



UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
West Coast Region
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September 29, 2017

Finding of No Significant Impact for Issuance of an Endangered Species Act Section 10(a)(1)(A) Permit to the United States Fish and Wildlife Service for Activities at Livingston Stone National Fish Hatchery

The Council on Environmental Quality (CEQ) Regulations state that the determination of significance using an analysis of effects requires examination of both context and intensity, and lists ten criteria for intensity (40 CFR 1508.27). In addition, the Companion Manual for National Oceanic and Atmospheric Administration Administrative Order 216-6A provides sixteen criteria, the same ten as the CEQ Regulations and six additional, for determining whether the impacts of a proposed action are significant. Each criterion is discussed below with respect to the proposed action and considered individually as well as in combination with the others.

1. Can the proposed action reasonably be expected to cause both beneficial and adverse impacts that overall may result in a significant effect, even if the effect will be beneficial?

Livingston Stone National Fish Hatchery (LSNFH) was constructed in 1997 for the explicit purpose of propagating Endangered Species Act (ESA) listed Sacramento River winter-run Chinook salmon. Hatchery propagated winter-run Chinook salmon are managed to be integrated with the natural population of winter-run Chinook salmon in the upper Sacramento River and are intended to provide a demographic enhancement to aid in the resilience, rebuilding, and recovery of that population. The hatchery programs at LSNFH are supported in the National Marine Fisheries Service (NMFS) Final Recovery Plan for Central Valley Chinook Salmon and Steelhead (NMFS 2014). The Final Recovery Plan states that LSNFH "...is expected to play a continuing role as a conservation hatchery to help recover winter-run Chinook salmon."

By issuing scientific research and enhancement authorizations - including enhancement permits similar to the Proposed Action considered here - NMFS has allowed information to be acquired that has enhanced resource managers' abilities to make more effective and responsible decisions to sustain anadromous salmonid populations, mitigate adverse impacts on endangered and threatened salmon and steelhead, and implement recovery efforts. The resulting information continues to improve our knowledge of the respective species' life histories, specific biological requirements, genetic make-up, migration timing, responses to human activities (positive and negative), and survival in the rivers and ocean. Therefore, the Proposed Action is not expected to have significant impacts. Overall, the proposed hatchery programs will be beneficial by contributing to the conservation and enhancement of the Sacramento River winter-run Chinook salmon evolutionarily significant unit (ESU).



2. Can the proposed action reasonably be expected to significantly affect public health or safety?

The proposed hatchery program would not be expected to have a significant impact on public health or safety because LSNFH follows all state and federal laws and regulations in the use and disposal of chemicals and biological agents used in hatchery operations. LSNFH also follows state and federal water quality requirements for the use and return of groundwater and surface water to ensure return flows meet water quality requirements. See the Hatchery and Genetic Management Plans (HGMPs) for LSNFH (USFWS 2016a, 2016b) and the Environmental Assessment (EA) (NMFS 2017a) for details on specific issues.

3. Can the proposed action reasonably be expected to result in significant impacts to unique characteristics of the geographic area, such as proximity to historic or cultural resources, park lands, prime farmlands, wetlands, wild and scenic rivers, or ecologically critical areas?

Construction of LSNFH was completed in 1998 on a 0.4 acre U.S. Bureau of Reclamation owned site located approximately 0.5 miles downstream of Shasta Dam on Keswick Reservoir. The hatchery is situated upstream of the limit of anadromy, on the west bank of the Sacramento River, outside the flood plain. No construction or operations are proposed that could affect these resources. The site contains no archeological or historical resources. Given the absence of these resources, the Proposed Action would not affect any historic or cultural resources, park lands, prime farmlands, wetlands, wild and scenic rivers, or ecologically critical areas.

4. Are the proposed action's effects on the quality of the human environment likely to be highly controversial?

The use of hatcheries can be controversial, and NMFS carefully considered the potential adverse effects of the HGMPs on the human environment. The effects of the proposed HGMPs are not associated with substantial scientific controversy because the proposed HGMP actions are consistent with the current scientific literature and hatchery management. Standard and proven fish-culture practices have been used at LSNFH since the facility was constructed to produce fish necessary to accomplish program goals, while reducing the potential for negative effects resulting from the program. Therefore the Proposed Action is not likely to be highly controversial.

5. Are the proposed action's effects on the human environment likely to be highly uncertain or involve unique or unknown risks?

The effects on the human environment are not highly uncertain and do not involve unique or unknown risks. Although there are some uncertainties involved in the on-going operation of LSNFH pursuant to the HGMPs, the risks are understood, and the proposed HGMPs include explicit steps to monitor and evaluate these uncertainties in a manner that allows timely adjustments to minimize or avoid adverse impacts. The proposed operation of the programs is similar to other recent hatchery operations in many areas of the Pacific Northwest, and the procedures and effects are well known.

6. Can the proposed action reasonably be expected to establish a precedent for future actions with significant effects or represent a decision in principle about a future consideration?

