

**Columbia Basin  
PIT Tag Information System**

---

**2009  
PIT Tag  
Specification  
Document**

---

**Prepared by  
Pacific States Marine Fisheries Commission  
for the  
PIT Tag Steering Committee**

**December 18, 2009**

**Compiled and Edited  
by  
Dave Marvin and Jenn Nighbor**



## Table of Contents

I. 2009 Changes.....	5
II. Overview.....	6
A. PIT Tag Information System Data Event Model .....	6
B. Data Use and Ethics .....	8
C. Procedure to Request a New Validation Code .....	9
D. Separation by Code Support .....	9
III. Data File Definitions.....	12
A. Tag Data File.....	12
B. MiniMon Interrogation File .....	24
C. MultiMon Interrogation File .....	26
IV. Code Lists .....	28
A. Species Codes .....	28
B. Run Codes.....	28
C. Rearing Type Codes.....	28
D. Verbose Species Run and Rearing Type Codes.....	29
E. Tag Data Coordinator ID Codes .....	29
F. Conditional Comments (Flag Codes).....	32
G. Hatchery Codes .....	33
H. Capture Method Codes .....	34
I. Tagging Method Codes.....	34
J. Organization Codes.....	34
K. Tag, Release, and Recovery Site Codes.....	35
L. PIT Tag Steering Committee Members, 2009 .....	53
V. Glossary of Terms.....	54

Appendix A. Hydrologic Unit Codes.....	64
A1. Classification System.....	64
A2. Explanation of Hydrologic Unit Codes.....	64
A3. Columbia Basin Hydrologic Unit Codes .....	65
Appendix B. Antenna Group Naming Standards.....	66
B1. Naming Standard for PIT Tag Antenna Groups at Juvenile Fish Facilities.....	66
B2. Naming Standard Example .....	67
Appendix C. Interrogation Site Configurations .....	68
C1. Bonneville Powerhouse 2 Juvenile (B2J).....	69
C2. Bonneville Bradford Island Adult Fish Ladder (BO1).....	70
C3. Bonneville Cascades Island Adult Fish Ladder (BO2) .....	71
C4. Bonneville Washington Shore Adult Fish Ladder (BO3) .....	72
C5. Bonneville Washington Shore Ladder Vertical Slots (BO4) .....	73
C6. Clark Flat Acclimation Site (CFJ).....	74
C7. Easton Acclimation Site (ESJ) .....	75
C8. Little Goose Dam (GOJ) .....	76
C9. Lower Granite Dam Adult Fish Ladder and Trap (GRA).....	77
C10. Lower Granite Dam Juvenile Fish Facility (GRJ) .....	78
C11. Ice Harbor Fish Ladders and Full Flow Bypass (ICH) .....	79
C12. Jack Creek Acclimation Site (JCJ).....	80
C13. John Day Dam (JDJ) .....	81
C14. Lower Monumental Dam (LMJ).....	82
C15. McNary Oregon Shore Ladder (MC1) .....	83
C16. McNary Washington Shore Ladder (MC2).....	84
C17. McNary Juvenile Fish Facility (MCJ).....	85

C18. Priest Rapids Dam Fish Ladders (PRA).....	86
C19. Prosser Fish Ladders and Sampling Facility (PRO).....	87
C20. Rock Island Dam Fish Ladders (RIA).....	88
C21. Rocky Reach Dam Adult Fishway (RRF).....	89
C22. Roza Dam Adult Fishway (RZF) .....	90
C23. Wells Dam Fish Ladders (WEA) .....	91
C24. Interrogation Site Configuration History .....	92
C25. Interrogation Site Operations History .....	130
Appendix D. Columbia Basin Hydrologic Unit Code (HUC) Maps .....	134
D1. Columbia Basin Hydrologic Unit Codes (USGS HUC3).....	135
D2. Idaho State Hydrologic Unit Codes (USGS HUC4).....	136
D3. Oregon State Hydrologic Unit Codes (USGS HUC4).....	137
D4. Washington State Hydrologic Unit Codes (USGS HUC4).....	138
Appendix E. Perpetual Day-of-Year (DoY) Calendars .....	140
E1. Perpetual DoY Calendar — Non-Leap Years.....	140
E2. Perpetual DoY Calendar — Leap Years.....	141

# I. 2009 Changes

The following is a list of significant changes made to the *2004 PIT Tag Specification Document* resulting in this *2009 PIT Tag Specification Document*:

1. Changed “2004” year references to “2009” throughout.
2. Section I now contains the list of changes from the previous document. Section II now contains the Program Overview.
3. Section II: Overview – Modified the “PIT Tag Data Event Model” and expanded the description.
4. Section II: Request PIT Tag Distribution – Removed section.
5. Section III: Updated all occurrences of “**Tagging File**” to “**Tag Data File**”, “**Coil ID**” to “**Antenna ID**”, “**Checksum**” to “**Transceiver ID**”, and “**Monitor**” to “**Antenna Group**”.
6. Section III: Updated the COORDINATOR ID tag header record definition to include references to a “long term project” as agreed to by the PTSC in 2005.
7. Section IV: Removed the redundant Tag, Release, Recovery Location table sorted by River KM.

# II. Overview

## A. PIT Tag Information System Data Event Model

Passive Integrated Transponder (PIT) tags have been used since 1987 to monitor the movement and behavior of anadromous salmonids in the Columbia and Snake River basins. The Columbia Basin PIT Tag Information System (PTAGIS) was implemented in 1991 to manage the collection, correlation, and exchange of Columbia Basin PIT tag data. PTAGIS encompasses dedicated data collection software, a centralized relational database management system, and standardized data descriptions and reporting processes. In 2002, the scope of the Columbia Basin PTAGIS program expanded to include entries for resident and semi-anadromous stocks of rainbow and cutthroat trout, bull trout, lamprey, sturgeon, and other species.

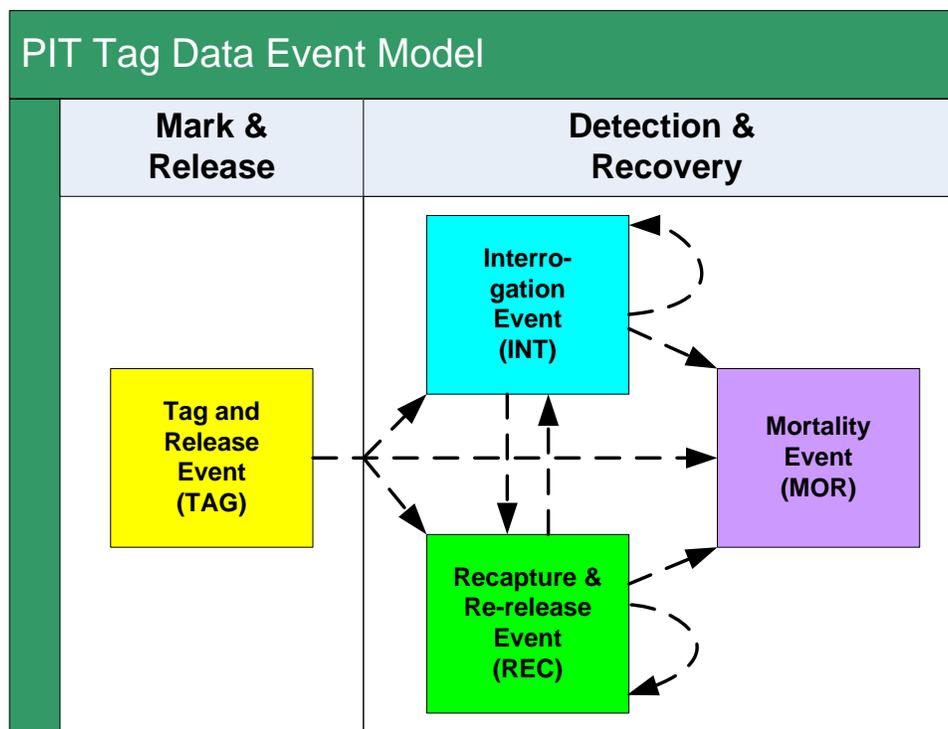


Figure 1: PIT Tag Data Event Model

Figure 1 illustrates the four general classes of PIT tag events represented in the PTAGIS database. First, every unique PIT tag code in the database is expected to have a single **Tag and Release Event**. This event is stored as a separate record in the database and is represented by **record type “TAG”**.

The second and third events, if they occur, happen subsequent to release. PIT-tagged fish may be physically recaptured one or more times, represented by **record type “REC”**. Each recapture is a separate **Recapture and Re-release Event**, and each of these events has a separate entry in the PTAGIS database. If, during a recapture event, a PIT-tagged fish dies, or a PIT tag from a previously released fish is recovered, then the observed or inferred death is recorded as a **Mortality Event (record type “MOR”)**, and the PTAGIS database receives a single entry for each such event. Each of these events, in addition to the **Tag and Release Event**, is recorded and reported to PTAGIS in a **Tag Data File**. A single Tag Data File may contain entries for any one, two, or all three of the **Tag and Release, Recapture and Re-release, and Mortality** events.

In addition, fish may be interrogated one or more times as they pass fixed interrogation locations, represented by **record type “INT”**. PIT tag interrogation systems are deployed at numerous locations throughout the Columbia and Snake River basins. The tag codes of PIT-tagged fish are passively detected when the fish swim through or past one or more transceiver antennas at these locations. Each of these passive interrogations is recorded as an **Interrogation Event**, and entered into an **Interrogation File**. Many interrogation sites employ one or more groups of antennas, potentially resulting in multiple detections of an individual PIT tag per site. In addition, a single anadromous fish may encounter, and be passively detected at, multiple interrogation sites as the fish migrates downstream to the ocean, and yet again as it returns to freshwater to spawn. Most interrogation sites maintained by PTOC, and many of the sites maintained by other entities, detect essentially 100% of the PIT-tagged fish passing through the multiple antennae deployed at these sites. By default, every interrogation site is expected to operate to provide continuous and consistent detection capabilities, and the site’s Data Steward is responsible for documenting any conditions that reduce or impact those capabilities.

The design of the PTAGIS database has evolved to incorporate, relate, and report detailed information about PIT-tagged fish, using the four events defined in the PIT Tag Data Event Model. This Specification Document has been prepared to ensure that all PIT tag data entered into, and retrieved from, the PTAGIS database are consistent with the Model. Database flexibility exists to modify data inputs as the model evolves. However, all proposed changes to this document must be reviewed annually by the PIT Tag Steering Committee (PTSC). Review and modification of this Specification Document will occur annually prior to February, as PTAGIS project priorities and resources allow. Questions concerning this document should be addressed to the PTSC. (See **PIT Tag Steering Committee Members, 2009** in Section IV.)

---

## **B. Data Use and Ethics**

At the March 24, 2004 PIT Tag Steering Committee meeting, the PTSC agreed to formalize the expectations of the community for the use of the PTAGIS data set. The consensus guidelines follow:

### **Those who submit data:**

1. Data contributors recognize and accept that their data submitted to PTAGIS are immediately available to other researchers and resource managers, who can use these data for their own, unpublished, analyses.
2. All data submitted to PTAGIS are associated with a Tag Data Coordinator, who can be contacted in order to verify the integrity of those data.
3. All data in the PTAGIS database are assumed to be preliminary, and as such unsuitable for formal analysis and review, until and unless the appropriate Tag Data Coordinator verifies the integrity of those data.
4. Data users will contact the appropriate Tag Data Coordinator(s) prior to including, summarizing, or referencing those data in any publication other than for internal distribution. This includes both peer-reviewed and non-reviewed documents. Data users will contact the Tag Data Coordinators in order to:
  - a) Obtain verification and context for data;
  - b) Secure appropriate permissions (in writing) prior to submission of this data for publication; and
  - c) Arrange appropriate acknowledgements, citations and/or authorships.

### **Those using data:**

The Data User is expected to contact the appropriate Tag Data Coordinator(s) prior to using data in any literature for other than internal distribution (both reviewed and non-reviewed documents) in order to:

- a) Provide verification and context for data;
- b) Secure appropriate permissions (in writing) prior to submission of this data for publication; and
- c) Arrange appropriate acknowledgements, citations and/or authorships.

---

## C. Procedure to Request a New Validation Code

Tag Data Coordinators are responsible for selecting the appropriate codes to use in marking, releasing and recapturing fish.

If Tag Data Coordinators require new codes in order to set up a new tagging, release, recapture or interrogation site, they should submit the new code request to their organization's PIT Tag Steering Committee member for review and approval by the PTSC and inclusion into the next Specification Document. (See **PIT Tag Steering Committee Members, 2009** in Section IV.)

If a Tag Data Coordinator has no PTSC representative, s/he may contact the PIT Tag Operations Center for assistance in setting up a new code.

---

## D. Separation by Code Support

### Introduction

PIT tags have been used to track the movement of anadromous salmonids in the Columbia Basin since 1987. The automated PIT tag interrogation systems installed at hydroelectric dams within the Basin are integral to this mark/recapture system. Many of the smolts (including PIT-tagged fish) that approach these dams are diverted, concentrated, and routed through Juvenile Bypass Systems (JBSs) away from the turbines. The bypass systems at Lower Granite, Little Goose, Lower Monumental, and McNary dams include Juvenile Fish Facilities (JFFs), operated by the US Army Corps of Engineers (COE), from which smolts are collected and transported around the downstream dams. The bypass systems at these four sites, and at John Day and Bonneville dams, also include Juvenile Monitoring Facilities (JMFs); subsamples of fish are regularly diverted to the JMF and inspected to determine the magnitude, species composition, and condition of the collected population. Fish entering the various juvenile fish and/or monitoring facilities are routed through a series of flumes and pipes. These various routes are equipped with groups of PIT tag detection antennas, and provide a convenient and effective method to passively and non-lethally observe previously-tagged smolts as they migrate downstream.

Prior to 1993, the interrogation of PIT-tagged fish had no affect on the disposition of those fish as they migrated through the JFF. During those years, the majority of smolts collected at COE JFFs were transported below Bonneville Dam, and so most PIT-tagged fish were interrogated at no more than a single site. Beginning in 1993, control gates, activated by the detection of a PIT tag, were systematically employed at Lower Granite and Little Goose dams to return any PIT-tagged to the river, rather than to a barge or truck. PIT tag control gates were first employed at Lower Monumental Dam in 1994, and in 1995 at McNary dam. Returning tagged fish to the river increases the probability of multiple downstream detections, a key criterion for the generation of reach survival estimates.

Since 1997, PIT Tag Separation by Code (SbyC) activities have been implemented at the JFFs of various COE projects. In contrast to the diversion of any and all detected PIT-tagged fish, the SbyC technology allows the controlled segregation of individual marked fish as they are routed through a JFF. The SbyC technology has been used to satisfy both fisheries research and

management objectives. The National Marine Fisheries Service (now NOAA Fisheries) developed the SbyC protocol, including the creation of the MULTIMON.EXE software to link the tag recognition and segregation actions. A typical use of SbyC is to separate and sample individual marked fish from the general population of tagged and non-tagged animals. Another application of the SbyC technology is to divert a known proportion of a marked cohort either to or away from transportation vessels at a JFF, as part of a controlled study design. SbyC technology was first used to divert adult PIT-tagged fish at the Lower Granite Dam Adult Trap in 1997, and at the Bonneville Dam Adult Fish Facility in 2000.

## **PIT Tag Separation by Code in the Columbia Basin**

The PIT tag Separation by Code (SbyC) process allows researchers to selectively, automatically, and passively separate individual tagged fish from the general population as they swim or are swept through various juvenile and adult fish passage facilities in the Columbia and Snake rivers. Typical SbyC study objectives include detaining selected fish in a holding tank for further examination, or routing target fish directly to/from a transportation vessel. Computerized detection systems at these facilities recognize individual target fish as they are interrogated, and automatically send instructions that shunt the target fish to the requested destination. The desired SbyC action can be applied to an entire population of tagged fish, a proportion of that population, or a predefined number of individuals. Collection quotas can be set to limit the number of fish sampled, both daily and over the course of the study. Each SbyC action can be scheduled for a specified number of hours or days, or a specified pattern of days. Multiple populations can be identified and segregated at a given site, and separate SbyC actions can be assigned to each group at that site.

Please refer to <http://www.ptagis.org/ptagis> (and navigate to the Support → SbyC section) for details regarding the PIT tag Separation by Code capabilities at the various juvenile and adult passage facilities. If you have any questions about SbyC activities at these locations, please contact Dave Marvin at the *PIT Tag Operations Center* (503.595.3100). If you are contemplating an SbyC study of your own, please refer to the SbyC Coordination Overview.

## **SbyC Coordination Overview**

One requirement of a successful Separation by Code (SbyC) study is the coordination of that study with other Columbia Basin research and management programs. The successful study must also take into account the different capabilities and constraints of the SbyC facilities at the various hydroelectric projects. And, the successful SbyC program requires careful, coordinated implementation of the study parameters. All three of these coordination components must be addressed before the initiation of the SbyC study. The scope and duration of these coordination efforts will vary by study, but should generally be prioritized by "**Program**", "**Project**", and then "**Study**".

## **Program Coordination**

There are at least two, and potentially four, steps to coordinate SbyC projects at the regional, or Program level. All researchers must coordinate their prospective SbyC studies through the Columbia Basin Fish Passage Advisory Committee (FPAC), the regional forum for fisheries management and research. Each study must also be coordinated with the Columbia Basin PIT Tag Information System (PTAGIS). The PTAGIS program includes the PIT Tag Operations

Center (PTOC), which operates and maintains the Region's main stem PIT tag interrogation systems, including the SbyC components. Additionally, all research in the Columbia Basin is subject to the constraints of the Endangered Species Act (ESA). Essentially all SbyC activities will impact, directly or otherwise, one or more stocks of salmon or steelhead listed under the ESA, and must be covered by an ESA permit. Finally, SbyC activities are conducted at dams operated by the Army Corps of Engineers (COE), and may require coordination through the appropriate COE District office. Depending on the scope and complexity of the SbyC request, coordination with FPAC, PTAGIS, and the COE may require a lead time of anywhere from one month to one year. The initiation of any necessary ESA permit process requires a minimum of 90 days.

If your research targets another researcher's tagged fish, then you have the additional responsibility of first obtaining the permission of the original Tag Data Coordinator.

### **Project Coordination**

All researchers must coordinate their SbyC studies with the COE site biologist at each of the various fish facilities. At the juvenile fish facilities at Lower Granite (LGR), Little Goose (LGO), Lower Monumental (LMN), McNary (MCN), John Day (JDA), and Bonneville (BON) dams, prospective researchers must also contact the state-contracted Smolt Monitoring Program Leader. Researchers contemplating SbyC research at the Lower Granite Dam adult trap, operated by NOAA Fisheries (NMFS), must coordinate those activities with the NMFS on-site personnel. Any SbyC activity at the Bonneville Adult Fish Facility must be coordinated through FPAC. The amount and extent of coordination necessary at the Project level may vary from simple acknowledgement to a complex approval and scheduling process. Initial contact at the Project level should occur concurrent with, or soon after, the initial Program coordination.

### **Study Coordination**

All SbyC studies are implemented through the PIT Tag Operations Center (PTOC). At the Study level, researchers will define the individual tag codes of interest, and provide PTOC with any necessary scheduling information. PTOC requests a minimum of two weeks lead time between the receipt of the tag codes and scheduling information, and the implementation of the SbyC study. This lead time is in addition to the scoping and procedural development coordinated with PTOC through the Program-level coordination described above.

# III. Data File Definitions

PTAGIS recognizes three types of data files: **Tag Data**, **MiniMon Interrogation**, and **MultiMon Interrogation**. All files must be in ASCII format and cannot contain non-printable characters (*e.g.*, <ESC> or <TAB>). Within each data class, all records must comply with the following specifications.

---

## A. Tag Data File

A **Tag Data File** is used to provide information on the tagging and release of newly marked fish. The **Tag Data File** may also include information on the *recapture* and/or *mortality* of previously PIT-tagged fish (See Recapture and Mortality definitions in the *Glossary of Terms* in Section V. PTAGIS will accept Tag Data files created by the **P3.EXE** data entry and validation software. The current version of **P3.EXE** is available from the PTAGIS Web Portal at [www.ptagis.org](http://www.ptagis.org).

A Tag Data File consists of eight possible record categories. (1-4) PTAGIS requires that the Tag Data File contain a single record each of the **File Type**, **Program Version**, **Session or Project Message**, and **End of File** record types, and (5) exactly 19 **Header** records. (6) A Tag Data File contains zero or more **Tag Detail** records. (7) The inclusion of one or more **Note** records is optional. (8) A **Variable Release Time Definition** record is required for each unique release time variable used in one or more **Tag Detail** records.

In the ASCII output file, each **Tag Detail** record is distinguished by a right justified sequence number in columns 1-4. The contents of all other record types are preceded by spaces (ASCII character 32dec./ØH2Ø) in columns 1-4. The **File Type**, **Program Version**, **Header**, and **End of File Record** definitions are all formatted as follows: the record declaration begins in column five, a colon (":") appears in column 36, and the record contents are displayed beginning in column 38. The individual Tag Data File record types are defined in detail below.

### 1. File Type Record

**Format:** "FILE TYPE" starting in column 5; a colon (:) in column 36; and "TAGGING" starting in column 38. This record is generated by the software on the first line of the ASCII output file. This is a required record.

```
FILE TYPE                               : TAGGING
```

## 2. Program Version Record

The only valid program version declaration is:

- PITTAG3 (version 1.0 or greater)

This record is generated by the software on the second line of the ASCII output file. This is a required record.

## 3. Session Message

Text, 76 character input maximum. This required record is formatted by the software; and is delimited by dashed sequences on lines three and five of the ASCII output file. While the exact record content is left to the user's discretion, the Session Message should provide a summary of the purpose or scope of the tagging project.

```
-----  
SPCA habitat utilization study in Swimin River drainage, 2009  
-----
```

## 4. Header Records

The label contents, order, and format of the header records are standardized and cannot be changed. These are required records. The mandatory inclusion of record contents may be required, as individually noted.

	FIELD NAME	CONTENT	MAND./OPT.
a.	<b>FILE TITLE</b>	xxxYYDDD.zzz	<b>Mandatory</b>
	This required format is auto-generated by <b>P3.EXE</b> and consists of a valid tagging data coordinator's ID (initials) and the day-of-year (YYDDD). The contents of the extension (zzz) are required but left to the discretion of the tagging supervisor. However, as all data files submitted to PTAGIS must have unique titles, it is imperative that the "filename.extension" combination not conflict with any other PIT tag data file generated within the Columbia Basin.		
b.	<b>TAG DATE</b>	MM/DD/YY hh:mm	<b>Mandatory</b>
	This field records the date the tag data was collected. The value is generated by the software, and defaults to the current computer date and time. This value can be modified in <b>P3.EXE</b> . When the Tag Data File contains records of PIT tag releases or recaptures/mortalities collected over multiple days then, by convention, the <b>Tag Date</b> field should contain the first day of sampling effort, the <b>Release Date</b> field (see below) should reference the last day of sampling effort, the actual dates of PIT tag release/recovery should be denoted using <b>Variable Release Times</b> (see below), and the procedure should be documented in a session <b>Note</b> (see below) preceding the first <b>Tag Detail</b> record (see below).		

	<b>FIELD NAME</b>	<b>CONTENT</b>	<b>MAND./OPT.</b>
c.	<b>TAGGER</b>	Lastname I	<b>Mandatory</b>
		This field records the tagging supervisor or primary tagger's last name, a space, and the tagger's first initial, to a maximum of 15 characters.	
d.	<b>HATCHERY SITE</b>	[Valid Hatchery]	Optional
		When fish are obtained from a hatchery, this field contains the four-character abbreviation from the domain of hatchery codes (See <b>Hatchery Codes</b> in Section IV.)	
e.	<b>STOCK</b>	Text	Optional
		This field contains a description of the genetic or geographic stock of fish, to a maximum of 15 characters.	
f.	<b>BROOD YR</b>	Nn	Optional
		This field contains the last two digits of the calendar year when eggs were deposited or collected, if known.	
g.	<b>MIGRATORY YR</b>	Nn	<b>Mandatory</b>
		This field contains the last two digits of the earliest possible calendar year when juvenile anadromous fish will out-migrate. For a recapture/mortality event for resident species, or if anadromous adults are tagged, this value references the current calendar year.	
h.	<b>TAG SITE</b>	[Valid Tag Site]	<b>Mandatory</b>
		This field contains a code, from the domain of valid Tag and Release Site codes, denoting the site where the fish were marked (See <b>Tag, Release, and Recovery Site Codes</b> in Section IV.) When reporting a recapture or mortality event, this code designates the recapture or mortality site.	
i.	<b>RACEWAY/TRANSECT</b>	Text	Optional
		This field contains an abbreviated description of the sampling location, to a maximum of six characters.	
j.	<b>CAPTURE METHOD</b>	[Valid Capture Method]	<b>Mandatory</b>
		This field contains a code, from the domain of valid Capture Method codes, denoting the method by which the fish were collected. (See <b>Capture Method Codes</b> in Section IV.)	
k.	<b>TAGGING TEMP</b>	nn.n	<b>Mandatory</b>
		This field contains the temperature (00.0-25.0°C, inclusive) of the tagging water. A value of <b>25.0</b> should be entered if the water temperature is not obtained, or the value varies over the period of time the fish are tagged.	

	<b>FIELD NAME</b>	<b>CONTENT</b>	<b>MAND./OPT.</b>
<b>l.</b>	<b>POST TAGGING TEMP</b>	nn.n	Optional
	When there is a significant time interval between the marking and release of PIT-tagged fish, this field contains the temperature (00.0-25.0°C, inclusive) of the water in the post-tagging holding facilities ( <i>e.g.</i> , an outdoor raceway).		
<b>m.</b>	<b>RELEASE WATER TEMP</b>	nn.n	<b>Cond. Mand.*</b>
	This field contains the temperature (00.0-25.0°C, inclusive) of the water the tagged fish were released into. This field is required when the Tag Data File provides Release Information. A value of <b>25.0</b> should be entered if the water temperature is not obtained, or the value varies over the period of time the fish are released.		
<b>n.</b>	<b>TAGGING METHOD</b>	[Valid Tagging Method]	<b>Mandatory</b>
	This field contains the four-character code, from the domain of valid Tagging Method codes, denoting the method by which PIT tags were inserted into the fish. If all Tag Detail records in the file refer to the recapture or mortality of fish previously tagged, the value is “NONE”. (See <b>Tagging Method Codes</b> in Section IV.)		
<b>o.</b>	<b>ORGANIZATION</b>	[Valid Organization]	<b>Mandatory</b>
	This field contains the code, from the domain of valid Organization codes, denoting the agency or entity responsible for the PIT tag marking or recovery activity. (See Error! Reference source not found. in Section IV.)		
<b>p.</b>	<b>COORDINATOR ID</b>	[Valid Coordinator ID]	<b>Mandatory</b>
	This field contains the code, from the domain of valid Coordinator ID codes, identifying the individual or “long term” research program. The person associated with the COORDINATOR ID is responsible for the marking or recovery operation utilizing the PIT tags. He or she is also responsible for responding to inquiries from other entities regarding those operations. (See <b>Rearing Type Codes</b> in Section IV.) PTAGIS users must request new COORDINATOR ID codes from their PIT Tag Steering Committee representative. (See <b>PIT Tag Steering Committee Members, 2009</b> in Section IV.)		

	<b>FIELD NAME</b>	<b>CONTENT</b>	<b>MAND./OPT.*</b>
q.	<b>RELEASE DATE</b>	MM/DD/YY hh:mm	<b>Cond. Mand.*</b>
	<p>This field contains the date and time the tagged fish were released, in Pacific Standard Time (PST). During a recapture event, this code designates the re-release date. This record is required when the Tag Data File provides Release Information. When the Tag Data File contains records of PIT tag releases or recaptures/mortalities collected over multiple days then, by convention, the <b>Tag Date</b> field (see above) should contain the first day of sampling effort, the <b>Release Date</b> field should reference the last day of sampling effort, the actual dates of PIT tag release/recovery should be denoted using <b>Variable Release Times</b> (see below), and the procedure should be documented in a session <b>Note</b> (see below) preceding the first <b>Tag Detail</b> record (see below).</p>		
r.	<b>RELEASE SITE</b>	[Valid Release Site]	<b>Cond. Mand.*</b>
	<p>This field contains a code (between four and six characters) denoting the site where the tagged fish were released. When the file contains records detailing mortality or recapture events, this code denotes the mortality site or the re-release site. This field is required when the Tag Data File provides Release Information (See <b>Tag, Release, and Recovery Site Codes</b> in Section IV).</p>		
s.	<b>RELEASE RIVER KM</b>	nnn(.nnn)	<b>Cond. Mand.*</b>
	<p>This field contains a series of three-digit values, separated by periods, corresponding to the lengths of river segments (in kilometers) between the mouth of the Columbia River and the release site. The total length of the field can not exceed 27 characters. This field is required when the Tag Data File provides Release Information (See <b>Tag, Release, and Recovery Site Codes</b> in Section IV).</p>		

**\*Cond. Mand. (Conditionally Mandatory):** If any of the four header fields related to Release Information (Release Water Temp, Release Date, Release Site, or Release River KM) is submitted with data, then all four of those header records must contain data. In addition, if Variable Release Times are declared and defined within the Tag Detail records, all four Release Information header records must be completed.

## 5. Tag Detail Records

Up to 9,999 Tag Detail records may appear in a Tag Data File.

FIELD NAME, DETAILS	COLUMN #	MAND./OPT.
<p>a. <b>SEQUENCE NUMBER</b></p> <p>This is a computer-generated value, incremented sequentially, and right-justified, with values between 1 and 9999, inclusive.</p>	1-4	<b>Mandatory</b>
<p>b. <b>PITCODE</b></p> <p>Left-justified, hexadecimal. Two general formats are permitted. The first consists of a 10-character hex tag code, optionally trailed by two spaces (32dec./ØH2Ø) and a two-character hex checksum value. This mask is characteristic of 400 kHz PIT tags. (The <b>P3.EXE</b> software recognizes and reports 400 kHz PIT tags, but does not compute or include the checksum value in the Tag Detail record.) The second format consists of a 14-character hex tag code comprised of a three-character hex country code, a period (ASCII 46dec./ØH2E), and a 10-character hex ID code; this mask is typical of 134.2 kHz ISO-compliant Duplex-B PIT tags. PTAGIS also recognizes a series of 10 periods as a null PITCODE value.</p>	7-20	<b>Mandatory</b> <sup>1</sup>
<p>c. <b>FORKLENGTH</b></p> <p>Fork length of fish. Integer, right justified, in millimeters.</p>	21-28	Optional
<p>d. <b>WEIGHT</b></p> <p>Weight of fish. Floating point numeric, right justified, and precise to a tenth of a gram.</p>	29-38	Optional
<p>e. <b>COMMENTS</b></p> <p>There are three classes of comments: Positional, Conditional, and Textual. These comments are used to describe specific characteristics of individual fish.</p>		

### 1. POSITIONAL COMMENTS

Only Positional Comments defined in this specification document may appear in columns 41-45 of the ASCII output file. The Positional Comments currently specified are as follows:

<b>A. SPECIES</b>	41	<b>Mandatory</b>
Single alpha-numeric character. (See <b>Species Codes</b> in Section IV.)		

<sup>1</sup> PIT tags can only be re-used in the Columbia River system if each tag is removed from the fish and the tag code is changed to ten periods (. . . . .), or the entire detail record is deleted from the Tag Data File prior to the submission of the file to PTAGIS. All other fields in the record should remain intact for future reference. PIT tags from recaptured fish CAN NOT be re-used, and MUST NOT be "dotted out."

