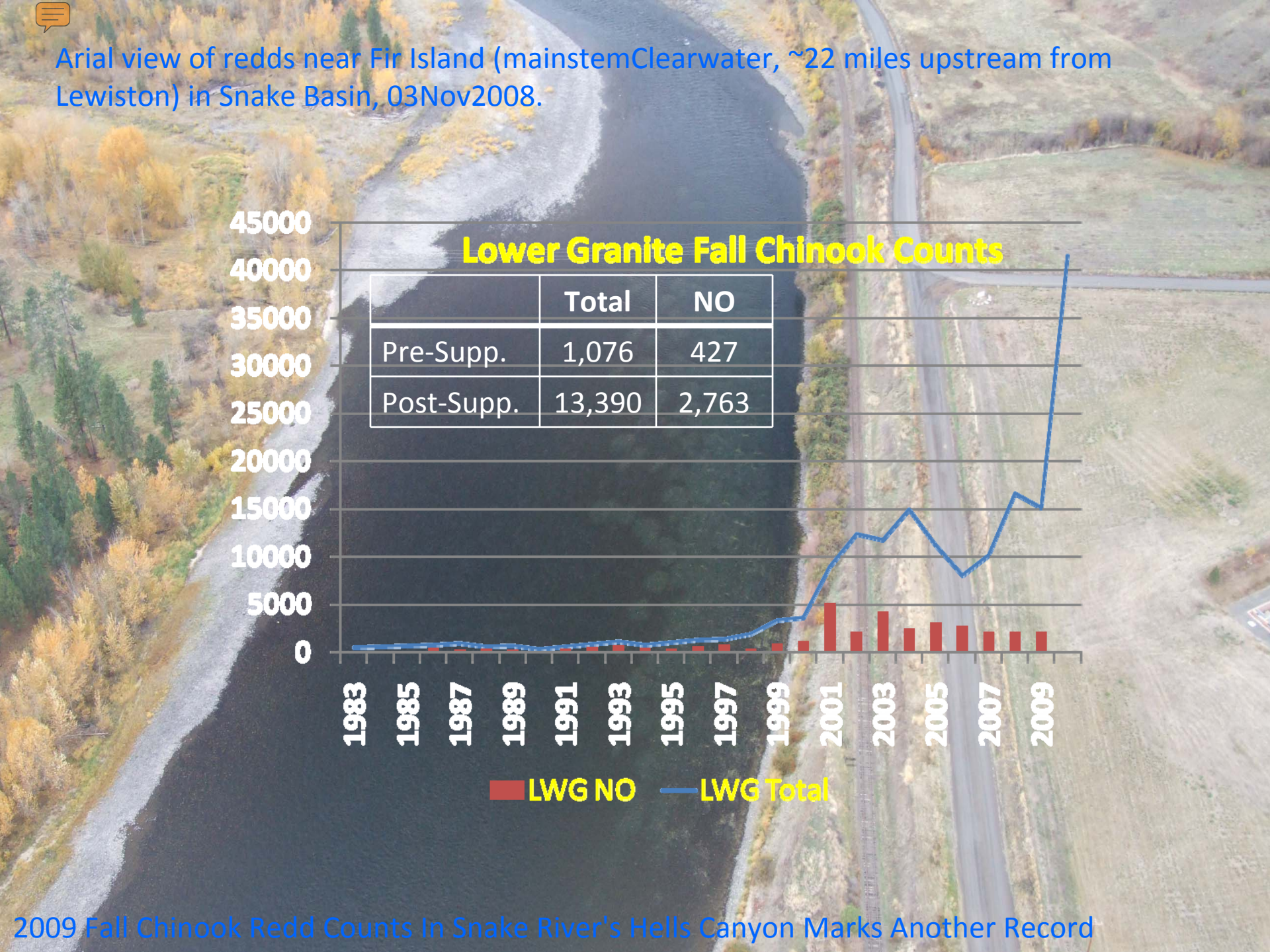
Hatchery Supplementation Success and the Juvenile Life-History of Wild-Reared Fall Chinook Salmon in the Lower Snake River, Idaho.

J.M. Plumb, C.M. Moffitt, and W.P. Connor.

AFS poster presentation, national meeting, Nashville, TN, Sept. 2009.

"The increased release of hatchery juveniles into the river was strongly ($P<0.0001$) related to the increase in redds. This increase in redds was, in turn, strongly related ($P<0.0001$) to an increase in CPUE of wild juveniles in the rearing areas. This study documents the success of hatchery supplementation with a known-origin stock to restore a wild population."

Arial view of redds near Fir Island (mainstemClearwater, ~22 miles upstream from Lewiston) in Snake Basin, 03Nov2008.



	Total	NO
Pre-Supp.	1,076	427
Post-Supp.	13,390	2,763

2009 Fall Chinook Redd Counts In Snake River's Hells Canyon Marks Another Record

Answers to Three Questions

1. Can supplementation maintain or increase natural production?

Yes – At least 11 recent studies support this

2. Can supplementation hatcheries be managed to maintain the long-term fitness of wild/natural populations?

Yes – At least 25 publications or studies support this

3. If there are negative hatchery effects, are they reversible?

Yes – At least 5 publications or studies support this

For more Information:

Bibliography in Support of Supplementation Science

www.ykfp.org

www.critfc.org

Bibliography in Support of Supplementation Science

Compiled by:
Yakama Nation Fisheries – Yakima Klickitat Fisheries Project
Columbia River Inter-Tribal Fish Commission

Draft, November 3, 2010

Purpose: The primary purpose of this bibliography is to present publications or studies that support the theory that supplementation (as defined by RASP 1992) techniques can be used to maintain or increase natural production, while maintaining the long-term fitness of the wild and native salmonid populations and keeping adverse genetic and ecological impacts within acceptable limits.

Note: The term "abstract" is used here to denote an abstract as published by the authors. The term "synopsis" is used when compilers of this bibliography summarized publications, often using sentences taken directly from the publications.

1) Can supplementation maintain or increase natural production?

Araki, H., W. R. Ardren, E. Olsen, B. Cooper, and M. S. Blouin. 2007. Reproductive success of captive-bred steelhead trout in the wild: evaluation of three hatchery programs in the Hood River. Conservation Biology 21 (1), 181-190.

Abstract: Population supplementation programs that release captive-bred offspring into the wild to boost the size of endangered populations are now in place for many species. The use of hatcheries for supplementing salmonid populations has become particularly popular. Nevertheless, whether such programs actually increase the size of wild populations remains unclear, and predictions that supplementation fish drag down the fitness of wild fish remain untested. To address these issues, we performed DNA-based parentage analyses on almost complete samples of anadromous steelhead (*Oncorhynchus mykiss*) in the Hood River in Oregon (U.S.A.). Steelhead from a supplementation hatchery (reared in a supplementation hatchery and then allowed to spawn naturally in the wild) had reproductive success indistinguishable from that of wild fish. In contrast, fish from a traditional hatchery (nonlocal origin, multiple generations in hatcheries) breeding in the same river showed significantly lower fitness than wild fish. In addition, crosses between wild fish and supplementation fish were as reproductively successful as those between wild parents. Thus, there was no sign that supplementation fish drag down the fitness of wild fish by breeding with them for a single generation. On the other hand, crosses between hatchery fish of either type (traditional or supplementation) were less fit than expected, suggesting a possible interaction effect. These are the first data to show that a supplementation program with native brood stock can provide a single-generation boost to the size of a natural steelhead population without obvious short-term fitness costs. The long-term effects of population supplementation remain untested.

Baumsteiger, J., D. M. Hand, D. E. Olson, R. Spateholts, G. FitzGerald, and W. R. Ardren. 2008. Use of Parentage analysis to Determine Reproductive Success of Hatchery-Origin Spring Chinook Salmon Outplanted into Shitike Creek, Oregon. North American Journal of Fisheries Management, 28:1472-1485.

Abstract: Removal of fish passage barriers provides Pacific salmon *Oncorhynchus* spp. and steelhead *O. mykiss* the opportunity to recolonize previously accessible habitat, though the time scale

of natural recolonization may not be sufficient for management or conservation goals. One strategy for accelerating recolonization is to outplant hatchery-origin adults into newly restored habitats. In this paper, we describe how genetic parentage analysis was used to determine the reproductive success of adult stream-type spring Chinook salmon *O. tshawytscha* taken from two localized hatchery stocks and outplanted into a stream. We defined reproductive success as the production of migratory juveniles. In 2002 and 2003, 83 and 265 adult hatchery salmon, respectively, were outplanted into Shitike Creek, Oregon, a tributary to the Deschutes River. Using 11 microsatellite markers, 799 and 827 migratory juveniles from the two brood years were genotyped and matched back to potential outplanted parents using genetic parentage analyses. Successful spawning of outplant–outplant, outplant–wild, and wild–wild fish occurred in Shitike Creek in both years. Adults outplanted in 2002 showed far fewer matches (18%) to sampled juveniles than those from 2003 (88%). Additionally, only 1% of juveniles had both parents identified as outplants in 2002, compared with almost 61% in 2003. Differences in the number of females outplanted each year appeared to account for the differential productivity. The number of offspring attributed to an individual outplant was variable, ranging from 1 to more than 10. Multiple outplant × outplant matings were identified for each sex as males mated with up to seven females and females mated with up to four males. This study shows that, under the right conditions, outplanted adult hatchery fish taken from localized hatchery stocks can contribute to the overall juvenile production in a natural stream.

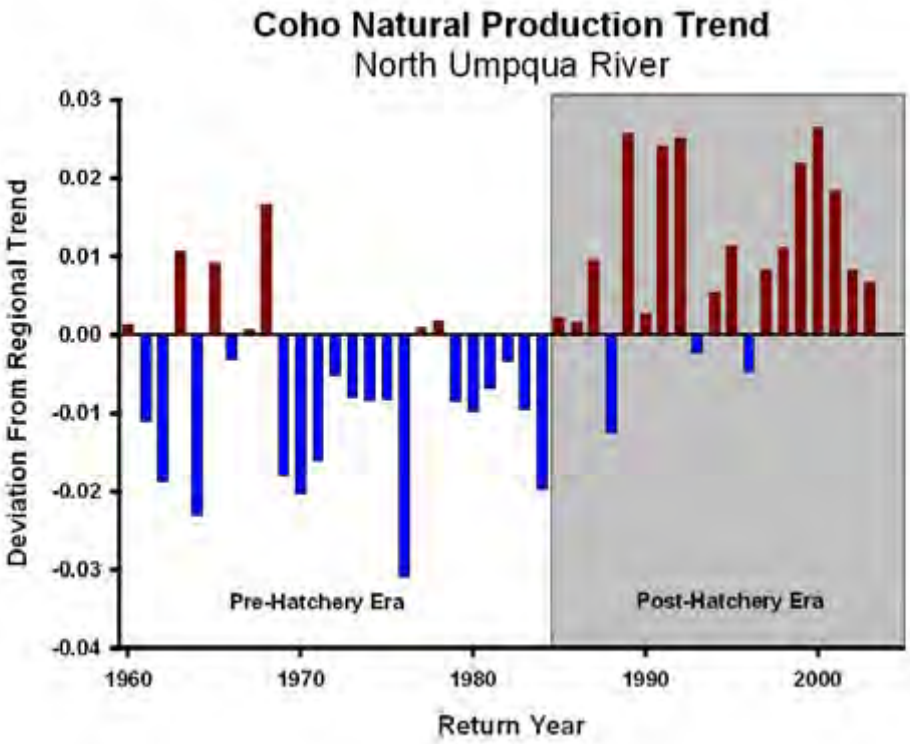
Berejikian, B. A., T. Johnson, R.S. Endicott, and J. Lee-Waltermire. 2008. Increases in Steelhead Redd Abundance Resulting from Two Conservation Hatchery Strategies in the Hamma Hamma River, WA. Canadian Journal of Fisheries and Aquatic Sciences, 65:754-764.

Abstract: Conservation hatcheries for anadromous salmonids that aim to increase production and minimizing genetic, ecological, and demographic risks have not been experimentally tested for their ability to increase number of adults spawning in the natural environment. The conservation hatchery program for steelhead (i.e., sea-run rainbow trout, *Oncorhynchus mykiss*) evaluated in this study caused an increase in the number of redds in the supplemented Hamma Hamma River compared with the presupplementation period. Three control populations (nonsupplemented) either remained stable or declined over the same period. The increase in redds from hatchery-produced spawners did not reduce the redd production from natural-origin spawners. The strategy of rearing and releasing adult steelhead accounted for the greatest proportion of redd abundance increases. Environmentally induced differences in spawn timing between the adult release group and anadromous adults of hatchery and natural origin may explain why the adult release group and anadromous adults assortatively formed pairing combinations on the spawning grounds. Although captively reared adults produced the majority of redds in years they were released in substantial numbers, uncertainty regarding the relative reproductive success of this strategy suggests caution in recommending one strategy over the other. A demographic boost to the naturally spawning population was effected while managing to minimize negative ecological consequences.

Cramer, S. P., N. K. Ackerman, and J. B. Lando. 2005. Viability of Oregon Coastal Coho: Comments on Oregon's 2005 Assessment. Report to Oregon Forest Industries Council and Douglas County. S.P. Cramer & Associates, Inc. Gresham, OR.

Synopsis: Review of data set dating back to 1958. Hatchery fish were virtually non-existent in the North Umpqua for the first 24 years of data, 1958-1981, and composed an average 76% of natural spawners after 1982. The North Umpqua showed a highly significant increase in natural production after 1982. Since 1985, when substantial returns from naturally spawning hatchery coho began, the trend in natural production of coho from the North Umpqua consistently out-performed the regional

trend in natural production (see figure). This difference clearly indicates that hatchery fish were successfully reproducing and having a detectable positive influence on natural production.

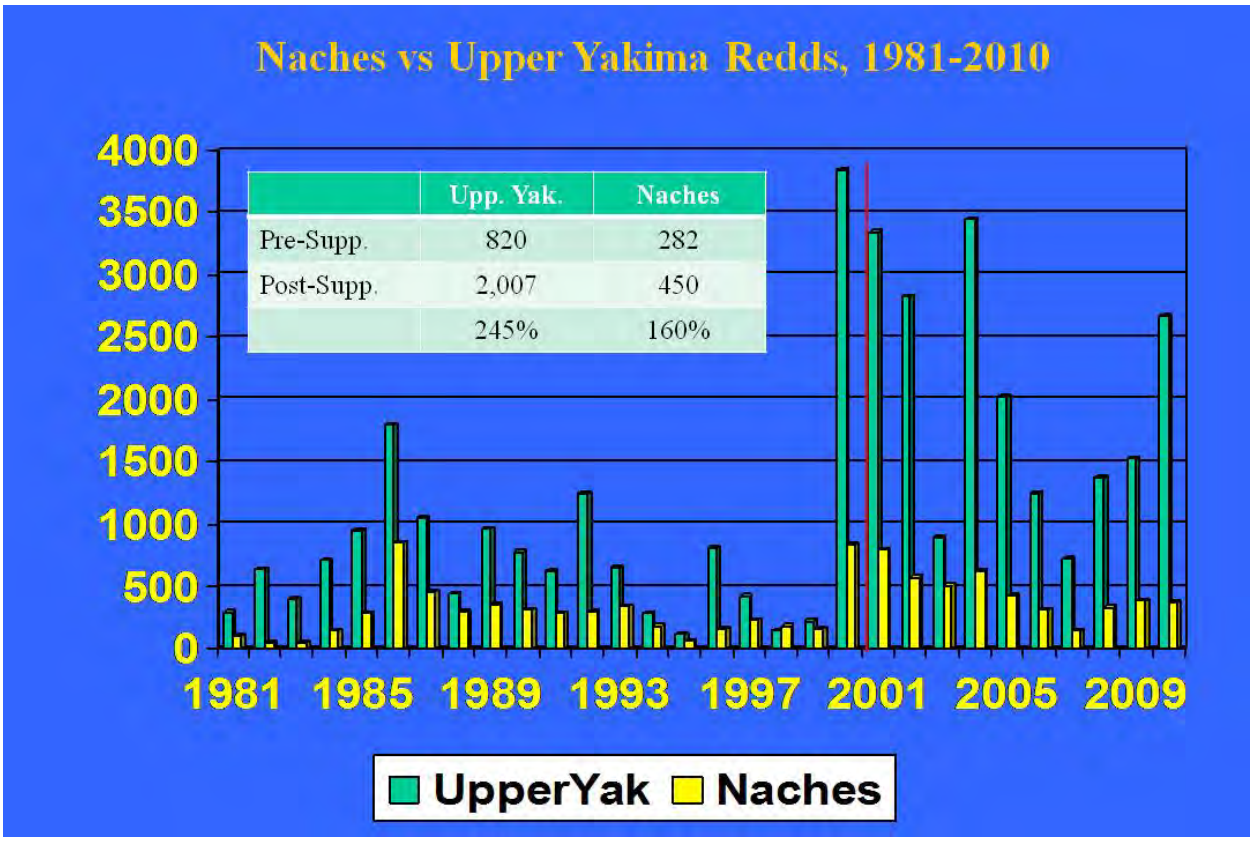


Kassler, T. W., D. K. Hawkins, and J. M. Tipping. 2008. Summer-Run Hatchery Steelhead Have Naturalized in the South Fork Skykomish River, Washington. Transactions of the American Fisheries Society 137:763-771.

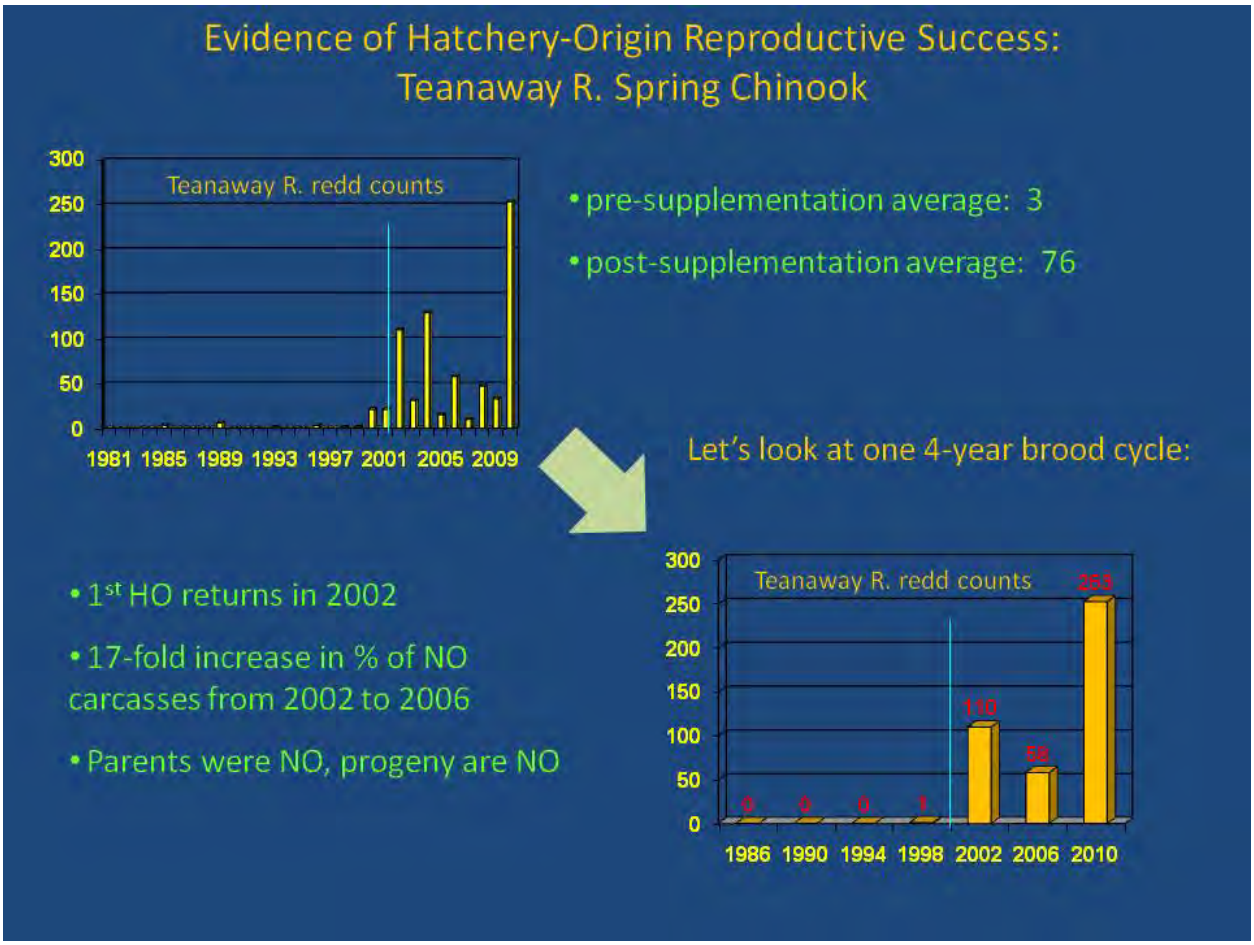
Abstract: Evaluation of natural-origin, hatchery-origin, and unmarked steelhead *Oncorhynchus mykiss* from the Skykomish River drainage basin, Washington, was conducted to determine the source of unmarked steelhead that return to Sunset Falls (South Fork Skykomish River). One possible source is the large number of steelhead stocked into the Skykomish River basin from Reiter Ponds Hatchery; this hatchery stock was founded with fish from Skamania Hatchery in the Washougal River system, Washington. A microsatellite DNA analysis of 10 loci was used to evaluate unmarked samples in comparison with natural-origin samples from the North Fork Skykomish River and hatchery-origin samples from Reiter Ponds Hatchery. Results of the analyses provide evidence that the unmarked steelhead collected at Sunset Falls are more closely related to Reiter Ponds Hatchery fish than to natural-origin fish from the North Fork Skykomish River. There is evidence that unmarked steelhead at Sunset Falls are also mixing with natural-origin North Fork Skykomish River fish but to a lesser degree than with Reiter Ponds Hatchery fish. This study documents that Skamania Hatchery-origin steelhead have naturally produced offspring that are returning to spawn in a northern Puget Sound river basin.

May, D., D. Larsen, M. Moser, D. Fast, M. Johnston, and A. Dittman. 2007. Spatial patterns of Yakima River spring Chinook spawning before and after supplementation. AFS poster presentation, national meeting, San Francisco, CA, Sept. 2007.

Synopsis (updated by compilers to include data from 2007-2010): Redd survey totals for the upper Yakima R. and Naches R. (1981 to 2010) indicated that the number of spawners increased for both populations during the post-supplementation period (2001-2010) but the average number of redds increased 245% in the upper Yakima vs. 160% for the unsupplemented Naches River (see figure below). These results suggest that supplementation increased the number of spawners in the upper Yakima beyond the natural increases associated with improved ocean survival. The number of redds and natural origin spawners has increased in the targeted Teanaway River indicating this approach may be successful for reintroduction of salmonids into underutilized habitat (2nd figure below).



	Upp. Yak.	Naches
Pre-Supp.	820	282
Post-Supp.	2,007	450
	245%	160%



McLean, M.L., P.T. Lofy, and J.D.M. Schwartz. 2006. Successful natural production of hatchery spring chinook salmon: A lesson from Lookingglass Creek in Eastern Oregon. Oregon Chapter AFS Meeting Presentation, March 3, 2006.

Synopsis: Reintroduction of a non-endemic hatchery spring Chinook stock from Rapid River (RR) was evaluated and various survival parameters were compared with an endemic stock from Lookingglass Creek (LCE) and other naturally produced fish from the Grand Ronde River (GRR) or other Columbia Basin tributaries (CSR). "There was no significant difference in mean adults-per-redd among the RR, LCE, or CSR. There was no significant difference in mean juveniles-per-redd between RR, LCE, and GRR. Progeny-per-parent ratios for RR were not significantly different than those estimated for GRR."

Phillips, J.L., J. Ory and A. Talbot. 2000. Anadromous salmonid recovery in the Umatilla River Basin, Oregon: A case study. Journal of the American Water Resources Association, Vol. 36, no. 6, pp. 1287-1308. Dec 2000.

Synopsis: The mean adult-to-adult return rate of hatchery-reared steelhead exceeded replacement and that of the naturally-spawning population. Although the smolt-to-adult survival rates of hatchery-reared fish fluctuate, salmonid escapement has increased in recent years, permitting steelhead and spring chinook harvest. Enumeration of potential spawners and observed redds reveals an increase in natural production of all supplemented species.

Plumb, J.M., C.M. Moffitt, and W.P. Connor. 2009. Hatchery Supplementation Success and the Juvenile Life-History of Wild-Reared Fall Chinook Salmon in the Lower Snake River, Idaho. AFS poster presentation, national meeting, Nashville, TN, Sept. 2009.

Synopsis: Since 1998, a fall Chinook supplementation program has been conducted in the Snake River Basin with brood captured from fish passage facilities and Lyons Ferry State Fish Hatchery. In association with hatchery releases, abundance of the wild spawning population has increased substantially. The increased release of hatchery juveniles into the river was strongly ($P<0.0001$) related to the increase in redds 3 years later. This increase in redds was, in turn, strongly related ($P<0.0001$) to an increase in CPUE of wild juveniles in the rearing areas. This study documents the success of hatchery supplementation with a known-origin stock to restore a wild population.

Steffensen, K.D., L.A. Powell, and J.D. Koch. 2010. Assessment of Hatchery-Reared Pallid Sturgeon Survival in the Lower Missouri River. North American Journal of Fisheries Management 30:671-678.

Abstract: The population of pallid sturgeon *Scaphirhynchus albus* in the lower Missouri River between Gavins Point Dam (river kilometer [rkm] 1,305.2) and the confluence with the Mississippi River (rkm 0.0) remains imperiled, little to no natural recruitment occurring. Artificial propagation and subsequent population augmentation (i.e., stocking) may be the only viable option for maintaining pallid sturgeon populations in the lower Missouri River in the near term. Because relatively little is known about the ability of hatchery-reared pallid sturgeon to survive, the objective of this study was to quantify survival estimates for hatchery-reared pallid sturgeon stocked into the lower Missouri River. We used stock–recapture data collected from 1994 to 2008 to derive survival estimates based on the Cormack–Jolly–Seber model within program MARK. Since 1994, a total of 78,244 hatchery-reared pallid sturgeon have been released and 1% of these have been recaptured. Recapture numbers by size at stocking were as follows: 48 age 0, 730 age 1, and 38 older than age 1. Stocked age-0 hatchery-reared pallid sturgeon had an estimated apparent survival rate of 0.051 (SE = 0.008), compared with 0.686 (SE = 0.117) for age-1 fish and 0.922 (SE = 0.015) for fish older than age 1. Our analysis confirms that hatchery-reared pallid sturgeon can survive in the wild and contribute to the overall population of this species.

Van Doornik, D.M., B.A. Berejikian, L.A. Campbell, and E.C. Volk. 2010. The effect of a supplementation program on the genetic and life history characteristics of an *Oncorhynchus mykiss* population. Canadian Journal of Fisheries and Aquatic Sciences, 67(9): 1449-1458.

Abstract: Conservation hatcheries, which supplement natural populations by removing adults or embryos from the natural environment and rearing and releasing parr, smolts, or adults back into their natal or ancestral streams, are increasingly being used to avoid extinction of localized populations of Pacific salmonids. We collected data before and during a steelhead (*Oncorhynchus mykiss*) supplementation program to investigate the effect that the program has had on the population's genetic diversity and effective population size and any changes to an important life history trait (residency or anadromy). We found that supplementation did not cause substantial changes in the genetic diversity or effective size of the population, most likely because a large proportion of all of the steelhead redds in the river each year were sampled to create the supplementation broodstock. Our data also showed that the captively reared fish released as adults successfully produced parr. Furthermore, we found that during supplementation, there was an increase in the proportion of *O. mykiss* with anadromous ancestry vs. resident ancestry.

2) Can supplementation hatcheries be managed to maintain the long-term fitness of wild/natural populations?

Araki, H. 2008. Hatchery Stocking for Restoring Wild Populations: A Genetic Evaluation of the Reproductive Success of Hatchery Fish vs. Wild Fish. Pp. 153-167 in K. Tsukamoto, T. Kawamura, T. Takeuchi, T. D. Beard, Jr. and M. J. Kaiser, eds. *Fisheries for Global Welfare and Environment, 5th World Fisheries Congress*.

Abstract: Potential impacts of hatchery programs on wild populations have long been discussed, and of particular interest is the reproductive success of hatchery born fish in natural environments. Here I summarize our recent studies, in which DNA fingerprinting and genetic parentage analyses were used to estimate adult-to-adult reproductive fitness of steelhead trout (*Oncorhynchus mykiss*) in the Hood River, Oregon (USA). We found: (1) Hatchery fish left fewer adult offspring per parent than wild fish, but supplementation hatchery fish (from local, wild broodstock; H_{supp}) left larger numbers of offspring than traditional hatchery fish (from nonlocal, multi-generation hatchery broodstock; H_{trad}); (2) The reproductive fitness of H_{supp} declined unexpectedly fast (~40% per generation) when H_{supp} were reused as broodstock in a hatchery, suggesting that the negative effects of hatchery rearing are cumulative and heritable; (3) Effective population size was mainly restricted by variance in reproductive success among individuals, rather than by biased sex ratio and temporal fluctuation of population sizes; (4) H_{trad} showed particularly large variance in reproductive success, indicating another negative effect of traditional programs. Our case studies suggest that using local, wild broodstock reduces negative effects of hatchery rearing, but the repeated use of H_{supp} as broodstock should be minimized for efficient supplementation.

Berejikian, B. A., E.P. Tezak, T.A. Flagg, A.L. LaRae, E. Kummerow, and C.V.W. Mahnken. 2000. Social dominance, growth, and habitat use of age-0 steelhead (*Oncorhynchus mykiss*) grown in enriched and conventional hatchery rearing environments. Canadian Journal of Fisheries and Aquatic Sciences, 57:628-636.

Abstract: This study investigated whether culturing age-0 steelhead (*Oncorhynchus mykiss*) in habitat-enriched rearing tanks, containing a combination of in-water structure, underwater feeders, and overhead cover, affected competitive ability and habitat use compared with juveniles cultured in more conventional vessels. In laboratory tests, steelhead juveniles grown in the enriched tanks socially dominated size-matched competitors grown in conventional tanks. When both treatments were introduced into separate sections of a quasi-natural stream, no differences in growth were found between them. However, when intermixed, fish reared in the enriched tanks grew at a higher rate than conventionally reared competitors, suggesting greater competitive ability of juveniles grown in the enriched tanks. Visual isolation and defensible food resources in combination in the enriched tanks were considered as the primary factors causing the observed competitive asymmetries. Steelhead juveniles from the two rearing environments exhibited very similar use of woody structure in the quasi-natural stream, both in the presence and in the absence of mutual competition. Rearing steelhead in more naturalistic environments could result in hatchery fish that behave and integrate into the postrelease (natural) environment in a manner more similar to wild fish.

Berejikian, B. A., D. M. Van Doornik, J. A. Scheurer, R. Bush. 2009. Reproductive behavior and relative reproductive success of natural - and - hatchery - origin Hood Canal summer chum slamon (*Oncorhynchus keta*). Canadian Journal of Fisheries and Aquatic Sciences, 66:781-789.

Abstract: Estimates of the relative fitness of hatchery- and natural-origin salmon can help determine the value of hatchery stocks in contributing to recovery efforts. This study compared the adult to fry reproductive success of natural-origin summer chum salmon (*Oncorhynchus keta*) with that of first- to third-generation hatchery-origin salmon in an experiment that included four replicate breeding groups. Hatchery- and natural-origin chum salmon exhibited similar reproductive success. Hatchery- and natural-origin males obtained similar access to nesting females, and females of both types exhibited similar breeding behaviors and durations. Male body size was positively correlated with access to nesting females and reproductive success. The estimates of relative reproductive success (hatchery/natural = 0.83) in this study were similar to those in other studies of other anadromous salmonids in which the hatchery population was founded from the local natural population and much higher than those in studies that evaluated the lifetime relative reproductive success of nonlocal hatchery populations.

Brockmark, S., and J.I. Johnsson. 2010. Reduced hatchery rearing density increases social dominance, postrelease growth, and survival in brown trout (*Salmo trutta*). Canadian Journal of Fisheries and Aquatic Sciences, 67(2):288-295.

Synopsis: Hatchery fish reared for conservation or supplementation often have difficulties adapting to natural conditions, resulting in poor performance in the wild. In a standard hatchery, fish are confined at high densities, which creates a social environment different from that experienced after release. Here we investigated how rearing density influences social dominance, postrelease growth, and survival in brown trout (*Salmo trutta*). Fish were reared at three density treatments: conventional hatchery density, half of conventional hatchery density, and natural density. Four months after hatching, dominance status was determined, and 36 fish from each treatment were released into an enclosed stream and recaptured after 36 days. Trout reared at natural density had higher dominance status and grew faster, both in the hatchery and in the natural stream, than trout from higher densities. Moreover, trout reared at natural density were twice as likely to survive in the stream as trout from higher densities. These novel results suggest that more natural rearing densities would facilitate the development of adaptive behaviour in hatchery salmonids and, thereby, their contribution to natural production.

Clarke, L.R., M.W. Flesher, T.A. Whitesel, G.R. Vonderohe, and R.W. Carmichael. 2010. Postrelease Performance of Acclimated and Directly Released Hatchery Summer Steelhead into Oregon Tributaries of the Snake River. North American Journal of Fisheries Management 30: 1098-1109.

Abstract: In a study using 14 paired-release groups over 10 release years, we compared the performance of hatchery summer steelhead *Oncorhynchus mykiss* that were acclimated as smolts (AC) for 16–57 d before release into ponds supplied with ambient stream water with that of fish trucked from the hatchery and directly released (DR) into Spring, Deer, and Little Sheep creeks in northeastern Oregon. After releasing the fish into streams, we monitored out-migration travel times and survival to Lower Granite Dam (LGD) on the Snake River using freeze brand marks or implanted passive integrated transponder tags in a subsample of each release group. Across all release groups, travel time was significantly slower for AC fish (34.7 d) than for DR fish (31.8 d), though there was no significant difference in survival probability to LGD. We used recoveries of coded wire tags to estimate smolt-to-adult survival (SAS) and a stray rate index (SRI) for the AC and DR strategies. Across all release groups, SAS was 33% higher and SRI 42% lower for AC steelhead. At each release site acclimation increased average SAS by at least 11% and decreased SRI by at least 16.5%. We found a significant, negative linear relationship between travel time to LGD and SAS;

however, there was no significant relationship between survival to LGD and SAS, which implies that judgments about the success or failure of a novel rearing or release strategy should not be made based on out-migration survival. Acclimating juvenile steelhead produced significantly higher SAS and lower SRI in the hatchery program we evaluated.

Cuenco, M. L., T. W. H. Backman, and P. R. Mundy. 1993. The use of supplementation to aid in natural stock restoration. Pages 269-293 in J. G. Cloud and G. H. Thorgaard, editors. Genetic conservation of salmonid fishes. Plenum Press, New York.

Synopsis: Defines supplementation and the parameters of a successful supplementation program. Note that this document was published by tribal scientists long before hatchery reform became popular and widely advocated. Many of the recommendations in this publication are being used in studies contained in this bibliography.

Dahl, J., E. Pettersson, J. Dannewitz, T. Järvi, and A-C Löf. 2006. No difference in survival, growth and morphology between offspring of wild-born, hatchery and hybrid brown trout (*Salmo trutta*). Ecology of Freshwater Fish 15:388-397.

Abstract: We studied survival, growth and morphological characters in the offspring of native hatchery and wild-born anadromous brown trout (*Salmo trutta*) and their hybrids (wild-born female × hatchery male and wild-born male × hatchery female) in a 1-year field experiment. We also conducted laboratory studies where we examined social interactions between the offspring of the same hatchery and wild-born trout. All offspring were raised in a hatchery and nose tagged before being released into the stream. In total, 1125 individuals were released into the stream (1999) and a total of 614 individuals were recovered (2000). We found no differences in growth and survival between the offspring of hatchery, wild-born and hybrid trout. Morphology was also similar among groups, where only 38% females and 36% males were classified into the right category, which were only 12% better than random classification. In the laboratory experiment, we compared only the offspring of hatchery and wild-born trout with respect to growth, dominance, aggressiveness, feeding and activity. We found small differences between the offspring of hatchery and wild-born fish with respect to growth but this effect was not found in the field experiment. Our result suggests that the offspring of hatchery trout and hybrids between hatchery and wild-born trout performed equally well to the offspring of wild-born trout.

Dannewitz, J., E. Petersson, T. Prestegaard, and T. Jarvi. 2003. Effects of sea-ranching and family background on fitness traits in brown trout *Salmo trutta* reared under near-natural conditions. Journal of Applied Ecology 40:241-250.

Summary (Author's words taken directly from publication):
1. Many threatened populations of salmonids depend on supplemental releases of hatchery-produced fish. Laboratory studies suggest that altered selection regimes in the hatchery may result in evolutionary changes of traits connected to fitness. Such changes can have profound effects on the performance of the hatchery fish following release in the natural environment, and may also affect the genetic characteristics of locally adapted wild populations. However, surprisingly few studies have looked at the ability of hatchery fish to compete with wild conspecifics under natural conditions.
2. We studied growth, survival and life-history adoption of a wild and a multigeneration sea-ranched strain of brown trout *Salmo trutta* in a semi-natural stream. The fish were planted in the stream as eyed eggs and their family and strain origins were later revealed by microsatellite markers.

3. In the first experiment, in which the experimental fish originated from a full-sib mating design, there were strong family effects on both growth and survival over the first growth season. In the second experiment, in which the experimental fish originated from a half-sib mating design, there were significant male and female effects on growth parameters but not on survival over the first growth season.
4. When family and male–female effects were accounted for, there were no differences between wild and sea-ranched trout in body size and condition factor after the first growth season, or in survival up to this stage. Nor was there any difference between the groups in the proportions that metamorphosed into the migratory smolt phase at 1 year of age.
5. Synthesis and applications. Our results suggest that wild-born trout of sea-ranched origin can successfully compete with trout of wild origin under semi-natural conditions. This indicates that the impact of hatchery selection on the performance of sea-ranched fish in the wild may not be as pronounced as previously thought. It is suggested that for salmonid populations that depend on supplemental stocking, more effort should be paid to minimizing negative environmental effects during hatchery rearing. The observed differences in fitness characters between families suggest that family effects should be taken into account in stocking programmes because the amount of genetic variation maintained within populations is related to the variance in family performance.

Dittman, A. H., D. May, D. A. Larsen, M. L. Moser, M. Johnston, and D. Fast. 2010. Homing and spawning site selection by supplemented hatchery- and natural-origin Yakima River spring Chinook salmon. Transactions of the American Fisheries Society 139:1014-1028.

Synopsis: This paper examined the homing patterns of supplemented Yakima River spring Chinook salmon releases from satellite acclimation facilities. The data indicated that supplementation increased the spatial range of spawning in the upper Yakima River. Natural- and hatchery-origin fish displayed similar spawning distributions within the upper Yakima Basin. Like their natural-origin counterparts, hatchery-origin fish demonstrated the ability to seek optimum spawning locations. This occurred especially in the absence of acceptable spawning conditions in their area of acclimation and release.

Eldridge, W.H. and K. Killebrew. 2008. Genetic diversity over multiple generations of supplementation: an example from Chinook salmon using microsatellite and demographic data. Conservation Genetics 9:13-28.

Abstract: We examined demographic data and microsatellite loci in a supplemented population of Chinook salmon (*Oncorhynchus tshawytscha*) seeking evidence of changes in genetic diversity or for reduction of the effective size (*Ne*) arising from supplementation (i.e., the Ryman-Laikre effect). A supplementation program in the North Fork Stillaguamish River (Washington State, USA) was intended to increase abundance (*N*) and maintain genetic diversity in the depressed population. Since supplementation expanded in 1986, about 9% of the population has been randomly collected for broodstock. The resulting progeny are released into the wild and comprised 10–60% of all returning adults. Genotypic data were obtained at 14 microsatellite loci from adult samples collected in four years between 1985 and 2001; these data indicated that the allelic richness and expected heterozygosity did not significantly change during this period and that genetic diversity in the captive and wild progeny was similar. The inbreeding and variance Ne estimated from adult escapement between 1974 and 2004 were different for the same generation, but the ratios of effective size to census size were very similar and decreased following supplementation. The variance *Ne* by the temporal method increased over time, but it is difficult to draw conclusions because of necessary assumptions made during the calculations. Based on these results we conclude that: (1) genetic

diversity has been maintained over multiple generations of supplementation; (2) supplementation has not contributed to a loss of genetic diversity; and (3) monitoring genetic effects of supplementation is not straightforward, but it can be useful to look at both demographic and genetic data simultaneously.

Fraser, D. J. 2008. How well can captive breeding programs conserve biodiversity? A review of salmonids. Evolutionary Applications, 1:535-586.

Synopsis: Review of existing literature relevant to genetic diversity and fitness issues in captive breeding and supplementation programs. Empirical and theoretical studies both suggest that most salmonid captive breeding programs can maintain genetic diversity over several captive generations. The apparent low N_e in some captive broodstocks might easily be avoided through the use of procedures that reduce genetic and other risks associated with captive breeding programs such as using local brood sources and minimizing generations in captivity. Many of the poorest performances of hatchery fish relative to wild fish involved nonlocal hatchery strains that had been in captivity for greater than five generations or that had undergone intentional artificial selection. There is little long-term evidence regarding whether captive-reared salmonids can or cannot be reintroduced as self-sustaining populations. There are numerous examples of the ability of salmonids to evolve rapidly in the wild over several generations. Certainly, then, the possibility exists that a reintroduced population based on captive- reared fish could re-adapt to the wild environment under a similar timeframe. There is only very limited empirical research to suggest that maintaining several small isolated populations with periodic mixing may be more effective at reducing losses of genetic diversity and fitness than maintaining a single large population.

Hedrick, P.W., D. Hedgecock, S. Hamelberg, and S.J. Croci. 2000. The impact of supplementation in winter-run chinook salmon on effective population size. Journal of Heredity, 91(2): 112-116.

Abstract: Supplementation of young raised at a protected site, such as a hatchery, may influence the effective population size of an endangered species. A supplementation program for the endangered winter-run chinook salmon from the Sacramento River, California, has been releasing fish since 1991. A breeding protocol, instituted in 1992, seeks to maximize the effective population size from the captive spawners by equaling their contributions to the released progeny. As a result, the releases in 1994 and 1995 appear not to have decreased the overall effective population size and may have increased it somewhat. However, mistaken use of non-winter-run chinook spawners resulted in artificial crosses between runs with fish on Battle Creek, the site of the hatchery, resulted in limiting the contribution of the released fish to the target mainstem population. Rapid genetic analysis of captured spawners and a new rearing facility on the Sacramento River should alleviate these problems and their negative effect on the effective population size in future years.