The proposed action will not establish a precedent for future actions with significant effects. Subsequent section 10(a)(1)(A) permit applications submitted to NMFS for hatchery operations are considered individually on a case-by-case basis and with consideration to overall cumulative impacts.

Artificial propagation has occurred largely along the West Coast through the implementation of hatchery programs designed to spawn and rear salmon and/or steelhead for release to rivers and streams. NMFS reviews HGMPs to determine their effects (positive and negative) on the attributes that define salmon and steelhead health, including the abundance, productivity, spatial structure, and diversity of natural-origin fish. HGMPs submitted to NMFS are reviewed for sufficiency before formal consultation can begin.

7. Is the proposed action related to other actions that when considered together will have individually insignificant but cumulatively significant impacts?

The cumulative impacts of the proposed HGMPs and relevant past, present, and reasonably foreseeable future actions (water management, climate change, ocean salmon harvest, watershed and aquatic habitat rehabilitation, *etc.*) were evaluated in the EA. The EA determined that the direct and indirect effects of the proposed action on the affected resources, in combination with effects from past, present, and foreseeable future actions on the same affected resources would not be expected to be significant.

The take of ESA-listed species will be limited to a level determined to result in a no-jeopardy ESA determination when considering the environmental baseline, the status of the species, any interrelated or interdependent effects, and the cumulative effects. The proposed HGMPs include monitoring and evaluation activities so that U.S. Fish and Wildlife Service (USFWS) and NMFS can respond to changes in the status of affected listed fish species. If salmon management efforts lead to cumulative effects that prevent the recovery of listed species, adjustments to hatchery production levels and the fisheries incidentally impacting winter-run Chinook salmon would likely be proposed.

8. Can the proposed action reasonably be expected to adversely affect districts, sites, highways, structures, or objects listed in or eligible for listing in the National Register of Historic Places or may cause loss or destruction of significant scientific, cultural, or historical resources?

The Proposed Action is not be expected to adversely affect any of the aforementioned areas, because the proposed activities will not occur near or within any of these areas. The Proposed Action will not cause loss or destruction of any scientific, cultural, or historical resources.

9. Can the proposed action reasonably be expected to have a significant impact on endangered or threatened species, or their critical habitat as defined under the Endangered Species Act of 1973?

An ESA section 7 Consultation on the issuance of a section 10(a)(1)(A) permit covering activities proposed in the submitted HGMPs was completed by NMFS on species under our jurisdiction, and concluded that the effects of the HGMP actions (*e.g.*, broodstock collection, rearing and release of juvenile winter-run Chinook salmon, and associated research, monitoring, and evaluation activities) would not jeopardize the continued existence of listed Sacramento River winter-run Chinook salmon, Central Valley spring-run Chinook salmon, and California Central Valley steelhead and would not destroy or adversely modify designated critical habitat (NMFS 2017b). This ESA Section 7 Consultation also concluded that the effects of the HGMP are not likely to adversely affect SDPS green sturgeon or Southern Resident Killer Whales, nor would it adversely affect or modify their designated critical habitat.

The proposed HGMPs are expected to have small beneficial effects on marine mammals and some non-target species. The proposed HGMPs are intended to result in demographic enhancement to natural-origin winter-run Chinook salmon over the duration of the proposed HGMPs. This would likely provide a very small increase in prey resources for marine mammals, wildlife, and other fish species and sea bore nutrients to the upper Sacramento River watershed.

Over the long-term, the proposed HGMPs would increase total and natural-origin winter-run Chinook salmon abundance and spatial structure as properly functioning habitat is restored and becomes more productive for naturally spawning hatchery-origin fish, and their returning adult progeny. Consequently, the proposed HGMPs would be expected to increase the likelihood of long-term survival and recovery of the Sacramento River winter-run Chinook salmon ESU.

10. Can the proposed action reasonably be expected to threaten a violation of Federal, state, or local law or requirements imposed for environmental protection?

The EA evaluated the Proposed Action and determined that the proposed HGMPs would not violate Federal, state, or local law or requirements imposed for the protection of the environment. The review of the proposed HGMPs pursuant to section 10(a)(1)(A), is designed to ensure compliance with the ESA, which is part of the purpose and need for the Proposed Action. Further, a General Condition required by the section 10(a)(1)(A) Permit to be issued for hatchery activities at LSNFH states, “The permit holder must obtain any other Federal, state, and local permits/authorizations necessary for the conduct of the activities provided for in this permit.”

11. Can the proposed action reasonably be expected to adversely affect stocks of marine mammals as defined in the Marine Mammal Protection Act?

Marine mammal species that overlap in time and space with a portion of the life cycle of winter-run Chinook salmon but are not expected to be adversely affected by the hatchery programs at LSNFH because hatchery production of winter-run Chinook salmon would increase their forage base of salmon, since salmon is an important principal prey item for marine mammal species.