FIELD NAME, DETAILS	COLUMN #	MAND./OPT.
---------------------	----------	------------

<b>B. RUN</b> Single alpha-numeric character. (See <b>Run Codes</b> in Section IV.)	42	<b>Mandatory</b>
----------------------------------------------------------------------------------------	----	------------------

<b>C. REARING TYPE</b> Single-character text. (See <b>Rearing Type Codes</b> in Section IV.)	43	<b>Mandatory</b>
-------------------------------------------------------------------------------------------------	----	------------------

For a list of the standard combinations of Species, Run, and Rearing Type Codes recognized by PTAGIS, (See

<b>D. RELEASE TIME VARIABLE</b> Two digits. These values allow users to specify multiple release times for Tag Detail records in a single file. Valid values are 00-99, inclusive. Each unique Release Time Variable used must have a corresponding Release Time Variable Definition that reports the actual date and time of release. (See <b>7. Variable Release Time Declaration Records</b> below.)	44-45	Optional
------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	-------	----------

<b>E. ADDITIONAL POSITIONAL COMMENTS</b> Var. Up to 45 columns of Additional Positional Comments, for use by individual research projects, may appear after column 45. These Additional Positional Comments are not recorded into the PTAGIS database.	Var.	Optional
-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	------	----------

<b>2. CONDITIONAL COMMENTS</b> Conditional Comments, also known as Flag Codes, are used to systematically catalog a variety of morphological, environmental, and logical factors associated with a specific tagged fish. Conditional Comments, if present, appear after any Additional Positional Comments and are preceded by a single vertical bar symbol (" ", ASCII 124dec./ØH7C). Individual Conditional Comments are delimited with a single space. Only Conditional Comments approved by the PTSC will be recognized by PTAGIS. (See <b>Conditional Comments (Flag Codes)</b> in Section IV.)	Var.	Optional
---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	------	----------

By default, the **Tag Detail Record** describes a new **Tagging** event. However, the presence of a specific Flag Code in the Tag Detail Record can denote either a **Recapture** or **Mortality** event, as described below.

**Recapture Events:** A recapture is defined as a previously PIT-tagged fish that is handled subsequent to the release event. The Tag Data File is used to record captures. The Flag code **RE** or **BT** must be added to each recapture tag record in the Tag Data File. If all of the tag records in the Tag Data File reference recaptured fish, then the Header records will also reference those Recapture Events. In such a case, for example, the Tag Site will actually denote the Recapture Site, and the Release Date will serve as the re-Release Date.

**Mortality Events:** A mortality is defined as a PIT tag that is recovered, with or without its host animal, subsequent to the tagged release of that animal. One of the defined mortality flag codes (**M**, **MB**, **MK**, **MS**, **L**, **SM**) must be added to each corresponding mortality tag record in the Tag Data File. PIT tags recovered from Mortality Events are to be returned to the PTOC, if possible. The death of tagged fish and/or the retrieval of those tags prior to release are not considered to be Mortality Events. In these circumstances, the original owner of the tag can remove ("dot-out") the reference to that tagging event in the original Tag Data File, submit the corrected file to PTAGIS, and then re-use the tag as part of a new tagging event.

**Adult Returns:** Anadromous PIT-tagged fish returning to spawning locations may be recorded as Tagging, Recapture, or Mortality events. Any salmon or steelhead that has returned to the Columbia River Basin from the Pacific Ocean is considered to be a "Returning Fish" and should be flagged with the "RF" code. Salmon and steelhead that are initially PIT-tagged as ocean returns should also be flagged with the "AT" code (Tagged as an Adult). In the case of all new tagging, recapture, or mortality events involving returning fish, the detail records should also be flagged with either an **MT** (for "Mature"), **KL** (for "Kelt"), **JA** (for "Jack"), or **MJ** (for "Minijack") life stage code, as appropriate.

FIELD NAME, DETAILS	COLUMN #	MAND./OPT.
<b>3. TEXTUAL COMMENTS</b> Textual Comments are separated from Conditional Comments by a single vertical bar symbol. If no Conditional Comments are present, Textual Comments are preceded by two vertical bar symbols "  ". This field can hold up to 50 alphanumeric characters, including ASCII punctuation. While the contents of this field are unregulated, by convention Textual Comments are intended as <i>ad hoc</i> annotations unique to individual tag detail records rather than a common descriptor duplicated in all detail records.	Var.	Optional

## 6. Note Records

Most Note Records are *ad hoc* annotations to the data file. Global comments pertaining to the tagging session are generally entered between the header and first Tagging Detail record, using the **Session Note** function in **P3.EXE**. Additional comments can be added within the Tagging Detail section during the tagging session. The format and content of all Note Records are ignored by PTAGIS.

## 7. Variable Release Time Declaration Records

**Format: VARIABLE RELEASE TIME DECLARATION:** (One required for each unique release time variable used in the Tagging Detail records.) The VRT declaration begins with an upper case "V" in column five, followed by a two-digit release variable (nn) in columns six and seven, an equals sign "=" in column eight, the two digit month (MM) in columns nine and 10, a slash (/) in column 11, the two digit day (DD) in columns 12 and 13, a slash (/) in column 14, the two digit year (YY) in columns 15 and 16, a space in column 17, the two digit military-style hour of release (hh, 00-23), in Pacific Standard Time, in columns 18 and 19, a colon (:) in column 20, and the two digit minutes (mm) of release in columns 21 and 22.

Vnn=MM/DD/YY hh:mm

*e.g.*, V01=04/08/09 16:45

When the Tag Data File contains records of PIT tag releases or recaptures/mortalities collected over multiple days then, by convention, the **Tag Date** field (see above) should contain the first day of sampling effort, the **Release Date** field (see above) should reference the last day of sampling effort, the actual dates of PIT tag release/recovery should be denoted using **Variable Release Times** (see above), and the procedure should be documented in a **session Note** (see above) preceding the first **Tag Detail** record (see above).

## 8. End of File Record

The End of File record uses the same positional formatting as HEADER records. The record is created by **P3.EXE** and is required by PTAGIS as the last record in the file.

**Format:** "CLOSE DATE" beginning in column 5, a colon (":") at column 36, and a date/time stamp (MM/DD/YY hh:mm) starting at column 38. The time is reported in Pacific Standard Time (PST).

CLOSE DATE : 06/09/09 14:50

## Example 1. Tag Data File with Predominantly New Tags

```

FILE TYPE                : TAGGING
PROGRAM VERSION          : PITTAG3 1.4.5
-----
TAGGING FILE EXAMPLE FOR 2009 SPECIFICATION DOCUMENT
-----

FILE TITLE                : ATL09118.KF1
TAG DATE                  : 04/28/09 04:30
TAGGER                    : LOSER A
HATCHERY SITE            :
STOCK                     :
BROOD YR                  :
MIGRATORY YR              : 09
TAG SITE                  : KILFAT
RACEWAY/TRANSECT         :
CAPTURE METHOD            : SCREW
TAGGING TEMP              : 8.9
POST TAGGING TEMP        :
RELEASE WATER TEMP       : 8.9
TAGGING METHOD             : HAND
ORGANIZATION              : SPCA
COORDINATOR ID           : ATL
RELEASE DATE              : 04/28/09 05:15
RELEASE SITE              : KILFAT
RELEASE RIVER KM         : 999.748.048

MARKING AT KILLUM FALLS TRAP FOR AMERICAN SPCA. ONLY SALMONIDS MARKED.
ALL FISH CAPTURED WERE TREATED WITH RESPECT AND WITHOUT CONSIDERATION OF
EXTERNAL APPEARANCE, ECONOMIC IMPORTANCE, OR POSITION IN FOOD CHAIN.

CLIP #Z194

1  3D9.1F5F6B187F      231          32H01      | AD |
2  3D9.1F565D5A54      223          32H01      | AD LV |
3  .....              133          32H01      | AD L |

THE BRUTE RESPONSIBLE FOR THE MURDER ABOVE HAS BEEN FIRED.

4  3D9.1F56304D0E      111          11H01      | AD RV |
5  3D9.200F03034B      118          11W01      | |
6  3D9.1F5F47310C      190          32H01      | AD 1> |
7  3D9.1F5627D4FA      213          32H01      | AD LV |
8  3D9.200F0E3112      240          32H01      | AD |

< TIME CHECK > 04 APRIL 2009 AT 07:02

9  3D9.200F0E6E55      246          32W02      | RE |
10 3D9.1F57080B77      262          32H02      | AD LV
11 3D9.200F1D072D      186          32W02      | GS |
12 3D9.524336416C      224          110.7      32H02RART4| AD <2 PB| ROCKING "T" FREEZE BRAND
.
.
1234 3D9.12349809D4      137          15.6      90U      ||COCKROACH. BIG SUCKER.

WITHOUT A VARIABLE RELEASE DECLARATION, THE PREVIOUS RECORD USES THE
DEFAULT RELEASE DATE/TIME PROVIDED IN THE HEADER.

1235 3D9.42D980FD14      137          15.6      11H05      ||
1236 3D9.5612FE09D3      104          11H05      ||
1237 3D9.7DCA27F3B1      185          25.1      32W05      ||

V01=04/28/09 06:30
V02=04/28/09 07:20
V03=04/28/09 07:50
V04=04/28/09 07:55
V05=04/28/09 08:15

CLOSE DATE                : 04/28/09 09:34

```

## Example 2. Tag Data File Containing Recaptures of Previously-Tagged Fish

```

FILE TYPE                : TAGGING
PROGRAM VERSION          : PITTAG3 1.4.5
-----
2009 SPCA HABITAT UTILIZATION AND BEHAVIOR STUDY; PIT TAG RECAPTURES
-----

FILE TITLE               : ATL09091.KF1
TAG DATE                 : 04/01/09 10:30
TAGGER                   : LOSER A
HATCHERY SITE           :
STOCK                    :
BROOD YR                 :
MIGRATORY YR            : 09
TAG SITE                 : KILFAT
RACEWAY/TRANSECT       :
CAPTURE METHOD           : SCREW T
TAGGING TEMP            : 10.0
POST TAGGING TEMP       :
RELEASE WATER TEMP      : 10.0
TAGGING METHOD           : NONE
ORGANIZATION            : SPCA
COORDINATOR ID          : ATL
RELEASE DATE            : 06/01/09 12:00
RELEASE SITE            : KILFAT
RELEASE RIVER KM        : 999.748.048

SEASONAL SUMMARY OF PIT TAG RECAPTURES AT KILLUM FALLS TRAP.  SAMPLING
OCCURRED 24x7 BETWEEN 4/1/09 AND 6/1/09, AS SHOWN IN THE TAG DATE AND
HEADER RELEASE DATE FIELDS.  TRAP WAS CHECKED DAILY.  COLLECTED FISH WERE
RE-RELEASED 100M ABOVE TRAP.

WHEN USING P3.EXE, A NOTE IN THE TAG DETAIL SECTION IS LOGICALLY
ASSOCIATED WITH THE TAG DETAIL RECORD IN WHICH IT IS CREATED, BUT THE NOTE IS
REPORTED BELOW THAT TAG DETAIL RECORD IN THE ASCII TAGGING FILE.  IF TAG DETAIL
NOTES ARE CREATED AS VISUAL, RATHER THAN LOGICAL, CUES, THEN IT'S MORE LEGIBLE TO
REFERENCE THOSE RECORDS HERE IN THE SUMMARY.  SO...

THE ADULT IN RECORD #5 WAS RETRIEVED FROM THE MOUTH OF THE TRAP, SCANNED,
AND ALLOWED TO RECOVER BEFORE BEING RE-RELEASED UPSTREAM.

REGARDING THE FISH IN RECORD #1236: HE'S DEAD, JIM.

1  3D9.1F5F6B187F      231          32H01      | RE AD |
2  3D9.1F565D5A54      223          32H01      | RE AD LV |
3  3D9.1E004238E5      133          15U02      | RE |
4  3D9.1F56304D0E      111          15H03      | RE AD RV |
5  3D9.200F03034B      818          15W04      | RE RF MT MA | PRE-SPAWNER
6  3D9.1F5F47310A      190          32H05      | RE AD 1> |

...
...

1235 3D9.42D980FD14    137          15.6 45W78  | RE |
1236 3D9.5612FE09D3    104          15H78      | RE AD >2 M | IMPINGED BY DEBRIS
1237 3D9.7DCA27F3B1    185          25.1 32W79  | RE |

V01=04/02/09 12:00
V02=04/04/09 12:00
V03=04/05/09 12:00
V04=04/06/09 12:00
V05=04/08/09 08:15
...

V78=05/29/09 12:00
V79=05/30/09 12:00

CLOSE DATE                : 06/28/09 09:34

```

### Example 3. Tag Data File Containing Mortalities of Previously-Tagged Fish

```

FILE TYPE                : TAGGING
PROGRAM VERSION          : PITTAG3 1.4.5
-----
2009 RETURNS TO SWIMIN HATCHERY
-----

```

```

FILE TITLE               : ATL09091.SIH
TAG DATE                 : 04/01/09 10:30
TAGGER                   : LOSER A
HATCHERY SITE           :
STOCK                    :
BROOD YR                 :
MIGRATORY YR            : 09
TAG SITE                 : SWIH
RACEWAY/TRANSECT       :
CAPTURE METHOD           : HATCH
TAGGING TEMP            : 10.0
POST TAGGING TEMP       :
RELEASE WATER TEMP      : 10.0
TAGGING METHOD           : NONE
ORGANIZATION            : SPCA
COORDINATOR ID         : ATL
RELEASE DATE            : 09/01/09 12:00
RELEASE SITE            : SWIH
RELEASE RIVER KM        : 999.888.777

```

SEASONAL SUMMARY OF PIT TAG RETURNS TO SWIMIN HATCHERY IN 2009. COLLECTION INCLUDED NATURAL AND SUPPLEMENTATION STOCKS. THESE WERE SEGREGATED, TUBE-SCANNED, AND RETURNED TO THE SWIMIN RIVER DAILY.

ALL HATCHERY STOCK WERE COLLECTED, SCANNED, AND SPAWNED. ADULTS WERE PONDED FROM 4/01/09 THROUGH 9/01/09, AS SHOWN IN THE TAG DATE AND HEADER RELEASE DATE FIELDS. THE ACTUAL DATES OF TAKE OR RE-RELEASE ARE REPORTED IN THE DETAIL RECORDS.

1	3D9.1F5F6B187F	834	12H01	RF MT RE M
2	3D9.7F7F5D5A54	982	12H01	RF MT RE M
3	3D9.7F7E4238E5	913	12H02	RF MT RE M
4	3D9.1F56304D0E		15U03	RF MT RE   NATIVE
5	3D9.200F03034B	1043	12H04	RF MT RE M
6	3D9.1F5F47310A	967	12H05	RF MT RE M
	...			
	...			
272	7F7D629176		15U78	RF MT RE   NATIVE
273	3D9.5612FE09D3	982	12H78	RF MT RE M
274	3D9.7DCA27F3B1	991	12H79	RF MT RE M

```

V01=04/09/09 12:00
V02=04/09/09 12:00
V03=04/19/09 12:00
V04=04/20/09 12:00
V05=04/21/09 09:15
...
...
V78=08/19/09 12:00
V79=08/28/09 12:00

```

```

CLOSE DATE                : 09/21/09 15:12

```

---

## B. MiniMon Interrogation File

Interrogation files are computer-generated using the *MINIMON.EXE* program which can be downloaded from [www.ptagis.org](http://www.ptagis.org). The format is described below. Interrogation Site Codes, transceiver ID Codes, and Antenna ID codes must be defined by PTAGIS before data can be incorporated into the PTAGIS database.

Interrogation files consist of five record categories: **File Type**, **Start Message Records**, **Interrogation Data Records**, **Other Record Types**, and an **End of File Record**.

### 1. File Type Record

**Format:** "FILE TYPE" beginning in column 5; a colon (":") in column 36; and "INTERROGATION" starting in column 38. This record is generated by the software on the first line of the ASCII file. This is a required record.

FILE TYPE : INTERROGATION

### 2. Start Message Records

Like the File Type record, Start Message Records begin in column 5, followed by a colon (":") in column 36 and the correctly formatted value beginning in column 38.

FIELD NAME	FORMAT	MANDATORY
a. FILE TITLE	SSSYJJJ.Aaa	Mandatory
File Titles contain a maximum of 12 alpha-numeric characters. The format consists of a three-character site code (SSS), two-digit year (YY), and three-digit day-of-year (JJJ). The file extension (Aaa) is at least one and no more than three alphanumeric characters. This record is generated by the software on the second line of the ASCII file. This is a required record.		
b. FILE CREATED	DD Month YYYY AT HH:MM	Mandatory
Date and time (e.g./ 24 April 2009 AT 16:45). This record is generated by the software on the third line of the ASCII file. The format is in "little endian form", which is common to the vast majority of the world's countries. The format is space separated, beginning with the two digit day of the month, followed by the full month name followed by a four digit year, two digit hour based upon twenty-four hour clock time and two digit minutes of the hour. The date and time, in Pacific Standard Time, denotes when passive interrogation monitoring began for this file. This is a required record.		
c. PROGRAM VERSION	MINIMON v.1.x.x	Optional

### 3. Interrogation Data Records

Individual records, if present, consist of the following required components. Optional

FIELD NAME	FORMAT	COLUMN #
a. DATA TOKEN	" " (a "vertical bar" or "pipe" symbol, ASCII 124dec./ØH7C)	1
b. PORT ID	2-char Hexadecimal	3-4
c. DATE	MM/DD/YY	6-13
d. TIME	hh:mm:ss (PST)	15-22
e. PITCODE	14-char (3.10) hexadecimal	24-37
f. TRANSCEIVER ID	"XX" or FS1001M transceiver ID	39-40
g. ANTENNA ID	2-char hexadecimal	42-43

### 4. Other Record Types

- a. Status and Warning Messages Optional  
Records prefaced with a tilde ("~") in the first column contain information regarding site and transceiver operations.
- b. Annotations Optional  
Records prefaced with an exclamation point ("!") contain manually-appended annotated notes and documentation.
- c. Buffered Records Optional  
Records prefaced with an asterisk ("\*") have been downloaded from a transceiver buffer and contain date and time stamps assigned by the transceiver's clock.
- d. Blank Lines Optional

## 5. End of File Record

**FILE CLOSED                      DD MONTH YYYY AT HH:MM                      Mandatory**

Date and time (*e.g.*, 24 April 2009 AT 16:45). The format is identical to the FILE CREATED record, beginning with the two digit day of the month, followed by the full month name followed by a four digit year, two digit hour based upon twenty-four hour clock time and two digit minutes of the hour. The date and time, in Pacific Standard Time, denotes when passive interrogation monitoring concluded. This is a required record generated by **MINIMON.EXE** on the last line of the ASCII file.

---

## C. MultiMon Interrogation File

The **MULTIMON.EXE** program was developed by the National Marine Fisheries Service (NOAA-Fisheries) for the interrogation of PIT-tagged fish at main stem Columbia and Snake River collection and sampling facilities. In addition to simply recording interrogation data, **MULTIMON.EXE** is designed to react to the presence of specific fish and trigger electrical or mechanical operations to control the routing of those fish through research facilities. This capability is a keystone of Separation by Code activities. The **MULTIMON.EXE** ASCII file output includes not only interrogation records, but configuration and diagnostic records relating to the program's logical processes. PTAGIS only recognizes MultiMon data collected at detection sites maintained by PTOC.

### Test Tags

Test tags are used to monitor the operation of an interrogation unit. There are two types of test tags. The first type is referred to colloquially as a stick tag, or formally as a Variable Reference Tag. These tags are usually embedded in a piece of wood and passed through the detection field of an antenna or antenna group. The second type of test tag is referred to colloquially as a timer tag or formally as a Fixed Reference Tag. These "tags" are passive, electronic devices powered by the electro-magnetic field of the interrogation unit they are testing. Each timer tag is permanently mounted in the unit and fires at a specified frequency.

**ALL TEST TAGS MUST BE REGISTERED WITH PTOC BEFORE USE.**

(See <http://www.ptagis.org/ptagis>; after logging in, select Services → Register Test Tags)

## Example 4. MiniMon Interrogation File

```
FILE TYPE           : INTERROGATION
FILE TITLE          : DOJ09121.C
FILE CREATED        : 30 APRIL 2009 AT 12:00
PROGRAM VERSION     : MINIMON v.1.5.3
```

```
~04/30/09 13:00:05
| 06 04/30/09 13:09:05 3D9.1BF0F0DC2F XX 10
| 05 04/30/09 13:09:06 3D9.1BF0F0DC2F XX 11
~04/30/09 14:00:05
~04/30/09 15:00:04
| 06 04/30/09 15:01:51 3D9.1BF0E974D5 XX 10
| 05 04/30/09 15:01:52 3D9.1BF0E974D5 XX 11
| 06 04/30/09 15:22:51 3D9.1BF0E59874 XX 10
| 05 04/30/09 15:22:52 3D9.1BF0E59874 XX 11
| 06 04/30/09 15:33:13 3D9.1BF0F123E1 XX 10
| 05 04/30/09 15:33:14 3D9.1BF0F123E1 XX 11
| 06 04/30/09 15:49:10 3D9.1BF0E677B0 XX 10
| 05 04/30/09 15:49:11 3D9.1BF0E677B0 XX 11
| 06 04/30/09 15:56:29 3D9.1BF0E68597 XX 10
| 05 04/30/09 15:56:30 3D9.1BF0E68597 XX 11
~04/30/09 16:00:03
| 06 04/30/09 16:07:42 3D9.1BF0F195C7 XX 10
| 05 04/30/09 16:07:43 3D9.1BF0F195C7 XX 11
| 06 04/30/09 16:07:44 3D9.1BF0E96F68 XX 10
| 06 04/30/09 16:33:06 3D9.1BF0F5D3EF XX 10
| 05 04/30/09 16:33:07 3D9.1BF0F5D3EF XX 11
~04/30/09 17:00:03
| 06 04/30/09 17:19:11 3D9.1BF0E67D24 XX 10
| 05 04/30/09 17:19:12 3D9.1BF0E67D24 XX 11
| 06 04/30/09 17:45:17 3D9.1BF0E6A631 XX 10
| 05 04/30/09 17:45:18 3D9.1BF0E6A631 XX 11
~04/30/09 18:00:02
```

```
FILE CLOSED           : 30 APRIL 2009 AT 18:00
```

# IV. Code Lists

The following standardized codes are used in the Columbia River Basin PIT Tag Information System (PTAGIS). Tag Data Coordinators can submit additional codes and definitions to their respective PIT Tag Steering Committee representative for review and approval.

The code domains listed below are complete as of December 15, 2009. However, codes may be added or modified at any time. The current contents of all code lists can be accessed and downloaded from the PTAGIS Web Portal at <http://www.ptagis.org>.

---

## A. Species Codes

Code	Species	Code	Species	Code	Species
0	Unknown	7	Bull Trout	E	Brook Trout
1	Chinook	8	Cutthroat Trout	F	American Shad
2	Coho	9	Other	G	Mountain Whitefish
3	Steelhead	A	Lamprey	H	Walleye
4	Sockeye	B	White Sturgeon	I	Channel Catfish
5	Chum	C	Green Sturgeon	J	Smallmouth Bass
6	Pink	D	Northern Pikeminnow		

---

## B. Run Codes

Code	Run	Code	Run
0	N/A	4	Winter
1	Spring	5	Unknown
2	Summer	R	Resident
3	Fall		

---

## C. Rearing Type Codes

Code	Rearing Type
H	Hatchery Reared
U	Unknown
W	Wild Fish or Natural Production

## D. Verbose Species Run and Rearing Type Codes

Code	Verbose Description	Code	Verbose Description
00U	Unknown (fish not observed)	3RH	Hat. Rainbow Trout
11H	Hat. Spring Chinook	3RU	Rainbow Trout (unknown r/t)
11U	Spring Chinook (unknown r/t)	3RW	Wild Rainbow Trout
11W	Wild Spring Chinook	42H	Hat. Summer Sockeye
12H	Hat. Summer Chinook	42U	Summer Sockeye (unknown r/t)
12U	Summer Chinook (unknown r/t)	42W	Wild Summer Sockeye
12W	Wild Summer Chinook	45H	Hat. Sockeye (unknown run)
13H	Hat. Fall Chinook	45U	Sockeye (unknown run & r/t)
13U	Fall Chinook (unknown r/t)	45W	Wild Sockeye (unknown run)
13W	Wild Fall Chinook	65W	Wild Pink
15H	Hat. Chinook (unknown run)	7RW	Bull Trout
15U	Chinook (unknown run & r/t)	85H	Hat. Coastal Cutthroat
15W	Wild Chinook (unknown run)	85U	Coastal Cutthroat (unknown r/t)
25H	Hat. Coho	85W	Wild Coastal Cutthroat
25U	Coho (unknown r/t)	8RW	Wild Resident Cutthroat
25W	Wild Coho	90U	Other
30H	Hat. O. mykiss (unkn. migratory status)	A0W	Lamprey
30U	O. mykiss (unkn. migratory rearing status)	B0W	White Sturgeon
30W	Wild O. mykiss (unkn. migratory status)	C0W	Green Sturgeon
32H	Hat. Summer Steelhead	D0W	Northern Pikeminnow
32U	Summer Steelhead (unknown r/t)	ERU	Brook Trout
32W	Wild Summer Steelhead	F0W	American Shad
34H	Hat. Winter Steelhead	G0W	Mountain Whitefish
34W	Wild Winter Steelhead	H0W	Walleye
35H	Hat. Steelhead (unknown run)	I0W	Channel Catfish
35U	Steelhead (unknown run & r/t)	J0W	Smallmouth Bass
35W	Wild Steelhead (unknown run)		

## E. Tag Data Coordinator ID Codes

Coord ID	Name, Agency/Org	Coord ID	Name, Agency/Org
AAB	Alan Byrne, IDFG	BAR	Brad Ryan, NMFS
ACG	Andrew Grassell, CPUD	BCJ	Brian Jonasson, ODFW
AFB	Arnie Brimmer, IDFG	BDA	Bill Arnsberg, NPT
AFE	Allen Evans, RTR	BDB	Brian Benjamin, ODFW
AJV	Alexis Vaivoda, CTWSR	BDL	Brian Leth, IDFG
ALS	Ann Setter, ODFW	BDM	Brian Michaels, NPT
AMR	Michelle Rub, NMFS	BDW	Bruce Watson, YINN
APD	Scott Sebring, NMFS	BGK	Barry Keese, CPUD
APR	Andrew Reasoner, DUCKSU	BGT	Behr Turner, GPUD
BHM	Bruce Monk, NMFS	EMD	Earl Dawley, NMFS
BJB	Brett Bowersox, IDFG	EVD	Erick Van Dyke, ODFW

Coord ID	Name, Agency/Org
BPK	Brian Kennedy, UIDAHO
BRB	Brian Beckman, NMFS
CAP	Chris Peery, USFWS
CAR	Chris Reign, ShoBan
CCC	Chris Caudill, ICFWRU
CCP	Charlie Cochran, WDFW
CCW	Catherine Willard, IDFG
CDR	Craig Rabe, NPT
CEJ	Chris Jordan, NMFS
CFB	Cyndi Baker, DUCKSU
CFM	Charles Morrill, WDFW
CGN	Courtney Newlon, USFWS
CGS	Charles Snow, WDFW
CLD	Curt Dotson, GPUD
CM	Christine Mallette, ODFW
CMK	Cory Kamphaus, YINN
CMP	Chuck Peven, CPUD
CRC	Craig Contor, CTUIR
CSM	Scott McCutcheon, BIOMRK
CSS	Comparative Survival Study
DAB	Dean Brege, NMFS
DAC	Dave Cannamela, IDFG
DAN	Duane A. Neitzel, PNL
DAV	David Venditti, IDFG
DAW	David Wills, USFWS
DBJ	David Johnson, NPT
DDT	Doug Taki, ShoBan
DJD	Dan Donima, PGE
DJN	Doug Nemeth, IDFG
DMH	David Hand, USFWS
DMM	Doug Marsh, NMFS
DPC	Doug Cramer, PGE
DPM	Dave Marvin, PSMFC
DRH	Doug Hatch, CRITFC
DSF	Derek Fryer, COE
DTL	David Lind, YINN
DTV	Dimitri Vidergar, IDFG
DWW	David Welch, KRC
EDL	Eric Lauver, GPUD
EEH	Eric Hockersmith, NMFS
EES	Eric Schulz, PGE
EFP	Sandy Downing, NMFS
EJL	Eric Leitzinger, IDFG
KEP	Kurtis E. Plaster, IDFG
KFT	Ken Tiffan, USGS
KGM	Keely Murdoch, YINN
KGO	Kenneth Ostrand, USFWS

Coord ID	Name, Agency/Org
EWB	Ed Buettner, IDFG
FAG	Fred Goetz, COE
GAA	Gordon Axel, NMFS
GAM	Geoff McMichael, PNL
GBZ	Gayle Zydlewski, USFWS
GCV	Greg Volkhardt, WDFW
GES	Gene Shippentower, CTUIR
GRP	Gene Ploskey, PNL
GSH	Glen Holmberg, USGS
HLB	Howard Burge, USFWS
HRP	Hood River Production Program
IGJ	Ian Jezorek, USGS
IMW	Kelly Kiyohara, WDFW
JAH	Jay Hesse, NPT
JAR	Jesse Rivera, USFWS
JAS	Jen Stone, USFWS
JAY	Jeff Yanke, ODFW
JCL	Jens Lovtang, CTWSR
JDF	James Fletcher, WFC
JDZ	Joe Zydlewski, USFWS
JEB	James Bartlett, PGE
JJL	Jeff Lutch, IDFG
JJP	Jay Pravecek, IDFG
JKB	Jody Brostrom, USFWS
JKF	Jeff Fryer, CRITFC
JLC	Jim Congleton, ICFWRU
JLH	Lance Hebdon, IDFG
JLV	Jason Vogel, NPT
JMH	Jon Hansen, NPT
JMO	Jill Olson, USFWS
JMP	John Plumb, USGS
JMS	Jennifer Schoolcraft, CPUD
JNL	Jerry Lockhart, NPT
JPA	Jeff Abrams, IDFG
JPW	Jody Walters, IDFG
JRH	Jim Harbeck, NPT
JSW	Jody White, QCI
JTH	Josh Hanson, ODFW
JVT	J. Vince Tranquilli, ODFW
KA	Kim Apperson, IDFG
KB	Kent Ball, IDFG
KCM	Kent Mayer, WDFW
KDM	Kyle Martens, USGS
RLM	Lynn McComas, NMFS
RLT	Rosanna Tudor, WDFW
RLW	Rey Weldert, CTUIR
RMC	Robert McDonald, CPUD

Coord ID	Name, Agency/Org
KMC	Ken Collis, CRITFC
LCS	Lowel Stuehrenburg, NMFS
LGG	Lyle Gilbreath, NMFS
LPD	Lytle Denny, SHOBAN
LRB	Larry Basham, FPC
MBE	Brad Eppard, NMFS
MBL	Mike Lambert, CTUIR
MGM	Matt Mesa, USGS
MH	Michael Hudson, USFWS
MHG	Michael Gessel, NMFS
MJB	Mike Babcock, YN
MJP	Mike Parsley, USGS
MLB	Mike Blenden, NPT
MLS	Mark Schuck, WDFW
MPF	Mike Faler, USFWS
MPP	Mike Peterson, IDFG
MRC	Matt Cooper, USFWS
MSH	Megan Hill, PGE
NAJ	Nicola Johnson, IDFG
NDD	Nancy Davis, UW
NRB	Nathan Brindza, IDFG
OTD	Steve Springston, ODFW
PAK	Paul Kucera, NPT
PCS	Carter Stein, PSMFC
PEB	Patricia Bigelow, USFWS
PHB	Phaedra Budy, UCFWRU
PJC	Peter Cleary, NPT
PKL	Paul Kline, IDFG
PMS	Paul Sankovich, USFWS
PTL	Peter Lofy, CTUIR
RAM	Regan McNatt, NMFS
RBK	Russ Kiefer, IDFG
RBR	Ralph Roseberg, USFWS
RDL	Dick Ledgerwood, NMFS
RDM	Rick Martinson, NMFS
RED	Rhonda Dasher, CCT
RER	Robert Reagan, ODFW
RFA	Randy Absolon, NMFS
RFW	Robert Warren, CREST
RGP	Russell Porter, PSMFC
RHW	Robert Wertheimer, COE
RKS	Kirk Schroeder, ODFW