Hedrick, P.W., V.K. Rashbrook, and D. Hedgecock. 2000. Effective population size of winter-run chinook salmon based on microsatellite analysis of returning spawners. Canadian Journal of Fisheries and Aquatic Sciences, 57(12): 2368–2373.

Abstract: We previously estimated the predicted effective population size for the endangered winter-run chinook salmon, *Oncorhynchus tshawytscha*, based on a number of assumptions, including random survival and return of released fish. Here we present data from actual returning spawners, identified to family by microsatellite loci, and calculate the observed effective population size. In 1994 and 1995, the observed effective population sizes were 93.6 and 78.2% of predicted values, respectively, suggesting that the numbers of returning fish were very close to random expectations in 1994 and less close to random in 1995. The ratio of the effective population size to the adult number,

Ne/N, was greater than unity for 1994 and approximately 0.5 in 1995. The high ratio in 1994 reflects the success of the breeding protocol to equalize individual contributions and near random returns, while the lower number in 1995 appears to be the result of both less successful equalization and less close to random returns in that year. These findings provide an optimistic outlook for the success of this supplementation program and suggest that the overall effective population size has not been greatly reduced, since returning spawners represent a broad sample of parents and not fish from only a few families.

Heggenes, J., M. Beere, P. Tamkee, and E. B. Taylor. 2006. Genetic diversity in steelhead before and after conservation hatchery operation in a coastal, boreal river. Transactions of the American Fisheries Society 135:251-267.

Abstract: The objectives of this study were to (1) investigate the genetic diversity of wild steelhead populations in the river before hatchery stocking and (2) assess the potential genetic impacts of interbreeding of returning hatchery adult fish with wild spawners over almost 20 years of large-scale hatchery operation. The level of population subdivision among Kitimat River samples was low (0.004) and not significantly different from 0. Tests of population subdivision between prehatchery and posthatchery operation indicated no significant changes. Similar results were obtained using other measures of genetic differentiation (principal components analysis of microsatellite allele frequencies and Cavalli-Sforza genetic distance). Our data, however, did indicate a slight but significant reduction in allelic richness after hatchery stocking. Pairwise tests for genetic differentiation among samples from different yearclasses were nonsignificant. We conclude that for the current management regime there is little apparent impact of hatchery practices on either the genetic structure or variation within the lower main-stem Kitimat River steelhead, but there may be a reduction in rare alleles. The practice of using substantial numbers of wild fish and multiple year-classes in the hatchery may have minimized genetic changes via genetic drift.

HSRG. 2005. Hatchery Scientific Review Group. Hatchery Reform in Washington State: Principles and Emerging Issues. Fisheries. Volume 30, Number 6. June 2005.

Synopsis: Makes recommendations for reforming hatchery operations to better meet goals of supporting sustainable fisheries and assisting with the conservation of natural populations. Many of the recommendations proposed by the HSRG were documented by Cuenco et al. in 1993 and are being used in studies contained in this bibliography.

Johnson, S.L., J.H. Power, D.R. Wilson, and J. Ray. 2010. A Comparison of the Survival and Migratory Behavior of Hatchery-Reared and Naturally Reared Steelhead Smolts in the Alsea River and Estuary, Oregon, using Acoustic Telemetry. North American Journal of Fisheries Management 30:55-71.

Abstract: We tracked three groups of steelhead *Oncorhynchus mykiss* smolts implanted with acoustic transmitters to determine whether the degree of hatchery domestication or the juvenile rearing environment (hatchery raceway versus natural stream) influenced migration timing and survival in the Alsea River and estuary, Oregon. Two groups consisted of age-1 smolts reared in concrete raceways. One hatchery-reared group (traditional brood group) was derived from the traditional Alsea River broodstock initially developed in the 1950s. The second hatchery-reared group (new brood group) was derived from naturally reared Alsea River adult steelhead that were captured and spawned at the hatchery beginning in the winter of 2000–2001. The third group (naturally reared group) consisted of age-2 naturally reared smolts captured in a downstream migrant trap located in a

tributary stream near the hatchery. We placed transmitters in 74 traditional brood smolts, 76 new brood smolts, and 72 naturally reared smolts. Thirty-one acoustic receivers were located throughout the Alsea River and estuary and in the ocean offshore of the river mouth to monitor smolt movement. Neither the degree of hatchery domestication nor the juvenile rearing environment (hatchery raceway versus natural stream) appeared to influence the number of steelhead smolts that successfully migrated to the ocean. We found no significant difference between groups in their survival to the head of tide or to the mouth of the estuary. Most smolts from all three groups were detected at the head of tide (87% of fish from the traditional brood group, 78% from the new brood group, and 84% from the naturally reared group). However, survival was poor in the lower estuary for all three groups; we estimated that only 37% of the traditional brood group, 45% of the new brood group, and 47% of the naturally reared group survived to the ocean. The timing of migration through the river was highly variable in all three groups, and we found no significant differences in the rate of downstream movement from the release site to the head of tide. Mean residence time within the estuary was similar for all groups, although smolts from the naturally reared group showed less variability in estuary residence time than hatchery-reared smolts.

Kassler, T.W. and C.A. Dean. 2010. Genetic Analysis of Natural-origin Spring Chinook and Comparison to Spring Chinook from an Integrated Supplementation Program and Captive Broodstock Program in the Tucannon River. Report to BPA, Project No. 2000-019-00, Contract Number 40744. WDFW, Olympia, WA.

Abstract: A collection of natural-origin spring Chinook from 1986 was compared to samples from two spawner groups (supplementation program and in-river spawners), and to collections of hatchery- and natural-origin from the Tucannon River. Samples from the captive brood program at the Tucannon River Hatchery were also compared. A microsatellite DNA analysis was conducted to determine if there have been any changes to the genetic diversity of spring Chinook in the Tucannon River. The measures of genetic diversity (heterozygosity and allelic richness) revealed similar levels within each spawner group and collection based on origin over time. Assessment of within population diversity indicates that the spawner groups and collections by origin have not undergone a loss of diversity and are not represented by family groups. We did detect that collections of the captive brood are not within Hardy-Weinberg proportions and have significant linkage disequilibrium as a possible result of using equal numbers of individuals from two brood years that are differentiated. The collection of captive brood progeny returns in 2008; however is within expected proportions and indicates there has not been a genetic change to the spawner group collection or collections by origin. The pairwise F_{ST} values identify the variation between any two groups is approximately 1.0% or less indicating the differences among the groups is small. Factorial correspondence analysis identifies similarity among collections that are separated by four years and represent the genetic differences among primary brood years and not genetic changes to the natural-origin collection from 1986. The combination of all the results demonstrates that the genetic diversity of spring Chinook in the Tucannon River has not significantly changed as a result of the supplementation or captive brood programs.

Knudsen, C.M., S.L. Schroder, C. Busack, M.V. Johnston, T.N. Pearsons, and C.R. Strom. 2008. Comparison of Female Reproductive Traits and Progeny of First-Generation Hatchery and Wild Upper Yakima River Spring Chinook Salmon. Transactions of the American Fisheries Society 137:1433-1445.

Abstract: Hatchery and wild female spring Chinook salmon *Oncorhynchus tshawytscha* from the upper Yakima River were compared to determine whether their reproductive traits had diverged after

a single generation of artificial propagation. Fecundity, relative fecundity, individual egg mass, and total gamete mass were all significantly correlated with body length, while reproductive effort (gonadosomatic index) was not. Regressions of trait versus body length often differed significantly among brood years. Hatchery spring Chinook salmon were significantly smaller than wild females over the four brood years examined. After brood year and body length (when necessary) were accounted for, wild females had an average of 8.8% more total gamete mass, 0.8% more individual egg mass, 7.7% greater fecundity, and 0.8% greater reproductive effort than hatchery females. Relative fecundity (the number of eggs per centimeter of body length) was on average 1.3% greater in hatchery females. We also compared body size at yolk absorption and egg-to-fry survival of the progeny from hatchery-by-hatchery and wild-by-wild matings. After differences in egg size were accounted for, hatchery fry were on average 1.0% heavier than wild fry. Egg-to-fry survival rates varied among years, with no consistent difference between hatchery and wild fry. The relationships between reproductive traits and body length were not significantly altered by a single generation of hatchery exposure. However, because hatchery females had smaller body sizes, the distributions of linked traits, such as total gamete mass and fecundity, differed by as much as 0.6 SD, probably resulting in some fitness loss. Our data support the idea that a single generation of state-of-the-art conservation hatchery propagation can produce fish with reproductive traits similar to those of wild fish, given comparable body size.

Lacroix, G.L. 2008. Influence of origin on migration and survival of Atlantic salmon (*Salmo salar*) in the Bay of Fundy, Canada. Canadian Journal of Fisheries and Aquatic Sciences 65:2063-2079.

Synopsis: Atlantic salmon smolts of wild and hatchery origin were tagged with ultrasonic transmitters and monitored at successive arrays of submerged receivers during migration from five watersheds in three regions of the Bay of Fundy, Canada. The early marine survival of migrating Atlantic salmon was estimated by monitoring their migration in estuarine and coastal habitats. Except in cases where hatchery fish were purposely forced to migrate later than their wild counterparts, the migration success did not differ significantly between groups of wild and hatchery smolts for rivers where both were simultaneously monitored. The responses of hatchery fish to delays in release indicated that synchronizing the readiness and release time of hatchery smolts to the timing of wild smolt runs may be crucial to successful management of the depleted or endangered salmon populations being sustained by hatchery programs in the Bay of Fundy.

Loomis, D. W., G. R. Moyer, M. Banks, and J. Muck. 2006. Umpqua Coho Genetic Pedigree Project: CHIP-ping Forward with Assessing Reproductive Success of Supplemental Fish Releases. Oregon Chapter AFS Meeting Presentation, March 1, 2006.

Synopsis: In progress (study overview available here). The first F1 generation from this coho study returned in 2004. Preliminary results show no statistical differences in smolt-to-adult returns or relative reproductive success for hatchery-by-hatchery (derived from local wild stock) compared to wild-by-wild matings and releases. Complete project results are expected to be available in 2011.

Monzyk, F.R., B.C. Jonasson, T.L. Hoffnagle, P.J. Keniry, R.W. Carmichael, and P.J. Cleary. 2009. Migration Characteristics of Hatchery and Natural Spring Chinook Salmon Smolts from the Grande Ronde River Basin, Oregon, to Lower Granite Dam on the Snake River. Transactions of the American Fisheries Society 138: 1093-1108.

Abstract: We investigated the patterns of travel time and survival of hatchery and natural smolts fitted with passive integrated transponder (PIT) tags through specific reaches of the migration corridor during the 2000–2006 migration years for two populations originating in the Grande Ronde River basin (Lostine River and Catherine Creek). For both populations, median travel times for natural smolts were significantly longer in the upper reaches of the migration corridor but shorter in the lower reaches than for their hatchery counterparts. Also, among both hatchery and natural smolts, smaller individuals spent more time in the upper reaches, presumably feeding to attain a larger size before continuing their migration. Within populations, both hatchery and natural smolts showed similar patterns of survival through the reaches of the migration corridor above Lower Granite Dam. Size-selective mortality was evident for hatchery and natural smolts from both populations, especially in the upper reaches, larger individuals experiencing higher survival.

Moyer, G.R., J.D. Rousey, and M.A. Cantrell. 2009. Genetic Evaluation of a Conservation Hatchery Program for Reintroduction of Sicklefin Redhorse *Moxostoma* sp. in the Tuckasegee River, North Carolina. North American Journal of Fisheries Management 29: 1438-1443.

Abstract: Restoration and reintroduction efforts for the sicklefin redhorse *Moxostoma* sp. have been initiated by state, tribal, and federal agencies owing to the limited geographic distribution of this species and threats associated with the physical alteration of its habitat. A critical component of a successful reintroduction is that the source and recipient populations have similar genetic resources and life history patterns. We used 10 microsatellite loci to estimate and compare indices of genetic diversity between the Little Tennessee River population of wild adults and the hatchery broodstock being used for initial reintroduction efforts. We also compared relatedness values for the broodstock used for restoration efforts. There were no significant differences between hatchery broodstock and wild adults with respect to average gene diversity, but the average number of alleles for each brood year was significantly less than that for wild adults. While this trend persisted when the 2007 and 2008 brood years (combined) were compared with wild adults, the reduction was not significant. Finally, all hatchery crosses were among unrelated individuals. Our results highlight the importance of using genetic information to assist restoration and reintroduction efforts.

Pearsons, T. N. and G. M. Temple. 2007. Impacts of Early Stages of Salmon Supplementation and Reintroduction Programs on Three Trout Species. North American Journal of Fisheries Management 27:1-20.

Abstract: Salmon supplementation and reintroduction programs have the potential to negatively impact other valued fish taxa that are not the targets of enhancement (nontarget taxa [NTT]). Impacts of the supplementation of spring Chinook salmon *Oncorhynchus tshawytscha* and the reintroduction of coho salmon *O. kisutch* (hereafter supplementation) on populations of rainbow trout *O. mykiss*, steelhead (anadromous rainbow trout), cutthroat trout *O. clarkii*, and bull trout *Salvelinus confluentus* were evaluated after 5 years of stocking approximately 1 million yearling smolts in the upper Yakima River basin between 1999 and 2003. Field methods included backpack electrofishing and snorkeling in tributaries and drift-boat electrofishing in the main stem. We used three sequential steps in our evaluation: (1) we determined whether spatial overlap occurred between supplemented fish and NTT; (2) if overlap occurred, we determined whether a change in abundance, size, or biomass occurred during supplementation; and (3) if a change occurred, we determined whether the change could be reasonably attributed to supplementation. Salmon rarely overlapped cutthroat trout or bull trout in tributaries, but some overlap with cutthroat trout occurred in relatively high elevations of the main stem and considerable overlap with rainbow trout occurred in tributaries and the main stem. Except in steelhead, the lower 90% confidence limit (CL) of abundance, size, and biomass was above the

containment objective for NTT that overlapped significantly with salmon. We used rainbow trout as an analog for steelhead. The lower 90% CL of rainbow trout abundance and size in tributaries and the main stem and biomass in the main stem was below the containment objective for steelhead. However, comparisons of rainbow trout abundance, size, and biomass between tributaries and main-stem sections with relatively high and low salmon abundances revealed that the change was probably not the result of supplementation (before–after control–impact paired site analysis: $P > 0.05$). Our data indicate that early stages of salmon supplementation have not impacted trout species in the upper Yakima River basin beyond predetermined containment objectives.

Schroder, S. L., C. M. Knudsen, T. N. Pearsons, T. W. Kassler, S. F. Young, C. A. Busack, and D. E. Fast. 2008. Breeding Success of Wild and First-Generation Hatchery Female Spring Chinook Salmon Spawning in an Artificial Stream. Transactions of the American Fisheries Society, 137:1475-1489.

Abstract: First generation hatchery and wild spring Chinook salmon from the upper Yakima River, Washington State were placed into an artificial stream and allowed to spawn. Seven independent test groups were placed into the stream from 2001 through 2005. No differences were detected in the egg deposition rates of wild and hatchery females. Pedigree assignments based on microsatellite DNA, however, showed that the eggs deposited by wild females survived to the fry stage at a 5.6% higher rate than those spawned by hatchery females. Subtle differences between hatchery and wild females in redd abandonment, egg burial, and redd location choice may have been responsible for the difference observed. Body size did not affect the ability of females to spawn or the survival of their deposited eggs. How long a female lived was positively related to her breeding success but female origin did not affect longevity. The density of females spawning in portions of the stream affected both egg deposition and egg-to-fry survival. No difference, however, was found in the overall distribution patterns of the two types of females. Other studies that have examined the effects of a single generation of hatchery culture on upper Yakima River Chinook have disclosed similar low-level effects on adult and juvenile traits. The cumulative impact of such differences will need to be considered when hatcheries are used to restore depressed populations of salmon.

Schroder, S. L., C. M. Knudsen, T. N. Pearsons, T. W. Kassler, S. F. Young, E.P. Beall, and D. E. Fast. 2010. Behavior and Breeding Success of Wild and First-Generation Hatchery Male Spring Chinook Salmon Spawning in an Artificial Stream. Transactions of the American Fisheries Society, 139:989-1003.

Abstract: Spring Chinook salmon *Oncorhynchus tshawytscha* native to the upper Yakima River, Washington, were placed into an artificial stream to evaluate the effect of a single generation of hatchery culture on their spawning behavior and ability to produce offspring. From 2001 to 2005, seven independent test groups containing wild and hatchery fish were placed into the stream. The effects of body weight, spawning ground longevity, attack frequency, social dominance, courting frequency, and mate number on breeding success in hatchery and wild males were evaluated. Differences in male agonism due to male origin were found. Wild males exhibited higher attack rates and greater social dominance than did hatchery males. However, the observed inequalities in agonism and dominance appeared to be largely caused by differences in body weight between the two types of males: wild males were, on average, 9% heavier than hatchery males. Wild and hatchery males did not differ in the frequency of courting behaviors or in the number of mates. Pedigree analyses based on DNA showed that hatchery and wild males had comparable breeding success values. Consequently, a single generation of hatchery exposure appeared to have a low effect on spring Chinook salmon male breeding success in our experimental setting.

Sharma, R, G. Morishima, S. Wang, A. Talbot, and L. Gilbertson. 2006. An evaluation of the Clearwater River supplementation program in western Washington. Canadian Journal of Fisheries and Aquatic Sciences, 63(2): 423-437.

Synopsis: After three generations of study, an integrated coho supplementation program in a Washington coastal stream documented no empirical evidence that the program negatively affected the fitness of the target population. This study demonstrates that a supplementation (hatchery) program, in this case following new and innovative operational protocols, can produce smolts that have nearly the same survival rate to adults as that of wild smolts and can result in more adult coho returning to the Clearwater basin. This benefit appears possible without short-term adverse impacts to either intrinsic productivity or the number of naturally produced smolts.

Sharpe, C.S., P.L. Hulett, C.W. Wagemann, M.P. Small and A.R. Marshall. 2010. Natural Reproductive Success of First-generation Hatchery Steelhead Spawning in the Kalama River: A Progress Report. Washington Department of Fish and Wildlife, Fish Program, Fish Science Division. (http://wdfw.wa.gov/publications/00969/wdfw00969.pdf)

Synopsis: The goal of the Kalama research program is to identify and empirically quantify risks imposed by hatchery programs on natural production of anadromous salmonids, and identify strategies to manage those risks. Studies of steelhead genetics, ecology, and life history have been ongoing in the Kalama River since the mid-1970's. A primary objective of Kalama research work has been to assess the relative reproductive performance and contribution of hatchery and wild steelhead spawning in the wild. We did not detect a difference in reproductive success of the wild broodstock hatchery spawners: the proportions of offspring from Hatchery × Hatchery (HH), Hatchery × Wild (HW), and Wild × Wild (WW) spawners closely approximated the proportions expected under the null hypothesis with reproductive success of hatchery spawners equal to that of wild spawners. Reproductive success of first-generation wild broodstock hatchery fish appeared to be similar to that of wild fish in the first replicate of our experiment. The outcome is in agreement with initial results from a similar reproductive success study on the Hood River, Oregon (Araki et al. 2006), where first generation wild-broodstock winter-run steelhead appeared to be as reproductively competent as the wild fish from which they were derived (but see Araki et al. 2007 and Araki et al. 2008). Because we present results from only the first of three replicates the results should be considered preliminary.

Small, M.P., K. Currens, T.H. Johnson, A.E. Frye, and J.F. Von Bargen. 2009. Impacts of supplementation: genetic diversity in supplemented and unsupplemented populations of summer chum salmon (*Oncorhynchus keta*) in Puget Sound (Washington, USA). Canadian Journal of Fisheries and Aquatic Sciences, 66:1216-1229.

Abstract: In supplementation programs, hatcheries employ wild-origin fish as brood stock and their offspring are allowed into wild spawning areas. Resource managers use supplementation to support imperiled salmonid populations, seeking to increase census size and possibly effective population size (Ne), while minimizing risks of genetic diversity loss and domestication from hatchery intervention. Here we document impacts of 5–10 years of supplementation on threatened summer-run chum salmon (*Oncorhynchus keta*) in Hood Canal (HC) and Strait of Juan de Fuca (SJF) in Washington State and compare them genetically with unsupplemented summer- and fall-run chum salmon from HC and South Puget Sound. Microsatellite allele frequencies identified four run-timing and geographic groups. HC and SJF summer chum salmon genetic relationships followed a metapopulation pattern of isolation by distance, similar to patterns prior to supplementation,

suggesting that supplementation minimally impacted population structure. In most supplemented subpopulations, we detected no effects on diversity and Ne, but high variance in individual pairwise relatedness values indicated over-representation of family groups. In two subpopulations, hatchery impacts (decreased diversity and lower Ne) were confounded with extreme bottlenecks. Rebounds in census sizes in all subpopulations suggest that general survivorship has improved and that possible hatchery effects on genetic diversity will be overcome.

3) If there are negative hatchery effects, are they reversible?

Bosch, W. J., T. H. Newsome, J. L. Dunnigan, J. D. Hubble, D. Neeley, D. T. Lind, D. E. Fast, L. L. Lamebull, and J. W. Blodgett. 2007. Evaluating the Feasibility of Reestablishing a Coho Salmon Population in the Yakima River, Washington. North American Journal of Fisheries Management 27:198-214.

Abstract: Historical returns of coho salmon to the Yakima River Basin were estimated to range from 45,000 to 100,000 fish annually but declined to zero by the 1980s after decades of overexploitation of fishery, water, and habitat resources. In 1996 the Yakama Nation and cooperators initiated a project to determine the feasibility of reestablishing a naturally spawning coho population in the Yakima River. The Yakima coho project explored whether successful recolonization was feasible when multi-generational, hatchery-reared coho were reintroduced to native habitats. After 10-20 years of outplanting, we compared data for adult returns of known natural- and hatchery-origin coho. We found that natural-origin coho returned at a significantly larger size than hatchery-origin coho. Mean egg mass and mean egg size of natural-origin females were greater than those of hatchery-origin females, though the differences were statistically significant for only one of three sample years. Natural-origin adults returned (2 to 9 days) and spawned (5 days) later than their hatchery-origin counterparts. Preliminary indices of smolt-to-adult survival for natural-origin coho were 3.5 to 17.0 times survival indices of hatchery-origin coho. The number of coho returning to historical native spawning habitats in upriver areas generally increased. Spawning surveys demonstrated the existence of robust and sustainable spawning aggregates in various locations in the basin. Hatchery releases from local brood source parents had significantly higher smolt-to-smolt survival than releases from out-of-basin hatchery broodstock, but some of these observed differences in survival could have been due in part to differences in smolt size. We conclude that hatchery-origin coho, with a legacy of as many as 10 to 30 generations of hatchery-influence, demonstrated their ability to reestablish a naturalized population after as few as 3 to 5 generations of outplanting in the wild.
Note that natural-origin coho adult returns to spawning areas above Willamette Falls confirm these results. After decades of outplanting hatchery-origin coho from multiple hatcheries including Oregon coastal hatcheries, releases above Willamette Falls were terminated in 1998. Now, 3-4 coho generations after hatchery-origin releases were terminated, adult coho returns to Willamette Falls numbered 25,300 in 2009 and will likely exceed 30,000 in 2010.

Conover, D. O., S. B. Munch, and S. A. Arnott. 2009. Reversal of evolutionary downsizing caused by selective harvest of large fish. Proceedings of the Royal Society B. doi:10.1098/rspb.2009.0003.

Synopsis: Evolutionary responses to the long-term exploitation of individuals from a population may include reduced growth rate, age at maturation, body size and productivity. Theoretical models suggest that these genetic changes may be slow or impossible to reverse but rigorous empirical evidence is lacking. Here, we provide the first empirical demonstration of a genetically based reversal of fishing-induced evolution. We subjected six populations of silverside fish (*Menidia*

menidia) to three forms of size-selective fishing for five generations, thereby generating twofold differences among populations in mean weight and yield (biomass) at harvest. This was followed by an additional five generations during which size-selective harvest was halted. We found that evolutionary changes were reversible. Populations evolving smaller body size when subjected to size-selective fishing displayed a slow but significant increase in size when fishing ceased. Neither phenotypic variance in size nor juvenile survival was reduced by the initial period of selective fishing, suggesting that sufficient genetic variation remained to allow recovery. These results show that populations have an intrinsic capacity to recover genetically from harmful evolutionary changes caused by fishing, even without extrinsic factors that reverse the selection gradient.

Doyle, R.M., R. Perez-Enriquez, M. Takagi, and N. Taniguchi. 2001. Selective recovery of founder genetic diversity in aquacultural broodstocks and captive, endangered fish populations. Genetica 111:291-304.

Abstract: Hatchery broodstocks used for genetic conservation or aquaculture may represent their ancestral gene pools rather poorly. This is especially likely when the fish that found a broodstock are close relatives of each other. We re-analysed microsatellite data from a breeding experiment on red sea bream to demonstrate how lost genetic variation might be recovered when gene frequencies have been distorted by consanguineous founders in a hatchery. A minimal-kinship criterion based on a relatedness estimator was used to select subsets of breeders which represented the maximum number of founder lineages (i.e., carried the fewest identical copies of ancestral genes). UPGMA clustering of Nei"s genetic distances grouped these selected subsets with the parental gene pool, rather than with the entire, highly drifted offspring generation. The selected subsets also captured much of the expected heterozygosity and allelic diversity of the parental gene pool. Independent pedigree data on the same fish showed that the selected subsets had more contributing parents and more founder equivalents than random subsets of the same size. The estimated mean coancestry was lower in the selected subsets, meaning that inbreeding in subsequent generations would be lower if they were used as breeders. The procedure appears suitable for reducing the genetic distortion due to consanguineous and over-represented founders of a hatchery gene pool.

Fraser, D. J. 2008. How well can captive breeding programs conserve biodiversity? A review of salmonids. Evolutionary Applications, 1:535-586.

Tymchuk, W. E., C. Biagi, R. Withler, and R. H. Devlin. 2006. Growth and behavioral consequences of introgression of a domesticated aquaculture genotype into a native strain of coho salmon. Transactions of the American Fisheries Society 135:442-455.

Abstract: Selective breeding for enhanced growth in Pacific salmon *Oncorhynchus* spp. and other fish typically involves use of the largest mature individuals to breed for future generations of aquaculture broodstock. Owing to an altered selection regime, faster-growing fish may not be as adapted to the natural environment as wild fish. To increase understanding of the genetic changes underlying selection for enhanced growth that results in phenotypic differentiation of farmed from wild Pacific salmon, multiple generations of pure and hybrid families were generated for coho salmon *O. kisutch*, including pure farm (D), pure native (Ch; a natural strain propagated by wild and hatchery production), F_1 and F_2 hybrids, and F_1 × wild backcross (B_{Ch}) genotypes. The family groups were reared in the laboratory under controlled conditions as (1) individual genotypic groups, (2) mixed groups under culture conditions, and (3) mixed groups under enriched (seminatural) conditions. The growth of the fish was tracked until smoltification. There was a significant genotype effect on growth performance (mass and length), with rankings as follows: $D > F_2 > F_1 > B_{Ch} > Ch$.

This ranking remained the same in all three rearing environments. Behavioral differences were observed among the families, the fast-growing domesticated families showing a reduced antipredator response relative to the slow-growing wild families. Expression of the phenotypic differences in the hybrids and backcrosses, together with the results from a joint-scale analysis on line means, suggests that additive genetic effects contribute significantly to the divergence between the fast- and slow-growing strains. As phenotypic differences between strains are largely a consequence of additive gene action, the phenotypic effects of domestication are largely diluted within two generations of backcrossing to wild salmon. Knowledge of the genetic changes responsible for altered growth rates is crucial to our ability to predict the consequences of introgression of domestic strains into wild populations of salmon.

4) Are hatchery effects genetically based?

Beacham, T. D. 2010. Revisiting Trends in the Evolution of Egg Size in Hatchery-Enhanced Populations of Chinook Salmon from British Columbia. Transactions of the American Fisheries Society, 139: 579-585.

Synopsis: Hatchery enhancement has been reported to result in an increase in egg size in coho salmon *Oncorhynchus kisutch* and a decline in egg size in Chinook salmon *O. tshawytscha*. Egg size may be directly influenced by selection, a larger egg size evolving as a consequence of hatchery incubation. Alternatively, a smaller egg size could evolve as a correlated response to fecundity selection, and a unidirectional change in egg size over time may reflect selection and an underlying genetic change in the population. To address this question, temporal trends in egg size were investigated for two hatchery-enhanced populations of Chinook salmon from Vancouver Island, British Columbia. After the effect of female length variation was removed by standardizing egg sizes to a female of common length (the overall mean for each population), there was no temporal trend in egg size from the 1970s to 2008 for any of the hatchery-enhanced populations evaluated. These results do not support a previous report of genetically based declines in egg size in hatchery-enhanced Chinook salmon populations from this region.

Mackey, G., J.E. McLean, and T.P.Quinn. 2001. Comparisons of Run Timing, Spatial Distribution, and Length of Wild and Newly Established Hatchery Populations of Steelhead in Forks Creek, Washington. North American Journal of Fisheries Management 21: 717-724.

Synopsis: In Washington State, the approach to management of wild and hatchery steelhead trout *Oncorhynchus mykiss* has been to separate the timing of return and spawning by the two groups through selective breeding for early timing in hatchery fish. However, overlap in timing and spatial distribution could permit genetic and ecological interactions. To evaluate this management approach, we compared the timing, spatial distribution, and size of adult steelhead in the wild and newly established hatchery populations of Forks Creek, Washington. Hatchery fish tended to return and spawn about 3 months before wild fish but there was some temporal overlap. Radio-tracking indicated that the spatial distributions of the populations overlapped considerably, permitting interbreeding and ecological interactions. However, the hatchery fish tended to stay closer to the hatchery, consistent with olfactory imprinting on the hatchery's water supply. Wild females were larger than hatchery females (median fork lengths were 670 and 644 mm, respectively), and wild males and females varied more in length than did hatchery fish of the same sex. In the first year in which naturally spawned offspring of hatchery fish might have returned, we observed a marked increase in early-returning unmarked (i.e., naturally spawned) adults, suggesting that some hatchery fish spawned successfully in the creek.

5) Background / Additional Reading

Bosch, W. J. 2004. The promise of hatchery-reared fish and hatchery methodologies as tools for rebuilding Columbia Basin salmon runs: Yakima Basin overview. American Fisheries Society Symposium 44:151-160.

Synopsis: Overview of Yakima Basin Projects and why supplementation is necessary.

Brannon, E. L., D. F. Amend, M. A. Cronin, J. E. Lannon, S. LaPatra, W. J. McNeil, R. E. Noble, C. E. Smith, A. J. Talbot, G. A. Wedemeyer, and H. Westers. 2004. The controversy about salmon hatcheries. Fisheries 29(9): 12-30.

Synopsis: Reviews literature that has been often cited to show the negative effects of hatcheries and explains how poor experimental designs or the use of inappropriate (e.g., non-local origin, multiple generations in hatcheries) hatchery stocks contributed to the negative results reported in these papers. Documents many examples where fish from traditional hatcheries have spawned successfully and done well under natural conditions.

Columbia River Inter-Tribal Fish Commission. 1995. WY-KAN-USH-MI WA-KISH-WIT Spirit of the Salmon. The Columbia River Anadromous Fish Restoration Plan, Vol. I and II. Portland, Oregon.

Columbia River Inter-Tribal Fish Commission. 2000. WY-KAN-USH-MI WA-KISH-WIT Spirit of the Salmon. The Columbia River Anadromous Fish Restoration Plan Update, Vol. I and II. Portland, Oregon.

Dompier, D. W. 2005. The Fight of the Salmon People: Blending Tribal Tradition with Modern Science to Save Sacred Fish. Xlibris Corporation, www.Xlibris.com.

Gallinat, M. P., and L. A. Ross. 2008. Tucannon River Spring Chinook Salmon Hatchery Evaluation Program, 2007 Annual Report. WDFW, Olympia, WA.

Narum, S.R., T.L. Schultz, D.M. Van Doornik, and D. Teel. 2008. Localized genetic structure persists in wild populations of Chinook salmon in the John Day River despite gene flow from outside sources. Transactions of the American Fisheries Society 137:1650-1656.

Abstract: Samples of Chinook salmon *Oncorhynchus tshawytscha* collected from four spawning areas in the John Day River, Oregon (n = 330), were genotyped with 13 microsatellite loci to test for bottlenecks and temporal stability within sites as well as genetic differentiation among sites, and to estimate gene flow from outside populations. Since the John Day River has never been stocked with hatchery-reared fish, this study provided the opportunity to evaluate the genetic integrity and structure of Chinook salmon in a wilderness area amid many hatchery-supported populations in the Columbia River. No tests for bottlenecks (Wilcoxon tests for heterozygosity excess) were significant, and the temporal variation was slight and not significant within any spawning reach except for the collections from the Middle Fork John Day River. Overall, the genetic distance estimates suggest that there are three distinct subpopulations in the John Day River, namely, those in (1) the North Fork John Day River (including Granite Creek), (2) the Middle Fork John Day River, and (3) the upper

main-stem John Day River. These genetic relationships were supported by results from a neighbor-joining dendrogram. Assignment tests indicate that out-of-basin straying occurs throughout the John Day River, the largest percentage of strays going to the North Fork John Day River. Immigration may have acted to avert genetic bottlenecks and maintain genetic diversity in populations with fluctuating census size. Yet the genetic substructure of the Chinook salmon in the John Day River indicates natural reproduction from philopatric individuals, possibly with higher reproductive success than immigrants. The evidence presented here elucidates the balance of philopatry and dispersal acting to maintain genetic diversity and localized structure among the Chinook salmon of the John Day River.

Perrier, C., G. Evanno, J. Belliard, R. Guyomard, and J-L. Baglinière. 2010. Natural recolonization of the Seine River by Atlantic salmon (*Salmo salar*) of multiple origins. Canadian Journal of Fisheries and Aquatic Sciences, 67(1): 1-4.

Abstract: The restoration of previously extinct salmon populations is usually achieved with stocking programmes, but natural recolonization can also occur through the straying of individuals from nearby populations. Here we investigated the origin of Atlantic salmon (*Salmo salar*) that recently recolonized the Seine River (France). The degradation of this river had led to the extinction of the population, but since the 1990s, the water quality has greatly improved. Although no stocking was performed, 162 individual salmon were recently observed by video-counting. Seven fish were sampled for morphological and genetic analyses. These individuals were genotyped at 17 microsatellites markers and their probable source populations were identified using baseline samples from regional and distant populations. Four of the sampled individuals were grilse and three were multi-sea-winter fish. Genetic analyses revealed that the fish partly originated from a nearby stock but also from distant populations, suggesting long-distance straying. This natural recolonization of a large river by strayers from several origins is discussed in terms of population sustainability and management.

References

RASP (Regional Assessment of Supplementation Planning). 1992. Supplementation in the Columbia River Basin, Parts 1-5. Report DOE/BP 01830-11, Bonneville Power Administration.

RIST (Recovery Implementation Science Team). 2009. Hatchery Reform Science. A review of some applications of science to hatchery reform issues. More information on the RIST, as well as an electronic copy of this report, can be found at http://www.nwfsc.noaa.gov/trt/index.cfm.

Bibliography of papers cited in RIST (2009), Figure 4 (see below) and response of tribal scientists (Note: this section is still being developed):

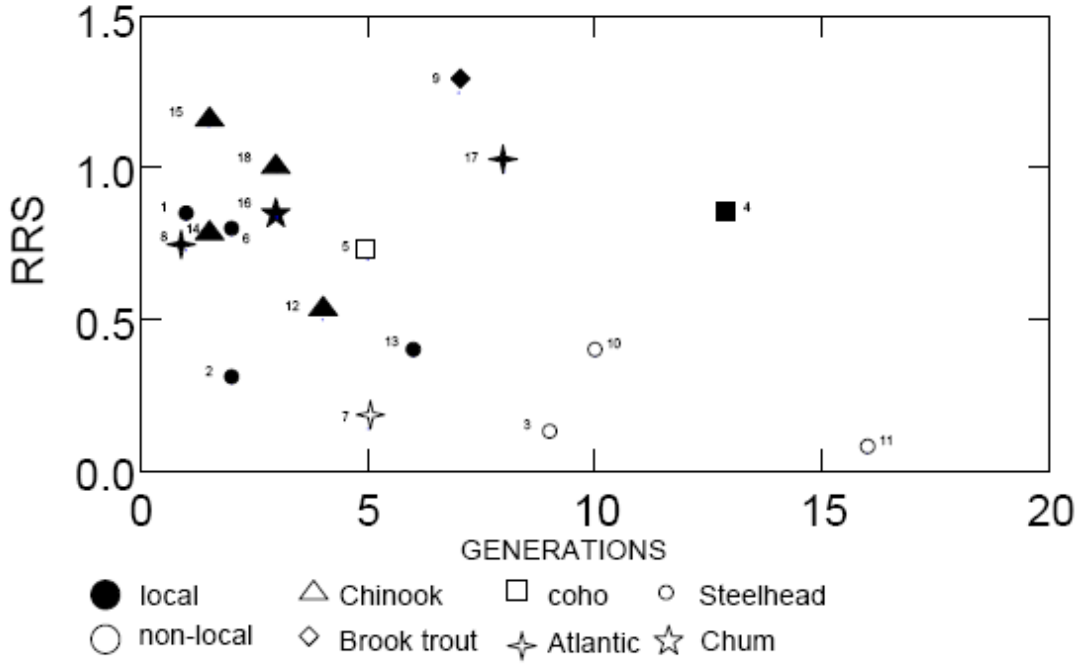


Figure 4 -- Summary of relative fitness estimates by species, broodstock origin, and generations in the hatchery (compiled by Berejikian, NWFSC). 1 - Araki et al. (2007b)), 2 - Araki et al. (2007b), 3 - Leider et al. (1990), 4 - Ford et al. (2006), 5 - Fleming and Gross (1993), 6 - Reisenbichler and McIntyre (1977), 7 - Fleming et al. (2000), 8 - Fleming et al. (1997), 9 - Dannewitz et al. (2003), 10 - Araki et al. (2007a), 11 - Araki et al. (2007a), 12 - Murdoch et al. (2008), 13 - Moran and Waples (2007), 14 - P. Moran (NWFSC, personal communication), 15 - P. Moran (NWFSC, personal communication), 16 – Berejikian et al. (2008), 17 - McGinnity et al. (1997.), 18 – Leth (2005).

Araki, H., B. Cooper, and M. S. Blouin. 2007. Genetic effects of captive breeding cause a rapid, cumulative fitness decline in the wild. Science 318:100-103.

And

Araki, H., B. Cooper, and M. S. Blouin. 2009. Carry-over effect of captive breeding reduces reproductive fitness of wild-born descendants in the wild. Biology Letters, published online 10 June 2009.

Abstract: Captive breeding is used to supplement populations of many species that are declining in the wild. The suitability of and long-term species survival from such programs remain largely untested, however. We measured lifetime reproductive success of the first two generations of steelhead trout that were reared in captivity and bred in the wild after they were released. By reconstructing a three-generation pedigree with microsatellite markers, we show that genetic effects of domestication reduce subsequent reproductive capabilities by ~40% per captive-reared generation when fish are moved to natural environments. These results suggest that even a few generations of domestication may have negative effects on natural reproduction in the wild and that the repeated use of captive-reared parents to supplement wild populations should be carefully reconsidered.

Response: This study presents adult-to-adult RRS estimates of naturally spawned steelhead of supplemented vs. wild origin in the Hood River. This paper differs from Araki et al. (2007; Cons. Biol.) by evaluating RRS over three generations rather than only two. The current manuscript is very similar to Araki et al. (2007; Science) with both studies evaluating RRS of wild born steelhead over three generations. A slight difference appears in the analysis groups, with the current paper comparing RRS of wild born fish with captive vs. wild parents, and Araki et al. (2007; Science) comparing RRS of wild born fish from two types of captive reared steelhead. Overall, the premise is fairly redundant with previous papers by these authors, to the point where some text, figures, and tables are nearly identical to earlier literature (Araki et al. 2007a, b). As written, the current manuscript provides only minor advancements relative to previous conclusions, and the methods are greatly lacking appropriate detail. It also appears that further comparisons of RRS could have been made with sample groups from Araki et al. (2007; Science).

Of the work included, the results of RRS are presented in a biased manner to suggest that descendants of captive fish have lower RRS than wild. Specifically, the discussion section glosses over the annual results and focuses only on averages over multiple years to support this claim. However, annual results provided in Table 1 indicate that in only 2 of 18 annual comparisons was RRS of captive fish (either CxC or CxW) significantly less than wild fish (WxW). In most cases (16 of 18) differences in RRS were not significant between groups. Further, in 4 of the 18 comparisons, captive fish had higher RRS than wild fish (but not significant). The annual results much more accurately describe the results of this study than averages that appear to be highly influenced by wide variance in annual RRS.

Deficient methods and limited presentation of results are followed by sweeping conclusions that are not well supported. This topic has important implications and warrants a more complete paper with adequate and detailed analysis methods, full presentation of results, and unbiased discussion.

Ford, M.J., H. Fuss, B. Boelts, E. LaHood, J. Hard, and J. Miller. 2006. Changes in run timing and natural smolt production in a naturally spawning coho salmon (*Oncorhynchus kisutch*) population after 60 years of intensive hatchery supplementation. Canadian Journal of Fisheries and Aquatic Sciences 63:2343-2355.

Abstract: Supplementing natural fish populations with artificially propagated (hatchery) fish is a common practice. In evaluating supplementation, it is important to assess the relative fitness of both hatchery-produced and naturally produced fish when they spawn together in the wild and to evaluate how the absolute fitness of the natural population changes after many generations of supplementation. We evaluated the relative fitness of naturally produced and hatchery-produced coho salmon (*Oncorhynchus kisutch*) in Minter Creek, Washington, USA. We also evaluated long-term changes in natural smolt production in this stream after several decades of intensive hatchery supplementation. Total smolt production was estimated to be 14 660 and 19 415 in 2002 and 2003, respectively, compared with the average value of 28 425 from 1940 to 1955. We found no significant difference in relative fitness between hatchery and natural fish, probably because the natural population consists largely of fish produced from the hatchery a generation or two previously. There has been a long-term trend for adults to return to the stream earlier in the spawning season. We estimated standardized selection differentials on run timing, with results indicating stabilizing selection with an optimum run timing later than the mean contemporary run timing but earlier than the historical mean run timing.

Response: Note the authors found no significant difference in relative fitness between hatchery and natural fish. There is no attempt to explain how other factors (e.g., habitat degradation, changes in water management, etc.-see NOAA 1998 citation below) could explain the decline in smolt production between 1940-1955 and 2002-2003. Earlier run timing could potentially be explained by improper brood representation in hatchery protocols (see Mackey et al. 2001).