12. Can the proposed action reasonably be expected to adversely affect managed fish species?

Winter-run Chinook salmon propagated at LSNFH are not intended for harvest, although some are incidentally harvested in fisheries targeting non-listed salmon. Harvest regulations have been enacted to reduce impacts to winter-run Chinook salmon, including time-area restrictions of fisheries and minimum size limits. Most incidental harvest occurs in the ocean recreational fishery south of San Francisco Bay. As a source of coded-wire tagged winter-run Chinook salmon, hatchery production from LSNFH indirectly benefits harvest management; recovery of coded-wire tags from winter-run Chinook salmon originating from LSNFH are used to monitor the effectiveness of harvest regulations and to inform decisions related to harvest management, which are aimed at reducing the harvest of winter-run Chinook salmon.

13. Can the proposed action reasonably be expected to adversely affect essential fish habitat as defined under the Magnuson-Stevens Fishery Conservation and Management Act?

The proposed HGMPs would have little or no effect on ocean and coastal habitats and/or essential fish habitat for any fish species, including Chinook salmon or steelhead. The proposed HGMPs do not include any new construction or habitat modification. The proposed HGMPs would provide small benefits to essential fish habitat by providing marine-derived nutrients through the decomposition of hatchery-origin winter-run Chinook salmon that escape to spawn naturally in the upper Sacramento River Basin.

14. Can the proposed action reasonably be expected to adversely affect vulnerable marine or coastal ecosystems, including but not limited to, deep coral ecosystems?

The proposed HGMPs are not expected to adversely affect vulnerable marine or coastal ecosystems. The small number of juvenile winter-run Chinook salmon released annually in the Upper Sacramento River Basin will be further reduced (through predation, entrainment, etc.) before entering marine and coastal ecosystems.

15. Can the proposed action reasonably be expected to adversely affect biodiversity or ecosystem functioning (e.g., benthic productivity, predator-prey relationships, etc.)?

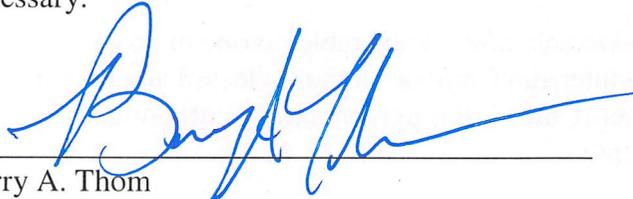
The proposed HGMPs are not expected to have a substantial impact on biodiversity within the affected area. Although winter-run Chinook salmon produced at LSNFH would interact with other species through competition and predator/prey interactions, the number of hatchery-origin winter-run Chinook salmon produced in accordance with the proposed HGMPs (200,000-250,000) would be a relatively small portion of the total predator or prey species. However, because the proposed HGMPs would increase the abundance and spatial structure of winter-run Chinook salmon in the Sacramento River watershed over current depressed levels as habitat improves through restoration actions, the proposed HGMP would likely improve ecosystem function within the affected area.

16. *Can the proposed action reasonably be expected to result in the introduction or spread of a nonindigenous species?*

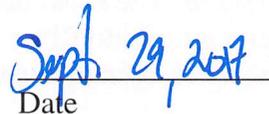
The proposed action does not involve the introduction, removal, or movement of any non-indigenous species into or out of the Action Area. The species involved in the proposed restoration activities are native to the study region (Sacramento River winter-run Chinook salmon), and common handling and movement methods will be used where necessary, which are not known to introduce or lead to the spread of nonindigenous species. The HGMPs would not introduce non-native species or expand their current range.

DETERMINATION

In view of the information presented in this document and the analysis contained in the supporting Final Environmental Assessment (NMFS 2017a), it is hereby determined that the issuance of a section 10(a)(1)(A) Enhancement Permit to USFWS for implementation of the HGMPs will not significantly impact the quality of the human environment as described above and in the supporting Final Environmental Assessment. In addition, all beneficial and adverse impacts of the Proposed Action have been addressed to reach the conclusion of no significant impacts. Accordingly, preparation of an Environmental Impact Statement for this action is not necessary.



Barry A. Thom
Regional Administrator



Date

REFERENCES CITED

- National Marine Fisheries Service. 2017a. Final Environmental Assessment on the Issuance of an Endangered Species Act Section 10(a)(1)(A) Enhancement Permit to the U.S. Fish and Wildlife Service for two Hatchery and Genetic Management Plans associated with Livingston Stone National Fish Hatchery. West Coast Region, California Central Valley Office, Sacramento, California, 69 pp.
- National Marine Fisheries Service. 2017b. Biological Opinion on the Issuance of an Endangered Species Act Section 10(a)(1)(A) Enhancement Permit to the United States Fish and Wildlife Service for Implementation of two Hatchery and Genetic Management Plans at Livingston Stone National Fish Hatchery. West Coast Region, California Central Valley Office, Sacramento, California, 144 pp.
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