Coord ID	Name, Agency/Org
RMK	Robert Keith, ShoBan
RNI	Robert Iwamoto, NMFS
RPM	Bob Mueller, PNL
RRR	Jeffrey Seggerman, IDFG
RWP	Russell Perry, USGS
RWS	Wes Stonecypher, ODFW
SA	Steve Achord, NMFS
SAH	Susan Hinton, NMFS
SCS	Sherman Sprague, NPT
SEJ	Steve Jacobs, ODFW
SGH	Steve Hays, CPUD
SJB	Steve Boe, CTUIR
SJR	Steve Rocklage, NPT
SLH	Steve Hemstrom, CPUD
SMF	Shannon Jewett, ODFW
SMP	Smolt Monitoring Program
SPR	Steve Rubin, USGS
TAF	Tom Flagg, NMFS
TAH	Thomas Hoffman, USFWS
TBH	Terry Holubetz, IDFG
TCB	Ted Bjornn, ICFWRU
TCR	Craig Robinson, USGS
TDR	T. Dean Rhine, IDFG
TEC	Tim Copeland, IDFG
TER	Tom Ruehle, NMFS
TGC	Tim Cochnauer, IDFG
THK	Tom Kahler, DC1PUD
TIM	Todd Miller, WDFW
TJS	Jason Seals, ODFW
TKN	Tom Nelson, ODFW
TLL	Theresa Liedtke, USGS
TLM	Todd Miller, WDFW
TMS	Tim Shibahara, PGE
TRM	Thaddeus Mosey, CPUD
TRW	Tim Walters, ODFW
TSC	Tom Curet, IDFG
WAC	Will Cameron, ODFW
WDM	William Muir, NMFS
WHW	Wayne Wilson, ODFW
WJB	Bill Bosch, YINN
WPC	William Connor, USFWS

## F. Conditional Comments (Flag Codes)

Code	Comment
0	Possible 0-Aged Chinook
1<	Descaled Less than 10 Percent
1>	Descaled Greater than 10 Percent
1P	Descaled - Patchy
1S	Descaled - Scattered
<2	Descaled Between 11 and 20%
>2	Descaled Greater than 20%
AD	Adipose Fin Clip
AF	Adipose Fin Damage
AI	Adipose Intact (not clipped)
AN	Anal Fin Damage
AT	Tagged as Adult
B	Bleeding after Tagged
BL	Bloated
BR	Brood Stock
BS	Body Scars
BT	Bare Tag Recovered after Release
CA	Caudal Fin Damage
CL	Lower Caudal Lobe Clip
CU	Upper Caudal Lobe Clip
CW	Coded Wire Tag
CY	Cyst
D	Dropped
DB	Double PIT-tagged
DF	Dorsal Fin Damage
DI	Deep Insertion
DK	Dark Body Color
DO	Dis-orbited Eye
DT	Duplicate Tag
EB	Electro-Shocker Burn
EF	Fin Erosion
EJ	Elastomer Jet / Photonic Fin Mark
EL	Damaged Eye - Left - after Tagging
EM	Excessive Mucous
ER	Damaged Eye - Right - after Tagging
FE	Female
PT	Pectoral Fin Damage
PV	Pelvic Fin Damage
Q1	Complete and Legible Freeze Brand
Q2	Brand is Legible but Incomplete
Q3	Brand is not Legible
Q4	Brand Rotation or Position Wrong
Q5	No Brand
Q6	Brand Caused Light to Excessive Burn
RE	Recapture
RF	Returning Fish
RP	Right Pectoral Fin Ray Sample
RT	Radio Tagged
RV	Right Ventral Fin Clip
SC	Scoliosis

Code	Comment
FU	Fungus
FX	Fish Examination
GB	Gas Bubble Trauma
GS	Gill Sample
HE	Hemorrhage
I	Body Injury - Prior to Tagging
IM	Immature
JA	Jack
JT	Jaw Tagged
JW	Jaw Damage
KD	Possible BKD
KL	Kelt
L	Fish Lost/Rejected Tag before Release
LA	Lacerations
LF	Large Fish Flume from Separator
LP	Left Pectoral Fin Ray Sample
LT	Light Body Color
LV	Left Ventral Fin Clip
M	Mortality
MA	Male
MB	Bleeding at Tagging/Died Pre-Release
MJ	Minijack
MK	Removed from Release Group (Killed)
ML	Left Maxillary Clip
MR	Right Maxillary Clip
MS	Sample Mort (Intentional Sacrifice)
MT	Mature
NF	Non-Functional Tag also in Fish
NM	No Mucous
OP	Opercule Damage
PA	Parasite
PB	Previously Branded
PC	Poor Fin Clip
PD	Peterson Disc
PO	Passive Observation
PR	Precocious
SF	Small Fish Flume from Separator
SI	Sonic (Acoustic) Tag Implant
SM	Subsequent Mort
SP	Spaghetti Tag
ST	Streamer Tag
SU	Surgery
SV	Silvery Body Color
TM	Tagged In Muscle
UL	Ulcer
VI	Visual Implant / Eye Adipose
WD	Possible Whirling Disease
X	Duplicate Tag for Pre-Release Mort
Y	Possible Age One (Yearling)

## G. Hatchery Codes

Code	Hatchery
ABEH	Abernathy SCTC
BEAH	Beaver Creek Hatchery
BIGC	Big Creek Hatchery (ODFW)
BONH	Bonneville Hatchery
BURL	Burley Hatchery, Puget Sound
CARS	Carson NFH
CASC	Cascade Hatchery
CASS	Cassimer Bar Hatchery
CHEL	Chelan PUD Hatchery
CLAH	Clackamas Hatchery
CLEE	Cle Elum Hatchery
CLWH	Clearwater Hatchery
COWS	Cowlitz Salmon Hatchery (now
COWT	Cowlitz Trout Hatchery (now Blue
CROP	Crooked River Rearing Pond
DWOR	Dworshak NFH
EAGH	Eagle Creek NFH
EAGL	Eagle Hatchery
EBNK	East Bank Hatchery Facility
ELRH	Elochoman River (Washington)
ENTH	Entiat NFH
GNAT	Gnat Creek Hatchery
GRAY	Grays River Hatchery
HAGE	Hagerman NFH
IRRI	Irrigon Hatchery
ISQH	Issaquah Hatchery
KALA	Kalama Falls Hatchery, WDFW
KLAS	Klaskanine Hatchery
KLIH	Klickitat Hatchery
KOOS	Kooskia NFH
LEAB	Leaburg Hatchery
LEAV	Leavenworth NFH
LEWH	Lewis River Hatchery
LOOH	Lookingglass Hatchery
LOWK	Lower Kalama Hatchery
LWSH	Little White Salmon NFH
TURO	Turtle Rock Hatchery
UMAH	Umatilla Hatchery
VANC	Vancouver Hatchery
WAHA	Washougal Hatchery, WDFW
WALH	Wallowa Hatchery
WELH	Wells Hatchery

Code	Hatchery
LYFE	Lyons Ferry Hatchery
MARI	Marion Forks Hatchery
MAVA	Magic Valley Hatchery
MCCA	McCall Hatchery
MCKE	McKenzie Hatchery
MERH	Merwin Hatchery
METH	Methow Hatchery
MONT	Montlake Hatchery
NCHH	Naches Hatchery
NISP	Niagara Springs Hatchery
NPTH	Nez Perce Tribal Hatchery
OASP	Oak Springs Hatchery
OXBH	Oxbow Hatchery, Cascades Locks, OR
OXBO	Oxbow Hatchery, Hells Canyon (IDFG)
PAHH	Pahsimeroi Hatchery
POWP	Powell Rearing Pond
PRDH	Priest Rapids Hatchery
PROH	Prosser Hatchery
RAPH	Rapid River Hatchery
REDP	Red River Rearing Pond
RINH	Ringold Hatchery
ROAR	Roaring River Hatchery
ROBU	Round Butte Hatchery
RRHH	Rocky Reach Hatchery (Archaic - use
SAND	Sandy Hatchery
SAWT	Sawtooth Hatchery
SERH	Sea Resources Hatchery (Chinook
SIMP	Similkameen Pond/Hatchery
SKAM	Skamania Hatchery
SOSA	South Santiam Hatchery
SPEE	Speelyai Hatchery
SPRC	Spring Creek NFH
SWSP	Sweetwater Springs Hatchery
TOUT	North Toutle Hatchery, WDFW
TRAS	Trask Hatchery
TUCH	Tucannon Hatchery
WHSH	Warrenton (OR) High School Hatchery
WILH	Willamette Hatchery
WILL	Willard NFH
WINT	Winthrop NFH
WSPH	Warm Springs NFH
YAKH	Yakima Hatchery

## H. Capture Method Codes

Code	Capture Method	Code	Capture Method
BPRCOL	Bypass Facility Raceway Collection	HOOK	Hook and Line
BPSUB	Bypass Sub-Sample	LADDER	Adult Passage Ladder
BSEINE	Beach Seine	LNGLIN	Longline
BTRAP	Box Trap	MTRAP	Minnow Trap
CMTRAP	Cray-Meeken Trap	NONE	Not Applicable
CREEL	Sport Fishery	PRED	Predation Mark Recovery
DIPNET	Dip Net	PSEINE	Purse Seine
DIPTRP	Dipper Trap	SCOTRP	Scoop Trap
DIVSYS	Diversion System	SCREWT	Screw Trap
FYKNET	Fyke Net	SHOCK	Electro-Shock
GILNET	Commercial or Tribal Gillnet Fishery	SURVEY	Spawning Survey
GWAIRL	Gatewell Airlift	TNGLNT	Tangle net fishery or
GWDIP	Gatewell Dip Net	TRAWL	Trawl Net
GWFYKE	Gatewell Fyke Net	TROLL	Ocean Troll Fishery
HATCH	Hatchery Returns	WTRAP	Weir Trap
HATRAK	Hatchery Rack		

## I. Tagging Method Codes

Code	Tagging Method
AUTO	Auto Tagger
GAST	Gastric Implantation
HAND	Hand-Held Syringe
NONE	None
SURG	Surgically Implanted

## J. Organization Codes

Code	Organization
BIOMRK	Biomark
CCT	Colville Confederated Tribes
COE	U.S. Army Corps of Engineers
CPUD	Chelan County Public Utility District
CREST	Columbia River Estuary Study Taskforce
CRITFC	Columbia River Inter-Tribal Fish Commission
CTUIR	Confed. Tribes of the Umatilla Indian Reser.
CTWSR	Confed. Tribes of the Warm Springs Reser.
DC1PUD	Douglas County Public Utility District No. 1
DUCKSU	Ducks Unlimited
FPC	Fish Passage Center
GPUD	Grant County Public Utility District
ICFWRU	Idaho Cooperative F&W Research Unit

Code	Organization
IDFG	Idaho Dept. of Fish and Game
KRC	Kintama Research Corporation
NMFS	NOAA Fisheries
NPT	Nez Perce Tribe
ODFW	Oregon Dept. of Fish and Wildlife
PGE	Portland General Electric
PNL	Pacific Northwest Labs (Battelle)
PNW	U.S. Dept. of Agriculture
PSMFC	Pacific States Marine Fisheries
QCI	Quantitative Consultants, Inc.
RTR	Real Time Research, Inc.
SEARES	Sea Resources
SHOBAN	Shoshone-Bannock Tribes

Code	Organization
UCFWRU	Utah Cooperative F&W Research Unit
UIDAHO	University of Idaho
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
UWASH	University of Washington

Code	Organization
WDF	Washington Dept. of Fish (archaic)
WDFW	Washington Dept. of Fish and Wildlife
WDW	Washington Dept. of Wildlife (archaic)
WFC	Wild Fish Conservancy
YINN	Yakama Nation

## K. Tag, Release, and Recovery Site Codes

### 1. Site Codes

The site code is an abbreviated description (four to six characters) of the tagging and/or release location. A site descriptor, if present, will be found in the last one to three characters. For all site codes that replicate an already established code, a number (2 through 9) will immediately precede the site descriptor.

For example:

<b>ELKC:</b> Elk Creek	<b>ELK2C:</b> A second Elk Creek	<b>ELK3C:</b> A third Elk Creek
------------------------	----------------------------------	---------------------------------

Rivers and streams that extend through two or more USGS Hydrologic Units are assigned specific River Reach codes for each corresponding Hydrologic Unit Code (HUC). The River Reach codes terminate in a single-digit integer starting with '1', corresponding with the mouth of the river or stream, and incrementing to the maximum number of distinct HUCs. For example, the Columbia River passes through nine HUCs between its mouth and Chief Joseph Dam (blocking anadromous fish passage), and thus there are nine Columbia River Reach codes (COLR1 – COLR9).

The following are valid site descriptors:

<b>B:</b> Bridge	<b>C:</b> Creek	<b>CH:</b> Channel  <b>FK:</b> fork of a river, but not part of a name ( <i>e.g.</i> , Salmon River, East Fork, but not Brushy Fork Creek)
<b>CN:</b> Canal	<b>D:</b> Dam	
<b>I or IS:</b> Island	<b>P:</b> Pond	
<b>R:</b> River	<b>S:</b> Screen	
<b>SL:</b> Slough	<b>T or TRP:</b> Trap	<b>W:</b> Weir

### 2. River Kilometer Code

The river kilometer code uses a hierarchical coding scheme: kilometers from the mouth of the Columbia River to the Release site (up to a 7<sup>th</sup> order stream for point release sites), with each tributary delimited with a period (*e.g.*, the code for the location of the Lower Granite Dam is 522.173 = 522 km from the mouth of the Columbia to the mouth of the Snake, and 173 km from the mouth of the Snake to the dam). Each segment of the code is three characters long, zero-padded from the left. When kilometers are calculated from measurements in miles, a standard conversion of 0.6214 m/km is used and the result is rounded to the nearest integer.

If additional sites are required, contact your PIT Tag Steering Committee member to add your requests to the list. River kilometer codes have a minimum length of three characters and a maximum length of 27 characters; the domain of characters is generally limited to integers and the period. There is an exception for the OCEAN code (“~~~”), and landlocked site definitions (such as Potholes Reservoir) that use the “\_\_\_” code. Sites within the Columbia Basin that do not provide direct release of fish are assigned a River Kilometer Code of “\*”; sites outside of the Columbia Basin are assigned a River Kilometer Code of “\*\*\*”.

When releasing or recovering fish in-river (as opposed to releasing or recovering at one of the listed fixed-site locations), the distance upstream from the mouth of the river, stream, or creek, is appended (in kilometers) to the base river kilometer code for that river.

For example, a project that is tagging 10 kilometers above the mouth of the South Fork Salmon River would be identified as:

**SALRSF 522.303.215.010**

### 3. GIS Hydrologic Unit Codes

The USGS Hydrologic Unit Code (HUC) is an eight-digit number, comprised of four two-digit fields, used to identify part or all of a surface drainage basin. In the Pacific Northwest, these are generally the same sub-basins or “provinces” identified in the Northwest Power and Conservation Council’s Fish & Wildlife Program. Each river or fixed location listed in Tag, Release, and Recovery Site Codes table below, is specific to a single quaternary HUC. See **Appendix A. Hydrologic Unit Codes** for a more formal treatment of this topic.

### 4. Stream and River Definitions vs. Fixed Release Sites

In the following table, the column labeled “FS” contains a “Y” or an “N”. The column contains a “Y” if the Tag/Release/Recovery Site is a “Fixed Site”; otherwise, the column contains an “N”.

The River Kilometer Code of a fixed site cannot be modified with an additional suffix or segment. Examples of fixed release sites are weirs, traps, bridges, intra-dam release sites, etc.

When reporting instream release and recovery events, a three-digit suffix is appended to the base river kilometer code to denote the actual distance upstream from the mouth of the stream or river that the release or recovery events occurred.

## 5. Tag, Release, and Recovery Site Codes

Site Code	Location Name	F S	River Kilometer Code	Total RKM	HUC ID
15MILC	Fifteen Mile Creek, near The Dalles, Oregon	N	309	309	17070105
18MILC	Eighteenmile Creek, Lemhi River Basin	N	522.303.416.092	1333	17060204
3LINKC	Three Links Creek	N	522.224.120.037.051	954	17060302
3MILIS	Three Mile Canyon Island (Col. R. below Blalock Island)	Y	412	412	17070101
4JULYC	Fourth of July Creek	N	522.303.630	1455	17060201
ABEH	Abernathy SCTC	Y	087.005	92	17080003
ABERC	Abernathy Creek, Lower Columbia River, Washington	N	087	87	17080003
AGNCYC	Agency Creek, Lemhi River Basin	N	522.303.416.039	1280	17060204
AHTANC	Ahtanum Creek, Yakima River	N	539.172	711	17030003
ALTULC	Alturas Lake Creek	N	522.303.633	1458	17060201
ALTURL	Alturas Lake	Y	522.303.633.011	1469	17060201
AMERR	American River	N	522.224.120.101	967	17060305
ASOTIC	Asotin Creek, Snake River above Clarkston	N	522.234	756	17060103
BADGEI	Badger Island, Columbia River	Y	512	512	17070101
BANKSL	Banks Lake, Grant County, Washington	Y	___		17020014
BARGAC	Bargamin Creek	N	522.303.255	1080	17060207
BASINC	Basin Creek, Lemhi River Basin	N	522.303.416.049.006	1296	17060204
BBC	Big Beef Creek	N	*		17110018
BCANF	Big Canyon Facility	Y	522.271.131.018.001	943	17060105
BCCAP	Big Canyon Creek Acclimation Facility (Clearwater River)	Y	522.224.057	803	17060306
BCHINL	Lake Billy Chinook	Y	328.177	505	17070301
BCKROC	Buckaroo Creek, Umatilla River	N	465.117	582	17070103
BCTRAP	Lake Washington, Bear Creek Trap	Y	***		17110012
BEAR2C	Bear Creek, John Day River Basin	N	351.218.009	578	17070204
BEAR3C	Bear Creek, Columbia River Estuary, Oregon	N	000.033	33	17080006
BEARC	Bear Creek	N	522.224.120.037.081	984	17060301
BEARVC	Bear Valley Creek	N	522.303.319.170	1314	17060205
BEAV2C	Beaver Creek, Methow River	N	843.057	900	17020008
BEAV3C	Beaver Creek, Wenatchee River Basin	N	754.075	829	17020011
BEAV3P	Beaver Creek Acclimation Pond, Wenatchee River Basin	Y	754.075.001	830	17020011
BEAV4C	Beaver Creek, Big Creek watershed, MF Salmon River	N	522.303.319.029.049	1222	17060206
BEAVEC	Beaver Creek	N	522.303.642	1467	17060201
BEDRKC	Bedrock Creek	N	522.224.042	788	17060306
BGM	Burlingame Diversion Dam, Walla Walla River	N	*	568	17070102
BIG1C	Big Creek, lower Columbia River near Knappa, OR	N	043	43	17080006
BIG2C	Big Creek, Middle Fork Salmon River	N	522.303.319.029	1173	17060206
BIG8MC	Big Eightmile Creek, Lemhi River Basin	N	522.303.416.073	1314	17060204
BIGB2C	Big Bear Creek, Lemhi River Basin	N	522.303.416.092.019	1352	17060204
BIGBEC	Big Bear Creek, Potlatch River	N	522.224.024.023	793	17060306
BIGC	Big Creek Hatchery (ODFW) near Knappa	Y	043.006	49	17080006
BIGCAC	Big Canyon Creek	N	522.224.057	803	17060306
BIGFLC	Big Flat Creek	N	522.224.120.037.113.026	1042	17060303
BIGMAC	Big Mallard Creek	N	522.303.247	1072	17060207
BIGWSP	Big White Salmon Ponds	Y	271.002	273	17070105
BIRCHC	Birch Creek, Umatilla River	N	465.077	542	17070103
BIRCHE	East Fork Birch Creek, Umatilla River	N	465.077.026	568	17070103

Site Code	Location Name	F S	River Kilometer Code	Total RKM	HUC ID
BIRCHW	West Fork Birch Creek, Umatilla River	N	465.077.026	568	17070103
BLNSDL	Blind Slough Net Pens (Oregon side of Col. River Estuary)	Y	047	47	17080006
BO1	Bonneville Dam PH1 (Archaic - replaced with BON)	N	*		17070105
BO2	Bonneville Dam PH2 (Archaic - replaced with BON)	N	*		17070105
BOBSC	Bobs Creek, Potlatch River watershed	N	522.224.024.065.019	854	17060306
BOHANC	Bohannon Creek, Lemhi River Basin	N	522.303.416.017	1258	17060204
BON	Bonneville Dam Complex	N	*	234	17070105
BONH	Bonneville Hatchery	Y	232.001	233	17080001
BONP	Bonifer Springs Acclimation Pond	Y	465.127.003	595	17070103
BOSTCC	Boston Canyon Creek, Umatilla River	N	465.127.003	595	17070103
BOUL2C	Boulder Creek, Little Salmon River watershed	N	522.303.140.029	994	17060210
BOUL3C	Boulder Creek, Potlatch River watershed	N	522.224.024.041	811	17060306
BOULDC	Boulder Creek	N	522.224.120.037.042	945	17060303
BOUNDC	Boundary Creek	N	522.303.319.154	1298	17060205
BOUTRP	Boulder Creek Trap	Y	522.224.120.037.042.001	946	17060303
BRAMYC	Big Ramey Creek, Big Creek watershed, MF Salmon River	N	522.303.319.029.042	1215	17060206
BRIDGC	Bridge Creek, John Day River Basin	N	351.218	569	17070204
BRIDWB	West Branch Bridge Creek, John Day River Basin	N	351.218.020	589	17070204
BRUS2C	Brush Creek, Klickitat River Basin	N	290.063.008	361	17070106
BRUSHC	Brushy Fork Creek	N	522.224.120.037.113.011	1027	17060303
BSHEEC	Big Sheep Creek	N	522.308.032	862	17060102
BTIMBC	Big Timber Creek, Lemhi River Basin	N	522.303.416.089	1330	17060204
BUCK2C	Buck Creek, Big Creek watershed, MF Salmon River	N	522.303.319.029.026	1199	17060206
BUCK3C	Buck Creek, White Salmon River Basin (WA)	N	271.008	279	17070105
BUCKC	Buck Creek, Umatilla River	N	465.145.002	612	17070103
BURL	Burley Creek Hatchery, Puget Sound	Y	***		17110019
BURNLC	Burnt Log Creek	N	522.303.215.060.024.024	1148	17060208
BUTCHC	Butcher Creek, Umatilla River	N	465.127.034	626	17070103
BUTCHP	Butcher Creek Acclimation Pond, Wenatchee River Basin	Y	754.089.013	856	17020011
BVAL2C	Bear Valley Creek, Lemhi River Basin	N	522.303.416.049.014	1304	17060204
BVRLYI	Beverly Islands, Columbia River below Wanapum Dam	Y	666	666	17020010
CABINC	Cabin Creek, Big Creek watershed, MF Salmon River	N	522.303.319.029.019	1192	17060206
CALAPR	Calapooia River	N	163.192	355	17090003
CAMASC	Camas Creek, Middle Fork Salmon River	N	522.303.319.057	1201	17060206
CAMP2C	Camp Creek, Middle Fork John Day River	N	351.298.052.076	777	17070203
CAMPCC	Camp Creek, Umatilla River	N	465.127.018	610	17070103
CANY2C	Canyon Creek, Lemhi River Basin	N	522.303.416.090	1331	17060204
CANYOC	Canyon Creek	N	522.224.120.037.012	915	17060303
CAPEHC	Capehorn Creek	N	522.303.319.170.010	1324	17060205
CARP	Carlton Acclimation Pond	Y	843.058	901	17020008
CARS	Carson National Fish Hatchery	Y	251.028	279	17070105
CASC	Cascade Hatchery (ODFW) near Cascade Locks	N	*	235	17070105
CASS	Cassimer Bar Hatchery	N	*		17020006
CATCMF	Middle Fork Catherine Creek	N	522.271.232.052.005	1082	17060104
CATCNF	North Fork Catherine Creek	N	522.271.232.052	1077	17060104
CATCSF	South Fork Catherine Creek	N	522.271.232.052	1077	17060104
CATHEC	Catherine Creek	N	522.271.232	1025	17060104
CATHEP	Catherine Creek Pond	Y	522.271.232.048	1073	17060104
CATHEW	Catherine Creek Weir	Y	522.271.232.032	1057	17060104

Site Code	Location Name	F S	River Kilometer Code	Total RKM	HUC ID
CAVEC	Cave Creek, Big Creek watershed, MF Salmon River	N	522.303.319.029.022	1195	17060206
CEDA2C	Cedar Creek, Potlatch River watershed	N	522.224.024.033	803	17060306
CEDARC	Cedar Creek, tributary to Lewis River	N	140.025	165	17080002
CEFLAF	Cedar Flats Acclimation Facility, Selway River	Y	522.224.120.037.008	911	17060302
CFCTRP	Crooked Fork Creek Trap	Y	522.224.120.037.113.003	1019	17060303
CGR	Cougar Dam	N	*	548	17090004
CHAMBC	Chamberlain Creek	N	522.303.282	1107	17060207
CHAMPC	Champion Creek	N	522.303.631	1456	17060201
CHAMWF	West Fork Chamberlain Creek	N	522.303.282.024	1131	17060207
CHANDL	Chandler Canal (Prosser Dam) - headgate to diversion screen (km 000-002)	N	539.076	615	17030003
CHEL	Chelan PUD Hatchery	N	*		17020010
CHELAR	Chelan River	N	810	810	17020009
CHEWUP	Chewuch Acclimation Pond (WDFW)	Y	843.080.010	933	17020008
CHEWUR	Chewuch River	N	843.080	923	17020008
CHINOR	Chinook River, Washington (Columbia River Estuary)	N	006	6	17080006
CHIP	Chiwawa Rearing Pond	Y	754.077.002	833	17020011
CHIWAC	Chiwaukum Creek, tributary to Wenatchee River	N	754.057	811	17020011
CHIWAR	Chiwawa River	N	754.077	831	17020011
CHIWAT	Chiwawa River Trap, 0.5 km below CHIP acclimation pond	Y	754.077.002	833	17020011
CJRAP	Captain John Rapids Acclimation Pond	Y	522.263	785	17060103
CLARFP	Clark Flat Acclimation Pond	Y	539.270	809	17030001
CLE	Cle Elum Dam	N	*	838	17030001
CLEARC	Clear Creek	N	522.224.120.004	870	17060304
CLEE	Cle Elum Hatchery	Y	539.293	832	17030001
CLELMD	Cle Elum Dam (Archaic - replaced with CLE)	N	539.299.013	851	17030001
CLELMR	Cle Elum River	N	539.299	838	17030001
CLWH	Clearwater Hatchery	N	*		17060306
CLWR	Clearwater River	N	522.224	746	17060306
CLWRMF	Middle Fork Clearwater River	N	522.224.120	866	17060304
CLWRNF	North Fork Clearwater River	N	522.224.065	811	17060308
CLWRSF	South Fork Clearwater River	N	522.224.120	866	17060305
CLWTRP	Clearwater Trap	Y	522.224.010	756	17060306
COLR	Columbia River (Archaic - replaced with reach-specific definitions)	N	000		170*
COLR1	Columbia River - mouth to Three Tree Point, WA (km 0-49)	N	000	0	17080006
COLR2	Columbia River - Three Tree Point, WA to Lewis River (km 49-140)	N	000	0	17080003
COLR3	Columbia River - Lewis River to Bonneville Dam (km 140-234)	N	000	0	17080001
COLR4	Columbia River - Bonneville Dam to John Day Dam (km 234-347)	N	000	0	17070105
COLR5	Columbia River - John Day Dam to Snake River (km 347-522)	N	000	0	17070101
COLR6	Columbia River - Snake River to Lower Crab Creek (km 522-661)	N	000	0	17020016
COLR7	Columbia River - Lower Crab Creek to Chelan Falls, WA (km 661-809)	N	000	0	17020010

Site Code	Location Name	F S	River Kilometer Code	Total RKM	HUC ID
COLR8	Columbia River - Chelan Falls, WA to Grand Coulee Dam (km 809-960)	N	000	0	17020005
COLTC	Colt Creek	N	522.224.120.037.113.020	1036	17060303
COLTKC	Colt Kill Creek - Replaces WHITSC	N	522.224.120.037.113	1016	17060303
COONSC	Coonskin Creek, Umatilla River	N	465.109	574	17070103
CORRAC	Corral Creek, Potlatch River watershed	N	522.224.024.052	822	17060306
COTNWC	Cottonwood Creek	N	522.224.031	777	17060306
COTP	Cottonwood Acclimation Pond	Y	522.271.046	839	17060106
COTTWC	Cottonwood Creek, Umatilla River	N	465.105	570	17070103
COUG2C	Cougar Creek, Potlatch River watershed	N	522.224.024.083.005	858	17060306
COUGRC	Cougar Creek, Grande Ronde Basin	N	522.271.049	842	17060106
COULTC	Coulter Creek, Wenatchee River Basin	N	754.089.014	857	17020011
COULTP	Coulter Creek Acclimation Pond, Wenatchee River Basin	Y	754.089.014.001	858	17020011
COWLR1	Cowlitz River - mouth to Crispus River (km 0-145)	N	111	111	17080005
COWLR2	Cowlitz River - Crispus River to headwaters (km 145-216)	N	111	111	17080004
COWS	Cowlitz Salmon Hatchery	Y	111.080	191	17080005
COWT	Cowlitz Trout Hatchery	Y	111.071	182	17080005
COYOTC	Coyote Creek, Umatilla River	N	465.145.005	615	17070103
CRISIS	Crescent Island, Columbia River	Y	510	510	17070101
CROO2C	Crooked Creek, Big Creek watershed, MF Salmon River	N	522.303.319.029.038	1211	17060206
CROOC	Crooked Creek	N	522.303.200	1025	17060207
CROOK1	Crooked River - Lake Billy Chinook to Prineville Reservoir (km 0-113)	N	328.177	505	17070305
CROOKC	Crooked Fork Creek	N	522.224.120.037.113	1016	17060303
CROOKP	Crooked River Pond	Y	522.224.120.094.015	975	17060305
CROOKR	Crooked River	N	522.224.120.094	960	17060305
CROP	Crooked River Pond (Archaic - use CROOKP)	N	522.224.120.094.015	975	17060305
CROTRP	Crooked River Trap	Y	522.224.120.094.001	961	17060305
CRTRAP	Lake Washington, Cedar River Trap	Y	***		17110012
CRUIKS	Cruikshank Creek, Lemhi River Basin	N	522.303.416.090.014	1345	17060204
CUNNSL	Cunningham Slough	N	139.000	139	17090012
CURP	Curl Lake Rearing Pond	Y	522.100.066	688	17060107
DAGGEC	Dagger Creek	N	522.303.319.155	1299	17060205
DAYP	Dayton Acclimation Pond	Y	509.035.087	631	17070102
DEADMC	Deadman Creek	N	522.224.120.037.016	919	17060303
DECKEC	Decker Creek	N	522.303.624.001	1450	17060201
DEERC	Deer Creek, upper Lemhi River Basin	N	522.303.416.092.022	1355	17060204
DESCH1	Deschutes River - mouth to Round Butte Dam (0-177 km)	N	328	328	17070306
DESCH2	Deschutes River - Round Butte Dam to headwaters (177-393 km)	N	328.177	505	17070301
DOGRVR	Dog River, tributary to EF Hood River (OR)	N	273.023.016	312	17070105
DRANOL	Drano Lake	Y	261	261	17070105
DRNP	Deep River Net Pens (Deep River, Washington)	Y	035.002	37	17080006
DRY	Dryden Diversion Dam, Wenatchee River	N	*	782	17020011
DRYP	Dryden Acclimation Pond	Y	754.026	780	17020011
DWOR	Dworshak National Fish Hatchery	N	*	811	17060306
DWORMS	Dworshak NFH, release into mainstem Clearwater River	Y	522.224.065	811	17060306
DWORNF	Dworshak NFH, release into North Fork Clearwater River	Y	522.224.065.000	811	17060308
EAGH	Eagle Creek NFH, in Clackamas River Basin	Y	163.040.027.016	246	17090011