E.G. From: National Oceanic and Atmospheric Administration (NOAA). 1998 (on-line). "Population: Distribution, Density and Growth" by Thomas J. Culliton. NOAA's State of the Coast Report. Silver Spring, MD: NOAA. URL:
http://state_of_coast.noaa.gov/bulletins/html/pop_01/pop.html
"Another rapidly developing coastal area is Puget Sound, Washington. In 1940, the area's population totaled 860,000. It has increased by about 400,000 people every 10 years since then. The area is now home to about 3.2 million people. The area's population is expected to increase by another 1.4 million people, reaching 4.6 million in the year 2015. Rural areas are being engulfed by housing and commercial developments. Forests and meadows are being replaced by roads, homes, office buildings and shopping malls. Keeping Puget Sound healthy is a more and more difficult task."

Leider, S.A., P.L. Hulett, J.J. Loch, and M.W. Chilcote. 1990. Electrophoretic comparison of the reproductive success of naturally spawning transplanted and wild steelhead trout through the returning adult stage. Aquaculture 88:239-252.

Abstract: A previous electrophoretic assessment of the natural reproductive success of sympatric transplanted hatchery and wild sumer-run steelhead trout *Oncorhynchus mykiss* (formerly *Salmo gairdneri*) populations was extended to include returns to the adult life history stage. The mean percentage of offspring from naturally spawning hatchery steelhead decreased at successive life history stages from a potential of 85-87% at the egg stage to 42% at the adult stage. In addition, reproductive success of naturally spawning hatchery steelhead compared to wild steelhead decreased from 0.750-0.788 at the subyearling stage to 0.108-0.129 at the adult stage. In freshwater, the period of greatest differential mortality for offspring of hatchery and wild steelhead occurred from the subyearling to smolt stage, suggesting that influences such as predation and competition affected survival of hatchery offspring to a greater extent than did environmental and ecological effects directly associated with differences in parental spawning time. Differential mortality of hatchery offspring also occurred during the smolt to adult phase, and was of a magnitude similar to that for the egg to subyearling phase. Poorer survival for naturally produced offspring of hatchery fish could have been due to long-term artificial and domestication selection in the hatchery population, as well as maladaptation of the transplanted hatchery stock in the recipient stream.

Response:

McGinnity, P., C. Stone, J.B. Taggart, D. Cooke, D. Cotter, R. Hynes, C. McCamley, T. Cross, and A. Ferguson. 1997. Genetic impact of escaped farmed Atlantic salmon (*Salmo salar* L.) on native populations: use of DNA profiling to assess freshwater performance of wild, farmed, and hybrid progeny in a natural river environment. ICES Journal of Marine Science 54:998-1008.

Synopsis: Since Atlantic salmon (*Salmo salar* L.) used for farming are usually genetically different from local wild populations, breeding of escaped farmed salmon potentially results in genetic changes in wild populations. To determine the likelihood and impact of such genetic change, an experiment was undertaken, in a natural spawning tributary of the Burrishoole system in western Ireland, to compare the performance of wild, farmed, and hybrid Atlantic salmon progeny. Juveniles

were assigned to family and group parentage by DNA profiling based on composite genotypes at seven minisatellite loci. Survival of the progeny of farmed salmon to the smolt stage was significantly lower than that of wild salmon, with increased mortality being greatest in the period from the eyed egg to the first summer. However, progeny of farmed salmon grew fastest and competitively displaced the smaller native fish downstream. The offspring of farmed salmon showed a reduced incidence of male parr maturity compared with native fish. The latter also showed a greater tendency to migrate as autumn pre-smolts. Growth and performance of hybrids were generally either intermediate or not significantly different from the wild fish. The demonstration that farmed and hybrid progeny can survive in the wild to the smolt stage, taken together with unpublished data that show that these smolts can survive at sea and home to their river of origin, indicates that escaped farmed salmon can produce long-term genetic changes in natural populations. These changes affect both single-locus and high-heritability quantitative traits, e.g. growth, sea age of maturity. While some of these changes may be advantageous from an angling management perspective, they are likely, in specific circumstances, to reduce population fitness and productivity. Full assessment of these changes will require details of marine survival, homing and reproductive performance of the adults together with information on the F_2 generation.

Response:

Moran, P. and R.S. Waples. 2007. Monitor and evaluate the genetic characteristics of supplemented salmon and steelhead. Annual Report to BPA, Project No. 1989-096-00.

Synopsis: The historical role of artificial propagation has typically been enhancement and mitigation; enhancement of existing fisheries or creation of new fishing opportunities and mitigation of habitat loss associated with hydropower. These applications have been, and to some extent remain, highly successful; however, traditional hatchery programs were not designed to sustainably increase natural production, and have generally not been demonstrated to do so. In many cases, artificial propagation can temporarily boost the number of spawners (Waples et al. 2007), but the ability to sustain that boost in the absence of continued hatchery propagation has rarely been demonstrated. Arguably, there are cases where fish have been re-introduced after extirpation of the native population, but the ability use supplementation to produce long-lasting increases in an existing natural population remains largely unproven. The consequences for listed species are unclear, and both theoretical and empirical data suggest that, in some cases at least, hatchery production can actually harm natural populations, putting them at greater, rather than lesser, risk of extinction. In most cases, it is not known how long positive or negative effects might persist, because hatchery production is rarely discontinued. The goal of artificial production in a conservation context is therefore to gain the demographic boost of hatchery production while minimizing whatever genetic risks might be associated with changes in the natural selective regime.

Response:

Murdoch, A.R., T.N. Pearsons, T.W. Maitland, M.J. Ford, and K. Williamson. 2008. Monitoring the reproductive success of naturally spawning hatchery and natural spring Chinook salmon in the Wenatchee River. Annual Report to BPA, Project No. 2003-039-00, Contract No. 00032138.

Abstract: Hatcheries have been increasingly asked to contribute to conserving natural salmon populations, as well as to continue to produce fish to mitigate for lost harvest opportunities. A key biological uncertainty about the effects of hatchery production on natural populations is the degree to which hatchery produced fish can reproduce in the natural environment. In order to help assess the

impact (positive or negative) of supplementation of spring Chinook salmon in the Wenatchee River we are using a DNA-based pedigree analysis to (1) directly measure the relative reproductive success of hatchery and natural-origin spring Chinook salmon in the natural environment, and (2) determine the degree to which any differences in reproductive success between hatchery and natural Chinook salmon can be explained by measurable biological characteristics such as run timing, morphology, and reproductive behavior. Both male and female hatchery fish produced far fewer progeny per parent when spawning naturally than did natural-origin fish. Differences in age structure, spawning location, weight, and run timing were responsible for a portion of the difference in fitness between hatchery and natural-origin fish. Male size and age had a large influence on fitness, with older and larger males selectively favored. Male run time had a smaller but still significant effect on fitness, with earlier returning fish favored. Female size had a significant effect on fitness, but the effect was much smaller than the effect of size on male fitness. Spawning location had a significant effect on fitness for both males and females, and for females may largely explain the reduced fitness observed for hatchery fish.

Response:

Reisenbichler, R.R. and J.D. McIntyre. 1977. Genetic Differences in Growth and Survival of Juvenile Hatchery and Wild Steelhead Trout, *Salmo gairdneri*. Journal of Fisheries Resource Board of Canada 34:123-128.

Abstract: Relative growth and survival of offspring from matings of hatchery and wild Deschutes River (Oregon) summer steelhead trout, *Salmo gairdneri*, were measured to determine if hatchery fish differ genetically from wild fish in traits that can affect the stock-recruitment relationship of wild populations. Sections of four natural streams and a hatchery pond were each stocked with genetically marked (lactate dehydrogenase genotypes) eyed eggs or unfed swim-up fry from each of three matings: hatchery x hatchery (HH), hatchery x wild (HW), and wild x wild (WW). In streams, WW fish had the highest survival and HW fish the highest growth rates when significant differences were found in the hatchery pond. HH fish had the highest survival and growth rates. The hatchery fish were genetically different from wild fish and when they interbreed with wild fish may reduce the number of smolts produced. Hatchery procedures can be modified to reduce the genetic differences between hatchery and wild fish.

Response:

See **Testimony #T5** for comment delineation

Statement of Salmon For All
Concerning the Mitchell Act DEIS
Astoria, Oregon
September 30, 2010

Good evening. My name is Hobe Kytr. I am the nonprofit administrator for Salmon For All, a nonprofit trade association of Columbia River commercial fishermen and processors, representing the lower river non-Indian gillnet fleet.

The Mitchell Act originally was enacted by congress in May of 1938 in response to the very real threat to the Columbia River's once mighty salmon runs posed by the construction of Bonneville Dam, the impending Columbia Basin Project, and the projected continuing development of the Columbia River Basin over the next several decades, including but not limited to large federal hydroelectric dam projects. By 1938, a large percentage of the once extensive habitat available to Columbia River salmonids had been lost behind dams built without fish passage. Work was continuing on Grand Coulee Dam, scheduled for completion in 1941, which would cut off the upper third of the Columbia River Basin from fish passage forever. Beginning in 1939, the Grand Coulee Fish Maintenance Program began efforts to salvage what could be saved of the salmon runs of the upper Columbia River by trapping fish at Rock Island Dam and hauling them in tanker trucks to what little habitat was still available in the Okanogan, Entiat, Methow, and Wenatchee Rivers. Fish culturists from the US Fish & Wildlife Service also sought to transform the upper river runs into composite, blended stocks suitable for artificial propagation. This is the context of desperate need in which the Mitchell Act legislation emerged.

In the best of all possible worlds, one would have hoped that more care should have been taken to preserve salmonid spawning habitat in the Columbia River Basin. But that's not what happened. Hydropower development, federal and otherwise, has turned the Columbia River into the most dammed river in the world. Irrigation projects transformed the Columbia Plateau into one of the most productive agricultural regions in the world, but also lured countless millions of migrating salmonids into unscreened irrigation ditches that proved to be dead-end death traps. Logging, pollution, industrial and ever encroaching urban development all took their toll west of the Cascades as well. In desperate attempts to save lower Columbia River Chinook and coho salmon, Mitchell Act hatcheries became the repositories in which their genetic legacy still resides.

Much has been said and written about what recovery of the Columbia River's populations of salmon and steelhead would look like, and what it would take to achieve that goal, insofar as it is possible. Those of us who represent various constituencies of the harvest community are perhaps the strongest proponents of Columbia River salmonid recovery. We have the most at stake in this effort, the most to gain if it succeeds, and the most to lose if it does not. But, none of the five options presented in the Mitchell Act Draft Environmental Impact Statement will help us advance towards recovery.

P O Box 56 • Astoria, Oregon 97103-0056 • (503) 325-3831 • FAX (503) 325-2725
info@salmonforall.org • www.salmonforall.org

In fact, all the options presented in the Mitchell Act DEIS lead us away from Columbia River salmonid recovery. By defining the status quo as the conditions present in 2007, Option One undoes all the advances in hatchery reform during the past three years, including successful supplementation programs instituted by the Columbia River Treaty Tribes as co-managers of the fishery. All the options presented fail to live up to federal treaty trust obligations under the 2008-2017 *US v. Oregon* Management Agreement and the 2008 renewal of the Pacific Salmon Treaty. Not one of the Options is consistent with Washington's updated 2010 Lower Columbia Salmon Recovery and Fish and Wildlife Subbasin Plan, or with the Conservation and Recovery Plan for Oregon's Populations of Lower Columbia Salmon and Steelhead recently approved by the Oregon Fish & Wildlife Commission. It is dispiriting to find that, all the while NMFS has been directing the states, tribes, and regional councils to engage in recovery planning, that the agency itself has been working on a Draft Environmental Impact Statement for Mitchell Act hatcheries that negates all the effort that has gone into the recovery planning mandated by NMFS.

The errors and omissions in the Mitchell Act DEIS are too numerous to reference here in any detail, but they are seriously disturbing. The coho and Chinook modeling in Appendix K use the wrong parameters with reference to the 2008-2117 *US v. Oregon* Management Agreement, the wrong allocation formulae for the non-Indian commercial and recreational mark-selective fisheries for spring Chinook, and the wrong mortality rate for the tangle net fishery. Even if the data on smolt production in the Columbia basin used in Appendix K were correct, and there is good reason to suspect they are not, the conclusions derived from the calculations in the modeling exercise still would be so erroneous that they would be useless to anyone. Appendix I, the Socioeconomic Resource Report, was never peer-reviewed nor completed, meaning that not only does it not live up to accepted academic standards, it does not meet NOAA Fisheries' own policy on peer review and data quality. The data on environmental justice communities in Tables 3-26, 3-27, and 3-28 list the wrong census data, and omit data from the four poorest counties in the states of Washington and Oregon, where the majority of our fishermen just happen to reside. These are only a few of the glaring deficiencies noted in the DEIS.

At this point in time, it is quite clear that the Mitchell Act Draft Environmental Impact Statement was not ready for public review. We call for the National Marine Fisheries Service to withdraw the DEIS until it actually has engaged in the full consultation process that already should have taken place with the tribes, states, and agencies that co-manage Columbia River fisheries. The data and conclusions in the Mitchell Act DEIS are of no use to those constituencies who are most likely to be affected by the draconian cuts proposed for Columbia River salmonid production levels. We reject the listed range of options that call for far fewer fish for the Columbia River Basin, which threaten to leave us all with reduced and failing fisheries. Let us instead embrace hope, and work together for increased abundance, leading to genuine recovery for Columbia River salmonids wherever it is possible to achieve that worthy goal. Finally, we remind the National Marine Fisheries Service that the mitigation obligations undertaken by the federal government in 1938, which were renewed and expanded in 1946, have not ended. The dams are still there, lost habitat is still lost, degraded habitat has only begun to be rehabilitated, and the naturally spawning salmonid stocks upon which recovery depends are not yet recovered, nor will any of the options presented in the DEIS make them more likely to do so.

Thank you for the opportunity to provide testimony. Salmon For All will provide detailed written comments on the Mitchell Act DEIS before the deadline for submitting public comment.

Letter 29, Comment #41

The Columbia Basin Weekly Fish & Wildlife News Bulletin

APPEALS COURT REJECTS LETHAL REMOVAL OF SALMON-EATING SEA LIONS; REMANDS ISSUE BACK TO NMFS

Posted on Tuesday, November 23, 2010 (PST)

The Ninth Circuit Court of Appeals in San Francisco on Tuesday ruled that the federal government in a March 2008 decision failed to explain how the killing of sea lions that prey on salmon below the Columbia River's Bonneville Dam is consistent with the Marine Mammal Protection Act.

The opinion reverses a Nov. 25, 2008, order by U.S. District Court Michael W. Mosman that said the National Marine Fisheries Service, in granting states authority to lethally remove sea lions, "properly evaluated whether individually identifiable pinnipeds were having a significant negative impact on the decline or recovery of salmonids" that are listed as threatened or endangered under the Endangered Species Act.

The MMPA's Section 120 requires such a determination before its protections can be relaxed to allow the removal, lethal or otherwise, of pinnipeds.

A total of 40 California sea lions have been removed since the authority was granted in March 2008. Soon thereafter the Humane Society of the United States and the Wild Fish Conservancy filed a lawsuit contesting NMFS' decision and followed with an appeal of Mosman's decision. The appeal was debated during 2009 with the appellate panel hearing oral arguments more than a year ago, Nov. 6, 2009.

The Ninth Circuit opinion ordered that the lawsuit be remanded to the district court "with instructions to vacate the decision of NMFS and remand to NMFS."

"Here, we hold that NMFS has not offered a satisfactory explanation for its action. First, the agency has not adequately explained its finding that sea lions are having a 'significant negative impact' on the decline or recovery of listed salmonid populations given earlier factual findings by NMFS that fisheries that cause similar or greater mortality among these populations are not having significant negative impacts," according to the Nov. 23 opinion penned by Raymond C. Fisher. The three-member panel that decided the appeal included Ninth Circuit Judges Fisher and Richard A. Paez and District Judge Jeremy D. Fogel. Fogel, a federal judge for the Northern District of California, was sitting on the panel by designation.

"Second, the agency has not adequately explained why a California sea lion predation rate of 1 percent would have a significant negative impact on the decline or recovery of these salmonid populations. These procedural errors require us to direct the district court to vacate NMFS's decision and remand to the agency to reconsider the action or provide a fuller explanation," the Ninth Circuit opinion said. The lethal take program approved by NMFS, which is also called NOAA Fisheries Service, set a goal of reducing predation to three-year average of 1 percent or less of salmon runs.

Downloaded from: http://www.cbbulletin.com/401918.aspx# (accessed November 23, 2010).

“In this respect we once again echo the concerns of the Marine Mammal Commission, which repeatedly emphasized to NMFS the need to ‘identify the level at which predation of salmonids by pinnipeds no longer would be considered significant,’ because ‘the taking authority should lapse once predation is reduced to a level where it no longer is having a significant impact,’” the opinion says.

As of this morning (Tuesday) state and federal officials had not yet fully reviewed the opinion or discussed a course of legal or other action.

“Obviously I’m disappointed after receiving what we thought was a strong opinion from the district court,” NMFS’ Garth Griffin said.

The defendants say the Ninth Circuit got it right.

“The government’s plan to kill sea lions for eating fish, while at the same time authorizing fishermen to take four times as many fish as sea lions is irrational, and the court has rightly put a stop to it,” said Jonathan R. Lovvorn, vice president and chief counsel for animal protection litigation for The HSUS. “It’s time for the agency to abandon this plan and work cooperatively with us to protect both sea lions and salmon in the Columbia River.”

The lawsuit challenged NMFS’ conclusion that sea lions must be killed to prevent them from consuming an average of 0.4 to 4.2 percent of salmon returns, even as the agency allows fishermen to take up to 17 percent of the salmon run, according to the plaintiffs.

“Blaming sea lions is nothing but a distraction,” said Kurt Beardslee, executive director of Wild Fish Conservancy. “We’re glad the court recognized that the agency must consider its salmon conservation decisions openly and carefully, considering all impacts to salmon — including dams, fisheries and habitat degradation.”

The opinion declared the NOAA Fisheries decision “arbitrary and capricious” under the Administrative Procedures Act.

“Accordingly, we direct the district court to vacate NMFS’s decision approving the states’ MMPA application and remand to NMFS to afford the agency the opportunity either to articulate a reasoned explanation for its action or to adopt a different action with a reasoned explanation that supports it.

“In so holding, we do not impose an undue burden on NMFS on remand. The APA requires only a ‘cogent explanation.’

“We recognize the challenges NMFS faces in addressing salmonid conservation and recovery in the Columbia River, the efforts it has taken to address multiple sources of mortality and the practical difficulties presented by uncertainties and changing conditions on the ground,” the opinion says. “We also recognize that sea lion predation is a serious and potentially significant problem in this location, and that Congress, in enacting section 120 of the MMPA, has authorized NMFS to give priority to ESA-listed salmonid populations over MMPA-protected pinnipeds under specific circumstances.

“As judges, our limited role is to ensure that NMFS has properly determined that those specific circumstances exist. To do so, we require an explanation from the agency that enables meaningful judicial review. We conclude that a remand is necessary in this case to permit us to fulfill our function.”

Downloaded from: http://www.cbbulletin.com/401918.aspx# (accessed November 23, 2010).

Letter 29, Comment #41

The Columbia Basin Bulletin
Weekly Fish & Wildlife News

SEA LION REPORT: SALMON TAKE INCREASING, BUT REMOVAL PROGRAM KEEPS IT FROM GOING HIGHER

Posted on Friday, November 05, 2010 (PST)

Overall consumption of salmon by California sea lions has continued to rise during the past three years, but federal and state officials still feel they are making progress toward reducing predation by removing marine mammals from the area immediately below the lower Columbia River's Bonneville Dam.

Studies show that the 40 sea lions removed from the area during those years were among the most voracious of the pinnipeds known to prey on salmon, steelhead and other fish species at Bonneville, according to the October research report, "Evaluation of Pinniped Predation on Adult Salmonids and Other Fish in the Bonneville Dam Tailrace, 2008-2010." The report was produced by U.S. Army Corps of Engineers researchers Robert J. Stansell, Karrie M. Gibbons, and William T. Nagy.

Data collected by the researchers show that while those sea lions represented only 9.5 percent (40 of 420) of the sea lions identified over the years, they accounted for 36.5 percent (3,388 of 9,275) of all the salmonid catch events attributed to specific individuals. The removed animals had a history of staying longer at the dam and eating more fish per capita than other animals seen at the dam.

"This indicates that the removal program has indeed targeted those animals most likely to stay for a long time and consume many salmonids," the report says. "Consumption estimates and presence metrics for 2008, 2009, and 2010 undoubtedly would have been higher if these select sea lions had not been removed."

The Corps research was launched in 2002 to evaluate the effect of the California sea lions growing presence below the dam on salmon stocks headed upriver in springtime on their spawning run. The fish include stocks that are protected under the Endangered Species Act. Bonneville is the first hydro project the fish encounter upon their return from the Pacific Ocean.

Historically only a few California sea lions were observed at Bonneville, which is located 146 river miles from the Pacific. But as spring chinook salmon returns swelled early this century, so did the number of marine mammals camped out below the dam's fish ladders. As many as 104 different California sea lions (2003) have been seen at the dam. The total was 82 in 2008, 54 in 2009 and 89 this past spring.

The number of individual sea lions observed at Bonneville Dam has increased from an average of 83.0 per year between 2002 and 2007 to 123.7 per year for the last three years, according to the Corps report. That is primarily due to an increase in the presence of Steller sea lions, which averaged 5.0 per year before 2008 and 46.7 from

2008 to 2010. Overall number of California sea lions at Bonneville each spring averaged 76.2 per year before 2008 and 75.0 during the past three years.

The adjusted salmonid consumption rate based on observations extrapolated to include totals for unobserved days were 4,294 fish in 2008, 4,037 in 2009 and 5,095 in 2010.

The overall number of salmon passing Bonneville increased from 2008 to 2009 and again from 2009 to 2010 so the actual percentage of the run taken by California sea lions shrank each year. The 2010 run, 267,184 passing Bonneville, was the second largest since 2002. The 2001 upriver spring chinook salmon run, as measured at the mouth of the Columbia, was the largest on record at 439,885.

The report is among the materials being considered by the Pinniped-Fisheries Interaction Task Force as it evaluates the effectiveness of a sea lion removal-deterrence program begun in 2008 by the states of Oregon and Washington, with the help of Columbia River Inter-Tribal Fish Commission member tribes, federal agencies and other entities. The states were granted lethal removal authority in March 2008 by NOAA Fisheries Service under Section 120 of the Marine Mammal Protection Act.

The 18-member task force, formed in 2007 to help evaluate the states' application for lethal take authority, includes representatives from academic, scientific and conservation communities, tribes and federal and state agencies.

The task force was reconvened Oct. 25-26 in Portland, and will meet again Nov. 9-10. When it completes its deliberations, the task force will submit recommendations to NOAA Fisheries on how the program, initially approved for a five-year run, should proceed. The federal agency will then decide whether to continue the program unchanged for the next two years, whether to modify the removal authority and/or terms of its letter of authorization or to determine that the permitted lethal removals have been effective and disband the task force.

The number of California sea lions captured during the March 1-May 31 period over the past three years includes 37 trapped below Bonneville and three at Astoria, Ore., near the river mouth. Ten were accepted by zoos or aquariums, 22 were euthanized and five died accidentally. The approval allows the removal of up to 85 animals yearly though NOAA Fisheries predicted that the states would probably be able to capture and remove 30 of the big marine mammals at best in any given year.

"This is likely the cause of the decline in CSL mean daily presence and maximum numbers seen on any given day, as most of the removed individuals had returned many years and remained at Bonneville Dam for long periods of time," the Corps report says.

Trapping next year would likely target about 35 California sea lions of the 78 animals that are now eligible for removal. That's because 37 of the eligible animals have not been seen at the dam in two or more years and six others were not seen last year. Researchers know from past experience that sea lions that do not return in consecutive years are unlikely to return at all.

NOAA Fisheries approval letter says that the states can lethally remove "individually identifiable predatory California sea lions that are having a significant negative impact on ESA-listed salmonids." To make the removal list a California sea lions must have been:

-- observed eating salmonids in the "observation area" below Bonneville Dam between Jan 1 and May 31 of any year; and

-- observed in the observation area below Bonneville Dam on a total of any five days (consecutive days, days within a single season, or days over multiple years); and

-- sighted in the observation area below Bonneville Dam after they have been subjected to active non-lethal deterrence.

The report noted that, despite the removal of some of the most successful predators in 2008 and 2009 the overall number of California sea lions visiting the dam grew in 2010.

“We expected the results from the 2010 season to show a steep decline in CSL numbers, which should have also resulted in reduced salmonid predation by CSL. However, this was not the case, as many new CSL ventured up to Bonneville Dam this year, if only briefly,” the report says. “It may be that removing 11 to 15 animals each year is not enough to prevent substantial recruitment of new individuals and increased predation, and that it would take more additional measures (e.g. the removal of about 30 individuals) each year to see and document a significant reduction in CSL numbers and salmonid predation.”

One sea lion this past year may have moved to No. 1 on the most wanted for removal list. The report notes that a pinniped branded as C287 took the most fish in one day at Bonneville Dam since observations began in 2002.

“He was seen to take 12 Chinook on April 12, 2010,” the report says. “If we use an average Chinook weight of 6.6 kg per fish (Brown, et al., 2010) this equates to about 85.8 kg in one day consumed. This is almost triple the maximum observed daily consumption by weight of that reported in Kastelein et al. (2000) from captive male CSL over 10 years old in the Netherlands. C287 was first observed at Bonneville Dam on March 22 this year, his sixth year observed at Bonneville Dam.”

“This is not to say every CSL consumes this many fish, but it does give us an indication of how unusual a situation pinniped predation at Bonneville Dam has become when compared to natural or captive consumption studies, and what some CSL are capable of consuming.”

The Corps report and other materials related to the task force evaluation of the removal program can be found at: http://www.mediate.com/DSConsulting/pg23.cfm

Downloaded from: http://www.cbbulletin.com/401380.aspx# (accessed November 23, 2010).

Study gauges success of wild fish rescue

Fish collected by Battle Ground-area man are tagged, then released

Letter 29, Comment #23

Photo by **Troy Wayrynen**

Dave Brown wades through a feeding pond containing 10,000 coho salmon on his property along Mill Creek near Battle Ground. The salmon, just tagged, will be released into the local tributaries next spring. At top, the last of 34,000 coho salmon is tagged using a special machine that implants a coded wire tag. The tags should reveal how well the rescued fish survive after they're released.

By **Erik Robinson**

Thursday, November 18, 2010

By Troy Wayrynen
The Columbian

Dave Knutzen, center, a fish biologist with Northwest Marine Technology, uses a machine to tag coho salmon as fish rescuer Dave Brown, left, and company biologist Geraldine Vander Haegen observe.

By Troy Wayrynen
The Columbian

The last of 34,000 coho salmon is tagged using a special machine implanting a coded wire tag. The tags should reveal how well the rescued fish survive after they're released.

When Dave Brown began scooping up tiny salmon stranded in drying creeks near his Battle Ground-area home several years ago, he had no way of gauging whether it would boost anemic fish runs in local rivers.

He only knew one thing for sure: Fish would die if he didn't act.

Brown and his ever-growing cadre of volunteers scoop stranded wild juvenile coho and steelhead, then place them in a series of pens Brown assembled on his property off 259th Street near Mill Creek. Fed by groundwater springs, the pens keep the fish alive until Brown can release them back into native streams swollen by autumn rains.

Turned loose, the fish go along their way.

But how many survive long enough to make their way downstream, migrate to the ocean and return two or three years later to spawn the next generation?

In 2008, a group of biologists decided to find out.

Northwest Marine Technology in Tumwater agreed to provide almost $5,000 worth of coded wire tags and equipment. On Tuesday, a group of volunteers finished inserting the last of 34,000 tags injected into fatty tissue above the snout. Each tag, roughly the size of a grain of rice, contains a six-character code identifying the fish as one of Brown's.

Now, three years later, Brown's chickens are just beginning to come home to roost.

Anytime one of these fish is caught in the ocean or collected in a survey of spawning habitat, biologists can detect the presence of the tag by waving a wand across the head, which is then lopped off and sent to laboratories in Alaska, British Columbia, Washington, Oregon or California to gather more information from the tags.

"They've got a whole freezer full of heads up in Olympia," Brown said.

Indeed, a few dozen of Brown's brood have already been identified after being caught as full-grown adults along the West Coast in ocean fisheries. Even though lower Columbia River wild coho are protected under the Endangered Species Act, state and federal fishery managers allowed these fish to be marked and ultimately killed on the theory that the fish would have died anyway without Brown's help.

Biologists praise the efforts of the volunteer fish rescuers, but Northwest Marine Technology wanted a scientific evaluation of the results.

They figure 34,000 tags should be just enough to compare the survival rate of wild fish rescued by Brown to those raised in nearby hatcheries, said Lee Blankenship, a retired state biologist who heads the company's biological staff. Brown, a lifelong fisherman, believes the results will show it's no contest.

"In the wild, in all species, the female picks her mate," Brown said.

Brown's fish have emerged from gravel spawning grounds, in contrast to the eggs of fish fertilized and then raised in protected concrete raceways at hatcheries. Through natural selection, he said, the fittest salmon survive to spawn the next generation.

Yet, after a century of habitat degradation and overfishing, hatcheries now account for the overwhelming majority of salmon that return to the Columbia River basin. Hatcheries provide the basis for popular sport, commercial and tribal fisheries; a recent federal proposal to curtail hatchery production to conserve wild runs has already run into stiff opposition.

Brown said his program offers a better blueprint, but Blankenship isn't so sure.

“It won’t replace hatcheries, in my opinion,” Blankenship said. “You couldn’t get to a large enough scale.”

Even so, he extols the work by Brown and other volunteers as a great way to conserve wild fish in areas where tributaries are drying up. In Clark County, a proliferation of asphalt and rooftops has constricted the landscape’s natural ability to absorb rain and recharge groundwater.

Geraldine Vander Haegen, a biologist with Northwest Marine Technology who has tagged fish in each of the past three years, envisions other programs popping up around the Northwest to boost wild runs.

“It gives you another tool, another chance to get production from streams that are being dewatered,” she said.

Brice Crayne, an AmeriCorps worker who helped tag Brown’s fish this week, said even hatcheries stand to benefit from conserving a strong genetic pool carried forward by fish capable of spawning in the wild.

“It’s not like cattle. It’s not like chickens,” Crayne said. “When the hatcheries fail, we’re not going to have fish.”

Erik Robinson: 360-735-4551, or erik.robinson@columbian.com.

Downloaded from: http://www.columbian.com/news/2010/nov/18/study-gauges-success-of-wild-fish-rescue-fish-coll/ (accessed November 18, 2010).

Letter 29,
Comment #23

"The Observer has come to stay, and it won't take water from anything that wiggles."
— George Hibbert
Observer Founding Editor
Dec. 28, 1900

CHINOOK OBSERVER
The News Source for Washington's Long Beach Peninsula since 1900

Tuesday, November 16, 2010

Salmon return to Chinook

New fish ladder will help the breeding process

By NANCY BUTTERFIELD
Observer correspondent

Tuesday, November 16, 2010

Photos by DAMIAN MULINIX/Chinook Observer

A 20-plus pound coho buck flops around outside a holding pen at Sea Resources last week. Many salmon have been returning to spawn the last few weeks.

Sea Resources manager Tony Getchell watches as the Chinook River flows across the newly installed fish ladder, upstream from the hatchery.

CHINOOK - To a casual observer, there's not much happening at the oldest hatchery in the state. But a peek behind the scenes at the Sea Resources hatchery in Chinook reveals quite the

opposite. Hundreds of fish are making their way up the Chinook River to spawn, helped on their way by a brand new concrete fish ladder built by hatchery manager Tony Getchell and volunteers.

"The chum are starting to come up right now," Getchell said Monday. "They look real good."

Getchell is proud of his "babies" - this year's run of salmon returning to the Chinook River. He said this year's fish - mostly coho but also some Chinook and chum - are weighing in at 18 to 20 pounds with some at 20 to 25 pounds.

Getchell, who has been with the facility for five years, and his pal and "main helper" Chuck Neaman, will be releasing the fish from their pens at the hatchery soon to head upstream to spawn. Right now, the eggs from the next batch of fish to return to the river will be fertilized, incubated and when they're big enough, put back into the river to start the process all over again.

Established in the late-1800s, the hatchery was founded "to continue the legacy of a community-based organization by forward-thinking salmon fishermen," according to Sea Resources board Vice President Nansen Malin. "They saw that supplies of salmon were being depleted and took turns donating a portion of their catches to the hatchery during spawning season," she said.

"Generations of local people who care about the history of the salmon fishery have been involved over the years," Malin said. "The most important thing is to continue the legacy, keep the board going and recruit volunteers."

Now, Getchell, and other volunteers are outside, rain or shine, helping this year's crop of coho, Chinook and chum up the Chinook River to their spawning grounds.

Not only that, Getchell and the volunteers this week completed a shelter where people can bring injured or ailing birds found on local beaches until someone from Sharnelle Fee's Wildlife Center of the North Coast can pick them up for care and rehabilitation.

The 10- by 12-foot shelter, and the hatchery, are on Houchen Street in Chinook, about a half-mile from Highway 101. For more information about the bird shelter, or to volunteer at the hatchery, call Getchell at 777-8229.

A short history of the hatchery

Driving through Chinook, one always notices a lovely restored yellow Victorian home. The historic residence also marks the Houchen Street intersection. Located a half mile up Houchen Street, the historical Chinook Hatchery has had its home for over 114 years.

In 1885, Alfred Houchen built a hatchery on the Chinook River. Houchen and local fishermen experimented to see if they could transport fish from traps to the hatchery for artificial propagation. It was a complete success.

Living close to Houchen was Nic Hansen, who went to work at the Chinook Hatchery. Even though salmon seemed unlimited in those days, local fishermen had the foresight to be concerned with propagation methods. Hansen became superintendent of the operation in 1897.
The hatchery got its fish from traps in Baker Bay. Families leased space for their fish traps from the state and took turns donating a day's catch to the hatchery. The fish were towed in crates up the Chinook River and separated into holding pens.

After spawning, the fertilized eggs were placed in incubation troughs inside the old building and eventually transferred to the rearing ponds.

It is said that the neighbors of the hatchery benefited from the proximity. A Mr. Nicholson arrived regularly with his wheelbarrow to cart away the fish carcasses from the disposal pit. It was said that Nicholson's garden grew the largest and the sweetest loganberries, rhubarb and grapes in town.

In 1935, fish traps were outlawed and the demise of the Chinook Hatchery, dependent on the traps, resulted.

Hatcheries all over the state had been closed and Columbia River fish runs continued to decline. By the mid-1960s, reactivation of hatcheries was viewed as advantageous. A group of concerned people formed a non-profit citizens' community corporation - Sea Resources.
Sea Resources formed an alliance with the local school district for vocational training and hatchery operations. The first classes were held in 1969. While the vo-tech is no longer in place, Sea Resources continues the proud tradition of salmon propagation and education with tours and programs that highlight salmon propagation, watershed restoration and native plants.

Downloaded from:
http://www.chinookobserver.com/main.asp?SectionID=1&SubSectionID=1&ArticleID=36540
(accessed November 18, 2010).

Letter 29, Comment #23

The Columbia Basin Weekly Fish & Wildlife News Bulletin

TRIBES DETAIL SUCCESS, PROMISE OF SUPPLEMENTATION TO BOOST NATURAL SPAWNING SALMON POPULATIONS

Posted on Friday, November 19, 2010 (PST)

"You're going to find differences in reproductive fitness" between wild salmon and hatchery fish that find their way to the spawning grounds, according to the Yakama Nation's Bill Bosch.

But better hatchery management practices now being employed that produce fitter fish can mute those differences. And numerous studies show that, when done right, supplementation with hatchery fish can boost natural production, according to Bosch and other tribal spokesmen who on Nov. 9 offered their side of the story to the Northwest Power and Conservation Council.

Can supplementation maintain or increase natural production? Can supplementation hatcheries be managed to maintain the long-term fitness of wild/natural populations? If there are negative hatchery effects, are they reversible?

"Yes," in all cases, said Bosch, citing a sampling of study results as proof, as well as a 27-page "Bibliography in Support of Supplementation Science," compiled by staff from the Yakama Nation's Yakima Klickitat Fisheries Project and Columbia River Inter-Tribal Fish Commission. The commission's member tribes include the Nez Perce, Umatilla, Warm Springs and Yakama.

"We're moving in the right direction, according to the Columbia River treaty tribes. We're moving toward recovery," Bosch said. "This is what treaty tribes think progress looks like."

The tribes requested the audience at the November meeting in Portland to provide an update on the tribes' hatchery supplementation initiatives and to counter a presentation made by NOAA Fisheries' Michael Ford in September. He cited two decades of research on Pacific salmon that "tend to show poor reproductive success of hatchery fish when they spawn in the natural environment" and that those hatchery fish can have negative impacts on wild juveniles and spawners. (See CBB Story "NOAA: Research Indicates Hatchery Fish Have Poor Reproductive Success When Spawn In The Wild" http://www.cbbulletin.com/399884.aspx)

NOAA Fisheries is charged with protecting wild salmon and steelhead stocks that are listed under the Endangered Species Act. Many of the tribal hatchery/supplementation programs are funded by the Bonneville Power Administration through the Council's Columbia River Basin Fish and Wildlife Program.

CRITFC Executive Director Paul Lumley said the NOAA presentation focused on linking negative happenings to supplementation while the tribes' approach is to use continually

updated science to “make hatchery programs work to the benefit of wild fish. It’s not all negative; we have had some tremendous successes” with upriver populations.

“Like it or not we’ve had some success,” Lumley said.

According to the Regional Assessment of Supplementation Project definition, supplementation “is the use of artificial propagation in an attempt to maintain or increase natural production while maintaining the long term fitness of the target population, and keeping the ecological and genetic impacts on non-target populations within specified limits.”

It is largely designed to keep populations afloat in the face of other factors that limit salmon, such as mortality from hydro system passage, habitat losses and flow management for power production and irrigation. And human population growth and development needs will continue to put pressure on shared habitat and water resources.

There is a need mitigate for those limiting factors in order to fulfill obligations in treaties to provide fisheries and to “help wild populations that aren’t replacing themselves,” Bosch said. Supplementation is necessarily an important tool.

“There aren’t a lot of options,” Lumley said.

Bosch says that increased artificial production has helped what has been somewhat of a resurgence in certain salmon populations. The tribes “had to sit on the bank for 25 years” starting in the early 1970s because there simply weren’t enough spring chinook salmon returning to conduct fisheries. For the past decade and more, fisheries have been frequent.

In central Washington’s Yakima River basin enough fish have returned to allow sport fisheries in 7 of the past 10 years, after 40 years without.

Some of the population growth can be attributed to supplementation, the practice of giving hatchery produced smolts their final rearing at various streamside acclimation sites so that they home in on those areas to spawn naturally when they return as adults.

As an example, an ongoing study shows that redd survey totals for the upper Yakima and Naches rivers (1981 to 2010) indicated that the number of spawners increased for both populations during the post-supplementation period (2001-2010) but the average number of redds increased 245 percent in the upper Yakima vs. 160 percent for the unsupplemented Naches River. That suggests that supplementation increased the number of spawners in the upper Yakima beyond the natural increases associated with improved ocean survival. The number of redds and natural origin spawners has increased in the targeted Teanaway River indicating this approach may be successful for reintroduction of salmonids into underutilized habitat, according to a study synopsis.

The wild population in the unsupplemented Naches “appears to be declining while the upper Yakima is holding its own, replacing itself,” Bosch told the Council.

There are numerous examples in the Columbia River of hatchery fish getting a foothold in the wild, and taking advantage of it, he said. Coho stocks in the Wenatchee and Yakima rivers in Washington and the Clearwater River in Idaho were at or near extinction before being reintroduced by the tribes. Since the mid- to late 1990s reintroductions of the coho populations in those streams have, except for an occasional dip, showed an upward trend.

The tribes have done their best to apply new-found scientific information to raise hatchery fish that more closely mirror the genetics and behavior traits of their wild kin. That includes random, representative selection of local broodstock wherever possible, factorial mating to maintain diversity, low rearing densities and underwater feeders and cover to more closely represent natural conditions and tests of different rearing/release strategies to increase survival.

Bosch said that a new, unbiased review of hatchery program research literature is needed to address concerns about the potential for reduced reproductive fitness among wild fish that interact with wild fish.

One of the graphs presented by NOAA's Ford in September compared the results from 18 studies that seemed to indicate that the reproductive fitness of hatchery origin fish and of natural salmon with which they interbreed decreases through time and in some cases decreases quite rapidly.

But a review of those studies shows that the researchers may not have adequately considered factors which might have "confounded" the results. In some cases, hatchery fish from non-local sources and/or with a multi-generational record of domestication were compared.

"Supplementation guidelines require use of extant local stock as the source for the hatchery broodstock," according to a CRITFC "interpretation" of Ford's graph. "If the open data points [hatchery fish from non-local broodstock] are removed from the graph, a liner regression line fit to the remaining data no longer has a dramatically downward slope, indicating that progressive loss of fitness will be of a much smaller magnitude than initially inferred."

Likewise there can be confounding environmental effects, rather than genetic, that cause seeming reduced fitness in hatchery fish. Comparing natural origin spawning in optimal habitat with hatchery fish spawning in less ideal conditions tilts the odds in the wild salmon's favor.

"You're bound to find differences in reproductive success," Bosch said.

"Similarly, some of the studies compare performance of hatchery stocks which have been deliberately, or inadvertently, selected for characters which diverge from those of the native stock (e.g., altered run timing). Such changes may be maladaptive, and inclusion in the graph of data from these programs graph biases the results against Supplementation," the CRITFC analysis said.

One example would be steelhead. Wild/natural fish migrate to sea after 1 to 3 years in freshwater so they are logically more robust and likely to survive to return and spawn, Bosch said. Nearly all steelhead hatcheries operate to produce age-1 smolts. Steelhead also include unique winter and summer populations, which have in some cases been inadvertently hybridized in hatcheries. Making comparisons with wild fish is indeed apples and oranges in many cases.

“Steelhead is not a good species to make broad-based claims about hatchery fish,” Bosch said.

Bosch said the tribes are seeking agreement with others in the region that hatchery programs are to achieve mitigation obligations and to help make progress towards conservation objections. An overarching goal would to improve programs through adaptive management.

“We’re going to keep pressing this scientific position with some of our colleagues,” said Steve Parker, technical staff coordinator for Yakama Nation Fisheries.