Site Code	Location Name	F S	River Kilometer Code	Total RKM	HUC ID
EAGL	Eagle Hatchery	N	*		17050114
EAGLEC	Eagle Creek	N	522.224.120.037.253.003	1159	17060301
EASTOP	Easton Acclimation Pond	Y	539.325	864	17030001
EBNK	East Bank Hatchery	N	*		17020010
EFHORC	East Fork Horse Creek, McKenzie River Basin	N	163.282.107	552	17090004
EIGHTC	Eightmile Creek, Chewuch River	N	843.080.018	941	17020008
ELDORC	Eldorado Creek	N	522.224.087.041	874	17060306
ELKC	Elk Creek	N	522.303.319.170.014	1328	17060205
ELRH	Elochoman River Hatchery (Elochoman River, WA)	Y	058.019	77	17080003
ENTH	Entiat NFH	Y	778.011	789	17020010
ENTIAR	Entiat River	N	778	778	17020010
ESANIS	East Sand Island, Columbia River	Y	008	8	17080006
FALLC	Fall Creek	N	522.303.319.163	1307	17060205
FDD	Feed Diversion Dam, Umatilla River	N	*	538	17070103
FEATHC	Feather Creek, Potlatch River watershed	N	522.224.024.083.001	854	17060306
FEEDCN	Feed Diversion Canal - headgate to diversion screen (km 000-001)	N	465.047	512	17070103
FISHC	Fish Creek	N	522.224.120.037.039	942	17060303
FISHEC	Fisher Creek	N	522.303.628	1453	17060201
FISTRP	Fish Creek Trap	Y	522.224.120.037.039.002	944	17060303
FIVEMC	Five Mile Creek	N	522.224.120.094.018	978	17060305
FLOSSC	Flossie Creek	N	522.303.282.027	1134	17060207
FLUMEC	Flume Creek, Lemhi River Basin	N	522.303.416.039.014	1294	17060204
FOGDEW	Foggy Dew Creek, Methow River watershed	N	843.035.009	887	17020008
FOUNDI	Foundation Island, Columbia River	Y	518	518	17070101
FRENC	Frenchman Creek	N	522.303.647	1472	17060201
FRENCH	French Creek	N	522.303.169	994	17060209
GABLEC	Gable Creek, John Day River Basin	N	351.218.022	591	17070204
GEDCWF	West Fork Gedney Creek	N	522.224.120.037.029.005	937	17060302
GEDNEC	Gedney Creek	N	522.224.120.037.029	932	17060302
GEECR	Gee Creek, Washington, lower Columbia River	N	140	140	17080002
GERMC	Germany Creek, Lower Columbia River, Washington	N	090	90	17080003
GOLD2C	Gold Creek, Methow River	N	843.035	878	17020008
GOLDC	Gold Creek	N	522.303.621	1446	17060201
GOOS2I	Goose Island, Columbia River above Priest Rapids Dam	Y	641	641	17020010
GOOSEI	Goose Island, lower Snake River	Y	522.014	536	17060110
GRAND1	Grande Ronde River - mouth to Wallowa River (km 0-131)	N	522.271	793	17060106
GRAND2	Grande Ronde River - Wallowa River to headwaters (km 131-325)	N	522.271	793	17060104
GRANDP	Grande Ronde River Pond	Y	522.271.320	1113	17060104
GRANDR	Grande Ronde River (Archaic - replaced with reach-specific definitions)	N	522.271	793	170601*
GRANDW	Grande Ronde River Weir	Y	522.271.307	1100	17060104
GRAYSR	Grays River, Washington, lower Columbia River	N	000.032	32	17070203
GRBLDC	Granite Boulder Creek, Middle Fork John Day River	N	351.298.052.090	791	17070203
GREENR	Green River, trib. to NF Toutle River	N	111.032.028.018	189	17080005
GREPC	Green Point Creek (tributary to West Fork Hood River)	N	273.020.002	295	17070105
GRNTRP	Grande Ronde River Trap	Y	522.271.002	795	17060106
HAGE	Hagerman NFH	N	*		17040212

Site Code	Location Name	F S	River Kilometer Code	Total RKM	HUC ID
HARDC	Hard Creek	N	522.303.140.031.002	998	17060210
HATRCK	Hat Rock State Park (Oregon)	Y	480	480	17070101
HAWLYC	Hawley Creek, Lemhi River Basin	N	522.303.416.092.004	1337	17060204
HAYDNC	Hayden Creek, Lemhi River Basin	N	522.303.416.049	1290	17060204
HAYNSC	Haynes Creek, Lemhi River Basin	N	522.303.416.026	1267	17060204
HAZARC	Hazard Creek	N	522.303.140.031	996	17060210
HCD	Hells Canyon Dam	N	*	919	17060101
HELLRC	Hell Roaring Creek	N	522.303.631	1456	17060201
HERDC	Herd Creek	N	522.303.552.014	1391	17060201
HERMAC	Herman Creek, Columbia River Gorge (OR)	N	243	243	17070105
HLK	Hemlock Dam, Wind River (WA) watershed	N	*	270	17070105
HOODEF	East Fork Hood River	N	273.023	296	17070105
HOODMF	Middle Fork Hood River	N	273.023	296	17070105
HOODR	Hood River	N	273	273	17070105
HOODWF	West Fork Hood River	N	273.020	293	17070105
HORS2C	Horse Creek, upper McKenzie River Basin	N	163.282.107	552	17090004
HORSEC	Horse Creek	N	522.303.301	1126	17060207
HUCKLC	Huckleberry Creek	N	522.303.624	1449	17060201
HUNGC	Hungry Creek (Lochsa River Basin)	N	522.224.120.037.039.007	949	17060303
I-90B	I-90 bridge over Columbia River above Wanapum Dam	Y	677	677	17020010
ICICLC	Icicle Creek	N	754.041	795	17020011
ICTRAP	Lake Washington, Issaquah Creek Trap	Y	***		17110012
IHR	Ice Harbor Dam	N	*	538	17060110
IMNAHR	Imnaha River	N	522.308	830	17060102
IMNAHW	Imnaha River Weir	Y	522.308.074	904	17060102
IMNTRP	Imnaha Trap	Y	522.308.007	837	17060102
IMQP	Imeqes Acclimation Pond	Y	465.123	588	17070103
INDIAC	Indian Creek, Middle Fork Salmon River	N	522.303.319.110	1254	17060205
IRRI	Irrigon Hatchery	N	*		17070101
IS18	Island 18, Columbia River	Y	549	549	17020016
JACK2C	Jack Creek, tributary of Icicle Creek, Wenatchee River watershed	N	754.041.027	818	17020011
JACKCP	Jack Creek Acclimation Pond	Y	539.284.017.009	849	17030001
JACKSC	Jacks Creek	N	522.224.047	793	17060306
JDA	John Day Dam	N	*	347	17070105
JDAR	John Day River (Archaic - replaced with reach-specific definitions)	N	351	351	170702*
JDAR1	John Day River - mouth to North Fork John Day River (km 0-298)	N	351	351	17070204
JDAR2	John Day River - North Fork John Day River to headwaters (km 298-454)	N	351	351	17070201
JDARMF	Middle Fork John Day River	N	351.298.052	701	17070203
JDARNF	North Fork John Day River	N	351.298	649	17070202
JDARSF	South Fork John Day River	N	351.341	692	17070201
JERSEC	Jersey Creek	N	522.303.223	1048	17060207
JOHNC	Johns Creek	N	522.224.120.056	922	17060305
JOHNSC	Johnson Creek	N	522.303.215.060.024	1124	17060208
JOHTRP	Johnson Creek Trap	Y	522.303.215.060.024.007	1131	17060208
JSFBC	Black Canyon Creek, South Fork John Day River	N	351.341.023	715	17070201

Site Code	Location Name	F S	River Kilometer Code	Total RKM	HUC ID
JSFDC	Deer Creek, South Fork John Day River	N	351.341.028	720	17070201
JSFMC	Murderers Creek, South Fork John Day River	N	351.341.027	719	17070201
JFWC	Wind Creek, South Fork John Day River	N	351.341.033	725	17070201
KALA	Kalama Falls Hatchery, WDFW	Y	118.017	135	17080003
KALAMR	Kalama River	N	118	118	17080003
KENYC	Kenney Creek, Lemhi River Basin	N	522.303.416.029	1270	17060204
KLICKR	Klickitat River	N	290	290	17070106
KLIH	Klickitat Hatchery	Y	290.069	359	17070106
KNAPPC	Knapp Creek	N	522.303.319.170.015	1329	17060205
KNOXB	Knox Bridge, SF Salmon River	Y	522.303.215.118	1158	17060208
KOOS	Kooskia National Fish Hatchery	Y	522.224.120.004.001	871	17060304
LAKE2C	Lake Creek, Metolius River watershed	N	328.177.061.003.004	573	17070301
LAKEBR	Lake Branch (tributary to West Fork Hood River)	N	273.020.009	302	17070105
LAKEC	Lake Creek	N	522.303.215.059.045	1144	17060208
LAPC	Lapwai Creek	N	522.224.019	765	17060306
LBCWF	West Fork Little Bear Creek, Potlatch River watershed	N	522.224.024.023.002.008	803	17060306
LBEARC	Little Bear Creek, Potlatch River watershed	N	522.224.024.023.002	795	17060306
LBOULC	Little Boulder Creek, Potlatch River watershed	N	522.224.024.059	829	17060306
LCATHC	Little Catherine Creek	N	522.271.232.044	1069	17060104
LEA	Leaburg Dam	N	*	501	17090004
LEAB	Leaburg Hatchery	Y	163.282.056	501	17090004
LEAV	Leavenworth National Fish Hatchery	Y	754.041.005	800	17020011
LEMHIR	Lemhi River	N	522.303.416	1241	17060204
LEMHIW	Lemhi River Weir	Y	522.303.416.049	1290	17060204
LEOPOC	Leopold Creek, Potlatch River watershed	N	522.224.024.033.008	811	17060306
LEWIEF	East Fork Lewis River	N	140.006	146	17080002
LEWISR	Lewis River	N	140	140	17080002
LGR	Lower Granite Dam	N	*	695	17060107
LGS	Little Goose Dam	N	*	635	17060107
LIBBYC	Libby Creek, Methow River	N	843.042	885	17020008
LICKC	Lick Creek	N	522.303.215.059.008	1107	17060208
LINEC	Line Creek, Umatilla River	N	465.127.008	600	17070103
LITCAC	Little Canyon Creek	N	522.224.057.005	808	17060306
LITNGC	Lightning Creek, Imnaha River	N	522.308.008	838	17060102
LMEMIS	Little Memaloose Island, Columbia River	Y	314	314	17070105
LMILIS	Little Miller Island, Columbia River	Y	331	331	17070105
LMN	Lower Monumental Dam	N	*	589	17060110
LMONIS	Lower Monumental Island, Snake River	Y	522.064	586	17060110
LNSANR	Little North Santiam River	N	163.174.019.044	400	17090005
LOCHSA	Lochsa River	N	522.224.120.037	903	17060303
LOGANC	Logan Creek, Big Creek watershed, MF Salmon River	N	522.303.319.029.058	1231	17060206
LOLOC	Lolo Creek	N	522.224.087	833	17060306
LOOH	Lookingglass Hatchery	Y	522.271.137.003	933	17060104
LOOKGC	Lookingglass Creek	N	522.271.137	930	17060104
LOONC	Loon Creek	N	522.303.319.073	1217	17060205
LOSTIP	Lostine River Pond	Y	522.271.131.042.021	987	17060105
LOSTIR	Lostine River	N	522.271.131.042	966	17060105
LOSTIW	Lostine River Weir	Y	522.271.131.042.001	967	17060105
LSALR	Little Salmon River	N	522.303.140	965	17060210

Site Code	Location Name	F S	River Kilometer Code	Total RKM	HUC ID
LSFTRP	Lower SF Salmon River Trap at rkm 61	Y	522.303.215.061	1101	17060208
LSHEEF	Little Sheep Facility	Y	522.308.032.005.008	875	17060102
LUGUAF	Lukes Gulch Acclimation Facility, SF Clearwater River	Y	522.224.120.014	880	17060305
LUNION	Lake Union	Y	***		17110012
LWBEAR	Bear Creek, Lake Washington below Redmond Way Bridge	Y	***		17110012
LWCEDR	Cedar River, Lake Washington at Logan Street Bridge	Y	***		17110012
LWD	Lowden Diversion Dam II, Walla Walla River	N	*	560	17070102
LWENAT	Little Wenatchee River	N	754.090.008	852	17020011
LWISSQ	Lake Washington, Issaquah Creek at SE 56th Street Bridge	Y	***		17110012
LWSALR	Little White Salmon River	N	261	261	17070105
LWSCCL	Ballard Locks	Y	***		17110012
LWSCFC	Ship Canal, Lake Washington at Fremont Cut/Bridge	Y	***		17110012
LWSCMC	Ship Canal, Lake Washington at Montlake Cut/Bridge	Y	***		17110012
LWSCML	Ship Canal, Lake Washington at King County/Metro Environmental Lab	Y	***		17110012
LWSH	Little White Salmon National Fish Hatchery	Y	261.002	263	17070105
LYFE	Lyons Ferry Hatchery	Y	522.095	617	17060107
MADRVR	Mad River (Entiat River watershed)	N	778.017	795	17020010
MANCRS	Manchester Research Station, Puget Sound	Y	***		17110019
MARSHC	Marsh Creek	N	522.303.319.170	1314	17060205
MARTRP	Marsh Creek Trap	Y	522.303.319.170.011	1325	17060205
MAVA	Magic Valley Hatchery	N	*		17040212
MCCA	McCall Hatchery	N	*		17050123
MCDEVC	McDevitt Creek, Lemhi River Basin	N	522.303.416.042	1283	17060204
MCKA2C	McKay Creek, Crooked River	N	328.177.072	577	17070305
MCKAYC	McKay Creek, Umatilla River	N	465.082	547	17070103
MCKE	McKenzie Hatchery	Y	163.282.053	498	17090004
MCKER	McKenzie River	N	163.282	445	17090004
MCKESF	South Fork McKenzie River	N	163.282.096	541	17090004
MCN	McNary Dam	N	*	470	17070101
MEACHC	Meacham Creek, Umatilla River	N	465.127	592	17070103
MEACHE	East Fork Meacham Creek	N	465.127.031	623	17070103
MEACHN	North Fork Meacham Creek	N	465.127.024	616	17070103
MEAD2C	Meadow Creek, South Fork Clearwater	N	522.224.120.053	919	17060305
MEADOC	Meadow Creek, Selway River	N	522.224.120.037.031	934	17060302
MERH	Merwin Hatchery (WDFW)	N	*		17080002
METH	Methow Hatchery	Y	843.085	928	17020008
METHR	Methow River	N	843	843	17020008
METOLR	Metolius River	N	328.177	505	17070301
METRO	King County/Metro Environmental Lab	Y	***		17110012
METTRP	Methow Smolt Trap at McFarland Creek Road Bridge	Y	843.030	873	17020008
MILL2C	Mill Creek, SF Clearwater River	N	522.224.120.052	918	17060305
MILL3C	Mill Creek, Columbia River at The Dalles, OR	N	304	304	17070105
MILL4C	Mill Creek, Lower Columbia River, Washington	N	087	87	17080003
MILLC	Mill Creek, Walla Walla River	N	509.054	563	17070102
MINAMR	Minam River	N	522.271.131.016	940	17060105
MINKC	Mink Creek	N	522.224.120.037.051	954	17060302
MINP	Minthorn Acclimation Pond	Y	465.109	574	17070103
MISSC	Mission Creek	N	522.224.019.016	781	17060306

Site Code	Location Name	F S	River Kilometer Code	Total RKM	HUC ID
MISSNC	Mission Creek, Umatilla River	N	465.098	563	17070103
MLAK2C	Middle Fork Lake Creek, Metolius River watershed	N	328.177.061.003	569	17070301
MLRSNI	Miller Sands Island, Columbia River Estuary	Y	038	38	17080006
MOLALR	Molalla River	N	163.057	220	17090009
MONCWF	West Fork Monumental Creek, Big Creek watershed, MF Salmon River	N	522.303.319.029.038.024	1235	17060206
MONT	Montlake Hatchery	N	*		17110012
MONUMC	Monumental Creek, Big Creek watershed, MF Salmon River	N	522.303.319.029.038	1211	17060206
MOONSC	Moonshine Creek, Umatilla River	N	465.108	573	17070103
MOOS2C	Moose Creek (Selway River)	N	522.224.120.037.065	968	17060302
MOOS2N	North Fork Moose Creek, Selway River	N	522.224.120.037.065.006	974	17060302
MOOS3C	Moose Creek, Potlatch River watershed	N	522.224.024.076	846	17060306
MOOSEC	Moose Creek	N	522.303.282.031	1138	17060207
MSANTR	Middle Santiam River, Oregon	N	163.174.019.064	420	17090006
MSLA2C	Middle Fk South Fk Lake Creek, Metolius River watershed	N	328.177.061	566	17070301
MULTCH	Multnomah Channel, Columbia River	N	139	139	17090012
MXWLCN	Maxwell Diversion Canal - headgate to diversion screen (km 000-002)	N	465.024	479	17070103
NASONC	Nason Creek (tributary to Wenatchee River)	N	754.089	843	17020011
NATCHR	Natches River	N	539.187	726	17030002
NBG	Nursery Bridge Diversion Dam, Walla Walla River	N	*	581	17070102
NEALC	Neal Creek, tributary to Hood River (OR)	N	273.007	280	17070105
NEWSOC	Newsome Creek	N	522.224.120.084	950	17060305
NFTEAN	North Fork Teanaway River	N	539.284.017	840	17030001
NISP	Niagara Springs Hatchery	N	*		17040212
NLVP	North Lapwai Valley Acclimation Pond	Y	522.224.019.001	766	17060306
NONE	Deprecated null value used only to support legacy data.	N	*		99999999
NPTH	Nez Perce Tribal Hatchery	Y	522.224.038	784	17060306
NSANTR	North Santiam River, Oregon	N	163.174.019	356	17090005
NSCAPC	North Scappoose Creek	N	139.003.004.009	155	17090012
OASP	Oak Springs Hatchery	N	*	404	17070306
OCEAN	Ocean Recovery	Y	~~~		N/A
OCHOCC	Ochoco Creek, Crooked River	N	328.177.072	577	17070305
OHARAC	O'Hara Creek	N	522.224.120.037.012	915	17060302
OKANR	Okanogan River	N	858	858	17020006
OLDMAC	Old Man Creek	N	522.224.120.037.028	931	17060303
OMAKC	Omak Creek (tributary to Okanogan River)	N	858.064	922	17020006
OROFc	Orofino Creek	N	522.224.072	818	17060306
OSOL	Osoyoos Lake	Y	858.130	988	17020006
OXBH	Oxbox Hatchery, Cascade Locks, OR (ODFW)	N	*	244	17070105
OXBO	Oxbow Hatchery (IDFG)	N	*		17050201
PAHH	Pahsimeroi Hatchery	Y	*	1316	17060202
PAHP	Pahsimeroi Pond	Y	522.303.489.011	1325	17060202
PAHSIR	Pahsimeroi River	N	522.303.489	1314	17060202
PAHSIW	Pahsimeroi Weir	Y	522.303.489.002	1316	17060202
PAHTRP	Pahsimeroi River Trap	Y	522.303.489.002	1316	17060202
PANT2C	Panther Creek (trib. to Wind River, Wash.)	N	251.007	258	17070105
PANTHC	Panther Creek (Salmon River)	N	522.303.338	1163	17060203

Site Code	Location Name	F S	River Kilometer Code	Total RKM	HUC ID
PAPOOC	Papoose Creek	N	522.224.120.037.105	1008	17060303
PARTRC	Partridge Creek	N	522.303.160	985	17060209
PATTEC	Pattee Creek, Lemhi River Basin	N	522.303.416.037	1278	17060204
PEARSC	Pearson Creek, Umatilla River	N	465.077.026.018	586	17070103
PELTON	Pelton Ladder (Deschutes River) Acclimation Pond	Y	328.161	489	17070306
PENP	Pendleton Acclimation Pond	Y	465.090	555	17070103
PER	Pelton Reregulating Dam	N	*	489	17070306
PESHAR	Peshastin River	N	754.029	783	17020011
PETEKC	Pete King Creek	N	522.224.120.037.003	906	17060303
PETTL	Pettit Lake	Y	522.303.633.002.002	1462	17060201
PETTLC	Pettit Lake Creek	N	522.303.633.002	1460	17060201
PINE2C	Pine Creek, Potlatch River watershed	N	522.224.024.028	798	17060306
PINEC	Pine Creek, Walla Walla River	N	509.038	547	17070102
PISTOC	Pistol Creek, Middle Fork Salmon River	N	522.303.319.118	1262	17060205
PIVASC	Pivash Creek, Potlatch River watershed	N	522.224.024.065.022	857	17060306
PLAP	Pittsburg Landing Acclimation Facility	Y	522.346	868	17060101
POLEC	Pole Creek	N	522.303.642	1467	17060201
POSTOC	Post Office Creek	N	522.224.120.037.082	985	17060303
POTHOL	Potholes Reservoir, Grant County, Washington	Y	---		17020015
POTR	Potlatch River	N	522.224.024	770	17060306
POTREF	East Fork Potlatch River	N	522.224.024.065	835	17060306
POTRWF	West Fork Potlatch River	N	522.224.024.083	853	17060306
POWP	Powell Rearing Pond	Y	522.224.120.037.113	1016	17060303
PRD	Priest Rapids Dam	N	*	639	17020016
PRDH	Priest Rapids Hatchery	Y	639	639	17020016
PRKDLF	Parkdale Acclimation Facility	Y	273.023.005.000	301	17070105
PRO	Prosser Diversion Dam, Yakima River	N	*	615	17030003
PROH	Prosser Hatchery	Y	539.075	614	17030003
PROSRD	Prosser Dam (Archaic - replaced with PRO)	N	539.076	615	17030003
PROTRP	Prosser Trap (Archaic)	N	539.076	615	17030003
PURDUC	Purdue Creek, Potlatch River watershed	N	522.224.024.080	850	17060306
PWD	Powerdale Dam, Hood River	N	*	280	17070105
QKASPC	Quaking Asp Creek, Lemhi River Basin	N	522.303.416.092.021	1354	17060204
RAPH	Rapid River Hatchery	Y	522.303.140.007.006	978	17060210
RAPIDR	Rapid River, Little Salmon River	N	522.303.140.007	972	17060210
RAPIWF	West Fork Rapid River	N	522.303.140.007.012	984	17060210
RAPR	Rapid River, Middle Fork Salmon River	N	522.303.319.124	1268	17060205
RATTLC	Rattlesnake Creek	N	271.012	283	17070105
REDFL	Redfish Lake	Y	522.303.615.005	1445	17060201
REDFLC	Redfish Lake Creek	N	522.303.615	1440	17060201
REDP	Red River Rearing Pond	Y	522.224.120.101.027	994	17060305
REDR	Red River	N	522.224.120.101	967	17060305
REDRSF	South Fork Red River	N	522.224.120.101.028	995	17060305
REDTRP	Red River Trap	Y	522.224.120.101.006	973	17060305
RELIEC	Relief Creek	N	522.224.120.094.013	973	17060305
RESVRC	Reservoir Creek, Lemhi River Basin	N	522.303.416.092.019	1352	17060204
RGRSPC	Roger's Spring Creek, Middle Fork Hood River	N	273.023.005	301	17070105
RICEIS	Rice Island	Y	034	34	17080006
RICHIS	Richland Island, Columbia River	Y	545	545	17020016

Site Code	Location Name	F S	River Kilometer Code	Total RKM	HUC ID
RINH	Ringold Hatchery	Y	567	567	17020016
RIS	Rock Island Dam	N	*	730	17020010
RLCTRP	Redfish Lake Creek Trap	Y	522.303.615.003	1443	17060201
ROBU	Round Butte Hatchery	N	*		17070306
ROCK2C	Rock Creek, Columbia River (WA)	N	363	363	17070101
ROCKC	Rock Creek, tributary to East Fork Lewis River	N	140.006.042	188	17080002
ROCKIS	Rock Island, Columbia River near Boardman, OR.	Y	441	441	17070101
ROLFIP	Rolfing Acclimation Pond, Wenatchee River Basin	Y	754.089.021	864	17020011
ROSAD	Roza Dam (Archaic - replaced with ROZ)	N	539.206	745	17030001
ROU	Round Butte Dam	N	*	505	17070301
ROZ	Roza Dam	N	*	745	17030001
RPDTRP	Rapid River Smolt Trap	Y	522.303.140.007.006	978	17060210
RRE	Rocky Reach Dam	N	*	763	17020010
RSSNIS	Russian Island, Columbia River Estuary	Y	036	36	17080006
RUNNIC	Running Creek	N	522.224.120.037.253	1156	17060301
RUSHC	Rush Creek, trib. of Big Creek, Middle Fork Salmon River	N	522.303.319.029.011	1184	17060206
RUSHWF	West Fork Rush Creek, Big Creek watershed, MF Salmon River	N	522.303.319.029.011.013	1197	17060206
RYANC	Ryan Creek, Umatilla River	N	465.132	597	17070103
SABEC	Sabe Creek	N	522.303.272	1097	17060207
SAEFSF	East Fork South Fork Salmon River	N	522.303.215.060	1100	17060208
SALEFT	East Fork Salmon River Trap	Y	522.303.552.029	1406	17060201
SALEFW	East Fork Salmon River Weir (Archaic - use SALEFT)	N	522.303.552.030	1407	17060201
SALMF1	Middle Fork Salmon River - mouth to Loon Creek (km 0-73)	N	522.303.319	1144	17060206
SALMF2	Middle Fork Salmon River - Loon Creek to headwaters (km 73-170)	N	522.303.319	1144	17060205
SALMOC	Salmon Creek (tributary to Okanogan River)	N	858.055	913	17020006
SALR	Salmon River (Archaic - replaced with reach-specific definitions)	N	522.303	825	170602*
SALR1	Salmon River - mouth to above French Creek (km 0-171)	N	522.303	825	17060209
SALR2	Salmon River - above French Creek to Middle Fork Salmon River (km 171-319)	N	522.303	825	17060207
SALR3	Salmon River - Middle Fork Salmon River to Pahsimeroi River (km 319-489)	N	522.303	825	17060203
SALR4	Salmon River - Pahsimeroi River to headwaters (km 489-650)	N	522.303	825	17060201
SALREF	East Fork Salmon River	N	522.303.552	1377	17060201
SALRMF	Middle Fork Salmon River (Archaic - replaced with reach-specific definitions)	N	522.303.319	1144	17060206
SALRNF	North Fork Salmon River	N	522.303.381	1206	17060203
SALRSF	South Fork Salmon River	N	522.303.215	1040	17060208
SALSFW	South Fork Salmon River Weir	Y	522.303.215.115	1155	17060208
SALTRP	Salmon Trap	Y	522.303.103	928	17060209
SANTIR	Santiam River, Oregon	N	163.174	337	17090005
SATUSC	Satus Creek, Yakima River	N	539.112	651	17030003
SAWT	Sawtooth Hatchery	Y	522.303.617	1442	17060201
SAWTRP	Sawtooth Trap	Y	522.303.617	1442	17060201
SCAPPB	Scappoose Bay, Oregon	N	139.003	142	17090012

Site Code	Location Name	F S	River Kilometer Code	Total RKM	HUC ID
SCAPPC	Scappoose Creek	N	139.003.004	146	17090012
SCHAFC	Schafer Creek, Klickitat River Basin	N	290.063.003	356	17070106
SECESR	Secesh River	N	522.303.215.059	1099	17060208
SECTRP	Secesh River Screw Trap	Y	522.303.215.059.007	1106	17060208
SELWY1	Selway River - mouth to Moose Creek (km 0-65)	N	522.224.120.037	903	17060302
SELWY2	Selway River - Moose Creek to headwaters (km 65-147)	N	522.224.120.037	903	17060301
SELWYR	Selway River (Archaic - replaced with reach-specific definitions)	N	522.224.120.037	903	170603*
SERH	Sea Resources Hatchery (Chinook River, Washington)	Y	006.006	12	17080006
SFSTRP	SF Salmon River Trap (Archaic - replaced with SALRSF or KNOXB)	N	522.303.215.118	1158	17060208
SGOLDC	South Fork Gold Creek, Methow River watershed	N	843.035.002	880	17020008
SHEEPC	Sheep Creek	N	522.303.188	1013	17060207
SHEPC	Sheep Creek, Middle Fork Salmon River	N	522.303.319.049	1193	17060206
SHERFT	Sherars Falls Fishway Trap, Deschutes River	Y	328.071	399	17070306
SHIMC	Shimmihorn Creek, Umatilla River	N	465.145.008	618	17070103
SIMCNF	North Fork Simcoe Creek, Toppenish Creek drainage	N	539.130.053.030	752	17030003
SIMCOC	Simcoe Creek, Toppenish Creek drainage	N	539.130.053	722	17030003
SIMILP	Similkameen Acclimation Pond (replaces archaic SIMP)	Y	858.119.008	985	17020007
SIMILR	Similkameen River	N	858.119	977	17020007
SIMP	Similkameen Pond (Archaic - replaced by SIMILP)	N	941.121.008	1070	17020007
SKIPAR	Skipanon River	N	013.003	16	17080006
SKIPAW	Skipanon Waterway	N	013	13	17080006
SLAT2C	Slate Creek, upper Salmon River	N	522.303.576	1401	17060201
SLATEC	Slate Creek, lower Salmon River	N	522.303.106	931	17060209
SMILEC	Smiley Creek	N	522.303.644	1469	17060201
SMITHC	Smith Creek, Big Creek watershed, MF Salmon River	N	522.303.319.029.054	1227	17060206
SNAKE1	Snake River - mouth to Palouse River (km 0-96)	N	522	522	17060110
SNAKE2	Snake River - Palouse River to Clearwater River (km 96-224)	N	522	522	17060107
SNAKE3	Snake River - Clearwater River to Salmon River (km 224-303)	N	522	522	17060103
SNAKE4	Snake River - Salmon River to Hells Canyon Dam (km 303-397)	N	522	522	17060101
SNAKER	Snake River (Archaic - replaced with reach-specific definitions)	N	522	522	170601*
SNKTRP	Snake Trap	Y	522.225	747	17060103
SNOSLC	Snowslide Creek, Big Creek watershed, MF Salmon River	N	522.303.319.029.038.009	1230	17060206
SPRC	Spring Creek National Fish Hatchery	Y	269	269	17070105
SQAW2C	Squaw Creek, Salmon River	N	522.303.564	1389	17060201
SQAW3C	Squaw Creek, Rock Creek (WA) watershed, Col. River	N	368.014	382	17070101
SQAWC	Squaw Creek, Umatilla River	N	465.124	589	17070103
SQUAWC	Squaw Creek, Lochsa River	N	522.224.120.037.096	999	17060303
SQUAWP	Squaw Creek Acclimation Pond	Y	522.303.564.001	1390	17060201
SSANTR	South Santiam River, Oregon	N	163.174.019	356	17090006
SSD	Sunnyside Dam	N	*	706	17030003
SSIDEC	Sunnyside Canal - headgate to diversion screen (km 000-001)	N	539.167	706	17030003
SSIDES	Sunnyside Screen (Archaic - use SSIDEC)	N	539.167.001	707	17030003

Site Code	Location Name	F S	River Kilometer Code	Total RKM	HUC ID
STANLC	Stanley Lake Creek	N	522.303.609.009	1443	17060201
STANLE	Stanley; Gage 2945 (Archaic - use SALR4)	N	522.303.609	1434	17060201
STAPAC	Stapaloo Creek, in Okanogan River basin	N	858.064.022	944	17020006
STOLP	Stolle Pond	Y	522.303.215.125	1165	17060208
STORMC	Storm Creek	N	522.224.120.037.113.016	1032	17060303
SUL	Sullivan Hydroelectric Plant, Willamette Falls	N	*	206	17090012
SULFUC	Sulphur Creek, Middle Fork Salmon River	N	522.303.319.150	1294	17060205
SWEETC	Sweetwater Creek, Lapwai Creek watershed	N	522.224.019.010	775	17060306
SWSP	Sweetwater Springs Rearing Facility	N	*	785	17060306
TANNEC	Tanner Creek, Columbia River below Bonneville Dam	N	232	232	17080001
TDA	The Dalles Dam	N	*	308	17070105
TEANAR	Teanaway River	N	539.284	823	17030001
TENMIC	Tenmile Creek	N	522.224.120.076	942	17060305
TENNAI	Tenasillahe Island, lower Columbia River	Y	060	60	17080003
TEPEEC	Tepee Creek, Klickitat River Basin	N	290.063.016	369	17070106
TEPEEF	East Fork Tepee Creek, Klickitat River Basin	N	290.063.016.005	374	17070106
TEXASC	Texas Creek, Lemhi River Basin	N	522.303.416.092	1333	17060204
THOMC	Thomas Creek, Umatilla River	N	465.145.005	615	17070103
THOP	Thornhollow Acclimation Pond	Y	465.113	578	17070103
TMF	Three Mile Falls Dam (Umatilla River)	N	*	470	17070103
TOPPEC	Toppenish Creek	N	539.130	669	17030003
TOUCHR	Touchet River	N	509.035	544	17070102
TOUT	North Toutle Hatchery, WDFW	Y	111.032.028.018.001	190	17080005
TOUTLR	Toutle River	N	111.032	143	17080005
TOUTNF	North Fork Toutle River	N	111.032.028	171	17080005
TROU2C	Trout Creek, Deschutes River Watershed	N	328.140	468	17070307
TROUTC	Trout Creek (trib. to Wind River, Wash.)	N	251.017	268	17070105
TUCH	Tucannon River Hatchery	Y	522.100.058	680	17060107
TUCR	Tucannon River	N	522.100	622	17060107
TUM	Tumwater Dam, Wenatchee River	N	*	798	17020011
TURO	Turtle Rock Pond	Y	765	765	17020010
TUTUIC	Tutuilla Creek, Umatilla River	N	465.084	549	17070103
TWIS2P	Twisp Acclimation Pond (Methow Salmon Recovery Foundation)	Y	843.066.002	911	17020008
TWISPP	Twisp Acclimation Pond (WDFW)	Y	843.066.008	917	17020008
TWISPR	Twisp River	N	843.066	909	17020008
TWNMIC	Twentymile Creek	N	522.224.120.069	935	17060305
TWNMIT	Twentymile Creek Trap	Y	522.224.120.069.003	938	17060305
UMAH	Umatilla Hatchery	N	*		17070101
UMAR	Umatilla River	N	465	465	17070103
UMATNF	North Fork Umatilla River	N	465.145	610	17070103
UMATSF	South Fork Umatilla River	N	465.145	610	17070103
UWH	University of Washington Hatchery	Y	***		17110012
VALEYC	Valley Creek	N	522.303.609	1434	17060201
VATC	Vat Creek	N	522.303.633.003	1461	17060201
VGISNB	Van Giesen Road Bridge, Yakima River	Y	539.014	553	17030003
VIENTC	Viento Creek, Columbia River Gorge (OR)	N	258	258	17070105
WAHA	Washougal Hatchery, WDFW	Y	193.032	225	17080001
WALH	Wallowa Hatchery	Y	522.271.131.063.001	988	17060105

Site Code	Location Name	F S	River Kilometer Code	Total RKM	HUC ID
WALLAR	Walla Walla River	N	509	509	17070102
WALLNF	North Fork Walla Walla River	N	509.081	590	17070102
WALLOR	Wallowa River	N	522.271.131	924	17060105
WALLSF	South Fork Walla Walla River	N	509.081	590	17070102
WAN	Wannapum Dam	N	*	669	17020010
WAP	Wapato Diversion Dam, Yakima River	N	*	711	17030003
WAPATC	Wapato Canal - headgate to diversion screen (km 000-001)	N	539.172	711	17030003
WAPATD	Wapato Dam (Archaic - replaced with WAP)	N	539.172	711	17030003
WAPATS	Wapato Screen (Archaic)	N	539.172.001	712	17030003
WARMSC	Warm Springs Creek	N	522.224.120.037.092	995	17060303
WARMSR	Warm Springs River, Deschutes River Watershed	N	328.135	463	17070306
WASHOR	Washougal River	N	193	193	17080001
WBIRDC	Whitebird Creek	N	522.303.086	911	17060209
WEBBC	Webb Creek, Lapwai Creek watershed	N	522.224.019.010.006	781	17060306
WEL	Wells Dam	N	*	830	17020005
WELH	Wells Hatchery	Y	830	830	17020005
WENA2T	Upper Wenatchee smolt trap just below Lake Wenatchee	Y	754.086	840	17020011
WENATL	Lake Wenatchee	Y	754.090	844	17020011
WENATR	Wenatchee River	N	754	754	17020011
WENATT	Wenatchee River trap at West Monitor Bridge	Y	754.010	764	17020011
WENR	Wenaha River	N	522.271.073	866	17060106
WENRNF	North Fork Wenaha River	N	522.271.073.035	901	17060106
WENRSF	South Fork Wenaha River	N	522.271.073.035	901	17060106
WHITCC	White Cap Creek	N	522.224.120.037.264	1167	17060301
WHITEC	White Creek, Klickitat River Basin	N	290.063	353	17070106
WHITER	White River, Wenatchee River Basin	N	754.090	844	17020011
WHITSC	White Sand Creek - replaced by COLTKC	N	522.224.120.037.113	1016	17060303
WHITSR	White Salmon River	N	271	271	17070105
WHITWF	West Fork White Creek, Klickitat River Basin	N	290.063.017	370	17070106
WHSR	Warrenton (OR) High School Hatchery	N	*	21	17080006
WILDCC	Wildcat Creek, Lemhi River Basin	N	522.303.416.090.014.003	1348	17060204
WILH	Willamette Hatchery (ODFW) at Oakridge	N	*		17090001
WILL	Willard National Fish Hatchery	Y	261.009	270	17070105
WILLIC	Williams Creek	N	522.303.622	1447	17060201
WILLR	Willamette River (Archaic - replaced with reach-specific definitions)	N	163	163	170900*
WILLR1	Willamette River - mouth to Willamette Falls (km 0-43)	N	163	163	17090012
WILLR2	Willamette River - Willamette Falls to Santiam River (km 43-175)	N	163	163	17090007
WILLR3	Willamette River - Santiam River to the confluence of the Middle and Coast forks of the Willamette River (km 175-301)	N	163	163	17090003
WILRMF	Middle Fork Willamette River	N	163.301	464	17090001
WILSOC	Wilson Creek, Middle Fork Salmon River	N	522.303.319.037	1181	17060206
WIMPYC	Wimpey Creek, Lemhi River Basin	N	522.303.416.020	1261	17060204
WIND2R	Wind River, Washington	N	251	251	17070105
WINDR	Wind River	N	522.303.177	1002	17060207
WINT	Winthrop National Fish Hatchery	Y	843.081	924	17020008

Site Code	Location Name	F S	River Kilometer Code	Total RKM	HUC ID
WINTBC	Rearing Pond in the back channel to Winthrop NFH	Y	843.081	924	17020008
WITHGC	Withington Creek, Lemhi River Basin	N	522.303.416.021	1262	17060204
WOLFC	Wolf Creek, Methow River	N	843.085	928	17020008
WOPTXD	Wapatox Dam (Archaic - replaced with WPX)	N	539.187.028	754	17030002
WPX	Wapatox Diversion Dam, Naches River	N	*	754	17030002
WRIGTC	Wright Creek, Lemhi River Basin	N	522.303.416.049.014.004	1308	17060204
WSPH	Warm Springs National Fish Hatchery	Y	328.135.016	479	17070306
WYCHUC	Wychus Creek, Upper Deschutes River Basin	N	328.198	526	17070301
YAKIM1	Yakima River - mouth to Naches River (km 0-187)	N	539	539	17030003
YAKIM2	Yakima River - Naches River to headwaters (km 187-345)	N	539	539	17030001
YAKIMR	Yakima River (Archaic - replaced with reach-specific definitions)	N	539	539	170300*
YANKFK	Yankee Fork Salmon River	N	522.303.591	1416	17060201
YANKWF	West Fork Yankee Fork Salmon River	N	522.303.591.011	1427	17060201
YELHKC	Yellowhawk Creek, Walla Walla River	N	509.070	579	17070102
YELLJC	Yellowjacket Creek, tributary of Camas Creek, Middle Fork Salmon River	N	522.303.319.057.007	1208	17060206
YELLCC	Yellowbelly Lake Creek	N	522.303.633.001	1459	17060201
YRIANC	Yearian Creek, Lemhi River Basin	N	522.303.416.057	1298	17060204

## 6. Intra-Dam Release Site Codes

These codes are appended as a suffix to the three-character dam site code and provide a specific location for release at, above, or below hydroelectric facilities. For example, a release into a gatewell at Lower Granite Dam would be coded as LGRGWL.

Code	Intra-dam Location
<b>BCC</b>	Release into the Facility Bypass Corner Collector
<b>BPS</b>	Release into the PIT-Tag Diversion System between the Diversion Gate and the furthest downstream PIT-Tag Detector
<b>BYP</b>	Release into the Facility Bypass Flume/Pipe
<b>COL</b>	Release into the Collection Channel upstream of the Dewatering Facility
<b>DTG</b>	Release into the Collection Flume/Pipe between the Dewatering Facility and the Collection/Bypass Gate
<b>DWT</b>	Release into the Dewatering Facility
<b>FBY</b>	Release into the Forebay within 0.5 km upstream of Dam
<b>FDS</b>	Release above the Fish Diversion Screen
<b>FTF</b>	Release into the Fish Transfer Facility
<b>GAT</b>	Release into Flume between Separator Exit and the Primary PIT-Tag Diversion Gate
<b>GWL</b>	Release into Gatewell(s)
<b>ICE</b>	Release into the Ice/Trash Sluiceway
<b>LD1</b>	Release into the Left Bank (facing downstream) Adult Fish Ladder {at a site with multiple ladders}
<b>LD2</b>	Release into the [Right Bank or Middle] (facing downstream) Adult Fish Ladder {at a site with 2 or 3 ladders}
<b>LD3</b>	Release into the Right Bank (facing downstream) Adult Fish Ladder {at a site with 3 ladders}

<b>Code</b>	<b>Intra-dam Location</b>
<b>LDR</b>	Release into the Adult Fish Ladder {at a site with a single ladder}
<b>MRT</b>	Mortality Recovery
<b>OFL</b>	Release into the PIT-Tag Diversion System downstream of the Last PIT-Tag Detector
<b>ORI</b>	Release into Orifice(s)
<b>RBR</b>	Release below the PIT-Tag Diversion System Gate with subsequent Barge Transportation from the Facility
<b>RRR</b>	Release below the PIT-Tag Diversion System Gate with subsequent Return to the River at the Facility
<b>RTR</b>	Release below the PIT-Tag Diversion System Gate with subsequent Truck Transportation from the Facility
<b>RXR</b>	Release below the PIT-Tag Diversion System Gate with subsequent Transportation from the Facility
<b>SEP</b>	Release into the Flume downstream of the Collection/Bypass Gate or into the Separator
<b>SPF</b>	Release into the Forebay within 0.5 km upstream of Spillway
<b>SPL</b>	Release directly into Spill Bay(s)
<b>SPT</b>	Release into the Tailrace within 0.5 km downstream of Spillway
<b>SRR</b>	Release into the Separator Return Flume/Pipe with Direct Return to the River
<b>STS</b>	Release onto the Submerged Traveling Screen
<b>TAL</b>	Release into the Tailrace within 0.5 km downstream of Dam
<b>TRB</b>	Release into Turbine(s)

---

## **L. PIT Tag Steering Committee Members, 2009**

### **Steve Pastor, Chair**

U.S. Fish and Wildlife Service CRFPO  
1211 SE Cardinal Ct., Suite 100  
Vancouver, WA 98683  
*Stephen\_Pastor@fws.gov*  
Ph: (360) 604-2500  
Fax: (360) 604-2505

### **Doug Marsh**

National Marine Fisheries Service  
2725 Montlake Blvd.  
Seattle, WA 98112  
*doug.marsh@noaa.gov*  
Ph: (206) 860-3235  
Ph: (206) 860-3267

### **Charles Morrill**

Washington Department of Fish & Wildlife  
600 N. Capitol Way  
Olympia, WA 98504  
*cfwdfw@aol.com*  
Ph: (360) 902-2747  
Fax: (360) 902-2183

### **Pat Keniry**

Oregon Department of Fish & Wildlife  
One University Blvd., 203 Badgley Hall, EOU  
La Grande, OR 97850  
*pkeniry@eou.edu*  
Ph: (541) 962-3026  
Fax: (541) 962-3067

### **Ed Buettner**

Idaho Department of Fish & Game  
1540 Warner Ave.  
Lewiston, ID 83501  
*ebuettner@idfg.idaho.us*  
Ph: (208) 799-5010  
Fax: (208) 799-5012

### **Jeff Fryer**

Columbia River Intertribal Fish Commission  
729 NE Oregon Street  
Portland, OR 97232  
*fryj@critfc.org*  
Ph: (503) 731-1266  
Fax: (503) 235-4228

### **Jack Tuomikoski**

Fish Passage Center  
1827 NE 44<sup>th</sup> Ave., Suite 240  
Portland, OR 97213  
*jackt@fpc.org*  
Ph: (503) 230-4287  
Fax: (503) 230-7559

# V. Glossary of Terms

## **ANTENNA**

A loop antenna, made from a coil of wire, which transmits a signal that excites a PIT tag, and then receives a return signal from the PIT tag. Antennas are found in all interrogation equipment, from tabletop detectors to automatic interrogation systems.

## **ANTENNA GROUP**

A group of antennas around the same pipe or flume within the same or adjoining shielding boxes, with no gates between them; a set of PIT tag antennas within one shielded unit.

## **ANTENNA ID**

The unique identifier associated with each antenna in an automatic interrogation system.

## **ASSOCIATED MARKS**

A field in a Release Information File (obsolete since 1998) used to record identifying marks, other than PIT tags, associated with a group of fish being released, (*e.g.*, freeze brands, fin clips, coded wire tags or VI tags).

## **BROOD YEAR**

A field in a Tag Data File used, if applicable, to record the last two digits of the year a hatchery stock was spawned.

## **CAPTURE METHOD**

A field in a Tag Data File used to record the method used to collect fish.

## **CHECKSUM**

An (archaic) field in a Tag Data File detail record used to record a two-character hexadecimal value that confirms the validity of a 400 kHz PIT tag code.

## **COLLECTION SITE**

A field in a Mortality File (obsolete since 1998) used to record the six-character code of the denoting the point of collection. The **RELEASE SITE** field in the Tag Data File serves the same purpose when referencing detail records denoting mortality events.

## **COIL**

See ANTENNA.

## **COIL ID**

See ANTENNA ID.

## **CONDITIONAL COMMENT**

A field in a Tag Data File detail record used to record coded references to fish condition, and other key criteria. PTAGIS will not accept data files containing unrecognized Conditional Comments.

## **COORDINATOR ID**

A field in a Tag Data File used to record the (generally) three-character initials of the Coordinator. The Coordinator is responsible for the marking or recovery operation utilizing the PIT tags, and for responding to queries from other entities regarding those operations. Coordinators are **not** necessarily directly involved in data collection.

## **CREATION DATE**

A field in a Mortality File (obsolete since 1998) used to record the date the file was created, and used as the default date of observed mortality. Obsolete. The **TAG DATE** field in the Tag Data File serves the same purpose when referencing detail records denoting mortality events.

## **DETECTION**

A single PIT tag interrogation event.

## **DETECTOR**

A colloquial term used to describe one or more antenna assemblies used to interrogate PIT-tagged fish.

## **DISOWNED TAG RECORD**

A mark/release record with a DISOWN File ID signifies that the PIT tag code was originally reported to PTAGIS in a Tag Data file, but that the tag code was removed from a subsequent version of that Tag Data file.

## **DIVERSION GATE**

A mechanical gate (such as a rotating- or slide gate) used to selectively route or segregate fish.

## **EPA-REACH**

See USGS HYDROLOGIC UNIT.

## **EVENT**

Any of the tagging and release, recovery (recapture or mortality) or interrogation activities associated with PIT tag mark/recapture studies.

## **FILE TITLE**

The file ID or name given to a PIT tag data file. Each File Title must be unique from all others in the Columbia River Basin and therefore it is very important to follow the formats described in the PIT tag Specification Document for each individual file type. Files containing computer-generated File Title declarations cannot be renamed without also editing the declaration within the file.

## **FILE TYPE RECORD**

This record is present in Tagging and Interrogation files. It designates the format, content, and function of PIT tag data files.

## **FIXED REFERENCE TAG**

A tag having a unique code and an internal clock that is permanently attached to a PIT tag antenna at an interrogation site, and used to monitor the operation and performance of an individual antenna. It receives power from the excitation coil and automatically transmits its code at a regular interval. Also known as a “Timer Tag.”

## **FLAG CODE**

See Conditional Comment.

## **FORK LENGTH**

A field in a Tag Data File detail record used to record the length of a fish from the tip of the snout to the fork of the tail, recorded in millimeters.

## **GIS HYDRO UNIT**

See USGS HYDROLOGIC UNIT.

## **HATCHERY SITE**

A field in a Tag Data File used, if applicable, to record a four-character abbreviation of the hatchery at which the fish were reared.

## **HEADER RECORD**

A record found at the beginning of a Tag Data File describing parameters global to the detail records in the file.

## **INTERROGATION FILE**

A data file of passive PIT tag detections, created with the MiniMon.exe or MultiMon.exe software programs, and containing the PIT tag codes, dates and times of interrogation, and the antenna IDs on which the tags were interrogated.

## **ISO**

International Standards Organization.

## **ISO 11784 and 11785**

These are the international standards related to the Radio Frequency ID technology used in PIT tags. 11784 defines the 128 bits of the tag telegram message, also referred to as the datagram. 11785 defines the technical parameters of the tag. For example, the ISO tag activation frequency is 134.2 kHz.

## **LOCATION**

A tag, release, recapture, or mortality site. Fixed locations include hatcheries, main stem dams, and some traps and weirs. Stream and river locations may support PIT tag events at points along the length of the entire stream from its mouth to its headwaters.

## **MAIN SITE**

For the purpose of PTAGIS database reports, specific main stem interrogation sites are classified as a “Main” site. Special database processing occurs for sites that are classified as “Main” sites. Specifically, the first interrogation of a PIT tag at a “Main” site will create an “obs\_main” record in the database. Subsequent interrogations of this PIT tag record at other “Main” sites will not generate further obs\_main records.

## **MIGRATION YEAR**

A field in a Tag Data File used to record the last two digits of the earliest calendar year when fish are expected to smolt and out-migrate to the ocean. In the case of adult or recaptured salmon and steelhead, or resident fish species, this value will generally reference the current year.

## **MINIMON.EXE**

A 32-bit Windows™ software program that provides automated data entry of PIT tag passive interrogation data.

## **MONITOR**

See ANTENNA GROUP.

## **MORTALITY**

A PIT tag that is recovered with or without the host animal, subsequent to the tagged release of the animal. See “Mortality Events” in Section III.A.5.e.2: Conditional Comments.

## **MORTALITY FILE**

An obsolete data input file format originally used to report PIT tag mortality events. These events are now recorded and reported to PTAGIS using the standard Tag Data File.

## **MULTIMON.EXE**

A DOS software program that provides automated data entry of PIT tag passive interrogation data. In addition, the MULTIMON.EXE program provides logical control for the operation of fish diversion gates, and includes a “Separation by Code” (SbyC) capability that permits the identification and segregation of individual PIT-tagged fish based on each tag’s unique hexadecimal code.

## **NOTE RECORD**

A comment section in a Tag Data File. Depending on the context in which they are recorded and used, note records can pertain to a group of fish or to an individual fish. Note records are not processed by, or incorporated into, the PTAGIS database.

## **OBSERVATION**

A colloquial name for an interrogation event recorded in an Interrogation File.

## **ORGANIZATION**

A field in a Tag Data file used to record the code for the entity responsible for data collection.

## **ORPHAN TAG RECORD**

A PIT tag is categorized as an ORPHAN if PTAGIS receives an interrogation record for that tag prior to the receipt of a corresponding mark/release record. When PTAGIS receives the actual tagging record, the ORPHAN status is automatically updated to reflect the true tagging and release properties. Generally, ORPHAN tag records occur when tagged fish are released directly upstream of a PIT tag detection site, and the researcher has not had an opportunity to finalize their marking data and submit those data to PTAGIS.

## **P3.EXE**

A 32-bit Windows™ data entry software program used to record tagging and release, recapture, and mortality events. P3.EXE integrates real-time, context-sensitive data validation into its data collection process.

## **PASS-THROUGH REFERENCE TAG**

A PIT tag embedded in a wooden block and passed through an interrogation system to determine coil, interrogation unit, and system reading efficiencies. Also called a STICK TAG.

## **PIFF.EXE**

A 32-bit Windows™ software program used to generate a formatted interrogation data file from text files containing raw device data.

## **PIT (Passive Integrated Transponder) TAG**

A computer chip attached to a wire antenna and encapsulated in a biologically inert glass capsule. The tag is excited when it is passed through the electro-magnetic field of a detector and the Tag ID encoded on the computer chip is transmitted to the detector.

## **PIT TAG DIVERSION GATE**

Any mechanical device used to route or divert PIT-tagged fish. The gate is activated by a Programmable Logic Controller (PLC) attached to a PIT tag detector.

## **PIT TAG INTERROGATION SYSTEM**

All of the equipment at an interrogation site related to detecting and reporting PIT tags.

## **PIT TAG STEERING COMMITTEE (PTSC)**

A subcommittee of the Fish Passage Advisory Committee of the Columbia Basin Fish and Wildlife Authority. The Committee is made up of technical representatives of the Basin's fisheries agencies and tribes. The Committee's function is to provide guidance in the development of tagging methodologies and data standards and to serve as a technical forum for the operation of PTAGIS and the PIT tag data collection and distribution system.

## **PIT CODE**

A unique 10- or 14-character hexadecimal code recorded on the computer chip in the PIT tag. PTAGIS applications refer to this value as the Tag ID.

## **POSITIONAL COMMENT**

A field in a Tag Data File detail record used to record specific, pre-formatted codes pertaining to an individual fish. Currently there are predefined values and formats for Species, Run, Rearing Type, and Release Time Variable codes. Individual researchers can designate their own additional positional comments for their own use, but they will not be recognized and processed by the PTAGIS data system.

## **POST TAGGING TEMP**

A field in a Tag Data File used to record the water temperature (C°) in a pond or raceway when fish are held for an extended period of time prior to release. This variable should be left blank if the fish are released immediately.

## **PTAGIS**

The PIT Tag Information System. This is the central repository of all PIT tag information collected in the Columbia Basin. PTAGIS is managed by the Pacific States Marine Fisheries Commission with funding from the Bonneville Power Administration.

## **PTOC**

The PIT Tag Operations Center. PTOC provides the operational components of the Columbia Basin PIT Tag Information System (PTAGIS) project. This acronym is from the Charter agreement for the PIT Tag Steering Committee between the Columbia Basin Fish and Wildlife Authority and the Pacific States Marine Fisheries Commission. According to the Charter, PTOC administers the PTAGIS database, operates and maintains all detection equipment at the main-stem Columbia and Snake river dams, and creates and updates data collection software for the Columbia River Basin PIT Tag Information System – this by definition is the PTAGIS project.

## **RACEWAY/TRANSECT**

This refers to a field in a Tag Data File used, as needed, to record the raceway or transect number or designation used to identify a group of PIT-tagged fish.

## **REARING TYPE**

A one-character code within the Positional Comments section of a Tag Data File detail record used to indicate the rearing status (hatchery, wild, or unknown) of a fish.

## **RECAPTURE**

A PIT-tagged fish that is handled subsequent to the release event. A recaptured fish must be designated with the “RE” flag code.

## **RECOVERY ORGANIZATION**

A field in the Mortality File (obsolete since 1998) used to record the code of the agency or organization responsible for the collection of mortality data. The **ORGANIZATION** field in the Tag Data File serves the same purpose when referencing detail records denoting mortality events.

## **RELEASE DATE**

A field in a Tag Data File used to record the date that fish are released after being PIT-tagged to rear or out-migrate naturally.

## **RELEASE INFORMATION FILE**

The Release Information File consisted of information about a Tag Data File or files that was not available at the time of tagging. Obsolete since 1998. Release information is now incorporated directly into the Tag Data File.

## **RELEASE RIVER KM**

A field in a Tag Data File used to record the location of release, in river kilometers. This is a hierarchical coding scheme denoting the distance of release locations and intermediate tributaries from the mouth of the Columbia River. For example, the Release River KM of 522.173 for Lower Granite Dam reflects a distance of 522 km from the mouth of the Columbia River to the mouth of the Snake River, and 173 km from the mouth of the Snake River to Lower Granite Dam.

## **RELEASE SITE**

A field in a Tag Data File containing the fixed location or stream name that PIT-tagged fish are released into.

## **RELEASE WATER TEMP**

A field in a Tag Data File containing the temperature (C°) of the body of water that PIT-tagged fish are released into to migrate downstream.

## **RIVER REACH**

See USGS HYDROLOGIC UNIT.

## **RUN**

A one-digit code within the Positional Comments section of a Tag Data File detail record used to indicate the season the adult fish return from saltwater (*e.g.*, spring Chinook, summer steelhead, etc).

## **SESSION MESSAGE**

A field in a Tag Data File used to summarize the purpose and function of the data set.

**SITE**

An interrogation system location.

**SITE CODE**

A unique three-character interrogation site identifier.

**SPECIES**

A one-digit code within the Positional Comments section of a Tag Data File detail record use to indicate the species of the fish being tagged.

**STICK TAG**

See PASS-THROUGH REFERENCE TAG.

**STOCK**

A field in a Tag Data File used, as needed, to record a brief descriptor of the brood stock, such as “Rapid River” or “Wells”.

**TAG DATE**

A field in a Tag Data File used to record the date the fish were tagged or recovered. The P3.EXE software program defaults to the current date and time.

**TAG DETAIL RECORD**

That portion of a Tag Data File containing the PIT code, length, weight, species, race, rearing type, and any comments associated with each individual tagged fish.

**TAG SITE**

A field in a Tag Data File used to record the location code (four to six characters) of the tagging or recovery operation.

**TAGGER**

This field in a Tag Data File can be used to record the last name and first initial of the tagging or project supervisor.

**TAG DATA FILE**

A data file containing information pertaining to the original marking and release, recapture, or mortality of PIT-tagged fish.

**TAGGING METHOD**

A field in a Tag Data File used to record the method of injecting tags into fish. If the data file contains only recapture or mortality information, the Tagging Method is denoted as “NONE.”

**TAGGING TEMP**

The temperature (C°) of the tagging bath during the marking operation.

## **TEST TAG**

A special tag (*e.g.*, “Stick Tag” or “Fixed Reference Tag”) registered by PTOC and used to test equipment at interrogation sites. Test tags are registered with the PTAGIS database in order to differentiate them from PIT tags used to mark animals

## **TEXTUAL COMMENT**

A field in a Tag Data File detail record containing an *ad hoc* text descriptor pertaining to an individual fish.

## **TIMER TAG**

See FIXED REFERENCE TAG.

## **TRANSPORTATION DURATION**

A field in a Release Information file (obsolete since 1998) used to report the duration of time from loading of fish onto the transport vehicle until they are released into the stream.

## **TRANSPORTATION TYPE**

A field in a Release Information file (obsolete since 1998) used to report the method of transport to the release site.

## **USGS HYDROLOGIC UNIT**

An eight-digit watershed code representing the primary through quaternary classifications of geographic mapping in the United States.

## **VARIABLE RELEASE TIME**

A method of assigning multiple Release Dates (including times) to groups of fish within a Tag Data File. If groups of fish within a Tag Data File are tagged and released to a stream independently of other groups within the same Tag Data File then release date and times must be recorded for each group of fish. This is done with the Release Time Variable, which is a Positional Comment value ranging from 00 to 99. There must be a corresponding Variable Release Time declaration in the Tag Data File to define each unique Release Time Variable reference in the Tag Detail section.

## **WEIGHT**

A field in a Tag Data File used to report the weight of the fish, recorded in tenths of grams.

This page left intentionally blank.

# Appendix A. Hydrologic Unit Codes

Adapted from Seaber, P.R., Kapinos, F.P., and Knapp, G.L., 1987, Hydrologic Unit Maps: U.S. Geological Survey Water-Supply Paper 2294, 63 p.

## **A1. Classification System**

The United States was divided and sub-divided into successively smaller hydrologic units which were classified into four levels: regions, sub-regions, accounting units, and cataloging units. The hydrologic units are arranged within each other, from the smallest (cataloging units) to the largest (regions). Each hydrologic unit is identified by a unique hydrologic unit code (HUC) consisting of two to eight digits based on the four levels of classification in the hydrologic unit system.

The first level of classification divides the Nation into 21 major geographic area, or regions. These geographic areas (hydrologic areas based on surface topography) contain either the drainage area of a major river, such as the Missouri region, or the combined drainage areas of a series of rivers, such as the Texas-Gulf region, which includes a number of rivers draining into the Gulf of Mexico.

The second level of classification divides the 21 regions into 222 sub-regions. A sub-region includes the area drained by a river system, a reach of a river and its tributaries in that reach, a closed basin(s), or a group of streams forming a coastal drainage area.

The third level of classification subdivides many of the sub-regions into accounting units.

The fourth level of classification is the cataloging unit, the smallest element in the hierarchy of hydrologic units. A cataloging unit is a geographic area representing part or all of a surface drainage basin, a combination of basins, or a distinct hydrologic feature.