Downloaded from: http://www.cbbulletin.com/401841.aspx# (accessed November 19, 2010).

Letter #30

Wild Fish Conservancy
NORTHWEST
SCIENCE EDUCATION ADVOCACY

November 24, 2010

William W. Stelle, Jr.
Regional Administrator
NMFS Northwest Region
7600 Sand Point Way NE
Seattle, WA 98115

Via email to MitchellActEIS.nwr@noaa.gov

Re: Mitchell Act EIS

Dear Mr. Stelle:

Wild Fish Conservancy appreciates the opportunity to comment on the draft Environmental Impact Statement for the Mitchell Act-based salmonid hatchery programs.

Our comments are enclosed. Please contact me or Nick Gayeski of our staff (nick@wildfishconservancy.org) if you have any questions. Thank you for considering our comments.

Sincerely,

Kurt Beardslee
Executive Director

Attachment

P.O. Box 402, Duvall, WA 98019 · 425-788-1167 · www.wildfishconservancy.org

Comments of Wild Fish Conservancy on the
Mitchell Act Draft Environmental Impact Statement
November 24, 2010

Comments on the Overall Direction to policy development proposed in the DEIS

#1

We believe that the approach adopted by NMFS in the DEIS squanders a valuable opportunity to acquire a comprehensive understanding of the impact of hatchery programs on Columbia River salmon and steelhead. The approach should be entirely abandoned in favor of a more comprehensive approach that is focused on recovery of ESA-listed salmonids and protection of other wild salmonid stocks.

#2

Recovery of salmon ESUs and steelhead DPSs in the Columbia River basin listed under the ESA is uncertain and by any measure likely to be a long-term and costly process (see, e.g., Doremus 2000, 2001). Hatchery programs are among the significant factors that contributed to the population declines that led to the current listings and that continue to impede the rebuilding of wild populations. Hatchery reform that is intended, in part, to rectify the harmful impacts to wild populations of hatchery programs and practices has been slow to begin, at best. Even so, many elements of proposed hatchery reform follow guidelines that are of questionable validity where the fitness of wild populations is concerned. In addition, the current draft of the remanded FCRPS Biological Opinion is still before the US District Court in Oregon.

#3

The circumstances that create the need for the DEIS provide a key opportunity for NMFS and the region to thoroughly re-evaluate the approach to mitigation of the hydropower system that has resulted in the region's excessive reliance on artificial production and to assess the extent to which continuation of this approach is consistent with the recovery of listed salmon and steelhead. Put simply, are hatchery programs the best way to mitigate for the loss and degradation of salmonid habitat caused by the construction of dams? We believe that this may best be a task for a Congressionally-mandated independent review by the National Academy of Science. In the final EIS, NMFS should request such a review. The evaluation should include analyses whether mitigation in the Columbia River in the form in which it has been practiced a) has been successful, and b) is compatible with preservation and recovery of ESA-listed salmon and steelhead ESU and DPS's. Such analyses are needed in order to identify an appropriate policy for the distribution of MA hatchery funds. An independent and comprehensive economic analysis of the costs and benefits of hatchery programs that includes a full accounting of costs imposed on the recovery of listed populations is an essential feature of the required comprehensive analysis.

#4

The public needs to know what numbers of hatchery fish must be produced in order to satisfy mitigation obligations. Then it can be determined whether mitigation obligations can be satisfied consistent with the recovery of ESA-listed populations.

Regardless, it should be NMFS' intention in the EIS to adopt a policy that is entirely consistent with insuring that hatchery programs do not impede recovery of listed species (see specific comments on Chapter 1). This includes recognition of the unsustainability of the non-selective fishery techniques employed by non-tribal commercial and tribal fishers throughout the basin, as well as in the ocean. Fisheries must transition rapidly to selective fishing gears if harvest directed at hatchery fish produced in the basin is to be compatible with the survival and recovery of ESA-listed populations. #5

There are, in addition, several relevant initiatives in the basin whose completion should be part of the necessary comprehensive review without which the EIS cannot provide the necessary policy direction. These include: #6

- completion of Phase II of the review of Columbia River basin hatcheries by the Independent Economic Review Board, and
- completion of the Artificial Production Review (APR) of CR hatchery programs, started in 1997, interrupted after 1999 and still unfinished.

We stress that both such reviews be completed and that the membership of each group be completely free of conflict of interest, unlike the Hatchery Science Review Group (HSRG). An independent review panel should not tolerate membership of individuals who currently are, or in the recent past have been, responsible for management of any aspect of current CR basin hatchery or related salmon management programs, or who are or have recently been contracted for business in the basin by state, tribal, or federal fisheries agencies or related entities.

Comments Regarding particular elements of the DEIS

1.1 Introduction:

Congress did not exempt Mitchell Act facilities or activities from the environmental laws passed in the late 1960s and early 1970s. While past Endangered Species Act Section 7 consultations have reconciled Mitchell Act facilities and activities with the ESA, we submit that overall, listed species in particular and wild fish in general have gotten short shrift. In the light of ESA listings and declining anadromous fish returns, little has changed. Millions of hatchery fish are released into the Columbia and its tributaries each year, exerting a negative influence on wild fish, and unsurprisingly, wild fish populations continue to decline. #7

The second objective of the proposed action is to "inform NMFS' future review of individual Columbia River basin hatchery programs under the ESA" (lines 15-16 on page 1-2). This is a laudable goal, but it is difficult for us to see how the DEIS accomplishes this, as it deliberately avoids discussion of alternatives in terms that would allow an evaluation of them in light of ESA requirements. This will be discussed in the comments regarding Section 2. #8

Section 7(a)(1) (affirmative programs to conserve listed species) is the lesser-known provision of Section 7 and since the listing of Pacific salmonids has been essentially #9

ignored as federal action agencies and the Services (NMFS and US Fish and Wildlife Service) adjusted to the new bureaucratic structure imposed by Section 7(a)(2) (avoidance of jeopardy) obligations. Certainly, every Section 7 consultation biological opinion has a few "conservation recommendations" listed, but it appears those are nothing more than a few voluntary things the action agency was doing anyway. In this case, the entire NEPA review that NMFS is conducting on Mitchell Act-funded hatchery programs, with the expansion to include a review of all Columbia basin hatchery programs could be called a Section 7(a)(1) exercise. Unfortunately, as will be discussed below in the comments on Chapters 2 and 3, it is difficult to determine the specific positive effects to listed species from the alternatives. Overall, it is unclear what steps NMFS will actually take to conserve listed species with respect to its activities relating to Mitchell Act hatcheries, so the opportunity to fulfill Section 7(a)(1) obligations has not been realized. #9

Sections 1.3.3.2 and 1.3.3.3. The DEIS discusses that hatchery programs qualify for an ESA Section 4(d) limitation (to the take prohibition for threatened species) if the program has fulfilled a number of steps. From our evaluation of NMFS' website (http://www.nwr.noaa.gov/Salmon-Harvest-Hatcheries/Hatcheries/HGMPs.cfm and associated pages), it does not appear that there are valid Section 10 permits or approved HGMPs for the majority of hatchery programs. It is unclear that this DEIS can set a policy direction for NMFS if it has not completed the initial requisite ESA analyses for these hatchery programs. Regardless, the final EIS should provide numbers for the hatchery programs that have current and approved HGMPs or Section 10 permits. #10

Section 1.7.1. The relationship between the alternatives and the *US* v *Oregon* Management Agreement is described (lines 4 -10, p. 1-42) in terms that the EIS does not assert that any alternative is consistent with the Management Agreement, and that "affected parties will exercise their authority regarding production measures following this environmental analysis in a manner that is consistent with the Management Agreement." This statement appears to give parties to the Management Agreement *carte blanche* to disregard any recommendations included in the final document. NMFS has given a Section 4(d) limit on take prohibitions for the *US* v. *Oregon* Management Agreement, so while the Management Agreement is compatible with the ESA, it would seem that a stronger statement is in order to ensure that the Management Agreement conforms with the policy direction set out by this effort, which is mandated by NEPA. Otherwise, what weight or authority, then, does this EIS have? #11

Section 1.7.3. This is not a very clear synopsis of the Clean Water Act, and is incorrect in places. For example, lines 4-5 state that each state "approves" NPDES applications. Idaho does not have CWA Section 402 authority the USEPA issues NPDES permits for Idaho. #12

More importantly, this section limits the CWA to "protecting water quality." While the Act does that, it also is a tool for protecting and restoring fish and wildlife. For example, protection of "beneficial uses" is a provision of each state's water quality standards (and Tribes, where Tribes have adopted their own standards). Although this provision has

not been fully utilized, it remains a feature of state law that applies to hatchery facilities. #12
This section and this DEIS should take a more expansive view of the Clean Water Act and determine the extent to which hatchery programs are impeding or advancing the attainment of Clean Water Act goals (cf. Hersh 2009).

Chapter 2. Alternatives

Section 2.4 describes the development of the alternatives. The end of that section (page 2-14) lists a number of "goals and/or principles" that each alternative (policy direction) considers. However, the first goal listed is the use of weirs to control the number of hatchery-origin fish on the spawning grounds. As will be discussed below, the EIS fails to fully consider all of the measure that could be taken to reduce the negative impact of hatchery fish. #13

Section 2.5. Alternatives Analyzed in Detail. The DEIS offers a list of artificially constructed alternatives, including one extreme of no Mitchell Act hatcheries, and three (Alternatives 3-5) that involve minor reductions in hatchery releases and the adoption of simple performance standards for segregated and integrated hatchery programs that provide no meaningful assurance of achieving reductions in hatchery impacts on listed populations sufficient to assure recovery. In fact, even if the efficacy of the performance standards is assumed, NFMS did not construct an alternative that would have maximized the benefit to listed species using those standards. Alternative 3 has the intermediate performance standard for both recovery domains. Alternative 4 has the "stronger" performance measure for the Willamette/Lower Columbia (W/LC) recovery domain and the "intermediate" measure for the Interior Columbia (IC). Alternative 5 applies the intermediate for the W/LC and the stronger for the IC. Why did NMFS not develop an alternative that includes the "stronger" performance measure for both recovery domains? Why are the "stabilizing populations" completely ignored in any alternative (although some positive gains are realized by stabilizing populations, the effect is incidental; there is no alternative that includes greater protection for stabilizing populations). By failing to do so, NFMS has failed in its Section 7(a)(1) ESA obligation. #14 #15

This is particularly well-illustrated by Table 2-10. Alternative 1 reflects the current status of the various populations. Discounting the stabilizing populations, currently 38 of 82 populations (primary and contributing) currently meet the stronger performance standard in the W/LC recovery domain, or 46%. The status quo in the IC recovery domain is 52/97 or 54%. The alternatives do little to improve this situation. Alternative 4 imposes the stronger performance standard on the W/LC and that improves the 46% to 78%. But the IC recovery domain barely improves under Alternative 4, to 57%, and increase of only 3%. Alternative 5 improves the W/LC to 59% and the IC to 82%. Again, the EIS needs an alternative that imposes the stronger performance standards on both recovery domains.

The vast majority of stabilizing populations remain heavily impacted by hatchery programs and the EIS needs an alternative that improves conditions in these populations.

#16

Alternatives 3, 4, and 5 will provide little, if any additional assurance that harmful impacts from artificial production will be reduced sufficiently to assure recovery. These alternatives rely on simple, quantitative performance metrics, one (PNI) for integrated programs and one (pHOS) for segregated programs that are presumed to appropriately limit deleterious genetic impacts of hatchery fish interactions with wild fish.

Of particular concern is the performance metric for integrated programs. Reliance on the arbitrarily-chosen values of PNI (0.5 and 0.7) is of great concern in view of the considerable recent and proposed expansion of integrated programs in the CR, despite the clear recommendation of the ISAB in 2003, 2005 to not expand hatchery programs or production in the CR until a proper region-wide evaluation of integration/supplementation had been conducted. This much-needed evaluation has not yet been started, much less completed.

PNI lacks empirical validation and its suitability as a performance standard is currently based entirely on theoretical genetic considerations. These theoretical considerations provide expectations as to the levels of relative fitness of wild and hatchery fish (measured as SAR, spawner-to-adult recruit, values) attained in the long run by integrated programs that achieve specific levels of PNI. This long run is on the order of 50 generations or over 200 years for steelhead and chinook salmon. At the end of such time, a selection equilibrium is expected to be attained at which the SAR's of first-generation hatchery adults spawning in the wild and naturally spawning fish will be equal. However, this says nothing about the absolute levels of the SARs at this future time when equilibrium is attained. Most importantly, the theoretical equilibrium has nothing to do with whether or not the SARs of natural spawning fish are sufficient to sustain the wild population in the absence of hatchery supplementation. Yet, it is this latter point that is of greatest importance to the recovery of listed populations. In fact, naturally spawning fitness after several generations of integration is almost guaranteed to be lower than it was when integration began, and could be half or less of what it was depending on the broodstock collection protocols as well as other key factors (see Goodman 2005).

In brief, by its very nature, the *hypothesis* that high PNI values will result in equal fitness of hatchery and wild spawners at some future date when equilibrium is attained cannot be evaluated empirically in the short run in which it is being applied. And, even if it were assured that equal fitness will be attained at that future time, there is no reason to believe that the resulting level of wild fitness that results will be sufficient to assure population persistence (i.e., recovery).

The alternative to reliance on such questionable and unverifiable a performance metric is to establish firm minimal life-stage specific transition (survival) rates that assure SARs greater than 1. NMFS' refusal to identify and employ such metrics and to rely instead on an inappropriate metric like PNI suggests that NMFS is not willing to hold hatchery programs to readily measurable standards that assure the preservation and recovery of wild CR salmon and steelhead.

While there are good reasons and empirical evidence to support the general recommendation to keep pHOS low, there is considerably less information about absolute threshold values, such as 0.05 or 0.10 contained in alternatives 3 – 5. At best, the values contained in alternatives 3 -5 should be regarded as maximum values. #17

Box 2-9 discusses weirs, and although it discusses the negative ecological and recreational aspects of weirs, it also says that the EIS "does not intend to fulfill any required environmental review associated with weir installation." Ecological and recreational costs associated with weir installation are separate from the costs associated with *operation*. Box 2-9 also speaks to the efficiency of permanent weirs at catching targeted fish (estimated at <95%) vs. a seasonal weir (estimated at <60%). The efficiency of these structures at disrupting migration and movement of wild fish is not discussed, although relevant literature documents the avoidance of instream structures by wild fish. An EIS that purports to set a "policy direction" but does not fully discuss the costs associated with one of the "goals and/or principles" that is a major part of almost every action alternative is not a complete nor relevant EIS. This EIS needs to fully recognize the adverse effects of weirs on wild fish, wildlife, and the overall ecological health of the watershed. Additional discussion of the costs associated with all of the identified measures to reduce pHOS is below. #18

Chapter 3. Affected Environment

Chapter 3, Affected Environment, speaks to the risk to fish from the hatchery programs. Section 3.2.3.1.2 is entitled "Current Approaches for Reducing Genetic Risks." Besides weirs, this section (page 3-6) also lists four other measures that can be taken to reduce genetic risk. Of those four (reduce number of hatchery fish produce; increase wild fish numbers through habitat restoration; change hatchery smolt release timing; and implement selective fisheries), it appears that the only one outside the scope of this EIS is the increase of wild fish numbers through habitat restoration. Hatchery programs certainly have the ability to reduce the numbers they produce and modify the release of smolts. And it is not unreasonable to think that the hatchery system as a whole -- the managers of all the hatchery programs – can implement greater use of selective fisheries because these same entities manage the harvest program. #19

Excess hatchery fish are a problem, yet here NMFS thinks the only "goal and/or principle" worth considering in the alternatives is a greater use of weirs, which exact a cost from wild fish and their associated ecosystems. Reducing numbers of fish, and changing hatchery techniques, however, are two measures that put the burden of finding a solution for the problem of excess fish squarely onto the shoulders of the creators of the problem – the hatchery programs themselves.

We have developed a table (Table 1) of that describes the bearer of the costs associated with each of the measures described on lines 3-9, page 3-6. This table only discusses the costs and benefits to three affected environmental components, fish, wildlife, and water quality and quantity. <u>We urge NFMS to complete such a table for all</u> #20

affected environmental components that evaluates the costs and benefits of all the measures that can be implemented to reduce the hatchery-origin fish on the spawning grounds, and then develop alternatives using all of these measures. #20

Sections 3.2.3.1.3 and 3.2.3.1.4 discuss hatchery facility risks and ways in which to reduce the risks. These sections speak mostly to water quantity and water quality issues, although the discussion is incomplete. While it may be true that "100% percent of the hatchery facilities… operate within the limits established in NPDES permits" (lines 17-18, p. 3-11), some of the facilities have antiquated permits, or have only recently had their permits re-issued. The old permit limits do not reflect current water quality conditions or modern technology. For example, the Leavenworth National Fish Hatchery discharges phosphorus and contributes to water quality exceedences in Icicle Creek and the Wenatchee River (WDOE 2009). The NPDES permit, which expired in 1979, has not yet been renewed. Even if the hatchery is complying with its "current" permit, that permit's effluent limitations have no relevance to the current ambient conditions. There may be other examples, but it is beyond the scope of Wild Fish Conservancy to point out to NMFS every exception. #21

In addition, the IHOT reference given on line 18 (p 3-10) does not give effluent guidelines for hatcheries, except insofar that it states that hatcheries should comply with their NPDES permits. The description given in this section is so general and full of circular references that it is of little value. #22

The statement that only 71% of hatcheries currently allow "all migrating species of all ages" to pass through hatchery-related structures causes great concern insofar as this document promotes the construction and operation of additional weirs. And just as we are not confident that compliance with NPDES permits means that hatchery facilities have little impact on water quality, we must question not just the 71% passage number, but also the accuracy of any measure of wild fish passage by hatchery managers that have traditionally been less-than-attentive to ecosystem conditions that do not affect hatchery operations. Actual fish passage at these facilities might be very much less than 71%. In fact, many hatchery programs and facilities still believe that blocking wild fish passage is desirable from a hatchery management point of view. #23

Sections 3.2.3.1.6 and 3.2.3.1.8 discuss competition and predation risks. The statement in bullet 4 of 3.2.3.1.8 – "Minimize size differences between hatchery-origin fish and their natural-origin counterparts" fails to specify the quantitative limits (maximum size difference between H and W smolts) required to achieve an appropriately low risk. Nor are there any standards stated or recommended for % residualization of coho, chinook, and steelhead. Appropriate, risk-averse standards for the maximum allowable percentage or number of residualized hatchery smolts in local rearing habitats need to be established and required. #24

Short of terminating hatchery programs, the best way to minimize the risk of competition and predation between wild and hatchery-origin fish is to raise hatchery smolts so that the distribution of size-at-release mirrors that of wild conspecifics ("natural smolt #25

template”). The DEIS should recommend the implementation of a “natural smolt template”. The natural smolt template was recommended by the HSRG as a standard early in its review of Puget Sound hatchery programs and then dropped without explanation. This standard should at least be the default requirement for all hatchery programs in the CR basin in the absence of program and release-site specific data showing that release of larger hatchery smolts measurably reduces competition during the outmigration without incurring residualization. Residualization of large hatchery spring chinook smolts is a common problem in many programs in the basin and should be avoided at all costs. We recognize that implementing a natural smolt template will likely result in reduced survival to adult return for many programs relative to current practices. Nonetheless, this should be the problem of the hatchery programs, not the wild listed fish that suffer competition and predation from hatchery smolts released at sizes larger-than the average size of wild conspecifics. #25

Section 3.2.3.1.11 discusses fisheries that target hatchery-origin fish. We believe that selective fisheries are an under-utilized technique that can appreciably reduce the number of hatchery-origin fish reaching spawning grounds. If the recovery of ESA-listed populations in the CR basin is to be pursued alongside the production of large numbers of hatchery fish for harvest, it is essential that fisheries become entirely selective. Most important, commercial and tribal fisheries need to transition rapidly to selective gear, capable of permitting the safe release of all non-target species, including ESA-listed salmon, steelhead, and bull trout. #26

Requirements for achieving the transition to selective fisheries include:

- Marking of all hatchery-produced fish, including progeny from integrated production programs if any of those progeny are intended to be harvested.
- Management of all fish produced by segregated programs as distinct species and all harvest directed only at these species.
- Tailoring the production of segregated programs to the capacity of all (selective) fisheries to capture all but the minimal escapement to hatchery racks necessary to sustain the needed level of production
- Management of all integrated programs to achieve PNI >= 0.7 with zero harvest on natural-origin adults, and a target pNOB = 1.0. Until the conditions for the conduct of a basin-wide evaluation of the supplementation (integration) conservation hypothesis have been implemented, reliance on PNI as a performance or monitoring metric should require a minimum of 0.7 with a universal goal of achieving pNOB = 1 (100% natural-origin adults in the annual broodstock). The combination of zero harvest on returning NOR adults combined with a pNOB = 1 in integrated programs provides the greatest assurance that the inevitable fitness decline due to integration will be kept to a minimum (Goodman 2005). In addition, all integrated programs should be required to attain average annual smolt-to-adult survival equal to that of local wild conspecifics, in order to insure that the fitness of integrated hatchery progeny is equal to that of the target local wild population at least over this significant life-stage.

- Funding assistance to tribal and non-tribal commercial fishers to facilitate the timely transition to selective fishing gear #26
- Funding for buyout of tribal and non-tribal commercial fishers to reduce fishing power so as to bring the fishing power of the new selective fishery regime into balance with the revised segregated hatchery production levels necessary to achieve compliance with the ESA-based standards of the EIS.
- Develop criteria by which mitigation credits can be earned by contributing to fund the transition to selective gear or to fund the buyouts. For example, requiring upper Columbia PUD's to fund selective fishing projects will arguably contribute more to recovery as well as to the development of sustainable upper basin fisheries than requiring contributions for hatchery and tributary habitat projects. Such mitigation funding should at least be evaluated.

Chapter 4. Environmental Consequences

The characterization of 'mitigation' Section 4.1.2 makes no reference to any minimal number of hatchery fish that must be produced. Rather, mitigation "is in the form of …BMPs applied to hatchery programs throughout the basin under all alternatives" (page 4-2). It is, therefore, entirely within NMFS' purview to require compliance with ESA-standards that insure no take and no jeopardy. As we argue throughout, this is the approach that NMFS should adopt for the EIS. #27

Tables 4-2 through 4-4 are less useful than they could be. We suggest rather than a simple "x" to denote whether a particular implementation measure affects a "salmon and steelhead" indicator (Table 4-4), that NMFS determine whether the affect is positive, negative, or neutral for the indicator. For example, in Table 4-4, the genetic risks to wild fish are decreased if there is a reduction in hatchery production. Without additional detail regarding how things are affected, rather than just whether they are affected, it is difficult to properly assess the effects. #28

We are concerned with the number of weirs proposed under Alternatives 3-5 (Table 4-6); as discussed above, we do not believe that this DEIS sufficiently describes the ecological costs of fish passage barriers. #29

Table 4-8 is revealing in that natural origin fish barely change in actual numbers through any of the action alternatives. It reveals that NMFS should craft an alternative that actually results in significantly greater numbers of natural origin fish. This table also needs a breakdown by recovery domain. As we stated above, an alternative that calls for the stronger performance measure in both recovery domains is lacking from the DEIS, and that may in fact result in higher numbers of natural origin fish. #30 #31

A Proposed Alternative

We concur with the comments submitted by the Native Fish Society regarding the elements of a basic hatchery policy alternative, and repeat them here for emphasis. #32

These should form the basis around which a completely revised DEIS should be developed. #32

1. keep wild and hatchery spawners separated
2. set specific ecological impact criteria for each hatchery on wild fish
3. establish selective harvest on hatchery fish that does least harm to wild fish
4. establish spawner abundance objectives by species in each watershed for wild fish
5. establish nutrient targets for each watershed from salmon carcasses
6. designate wild salmonid management watersheds in each ESU
7. evaluate the benefit cost and cost effectiveness annually of each hatchery program
8. determine the cost to catch for each hatchery program annually
9. direct the independent economic advisory board to complete an economic review of each hatchery program in the Columbia River Basin and Puget Sound.
10. develop and implement a wild salmonid management plan for each watershed with measurable criteria for diversity, distribution, productivity, viability, and abundance.
11. evaluate hatcheries on contribution to fisheries and establish a minimum contribution rate for hatchery fish that optimizes funding investment while protecting wild fish from hatchery and harvest impacts.
12. require all hatchery fish to be externally marked and provide an internal tag to identify the hatchery of origin.
13. establish a basin wide stock transfer policy to regulate the movement of fish and eggs among populations and ESUs/DPSs.
14. require all hatchery origin fish be kept in sport fisheries.
15. fully integrate agency management structure on harvest, hatchery and wild salmonid management.
16. restructure management so that harvest and hatchery programs support natural production objectives in the Columbia River basin.
17. require barbless hooks in all recreational fisheries in the Columbia River basin to reduce harm in mixed stock fisheries on wild juvenile and adult salmonids.
18. develop selective fisheries to maximize harvest of hatchery fish and minimize harm to wild fish in mixed stock commercial and recreational fisheries.
19. operate hatcheries so that hatchery effluent is regulated consistent with the Clean Water Act.
20. reduce hatchery production, evaluate stray rates of hatchery fish and implement measures to reduce strays.

We would add the following to this list: #33

21. eliminate production facilities from tributary basins and relocate them on the Columbia River mainstem.
22. implement the recommendations in the ISAB's 2003 Review of supplementation programs in the Columbia Basin and the Salmon Recovery Science Review Panel's similar recommendations regarding the

statistical design necessary to evaluate supplementation programs in the basin, including closing facilities if necessary to create appropriate unsupplemented reference populations. #33

Summary

The entire salmonid hatchery system and the concept of "mitigation" for dams through artificial production merits a review from an independent panel such as the National Academy of Science. This should be done before a final EIS is prepared. If this is not done, the EIS needs to include performance standards that maximize recovery of listed salmonids. If different levels of performance standards are selected for the final EIS, then an alternative that implements the stronger performance standard throughout the Columbia basin needs to be included. The final EIS should allow for greater comparisons between the performance standards and ESA-based standards.

Rather than emphasize greater use of weirs, which is yet another way to externalize the hatchery program's costs to wild fish and their ecosystems, the final EIS should include a greater evaluation of other measures to reduce pHOS, including ones like selective fisheries, which place the burden on removing hatchery fish on those who benefit from the hatchery system. These measures should be included in alternatives, rather than the DEIS's emphasis on weirs.

Literature Cited

Doremus, H and J. Pagel. 2001. "Why listing may be forever: perspectives on delisting under the U.S. Endangered Species Act". Conservation Biology 15, 5:1258-1268.

Dormus, H. 2000. "Delisting endangered species: an aspirational goal, not a realistic expectation"> environmental Law Reporter 30: 10434-10454.

Goodman, D. 2005. "Selection equilibrium for hatchery and wild spawning fitness in integrated breeding programs" Canadian Journal of Fisheries and Aquatic Sciences 62:374-389.

Hersh, C.M. 2009. The Clean Water Act's antidegradation policy and its role in watershed protection in Washington state. West-Northwest Journal of Environmental Law and Policy 15:2 217-278.

ISAB 2003. "Review of salmon and steelhead supplementation". Portland. Available from http:// www.nwcouncil.org/libraryisab/isab2003-3.htm

ISAB 2005. "Monitoring and evaluation of supplementation projects". Portland. Available from http:// www.nwcouncil.org/libraryisrp/isrp2005-15.htm

Myers, R., S.A. Levin, R. Lande, F.C. James, W.W. Murdoch, and R.T. Paine. 2004. "Hatcheries and endangered salmon". Science v. 303, March 26, 2004: 1980.

Salmon Recovery Science Review Panel (RSRP) report for the meeting held July 21 – 23, 2003 (hatchery experiments and monitoring).

RSRP report for the meeting held August 30 – September 1, 2004

WDOE 2009. Wenatchee River Watershed Dissolved Oxygen and pH Total Maximum Daily Load Water Quality Improvement Report (August 2009 revision). Publication No. 08-10-062. Washington Department of Ecology, Central Regional Office, Yakima, WA.

Table 1. Costs and benefits to selected environmental components from various measures to reduce hatchery-origin fish on spawning grounds (pHOS)[1].

Affected environmental component →	Fish	Wildlife	Water Quality and Quantity
Action to reduce pHOS ↓			
Reduce the number of juveniles released.	Positive for wild fish due to fewer interactions, competition for prey, lessened risk of genetic introgression, and other factors.	Negative for marine-oriented wildlife until wild fish production increases, positive for freshwater-oriented wildlife if hatchery facility impacts reduced, negative if current pHOS is large until wild fish production increases	Positive if accompanied by a reduction in water, feed, and chemicals
Increase the number of natural-origin fish produced through habitat restoration actions.	Positive for wild fish, unless increased habitat provides disproportional opportunities for hatchery fish to fill the habitats.	Positive for marine- and freshwater-oriented wildlife	Positive if accompanied by a reduction in water, feed, and chemicals as need for hatchery production reduced; otherwise neutral
Release hatchery-origin smolts in a manner that when they return as adults they will return back to the hatchery facility and not natural spawning areas	Positive for wild fish as this reduced pHOS	Neutral, unless timing/appearance of adults in various locales changes such that wildlife cannot readily adapt	Depends if water use / quality changes due to difference in release
Implement selective fisheries to target hatchery-origin fish	Positive for wild fish if selection is sufficiently protective of wild fish	Neutral for marine-oriented wildlife, depending on where selective fisheries are; negative for	Neutral
Operate weirs to trap and remove a portion of the returning hatchery-origin fish before they spawn	Negative for all wild fish as hatchery blockages can inhibit passage, positive for the NOS	Neutral for marine-oriented, negative for upstream freshwater-oriented if current pHOS is large until while wild fish production catches up	Negative if water needs for weir operation increase water use; otherwise neutral

[1] This table discusses the relationship between actions to reduce pHOS and only three affected environmental components. We urge NFMS to adopt this approach in the final EIS and consider the relationship between the actions that can be taken to reduce pHOS (not just weirs) and all affected environmental components.

#20

November 29, 2010

Letter #31

William W. Stelle, Jr.

Regional Administrator

NMFS Northwest Region

7600 Sand Point Way NE

Seattle, WA 98115

Via email to MitchellActEIS.nwr@noaa.gov

Re: Mitchell Act EIS

Dear Mr. Stelle:

Please accept the following comments into the record on your EIS for the Mitchell Act Salmon Hatchery Programs. Our group 'Artists4Action' would like to express strong dissatisfaction with your proposed actions, and we would like our comments to be included and addressed by you. #1

Please be sure to contact us with your answers to our questions, or if you have any questions about our comments. Thank you for the opportunity to comment. Comments attached.

Sincerely,

Catherine Koehn/Executive Director 'Artists4Action' non-profit

cat@artists4action.org

Attachment:"Extinction is NOT an option"

Comments of Artists4Action non-profit on the Mitchell Act Draft Environmental Impact Statement

November 29, 2010

General Comments on the Overall Direction to policy development proposed in the DEIS:

Our group has been researching the proposed alternatives, and we would like to start by expressing our dissatisfaction with your DEIS on several levels. You have lost a great opportunity to gain a thorough understanding of Hatchery impacts on listed ESA species. #2

We believe you should completely abandon these current inadequate efforts and initiate a more comprehensive approach that focuses on real 'Recovery' of wild Salmon. #3

We believe that the approach adopted by NMFS in the DEIS squanders a valuable opportunity to acquire a comprehensive understanding of the impact of hatchery programs on Columbia River salmon and steelhead. The approach should be entirely abandoned in favor of a more comprehensive approach that is focused on recovery of ESA-listed salmonids and protection of other wild salmonid stocks. #4

Over the last decade there has been a significant documentation of the fact that:

"Hatchery programs are among the significant factors that contributed to the population declines that led to the current listings and that continue to impede the rebuilding of wild populations."

As such, any 'reform' should move to rectify the harmful impacts to wild populations of hatchery programs and practices. Many elements of your proposed hatchery reform follow guidelines that are of questionable validity where the fitness of wild populations is concerned.

*** And an important fact that you seem to be neglecting is that the US District Court of Oregon still is reviewing your remanded FCRPS Biological Opinion; you should wait until their decision is in. #5

You have missed a key opportunity for NMFS and the region to thoroughly re-evaluate the approach to mitigation of the hydropower system that has resulted in the region's excessive reliance on artificial production and to assess the extent to which continuation of this approach is consistent with the recovery of listed salmon and steelhead. #6

-Are hatchery programs the best way to mitigate for the loss and degradation of salmonid habitat caused by the construction of dams? We believe that this may best be a task for a **Congressionally- mandated independent review by the National Academy of Science**.

In the final EIS, NMFS should request such a review.

Such analyses are needed in order to identify an appropriate policy for the distribution of MA hatchery funds. An independent and comprehensive economic analysis of the costs and benefits of hatchery programs that includes a full accounting of costs imposed on the recovery of listed populations is an essential feature of the required comprehensive analysis.

The public needs to know what numbers of hatchery fish must be produced in order to satisfy mitigation obligations. Then it can be determined whether mitigation obligations can be satisfied consistent with the recovery of ESA-listed populations.

You should also include a recognition of the unsustainability of the non-selective fishery techniques employed by non-tribal commercial and tribal fishers throughout the basin, as well as in the ocean. Fisheries must transition rapidly to selective fishing gear. #7

There are, in addition, several relevant initiatives in the basin whose completion should be part of the necessary comprehensive review without which the EIS cannot provide the necessary policy direction. These include: #8

- completion of Phase II of the review of Columbia River basin hatcheries by the Independent Economic Review Board, and
- completion of the Artificial Production Review (APR) of CR hatchery programs, started in 1997, interrupted after 1999 and still unfinished.

Both such reviews need to be completed, and we would like again to stress that the membership of each group be completely **free of conflict of interest, unlike the Hatchery Science Review Group (HSRG).** #9

An independent review panel should not tolerate membership of individuals who currently are, or in the recent past have been, responsible for management of any aspect of current CR basin hatchery or related salmon management programs, or who are or have recently been

contracted for business in the basin by state, tribal, or federal fisheries agencies or related entities. #9

Our overall comment would be: NMFS should craft a NEW Plan, that actually results in significantly greater numbers of natural origin fish. #10

Comments Regarding particular elements of the DEIS

1.1 Introduction:

The Mitchell Act must follow the ESA Section 7 requirements, but it appears that overall, listed species in particular and wild fish in general have gotten short shrift. In the light of ESA listings and declining anadromous fish returns, little has changed. Millions of hatchery fish are released into the Columbia and its tributaries each year, exerting a negative influence on wild fish, and unsurprisingly, wild fish populations continue to decline. #11

The second objective of the proposed action is to "inform NMFS' future review of individual Columbia River basin hatchery programs under the ESA" (lines 15-16 on page 1-2). We don't believe that you have accomplished this goal, because it would seem that you have deliberately avoided any discussion of alternatives that would allow an evaluation of them in light of ESA requirements. To the people of the Northwest nothing is more important than effectively saving the Salmon. #12

There is one part of Section 7 (a)(1) that says you must consult and recommend Conservation Recommendations, but it appears those are nothing more than a few voluntary things the action agency was doing anyway. It is unclear what steps NMFS will actually take to conserve listed species with respect to its activities relating to Mitchell Act hatcheries, so the opportunity to fulfill Section 7(a)(1) obligations has not been realized. #13

Sections 1.3.3.2 and 1.3.3.3. The DEIS discusses that hatchery programs qualify for an ESA Section 4(d) limitation (to the take prohibition for threatened species) if the program has fulfilled a number of steps. From our evaluation of NMFS' website and associated pages, it does not appear that there are valid Section 10 permits or approved HGMPs for the majority of hatchery programs. It is unclear that this DEIS can set a policy direction for NMFS if it has not completed the initial requisite ESA analyses for these hatchery programs. #14

The final EIS should provide numbers for the hatchery programs that have current and approved HGMPs or Section 10 permits.

Section 1.7.1. You need to write some teeth into your proposal as it pertains to *US* v *Oregon* Management Agreement case. It appears to give the parties free rein as to whether they will follow your recommendations. Unless you strengthen this, it would give the impression that your agreement carries little if any weight or authority to enforce the recommendations. You need a strong statement to conform with any policy directions. #15

Section 1.7.3. This synopsis of the Clean Water Act is incorrect in places. For example, lines 4-5 state that each state "approves" NPDES applications. Idaho does not have CWA Section 402 authority the USEPA issues NPDES permits for Idaho. And the section on 'Beneficial Uses' should clearly delineate the extent to which hatchery programs are impeding or advancing the attainment of Clean Water Act goals; and we believe these to be sizable and important! #16

Chapter 2. Alternatives

Section 2.4 describes the development of the alternatives, but your EIS fails to fully consider all of the measure that could be taken to reduce the substantial negative impacts of hatchery fish. #17

Section 2.5. Alternatives Analyzed in Detail. The DEIS offers a list of artificially constructed alternatives, including one extreme of no Mitchell Act hatcheries. We believe that this alternative should be taken seriously, and the economic and social impacts of cessing such harmful operations must be taken fully into account. We see no documentation of the monetary expenditures that could be saved if this alternative were seriously considered. In these difficult economic times, spending millions on FAILED schemes seems counter-productive and wasteful. We suggest that you need to RE-do this whole effort, and when you do please include ALL interested parties, and compile all economic ramifications of such. We can't afford to keep funding FAILED FIXES. #18

As pertains to the lower Columbia and Willamette sections, we would like to ask why NMFS did not develop an alternative that includes the "stronger" performance measure for both recovery domains? Why are the "stabilizing populations" completely ignored in any alternative (although some positive gains are realized by stabilizing populations, the effect is incidental; there is no alternative that includes greater protection for stabilizing populations). By failing to do so, NFMS has failed in its Section 7(a)(1) ESA obligation. #19

This is particularly well-illustrated by Table 2-10. Alternative 1 reflects the current status of the various populations. Discounting the stabilizing populations, currently 38 of 82 populations (primary and contributing) currently meet the stronger performance standard in the W/LC recovery domain, or 46%. The status quo in the IC recovery domain is 52/97 or 54%. The alternatives do little to improve this situation. Alternative 4 imposes the stronger performance standard on the W/LC and that improves the 46% to 78%. But the IC recovery domain barely improves under Alternative 4, to 57%, and increase of only 3%. Alternative 5 improves the W/LC to 59% and the IC to 82%. Again, the EIS needs an alternative that imposes the stronger performance standards on both recovery domains. #19

The vast majority of stabilizing populations remain heavily impacted by hatchery programs and the EIS needs an alternative that improves conditions in these populations.

Alternatives 3, 4, and 5 will provide little, if any additional assurance that harmful impacts from artificial production will be reduced sufficiently to assure recovery. These alternatives rely on simple, quantitative performance metrics, one (PNI) for integrated programs and one (pHOS) for segregated programs that are presumed to appropriately limit deleterious genetic impacts of hatchery fish interactions with wild fish. #20

Of particular concern is the performance metric for integrated programs. Reliance on the arbitrarily-chosen values of PNI (0.5 and 0.7) is of great concern in view of the considerable recent and proposed expansion of integrated programs in the CR, despite the clear recommendation of the ISAB in 2003 & 2005 to not expand hatchery programs or production in the CR until a proper region-wide evaluation of integration/supplementation had been conducted. This much-needed evaluation has not yet been started, much less completed.

The theoretical equilibrium you say will follow, really has nothing to do with whether or not the SARs of natural spawning fish are sufficient to sustain the wild population in the absence of hatchery supplementation. Yet, it is this latter point that is of greatest importance to the recovery of listed populations.

By its very nature, the *hypothesis* that high PNI values will result in equal fitness of hatchery and wild spawners at some future date when equilibrium is attained cannot be evaluated empirically in the short run, even if it were assured that equal fitness will be attained at that future

In fact, naturally spawning fitness after several generations of integration is almost guaranteed to be lower than it was when integration began, and could be half or less of what it was depending on the broodstock collection protocols as well as other key factors. #20

We take issue with your reliance on such questionable and unverifiable performance standards.

NMFS' refusal to identify and employ adequate measures is disappointing; and to rely instead on an inappropriate metric like PNI suggests that NMFS is not willing to hold hatchery programs to readily measurable standards that assure the preservation and recovery of wild CR salmon and steelhead.

In summary, there appears to be no reason to believe that the resulting level of wild fitness will be sufficient to assure population persistence (i.e., recovery).

Box 2-9 discusses weirs, and although it discusses the negative ecological and recreational aspects of weirs, it also says that the EIS "does not intend to fulfill any required environmental review associated with weir installation"; - but these impacts could be significant! There are indeed ecological and recreational costs associated with the use of weirs. The efficiency of these structures at disrupting migration and movement of wild fish is not discussed, although relevant literature documents the avoidance of instream structures by wild fish. An EIS that purports to set a "policy direction" but does not fully discuss the costs associated with one of the "goals and/or principles" that is a major part of almost every action alternative is not a complete nor relevant EIS. This EIS needs to fully recognize the adverse effects of weirs on wild fish, wildlife, and the overall ecological health of the watershed. Additional discussion of the costs associated with all of the identified measures to reduce pHOS is below. #21

Chapter 3. Affected Environment

Chapter 3, Affected Environment, speaks to the risk to fish from the hatchery programs. Section 3.2.3.1.2 is entitled "Current Approaches for Reducing Genetic Risks." Besides weirs, this section (page 3-6) also lists four other measures that can be taken to reduce genetic risk. Of those four (reduce number of hatchery fish produce; increase wild fish numbers through habitat restoration; change hatchery smolt release timing; and implement selective fisheries), it appears that the only one outside the scope of this EIS is the increase of wild fish numbers through habitat restoration. Hatchery programs certainly have the ability to reduce the numbers they produce and modify the release of smolts. And it is not unreasonable to think that the hatchery system as a whole -- the managers of all the hatchery programs – can implement greater use of selective fisheries because these same entities manage the harvest program. #22

Excess hatchery fish are a problem, yet here NMFS thinks the only "goal and/or principle" worth considering in the alternatives is a greater use of weirs, which exact a cost from wild fish and their associated ecosystems. #22

Reducing numbers of fish, and changing hatchery techniques, however, are two measures that put the burden of finding a solution for the problem of excess fish squarely onto the shoulders of the creators of the problem – the hatchery programs themselves.

We urge NFMS to fully address all affected environmental components that evaluates the costs and benefits of all the measures that can be implemented to reduce the hatchery-origin fish on the spawning grounds, and then develop alternatives using all of these measures.