## **A2. Explanation of Hydrologic Unit Codes**

An eight-digit code uniquely identifies each of the four levels of classification within four two-digit fields. The first two digits identify the water-resources region; the first four digits identify the sub-region; the first six digits identify the accounting unit, and the addition of two more digits for the cataloging unit completes the eight-digit code. An example is given here using hydrologic unit code (HUC) 01080204:

01 - the region

0108 - the sub-region

010802 - the accounting unit

01080204 - the cataloging unit

An 00 in the two-digit accounting unit field indicates that the accounting unit and the sub-region are the same. Likewise, if the cataloging unit field is 00, it is the same as the accounting unit.

### A3. Columbia Basin Hydrologic Unit Codes

#### 170200 Upper Columbia

17020001	Franklin D. Roosevelt Lake
17020002	Kettle
17020003	Colville
17020004	Sanpoil
17020005	Chief Joseph
17020006	Okanogan (United States)
17020007	Similkameen (United States)
17020008	Methow
17020009	Lake Chelan
17020010	Upper Columbia-Entiat
17020011	Wenatchee
17020012	Moses Coulee
17020013	Upper Crab
17020014	Banks Lake
17020015	Lower Crab
17020016	Upper Columbia-Priest Rapids

#### 170300 Yakima

17030001	Upper Yakima
17030002	Naches
17030003	Lower Yakima

#### 170601 Lower Snake

17060101	Hells Canyon
17060102	Imnaha
17060103	Lower Snake-Asotin
17060104	Upper Grande Ronde
17060105	Wallowa
17060106	Lower Grande Ronde
17060107	Lower Snake-Tucannon
17060108	Palouse
17060109	Rock
17060110	Lower Snake

#### 170603 Clearwater

17060301	Upper Selway
17060302	Lower Selway
17060303	Lochsa
17060304	Middle Fork Clearwater
17060305	South Fork Clearwater
17060306	Clearwater
17060307	Upper North Fork Clearwater
17060308	Lower North Fork Clearwater

#### 170702 John Day

17070201	Upper John Day
17070202	North Fork John Day
17070203	Middle Fork John Day
17070204	Lower John Day

#### 170602 Salmon

17060201	Upper Salmon
17060202	Pahsimeroi
17060203	Middle Salmon-Panther
17060204	Lemhi
17060205	Upper Middle Fork Salmon
17060206	Lower Middle Fork Salmon
17060207	Middle Salmon-Chamberlain
17060208	South Fork Salmon
17060209	Lower Salmon
17060210	Little Salmon

#### 170701 Middle Columbia

17070101	Middle Columbia-Lake Wallula
17070102	Walla Walla
17070103	Umatilla
17070104	Willow
17070105	Middle Columbia-Hood
17070106	Klickitat

#### 170703 Deschutes

17070301	Upper Deschutes
17070302	Little Deschutes
17070303	Beaver-South Fork
17070304	Upper Crooked
17070305	Lower Crooked
17070306	Lower Deschutes
17070307	Trout

#### 170800 Lower Columbia

17080001	Lower Columbia-Sandy
17080002	Lewis
17080003	Lower Columbia-Clatskanie
17080004	Upper Cowlitz
17080005	Lower Cowlitz
17080006	Lower Columbia

#### 170900 Willamette

17090001	Middle Fork Willamette
17090002	Coast Fork Willamette
17090003	Upper Willamette
17090004	Mckenzie
17090005	North Santiam
17090006	South Santiam
17090007	Middle Willamette
17090008	Yamhill
17090009	Molalla-Pudding
17090010	Tualatin
17090011	Clackamas
17090012	Lower Willamette

## Appendix B. Antenna Group Naming Standards

### ***B1. Naming Standard for PIT Tag Antenna Groups at Juvenile Fish Facilities***

Begin at the first antenna group(s) the fish encounter upon entering the facility (generally, this will be at the debris and size separator). To name each antenna group, take the first of the following that applies to the antenna group's location within the plumbing.

1. If the antenna group comes directly from the separator, such that all fish leaving the separator through that flume pass through that antenna group (with no intervening gates or splits), name it "SEPARATOR".
2. If the antenna group is not in the PIT Tag diversion system, but leads to any one of the following (trace the pipes and flumes downstream of the antenna group), name the antenna group after what it goes to:

RACEWAY Raceway(s): If a particular set, append that set's name.

RIVER Back to the river

TRUCK Truck loading

BARGE Barge loading

TRANSPORT Either truck or barge loading

EXIT Back to the river, or truck or barge loading

If one term completely describes the antenna group's location, use it. Otherwise, use all necessary terms to describe the antenna group (*e.g.*, RACEWAY/EXIT).

3. If the antenna group is located between the Corps sample gate and the sample holding tank (the antenna group may be before or after the sample head box), name it "SUBSAMPLE".
4. If the antenna group is between the Corps sample holding tank and the lab, name it "SAMPLE ROOM".
5. If the antenna group is the first antenna group encountered after a PIT Tag diversion gate, name it "DIVERSION".
6. If the antenna group is in the PIT Tag diversion system, but is not the first antenna group encountered, call it "DIVERSION" plus the applicable term(s) from item 2 above (*e.g.*, "DIVERSION EXIT").

Some of these naming conventions may be modified based on certain design features of the facility:

1. If there are two parallel paths through part or all of the facility, beginning with the separator, add the prefix "A" or "B" to each antenna group in the parallel portion; "A" will be the first encountered by the flow through the separator; and "B" the second (such as "A SEPARATOR", "B TRANSPORT"). If there are more than two parallel paths, continue with "C" and "D", etc. as prefixes. Only use these prefixes for as long as the paths are parallel from the separator.
2. If there are two parallel paths through part of the facility, but they diverge from a point other than the separator, include the suffix "1" or "2" to each antenna group in the parallel portion; "1" will be the first encountered by the flow into the parallel sections, "2" the second (*e.g.*, "DIVERSION 1", "DIVERSION 2"). If there are more than two parallel paths, continue with "3", "4", etc. Only use these suffixes for as long as the paths are parallel.
3. If the antenna group controls a diversion gate, suffix "GATE" to the antenna group. NOTE: If there are several coils in line, some controlling a diversion gate and others not, those that control the gate should be designated as a separate antenna group from the others.
4. Abbreviations may be used to shorten the name of an antenna group, providing the abbreviations are commonly known (*e.g.*, "E" for "EAST") and do not create a situation where two antenna groups have the same name.

## **B2. Naming Standard Example**

At Little Goose, there are 10 antenna groups. The first four coming from the separator are two 2-coil units that control the diversion gates and an additional 2-coil unit in line with each of the first. These are parallel; two are gate controllers. They are called "A SEPARATOR", "A SEPARATOR GATE", "B SEPARATOR", and "B SEPARATOR GATE".

Continuing down the undiverted path, each side has an antenna group just after the Corps sample gates. The flow from these antenna groups can be sent to the raceways, truck loading, barge loading, or to the river. Since they are still parallel; these antenna groups are called "A RACEWAY/EXIT" and "B RACEWAY/EXIT".

Going down the diversion system, the flumes which carry the fish from the diversion gates lead to separate head boxes, then down separate pipes with antenna groups to holding tanks. Since these are also parallel, they are called "A DIVERSION" and "B DIVERSION".

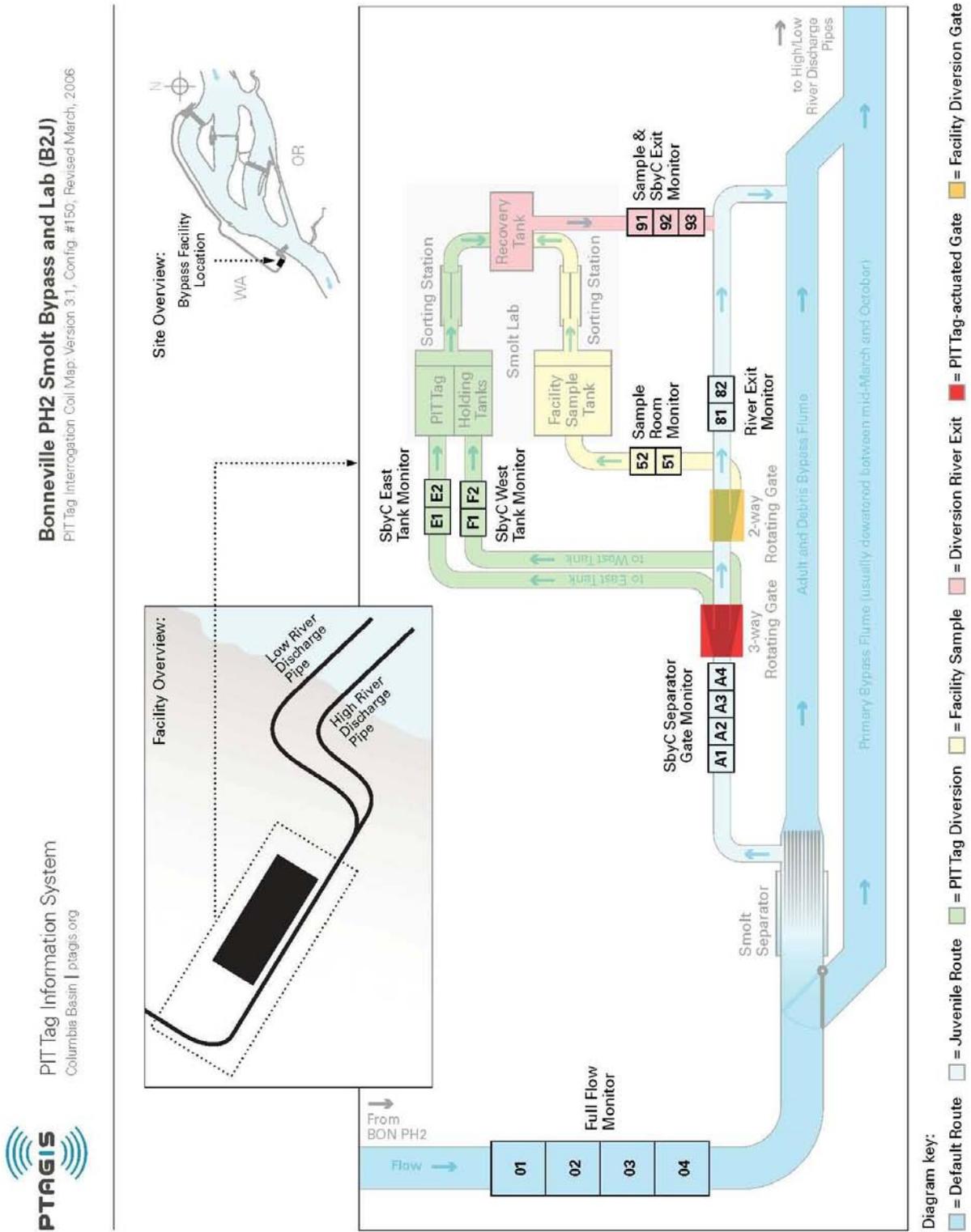
There is one more antenna group in the diversion system; this one leads to truck loading, barge loading, or to the river. The two sides come together before this antenna group; therefore it is called "DIVERSION/EXIT".

The last antenna group is in the Corps Sample; it leads into the lab, after the holding tank. It is called "SAMPLE ROOM".

## Appendix C. Interrogation Site Configurations

This appendix contains diagrams of Interrogation Sites currently maintained by the PIT Tag Operations Center (PTOC), and the complete configuration history for all Interrogation Site data defined in the PIT Tag Information System (PTAGIS). If you need additional information about any Interrogation Site, please contact PTAGIS at [ptagis\\_support@ptagis.org](mailto:ptagis_support@ptagis.org) or (503) 595-3100.

# C1. Bonneville Powerhouse 2 Juvenile (B2J)

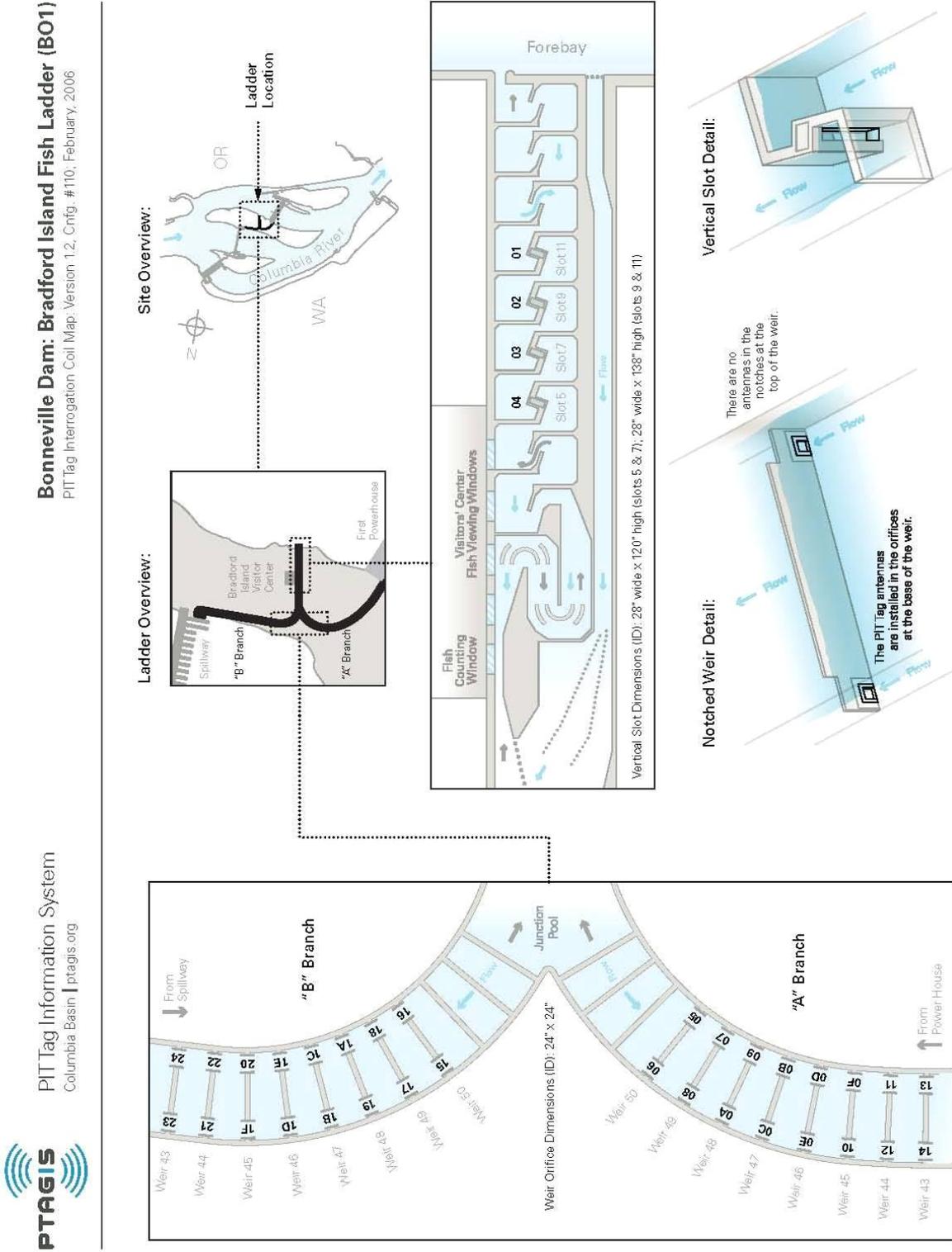


**Bonneville PH2 Smolt Bypass and Lab (B2J)**  
 PIT Tag Interrogation Col Map: Version 3.1, Config. #150, Revised March, 2006

PIT Tag Information System  
 Columbia Basin | ptagis.org



## C2. Bonneville Bradford Island Adult Fish Ladder (BO1)



PIT Tag Information System  
 Columbia Basin | ptagis.org

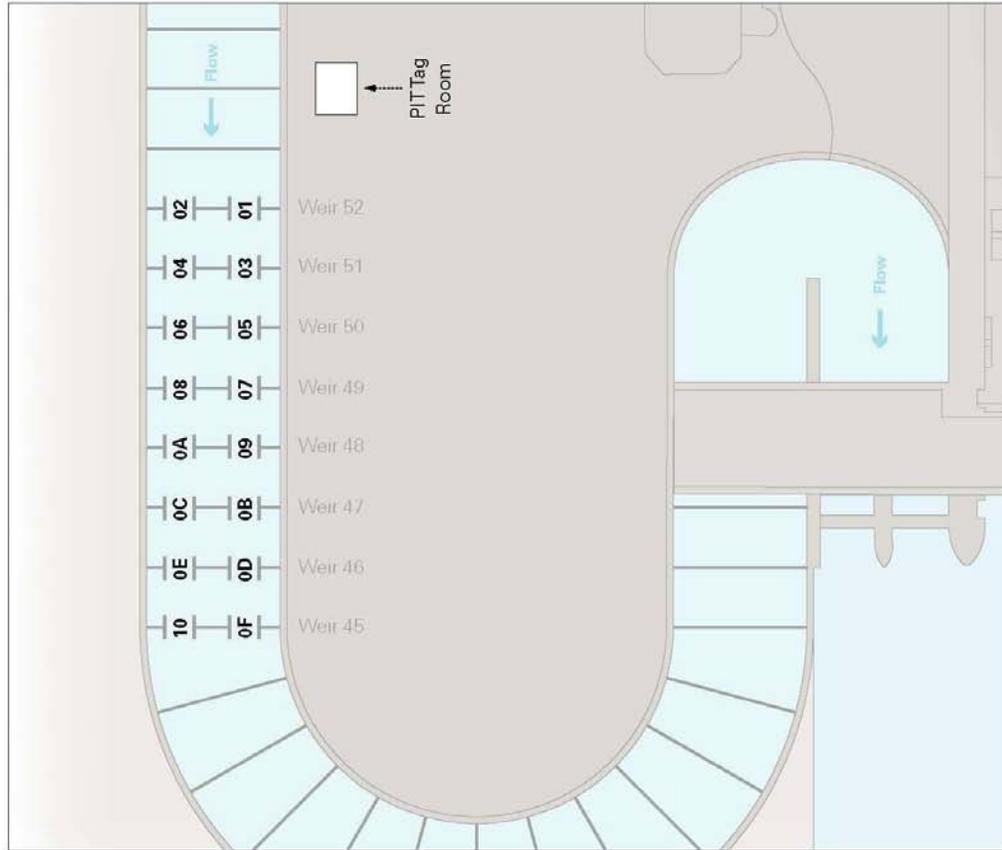
### C3. Bonneville Cascades Island Adult Fish Ladder (BO2)



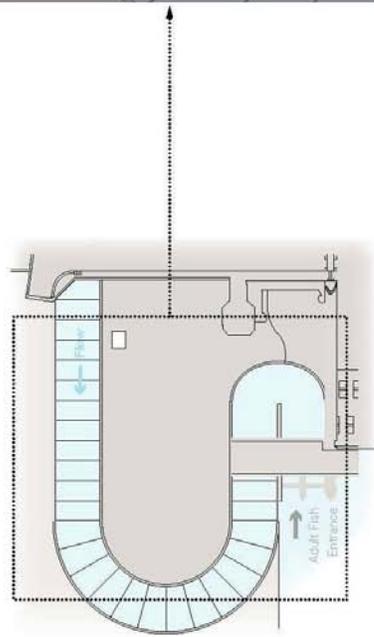
PTAGIS Information Systems  
Columbia Basin | ptagis.org

#### Bonneville Dam: Cascades Island Fish Ladder (BO2)

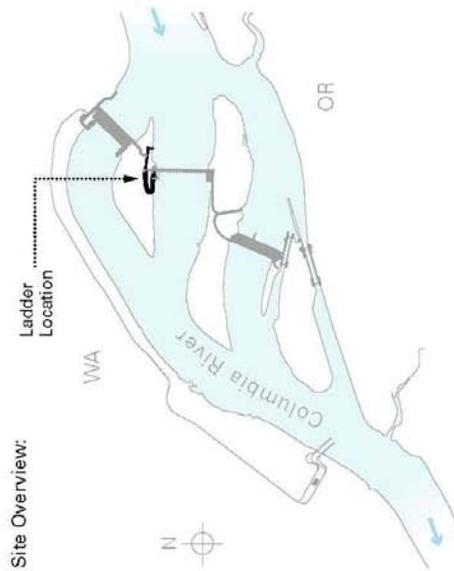
PIT Tag Interrogation Coll Map: Version 1.1, Cnfg. #100, February, 2002  
Orifice Dimensions: 24" wide x 24" high



Ladder Overview:



Site Overview:



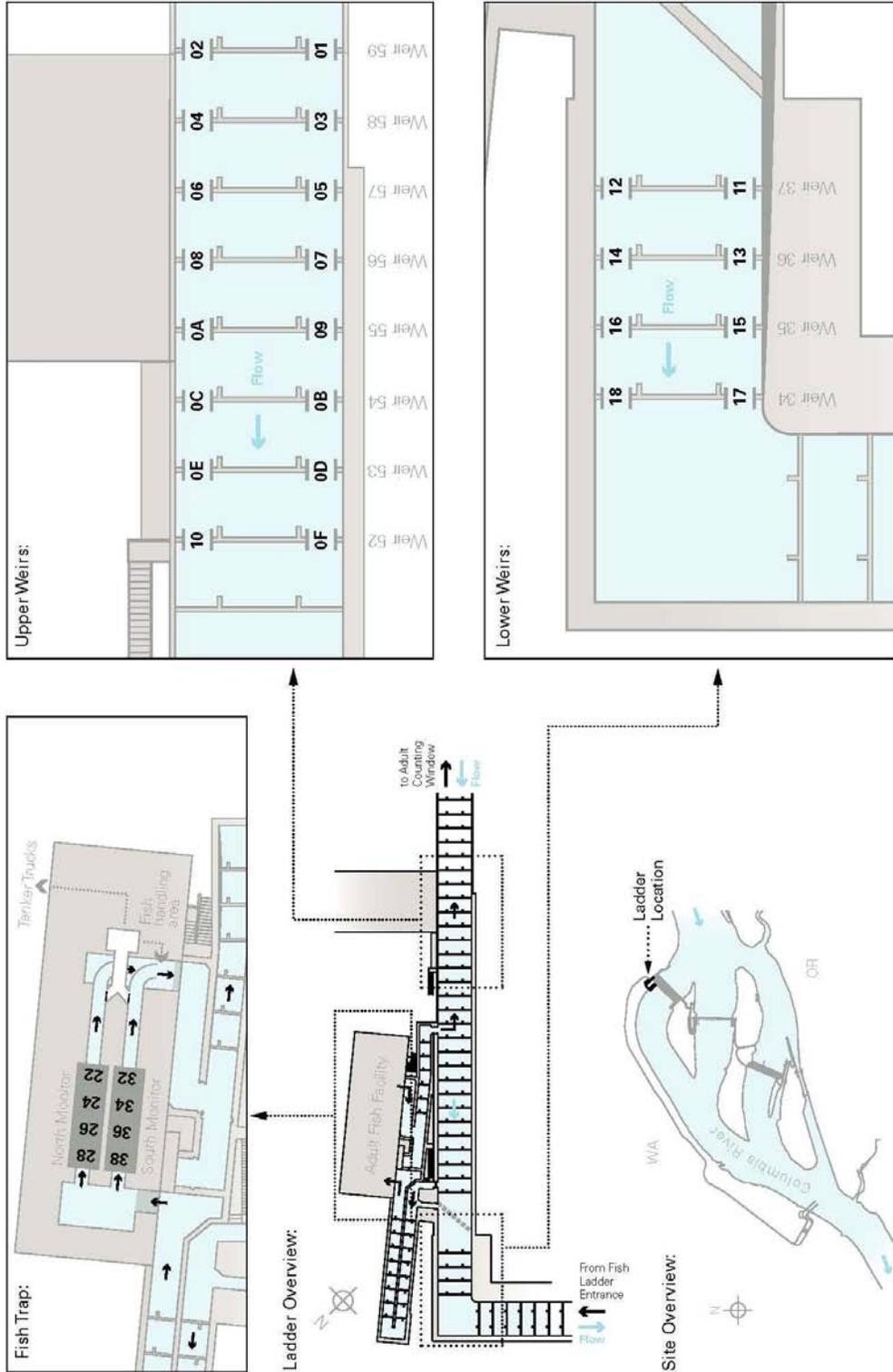
## C4. Bonneville Washington Shore Adult Fish Ladder (BO3)

### Bonneville Dam: Washington Shore Fish Ladder and AFF (BO3)

PIT Tag Interrogation Coil Map, Version 1.2, Cnfg. #110; Revised December, 2003  
 Orifice Dimensions: .18" wide x 18" high



PIT Tag Information Systems  
 Columbia Basin | ptagis.org



## C5. Bonneville Washington Shore Ladder Vertical Slots (BO4)

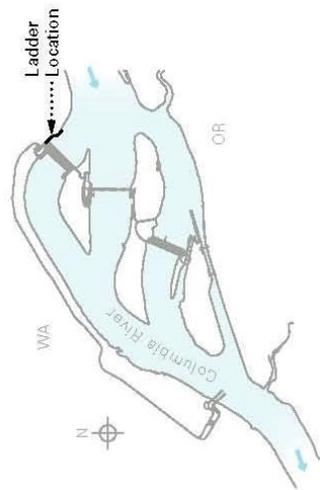


PTAGIS  
Columbia Basin | ptagis.org

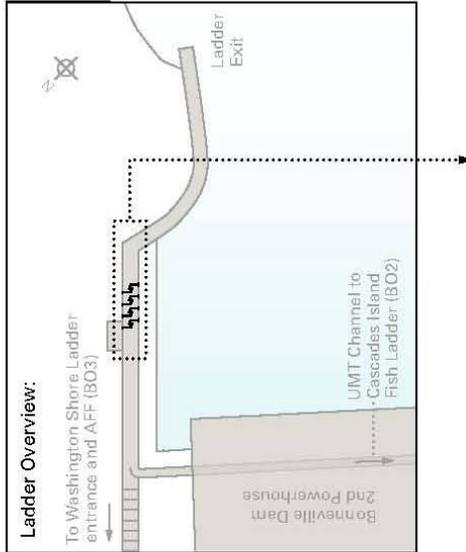
### Bonneville Dam: Washington Shore Ladder Vertical Slots (BO4)

PIT Tag Interrogation Coil Map: Version 10, Cnfg. #100; Created March, 2005  
Antenna Dimensions (ID): 28" wide x 120" high (slots 5 & 7); 28" wide x 138" high (slots 9 & 11)

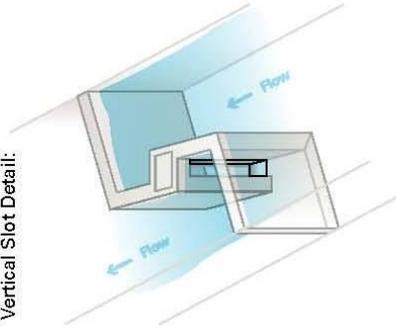
Site Overview:



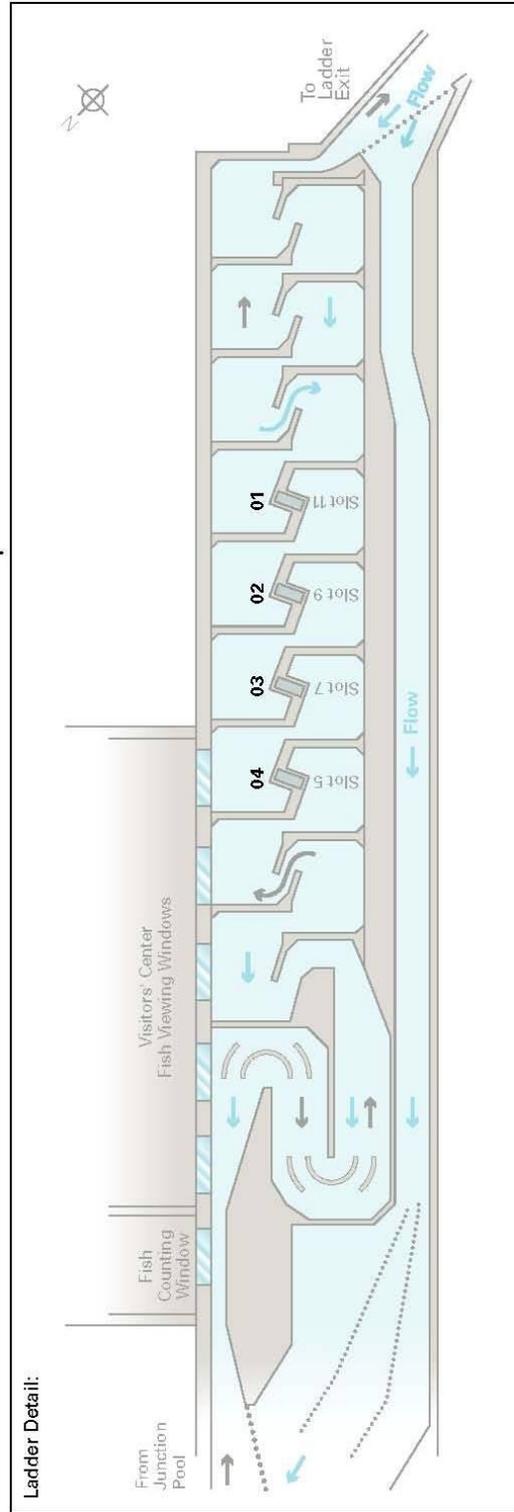
Ladder Overview:



Vertical Slot Detail:

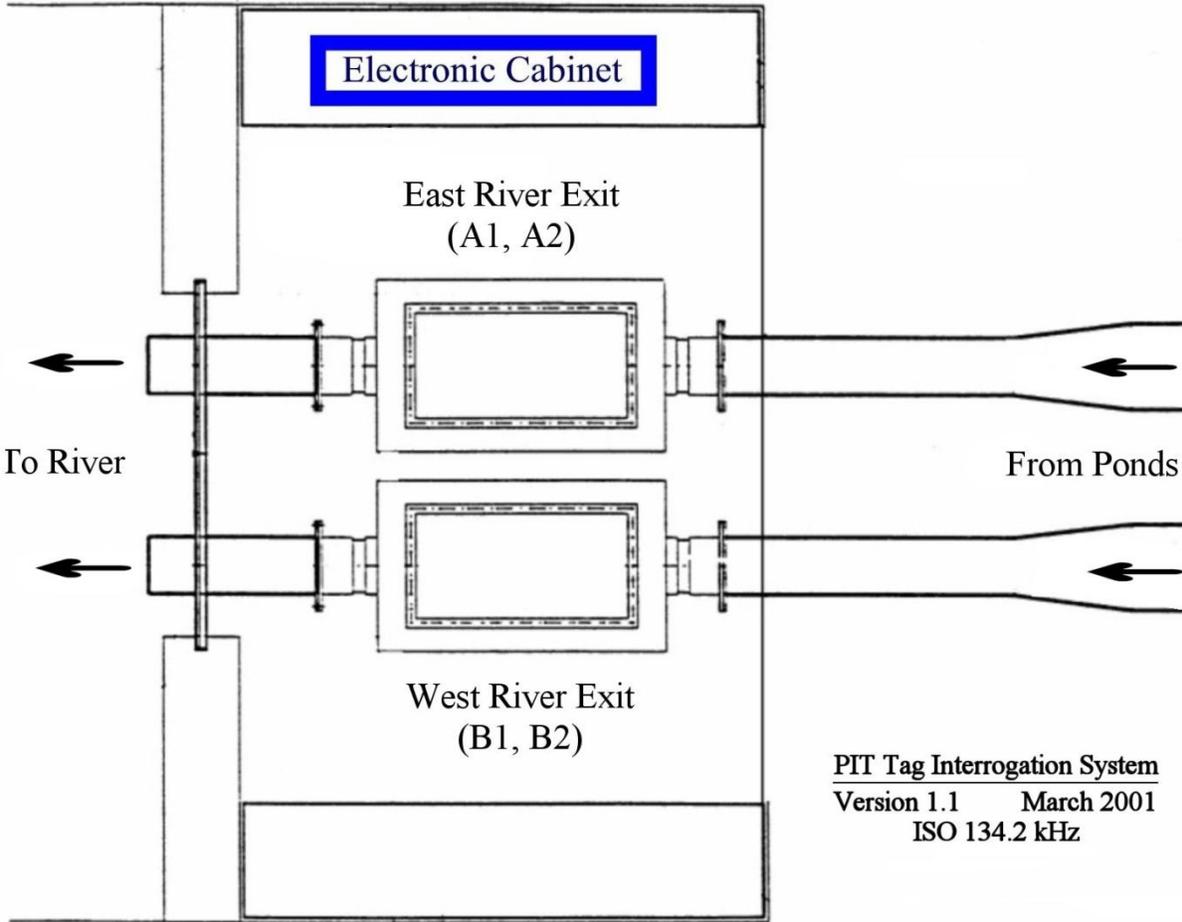


Ladder Detail:



**C6. Clark Flat Acclimation Site (CFJ)**

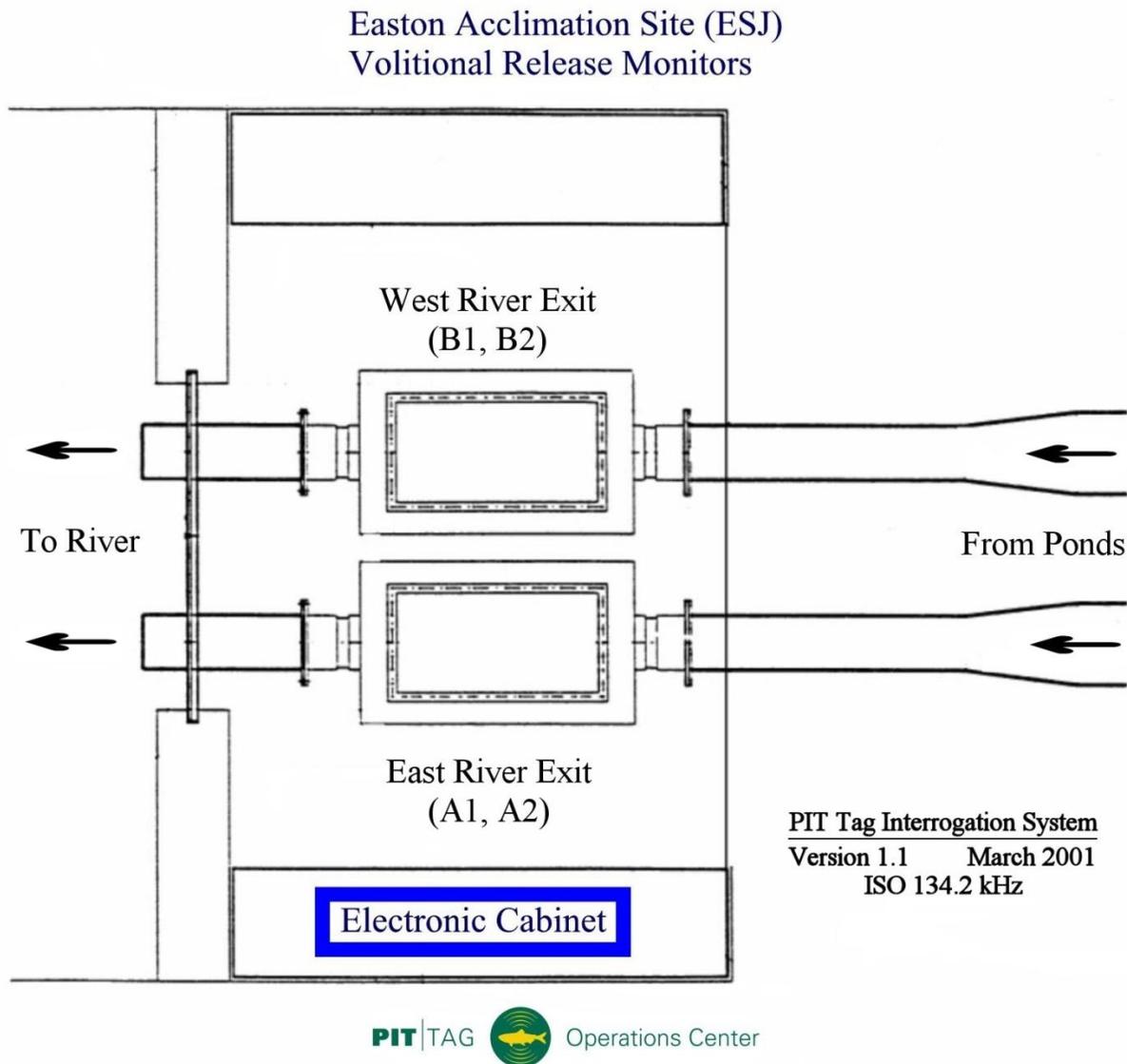
Clark Flat Acclimation Site (CFJ)  
Volitional Release Monitors



PIT Tag Interrogation System  
Version 1.1 March 2001  
ISO 134.2 kHz



## C7. Easton Acclimation Site (ESJ)

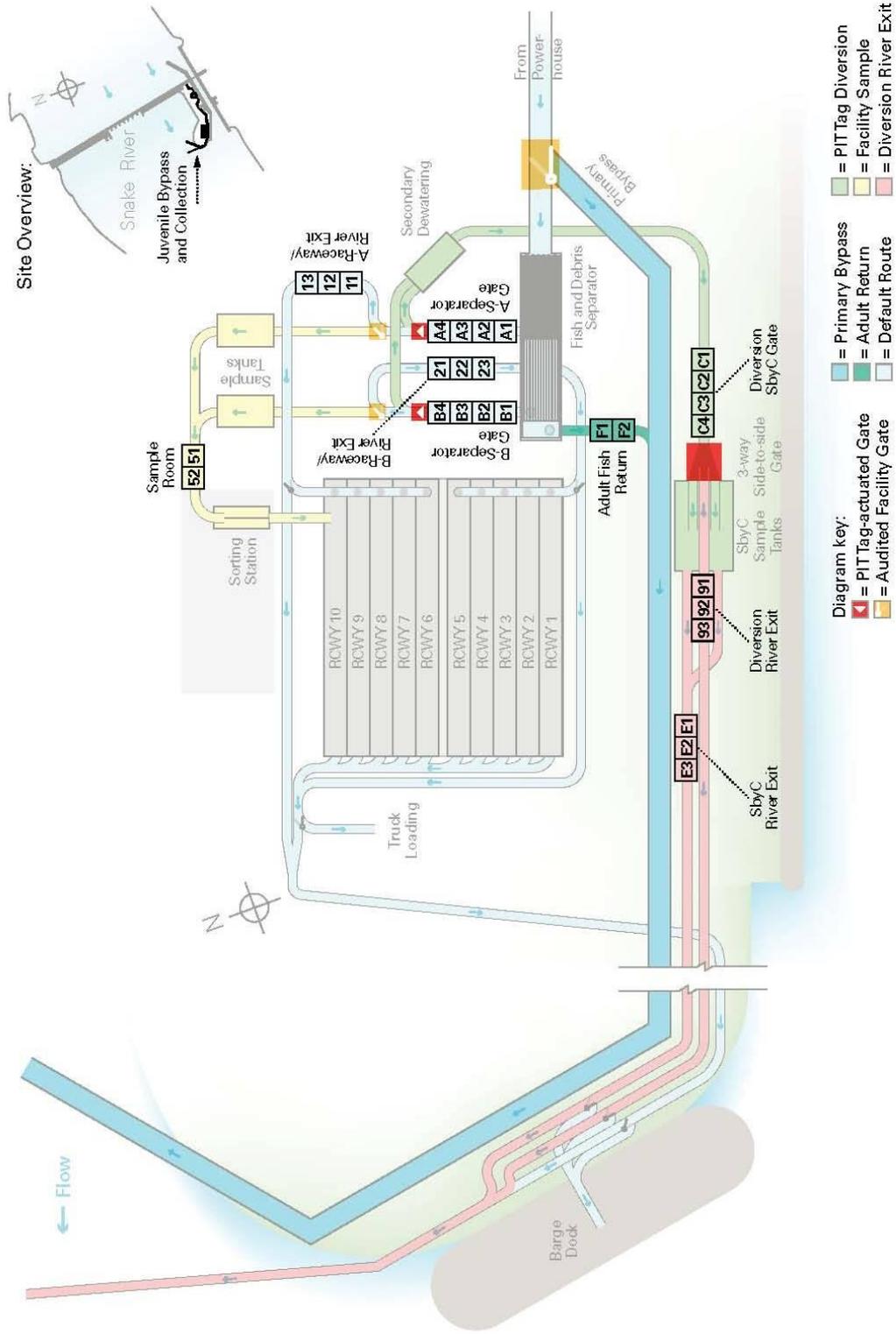


# C8. Little Goose Dam (GOJ)



PIT Tag Information System  
Columbia Basin | ptagis.org

**Little Goose Dam Smolt Bypass and Collection (GOJ)**  
PIT Tag Interrogation Coil Map: Version 3.1; Cnfg. #140; Revised December, 2005



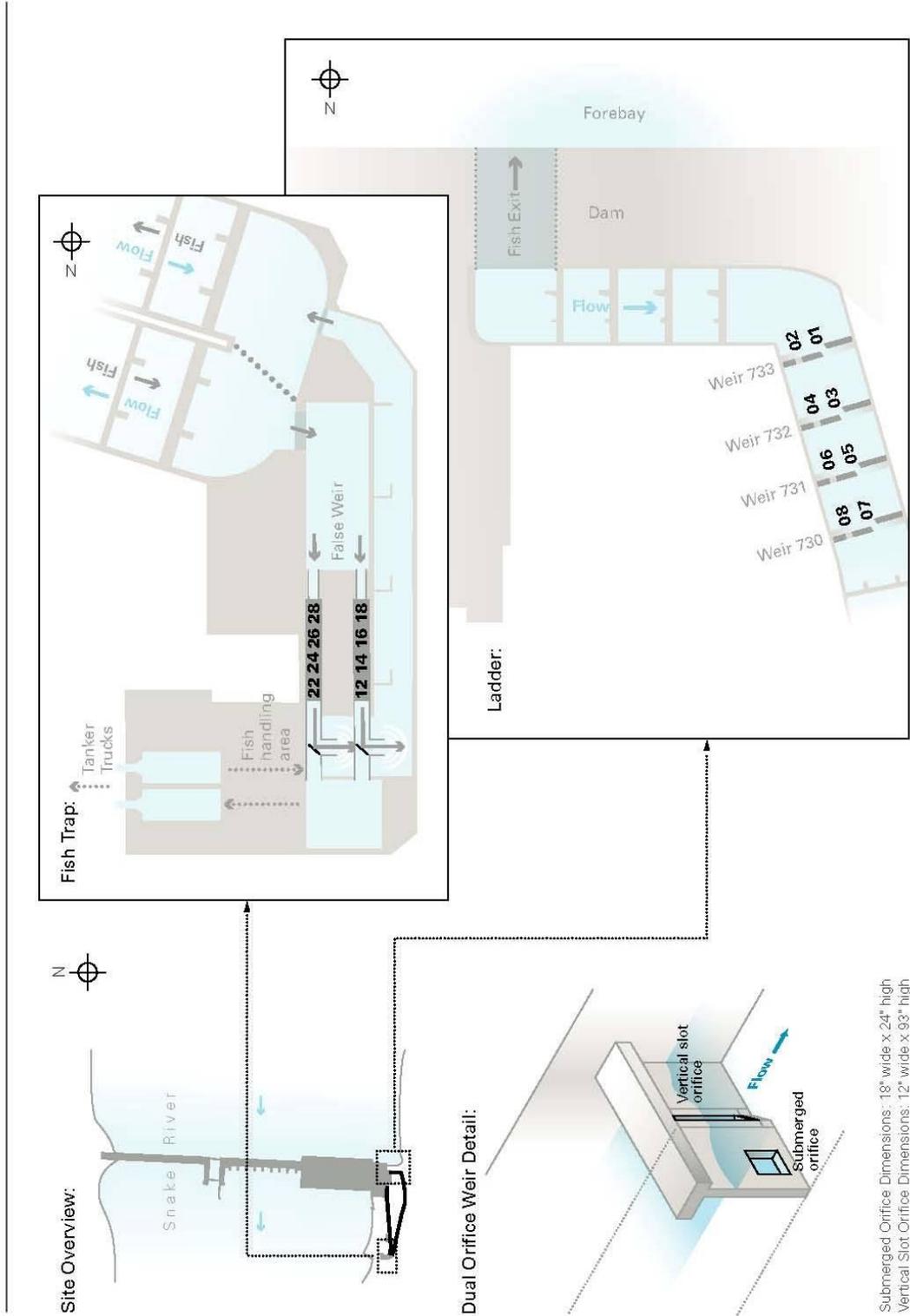
# C9. Lower Granite Dam Adult Fish Ladder and Trap (GRA)



PIT Tag Information Systems  
Columbia Basin | ptagis.org

## Lower Granite Dam Fish Ladder and Trap (GRA)

PIT Tag Interrogation Coil Map: Version 4.1, Cnfg. #140; Revised December, 2003



Submerged Orifice Dimensions: 18" wide x 24" high  
Vertical Slot Orifice Dimensions: 12" wide x 93" high

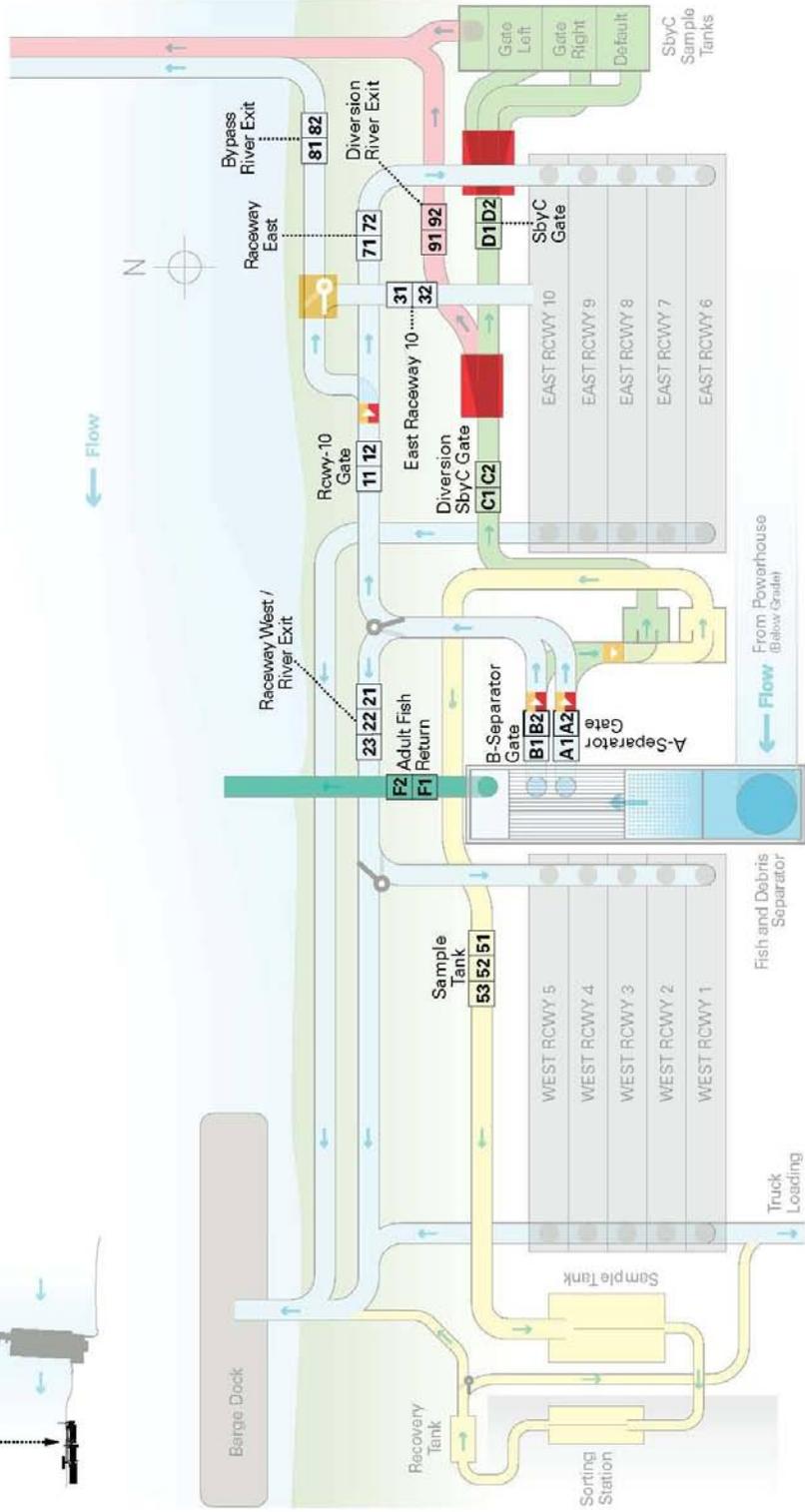
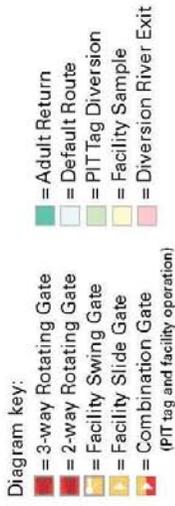
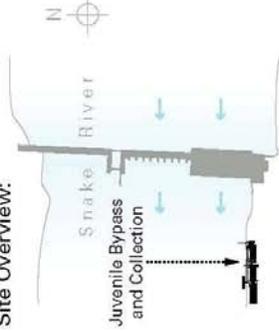
# C10. Lower Granite Dam Juvenile Fish Facility (GRJ)



PIT Tag Information System  
Columbia Basin | ptagis.org

Lower Granite Dam Smolt Bypass and Collection (GRJ)  
PIT Tag Interrogation Coll Map: Version 4.0, Collg #140, Revised March, 2007

## Site Overview:

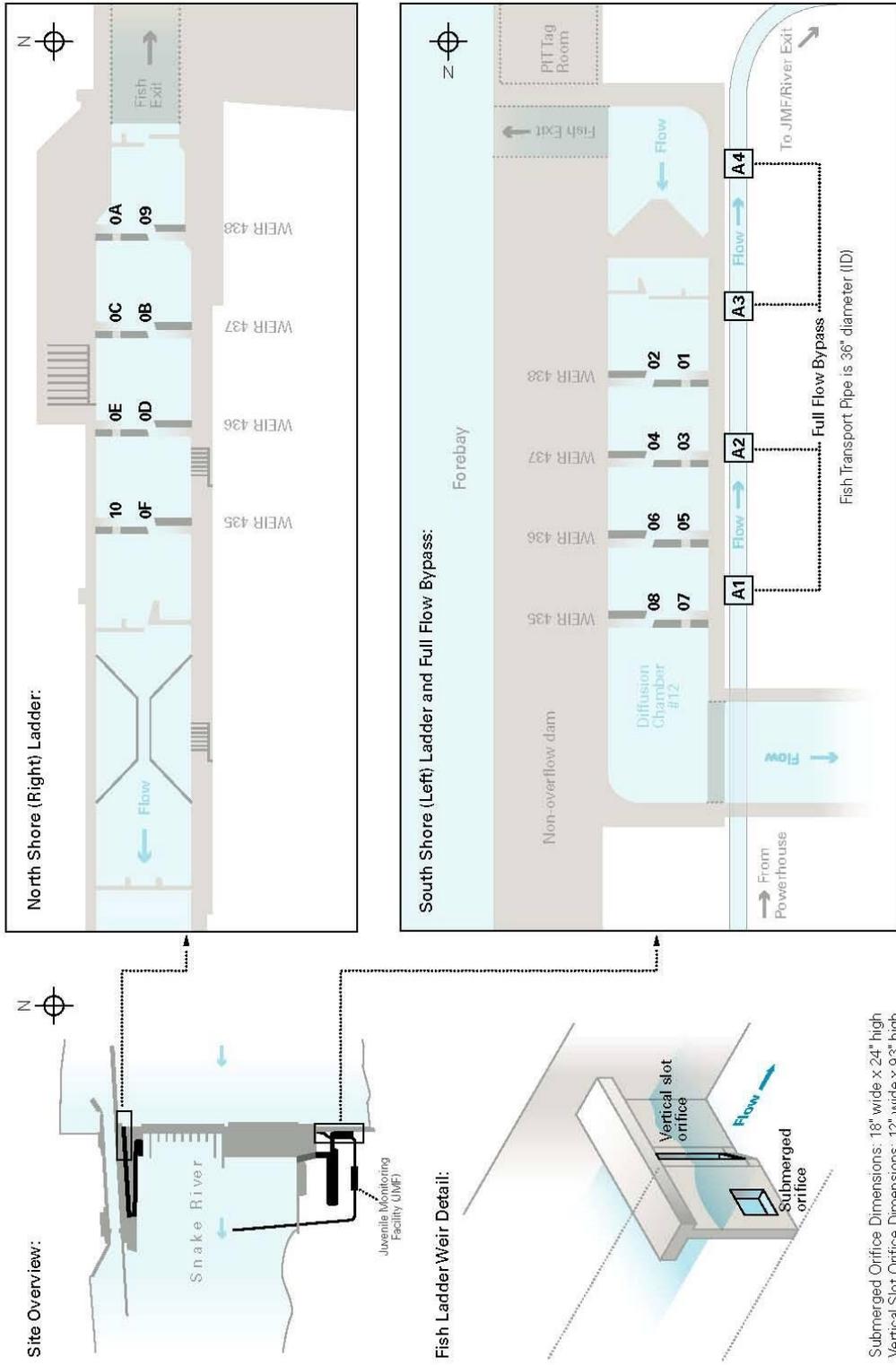


# C11. Ice Harbor Fish Ladders and Full Flow Bypass (ICH)



PTAGIS Information Systems  
Columbia Basin | ptagis.org

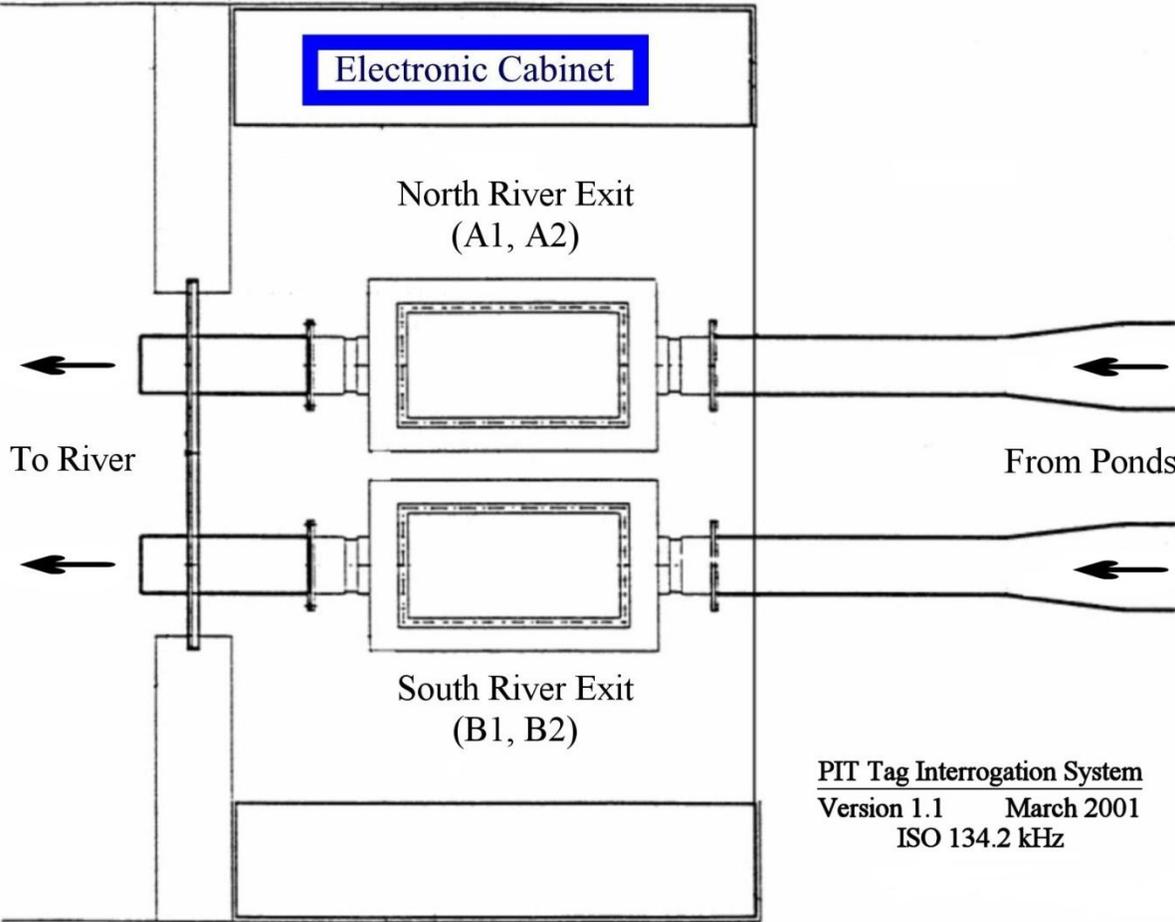
**Ice Harbor Dam Fish Ladders and Full Flow Bypass (ICH)**  
PIT Tag Interrogation Coil Map, Version 1.0, Cnfg. #100; Created April, 2005  
This supercedes the previous IHA (fish ladders only) installation.



Submerged Orifice Dimensions: 18" wide x 24" high  
Vertical Slot Orifice Dimensions: 12" wide x 93" high

**C12. Jack Creek Acclimation Site (JCJ)**

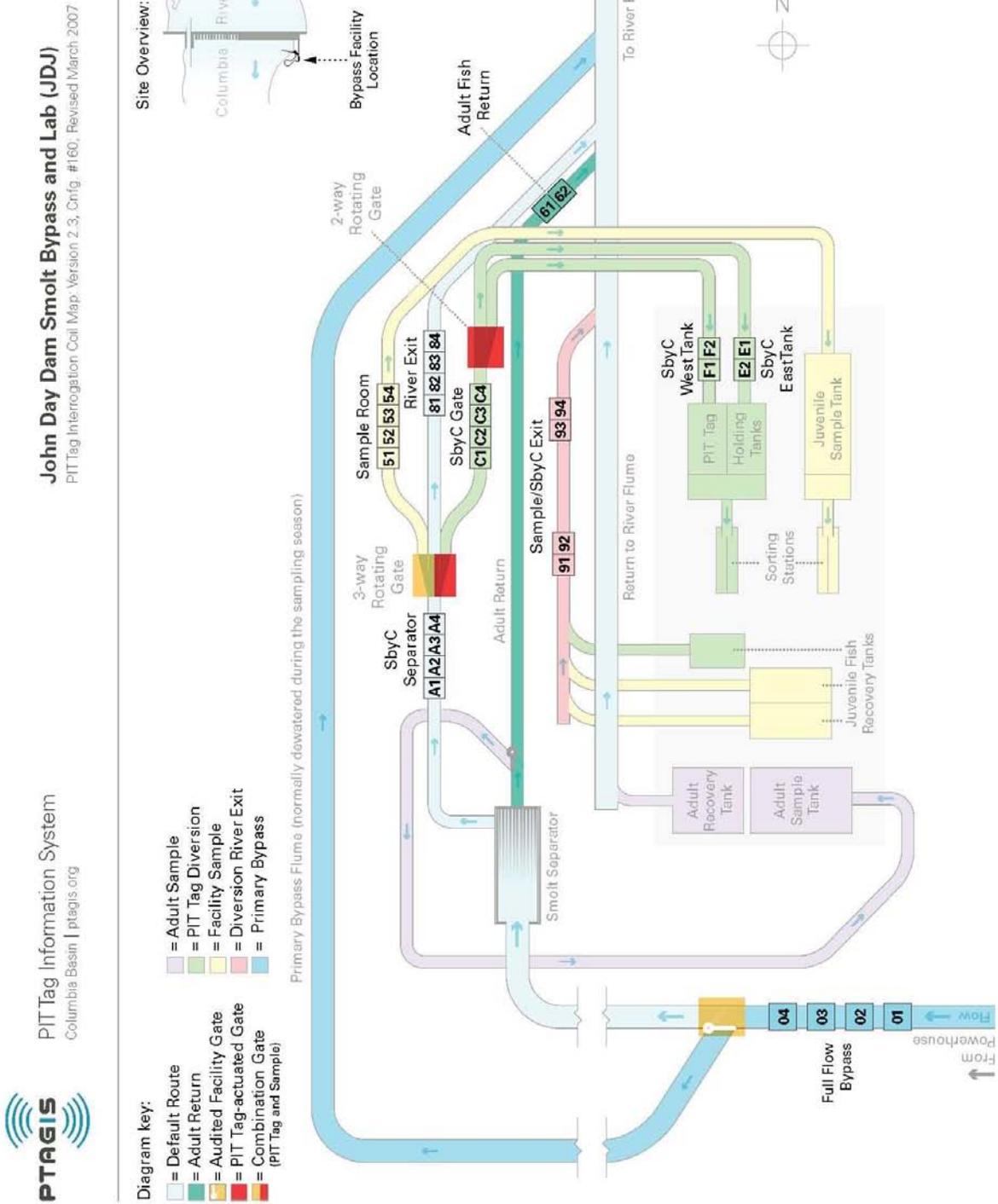
Jack Creek Acclimation Site (JCJ)  
Volitional Release Monitors