Sections 3.2.3.1.3 and 3.2.3.1.4 discuss hatchery facility risks and ways in which to reduce the risks. These sections speak mostly to water quantity and water quality issues, although the discussion is incomplete. While it may be true that "100% percent of the hatchery facilities… operate within the limits established in NPDES permits" but we do not believe this sufficiently protects wild fish. #23

For example, the Leavenworth National Fish Hatchery discharges phosphorus and contributes to water quality exceedences in Icicle Creek and the Wenatchee River. Their NPDES permit, which expired in 1979, has not yet been renewed. Even if the hatchery is complying with its "current" permit, that permit's effluent limitations have no relevance to the current ambient conditions. In addition, the IHOT reference given on line 18 (p 3-10) does not give effluent guidelines for hatcheries, except insofar that it states that hatcheries should comply with their NPDES permits. The description given in this section is so general and full of circular references that it is of little value. #24 #25

The statement that only 71% of hatcheries currently allow "all migrating species of all ages" to pass through hatchery-related structures causes great concern insofar as this document promotes the construction and operation of additional weirs. And just as we are not confident that compliance with NPDES permits means that hatchery facilities have little impact on water quality, we must question not just the 71% passage number, but also the accuracy of any measure of wild fish passage by hatchery managers that have traditionally been less-than-attentive to ecosystem conditions that do not affect hatchery operations. Actual fish passage at these facilities might be very much less than 71%. In fact, many hatchery programs and facilities still believe that blocking wild fish passage is desirable from a hatchery management point of view. #26

Sections 3.2.3.1.6 and 3.2.3.1.8 discuss competition and predation risks. "Minimize size differences between hatchery-origin fish and their natural-origin counterparts" fails to specify the quantitative limits (maximum size difference between H and W smolts) required to achieve an appropriately low risk. Nor are there any standards stated or recommended for % residualization of coho, chinook, and steelhead. You should've proposed appropriate, risk-aversion standards for the maximum allowable percentage or number of residualized hatchery smolts in local rearing habitats need to be established and required. #27

At a bare minimuim the DEIS should recommend the implementation of a "natural smolt template". The natural smolt template was recommended by the HSRG as a standard early in its review of Puget Sound hatchery programs -and then dropped without explanation. This standard should at least be the default requirement for all hatchery programs in the CR basin in the absence of program and release-site specific data showing that release of larger hatchery smolts measurably reduces competition during the outmigration without incurring residualization. Residualization of large hatchery spring chinook smolts is a common problem in many programs in the basin and should be avoided at all costs.

Even though implementing a natural smolt template will likely result in reduced survival to adult return for many programs, this should be the problem of the hatchery programs, not the wild listed fish that suffer competition and predation from hatchery smolts released at sizes larger-than the average size of wild conspecifics.

We would suggest that it would be much more efficient for you to terminate your current hatchery programs. #28

Section 3.2.3.1.11 discusses fisheries that target hatchery-origin fish. We believe that selective fisheries are an under-utilized technique that can appreciably reduce the number of hatchery-origin fish reaching spawning grounds. If the recovery of ESA-listed populations in the CR basin is to be pursued alongside the production of large numbers of hatchery fish for harvest, it is essential that fisheries become entirely selective. Additionally, commercial and tribal fisheries need to transition rapidly to selective gear, capable of permitting the safe release of all non-target species, including ESA-listed salmon, steelhead, and bull trout. #29

Requirements for achieving the transition to selective fisheries include:

- Marking of all hatchery-produced fish, including progeny from integrated production programs if any of those progeny are intended to be harvested.

- Management of all fish produced by segregated programs as distinct species and all harvest directed only at these species. #29
- Tailoring the production of segregated programs to the capacity of all (selective) fisheries to capture all but the minimal escapement to hatchery racks necessary to sustain the needed level of production
- Management of all integrated programs to achieve PNI >= 0.7 with zero harvest on natural-origin adults, and a target pNOB = 1.0. Until the conditions for the conduct of a basin-wide evaluation of the supplementation (integration) conservation hypothesis have been implemented, reliance on PNI as a performance or monitoring metric should require a minimum of 0.7 with a universal goal of achieving pNOB = 1 (100% natural-origin adults in the annual broodstock). The combination of zero harvest on returning NOR adults combined with a pNOB = 1 in integrated programs provides the greatest assurance that the inevitable fitness decline due to integration will be kept to a minimum (Goodman 2005). In addition, all integrated programs should be required to attain average annual smolt-to-adult survival equal to that of local wild conspecifics, in order to insure that the fitness of integrated hatchery progeny is equal to that of the target local wild population at least over this significant life-stage.
- Funding assistance to tribal and non-tribal commercial fishers to facilitate the timely transition to selective fishing gear
- Funding for buyout of tribal and non-tribal commercial fishers to reduce fishing power so as to bring the fishing power of the new selective fishery regime into balance with the revised segregated hatchery production levels necessary to achieve compliance with the ESA-based standards of the EIS.
- Develop criteria by which mitigation credits can be earned by contributing to fund the transition to selective gear or to fund the buyouts. For example, requiring upper Columbia PUD's to fund selective fishing projects will arguably contribute more to recovery as well as to the development of sustainable upper basin fisheries than requiring contributions for hatchery and tributary habitat projects. Such mitigation funding should at least be evaluated.

Chapter 4. Environmental Consequences

The characterization of 'mitigation' Section 4.1.2 makes no reference to any minimal number of hatchery fish that must be produced. Rather, mitigation "is in the form of …BMPs applied to hatchery programs throughout the basin under all alternatives" (page 4-2). It is, therefore, entirely within NMFS' purview to require compliance with ESA-standards that insure no take and no jeopardy. As we argue throughout, this is the approach that NMFS should adopt for the EIS. #30

Tables 4-2 through 4-4 are less useful than they could be. We suggest rather than a simple "x" to denote whether a particular implementation measure affects a "salmon and steelhead" indicator (Table 4-4), that NMFS determine whether the affect is positive, negative, or neutral for the indicator. For example, in Table 4-4, the genetic risks to wild fish are decreased if there is a reduction in hatchery production. Without additional detail regarding how things are affected, rather than just whether they are affected, it is difficult to properly assess the effects. #31

We are also concerned with the number of weirs proposed under Alternatives 3-5 (Table 4-6); as discussed above, we do not believe that this DEIS sufficiently describes the ecological costs of fish passage barriers. #32

Table 4-8 reveals that natural origin fish barely change in actual numbers through any of the action alternatives. It reveals that NMFS should craft an alternative that actually results in significantly greater numbers of **natural origin** fish. This table also needs a breakdown by recovery domain. As we stated above, an alternative that calls for the stronger performance measure in both recovery domains is lacking from the DEIS, and that may in fact result in higher numbers of natural origin fish. #33 #34 #35

A Proposed Alternative

We concur with the comments submitted by the Native Fish Society regarding the elements of a basic hatchery policy alternative, and repeat them here for emphasis. These should form the basis around which a completely revised DEIS should be developed. #36

1. keep wild and hatchery spawners separated
2. set specific ecological impact criteria for each hatchery on wild fish
3. establish selective harvest on hatchery fish that does least harm to wild fish
4. establish spawner abundance objectives by species in each watershed for wild fish
5. establish nutrient targets for each watershed from salmon carcasses
6. designate **wild salmonid management watersheds** in each ESU
7. evaluate the benefit cost and cost effectiveness annually of each hatchery program
8. determine **the cost to catch** for each hatchery program annually
9. direct the independent economic advisory board to complete an economic review of each hatchery program in the Columbia River Basin and Puget Sound.
10. develop and **implement a wild salmonid management plan** for each watershed with measurable criteria for diversity, distribution, productivity, viability, and abundance.
11. evaluate hatcheries on contribution to fisheries and establish a minimum contribution rate for hatchery fish that optimizes funding investment while protecting wild fish from hatchery and harvest impacts.
12. require all hatchery fish to be externally marked and provide an internal tag to identify the hatchery of origin.
13. establish a basin wide stock transfer policy to regulate the movement of fish and eggs among populations and ESUs/DPSs.
14. require all hatchery origin fish be kept in sport fisheries.
15. fully integrate agency management structure on harvest, hatchery and wild salmonid management.
16. restructure management so that harvest and hatchery programs support natural production objectives in the Columbia River basin.
17. require barbless hooks in all recreational fisheries in the Columbia River basin to reduce harm in mixed stock fisheries on wild juvenile and adult salmonids.

18. develop selective fisheries to maximize harvest of hatchery fish and minimize harm to wild fish in mixed stock commercial and recreational fisheries. #36
19. operate hatcheries so that hatchery effluent is regulated consistent with the Clean Water Act.
20. **reduce hatchery production,** evaluate stray rates of hatchery fish and implement measures to reduce strays.

We would add the following to this list: You should really consider recommendations to close such facilities if necessary to create opportunities for unsupplemented reference populations.

Summary

If different levels of performance standards are selected for the final EIS, then an alternative that implements the stronger performance standard throughout the Columbia basin needs to be included. **The final EIS should allow for greater comparisons between the performance standards and ESA-based standards.**

Rather than emphasize greater use of weirs, which is yet another way to externalize the hatchery program's costs to wild fish and their ecosystems, the final EIS should include a greater evaluation of other measures to reduce pHOS, including ones like selective fisheries, which place the burden on removing hatchery fish on those who benefit from the hatchery system. These measures should be included in alternatives, rather than the DEIS's emphasis on weirs.

The entire salmonid hatchery system and the concept of "mitigation" for dams through artificial production merits a review from an independent panel such as the National Academy of Science. This should be done before a final EIS is prepared. If this is not done, the EIS needs to include performance standards that maximize recovery of listed salmonids.

And lastly, we would like to echo the thoughts of the Native Americans who told you more than 50 years ago that they did NOT want the dams, that the Dams would hurt the Salmon Runs. #37

The American Public has every right to tell you that **your system has FAILED the Salmon**. You need a complete rework and re-evaluation of your efforts. **We will NOT ACCEPT EXTINCTION, and your plans are a prescription for Extinction.** Stop your 'business as usual' approach and go back to the drawing board to bring us a REAL estimate of the harm Hatcheries and Dams are doing to our Natural Resources. The status-quo can NOT continue. #38

We expect you to really SAVE THE SALMON.

Sincerely, Catherine Koehn/Executive Director 'Artists4Action'

WESTPORT CHARTERBOAT ASSOCIATION
P. O. BOX 654 • WESTPORT, WASHINGTON 98595

Letter #32

NOAA-NMFS
RECEIVED
NORTHWEST REGIONAL OFFICE

November 29, 2010

William W. Stelle, Jr.
Regional Administrator
NMFS Northwest Region
7600 Sandpoint Way NE
Seattle, WA 98115

Re: Mitchell Act DEIS

Dear Mr. Stelle:

Thank you for the opportunity to comment on the Mitchell Act DEIS. Our charterboat association represents all the remaining for-hire vessels operating out of Westport, Washington. We numbered over 200 in the late 1970's. Today we number around 30. We are in the business of taking anglers fishing. We fish for a number of other species however salmon is our primary fishery and without a viable salmon fishery we couldn't survive. #1

First, let me say that we agree wholeheartedly with the comment letter sent to you by the Pacific Fishery Management Council (PFMC). The current draft DEIS ignores the mitigation intent of the Mitchell Act and calls for reducing production in virtually every alternative. We believe that alternatives that increase production are necessary for a full review of Mitchell Act hatchery funding. #2

Second, although not necessarily highlighted but implied, is a future dependent upon "mark selective fisheries" (MSF) for recreational anglers fishing off the Washington coast. We are not philosophically opposed to MSF and we do believe it should be a tool in the tool box. However, we have been selectively harvesting hatchery Coho for 11 years now and our recent experience has not been good. In order to have publicly accepted, successful MSF fisheries, there needs to be a high proportion of marked hatchery fish in the ocean. Since we began MSF for Coho in 1999, Coho production has been declining. The encounter rate has gone down substantially. People are losing #3

interest in taking fishing trips where they are required to release many more fish than they can retain and, in many cases, going home with no fish. As a result, MSF is fast losing favor among our fleet and the public. Now we are considering the same scenario with Chinook produced by Mitchell Act hatcheries and DEIS alternatives that reduce production. We fear that our industry and communities cannot survive the social and economic damage that would be guaranteed with any of the current alternatives. #3

Finally, we are struggling with the science. We don't believe that the HSRG science is the only path available to rebuild healthy natural runs of salmon in the Northwest. Tribal managers have been very successful in the upper Columbia River using hatchery stocks to supplement wild stocks in the rebuilding process. Their proven methodology allows for both rebuilding and harvest and we believe that NMFS needs to thoroughly review both methodologies prior to travelling down a path that promises to be devastating to fishery groups and the communities that depend upon them. #4

Thank you again for allowing our comments.

Respectfully Yours,

Steve Westrick, President

Cc Phil Anderson, WDFW Director
Congressman Norm Dicks
Congresswoman Jaime Herrera

MIDDLE SNAKE
WRIA 35 WATERSHED PLANNING

December 1, 2010

William Stelle Jr.
7600 Sand Point Way NE
Seattle, WA 98115

Letter #33

Dear Mr. Stelle,

We appreciate the opportunity to provide comments on the Draft Environmental Impact Statement on the Mitchell Act and Columbia River Basin Hatchery Operations (DEIS). WRIA 35 membership consists of four county commissioners from southeastern Washington (SEWA), the cities of Clarkston, Asotin and Pomeroy and four conservation districts. Our area of expertise is working with private landowners installing voluntary restoration and protection projects for ESA listed salmonids in priority areas in Snake River tributaries. Many members also serve on the Snake River Salmon Recovery Board. We have been working on habitat projects and recovery of Snake River Chinook and steelhead over the past 20 years. #1

With this background it should not be surprising that we are extremely disturbed with the DEIS. It is obvious that no one from SEWA was consulted or reviewed this DEIS. It is blatantly obvious in the economic section that little or no research was done on how important hatchery fall and spring Chinook and steelhead fishing are to SEWA. The economic figures don't even represent SEWA portion of the steelhead fishing let alone if there is Chinook and steelhead fisheries in Idaho and Oregon. The DEIS lists SEWA, Idaho and northeastern Oregon at 13 million, steelhead fishing alone in SEWA generates 20 million per year and if hatchery releases are reduced this would have adverse impacts on cities in Washington, Idaho and Oregon that rely on sport fishing like Asotin, Clarkston, Lewiston, Orofino, Riggins, Joseph and Enterprise. #2

This region has worked with regulatory agencies to voluntarily protect and restore habitat. There are at least two populations of wild steelhead that are thriving in SEWA in Asotin and Joseph creeks. These populations could be protected and terminal fisheries for hatchery stocks could continue without impacting local economies, recreational opportunities or wild stocks. We would appreciate more local input from hatchery managers within our region. There is a wealth of knowledge regarding hatchery production, harvest and habitat in the Snake basin, yet none of these individuals were consulted. Additionally accurate numbers should have been used for the model. It doesn't appear that sound science or accurate data was used to populate the model. #3 #4

Thanks for the opportunity to respond and WRIA 35 supports the withdrawal of the DEIS to provide for a complete rescoping and revision in order to develop a draft that reflects a collaborative effort with **all** the affected parties. #5

Sincerely,

Bradley J. Johnson

Bradley J. Johnson – Watershed Planning Director

PO Box 605 • Clarkston, WA 99403-0605 • (509) 758-1010 • www.asotinpud.org/msww/

12/01/2010
P.O. Box 162
Acme, WA 98220

Letter #34

William W Steele Jr.
NMFS Northwest Region
7600 Sand Point Way NE
Seattle, WA 98115

Dear Mr. Steele Jr.;

Re: Draft Environmental Impact Statement to Inform Columbia River Basin Hatchery Operations & the Funding of Mitchell Act Hatchery Programs (EIS)

#1

We represent the Washington Federation of State Employees (WFSE) within Washington State and are employed by the Washington Department of Fish and Wildlife (WDFW). Our purpose is to comment for WFSE regarding any change in Mitchell Act Funding in support of WDFW and secure an audience for WFSE to further explain, answer questions, and help reviewers make informed decisions on how to respond to the DEIS and help NOAA formulate a preferred alternative regarding the above impact statement.

#2

Mitchell act has been funding the operation of hatcheries within Washington State for over 60 years now. These hatcheries and other projects are an important part of the salmon and steelhead runs in the Columbia and Snake Rivers. Washington depends on this funding for mitigation for the hydroelectric projects in the Columbia and for recreational and commercial fishing opportunities within the state. We desire this funding to continue in the significant future.

#3

The text of the EIS lists 5 alternatives none of which fully represent the needs of our members and the fisheries resources. We wish to ensure that there is a sustainable fishery into the foreseeable future, hatcheries are and will continue to be an essential component of the fish runs and conservation efforts in the Columbia River Basin. We would request that some changes would be made to your alternatives.

#4

A preferred alternative should acknowledge the different roles and priorities populations can have within an ESU/DPS e.g. primary, contributing, and stabilizing and then allow the hatchery programs to operate consistent with risks managers are willing to take. A preferred alternative should increase conservation effectiveness while providing for sustainable fisheries into the future. A preferred alternative should reflect the prioritization of populations within each ESU/DPS, and to the extent possible establish a bridge towards the role of harvest in the overall implementation of effectiveness.

Thank you for the opportunity to comment and participate in the process of reviewing Mitchell Act Funding. We at WFSE look forward to the opportunity to discuss this issue with you further and provide suggestions as to how our Mitchell Act Hatcheries can contribute to salmon and steelhead recovery in the Columbia River Basin.

Regards;

Doreen Merrill, Local #2753 President – Council 28 AFSCME
253-840-4593 or 253-227-5728
Jed Varney, Local #2964 President – Council 28 AFSCME
360-319-3200 or 360-420-3029

Coastal Conservation Association

TEXAS • LOUISIANA • MISSISSIPPI • ALABAMA • FLORIDA • GEORGIA
SOUTH CAROLINA • NORTH CAROLINA • VIRGINIA • MARYLAND • NEW YORK
CONNECTICUT • MASSACHUSETTS • NEW HAMPSHIRE • MAINE • OREGON • WASHINGTON

Letter #35

December 3, 2010

Willam W. Stelle, Jr.
Regional Administrator
NMFS Northwest Region
7600 Sand Point Way NE
Seattle, WA 98115

Mr. Stelle,

Coastal Conservation Association (CCA) is pleased to provide comments on the Draft Environmental Impact Statement (DEIS) to inform Columbia River Basin Hatchery Operations and the Funding of Mitchell Act Hatchery Programs. CCA believes a comprehensive review of Columbia River hatchery programs is an essential step for NMFS to align hatchery production, and its closely related harvest management decisions, with wild salmon and steelhead recovery efforts.

Our primary concern with the DEIS is that it fails to recognize the vital role of harvest in determining the composition (hatchery origin vs. wild origin) of returning adult spawners. Considering that the primary purpose of 85% of Columbia River basin hatchery production is to provide fish for commercial, recreational and tribal harvests, it seems senseless to review hatchery production without also considering harvest management. For example, despite making great progress mass-marking hatchery fish, insufficient progress has been made to increase the selectivity of harvest though mark-selective fisheries. Non-selective harvest remains widespread and continues to prevent large numbers wild salmon and steelhead from successfully spawning in the wild. These natural spawners are essential to maintaining the genetic diversity and fitness of wild populations, including the thirteen Columbia River Basin salmon and steelhead stocks listed under the ESA. #1

The DEIS ignores how mark-selective fisheries can benefit wild salmon and steelhead populations. Such fisheries not only harvest excess marked hatchery fish but can also increase survival rates for returning unmarked wild stocks. Mark-selective fishing methods have the potential to harvest a far greater percentage of hatchery salmon from targeted runs than non-selective harvest methods. While the DEIS outlines the possible use of weirs, hatchery production cuts, integrated broodstock programs and reductions in harvest to keep the influence of hatchery-origin fish within scientifically acceptable levels, it omits any serious consideration of how mark-selective fisheries can also help protect wild populations. Instead of proposing drastic cuts to hatchery production and salmon harvests, NMFS should promote increased selective harvest of excess marked hatchery fish as a key strategy for sustaining hatchery production and fisheries while also protecting the fitness and productivity of wild populations. #2

There is growing evidence related to the benefits selective fisheries to meeting hatchery reform and harvest objectives. The recreational salmon and steelhead fishery in the Columbia River basin has largely transitioned to a mark-selective fishery. The selectivity of the recreational fishery allows it to harvest far greater numbers of hatchery-origin salmon and steelhead per wild fish impacted. This is significant in the Columbia River where limits on the number of ESA-listed fish that may be harmed frequently constrain commercial, recreational and tribal harvests. When those ESA impact limits are reached all fisheries are shut down, regardless of their effectiveness targeting excess hatchery fish. #3

Examples of mark-selective commercial fisheries are also emerging. The Colville Tribes are well into a multi-year effort involving live capture seining. This technique provides both an opportunity for meaningful tribal harvest, but also a tool to strengthen the fitness of native populations by selectively harvesting excess marked hatchery fish before they reach the spawning grounds. This mark-selective commercial harvest is benefiting native fish populations by: 1) increasing the Proportion of Natural Influence (PNI) on the spawning grounds and in hatchery programs; 2) reducing the Proportion of Hatchery Origin Fish on Spawning Grounds (pHOS); and 3) increasing the Proportion of Natural Origin Fish for Broodstock (pNOB). PNI, pHOS and pNOB are important measurements of the influence of hatcheries programs on wild salmon populations.

In the Lower Columbia, the Washington and Oregon Departments of Fish and Wildlife are undertaking a similar effort to evaluate the effectiveness of mark-selective commercial fishing gear to target plentiful returns of hatchery fish. Hatchery fish vastly outnumber natural Chinook salmon populations spawning in the wild, and in most Lower Columbia populations over 70% of the fish returning to spawn are of hatchery origin *(Hatchery Science Review Group, Columbia River Hatchery Reform System-Wide Report, 2009)*. This greatly exceeds the levels recommended by independent and agency scientists, including the Hatchery Scientific Review Group (HSRG). Unfortunately, NMFS did not consider the recent progress being made to implement selective recreational and commercial fisheries and their potential for protecting wild fish and maintaining hatchery production.

It is clear NMFS would like to provide various alternatives for the public to review and provide comment concerning the development of hatchery performance measures. Unfortunately, the alternatives the agency has outlined for such measures rely on a completely arbitrary distinction between Willamette/Lower Columbia and Interior Columbia populations. NMFS has provided no basis in law or science for applying different performance standards to Willamette/Lower Columbia and Interior Columbia populations. The final EIS should adopt a scientifically-based approach to applying performance measures to Columbia River basin hatcheries without this arbitrary distinction. #4

HSRG's 2009 Columbia River Hatchery Reform System-Wide Report represents an important road map to recover wild salmon and steelhead populations through the implementation of hatchery and selective fishing reforms in the Columbia River. We encourage NMFS to give the recommendations greater consideration as it develops a final EIS. For example, while NMFS included the HSRG population designations (Primary, Contributing and Stabilizing) in the DEIS, it did not prepare an alternative #5

that proposes different performance goals and principles for integrated and segregated hatchery programs based on their influence on Primary and Contributing populations. The primary purpose of the HSRG population designations is "to link the biological significance of specific populations to acceptable levels of hatchery influence and apply differing standards of risk (PNI, pHOS) to those designations" *(HSRG Comments on Mitchell Act EIS, November 15, 2010)*. Instead of recognizing the difference between Primary and Contributing populations, the various alternatives in the DEIS apply the same standard to both the Primary and Contributing populations. #5

Furthermore, while the DEIS proposes the use of the PNI and pHOS measurements as the metrics within the proposed performance goals for hatchery programs, the document indicates that "NMFS is not advocating their use by hatchery managers." It is difficult to imagine the purpose of a performance measure if NMFS has no intention of encouraging its use. #6

As the agency develops a final EIS we also hope NMFS will provide greater clarity on how this policy will be applied in future ESA consultations and decisions related to the funding of Mitchell Act programs. Hatchery operators, harvest managers and the public need a clear indication of how NMFS intends to ensure that hatchery operations do not negatively impact wild salmon and steelhead recovery while remaining consistent with ESA requirements and the best available science. #7

The DEIS also provides a clear picture of the economic benefit of mark-selective fishing to our region. For example, according to the DEIS the Net Economic Value (NEV) of recreational fisheries in the Columbia River basin is $35.8 million. This compares to a NEV of $2.1 million for non-tribal and tribal commercial fisheries in the Columbia River basin. When one considers that the recreational fishery catches less than one-third of the salmon harvested, these numbers indicate that it generates 17 times the economic value of the commercial fishery. #8

In summary, the stated goal of the DEIS is to "develop a NMFS policy direction" that will "guide NMFS's distribution of Mitchell Act hatchery funds" and "inform NMFS's future review of individual Columbia River basin hatchery programs under the Endangered Species Act." While CCA has significant concerns with each of the alternatives outlined in the DEIS, we support the goal articulated by NMFS and encourage the agency to build upon on some of the positive elements contained in the document as it continues the EIS process. Our primary concerns and comments are summarized below: #9

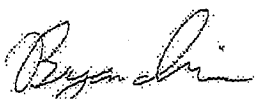
- Any final EIS on Columbia Basin hatcheries should consider the benefits of mark-selective fishing to salmon recovery and hatchery reform efforts
- NMFS should avoid drawing arbitrary distinctions between areas of the Columbia Basin and apply uniform, science-based approaches to hatchery management
- NMFS should advocate the use of hatchery performance measures (PNI, pHOS, etc)

- NMFS should give greater weight to the recommendations of the Hatchery Scientific Review Group, particularly science-based approaches for managing by different population designation categories

- NMFS should provide greater clarity on how this policy will be applied

CCA appreciates this opportunity to comment on the DEIS and encourages NMFS to develop a final EIS that outlines a science-based approach to managing hatcheries consistent with NMFS's multiple mandates, including the mitigation requirements of the Mitchell Act. We are confident in the potential for hatcheries to contribute to the conservation of wild salmon and steelhead populations while maintaining fishing opportunity through proper broodstock management and selective harvest reforms.

Sincerely,



Bryan Irwin, Regional Executive Director
CCA Pacific Northwest

About CCA: CCA is a national 501(c)(3) grassroots conservation organization founded to advocate for the conservation of our coastal marine resources. CCA's objective is to conserve, promote and enhance the present and future availability of these coastal resources for the benefit and enjoyment of the general public. Nationwide, CCA is the largest marine conservation organization representing over 100,000 members in 17 coastal states with a thirty-year track record of benefiting coastal fish stocks and fisheries. After opening state chapters in Oregon and Washington a little over three years ago, CCA has already grown to include 10,000 members in thirty chapters across the Pacific Northwest. CCA's membership is predominantly comprised of conservation-minded recreational anglers.

LONG LIVE THE KINGS
Restoring Wild Salmon

Letter #36

December 3, 2010

To: William W. Stelle, Jr.,
Regional Administrator,
NMFS Northwest Region

First, we applaud your effort to institute an overarching vision and much needed policy direction for Columbia River basin hatchery production via this Mitchell Act EIS process. The findings of the Columbia River Basin Hatchery Scientific Review Group have provided NMFS a solid foundation for doing so. #1

The implementation of a well-scoped and vetted policy direction that includes both performance goals and their metrics requires that NMFS' and the other co-managers' track and communicate progress toward meeting stated goals. While it was stated in the Draft EIS that NMFS' new policy direction will include monitoring and evaluation (p. 2-14 line 10), it is not clear from the document whether or how monitoring and evaluation methods will be improved so that progress toward meeting performance goals and metrics can be effectively or adequately tracked and communicated. Therefore, when considering your new policy direction for the application of Mitchell Act funds, Long Live the Kings' asks that NMFS include the need for a more robust, unified, and explicit monitoring and evaluation approach with vastly improved data management and communications components. #2

We acknowledge that there have been, and continue to be ongoing efforts to address monitoring and evaluation needs. However, the current approach to monitoring, evaluation and data management is fragmented and in many cases insufficient, with components handled by a multitude of authorities. This work and its ultimate communication out to appropriators, stakeholders and the public must be a coordinated, multi-party effort. Involving non-governmental organizations in these efforts can boost chances for success. Also, it appears specific funding mechanisms have not yet been identified, but will be critical to achieve necessary levels of coordination and efficiency. #3

The new "hatchery reform" salmon management paradigm NMFS is endeavoring to implement is very complex. NMFS could benefit from identifying partners that can assist in communicating the complex goals and objectives and help build public understanding and support for new approaches and improved program elements. #4

Regards,

Jacques White

Executive Director
Long Live the Kings

Long Live the Kings was the project manager and facilitator of the Puget Sound and Coastal Washington Hatchery Reform Project (2000-2005) and the US Fish and Wildlife Service Pacific Region Federal Hatchery Review (2005-2010)

LOWER COLUMBIA FISH RECOVERY BOARD

2010 BOARD

Tom Linde, Chairman
Skamania County Citizen

F. Lee Grose, Vice Chairman
Lewis County Commissioner

Randy Sweet, Treasurer
Cowlitz County Citizen and
Private Property Representative

Taylor Aalvik
Cowlitz Indian Tribe

Blair Brady
Wahkiakum County
Commissioner

Irene Martin
Wahkiakum County Citizen

Tom Martin
Hydro-Electric Representative

Jim Richardson
Skamania County Commissioner

Steve Stuart
Clark County Commissioner

Axel Swanson
Cowlitz County Commissioner

Don Swanson
SW WA Environmental
Representative

Charles TenPas
Lewis County Citizen

Dean Takko
WA State Legislative
Representative

Jade Unger
Clark County Citizen

Dennis Weber
SW WA Cities Representative

~~

Jeff Breckel
Executive Director

December 3, 2010

Letter #37

William W. Stelle, Jr.
Regional Administrator
NMFS Northwest Region
7600 Sand Point Way NE
Seattle, Washington, 98115

Re: Mitchell Act Draft Environmental Impact Statement (DEIS)

Dear Mr. Stelle:

We are writing to provide comments on the DEIS to Inform Columbia River Basin Hatchery Operations and the Funding of Mitchell Act Hatchery Programs.

#1

The Lower Columbia Fish Recovery Board (LCFRB) was established by state statute to oversee and coordinate salmon and steelhead recovery efforts in the lower Columbia region of Washington. Over the past 12 years, the LCFRB has played a central role in recovery planning, watershed management, and habitat restoration efforts. In 2004, the LCFRB in cooperation with federal, state and local interests completed the WA Lower Columbia Salmon Recovery and Fish & Wildlife Subbasin Plan (Plan). National Marine Fisheries Service (NMFS) adopted the Plan as an Interim Regional Recovery Plan in 2006. In June 2010, the LCFRB adopted and submitted to NMFS a comprehensive update of the Plan.

The goal of the Plan is to return our ESA-listed salmon and steelhead populations to healthy, harvestable levels. To be successful, we knew that our Plan needed to work for both the fish and the people of our region. To this end, we carefully evaluated the status of lower Columbia Chinook, coho, chum, and steelhead. We examined the threats to each species. Then, we worked with the many and varied interests in our region to meld biological, social, legal, and cultural factors into an integrated set of strategies, measures and actions addressing habitat, harvest, hatchery, and hydro factors in an integrated manner.

We recognize and appreciate the complexity of the analysis NMFS has undertaken. We support the development of a sound policy basis for ensuring that Columbia Basin hatchery programs support sustainable fisheries and satisfy treaty-trust obligations while furthering ESA recovery efforts. However, we are concerned the breadth or depth of the analysis of the DEIS is not sufficient to effectively guide Mitchell Act hatchery funding decisions or inform future reviews of individual Columbia River basin hatchery programs under the ESA. Specifically, we believe that the EIS should:

#2

1. **Be consistent with adopted ESA recovery plans**. The alternatives in the DEIS are not consistent with the goals, objectives, strategies, measures, and actions of the Plan. Specifically:

#2

a. Target performance goals for reducing the adverse impacts of hatchery fish on natural origin fish are applied on the Willamette/Lower Columbia or Interior Columbia domain level with no differentiation of species. Such an approach is inconsistent with the Evolutionarily Significant Unit (ESU) or Distinct Population Segment (DPS) basis used in making ESA listing decisions and developing recovery plans. Analysis at the domain level does little to inform hatchery decisions under the ESA.
b. The same performance standards are applied to both primary and contributing populations. Doing so fails to recognize the significant differences in the recovery objectives for the two population categories.
c. The DEIS applies the "stronger" and "intermediate" performance goals without regard to the individual population objectives set forth in the recovery plan. Doing so fails to recognize the population structure needed to achieve a viable Stratum or Major Population Group (MPG) and ultimately a viable ESU or DPS.

We urge NMFS to adopt the ESU or DPS approach used in recovery plans to construct and evaluate alternatives. We further urge NMFS to use the population goals, strategies and measures in the Washington Lower Columbia Recovery Plan in defining and assessing conservation actions. The selected preferred alternative should be consistent with the Washington Lower Columbia Recovery Plan and other Columbia Basin recovery plans.

#3

2. **Broaden the range of alternatives evaluated to include consideration of increased hatchery production**. The LCFRB recognizes the need to maintain commercial, sport, and tribal harvest opportunities while working to recover listed salmon and steelhead. The Washington Lower Columbia Plan recognizes the critical role hatcheries will play in providing such harvest opportunities and supports hatchery operations that are consistent with recovery and objectives. Given the economic and cultural significance of salmon fisheries, we believe that increased hatchery production should be analyzed. Such an analysis should assess whether increased production can be achieved without jeopardizing progress to recovery of ESA-listed populations. The analysis should include consideration of both hatchery and harvest measures that can be used to reduce the adverse effect of hatchery fish on natural origin fish.

#4

3. **Evaluate the impact of each alternative on the ability of hatchery programs to satisfy mitigation, treaty, and other legally mandated obligations.** Making hatchery funding and operational decisions requires a clear vision of the goals or mandates hatcheries must address. While the DEIS does evaluate overall production levels, it does little to relate the various production levels analyzed to the various mitigation, conservation, and treaty obligations. Given the various interests and constituencies that could be affected by decisions based on the EIS, the EIS should provide a more detailed discussion of the impacts alternatives could have on satisfying legal mandates.

We appreciate the opportunity to comment on the Mitchell Act DEIS.

Sincerely,

Tom Linde, Chairman

Cc:
Senator Maria Cantwell
Senator Patty Murray
Representative Brian Baird

Letter #38

Northwest RiverPartners
For salmon, our economy and quality of life

December 3, 2010

VIA ELECTRONIC AND FIRST CLASS MAIL

William W. Stelle, Jr., Regional Administrator NMFS
Paul N. Doreumus, NEPA Coordinator
NMFS Northwest Region
National Oceanic and Atmospheric Administration
7600 Sand Point Way NE
Seattle, Washington 98115

Re: Mitchell Act DEIS

Dear Sirs:

Northwest RiverPartners ("NWRP") appreciates this opportunity to submit comments on NMFS' Draft Environmental Impact Statement (DEIS) To Inform Columbia River Basin Hatchery Operations and the Funding of Mitchell Act Hatchery Programs (hereafter "DEIS"). NWRP is an alliance of farmers, utilities, ports and businesses that promote the economic and environmental benefits of the Columbia and Snake Rivers and salmon recovery policies based on sound science (**Northwest RiverPartners members**). #1

We are dedicated to ensuring both the conservation of Columbia/Snake River Basin salmon and robust production of clean, renewable, and reliable electricity from the Federal Columbia River Power System ("FCRPS"). For these reasons, and because our members and their constituents contribute funding for hatcheries and other measures aimed at restoring salmon, NWRP has a significant vested interest in NMFS' development of a comprehensive and well planned and implemented hatchery policy.

NWRP applauds NMFS' desire to develop a comprehensive hatchery policy to guide both NMFS' distribution of Mitchell Act funds and to inform NMFS' future review of individual Columbia River basin hatchery programs under the Endangered Species Act ("ESA"). Hatcheries play an important role in mitigating for the effects of hydropower operations, irrigation and municipal water withdrawals, commercial, recreational and tribal harvest, farming, and industrial activities in and around the Columbia Snake River Basin that have collectively harmed the region's wild salmon and steelhead populations.

Some hatcheries are also conserving critically important salmon populations such as Snake River Sockeye. However, some hatchery practices have also been shown to have significant negative impacts on naturally spawning and ESA listed fish and have contributed to their decline. The best available science suggests that hatchery stocks impact naturally-spawning fish by increasing mixed stock harvest pressure, competing for food, territory, mates and spawning sites, and genetically mutating wild stocks. (Michael Ford presentation to the Northwest Power and Conservation Council, http://www.nwcouncil.org/news/2010/09/Default.asp; Northwest Fisheries Science Center, Recovery Implementation Science Team, Hatchery Reform Science, http://www.nwfsc.noaa.gov/trt/puget_docs/hatchery_report_april92009.pdf; and The State of the Salmon Ecological Interactions Conference; http://www.stateofthesalmon.org/conference2010/presentations.html) #2

While the DEIS purports to be developing a comprehensive hatchery strategy for the Basin, it is unclear exactly how the new policy will affect existing hatchery reform efforts already underway. For example, the FCRPS 2008 Biological Opinion established a comprehensive set of hatchery reforms in the form of Reasonable and Prudent Alternatives (RPAs) 39 and 40. RPA 39 requires NMFS to adopt programmatic criteria for funding decisions related to FCRPS hatcheries which in turn will require implementation of best management practices developed by the Hatchery Scientific Review Group. RPA 40 requires NMFS to consult under ESA section 7(a)(2) on the operation of hatchery programs funded by FCRPS action agencies, and on the hatchery genetic management plans ("HGMP"s) required for the operation of each FCRPS hatchery. #3

These RPAs are collectively expected to: "(1) integrate hatchery mitigation and conservation objectives; (2) preserve genetic resources; and (3) accelerate trends toward recovery as limiting factors and threats are fixed and natural productivity increases." FCRPS BiOp at 8-35; DEIS at 1-45 (emphasizing that FCRPS hatchery reforms are designed "to ensure against the impediment of recovery and to preserve and rebuild genetic resources through safety-net and conservation actions to reduce short-term extinction risk and promote recovery.").

The DEIS mentions other hatchery programs currently being implemented under other federal programs and by publicly owned utilities but is vague as to how the policy ultimately adopted through the Mitchell Act hatchery NEPA process will affect these other hatchery programs and reform efforts already underway. *See* DEIS at 1-15-17; 1-21-1-45. Given that the FCRPS hatchery funding reforms have already undergone a programmatic consultation, and are already being implemented, and given that some hatcheries are implementing HGMPs developed on the basis of best available science in coordination with NMFS and are undergoing section 7 ESA consultation, the policy ultimately derived from the Mitchell Act NEPA process must be carefully harmonized with these existing reforms, so as not to conflict with or undermine them.

Finally, the DEIS emphasizes that the Management Agreement produced through the *U.S. v. Oregon* allocation process will not be analyzed or re-visited as part of the Mitchell Act EIS. Instead, "NMFS assumes that affected parties will exercise their authority regarding production measures following this environmental analysis *in a manner that is consistent with the most current Management Agreement.*" (emphasis supplied). Because "approximately half of the production currently funded under the Mitchell Act is used to fulfill commitments of the #4

Management Agreement" (DEIS at 1-41), it is unclear what benefit the Mitchell Act hatchery policy will ultimately have over the region's hatcheries if the new policy will not impact or potentially alter the existing harvest Management Agreement. #4

Indeed, hatchery and harvest reforms are inherently intertwined. It is impossible to address or reform one while not impacting the other. *See e.g.*, DEIS at 1-41 ("the [Management]Agreement includes important and substantive commitments related to hatchery production. . ."). The hatchery policy adopted through this Mitchell Act NEPA process should inform the future direction of harvest in the region. The Management Agreement should not be viewed as immunized from these reform efforts. NMFS' policy, whatever it ultimately is, must inform and guide the Management Agreement and future modifications thereto, and reflect the same goals established in the FCRPS BiOp. #5

For all these reasons, NWRP urges NMFS to substantially revise the DEIS and issue a FEIS that is consistent with the comments set forth above. #6

Very truly yours,

Terry, Flores, Executive Director

Ccs:

NW Power and Conservation Council
Bonneville Power Administration
FCRPS Litigation – Regional Coalition

Letter #39

Public Power Council
825 NE Multnomah, Suite 1225
Portland, OR 97232
503.595.9770
Fax 503.239.5959

December 3, 2010

Mr. Will Stelle, Regional Administrator
NMFS Northwest Region
National Oceanic and Atmospheric Administration
7600 Sand Point Way NE
Seattle, Washington 98115

Re: Public Power Council Comments on Hatchery Draft Environmental Impact Statement

Dear Mr. Stelle:

Thank you for the opportunity to comment on the National Marine Fisheries Service's (NMFS) Draft Environmental Impact Statement (DEIS) to Inform Columbia River Basin Hatchery Operations and the Funding of Mitchell Act Hatchery Programs. The Public Power Council (PPC) represents over 100 consumer-owned utility customers of the Bonneville Power Administration (BPA). As the primary customers of BPA, PPC members and their customers fund regional fish and wildlife mitigation efforts including hatcheries, totaling approximately $800 million annually and have a vested interest in ensuring these efforts are efficient, cost-effective, and based on sound science. While PPC appreciates the effort NMFS is making to improve the effectiveness of hatcheries and minimize their effects on wild fish, we believe the DEIS needs to be significantly revised before it can be an effective tool for directing regional hatchery policy and guiding Mitchell Act hatchery funds. In addition to the comments below, PPC supports comments submitted by Northwest RiverPartners. #1 #2

NMFS purports to develop a comprehensive hatchery policy for Columbia River Basin (Basin) hatcheries and Mitchell Act hatcheries but is unclear in how it will take into account the reform efforts already underway. The DEIS should clarify how it will consider the corrective actions and program modifications currently being implemented at hatcheries throughout the region as a result of other permitting and mitigation processes including the Federal Columbia River Power System (FCRPS) Biological Opinion and Endangered Species Act consultation for Federal Energy Regulatory Commission licensed projects. #3

The DEIS should evaluate the effects of Mitchell Act hatcheries on naturally produced populations of salmon and steelhead in the Basin and specify how individual programs should be operated. By doing this, the DEIS could be used to develop priorities for capital improvements that more directly promote conservation of natural origin salmon and steelhead populations and potentially reduce operational costs at facilities. #4 #5

The DEIS should more comprehensively consider harvest. In their 2009 report on Columbia River hatchery reform, the Hatchery Science Review Group found that without addressing the effects of harvest, hatchery reform alone would not significantly reduce impacts of hatchery fish on naturally produced populations. Mitchell Act hatchery programs support large-scale, non-selective, mixed-stock harvest. Management of this kind significantly impacts the recovery of ESA listed salmon and steelhead populations in the Basin. Without a greater consideration of harvest, the DEIS misses an important consideration of the conservation of anadromous fishery resources in the Basin. #6

Updated fish data should be used in the DEIS. NMFS is currently proposing that the DEIS alternatives be analyzed using fish passage survival rates from the 2004 FCRPS Biological Opinion. Since 2004 there have been several modifications to the configuration and operation of the FCRPS. Many of these modifications, including the installation of Surface Bypass Systems have improved survival of juvenile salmon and steelhead passing the the federal hydrosystem. This new information should be incorporated into the DEIS alternatives. #7

PPC appreciates the opportunity to comment and is hopeful that the DEIS will be revised to better address the conservation of wild salmon stocks, avoid conflict with other regional hatchery reform processes, prioritize needed infrastructure improvements, directly incorporate harvest management considerations, and use updated fish survival data. We look forward to working with NMFS as it continues to develop hatchery policy for the region.

Sincerely,

/s/ Bo Downen
Bo Downen
Policy Analyst
Public Power Council

Letter #40

December 3, 2010

William W. Stelle, Jr.
Regional Administrator
NMFS Northwest Region
National Oceanic and Atmospheric Administration
7600 Sand Point Way NE
Seattle, WA 98115

Re: Mitchell Act EIS

Dear Mr. Stelle:

Wild Salmon Center appreciates the opportunity to submit these comments on the Draft Environmental Impact Statement to Inform Columbia River Basin Hatchery Operations and the Funding of Mitchell Act Hatchery Programs (DEIS). As you know the mission of the Wild Salmon Center is to identify, understand and protect the best wild salmon ecosystems of the Pacific Rim.

#1

Our interest in commenting on the DEIS is to reduce impacts and risks to naturally produced salmon in the Columbia River basin from hatchery operations. While we recognize that there are many social and legal issues implicit in the DEIS alternatives, our comments focus on the science and biological impacts related to hatchery programs –impacts which we believe NOAA needs to address in order to meet its obligations to ensure recovery of Columbia River salmon and steelhead ESUs listed under the Endangered Species Act.

#2

The negative effects of hatcheries on the abundance and diversity of wild salmon populations have been well documented. These effects include the loss of reproductive performance of naturally spawning populations when hatchery-origin spawners, whose fitness is determined largely by artificial rather than natural selection forces, interbreed with wild fish (e.g. Araki et al. 2007, Fraser 2008). These effects can be amplified by various broodstock practices within the hatchery system. Other significant impacts of hatchery programs on the long-term productivity and resilience of wild populations include ecological interaction effects due to competition (Pearsons et al. 2010, Ruggerone et al. 2010), predation (Fritts et al. 2007) and disease transmission (Foott et al. 2006) as well as overfishing of wild salmon populations in mixed stock fisheries (Kope 1992).

#3

The irony of these problems is that hatcheries in the Pacific Northwest and California have been routinely used in an attempt to mitigate for habitat loss from human development activities. The lessons learned are that this type of mitigation has compounded the loss of wild salmon abundance and productivity (Buhle et al. 2009) by

INTERNATIONAL HEADQUARTERS
721 NW Ninth Avenue, Suite 300 • Portland, Oregon 97209 USA • tel: 503.222.1804 • fax: 503.222.1805
info@wildsalmoncenter.org • www.wildsalmoncenter.org

reducing the fitness and production of wild populations not directly impacted by the habitat modification activity. #3

In May 2010, State of the Salmon, a joint program of the Wild Salmon Center and Ecotrust, hosted over 300 attendees from across the North Pacific for the first international conference on ecological interactions between wild and hatchery salmon (http://www.stateofthesalmon.org/conference2010/). A special breakout session focused on the unique challenges and opportunities in managing wild and hatchery salmon and their interactions in the Columbia River. Although it was clear that research on wild and hatchery salmon ecological interactions in the Columbia River is at a more advanced stage compared to other regions, a number of key uncertainties were identified regarding hatchery programs within the Columbia River basin: #4

- Sufficient data and knowledge about disease transmissions between hatchery and wild fish are lacking.
- The effect of hatchery releases on predator population dynamics are poorly understood (e.g. the functional, numerical and long-term responses of predators to the abundance of hatchery-origin prey and the indirect effects on wild populations).
- Salmon can have strong ecological interactions and impacts on other species, yet multi-species evaluations are rarely conducted at the hatchery production scale.
- Knowledge of the density dependent effects of hatchery juveniles and adults in the freshwater environment and shared river/marine migration corridors is inadequate (i.e., the potential effects on wild fish population dynamics when large numbers of hatchery fish intermingle with small numbers of wild counterparts).

In summary, our experience and the science surrounding artificial salmon production indicate that hatcheries: #5

- have contributed directly to dramatic declines of wild stocks, reduced life history and genetic diversity, lowered productivity and reduced wild fish spawning success;
- have not stabilized salmon production, a goal that reflects a naive understanding of marine and freshwater ecosystems;
- have rarely "enhanced" total salmon production in spite of more than a century of effort and a huge expenditure of funds;
- have not been subjected to rigorous, consistent monitoring or cost-benefit analysis despite large annual operational costs; and
- have entrenched, politically influential social and economic constituencies despite the well documented negative impacts on wild fish populations.

Given the known impacts and uncertainties associated with hatchery programs and their impacts on wild populations, we encourage the National Marine Fisheries Service to take a conservative and precautionary approach to funding and operating Mitchell Act hatcheries in the Columbia River basin. Specifically, we recommend that: #6

1. The number of hatchery salmon and steelhead released be significantly reduced by downsizing or eliminating hatchery programs that are not meeting best management practices (BMPs).

2. BMPs be applied to all remaining hatcheries. #7
3. No Mitchell Act funding be provided for new hatchery programs. #8
4. All Columbia River basin hatchery programs meet stronger performance goals for primary and contributing populations of salmon and steelhead. #9

Thank you for the opportunity to comment on the DEIS.

Sincerely,

Guido Rahr, President & Chief Executive
Wild Salmon Center

References

Araki, H., Cooper, B., & Blouin, M. S. (2007). Genetic effects of captive breeding cause a rapid, cumulative fitness decline in the wild. Science, 318(5847), 100—103.

Buhle, E.R., K. K. Holsman, M. D. Scheuerell, and A. Albaugh. (2009). Using an unplanned experiment to evaluate the effects of hatcheries and environmental variation on threatened populations of wild salmon. Biological Conservation 142:2449–2455.

Foott, J. S., Free, D., McDowell, T. S., Arkush, K. D., & Hedrick, R. P. (2006). Infectious hematopoietic necrosis virus transmission and disease among juvenile Chinook salmon exposed in culture compared to environmentally relevant conditions. San Francisco Estuary and Watershed Science, 4(1).

Fraser, D. J. (2008). How well can captive breeding programs conserve biodiversity? A review of salmonids. Evolutionary Applications, 1: 535–586.

Fritts, A. L., Scott, J. L., & Pearsons, T. N. (2007). The effects of domestication on the relative vulnerability of hatchery and wild origin spring Chinook salmon (Oncorhynchus shawytscha) to predation. Canadian Journal of Fisheries and Aquatic Sciences, 64(5), 813—818.

Kope, R. G. (1992). Optimal harvest rates for mixed stocks of natural and hatchery fish. Canadian Journal of Fisheries and Aquatic Sciences, 49, 931—938.

Pearsons, T. N., & Temple, G. M. (2010). Changes to rainbow trout abundance and salmonid biomass in a Washington watershed as related to hatchery salmon supplementation. Transactions of the American Fisheries Society, 139, 502—520.

Ruggerone, G. T., R. M. Peterman, B. Dorner, and K. W, Myers. (2010). Magnitude and trends in abundance of hatchery and wild pink salmon, chum salmon, and sockeye salmon in the North Pacific Ocean. Marine and Coastal Fisheries: Dynamics, Management, and Ecosystem Science 2:306–328.

Subject: Cutting Hatchery Numbers
From: Rick & Patricia Hampton <rickp21@centurytel.net>
Date: Sun, 08 Aug 2010 11:39:59 -0700
To: MitchellActEis.Nwr@noaa.gov

Letter #41

I don't agree with your biologist's assessment in cutting hatcheries in the Columbia Basin. The reason you are having trouble with wild runs is the completion of the wild fish runs by seals, other fish species, water quality and degradation of the ocean! The other problems is the over fishing techniques of foreign countries fishing in the waters just off our Coast. Wild fish runs have already been impacted by years of hatchery fish in our waters from Washington State to California. Stopping hatchery programs will only deplete down the numbers eliminating fishing all together. This seems to be the goal of the program in itself! If Wild fish are superior which I have read then they will out survive all the hatchery fish in the Columbia system.

#1

#2

#3

Subject: mitchell act eis comment
From: Eric Flowers <tsweditor@gmail.com>
Date: Mon, 13 Sep 2010 22:16:00 -0700
To: MitchellActEis.Nwr@noaa.gov

Letter #42

To whom it may concern,
Please accept the following comments regarding Mitchell Act funding and the Columbia River Hatchery system.
As an angler and Northwest resident, I have read with concern in recent months and years about the detrimental impacts of hatchery fish on the long-term health of our dwindling wild fish populations. The process that you are undertaking represents a great opportunity to reverse that trend. I believe that it's imperative that we do that now, before it is too late. To that end I would like to see NMFS adopt the most rigorous standards possible for our existing hatcheries and curtail the expansion of the hatchery program, broodstock or otherwise. Whatever alternative is chosen, I would like to see the emphasis on reducing or eliminating altogether the intermingling of wild and hatchery fish within the Columbia system -- upper and lower. Reducing hatchery production and installing weirs on key tributaries are proven and essential steps in that process.

#1

#2

Thanks for all your work,

Eric Flowers,
Bend, Oregon.

Subject: comment
From: Mark Lyte <coltfishingguide@comcast.net>
Date: Tue, 12 Oct 2010 20:57:53 -0700
To: MitchellActEis.Nwr@noaa.gov

Letter #43

All the options are not an option at all. You can not allow such a bad plan to go forward. No reduction in hatchery releases are acceptable. Where do you think the fish came from? Conditioning of young fish is why they act different than a natural spawner. It is all ready hard enough to get a fish as it is. If you want to save fish stop trawls and gill nets. The commercialization of any species puts and has put them and all that have come before them under pressure they can not maintain. Do not redirect any funds away from hatchery fish and operation..

#1
#2
#3
#4

Subject: Columbia DEIS
From: Nicholas Erler <erler37@gmail.com>
Date: Wed, 13 Oct 2010 17:44:09 -0700
To: MitchellActEis.Nwr@noaa.gov

Letter #44

To Whom it May Concern,

I am writing to show my full support for the proposals within the DEIS (Draft Environmental Impact Statement) for Columbia River Mitchell Act hatcheries. Wild fish numbers have significantly diminished over the years, this would help increase their numbers while maintaining a healthy economy. #1

Thanks for your time and consideration.

Nicholas Erler

Subject: comments
From: Steven Hawley <sjhawley@mac.com>
Date: Tue, 02 Nov 2010 19:10:53 -0700
To: MitchellActEis.Nwr@noaa.gov

Letter #45

Thanks for the chance to comment on the EIS for Columbia River hatchery operations. My recommendations are brief.

1. No more out of basin hatchery stocks planted in rivers where there are wild or self-sustaining populations of salmon and/or steelhead. #1
2. Weirs or some other means of separating wild from hatchery fish at the mouths of spawning tributaries is a goal worth implementing sooner rather than later. #2
3. Discontinue hatchery programs that do not meet the highest standards. #3

Sincerely,

Steve Hawley

Subject: eis comments
From: Schuyler Dunphy <schuylerdunphy@gmail.com>
Date: Wed, 03 Nov 2010 11:13:49 -0600
To: MitchellActEis.Nwr@noaa.gov

Letter #46

To Whom it may concern,

I am writing to comment on the Mitchell Act hatcheries and associated hatchery reform. Hatcheries in the Columbia basin have for too long been concern chiefly with maximizing hatchery releases and harvest with little concern for wild productivity. Considering the lack of recovery for listed wild salmon and steelhead the best course of action going forward will include: 1)limiting hatchery releases 2)constructing weirs at the mouths of many spawning tributaries to stop genetic introgression between wild and hatchery fish 3)prohibiting out of basin plants or fish culture 4)prohibiting "integrated" stocks where wild fish are mined for hatchery production. A growing body of research indicates a loss of fitness in domesticated wild fish, even after one generation. Furthermore, the ecological interactions occurring between hatchery and wild fish are very concerning and warrant significant caution when determining release numbers for hatcheries.

#1

#2

Sincerely
Schuyler Dunphy

Subject: PLEASE CONSIDER REDUCING HATCHERY PRODUCTION IN THE COLUMBIA BASIN #1

From: Ryan Jenkins <ryan@greyrockrealty.com>

Letter #47

Date: Wed, 03 Nov 2010 19:01:10 -0600

To: MitchellActEis.Nwr@noaa.gov

Wild fish genes are a big part of the answer to the problem. #1

Subject: comments
From: Jonathan Stumpf <jonathanstumpf@gmail.com>
Date: Wed, 03 Nov 2010 17:33:36 -0700
To: MitchellActEis.Nwr@noaa.gov

Letter #48

Please consider the construction of weirs at the mouths of spawning tributaries, discontinue the planting of out of basin stocks, and cut ALL hatchery programs that do not meet the strongest performance goal.

#1 #2 #3

sincerely,

Jonathan Stumpf

From: wes green <pwdrslt@unionplus.net>
Date: Wed, 03 Nov 2010 18:55:48 -0700
To: MitchellActEis.Nwr@noaa.gov

Letter #49

I would like to see the funds from The Mitchell Act used to help the recovery of WILD Steelhead and Salmon. These fish are to valueable to let slip into the pages of history. Wild fish are stronger and better adapted to survive in the Columbia Basin. Hatchery fish only dilute the gene pool. Thank you for your time. #1

From: Greg Cheslyn <geezmail@att.blackberry.net>
Date: Thu, 04 Nov 2010 01:31:15 +0000
To: MitchellActEis.Nwr@noaa.gov

Letter #50

Reform #1

Greg Cheslyn

Sent via BlackBerry by AT&T

Subject: please consider
From: Conrad P Gowell <cgowell@pugetsound.edu>
Date: Thu, 04 Nov 2010 01:33:32 -0700
To: "MitchellActEIS.nwr@noaa.gov" <MitchellActEis.Nwr@noaa.gov>

Letter #51

Columbia river basin,
Please consider reducing hatchery production in the basin. I know this is one of the most complex and controversial watersheds in the world but it has a real potential to *naturally* productive once again. Doing this would reduce hatchery costs, reduce recreational bycatch pressure, and limit hatchery-wild fish competition both in stream and in the ocean. #1
respectfully and hopefully,
Conrad Gowell

Subject: We used to visit the hatcheries.....
From: marguerite Borchers <margieborchers@gmail.com>
Date: Wed, 17 Nov 2010 15:35:38 -0800
To: Mitchell Act EIS <MitchellActEis.Nwr@noaa.gov>

Letter #52

.....and thought they were a good thing. However, the wild salmon are suffering from the hatcheries as these hatchery fish compete with the wild salmon for their habitat and food. #1

I fear the end of the wild salmon in other ways as well-- dams, and now possibly GM fish. How many ways can wild salmon be assaulted and survive?

Margie and William Borchers,
Yacolt, WA

Subject: Reductions to hatchery salmon and steelhead
From: don b <gofishdon09@yahoo.com>
Date: Thu, 18 Nov 2010 08:40:49 -0800 (PST)
To: MitchellActEis.Nwr@noaa.gov

Letter #53

To whom it may concern,I would like to voice my concern to this proposel.I come from a large family and a deep tradition of fishing and hunting that has been passed on from fathers to sons and grand fathers to grand children.I have been optamistic that things where going in the right derrection.Cutting or elimanating prodution from hatcheries will not only hurt my family but families all along our shore lines.Less fish = less fisherman and in these hard times that could certanly mean the end to many small business and major losses to our econamy.Sportsman are selectivly able to remove hatchery fish with out harming wild fish.I ask you if we have so many hatchery fish returning to our rivers that it jeperdizes our wild fish,why are we not useing wild fish as brood stock for our hatcheries.Would that not protect the gene pool?.And if so many hatchery fish are in our rivers then why do we as sportsman get shut down or have our hands tied so often in the salt water or the lower reches of our rivers.If we will ever get more wild fish to the spawning grounds we must stop the lethell harvast of our fish meaning the removal of gill nets.In todays times with tecnology and lost jobs,budget short falls,forclosures,HARD TIMES does it make sence to make times harder?.Thank you for your time Don Butterfied Tukwila,Wa.

#1 #2 #3 #4

Subject: DEIS Comment
From: palexanderfish@aol.com
Date: Tue, 23 Nov 2010 00:04:06 -0500 (EST)
To: MitchellActEis.Nwr@noaa.gov, "<MitchellActEIS.nwr"@noaa.gov

Letter #54

William W. Stelle, Jr.
NMFS Northwest Region
7600 Sand Point Way NE.
Seattle, WA., 98115

Dear Mr. Stelle,

Thank you for your time and service to our country and its citizens. You have a huge task, and I don't envy you. I would like to comment on the Mitchell Act DEIS and ask you to consider its implications to families like my own. But first, please let me introduce myself and share a little history about my family. My name is Paul Alexander, and I was born in 1958 in Ilwaco, Washington, where my parents raised us twelve children. My parents were hard working people who believed in the American dream. They emphasized good values such as hard work, strong education, and good stewardship of our natural resources. They taught us to appreciate what we have. I do believe they were at the front lines of the recycling movement, as we were taught to never waste anything. Both were devoted to the raising their twelve children and passing on their good values to each of us. It worked! #1

Here is why. They were able to achieve this goal, because there were plenty of natural resources at that time. When I say natural resources, I mean both fish and timber, but mostly, I mean salmon. I remember as a first grade student in Chinook, Washington, I would go to the cannery after school and hang out in the break room. If I wanted to spend time with my mom, I would go hang on her leg while she was either sliming salmon or packing them into cans. I remember the smells and the abundance and the size of the salmon. These are great memories, and eventually I grew old enough to work in the canneries as well. I remember icing troll caught salmon and filling totes that were stacked to the ceiling of Jessie's Ilwaco Fish Company. These were all great memories and lasted until I graduated from Ilwaco High in 1976. Sadly, as I grew older, I also remember more and more dams being built on the Columbia River and its estuaries. I also remember the dwindling salmon runs that were no doubt caused by the effects of these dams. This is what brings me to the point I want to make.

Once again, I don't envy your job. From what I've heard and read, I agree with the majority of salmon advocates that the DEIS will not mitigate salmon to the scope in which salmon mitigation was promised when the dams were allowed to be built. The DEIS as is will not meet its promises to the citizens of this country or to the salmon. As a commercial salmon fisherman, my life depends on an abundance of salmon being produced at the hatchery level. With this in mind, I would like to ask you to rewrite the DEIS to include the promised mitigation of salmon to their pre-dam populations. I believe this is a reality that can happen and absolutely would spur our economy back to the heights of my parents' era and the days of my youth. It can be done! #2

Thank you for your time, Sir.

Sincerely,

Paul Alexander, F/V Metta Marie

William W. Stelle, Jr.
Regional Administrator
NMFS Northwest Region
7600 Sandpoint Way NE
Seattle, WA 98115

Letter #55

Re: Mitchell Act DEIS

Dear Mr. Stelle:

Thank you for providing the public the additional time to prepare comments on the Mitchell Act Draft Environmental Impact Statement (DEIS). I am a commercial salmon troller and I have troll permits for Oregon, Washington and Alaska so I am deeply concerned with any issue that may impact the economics of the Pacific salmon trolling fleet and all other users of the Pacific salmon resource. I do look forward to NMFS succeeding in keeping salmon fishing viable and sustainable, and I offer these comments in the hope that I can contribute to that end. #1

I offer as a general summary comment that I endorse the comments of the PFMC in their draft document F4b_SUP_MAC_NOV2010BB. #2 I also endorse the joint comments on this DEIS from 25 organizations representing salmon fishermen, including the Washington Trollers Association and Alaska Trollers Association. #3 Additionally, I call for the re-write of the DEIS to correct the many common flaws in the document as cataloged in comments NMFS has received from Irene Martin and Salmon for All. #4 Finally, I offer a detailed comment concerning predation on salmon both as juveniles and adults and my concern that some scenarios related to dam removals have not been analyzed and therefore leave a major hole in the DEIS.

Predation on salmon

Salmon are prey for may animals throughout their lives. Most famously, Columbia River juvenile salmon are preyed upon by Caspian Terns and Double-crested Comorants as well as other predators as listed in the DEIS. Upon entering marine waters juvenile salmon are preyed upon by a variety of fishes including Pacific hake (*Merluccius productus*)[1], a variety of sharks, pinnipeds and sea birds[2]. As larger subadults and adults, salmon become prey to larger sharks, sea lions, and dagger fish (*my observations from fishing*). #5

There is an abundance of studies of predation on juvenile and adult salmon. Predator swamping, size selectivity by predators, timing of marine entry by juveniles, relative population sizes of

1 Emmet and Sampson: Juvenile Salmonid Trophic Model Analysis, CalCOFI Rep. Vol. 48, 2007
2 Pearcy, W.G. Ocean Ecology of Pacific salmonids. Seattle, University of Washington, 1992

marine forage fishes and Pacific hake and juvenile salmon and other hypotheses have been examined or modeled. Predation on adults by Southern Resident Killer Whales (SRKW) is described in the DEIS, but without stock composition data. In short, the means to conduct modeling of predation impacts on mortality and productivity exist. #5

However, the DEIS fails to do even a rudimentary ecosystem based model of predation and the impact of lower hatchery production. The impact on some predators is analyzed, but not the impact of predation on salmon populations. I offer a simplistic scenario in the next paragraph. #6

The impact on wild and ESA listed stocks is easy to predict in the DEIS alternatives that reduce hatchery production: a greater proportion of wild and ESA listed salmon will be consumed by predators. In the case of Southern Resident Killer Whales (SRKW), the DEIS, quoting the SRKW BIOP, predicts an annual consumption of 221,000 chinook. When fewer of these chinook are of hatchery origin, more wild and ESA listed chinook will be consumed, reducing those adult populations. Avian predation of juveniles will have a higher proportion of wild and ESA listed salmon when hatchery production is reduced. Until these types of impacts are understood, the DEIS may be offering alternatives that are not feasible under the ESA.

When the DEIS does not analyze the impact on salmon populations from predation, readers such as myself have no way of knowing how any of the alternatives affect survival or productivity of Columbia Basin salmon. By not accounting for the predation mortality, and how mortality may be dependent on hatchery production, the estimation of economic impacts of the alternatives is likely to be very coarse at best, and at worst a bureaucratic guess. I recommend that the DEIS be re-written to include the effects of predation so that reviewers can understand the effects the alternatives have across the marine and freshwater ecosystem.

FCRPS Biological Opinion

The DEIS alternatives are not analyzed under a scenario that includes the removal of the four lower Snake River dams, a possible action in the 2010 Federal Columbia River Power System (FCRPS) Biological Opinion Adaptive Management Implementation Plan. An implementation scenario that includes removal of the four lower Snake dams would be taken directly from the FCRPS BIOP and is a scenario that has as high a likelihood of occurring as the performance goals pHOS or PNI turning into BIOP requirements. #7

Throughout the DEIS, NMFS repeats that hydro development has reduced natural spawning populations which in turn requires hatcheries to mitigate. With dam removal occurring in the Columbia Basin (Sandy and White Salmon Rivers) and the possibility that the four lower Snake dams will be ordered removed to assure recovery of ESA listed salmon returning to the Snake Basin, the DEIS is incomplete without analyzing implementation scenarios that account for natural production increasing because of dam removal. I recommend the analysis of an

alternative that reduces hatchery production as natural production rises in the Snake Basin after removal of the four lower dams. #7

The DEIS conflicts with the FCRPS BIOP on mitigation obligation. The FCRPS BIOP describes NMFS' goals on page 116, section 2.3.1: "NOAA Fisheries' goal is twofold: increasing the effectiveness of hatcheries in supporting the survival and recovery of listed species and satisfying the mitigation requirements of the FCRPS." I recommend NMFS make explicit in the DEIS that they are going to fulfill the mitigation obligations as committed to in the FCRPS BIOP. #8

The role of mitigation

In response to NMFS's helpful hint to comment on the DEIS: #9

"Formulate a notion of what the hatchery programs should accomplish; that is, formulate a notion of the policy direction they think should guide NMFS decisions on hatchery production in the Columbia River basin."

(p.4 of the Executive Summary) NMFS's policy should be to mitigate fisheries to a level not less that 50% of MSY harvest of all salmon species pre dam in all portions of the basin. Since pre dam runs were on the order of 15 to 30 million salmon and steelhead, a total run including mitigation of 7.5 to 15 million would be a good place to start.

Public Testimony given to NMFS in Astoria referenced a goal of the Columbia River Intertribal Fish Commission of 5 million salmon crossing Bonneville annually. Given an ocean harvest of a million or more Columbia Basin origin salmon, the 5 million over Bonneville goal is in line with 50% of pre dam MSY harvest. I recommend analysis of a goal of this magnitude of mitigation and wild run restoration.

In summary, although NMFS has spent a great deal of time and money on the DEIS without collaboration with stake holders from the outset, NMFS has developed alternatives that do not meet the needs of stakeholders in the region. NMFS fails to ask stakeholders at the outset what they consider adequate mitigation for the destruction caused by the hydroelectric system. Although NMFS acknowledges the damage caused to salmon runs by dams, NMFS does not seek to analyze how mitigation needs would change as dams are removed, even though dams are being removed in the basin with more removals possible. NMFS does not attempt to apply an ecosystem wide analysis the impact of the DEIS alternatives which leaves reviewers guessing about possible outcomes from the alternatives. I recommend NMFS re-write the DEIS and re-submit it for public comment. #10 #11

Sincerely,

Joel Kawahara
Commercial Fisherman

Mr. Stelle,

Please restore and protect wild salmon runs!

#1

Warmly,

Kim Waldman (Kim WALDMAN)
Lynn Gilman (Lynn Gilman)

NOAA-NMFS
RECEIVED
NORTHWEST REGIONAL OFFICE

P.S. We are just two concerned citizens living in Seattle. Thank you for your time & energy.

Letter #56

Letter #57

Mitchell Act DEIS

NOAA-NMFS
RECEIVED
NOV 2 0 2010
NORTHWEST REGIONAL OFFICE

William Stelle Jr.,
Regional Administrator,
NMFS Northwest Region, NOAA,
7600 Sand Point Way NE,
Seattle, Wa. 98115.

Subject: **Mitchell Act EIS**

The undersigned organization(s) wish to voice our opinion regarding the Draft Environmental Impact Statement (DEIS) to Inform Columbia River Basin Hatchery Operations and the Funding of Mitchell Act Hatchery Programs.

#1

We join with recreational, commercial and tribal fishers, in-river and ocean, from Oregon, Washington, Alaska and Idaho, with generations of experience behind us on what it takes to conduct viable fisheries, and shared concerns regarding the Mitchell Act DEIS. We are united in our agreement that all of our groups are entitled to conduct viable fisheries that sustain our communities.

#2

We share a mutual concern that, due to its many errors, lack of documentation, faulty modeling, and major omissions, the DEIS is not ready for public comment and should not have been put forth for such review. It has cost numerous fisheries organizations and fisheries and tribal agencies considerable time and money to comment on a document that is seriously flawed, and which should have been corrected by the agency before public review. These comments are contained in individual letters provided NMFS by the respective organizations and agencies. The document itself represents a significant investment by the U.S. taxpayer of approximately $1,000,000. The public has a right to expect an accurate and complete document to be presented for public review.

#3

We share a mutual concern that the five alternatives presented for review all result in adverse effects on harvest. NO alternative appears that is supportive of harvest. All alternatives, including status quo, will result in reduced harvest. It does not appear to us that any alternatives that might have been supportive of harvest were considered. If they were, they are not evident in the document. The Mitchell Act was intended to compensate for habitat that was destroyed due to hydro-electric and other development of the Columbia Basin. Further, its intent was mitigation to provide continued harvest opportunities to compensate for that destruction (DEIS, pp. 1-21 and 2-15). We do not believe that the five alternatives provided in the DEIS fulfill these legal obligations of the Mitchell Act.

#4

We share a mutual concern that the DEIS appears to subsume the Mitchell Act under the Endangered Species Act and abolish the mitigation requirements of the Mitchell Act. We are concerned that this focus might be construed as a regulatory repeal of the Mitchell Act without a Congressional vote. Fisheries along the entire west coast will be affected by the draconian cuts in harvest proposed, and we object strongly to this reorientation of the Mitchell Act. We do not believe that conservation and harvest are mutually exclusive.

We recommend that the National Marine Fisheries Service withdraw this document, consult with our groups and the numerous agencies and tribal governments who were not consulted in the drafting of this document, and redraft a DEIS that corrects the multitude of errors and omissions noted in comments received by the agency. We also recommend that NMFS provide alternatives that are supportive of viable fisheries across all sectors, and respectful of the place of salmon and salmon fisheries in the history, economy and culture of the west coast. We are united in our agreement that good government, good regulatory practice and good stewardship require that the current DEIS be withdrawn as requested.

#5

#6

#7

Signed _____ Date 11/4/10

Name Russell A Svec

Organization Makah Fishery Manager

Address P. O. Box 115

Neah Bay Wa. 98357

Telephone (360) 645-3156 Email RSVEC@CENTURYTEL.NET

Signed [illegible] Date 11/05/10

Name Butch Smith Pres

Organization ILWACO Charter Assoc

Address PO Box 268

ILWACO WA 98624

Telephone 360-642-3333 ;Email colo@willapabay.org

Signed Email Permission Date 11/3/2010

Name Jim Wells

Organization Salmon For All

Address P.O. Box 56

Astoria, Ore 97103

Telephone 503-325-3831 Email info@salmonforall.org

Signed Email Permission Date 11/1/10

Name Steve Nostrisk Pres

Organization Westport Charter Boat Assoc.

Address Po Box 654

Westport WA

98595

Telephone 360-268-0445 ;Email

Signed [illegible] Date 11-4-10

Name Frankie Rosenau

Organization Fishermen

Address P.O.

Tokeland, Wa.

98587

Telephone 360-726-4358 Email

Signed [illegible] Date 11/4/10

Name GERALD REINHOLDT

Organization OREGON SALMON COMMISSION

Address P.O BOX 983

LINCOLN CITY

OREGON 97367

Telephone ;Email

Signed Date

Name Pierre Marchand

Organization Jessie's Ilwaco Fish Co

Address Box 800

Ilwaco, Wa. 98624

Telephone 360-642-3773 Email Pierrem@Ilwacofish.com

Signed Duncan F MacLean Date 11/4/10

Name DUNCAN F MACLEAN (SECRETARY)

Organization PACIFIC COAST FEDERATION OF FISHERMENS ASSOC.s

Address PO BOX 29370

SAN FRANCISCO CA

94129-0370

Telephone 415 561-5080 Email

Signed Steve G Watrous Date 11/4/10

Name STEVE WATROUS, PRES.

Organization COLUMBIA PACIFIC ANGLERS

Address 2515 KAUFFMAN AVE

VANCOUVER, WA. 98660

Telephone 360-607-7133 ;Email BranchOffice@gocougs.wsu.edu

Signed Duncan F MacLean Date 11/4/10

Name DUNCAN F MACLEAN

Organization F/V BARBARA FAYE

Address PO BOX 1942

EL GRANADA CA

94018

Telephone 415 9873639 Email b-faye@comcast.net

Signed Duncan F MacLean Date 11/4/10

Name DUNCAN F MACLEAN (PRESIDENT)

Organization HALF MOON BAY FISHERMENS ASSOC

Address PO BOX 340

EL GRANADA, CA

94018

Telephone ;Email

Signed Date 11/4/10

Name JIM OLSON

Organization WASHINGTON TROLLERS

Address PO BOX 586

AUBURN WA 98071

Telephone 253-569 4680 Email JAOCTO @ JUNO.COM

Signed Kent Martin vice/pres Date 11-4-10

Name KENT MARTIN

Organization Columbia River Fishermens Protective Union

Address Astoria, Oregon

Telephone 503 325 2702 ;Email

Signed _____ Date Nov. 4, 2010

Name SUSAN CHAMBERS

Organization West Coast Seafood Processors Assn.

Address 1618 SW 1st Ave. #318

Portland, OR 97201

Telephone _____ ;Email _____

Signed _____ Date 11/4/10

Name JOHN HOLLOWAY

Organization RECREATIONAL FISHING ALLIANCE, OR CHAPTER

Address 6823 S.W. BURLINGAME AVE.

PORTLAND, OR

Telephone 503-245-1281 Email RFAoregon@comcast.net

Signed _____ Date 11/05/10

Name WAYNE BUTLER

Organization Bandon Chamber of Commerce

Address P.O. Box 670

BANDON, OR 97411

Telephone 541-347-9126 ;Email WAYNE.B1@MYCOMSPAN.COM

Signed Email permission Date Oct. 29, 2010

Name Mike Sorenson

Organization Oregon Coast Charter & Sportfishing Assn.,

Address

Telephone 541-270-2831 Email fvmissraven@hotmail.com

Signed Joel Kawahara Date joelkaw@earthlink.net

Name Joel Kawahara Nov 5, 2010

Organization F/V Karolee

Address 3652 Lindsay Hill Rd

Quilcene, WA 98376

Telephone (360)765-3581 ;Email

Signed Lonnie T. Foster Date 11-5-10

Name Lonnie T. Foster

Organization Quileute Fisherman

Address P.O. Box 279

LaPush, Wa. 98350

Telephone 360-374-6693 ~~640-5399~~ Email lonnie.foster@quileutenation.org

Signed Email permission Date Oct. 28, 2010

Name Larry Carpenter

Organization Master Marine

Address

Telephone 1-800-838-2176 Email LarryC@MasterMarine.com

Signed Email permission Date Oct. 28, 2010

Name Frank Warrens

Organization Former PFMC Chair

Address

Telephone 503-228-6607 ;Email frank@frankwarrensauto.com

Signed Email permission Date Oct. 28, 2010

Name Paul Pierce

Organization SAS Members

Address

Telephone Email sclad111@aol.com

Signed Email permission Date Oct. 25, 2010

Name Richard Heap

Organization Oregon South Coast Fishermen

Address P.O. Box 2704,

Harbor, Or. 97415

Telephone ;Email fiskcave@charter.net

Signed Email permission Date

Name Richard Ross, President

Organization Coastside Fishing Club

Address

Telephone Email rickross@astound.net

Signed Email Permission Date Oct. 25, 2010

Name Dale Kelley, Executive Director

Organization Alaska Trollers Association

Address 130 Seward, #205,

Juneau, AK. 99801

Telephone ;Email ata@gci.net

Signed Email permission Date Oct. 28, 2010

Name Paul Alexander

Organization Or/Wa Salmon Troller, FV Metta Marie

Address 1115 15th St. NE

Salem, Or. 97301

Telephone 541-619-7456 Email palexanderfish@aol.com

Signed Email permission Date Oct. 28, 2010

Name Paul Heikkila

Organization F/V Andante

Address

Telephone ;Email pheikkila@mycomspan.com

Signed Email permission Date Oct. 28, 2010

Name Duncan MacLean

Organization Half Moon Bay Fisherman's Association

Address

Telephone Email b-faye@pacbell.net

Mitchell Act DEIS.doc

William Stelle Jr.,
Regional Administrator,
NMFS Northwest Region, NOAA,
7600 Sand Point Way NE,
Seattle, Wa. 98115.

Subject: **Mitchell Act EIS**

The undersigned organization(s) wish to voice our opinion regarding the Draft Environmental Impact Statement (DEIS) to Inform Columbia River Basin Hatchery Operations and the Funding of Mitchell Act Hatchery Programs.

We join with recreational, commercial and tribal fishers, in-river and ocean, from Oregon, Washington, Alaska and Idaho, with generations of experience behind us on what it takes to conduct viable fisheries, and shared concerns regarding the Mitchell Act DEIS. We are united in our agreement that all of our groups are entitled to conduct viable fisheries that sustain our communities.

We share a mutual concern that, due to its many errors, lack of documentation, faulty modeling, and major omissions, the DEIS is not ready for public comment and should not have been put forth for such review. It has cost numerous fisheries organizations and fisheries and tribal agencies considerable time and money to comment on a document that is seriously flawed, and which should have been corrected by the agency before public review. These comments are contained in individual letters provided NMFS by the respective organizations and agencies. The document itself represents a significant investment by the U.S. taxpayer of approximately $1,000,000. The public has a right to expect an accurate and complete document to be presented for public review.

We share a mutual concern that the five alternatives presented for review all result in adverse effects on harvest. NO alternative appears that is supportive of harvest. All alternatives, including status quo, will result in reduced harvest. It does not appear to us that any alternatives that might have been supportive of harvest were considered. If they were, they are not evident in the document. The Mitchell Act was intended to compensate for habitat that was destroyed due to hydro-electric and other development of the Columbia Basin. Further, its intent was mitigation to provide continued harvest opportunities to compensate for that destruction (DEIS, pp. 1-21 and 2-15). We do not believe that the five alternatives provided in the DEIS fulfill these legal obligations of the Mitchell Act.

We share a mutual concern that the DEIS appears to subsume the Mitchell Act under the Endangered Species Act and abolish the mitigation requirements of the Mitchell Act. We are concerned that this focus might be construed as a regulatory repeal of the Mitchell Act without a Congressional vote. Fisheries along the entire west coast will be affected by the draconian cuts in harvest proposed, and we object strongly to this reorientation of the Mitchell Act. We do not believe that conservation and harvest are mutually exclusive.

We recommend that the National Marine Fisheries Service withdraw this document, consult with our groups and the numerous agencies and tribal governments who were not consulted in the drafting of this document, and redraft a DEIS that corrects the multitude of errors and omissions noted in comments received by the agency. We also recommend that NMFS provide alternatives that are supportive of viable fisheries across all sectors, and respectful of the place of salmon and salmon fisheries in the history, economy and culture of the west coast. We are united in our agreement that good government, good regulatory practice and good stewardship require that the current DEIS be withdrawn as requested.

Signed Thomas M. McLaughlin Date 11/1/10

Name THOMAS M. MCLAUGHLIN

Organization SEAFOOD PRODUCERS COOPERATIVE

Address 2875 ROEDER AVE
BELLINGHAM, WA. 98225

Telephone 360 733-0120 Email tmclaughlin@spcsales.com

Subject: Mitchell Act
From: Rob Crandall <rob@amatobooks.com>
Date: Tue, 30 Nov 2010 10:41:53 -0800
To: MitchellActEis.Nwr@noaa.gov

Letter #58

Hello,

My name is Rob Crandall. I live in Oregon and operate Water Time Outfitters a fishing guide service. Hatchery steelhead are very important to my business. They help me pay my bills and run a household. #1
Your decisions on hatchery fish impact more than just the Hatchery vs. Wild fish situation. Please consider the economic benefits that hatchery fish provide.

Here are several points important to consider.

1) Options that cut hatchery production and diminish fisheries are not acceptable when these programs are designed to ***mitigate for fisheries destroyed by Federal projects. (i.e. dams, irrigation)*** #2
2) Some river systems have not had wild steelhead in them for almost 100 years!! Why think that now after years of introduced fish that we can restore a wild fish. There are no true native fish in some rivers. #3
3) Rather than cut production to reduce interactions between hatchery and wild fish on spawning beds, suggest better use of the select areas (terminal fisheries). #4

Why operate with the same blunt tool for everything? Some fisheries should be protected for wild fish, not all. Some fisheries should be enhanced with more hatchery fish. Create viable strong hatchery fisheries that are great for the economy and social benefits. Reserve some protected areas for wild steelhead focus. #5

Please maintain or increase hatchery funding! It is the legal responsibility for the Mitchell Act and the right thing to do. #6

Best regards,

Rob Crandall
Water Time Outfitters
503-704-6449

Subject: eis comment
From: nathanrogol@centurytel.net
Date: Tue, 30 Nov 2010 16:15:58 -0500
To: MitchellActEis.Nwr@noaa.gov

Letter #59

Dear Administrator,

This is my comment on the current discussion of mitchell act hatceries in the Columbia river basin.

The hatchery programs initiated and run through the mitchell act were intended to replenish and maintain fish populations that were declining because of habitat loss due to various mans activities, dams, agriculture and logging. #1

Hatcheries have done a good job of producing fish to mitigate, and therefore maintain a level of fish production that allows our ways of life, culture, heritage, tradition, and economy to survive. We depend on hatcheries to perform this vital job.

the investment the government makes in hatcheries is multiplied many times in the economy and way of life of our region, in fact, the 16 million dollar yearly investment seems like a fantastic bargain.

many sub species of salmon have been saved through the hatcheries, and hatchery fish have been used to reintroduce lost runs in columbia basin tributaries. Much progress has been made in habitat improvement in tributary streams, and recovery of wild spawning fish is taking place.

But now some folks come saying, "we must have wild fish. " and an assumption seems to be made that hatcheries and wild fish are not compatible, and that hatcheries may be detrimental to wild fish recovery. #2

To them I wish to point out that the habitat needed for meaningful salmon recovery is buried in lakes behind dams. The tributaries by themselves cannot produce meaningful salmon recovery, and until the dams come down and create more of the kind of habitat that exists on the hanford reach of the main river hatcheries must shoulder the burden of producing healthy salmon populations. #3

I also ask that the hatchery vs. wild issue be revisited. It seems that it is accepted science that a naturally spawned fish is different and superior to a hatchery spawned fish. I believe that this is impossible. It is like saying that you are a different person if you are born in the car on the way to the hospital, or in the hospital. The genetic make up of the fish embryo is not changed by its location. A juvenile fish may learn different behavior in a hatchery, but it won`t change its genetics. Learned behaviors can be addressed through hatchery practices. These hatchery fish prove their ability to do just fine in the ocean, they compete for food, escape predators, and migrate the same as the wild fish. #4

They are the same fish. Hatcheries can refine their brood stock to address local population genetics issues.

I also wish to submit the idea that some straying of fish is a normal part of what salmon do. It should not be looked upon as such a bad thing. It is natures way of spreading some genetic diversity. #5

I`m asking the NOAA administration to operate under an alternative that boosts production of hatchery fish for meaningful salmon population. With best hatchery management practices and continued habitat recovery efforts, wild fish production will improve. #6

But it is not reasonable to drastically cut fish production at hatcheries and expect to have wild fish population expand to the extent to provide meaningful salmon populations. #7

The 16 million dollars the government invests in hatchery production is a drop in the bucket compared with the billions spent on "fish recovery". This amount of money should be expanded and the prevailing policy should recognize that hatcheries are here to stay, are vital to our economy and way of life, and can work hand in hand with wild fish recovery #8

Letter #60

Subject: DEIS comment
From: palexanderfish@aol.com
Date: Wed, 01 Dec 2010 14:45:04 -0500 (EST)
To: Will.Stelle@noaa.gov

December 1, 2010

William Stelle Jr.
Regional Administrator,
NMFS Northwest Region, NOAA,
7600 Sand Point Way NE
Seattle, WA. 98115

Subject: Mitchell Act DEIS

Dear Mr. Stelle,

Thank you for your time and service to our states and their citizens. You have a huge task, and I don't envy you. As a commercial salmon troller in both Washington and Oregon, I would like to comment on the Mitchell Act DEIS. #1

I grew up in Ilwaco, Washington and witnessed some of the last days of the truly BIG salmon runs. As more and more dams were built, I watched the huge salmon disappear. We became dependent on the government to provide hatchery fish and these hatchery programs worked. They produced a lot of salmon! Now the production at the hatcheries

has been cut back to a point where there are not enough salmon to sustain all the creatures that depend on them. The DEIS must include a provision that fully mitigates for the these lost salmon runs. Our ecosystem and our livelihoods depend on it. #1

Once again, I don't envy your task. From the perspective of someone who was born into the salmon industry, I know our scientist and managers can work on a solution that will satisfy the needs of every salmon user. They have in the past and they can again. Fish incubated in hatcheries are a must as long as the dams exist. Hatcheries are a necessary reality, and we cannot expect the salmon to return in abundance without them. This is not the time to decrease spending and reduce production at the hatchery level. Actually we need to increase spending and salmon output. #2

I also believe protecting the ESA listed salmon runs is using too much time and money, and there needs to be a better balance in both spending and providing for all creatures. I realize the concern about hatchery strays mixing with the ESA listed runs, but reducing hatchery production is not the answer to helping sustain a healthy environment and sustaining natural runs. We should start by eliminating all the fish farms, as we know the chemicals and diseases from these farms are having an adverse affect on our environment and all the animals that share their space or consume them. We should also rethink the use of fin-clipping or what I call 'maiming' salmon as a management tool. The waste here can be counted both in dollars and salmon. It is tragically high. #3 #4 #5

The fact is that we would not be facing this scenario, if we had been better stewards of our environment in the first place. Clear cut logging, strip mining, damming, irrigating for both commercial and recreational use, and over fishing (in the past) have left the salmon and other species on the brink of survival. Yet, I see wonderful possibilities. Rivers like the Wenatchee and others are seeing more and more naturally spawning fish. This would not have happened without human intervention at the hatchery level. These naturally occurring runs are the result of hatchery strays fighting their way for survival. The evidence here points to the fact that hatchery fish released into the wild and stray spawners can and will reproduce and become as strong as the original stocks. If humans can intermingle with different races of humans and continue to survive, I think it is safe to say that a Columbia River Salmon can interrningle with a Frazier River or Sacramento River Salmon and still be a great fish! The same holds true for hatchery strays. The strays will eventually become a part of the natural cycle of salmon, and as we know, the strongest will survive. They have and they will continue to. #6

I ask that you rewrite the DEIS to include an alternative that updates our hatchery systems, ramps up the production of hatchery fish, and spends more money for fish rearing programs, e.g., hatch boxes, stream enhancement, etc... . We have the science to make these necessary choices. Many people were put to work during FDR's time and trained to become productive workers under the (WPA) Work Projects Administration. Here is an opportunity to do great things once again, so let's begin with our hatchery programs and remember that the process requires an endless committment. Let the work begin. Thank you very much for your time. #7

Sincerely,

Paul Alexander, F/V Metta Marie

DEIS comment.eml	**Content-Type:** message/rfc822 **Content-Encoding:** 7bit

Letter #61

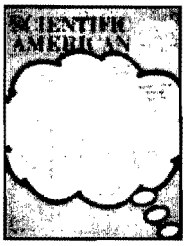
Subject: Salmon farming is killing the ocean environments.
From: palexanderfish@aol.com
Date: Wed, 01 Dec 2010 16:14:05 -0500 (EST)
To: Will.Stelle@noaa.gov

#1

Dear Mr. Stelle, Thank you again for your time. I would like to forward you an article that definitely lines up with the points I made about the adverse impact fish farms are having on our environment. These things left unchecked will eventually catch up to all of us. The data on these fish farms is endless, but it all points to one fact: Fish farms are bad news for both people and the environment. I hope you take the time to read this article about the East Coast Canadian fish farms. It is quite possible that the Orcas of Puget Sound are sick because of the fish farms on the West Coast of Canada and the U.S. Again, I don't envy your job, but I would be glad to relay the information I have on current issues. It really is just a matter of researching and networking, which is why we all need to work together in figuring out the best thing to do for our environment. Sadly, there is no easy answer. Here is what was forwarded to me. Thanks, Paul Alexander

An interesting article: They pull up tarps around the pens of salmon and add the toxic chemical to kill the lice and then lower the tarps and let all this poison, toxic chemicals loose in the bay which is killing the bottom of the food chain there. Also there are test results whereas the chemical settles out to the bottom and stays there making the floor of the bay toxic to lobsters and such. It's killing life in the bay and the government says it's ok. One of the people in the article says if he released stuff like that, he'd be in jail. And he would but the farms can do it. It's a good read.

SCIENTIFIC AMERICAN



Magazines

- Scientific American

Is salmon farming bad for the oceans?

#1

By Anne Casselman Nov 17, 2010 01:50 PM 0

We are as close to the salmon cages as we can get, telephoto lenses out, video rolling. From our vantage point, fisherman Reid Brown's 45-foot boat the Rebecca and Shelley, we don't see any salmon but the seabirds clamoring around the raised salmon cages are excited about something here in Passamaquoddy Bay on the Bay of Fundy.

This region is throne to a wealth of wild marine diversity and biomass, a bounty that is augmented (and unseated in the opinion of some) by booming salmon farms. There are 95 salmon farms in New Brunswick's waters that produce 26,000 metric tones of salmon each year. Together they stock enough smolt, roughly 12 million, to outnumber people in New Brunswick 16 to one.

The waters that Brown has fished for 47 years show signs of malcontent. "The microorganisms seem to be disappearing, zooplankton and so on," says Brown. "Means no food for the fish." It's unclear whether the drop in zooplankton is linked to salmon farming but other connections are more obvious, such as the lobster kill last year traced to an illegal chemical that kills sea lice, the bane of salmon farmers.

Expedition Voices: The Legacy of Atlantic Canada's Salmon Farming from Alexandra Cousteau on Vimeo.

Some 30 years into the relatively new practice of fish farming the debate continues: What ecological toll does salmon farming exact on the greater marine environment, and how can salmon aquaculture proceed sustainably?

What began as chemical warfare to quell sea lice numbers in salmon farms has turned into an arms race as the parasitic crustaceans, which attach to salmon and increase their susceptibility to disease, have developed resistance to treatments. As the chemical ante is upped, so too are concerns about ecological side-effects.

"The kinds of chemicals you need to kill sea lice are not specific only to sea lice. They also affect crabs and lobsters and also copepods, so there's great concern about that," says Fred Whoriskey, executive director of the Ocean Tracking Network at Dalhousie University in Halifax, Nova Scotia. Go to the bottom of any marine food chain and you'll find the likes of crustaceans, such as krill and zooplankton, for which deltamethrin (the main ingredient in AlphaMax, an anti-sea lice pesticide recently used on salmon farms in New Brunswick) is highly toxic.

"If the status quo remains it's going to harm and kill marine ecosystems," says Matt Abbott,

#1

Fundy Baykeeper coordinator in Saint Andrews, New Brunswick.

Emergency pesticide treatments halted

Recent deltamethrin (marketed as AlphaMax) sea lice pesticide trials in the Bay of Fundy were halted after preliminary experiments by Environment Canada resulted in dead lobsters in and round the plume of pesticide.

Environment Canada Media Relations Advisor Henry Lau emailed this statement: "Testing was conducted to monitor the application of Alphamax using a tarp system to confirm that this application is in compliance with the Fisheries Act. Preliminary results have raised some questions about the currently-proposed tarp application system, and these results are being reviewed by all parties."

"I did hear that these lobsters died and I am frankly not surprised because we know that deltamethrin can be harmful to lobster, which is why we have designed these systems so that the lobster will not come into contact with the product," says Pamela Parker, executive director of the Atlantic Canada Fish Farmers Association.

Salmon farmers raise their nets to apply the pesticides. The fish then soak in the pesticide solution, which is later released into the estuarine or near shore habitat. While it is true that grown lobsters live on the ocean floor, critics point out that lobster larvae concentrate near the water surface where the pesticides are, and are far more sensitive to lower concentrations of the pesticide. Furthermore, sediments are a major sink for deltamethrin in freshwater ponds, which suggests that it may incorporate into ocean sediment as well.

The recommended dosage of deltamethrin to rid farmed salmon of sea lice is three parts per billion for 40 minutes . Even if this concentration were diluted by a factor of 82 it would still kill 50 percent of stage III lobster larvae exposed for one hour, according to a 2009 Department of Fisheries and Oceans (DFO) report published by the Oceans and Science Branch in Moncton, New Brunswick. If the recommended dosage were diluted by a factor of 230 it would still be deadly to half of the amphipods, tiny crustaceans critical to marine food webs, exposed for one hour.

"It will dissipate very quickly in the marine environment," says Parker, based on unpublished experiments that the salmon growers association conducted last year. "The active ingredient deltamethrin was undetectable outside the net pen skirting during the trial and within ten minutes following the release of the skirting."

Counter to this, the study authors conclude that the recommended dosage of deltamethrin will impact crustaceans over 100 meters away from the net pens for 2-4 hours following treatment based on their findings. Furthermore they report that the amphipods were so sensitive to the pesticide that they couldn't establish the threshold toxicity value for immobility.

"I find it very disturbing that the federal and provincial government will pass these chemicals because they are against [articles in] the Oceans Act... to dump lethal chemicals in the water," says traditional fisherman Reid Brown. "If I dumped them in the water I'd be in jail."

Do salmon farms come at the expense of lobster nurseries?

One of cameraman Christoph Schwaiger's best birthday presents was a fresh lobster proffered by our hosts for the night, the Ross family in Saint Andrews, New Brunswick. His birthday lobster (briefly named Lisa) was black and shiny, speckled with carmen red, and the lobster meat was absolutely delicious, equal parts succulent, sweet and briny.

It wasn't until later, after we spoke with local fishermen and scientists alike, that we learned about the deleterious effect of salmon farms on lobster fisheries.

"You see the salmon cages over top of known lobster nurseries or scallop beds," says Sheena Young, program coordinator for the Fundy North Fisherman's Association from the deck of the Rebecca and Shelley. "It's just devastating."

"It's suicide to the lobster fishery to be dunking those chemicals in," says Mike Strong, a retired surveys biologist for the Department of Fisheries and Oceans in Saint Andrews, New Brunswick. "The lobster fishery is worth about as much as the salmon- growing industry and to displace a perfectly healthy good fishery by growing salmon, to me it's wrong."

#1

Strong's research revealed that lobsters are in fact very picky about the type of ocean floor they inhabit. "But the problem is that exactly matches what the fish farmers are looking for in terms of establishing cages," he says. "As soon as you put in a fish farm that bottom is no longer suitable for settlement of lobster larvae because all the feces from the fish and the unused food goes down and clots up the bottom."

The relationship between wild and farmed salmon

Salmon farming is still a relatively new practice, having started 30 years ago but already about 60 percent of salmon consumed worldwide are farmed , with annual production exceeding one million metric tons.

For Abbott, to call salmon aquaculture "farming" is a misnomer. "Aquaculture isn't just like any other farming," he says. "It's farming carnivores in the water. It's a totally different equation."

To grow one pound of farmed salmon requires roughly three pounds of wild caught fish. "It takes wild fish to grow farmed fish. That's the key rub," Abbott says. In short, these farms use up much more fish flesh than they produce and therefore cannot replace capture fisheries.

The truth is that wild Atlantic salmon stocks have plummeted in North America – all the way down to 4 percent of what the original production capacity was, says Whoriskey. And in the Bay of Fundy wild salmon stocks have been especially hard hit, plunging from 40,000 returning fish down to a couple hundred in the span of two decades.

No direct causal link between the reduction in wild salmon stocks in the Bay of Fundy and the boom in salmon farms has emerged yet but a study of wild salmon stocks worldwide reports a 50 percent reduction in the survival of wild salmon associated with salmon farming.

Here in the tight-knit communities of New Brunswick however, different fisheries that all draw upon and affect the marine ecosystem – whether they're for wild salmon, lobster or farmed salmon – don't function as zero sum competitors because the larger community remains the strongest common denominator.

"We have met the salmon farmers and they are us. This is not an evil group, they are local people, they are part of the working waterfront," says Whoriskey. "In my opinion again in an ideal world, an industry that's dependent on growing Atlantic salmon is dependent on pristine conditions."

Salmon farming is killing the ocean environments..eml	**Content-Type:** message/rfc822 **Content-Encoding:** 7bit

Subject: Comment for Mitchell Act EIS
From: Bob Horning <bob@bobhorning.com>
Date: Thu, 02 Dec 2010 12:28:55 -0800
To: MitchellActEis.Nwr@noaa.gov

Letter #62

December 2nd, 2010

William W Stelle, JR
Regional Administrator
NMFS Northwest Region
National Oceanic and
Atmospheric Administration
7600 Sand Point Way NE
Seattle, Washington 98115

Bob Horning
21215 NW Brunswick Canyon Rd
North Plains, OR 97133
503-647-0113
bob@bobhorning.com

Comment letter for Columbia River Basin Hatcheries
And Mitchell Act EIS

Dear NOAA Fisheries,

While trying to protect wild salmon and build up their runs may seem to sound good, there are a few severe flaws with the biologist's theories of eliminating the hatcheries to do this. The number one flaw that everyone is missing here is the Columbia River is no longer a "natural" river, it's a controlled river, with dams and manmade problems at every turn. Because of this, to try to build up the salmon runs based on natural means is flawed and impossible from the start. To have good runs you will always need hatcheries. #1

The number two flaw is that much of the genetic diversity in our salmon has been diluted through 100 years of hatchery programs. To ensure no interbreeding the hatcheries have interbred the hatchery salmon with the wild salmon, and many hatchery salmon have bred with wild ones. The genetic pool is now tainted, with once diverse stock now very much alike. #2

This is not to say that we should not try to save what is left of the genetic gene pool in these rivers or to say that the hatchery program should be run as it currently is. While the hatchery program has supplied salmon, it has, as mentioned, diluted the gene pool with its current practices. Instead of enhancing native fish runs that have certain characteristics to each river system, it has brought in fish from other systems and tailored many fish through breeding programs so they are more suitable for hatchery stock.

So what is the solution? Do what has already been a practice with the Snake River Sockeye Salmon, a good breeding program to build up wild stocks through the hatchery program. #3

What most people don't know is that the Snake River Sockeye salmon were saved from extinction by pulling **all** the adult salmon out of the river in the 1990's and creating a broad stock in hatcheries up in the Manchester research facility in Clam Bay Washington. http://www.nwfsc.noaa.gov/research/facilities/manchester.cfm. This was called the **NMFS Redfish Lake Sockeye Salmon Captive Broodstock Program.** Yes, all the Snake River sockeye are hatchery fish so to speak. They took a species, built up the stock through the hatchery program, and

saved it. In 1992 a single fish returned, "Lonely Larry" as he was called, and now we have over 2,000 fish returning. **This is over a 2,000% increase, a proven program.** #3

This is what all hatcheries should do with all species of salmon on the Columbia, since the river is not natural anyway. Get rid of the current hatchery stock over time by replacing all hatchery salmon with what's left of the wild stock and use wild stock as the basis for all hatcheries. That way everyone can fish for plenty of wild stock and the only cut off for all fishermen is the point to make sure that there is enough brood stock. As I said, the Columbia is no longer wild, natural, and you will never build up the salmon by relying on natural means.

This will also require a change in the hatcheries themselves, going from plain concrete raceways to raceways with structure in it, mimicking a river system. A study by NMFS in the 1990's at Manchester also showed that the only difference between a wild juvenile salmon in the wild and one in a raceway is its characteristics and coloring. With proper structure, shading and feeding practices (feeding from above draws the fish up instead of staying low) a hatchery raised wild juvenile salmon's survival rate dramatically improves. #4

And for those who want more salmon sooner, you can do that right away by getting rid of the man-made nesting sites of the Caspian terns and Cormorants. These birds consume 22,000,000 smolts a year, which translates into about 1.4 million adult salmon that won't return. This year ODFW guesstimates that 2 million adult salmon (all species) will enter the Columbia River system. Had these juvenile salmon not been eaten by the terns and cormorants we would have 3.5 million salmon returns, an over 50% increase. Caspian terns were not in the Columbia River system till 1984 when they started nesting on dredge material islands. The devastation that these birds have on our salmon population is much greater than the sea lions, yet sea lions are a focus of strong debate while the birds are not. #5

Solutions to our salmon problems are there, if people are willing to look at the reality of our situation. As mentioned in the first paragraph, the Columbia River is no longer a "natural" river system, and in reality you have to deal with that. Treat the river as a controlled river, and find solutions that match that reality. #6

Sincerely,
Bob Horning

Salmon-Mitchelle Act EIS Comment.doc	**Content-Type:** application/msword **Content-Encoding:** base64

Subject: Mitchell act
From: Kelly Reichner <kreichner@fishermans-marine.com>
Date: Thu, 02 Dec 2010 12:37:41 -0800
To: MitchellActEis.Nwr@noaa.gov

Letter #63

Dear Sir,
My name is Kelly Reichner and I am a buyer for Fisherman's marine Supply. Mitchell act funds are vital to me and my family. Mitchell act founds provide fishing opportunities to families here in the Northwest, which in turn provided enjoyment and employment to many people in our communities. Salmon and Steelhead fishing is a tradition for many families and people here in the Northwest and we need to continue this tradition. I sincerely hope that full funding for the Mitchell act will continue. #1

Sincerely
Kelly Reichner

Donna Baker
Michael Morgan
PO Box 201
Lummi Island, WA 98262-0201

CitizenLetter®

An urgent message from a concerned citizen.

October 21, 2010

Letters #64 through #418

Administrator William Stelle
NW Marine Fisheries Service
7600 Sand Point Way NE
Seattle, WA 98115-0070

Dear Administrator William Stelle,

I am writing to urge the National Marine Fisheries Service to restore wild salmon and steelhead populations by scaling down hatchery programs in the Columbia River Basin. #1

As you are aware, after the federal government built dams across the Columbia River Basin--and killed most of the wild salmon and steelhead--it set up a broad network of hatcheries to boost fish harvests. But the hatchery fish have only done further harm to the wild fish. They prey on wild fish. They compete for habitat and food. And they interbreed with them, making wild fish more vulnerable to disease. #2

As you also know, the Fisheries Service is now reevaluating the hatchery program. One of the four options under consideration would reduce the number of hatchery-raised fish and cut the number of salmon and steelhead harvested annually by half. #3

This option would most quickly restore wild fish in the Columbia River Basin and I urge you to support it.

Please let me know how you intend to address this issue.

Sincerely,

Donna Baker
Michael Morgan

NOAA-NMFS
RECEIVED
OCT 25 2010
NORTHWEST REGIONAL OFFICE

CitizenLetters are a service of CREDO.

CREDO more than a network. a movement.

2928 06/10 Printed on chlorine-free, 100% post-consumer recycled paper with soy-based ink ©2010 CREDO

Testimony from the Columbia River Inter-Tribal Fish Commission

September 20, 2010

Vancouver, WA

Testimony #T1

Public Testimony (recorded and in writing)

#1

Good evening. My name is Mike Matylewich and I am the manager of the Fisheries Management Department of the Columbia River Inter-Tribal Fish Commission. The Commission was formed by the Nez Perce, Warm Springs, Umatilla and Yakama Tribes in 1977 for the purpose of coordinating its member tribes' fishery policies and providing technical expertise. The tribes reserved the right to take fish at all usual and accustomed places in the treaties of 1855. In return for millions of acres of land, the federal government promised to secure that right.

Following the treaties, natural salmon production declined in the Columbia Basin as development activities compromised survival. Mitchell Act hatcheries were built to mitigate for salmon losses caused by development of the hydro system and other factors. However, implementation of the Act from 1948 until 1982 focused on releasing fish below tribal fisheries by using the hatcheries primarily below the Bonneville Dam as a substitute for natural spawning and rearing in the upper Columbia. The result was a severe decline in upper Columbia and Snake River runs as harvesters focused on the abundance of lower river hatchery runs.

Since 1982, tribes have implemented numerous salmon restoration and rebuilding projects to improve habitat and move production upriver to assist naturally-spawning runs. Now we see a series of alternatives from NMFS Fisheries that would reverse this progress throughout the Columbia Basin. In this regard, we are deeply dismayed that NMFS Fisheries did not consult with the Commission or its member tribes in development of this DEIS.

The scope of the Mitchell Act DEIS includes all hatchery production in the Columbia Basin, including hatcheries operated by the Commission's member tribes. The document identifies alternative proposals for significant cuts and elimination of hatchery programs throughout the basin; programs that serve to both support important treaty fisheries and assist in the recovery of natural origin salmon populations.

#2 #3

The tribes find the document cumbersome and frustrating to review. The range of alternatives is limited and only contains reductions in hatchery production from current programs. The cuts would impact the congressionally mandated Lower Snake River Compensation program, as well as several mitigation commitments under FERC relicensing agreements. NMFS simply cannot choose to disrupt mitigation

programs designed to offset the negative impacts of the hydro-system and other development in the basin. As long as the dams remain in place, the mitigation responsibility remains. #3

The tribes have spent decades negotiating agreements with the federal government on hatchery programs. Many of the identified cuts in hatchery programs are contrary to commitments in the *U.S. v. Oregon* Management Agreement. The DEIS only provides lip service to this Agreement, which was negotiated by NMFS and is court-ordered. From our perspective the DEIS attempts to unilaterally undo current enforceable agreements between the tribes and the United States that were based on extensive collaborative efforts. #4

The tribes believe that the objectives for hatchery and natural fish need to be determined basin-by-basin. We have successfully invested countless resources to this end. It is inappropriate for NMFS to ignore its negotiated management agreements and now propose arbitrary and fixed standards throughout the Columbia Basin. Management decisions can and must be flexible to address differences in habitat and survival potential and different levels of risk for different populations. We have sought and established balance in the U.S. v. Oregon Management Agreement so that our efforts to fully recover natural populations can fit with the needs of people to utilize the fishery resource. The tribes view hatcheries as wild salmon nurseries that can serve to give struggling populations a boost as we work to resolve habitat and hydro system survival issues. Carefully managed hatcheries can and do provide benefits for fish recovery and, under the Endangered Species Act, recovery of naturally spawning populations in natural habitat. #5

Our technical staff is currently reviewing the document and they have noted many errors in the document and its analysis of the proposed alternatives. For example, we see significant errors in the harvest modeling which cause errors in both the economic impacts analysis and in the estimates of hatchery and wild fish escaping fisheries. These assumptions result in misleading conclusions in the economic impacts analysis and in the estimates of hatchery and wild fish escaping fisheries. These errors make it exceptionally difficult to judge the level of impacts on efforts to use hatcheries for conservation, mitigation efforts and fisheries. These errors make it exceptionally difficult to judge the level of adverse impacts that any of these alternatives will have on treaty and non-treaty fisheries. We will provide detailed comments by the deadline. #6

Thank you for the opportunity to comment.

Testimony #T2

DRAFT
Testimony of the Confederated Tribes of the Umatilla Indian Reservation
Concerning the Draft Environmental Impact Statement
Of NOAA Fisheries on the
Mitchell Act and Columbia River Basin Hatchery Operations
September 24, 2010
Kennewick, WA

#1

Good evening. My name is N. Kathryn Brigham and I am Secretary of the Board of Trustees of the Confederated Tribes of the Umatilla Indian Reservation, also known as the CTUIR. In our Treaty of 1855 with the United States, the CTUIR reserved the right to take fish at all usual and accustomed places.

The CTUIR and other Tribes have worked hard to be co-managers in the Columbia River Basin and in many areas have succeeded. The most disappointing issue to me is the approach that NOAA has taken in developing the this DEIS and how it was provided to the Columbia River Treaty Tribes who are co-managers. This approach reminds me of the 1970's. It was my hope this approach would not be repeated and here we are responding to a draft that appears to negatively impact the work we have done in restoring the fish runs.

#2

We watched the salmon runs go down as the Columbia Basin was developed for purposes of hydropower, flood control and navigation. Current returns are less than two million salmon each year, down from untold millions in the times of my ancestors.

Hatcheries were built to mitigate for the salmon losses from the hydropower and other development activities. However, most of this mitigation has not been in-place or in-kind. The Mitchell Act is a good example of this misguided implementation. The implementation of the Act did not follow the intent of the Act which was to mitigate for losses where the losses occurred or for the species impacted. Most of the Mitchell Act hatchery releases are downstream of The Dalles Dam and downstream of where the losses occurred. Most of releases are tule fall chinook and coho and not the other species that were damaged. The consequence of this injustice is that upriver returns and upriver fisheries suffered, while lower river and ocean fisheries benefitted and the Federal Trust Responsibility to the Tribes was not fulfilled. We are now faced with this Mitchell Act DEIS, which goes beyond the Mitchell Act funding and purports to provide a blueprint for

analysis of all Columbia Basin Hatcheries under the Endangered Species Act. #2

Since the early 1980s, the tribes, states and federal agencies have worked hard to implement numerous salmon restoration and rebuilding projects to improve habitat and move production upriver to assist naturally-spawning runs and help correct the past injustices. The CTUIR has closely worked with state and federal co-managers to adapt and improve hatchery programs in NE Oregon and SE Washington tributaries over the last two decades. Hatchery programs and adjustments were based on case-by-case circumstances unique to each subbasin and hatchery program. Some recent Umatilla adaptive program improvements were, in part, the result of science review recommendations. Other programs, such as in the Grande Ronde Basin, have intentionally implemented a diversified approach to evaluate uncertainties and potential varying successes. Disrupting these specific hatchery programs and purposes with a NOAA directive to reduce hatchery production, as it appears the DEIS is paving the way for implementing the HSRG recommendations as a rule, instead of a tool to be selectively used as appropriate. The US vs. Oregon Parties reviewed the HSRG, including at TAC and PAC meetings, and agreed that the HSRG is a tool, not a rule. The DEIS also does not appear to be consistent with the immense investment of resources in past and recent hatchery management processes, which have documented successes in returning fish. #3 #4

The CTUIR is proud of the successes that have been achieved in local basins where salmon were once extirpated. In the Umatilla Basin, the result is revived annual Indian and non-Indian salmon fisheries over the last 20 years and increasing naturally produced populations where there had been none for over 70 years. We are also experiencing success in the Walla Walla Basin where fish returns this year allowed for the first tribal salmon fishery in nearly 100 years. Cuts in the proposed Walla Walla Hatchery program to comply with this DEIS would undermine the very comprehensive and collaborative effort to restore salmon in the Walla Walla Basin. #5

Now, as we examine the Mitchell Act and Columbia River Basin Hatchery Operations DEIS we are disappointed to see a series of alternatives and implementation scenarios from NOAA Fisheries that would reverse the progress discussed above, not only in the CTUIR ceded territory, but throughout the Columbia Basin. The DEIS identifies a range of alternatives and gives implementation scenarios that call for significant cuts and #6

elimination of hatchery programs throughout the basin; programs that serve to support important treaty fisheries, help fulfill federal trust obligations, and assist in the recovery of natural origin salmon populations. #6

The limited range of alternatives considered affects congressionally-mandated mitigation programs and indicates to us that the federal government will again fail to keep the promises made in the Treaty of 1855. NOAA Fisheries simply cannot choose to unilaterally disrupt mitigation programs. The tribes have spent decades negotiating agreements with the federal government on hatchery programs. Indeed, many of the identified cuts in hatchery programs in the implementation scenarios are contrary to commitments in the *U.S. v. Oregon* Management Agreement. The DEIS only provides lip service to this Agreement, which was negotiated by NOAA Fisheries and is court-ordered. From our perspective the DEIS attempts to undo current enforceable agreements between the tribes and the United States that were based on extensive collaborative efforts. #7 #8

It is also unthinkable that the Columbia River Treaty Tribes with a right to take 50% of the harvestable fish in the River and its tributaries were not adequately consulted on this DEIS. NOAA Fisheries says they spent nearly 5 years developing this product, yet they did not take the time to comply with their consultation obligations, including the guidance provided by Secretarial Order 3206, "American Indian Tribal Rights, Federal-Tribal Trust Responsibilities, and the Endangered Species Act." The very first principle of that Order provides in pertinent part: #9

> "Whenever the agencies, bureaus, and offices of the Departments are aware that their actions planned under the Act may impact tribal trust resources, the exercise of tribal rights, or Indian lands, they shall consult with, and seek the participation of, the affected Indian tribes to the maximum extent practicable. This shall include providing affected tribes adequate opportunities to participate in data collection, consensus seeking, and associated processes."

Similarly, Principle 3 of the Order provides in pertinent part:

> "If the proposed conservation restriction is directed at a tribal activity that could raise the potential issue of direct (directed) take under the Act, then meaningful government-to-government

consultation shall occur, in order to strive to harmonize the federal trust responsibility to tribes, tribal sovereignty and the statutory missions of the Departments."

No meaningful government-to-government consultation took place with the CTUIR. This lack of consultation with effected Tribes that have been stewards of the resources for millennia may help explain why there are so many deficiencies in the DEIS. The DEIS list of consulted parties does not include CTUIR as a consulted entity. #9

As our staff continues to review the document, we continue to note many factual, data-related or technical errors in the information used and the analysis of the proposed alternatives. For example, we see significant errors in the harvest modeling which cause errors in both the economic impacts analysis and in the estimates of hatchery and wild fish escapement. This is a model that the tribes and state co-managers in the basin have not agreed on and have many concerns with it. These errors make it exceptionally difficult to judge the level of impacts on efforts to use hatcheries for conservation, mitigation efforts and fisheries. In other words, erroneous assumptions go into the economic impacts analysis and escapement objectives, which in turn inform the socioeconomic and environmental justice sections, making those sections inadequate and unlikely to withstand legal challenge. We will provide detailed comments by the deadline. #10 #11 #12

These errors are also a symptom of the overbroad purpose and scope of this DEIS. Instead of limiting itself to Mitchell Act funding, NOAA Fisheries attempts to lay out a template for ESA coverage for all Columbia Basin Hatcheries. NOAA fisheries should narrow this EIS to just focus on Mitchell Act funding, and leave Columbia Basin hatchery practices for a more considered and fully informed NEPA product. #13

In sum, there are significant policy, technical and legal problems with the DEIS. The policy problems go to the intended purpose and use of this DEIS. It is structured to go beyond the Mitchell Act programs and apply to all hatcheries in the Columbia Basin; the alternative and implementation scenarios selected appear to drive federal hatchery policy toward a reduction in the numbers of fish produced and returning; it appears to stake out a policy position toward the strict application of HSRG recommendations that are inappropriate for some programs; and it is based on uncertain scientific premises regarding the fitness of all hatchery fish. The technical errors #14 #15

include inaccurate assumptions regarding the composition of current fisheries, both tribal and non-tribal, factual inaccuracies regarding the fish themselves, and omission of relevant data on other fisheries that influence the Columbia Basin harvest return. #15 Some of the problems that appear to make the DEIS vulnerable to legal challenge include the failure to consult with effected Tribes, and the limited scope of alternatives and implementation scenarios. #16 While all possible alternatives and implementation scenarios need not be included, the spectrum of reasonable possibilities must be represented. The possibility of increased production, which is not only reasonable but contemplated in both the *US v. Oregon* Management Agreement and the Columbia Basin Fish Accords, is not represented in the implementation scenarios, nor is it clearly identified in the alternatives.

The tribes believe that the objectives for hatchery and natural fish need to be determined basin-by-basin. #17 We have successfully invested countless resources to this end. #18 It is inappropriate for NMFS to ignore its negotiated management agreements and now propose arbitrary and fixed standards throughout the Columbia Basin. Management decisions can and must be flexible to address differences in habitat and survival potential and different levels of risk for different populations. We have sought and established balance in the U.S. v. Oregon Management Agreement so that our efforts to fully recover natural populations can fit with the needs of people to utilize the fishery resource. Hatcheries are wild salmon nurseries that can serve to give struggling populations a boost as we work to resolve habitat and hydro system survival issues. Carefully managed hatcheries can and do provide benefits for fish recovery and, under the Endangered Species Act, recovery of naturally spawning populations in natural habitat.

The Hanford Reach is an area where using hatcheries to rebuild natural runs is a huge success and we see both Tribal and non-tribal people fishing on these stocks. #19 I am not the one who is going to tell this area that these stocks are going to see a reduction.

Thank you for the opportunity to comment.

Testimony #T3

Testimony of the Yakama Nation
Concerning the Draft Environmental Impact Statement
Of NOAA Fisheries on the
Mitchell Act and Columbia River Basin Hatchery Operations

September 24, 2010

Kennewick, WA

#1

Good evening. My name is Virgil Lewis, Sr. and I am Chairman of the Fish, Wildllife, and Law and Order Committee of the Yakama Tribal Council. In our treaty of June 9, 1855 with the United States, the Yakama Nation reserved the right to take fish at all usual and accustomed places. This included the right to have fish present to catch. The federal government promised to secure that right and we have been struggling ever since for the federal government to live up to its promise.

For generations, we have watched as human development of the Columbia Basin has increased and salmon returns have decreased. Decisions were made, usually without tribal consultation and mostly without regard for tribal concerns, that knowingly and deliberately sacrificed wild runs of salmon in exchange for other benefits from the rivers, such as irrigated agriculture and hydroelectric power. Hatcheries have always been envisioned as a necessary tool to mitigate for fishery losses due to development of the hydrosystem and other aspects of the Northwest's economy. Accordingly, hatcheries represent a promise to those who have always depended on the salmon for culture, sustenance, and livelihood to replace the fish that are destroyed as a result of human development of salmon habitats.

#2

The Draft Environmental Impact Statement released recently by the NOAA-Fisheries reviews mitigation hatchery programs funded by the Mitchell Act or permitted by NOAA under its ESA regulatory authority. Our first review of the DEIS indicates that it is riddled with numerous errors in facts and understanding

#2

of fishery management processes in the Columbia Basin. It also appears to suffer from a number of structural weaknesses. Many of these shortcomings could have been avoided through consultation with the fishery co-managers during the preparation of the DEIS. Tonight we will summarize our initial thoughts, and we will provide specific details in our written comments to the record by the December deadline.

#3

Our technical staff is currently reviewing the document and they have noted many errors in the document and its analysis of the proposed alternatives. For example, we see significant errors in the harvest modeling which cause errors in both the economic impacts analysis and in the estimates of hatchery and wild fish escaping fisheries. These errors make it exceptionally difficult to judge the level of impacts on efforts to use hatcheries for conservation, mitigation efforts, and fisheries. It is exceptionally difficult to judge the level of adverse impacts that any of these alternatives will have on treaty and non-treaty fisheries.

#4

We have found no analysis whatsoever as to how any of the alternatives would further the fishery development objectives envisioned in the Mitchell Act. In fact, most alternatives do just the opposite. One glaring example of interest to many in the audience here tonight is Snake River fall Chinook. Appendix C in the draft EIS documents that NOAA would reduce fall Chinook releases in the Snake River by over 95%, from a current level of approximately 5.8 million juveniles to only 100,000 to 300,000 fish annually. NOAA and many in the audience may recall that adult returns of Snake River wild/natural fall Chinook were fewer than 80 fish in 1990 prior to ESA listing. The Columbia River Treaty Tribes fought very hard to restore fish to natural habitats in the Snake by releasing Lyons Ferry hatchery fish above Lower Granite beginning in 1996. These efforts are mainly responsible for increasing adult returns above Lower Granite to greater than 16,600 fish in 2008. More than 25,000 fall Chinook will cross Lower Granite Dam in 2010, by far the greatest count since the dam went online in 1975. With the

#4

level of hatchery production cuts proposed by NOAA, adult returns to Lower Granite Dam would likely revert to the levels that led to ESA listing.

Appendix C also documents that NMFS would reduce fall Chinook releases in the Yakima River by 1.7 million fish annually. These cuts would seriously impact valuable fisheries throughout the Columbia Basin from Buoy 10 to the popular fishing areas here around the Tri-Cities. These are but two examples. The draft EIS contains many other examples of how NOAA proposes to undo successful local recovery efforts in the mid- and upper Columbia basins that the Yakama Nation and the Confederated Tribes of the Umatilla have worked to achieve in collaboration with local stakeholders. These successes have returned salmon and salmon fisheries to our local fishing areas, in many cases for the first time in decades.

#5

These successes in our local fishing areas are occurring because the tribes have worked hard to implement numerous salmon restoration and rebuilding projects to improve habitat and move production upriver to assist naturally-spawning runs and help correct the past injustices. The Yakama Nation struggled with federal and state agencies for over two decades to build the Cle Elum Hatchery in the Yakima River. The Yakama Nation overcame the obstacles to construct a facility that works in harmony with the natural environment to improve spring chinook returns. The result is healthy sustainable populations that provide fishing opportunities where there once were none.

So we are disappointed to see a series of alternatives from NOAA Fisheries in the Mitchell Act and Columbia River Basin Hatchery Operations DEIS that would reverse this progress, not only in Yakama Nation ceded territory, but throughout the Columbia Basin. The document identifies a range of alternatives that call for significant cuts and elimination of hatchery programs throughout the basin; programs that serve to both support important treaty and recreational fisheries and assist in the recovery of natural origin salmon populations.

#6

The limited range of alternatives evaluated in the DEIS also would create ripple effects across a number of important international and regional agreements that incorporate existing hatchery programs. Recent settlements of the Pacific Salmon Treaty, *U.S. v Oregon* Management Agreement, and the Columbia River Fish Accords assume that hatchery production levels will remain approximately at status quo levels during the term of the agreements. Any of the alternatives in the DEIS would seriously alter those programs. In addition, the alternatives would require reductions in congressionally-mandated hatchery mitigation programs, and would signal to us that the federal government may again fail to keep the promises made in the Treaty of 1855. NOAA Fisheries simply cannot choose to unilaterally disrupt mitigation programs, such as those negotiated as part of FERC relicensing agreements, designed to offset the negative impacts of the hydropower system and other development in the Columbia Basin.

#7

#8

The tribes have spent decades negotiating agreements with the federal government on hatchery programs. Many of the identified cuts in hatchery programs are contrary to commitments in the *U.S. v. Oregon* Management Agreement. The DEIS only provides lip service to this Agreement, which was negotiated by NOAA Fisheries and is entered as a federal court order that is binding on the parties to this case. From our perspective the DEIS attempts to undo current enforceable agreements between the tribes and the United States that were based on extensive collaborative efforts. To the extent the hatchery programs in the Management Agreement are specifically referenced in the Columbia River Accords, forced changes to those hatchery programs would upset important terms and conditions in the Accords and cast uncertainty on its future.

#9

We also question the strength of the scientific foundation upon which the draft EIS is constructed. The analysis in the draft EIS appears to be broadly based on the scientific notion that hatchery-origin fish, regardless of parentage or the

number of generations in culture, are inherently inferior to natural-origin fish and should be excluded from the spawning grounds. Yet this principle is contradicted by the Snake River fall Chinook success mentioned earlier, by coho returns to the mid- and upper Columbia River tributaries, and by spring Chinook returns in the Umatilla, Walla Walla, Yakima and numerous other subbasins and tributaries. Even some of NOAA's own scientists have recently delivered presentations or published papers questioning this principle, or at least its broad application. It strikes us as unacceptable public policy to completely overhaul the existing hatchery system in the Columbia Basin on the basis of new and relatively unproven science regarding the use of hatcheries in restoring natural stocks. #9

The tribes believe that the objectives for hatchery and natural fish need to be determined basin-by-basin. We have successfully invested countless resources to this end. It is inappropriate for NMFS to ignore its negotiated management agreements and now propose arbitrary and fixed standards throughout the Columbia Basin. Management decisions can and must be flexible to address differences in habitat and survival potential and different levels of risk for different populations. We have sought and established balance in the U.S. v. Oregon Management Agreement so that our efforts to fully recover natural populations can fit with the needs of people to utilize the fishery resource. The tribes view hatcheries as wild salmon nurseries that can serve to give struggling populations a boost as we work to resolve habitat and hydrosystem survival issues. Carefully managed hatcheries can and do provide benefits for fish recovery and, under the Endangered Species Act, recovery of naturally spawning populations in natural habitat. #10

Thank you for the opportunity to comment.

Testimony #T4

Testimony of the Confederated Tribes of the Warm Springs Reservation of Oregon Concerning the Draft Environmental Impact Statement Of NOAA Fisheries on the Mitchell Act and Columbia River Basin Hatchery Operations
September 30, 2010
Astoria, OR

#1

Good evening. My name is Bruce Jim and I am the chairman of the Fish and Wildlife Committee of the Confederated Tribes of the Warm Springs Reservation of Oregon. I am also the chairman of the Columbia River Inter-Tribal Fish Commission. The Commission was formed by the Nez Perce, Warm Springs, Umatilla and Yakama Tribes in 1977 for the purpose of coordinating its member tribes' fishery policies and providing technical expertise. The tribes reserved the right to take fish at all usual and accustomed places in the treaties of 1855.

The subject of tonight's hearing is the Draft Environmental Impact Statement on the Mitchell Act and Columbia River Basin Hatchery Operations. Hatcheries are important and necessary tool for realizing the federal government's treaty trust responsibility.

Hatcheries, including those funded under the Mitchell Act, were built to mitigate for salmon losses caused by development of the hydropower system and other development activities that destroyed salmon habitat and compromised survival. In the case of the Mitchell Act, early implementation focused on releasing fish from hatcheries primarily downstream of Bonneville Dam and downstream of tribal fisheries. The mitigation was neither in-place nor in-kind. For many years tribal fishermen suffered while non-tribal harvesters benefited from the abundance of lower river hatchery runs. The tribes have practiced conservation in their fisheries since time immemorial so that the benefits can accrue to fisheries from Alaska to Columbia River tributaries.

The tribes spent decades fighting state and federal agencies to get a fair allocation of the resource and provide spawning escapement to produce fish for future generations. The tribes fought in federal court for recognition of the treaty fishing right. The co-management relationship between the tribes, federal agencies and state agencies evolved into a series of negotiated agreements that gave the co-managers a decision framework for harvest and hatchery actions.

#2

In reviewing the Draft Environmental Impact Statement, the tribes find it disturbing that the analysis of alternatives does not adequately reflect regional collaborative agreements, such as the 2009-2017 *U.S. v. Oregon* Management Agreement. The status quo alternative reflects hatchery release in 2007. The analysis of the remaining alternatives all reflect reductions in hatchery releases, which is contrary to the commitments in the regional agreements. In this regard, the alternatives also indicate that NOAA Fisheries did not appropriately consult with the Columbia River tribes in development of this DEIS. We are deeply dismayed by that.

#3

The significant cuts in hatchery programs identified in the analysis of alternatives would be detrimental to important fisheries and recovery efforts. We find it difficult to speak to the results of the analysis on fisheries because we find that many of the underlying assumptions used in the analysis are simply not correct. The model results are misleading on the effects of harvest and economics from the fisheries. All other things equal, we do know the less hatchery fish released will result in reduced harvest opportunity for all fisheries. #4

The tribes have led the way on implementing numerous innovative salmon restoration and rebuilding projects to improve habitat and utilize hatchery production to assist upriver naturally-spawning runs. Now we see a series of alternatives from NOAA Fisheries that would reverse this progress throughout the Columbia Basin. NOAA Fisheries simply cannot choose to disrupt mitigation programs designed to offset the negative impacts of the hydropower system and other development in the basin. As long as the dams remain in place and habitat is destroyed, the mitigation responsibility remains. #5

The tribes, in collaboration with the other co-managers, have sought and established balance in the U.S. v. Oregon Management Agreement so that our efforts to fully recover natural populations can fit with the needs of people to utilize the fishery resource. The analyzed alternatives will have negative effects on tribal and non-tribal fishing communities. There will be no environmental justice for these communities if we allow hatchery releases to be reduced and offer little else to improve the natural runs. Hatcheries are important tool in achieving environmental justice and the tribes view hatcheries as wild salmon nurseries that can serve to give struggling populations a boost as other survival issues are addressed. As demonstrated by tribal programs, carefully managed hatcheries can and do provide benefits for fish recovery and, under the Endangered Species Act, recovery of naturally spawning populations in natural habitat. #6 #7

Thank you for the opportunity to comment.

Testimony #T5

Statement of Salmon For All
Concerning the Mitchell Act DEIS
Astoria, Oregon
September 30, 2010

Good evening. My name is Hobe Kytr. I am the nonprofit administrator for Salmon For All, a nonprofit trade association of Columbia River commercial fishermen and processors, representing the lower river non-Indian gillnet fleet. #1

The Mitchell Act originally was enacted by congress in May of 1938 in response to the very real threat to the Columbia River's once mighty salmon runs posed by the construction of Bonneville Dam, the impending Columbia Basin Project, and the projected continuing development of the Columbia River Basin over the next several decades, including but not limited to large federal hydroelectric dam projects. By 1938, a large percentage of the once extensive habitat available to Columbia River salmonids had been lost behind dams built without fish passage. Work was continuing on Grand Coulee Dam, scheduled for completion in 1941, which would cut off the upper third of the Columbia River Basin from fish passage forever. Beginning in 1939, the Grand Coulee Fish Maintenance Program began efforts to salvage what could be saved of the salmon runs of the upper Columbia River by trapping fish at Rock Island Dam and hauling them in tanker trucks to what little habitat was still available in the Okanogan, Entiat, Methow, and Wenatchee Rivers. Fish culturists from the US Fish & Wildlife Service also sought to transform the upper river runs into composite, blended stocks suitable for artificial propagation. This is the context of desperate need in which the Mitchell Act legislation emerged.

In the best of all possible worlds, one would have hoped that more care should have been taken to preserve salmonid spawning habitat in the Columbia River Basin. But that's not what happened. Hydropower development, federal and otherwise, has turned the Columbia River into the most dammed river in the world. Irrigation projects transformed the Columbia Plateau into one of the most productive agricultural regions in the world, but also lured countless millions of migrating salmonids into unscreened irrigation ditches that proved to be dead-end death traps. Logging, pollution, industrial and ever encroaching urban development all took their toll west of the Cascades as well. In desperate attempts to save lower Columbia River Chinook and coho salmon, Mitchell Act hatcheries became the repositories in which their genetic legacy still resides.

Much has been said and written about what recovery of the Columbia River's populations of salmon and steelhead would look like, and what it would take to achieve that goal, insofar as it is possible. Those of us who represent various constituencies of the harvest community are perhaps the strongest proponents of Columbia River salmonid recovery. We have the most at stake in this effort, the most to gain if it succeeds, and the most to lose if it does not. But, none of the five options presented in the Mitchell Act Draft Environmental Impact Statement will help us advance towards recovery. #2

P O Box 56 • Astoria, Oregon 97103-0056 • (503) 325-3831 • FAX (503) 325-2725
info@salmonforall.org • www.salmonforall.org

In fact, all the options presented in the Mitchell Act DEIS lead us away from Columbia River salmonid recovery. By defining the status quo as the conditions present in 2007, Option One undoes all the advances in hatchery reform during the past three years, including successful supplementation programs instituted by the Columbia River Treaty Tribes as co-managers of the fishery. All the options presented fail to live up to federal treaty trust obligations under the 2008-2017 *US v. Oregon* Management Agreement and the 2008 renewal of the Pacific Salmon Treaty. Not one of the Options is consistent with Washington's updated 2010 Lower Columbia Salmon Recovery and Fish and Wildlife Subbasin Plan, or with the Conservation and Recovery Plan for Oregon's Populations of Lower Columbia Salmon and Steelhead recently approved by the Oregon Fish & Wildlife Commission. It is dispiriting to find that, all the while NMFS has been directing the states, tribes, and regional councils to engage in recovery planning, that the agency itself has been working on a Draft Environmental Impact Statement for Mitchell Act hatcheries that negates all the effort that has gone into the recovery planning mandated by NMFS.

#2 #3 #4 #5 #6

The errors and omissions in the Mitchell Act DEIS are too numerous to reference here in any detail, but they are seriously disturbing. The coho and Chinook modeling in Appendix K use the wrong parameters with reference to the 2008-2117 *US v. Oregon* Management Agreement, the wrong allocation formulae for the non-Indian commercial and recreational mark-selective fisheries for spring Chinook, and the wrong mortality rate for the tangle net fishery. Even if the data on smolt production in the Columbia basin used in Appendix K were correct, and there is good reason to suspect they are not, the conclusions derived from the calculations in the modeling exercise still would be so erroneous that they would be useless to anyone. Appendix I, the Socioeconomic Resource Report, was never peer-reviewed nor completed, meaning that not only does it not live up to accepted academic standards, it does not meet NOAA Fisheries' own policy on peer review and data quality. The data on environmental justice communities in Tables 3-26, 3-27, and 3-28 list the wrong census data, and omit data from the four poorest counties in the states of Washington and Oregon, where the majority of our fishermen just happen to reside. These are only a few of the glaring deficiencies noted in the DEIS.

#7 #8 #9 #10

At this point in time, it is quite clear that the Mitchell Act Draft Environmental Impact Statement was not ready for public review. We call for the National Marine Fisheries Service to withdraw the DEIS until it actually has engaged in the full consultation process that already should have taken place with the tribes, states, and agencies that co-manage Columbia River fisheries. The data and conclusions in the Mitchell Act DEIS are of no use to those constituencies who are most likely to be affected by the draconian cuts proposed for Columbia River salmonid production levels. We reject the listed range of options that call for far fewer fish for the Columbia River Basin, which threaten to leave us all with reduced and failing fisheries. Let us instead embrace hope, and work together for increased abundance, leading to genuine recovery for Columbia River salmonids wherever it is possible to achieve that worthy goal. Finally, we remind the National Marine Fisheries Service that the mitigation obligations undertaken by the federal government in 1938, which were renewed and expanded in 1946, have not ended. The dams are still there, lost habitat is still lost, degraded habitat has only begun to be rehabilitated, and the naturally spawning salmonid stocks upon which recovery depends are not yet recovered, nor will any of the options presented in the DEIS make them more likely to do so.

#11 #12 #13 #14 #15

Thank you for the opportunity to provide testimony. Salmon For All will provide detailed written comments on the Mitchell Act DEIS before the deadline for submitting public comment.

Testimony #T6

#1

Historical Background of the Mitchell Act (Public Law 75-502)
By Irene Martin
September, 2010

The Mitchell Act (Public Law 75-502) was passed by Congress on May 11, 1938, a year after passage of the Bonneville Project Act in 1937, which authorized building of Bonneville Dam for the purpose of improving navigation on the Columbia River, as well as for production and sale of electricity. News accounts during the months leading up to passage of the Mitchell Act recorded the contemporary understanding of the purpose of the Act.

- Astorian Budget, Mar. 11, 1938 p. 1. "Status of the congressional bill to appropriate $500,000 for construction of fish culture stations on the Columbia River claimed the attention of Oregon, Washington and Idaho fish and game bodies meeting here today." The Columbia River Salmon Conservation Association is named in the article as lobbying for the bill in Congress.
- Astorian Budget, April 14, 1938, p. 1. "Columbia River salmon and what should be done to conserve them and save the fishing industry from destruction occupied the time of the house committee on merchant marine and fisheries today."
- Astorian Budget, April 21, 1938, p. 1. When the bill ran into budget challenges, the Astorian Budget reported that proponents of the bill were able to convince budget director Donald Bell, "that the Columbia river bill was worthy in that the situation here is of an emergency nature and that the government, by its construction of Bonneville dam, has contributed to the situation which makes the bill necessary."
- Astorian Budget, April 26, 1938, p. 1. The newspaper reported that the measure was scheduled for a vote. "The bill authorizes appropriations in the sum of $500,000 for establishment of hatcheries on the tributaries of the Columbia and for other fish conservation measures. Its intention is to compensate for the damage to Columbia fisheries by the building of Bonneville and Grand Coulee Dams."

The Congressional Record for the House Hearing of Senate Bill 2307, the authorizing legislation for the Mitchell Act, May 2, 1938, also provides the context and understanding for the legislation in the following excerpt:

Mr. Bland. ...the situation is that an emergency has developed by reason of conditions, not only because of the construction of the Bonneville Dam, but also because of the construction of irrigation plants and reclamation projects, and all that sort of thing, so that there was brought before the committee maps showing a large area that was affected and we had to take the matter as a practical proposition, a condition that was confronting us, threatening the fisheries of the Northwest, and we had to meet it the best way we could…

Mr. Rich. Then the gentleman will admit that the statements made that the Bonneville Dam and the Grand Coulee Dam were not going to interfere with the salmon fisheries in the Columbia River were not correct, and the gentleman also admits that a

#1

mistake was made by building those dams because it will ruin the salmon industry in the Columbia River.

Mr. Bland. I do not know that I would go so far in my admission. I admit there is serious danger of ruining the salmon fisheries there, and they are being damaged…" [1]

These accounts and numerous others of a similar nature reveal both the environmental setting the Mitchell Act developed in, the era of construction of large mainstem dams, and its understood purpose, to conserve Columbia River salmon runs and compensate for damage being done to fisheries that depended upon the runs that were being affected by the environmental changes occurring due to development in the Columbia Basin.

According to the Northwest Power and Conservation Council's website, the Mitchell Act "is intended to mitigate the impacts to fish from water diversions, dams on the mainstem of the Columbia River, pollution and logging. Primarily, though, the mitigation is accomplished through fish hatcheries and the installation of juvenile fish diversion screens at irrigation water withdrawals." [2] The same website notes that the initial appropriation of funding for purposes of the act was $500,000. These funds came from payments received by the federal government between 1905-1931 from leases with commercial fishing interests on the lower Columbia River for seining grounds on Sand Island and Peacock Spit, among others, in the lower Columbia estuary. The Council's website states: "Through the authorization, Congress intended to invest money received by the government for the use of fishing grounds in efforts to rebuild and conserve the fish runs. The Act recognized that anadromous fish populations were in a serious decline, and that the decline was caused by impacts on spawning and rearing habitat from deforestation, pollution, hydroelectric dams and diversion of water for irrigation."

Continuing concerns regarding development of the Columbia Basin surfaced frequently in fisheries agencies following passage of the Act. The Oregon Fish Commission's top scientist, Dr. Willis Rich, noted prior to the end of World War II that "Several federal agencies are planning extensive engineering developments for the Columbia Basin that will involve numerous large dams and water diversions. This program will undoubtedly be initiated early in the post-war period as part of a nation-wide 'make-work' program designed to prevent unemployment during the reconversion from war-time to peace-time economy. These developments will seriously affect the salmon resources of the Columbia River and, conceivably, may so reduce them as to destroy the commercial fishery. It is of obvious importance to the State to see that adequate consideration is given to the salmon resources and that every reasonable effort is made to provide for their maintenance." [3] Hugh Mitchell, Director of the Dept. of Fish Culture for the Oregon Fish Commission, stated that "Because of the great dams already constructed in the Columbia River or its tributaries and the very large number of proposed dams in the Columbia and its tributaries, it is generally agreed by scientists and all others concerned that the hope of maintaining and supporting the salmon runs in the Columbia River Basin will rest largely upon artificial means of production." [4]

Richard Neuberger, at the time a member of the Oregon legislature and a writer, wrote an article for the Saturday Evening Post, published Sept. 13, 1941, describing the

#1

experimental nature of attempts to save fish runs on the on the Columbia. Excerpts indicate issues being faced:

"Last year, up a labyrinth of ladders and stairways and chutes at Bonneville, 391,595 ascending Chinooks were counted. Is this number large or small? Who knows? The biologists do not. They have no basis of comparison; never before have the fish in a vast stream been counted at all…the Federal Government has begun a prodigious experiment…to determine if salmon whose forebears have spawned in the Columbia's last, lingering reaches can be schooled to consummate their lives at least 500 miles downstream [below Grand Coulee Dam]. Frank A. Banks, chief engineer at Grand Coulee, calls the scheme Uncle Sam's Fish College…Will this idea work… Will [the salmon] continue on to Grand Coulee, over the route their ancestors traveled, and perish buffeting its cement ramparts? Of will they wind off toward their new habitats?"

The article goes on to describe the various features of development of the Northwest that were inimical to salmon, the efforts of biologists and others to try to find a way to preserve at least some part of the salmon resource, and the experimental, even speculative nature of many of these attempts. [5]

The original Act was amended on several occasions subsequent to its original passage. In 1946 it was amended to, among other things, authorize the Secretary of the Interior to conduct investigations and surveys regarding conservation of the Columbia's fisheries resources. In 1947, the Secretary of the Interior issued The Columbia River, A Comprehensive Report on the Development of the Water Resources of the Columbia River Basin for Irrigation, Power Production and Other Beneficial Uses in Idaho, Montana, Nevada, Oregon, Utah, Washington and Wyoming. [6] The following quotation from this document outlines in stark terms just exactly the circumstances under which the Mitchell Act hatcheries were born:

"Construction of potential main stream dams will convert the Columbia and Lower Snake Rivers into a series of lakes. This, together with construction of additional dams on tributaries will create anadromous fish problems of such magnitude that, despite remedial measures growing from investigations listed above, runs to upper waters of the basin may be seriously depleted or even eliminated in entirety. Losses of such runs would be particularly serious because of the superior quality of the salmon migrating to and spawning in headwater streams and lakes. In the event that upper-river runs should be permanently reduced to small volume or eliminated, maintenance of the runs of anadromous fish in the Columbia River would depend principally or exclusively upon the tributaries of the lower river. Compensating increases of runs into those lower tributaries would require years to develop. Since some of the mainstem dams are now scheduled for early construction, immediate steps should be taken to carry out the proposal for the development of lower-river fishery resources.

"The development of the fisheries of the lower river is not proposed as a complete solution to the problem of fish maintenance in the Columbia, and in no sense is a substitute for maintaining the high-valued fish populations which spawn in the upper river. The proposal is in the nature of insurance to protect the fishery resources if, at some unpredictable time, fish-protective devices fail in their purpose…" [7]

#1

The same document also proposed a detailed study and economic evaluation of the basin's fisheries, including commercial, sport, Indian fisheries and the offshore troll fishery extending from southeastern Alaska to northern California. [8] A special edition of The Bumble Bee in April of 1947 listed a coalition comprising the Oregon Fish Commission, Washington Dept. of Fisheries, Idaho Fish and Game Commission, Columbia River Salmon and Tuna Packers Ass'n., International Fishermen and Allied Workers of America, Washington Legislative Fisheries Interim Committee, Oregon Legislative Fisheries Interim Committee, Izaak Walton League of America, Oregon Division, Oregon Game Commission, Washington Dept. of Game, Columbia River Fishermen's Protective Union, Northwest Federation of Indians, Indian Tribal Council, Washington States Sports Council, Oregon Wild Life Federation and Mid-Columbia Fisheries Association, formed to pressure for consideration of the fishery resource in the face of continued development of the Columbia Basin, and for compensation for damage to the fishery resource.

In 1949 the U.S. Dept. of the Interior issued a special study, A Survey of the Columbia River and Its Tributaries with Special Reference to the Management of its Fishery Resources. [9] The Lower Columbia River Fishery Development Program became the vehicle for implementing the recommendations from the survey. Planning Reports were developed for a number of lower Columbia streams, including the Grays River and the Elochoman, which recommended hatchery facilities be developed and other fish enhancement efforts, such as controlling logging activities and pollution, be implemented. "In summation, the State will continue to manage in so far as possible the various factors as they effect (sic) the fish life produced by these streams to gain the maximum public benefit <u>in perpetuity</u> (emphasis added)." [10] The Planning Reports presented numbers regarding both the present and projected production of these facilities, along with costs and benefits resulting from increased production and harvest in various fisheries. [11]

It is quite clear from the documents cited that a major goal of the Mitchell Act from its inception was to develop production facilities that would mitigate the damage to the environment created by numerous activities, including logging, development, irrigation, gravel-mining, hydro-electric facilities, etc., and provide fish for harvest, specifically mentioning recreational, tribal and commercial harvest, both off-shore and inriver. It is also quite clear from the location of most of the hatcheries below Bonneville Dam that the environmental consequences of development of the upper Columbia, including fish passage, unscreened irrigation ditches and loss of mainstem spawning habitat were recognized at that time as major obstacles to healthy fish runs. It is also quite clear from numerous documents of the time that the Lower Columbia Development Program was recognized as not sufficient to replace what was being lost. The Bumble Bee, the house organ of the Columbia River Packers Association, expressed the view of the affected fishing industry: "The industry feels that the results of this proposed program…should be considered only moderate reparation for the damage already done to the resource by government built dams which have cut off thousands of miles of good salmon spawning area and destroyed many races of salmon which were once abundant in the river… The

#1

'Lower River Plan' will be of great help and assistance in curtailing the losses occasioned by dams, but it cannot suffice to save the salmon resource as we know it today, if the great upriver spawning areas are lost through blockade or submersion in deep water." [12]

Further, as described by Michael Blumm and Lorraine Bodi, "This [the Lower Columbia Development Plan], unfortunately, produced unfair distributional consequences, as upper basin fishers, including Indian tribes and Idahoans, bore the brunt of the dam-related losses with little or no compensation for many years." [13] In 1951 the Oregon Fish Commission produced a document, The Indian Dip Net Fishery at Celilo Falls on the Columbia River, which evaluated the tribal subsistence and commercial fisheries in that locale, recognizing that "The Dalles Dam, when built, will eradicate the entire Indian fishery at Celilo Falls." [14] A fuller description of what occurred in tribal fisheries due to development of the Columbia Basin may be found in Cain Allen's article, "Replacing Salmon, Columbia River Indian Fishing Rights and the Geography of Fisheries Mitigation." [15] In 1956 Congress ordered that a program similar to the Lower Columbia River Fishery Development Program be extended above McNary Dam, as well as below it, and Idaho was included in 1957, at which time the word "Lower" was eliminated.

As the Secretary of the Interior's 1947 document stated, the Mitchell Act funded hatcheries as a form of "insurance" to protect fisheries resources in case of further damage due to the failure of "fish-protective devices." As was clear in the Planning Documents cited above, this public benefit was expected to continue "in perpetuity." Those public benefits, according to the various sources cited above, included tribal, commercial and recreational fisheries, both in-basin and coastal.

The early Mitchell-Act-funded hatchery programs were successful in turning around some of the dramatic declines in a number of native fish populations that were being experienced in the 1940s and 1950s. This is certainly the case with LCR coho, LCR tule fall Chinook, and LCR spring Chinook, among others. In 1957 the Big Creek Hatchery in Oregon was refurbished under the Mitchell Act, raising fall Chinook, coho, steelhead and cutthroat trout. According to its Operations Plan for 2010, "Big Creek Hatchery programs are harvest programs, used to mitigate for fishing and harvest opportunities lost due to habitat loss and migration blockage resulting from the Columbia Basin hydropower system."[16] In 1952, on Washington's Elochoman River, where splash dams and significant logging activity had extensively affected the watershed, "native stocks of fall chinook, once abundant, had been reduced to extreme lows, with coho also at low ebb." The Elochoman Hatchery, built in 1954 with Mitchell Act funds, in its first year of operation had only 13 fall Chinook salmon which "were checked at the racks in the lower river. All of these were males and no eggs were taken." By 1976 fall Chinook returns were 2,643; coho were up to 11,872 fish. Another Mitchell Act hatchery, the Washougal, completed in 1958 was put in place because "the Washougal was one of the first streams to have its salmon runs depleted by man-made obstruction, with power dams put in the river in early days… [it was] designed to rebuild the denuded runs of fall Chinook and coho salmon in the Washougal River and adjacent areas."[17] It should be noted that many of the gene pools from which it is hoped to rebuild naturally spawning ESA-listed

#1

populations of Columbia River salmon such as LCR coho and tule fall Chinook, reside in these same Mitchell Act hatcheries today.

In 2005 a document entitled "Mitchell Act Hatchery Funding" was issued by the Idaho, Washington and Oregon Fish and Wildlife departments, U.S. Fish and Wildlife Service, and the Yakama, Nez Perce, Umatilla, Colville and Shoshone-Bannock tribes. The document outlined the scope of the Mitchell Act since the years of its inception and stated: "The program is a valuable resource in the protection of natural and hatchery produced fish. However, funding for the entire Mitchell Act program has not been sufficient to maintain the basic service level; maintenance of facilities has been deferred, facilities have been closed, facilities have shifted to non-Mitchell Act production and funding, funds have not been available for needed monitoring or assessment, construction of needed screens or fishways has not occurred, federally required mass marking programs, ESA related evaluation programs and the ability to respond to biological or social needs has not been possible." [18] The agencies stated that "A regional proposal is being advanced that uses the most recent scientific advice to manage Mitchell Act fish hatcheries in a genetically friendly, recovery oriented and sustainable manner." [19] They warned that "This must be accomplished without abandoning the federal responsibility to mitigate for populations depressed due to development since the latter part of the 19th century. The programs developed for the individual hatcheries will depend upon their locations, water supplies, facilities' designs, rearing conditions, and other factors relating to their capabilities. Some people refer to this as 'hatchery reform,' it may be better expressed as, 'Program assessment, improvement and alignment to address current needs and expectations of the program.'" [20] The agencies provided a list of different hatcheries and programs funded by the Mitchell Act at that time.

In 2010, the National Marine Fisheries Service issued a Draft Environmental Impact Statement "pursuant to NEPA to assess the environmental impacts associated with NOAA proceeding to develop a NMFS policy direction that will 1) guide NMFS distribution of Mitchell Act funds and 2) inform NMFS future review of individual Columbia River basin hatchery programs under the Endangered Species Act." [21] While the agency includes a discussion in the Executive Summary, entitled "What is the relationship between the ESA and the National Environmental Policy Act (NEPA)?" no corresponding discussion regarding the relationship between NEPA and the Mitchell Act is in evidence.

The Mitchell Act's original intent and purpose was that of addressing an environmental injustice by establishing a means for conservation of salmon coupled with mitigation for fisheries affected by development of the Columbia basin. The DEIS does not discuss this history or intent, nor even say much about the Mitchell Act and how it is implemented, except in regard to the Endangered Species Act. The DEIS also does not say much about the continuing environmental pressures occurring in the Columbia basin due to the ongoing development that was initiated in the 1930s and resulted in the passage of the Mitchell Act at that time. The circumstances that resulted in passage of the Mitchell Act have not gone away, and neither have the fisheries that depended upon the successful implementation of the Act. Indeed, it could be argued that the same circumstances that

#1

resulted in passage of the Mitchell Act also contributed to the listings, in the late 20th and early 21st centuries, of a number of Columbia River salmon species under the Endangered Species Act.

Notes

1. Congressional Record, 83rd Congress, House of Representatives, May 2, 1938, p. 6075.

2. www.nwcouncil.org/history/MitchellAct.asp, accessed Sept. 6, 2010.

3. Oregon Fish Commission. Biennial Report of the Fish Commission of the State of Oregon. Salem, OR: State Printing Dept., 1945, p. 38.

4. Ibid., p. 41.

5. Neuberger, Richard. "The Great Salmon Mystery." The Saturday Evening Post, Sept. 13, 1941.

6. U.S. Secretary of the Interior. The Columbia River, A Comprehensive Report on the Development of the Water Resources of the Columbia River Basin for Irrigation, Power Production and Other Beneficial Uses in Idaho, Montana, Nevada, Oregon, Utah, Washington and Wyoming. Washington, DC: U.S. Dept. of the Interior, Feb. 1947.

7. Ibid., p. 380

8. Ibid., p. 380

9. Bryant, Floyd. A Survey of the Columbia River and Its Tributaries with Special Reference to the Management of its Fishery Resources: Washington Streams from the Mouth of the Columbia River to and including the Klickitat River (Area I). Washington, DC: U.S. Dept of the Interior, 1949, Special Scientific Report No. 62.

10. Washington Dept. of Fisheries, U.S. Fish and Wildlife Service. Lower Columbia River Fisheries Development Program Planning Reports, Grays River Area and Elokomin Area. Olympia, WA: August 1951. Grays River Report, p. 16.

11. See pp. 8-11 of the Grays River Planning Report, ibid.

12. The Bumble Bee, vol. 4, no. 8, Nov. 1949, p. 2. In April 1947, CRPA devoted an entire issue of The Bumble Bee to the issue of dams and fish.

13. Cone, Joseph and Sandy Ridlington. The Northwest Salmon Crisis, A Documentary History, Corvallis, OR: Oregon State University Press, 1996, p. 105.

#1

14. Schoning, Robert, T.R. Merrell, Jr., and D.R. Johnson. The Indian Dip Net Fishery at Celilo Falls on the Columbia River. Portland, OR: Oregon Fish Commission, Nov. 1951, p. 32. Contribution No. 17.

15. Allen, Cain. "Replacing Salmon: Columbia River Indian Fishing Rights and the Geography of Fisheries Mitigation." Oregon Historical Quarterly, vol. 104, no. 2, Summer 2003, pp. 196-227.

16. Oregon Dept. of Fish and Wildlife, Big Creek Hatchery Operations Plan, 2010, p. 3. See also Columbia Basin Anadromous Propagation Hatchery Information, on the Columbia Basin Research website, http://www.cbr.washington.edu/dart/hatch/ accessed 9/21/2010.

17. Washington Dept. of Fisheries, Salmon and Salmon Hatcheries, Olympia, WA: Washington Dept. of Fisheries, Oct. 1978, pp. 37, 38, 49-50.

18. Idaho Dept. of Fish and Game, Oregon Dept. of Fish and Wildlife, Washington Dept. of Fish and Wildlife, U.S. Dept. of Fish and Wildlife, Confederated tribes and Bands of the Yakama Nation, Nez Perce Tribe, Confederated Tribes of the Umatilla Indian Reservation, Shoshone-Bannock Tribes of Fort Hall, Confederated Tribes of the Colville Reservation. Mitchell Act Hatchery Funding, A Proposal… for a Multi-Year Regional Approach to Management and Funding of Actions Authorized under Public Law 75-502, Mitchell Act. June 20, 2005, p. 1.

19. Ibid., p. 2.

20. Ibid., p. 2.

21. National Marine Fisheries Service. Draft Environmental Impact Statement to inform Columbia River Basin Hatchery Operations and the Funding of Mitchell Act Hatchery Programs. Silver Spring, MD: U.S. Dept. of Commerce, NMFS Northwest Region, 2010. Cover letter from Paul Doremus.

Irene Martin,
P.O. Box 83,
Skamokawa, Wa. 98647.
360-795-3920; imartin@iinet.com

Testimony #T7

Testimony of Kent Martin, P.O. Box 83, Skamokawa, Wa. 98647. Hearing re Draft Environmental Impact Statement, Mitchell Act, Sept. 30, 2010, Astoria, Oregon.

#1

My name is Kent Martin. I am a commercial fisherman from Skamokawa, Wa.

As a commercial salmon fisherman, who has fished 40 seasons in Alaska, I and my colleagues are very aware of the productivity of wild salmon populations. Perhaps this is why we have so stubbornly persisted on the Columbia River. Every year, even in the poor years, we see the recurring miracle of what abundance really looks like. It is not something one can capture on the printed page – it can only be experienced first hand before the printed page can have real meaning.

The Columbia was once like that Alaska experience. Huge volumes of four of the five species of Pacific salmonids spawned and reared, not just in the tributaries but in the mainstem Columbia. One of the few peep-holes into that former abundance is the population of bright fall Chinook that spawn in the Hanford Reach of the mainstem Columbia. They only exist today because Ben Franklin Dam was never built. Because the Hanford Reach is the rare exception, rather than the norm, hatcheries were built to compensate society of the impending loss of this valuable resource. The mantra was that with hatchery production, "We can have our cake and eat salmon too."

And to a great degree they were right. The genetic heritage of these populations, many of which were concreted out of their spawning and rearing habitat, would not be extant were it not for hatcheries. But now the "wild fish advocates" and NMFS say that hatcheries are the primary constraint to recovering natural spawning abundance. In so doing, they have redefined what constitutes "recovery." So instead of the 30,000 or 40,000 natural spawners that formerly returned to the Lower Snake River when I was a young man, "recovery" is now defined as a sustained return of around 8,000 fish.

#2

Nowhere is this historical amnesia more in evidence that at the unveiling of the Hatchery Scientific Review Group's recommendations. Dr. Lars Mobrand, in response to a question on stream flows, stated that the HSRG did not consider stream flows in their recommendations. Moreover, it was assumed that habitat was going to be stabilized, if not improved.

#3

The big difference between abundance here and in Alaska are these two issues: water and habitat. I have seen nothing in the behavior of NMFS or in the DEIS that would lead me to believe that this agency will take an active role in preserving water and habitat. For example, the agency withdrew from a lawsuit brought by Riverkeepers against the proposed LNG terminal at Bradwood in the lower Columbia. The project raised grave environmental concerns about mainstem rearing habitat and the bi-weekly 12 million gallon unscreened water withdrawals to re-ballast ships. Those of us involved in trying to deal with these environmental issues concerning water and habitat expected strong advocacy for the fish from NMFS, but that did not happen.

The Draft EIS suggests dramatic hatchery reductions with reduced recovery goals, which trivialize the hard work the states, tribes and other agencies and groups have done to facilitate meaningful recovery. The DEIS represents more of the "bait and switch" tactics that I have witnessed for the 50 years I've been fishing, where harvest is expected to shoulder the burden of a recovery that never happens. #4

Speaking of "bait and switch," I note that a centerpiece of the HSRG recommendations was a shift to selective harvest. That policy has been affirmed by NMFS. Commercial fishermen on the lower Columbia have developed the tangle net and are experimenting with other types of gear like seines in order to release unmarked natural spawning fish. NMFS personnel and HSRG members have been out on the water to observe some of these experiments. The harvest sector is doing its part in salmon recovery, but what relevance does selective harvest, sport or commercial, have if there aren't significant numbers of hatchery mitigation fish to catch? #5

No hatcheries, no habitat, no harvesters, no advocacy for fish, only press releases about a recovery that will never happen. That is the message I get from the DEIS. If NMFS is sincere about salmon recovery, hatchery production will be reduced only after natural spawning salmon recovery occurs, not before. The Mitchell Act represents Congressional recognition of the mitigation obligation owed due to development of the Columbia Basin. Mitigation and conservation are not diametrically opposed; rather, they are two sides of the same coin. The DEIS needs to be completely rewritten to ensure that the habitat, hatchery, harvest and hydro components are brought into balance so that genuine salmon recovery can take place. #6 #7

Nez Perce

TRIBAL EXECUTIVE COMMITTEE
P.O. BOX 305 • LAPWAI, IDAHO 83540 • (208) 843-2253

Testimony #T8

Testimony of the Nez Perce Tribe
Concerning the Draft Environmental Impact Statement
Of NOAA Fisheries on the
Mitchell Act and Columbia River Basin Hatchery Operations
October 13, 2010
Lewiston, ID

#1

Good evening. My name is McCoy Oatman and I am the Chairman of the Nez Perce Tribal Executive Committee.

In 1855 the Nez Perce Tribe signed a treaty with the federal government. That treaty reserved to the Tribe a permanent "homeland" or "Reservation," as well as the right to take fish at all usual and accustomed places. In return for millions of acres of land, the federal government promised to secure these rights.

The Nez Perce people live in the heart of salmon country – along the Salmon, Snake, Grande Ronde, Imnaha, Clearwater and Tucannon rivers. Historically, these places were the major producers of salmon and steelhead in the Columbia River Basin. Yet as more people moved and settled in the west and as the system of dams were put in place, our people watched the salmon runs decline and become extinct and listed under the Endangered Species Act.

We have witnessed the extirpation of entire populations of salmon and steelhead and the blocking and altering of thousands of miles of rivers and streams as a result of the dams. They include: Hells Canyon, Oxbow, and Brownlee on the Snake River, Wallowa Lake Dam on the Wallowa River, Dworshak Dam on the North Fork Clearwater, and before that, Lewiston Dam on the mainstem Clearwater. And then, just 40 years ago, four more dams were constructed by the United States on the Lower Snake River. Together, they make a total of eight mainstem dams that every single salmon and steelhead must somehow deal with in their migration downstream and their return from the ocean.

As dam after dam was built, the United States committed to building hatcheries that would mitigate for the salmon losses they caused. The Tribe is very active in this hatchery effort. We manage two major hatchery facilities and 16 satellite facilities that release approximately eight million juvenile fish each year. These include spring, summer, and fall Chinook, coho, steelhead, and lamprey. Together, our releases make up

about 30% of the 26 million salmon and steelhead in the Snake Basin. We release these fish to provide a harvest and rebuild naturally spawning runs.

#2

We also work very closely with our state and federal co-managers (including NOAA Fisheries), to coordinate on and improve the combined hatchery programs in the Snake River Basin. It is understandable how we would be surprised and angry that NOAA would put forth a proposal for a "policy directive" on hatcheries without first consulting us or the other hatchery managers in the basin.

NOAA Fisheries says they spent nearly five years developing this product, yet they did not take the time to talk to the entities producing the fish. This lack of consultation may help explain why there are so many deficiencies in the Draft EIS.

I will speak tonight about three major concerns.

#3

1. First, we are stunned to see a series of alternatives that would reverse the progress we have made; not only in Nez Perce territory, but throughout the Columbia Basin. The Draft EIS identifies a range of alternatives and gives "implementation scenarios" for them that call for significant cuts and elimination of hatchery programs throughout the basin. These are programs that serve to support important tribal and non-tribal fisheries; they help fulfill federal trust obligations; they are congressional mitigation obligations; and they assist in the recovery of natural origin salmon populations.

   #4

   For example, three of the implementation scenarios call for termination of the spring Chinook program at Rapid River hatchery. You must understand the importance of this hatchery to the area – our people faced armed SWAT teams, and went to jail to exercise their treaty rights to fish at Rapid River. It has been one of the few locations in the Snake that still provides for tribal subsistence and livelihood. In 2010 alone, tribal and non-tribal fishermen harvested over 15,000 salmon returning to Rapid River. This does not include the thousands of Rapid River salmon that are harvested downstream of Bonneville Dam.

   #5

   Another example is that four of the alternatives call for drastically reducing releases of Snake River fall Chinook. The Nez Perce and other Tribes had to resort to a legal challenge to have those fish released upstream of Lower Granite. At the time, fall Chinook were one of the most threatened of Snake Basin salmon. Today, they are returning in great numbers and spawning in the wild. In fact, even NOAA Fisheries has used the success of these returns to argue that the hydroelectric system is not as detrimental as most people know it to be.

   #6

   In regards to these examples, we understand that NOAA wants to minimize the use of the so-called implementation scenarios. But in all honesty, what are we supposed to evaluate, other than what is put down on paper?

#7

2. Our second point relates to disruption of our agreements and dealing in bad faith. The Nez Perce, Umatilla, Yakama, and Warm Springs Tribes, as well as the states of

Oregon, Washington and Idaho, and the U.S. Fish and Wildlife Service, and NOAA Fisheries have spent decades negotiating legally binding agreements for hatchery programs. Indeed, we just concluded our new 10 year agreement in 2008. Many of the proposed cuts in this Draft EIS involve the same hatcheries we just reached agreement on. We are amazed that NOAA Fisheries has not compared and evaluated what it proposes in this document with the agreement it just entered into. #7

We understand that NOAA is a large agency, but what is proposed here is of basin-wide significance. It is incumbent that NOAA is aware of its agreements and legal mandates. The left hand must know what the right hand is doing.

3. Our third point goes to the science underpinning the Draft EIS. Our staff has found many factual or technical errors in the information used and its analysis. For example, we see significant errors in the harvest modeling which results in misrepresenting both the economic impacts and the estimates of fish escapement. Furthermore, we were deeply troubled to find that the model to analyze hatchery affects has been used way beyond its intended purpose. And finally, the tone of the document and its proposed strategies, leave NOAA with no alternative but to abrogate its agreements, its Biological Opinions and congressional mandates. Because the entire analysis in the document is built on this unsupportable foundation, we don't know how it can be fixed. We strongly advise NOAA to start again. #8

The Nez Perce Tribe believes that the objectives for hatchery and natural fish need to be determined basin-by-basin. What works in a coastal stream in the Puget Sound certainly does not work here 500 miles from the ocean and above eight dams. Management decisions can and must be flexible to address differences in habitat and survival rates and different levels of risk for different populations. We have already sought and established balance in the U.S. v. Oregon Agreement. NOAA needs to follow that same path. #9

In closing, the overbroad purpose of the Draft EIS, the way it was developed without partners, its advocacy of abrogating congressional mitigation mandates and legal agreements, and its potential real-life effects on our fishermen, call for starting over. NOAA Fisheries should narrow this EIS to just focus on Mitchell Act funding, it should use different evaluation methods in doing so, and it should leave policy direction on Columbia Basin hatchery practices for a more fully informed collaborative effort. In the end, carefully managed hatcheries provide benefits for fishermen and recovery of naturally spawning populations in their natural habitat. #10

As long as the dams are here, the mitigation responsibility remains.

Thank you for the opportunity to comment.

Testimony #T9

COLUMBIA RIVER INTER-TRIBAL FISH COMMISSION
729 NE Oregon, Suite 200, Portland, Oregon 97232 503 238 0667

Testimony of the Columbia River Inter-Tribal Fish Commission
Concerning the Draft Environmental Impact Statement
Of NOAA Fisheries on the
Mitchell Act and Columbia River Basin Hatchery Operations
October 13, 2010
Lewiston, ID

#1

Good evening. My name is Joel T. Moffett. I currently serve as the treasurer for both the Columbia River Inter-Tribal Fish Commission and the Nez Perce Tribal Executive Committee. The Commission was formed by the Nez Perce, Warm Springs, Umatilla and Yakama Tribes in 1977 for the purpose of coordinating its member tribes' fishery policies and providing technical expertise. The tribes reserved the right to take fish at all usual and accustomed places in the treaties of 1855.

The subject of tonight's hearing is the Draft Environmental Impact Statement on the Mitchell Act and Columbia River Basin Hatchery Operations. Hatcheries are important and necessary tools for realizing the federal government's treaty trust responsibility.

The annual pre-development return of salmon and steelhead to the Columbia River is estimated at 11 to 16 million, according to a report by the Northwest Power and Conservation Council. When Congress enacted the Mitchell Act in 1938, the annual returns were still substantial. Congress had the foresight to authorize mitigation for impending salmon losses caused by development of the hydropower system and other activities, but Congress could not envision the extent of those losses. Current returns to the Columbia River are only a small fraction of the historical returns.

Congress authorized the Mitchell Act as a fisheries development program and did not specify how or where the mitigation was to be realized. Early implementation focused on releasing fish from hatcheries primarily downstream of Bonneville Dam and downstream of tribal fisheries. The mitigation was neither in-place nor in-kind and for many years tribal fishermen suffered.

The tribes spent decades fighting state and federal agencies to get a fair allocation of the resource and provide spawning escapement to produce fish for future generations. The tribes released their own report in 1982 to reform the Mitchell Act program. The tribes fought in federal court for recognition of the treaty fishing right. The co-management

relationship between the tribes, federal agencies and state agencies evolved into a co-management decision framework for harvest and hatchery actions. #1

The tribes are dismayed that the analysis of alternatives in the Draft Environmental Impact Statement does not adequately reflect regional collaborative agreements, such as the 2008-2017 *U.S. v. Oregon* Management Agreement. Contrary to the commitments in regional agreements, the analysis of the alternatives in the DEIS reflects substantial reductions in hatchery releases. We find it difficult to speak to the specifics of the results of the analysis because many of the technical underpinnings of the analysis are simply not correct. The tribes will more extensively address the technical issues in written comments. #2 #3

The significant cuts in hatchery programs identified in the analysis of alternatives would be detrimental to important fisheries and recovery efforts. This would be particularly hard felt in Idaho, because one of the alternatives calls for substantial reductions in the Snake River fall chinook program and the closure of Rapid River Hatchery. #4

The wild Snake River fall Chinook return at Lower Granite Dam reached a low of 78 fish in 1990. After the significant 1994 *U.S. v. Oregon* proceedings which focused on the Snake River fall Chinook, the tribes worked hard with co-managers to implement an innovative salmon restoration program to utilize hatchery production to assist the naturally-spawning return above Lower Granite Dam. The benefits of all this effort can be seen in the return of 50,000 fall chinook to Lower Granite Dam this year.

Rapid River Hatchery is part of Idaho Power Company's mitigation for losses created by the construction of the Hell's Canyon Dam complex. Rapid River provides a key fishing opportunity for tribal members and non-tribal members. Tribal members risked their safety and went to jail to affirm the treaty fishing right at Rapid River. As long as the Hell's Canyon Dam complex remains standing, the mitigation obligation will remain.

NOAA Fisheries turns its back on decades of regional cooperation by even proposing these actions as ways to implement the proposed alternatives. NOAA Fisheries offers the same old tired policies that led to listings for protection under the Endangered Species Act. Substantially cutting hatchery programs without addressing other survival factors will not advance regional salmon recovery efforts. The result will be museum piece management that does disservice to recovery of the species and fisheries. #5

As demonstrated by tribal programs, carefully managed hatcheries can and do provide benefits for fish recovery and, under the Endangered Species Act, recovery of naturally spawning populations in natural habitat. The tribes have always put the needs of the resources first, because our culture depends on it. The tribes stand ready to work collaboratively with the other regional co-managers to restore salmon populations throughout the Columbia Basin. Unfortunately, this Draft Environmental Impact Statement, as presently constructed, does nothing to advance the effort. #6

Thank you for the opportunity to comment.