PIT Tag Interrogation System  
Version 1.1    March 2001  
ISO 134.2 kHz



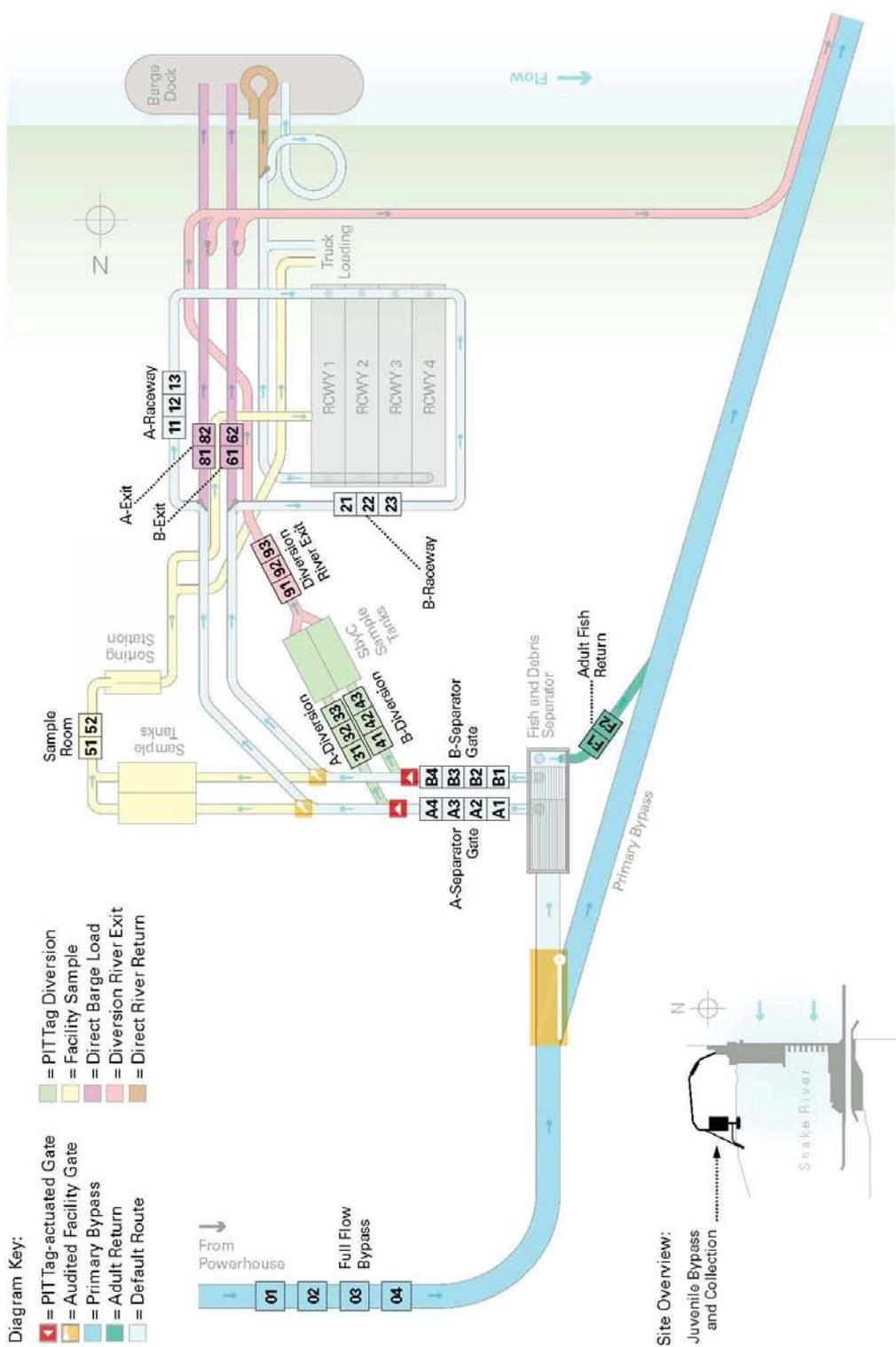
# C13. John Day Dam (JDJ)



# C14. Lower Monumental Dam (LMJ)

**Lower Monumental Dam Smolt Bypass and Collection (LMJ)**  
 PIT Tag Interrogation Coll Map: Version 3.2, Cnfig. #150, Revised March, 2007

**PTAGIS** PIT Tag Information System  
 Columbia Basin | ptagis.org



# C15. McNary Oregon Shore Ladder (MC1)

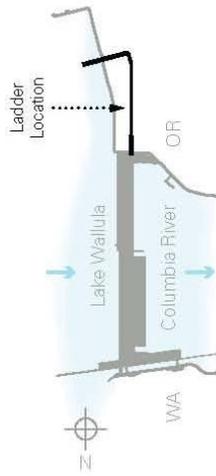
## McNary Dam: Oregon Shore Ladder (MC1)

PIT Tag Interrogation Coil Map: Version 12, Chfg. #100, February 2002

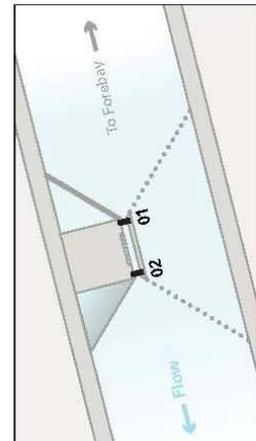
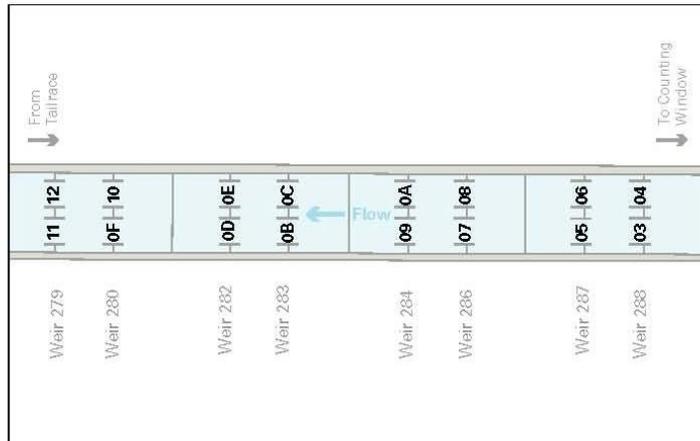
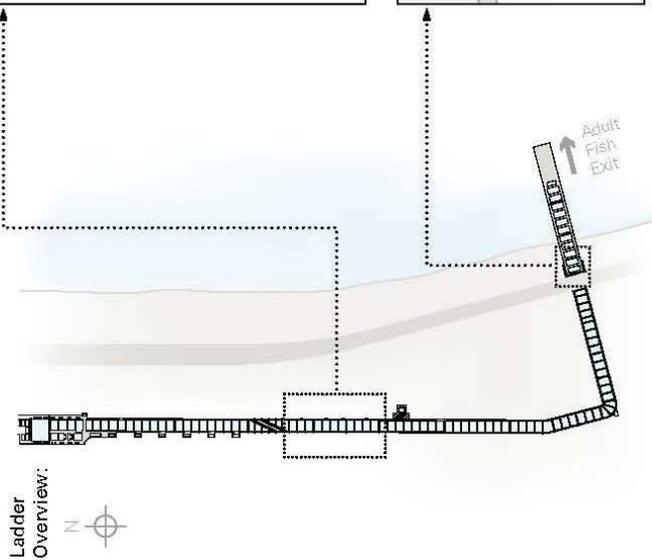


PIT Tag Information System  
Columbia Basin | ptagis.org

Site Overview:

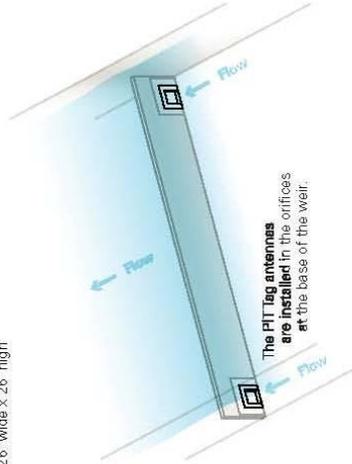


Ladder Overview:



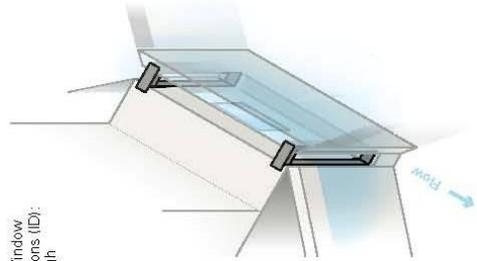
Overflow Weir Detail:

Weir Orifice Antenna Dimensions (ID):  
26" wide x 26" high



Counting Window Detail:

Adult Counting Window  
Antenna Dimensions (ID):  
20" wide x 62" high



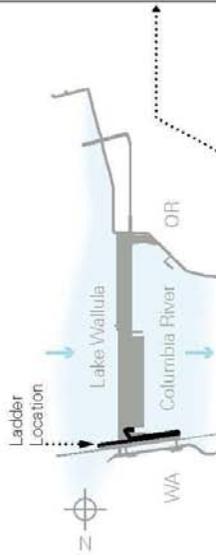
# C16. McNary Washington Shore Ladder (MC2)



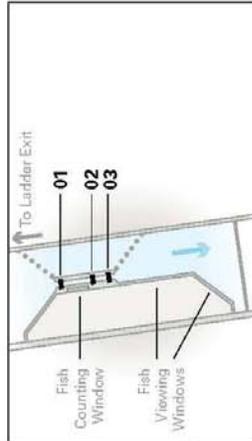
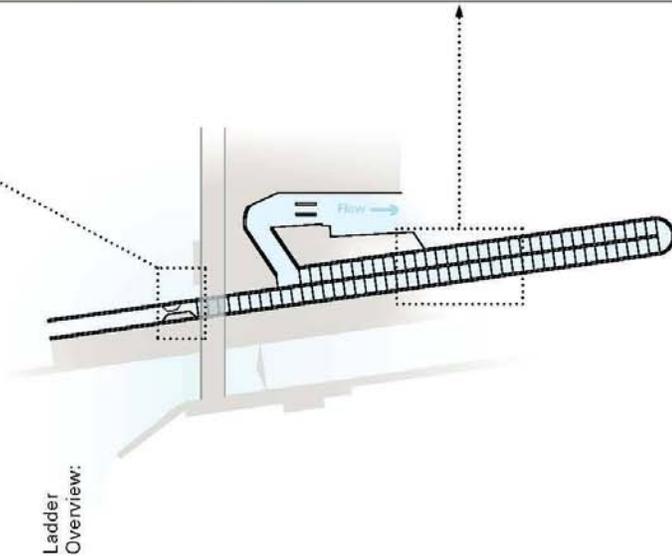
PIT Tag Information System  
Columbia Basin | ptagis.org

**McNary Dam: Washington Shore Ladder (MC2)**  
PIT Tag Interrogation Coil Map, Version 1.1, Cnfg. #120; Revised March, 2006

Site Overview:

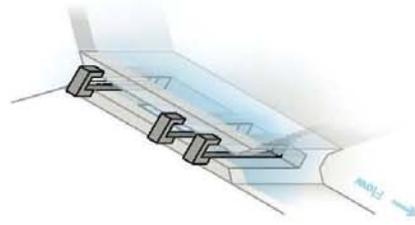


Ladder Overview:



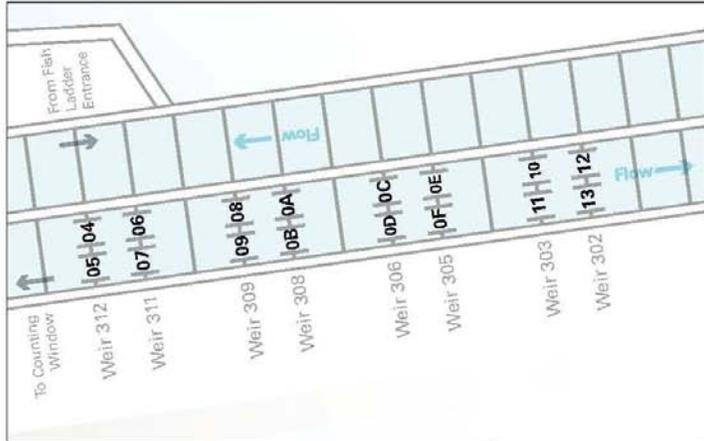
Counting Window Detail:

Adult Counting Window Antenna Dimensions (ID): 20' wide x 62' high



Overflow Weir Detail:

Weir Office Antenna Dimensions (ID): 21' wide x 23' high



# C17. McNary Juvenile Fish Facility (MCJ)

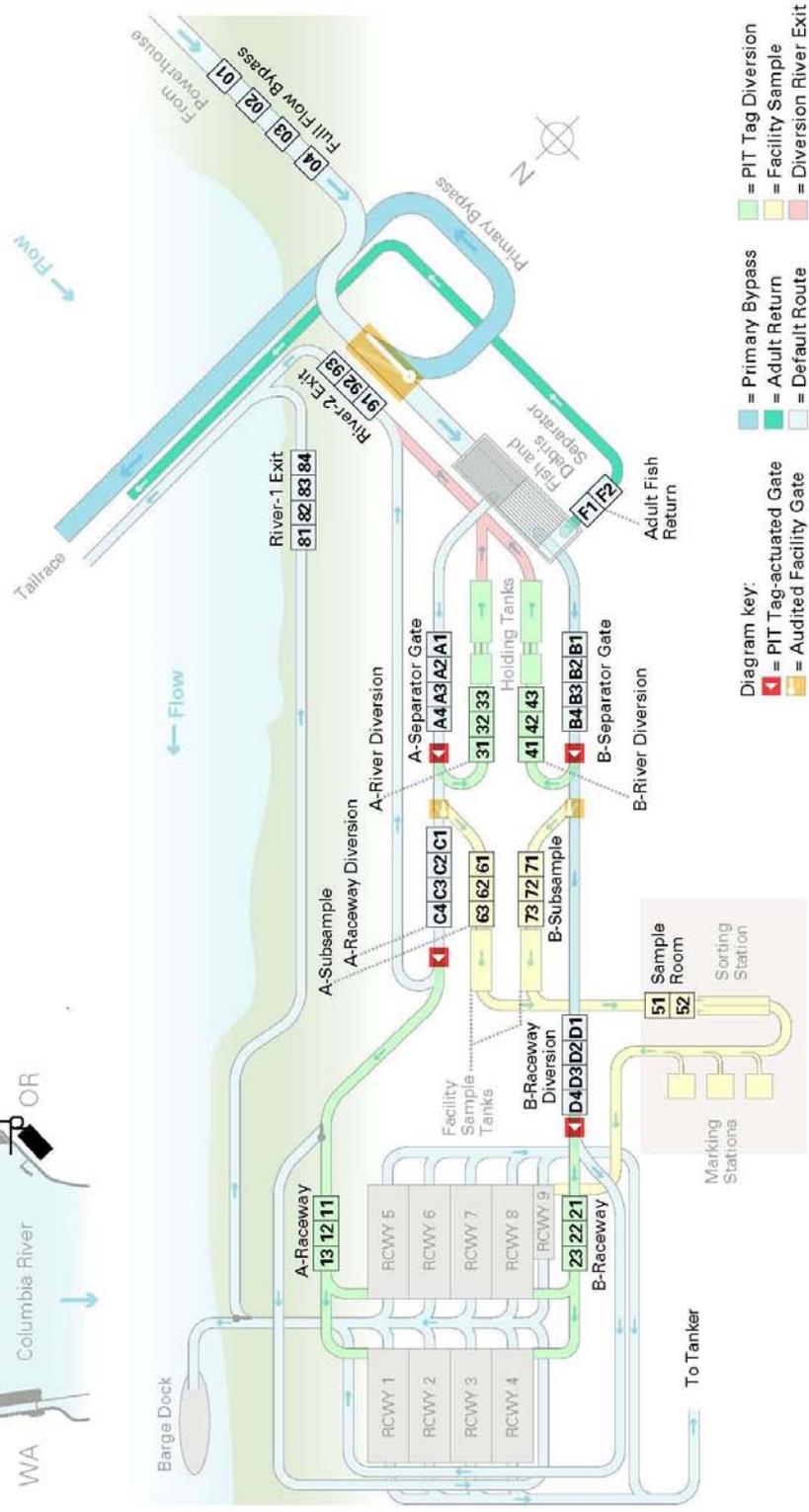
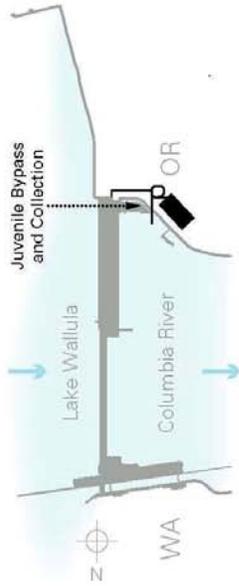


PIT Tag Information Systems  
Columbia Basin

## McNary Smolt Bypass and Collection (MCJ)

PIT Tag Interrogation Coll Map: Version 3.1, Cnfig. #160, Revised June, 2003

Site Overview:



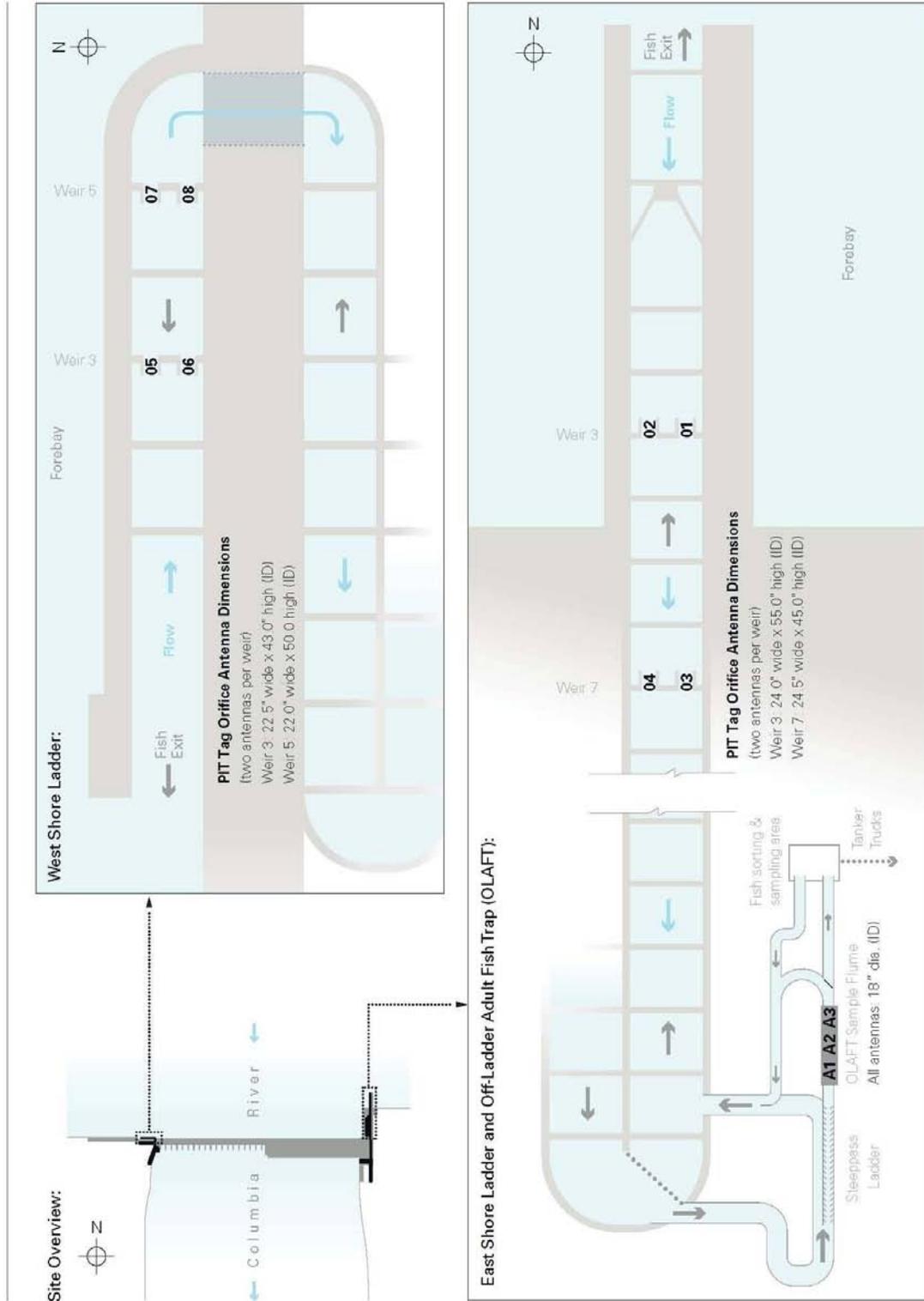
# C18. Priest Rapids Dam Fish Ladders (PRA)



PTAGIS Information System  
Columbia Basin | ptagis.org

## Priest Rapids Dam Fish Ladders (PRA)

PIT Tag Interrogation Coll Map, Version 1.1, Cnfg. #1110, Revised June, 2007

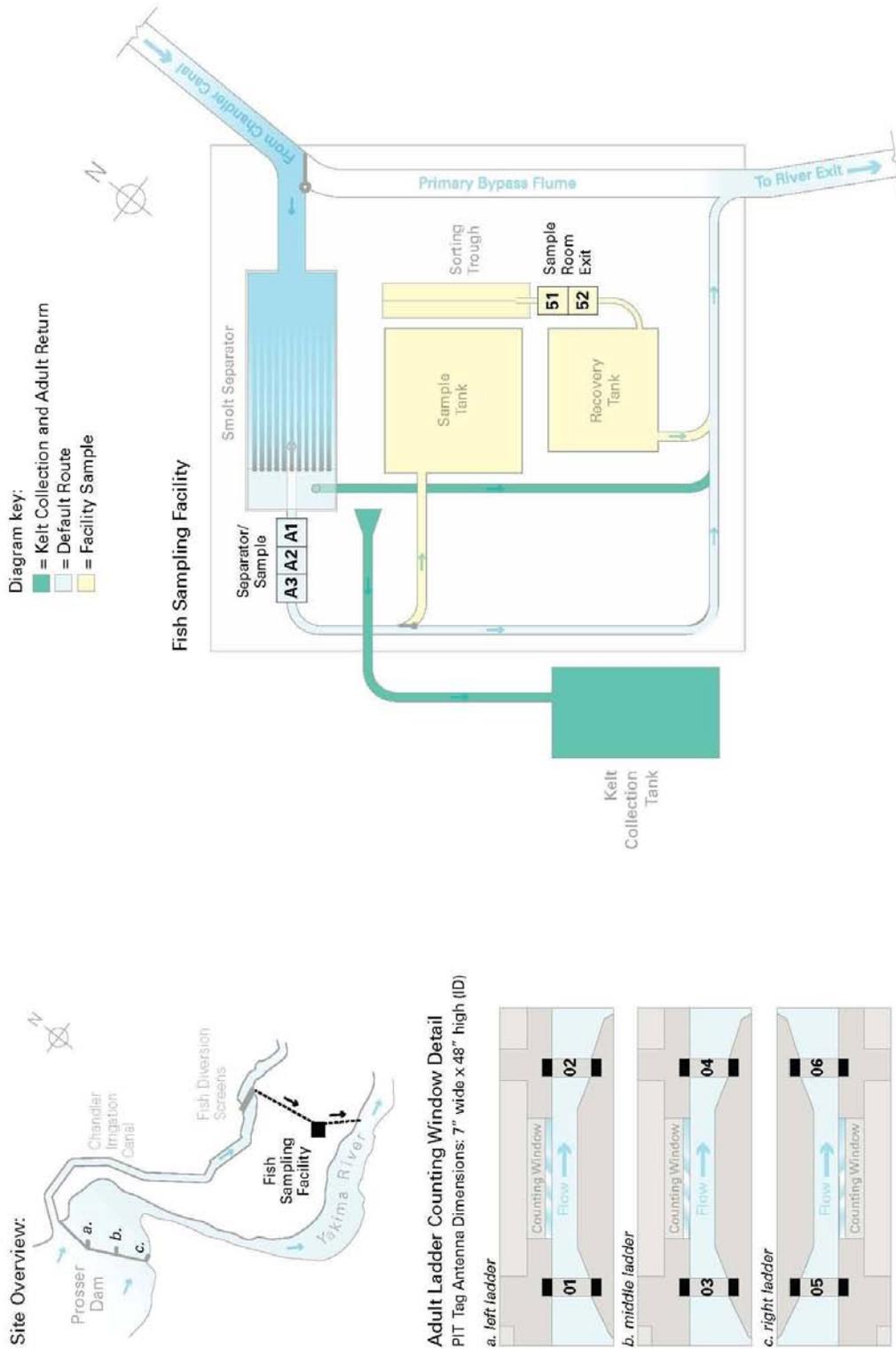


# C19. Prosser Fish Ladders and Sampling Facility (PRO)



PIT Tag Information Systems  
Columbia Basin | ptagis.org

Prosser Dam Fish Ladders and Sampling Facility (PRO)  
PIT Tag Interrogation Map: Version 1.2, Cnfg. #110, August, 2005



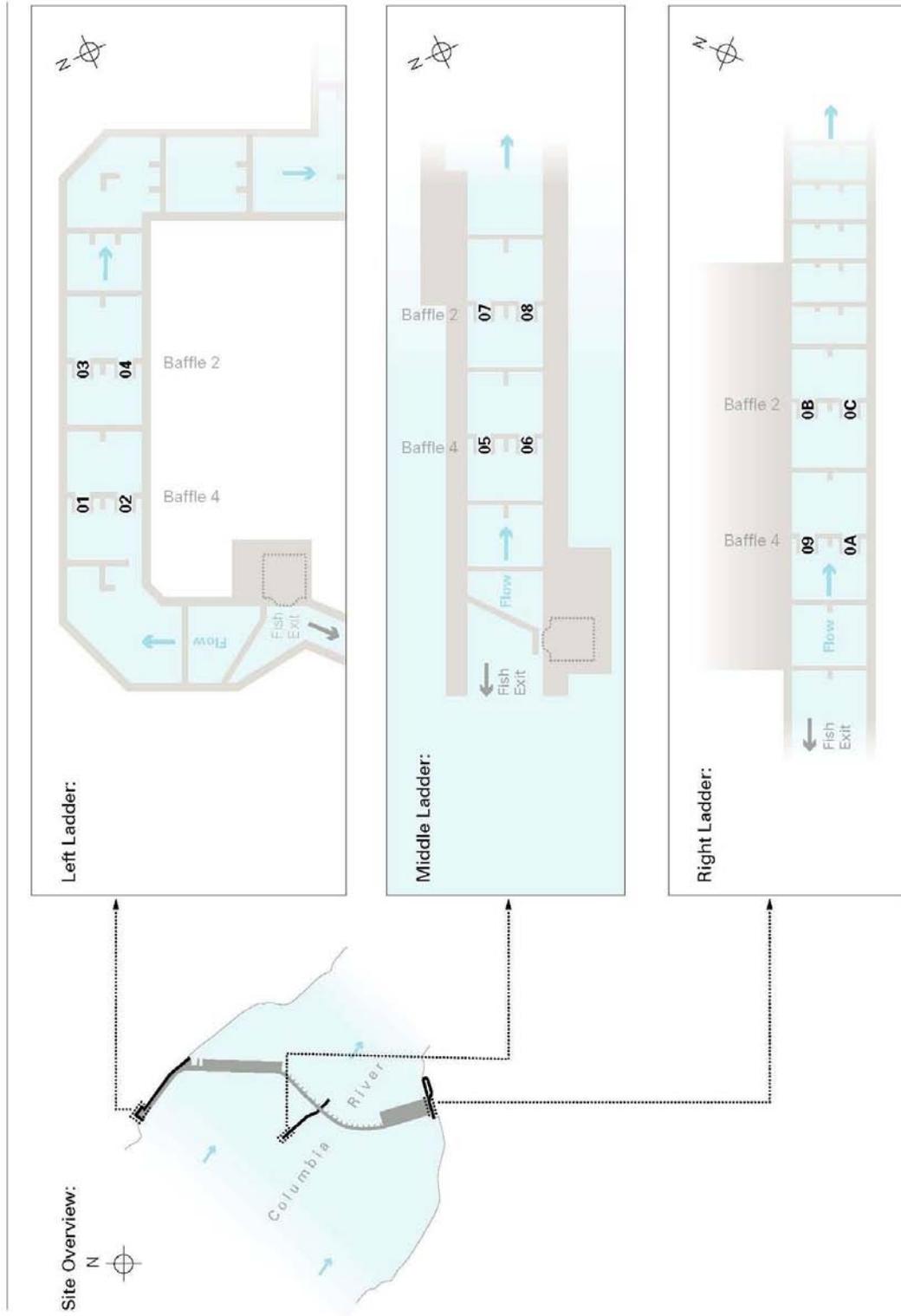
## C20. Rock Island Dam Fish Ladders (RIA)



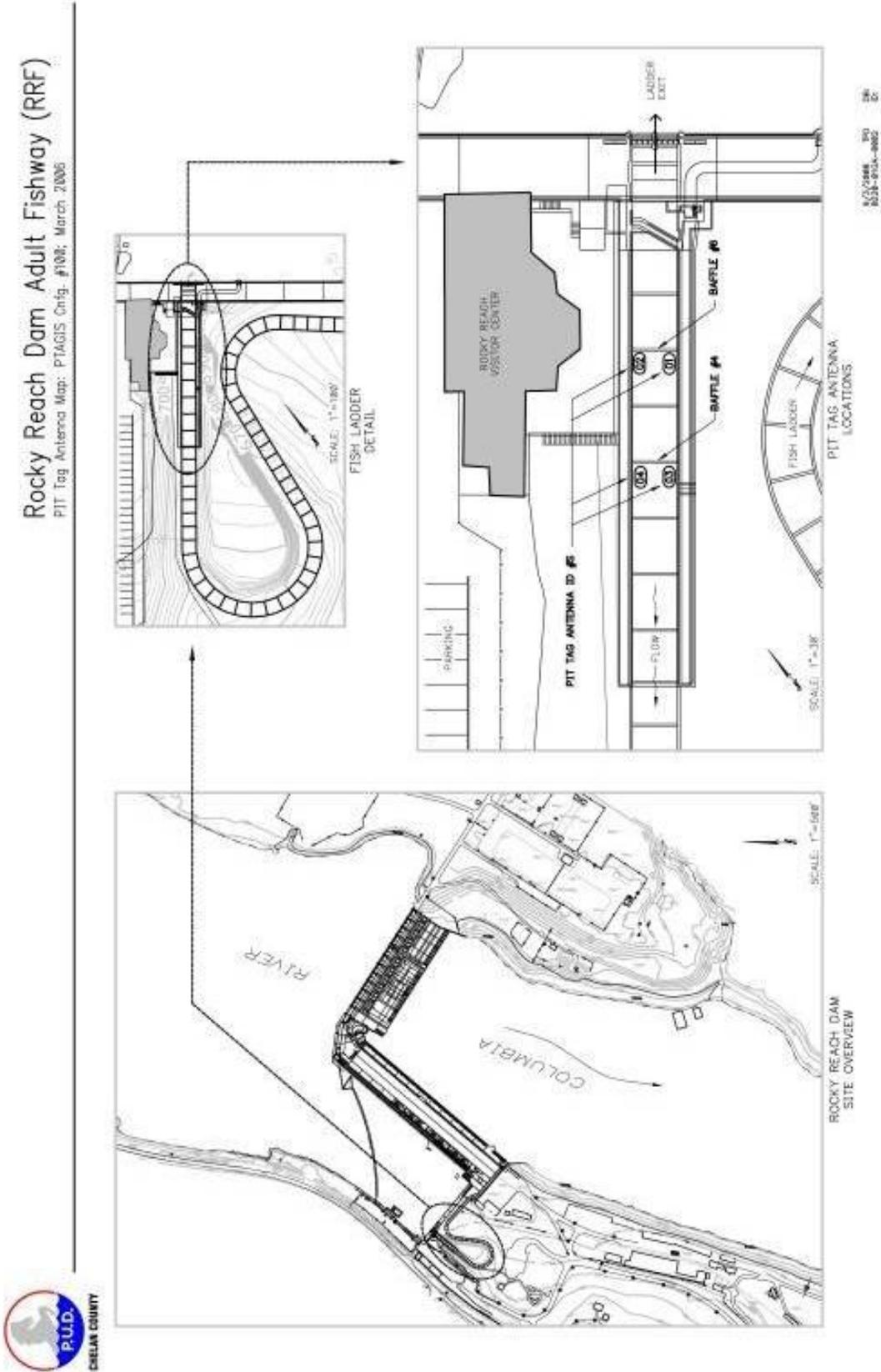
PIT Tag Information Systems  
Columbia Basin

### Rock Island Dam Fish Ladders (RIA)

Interrogation Coll Map Revised: May, 2003 v.1.0, Cnfg. #100  
PIT Tag Antennae Dimensions: 21.5" wide x 36.5" high (ID)



## C21. Rocky Reach Dam Adult Fishway (RRF)



## C22. Roza Dam Adult Fishway (RZF)

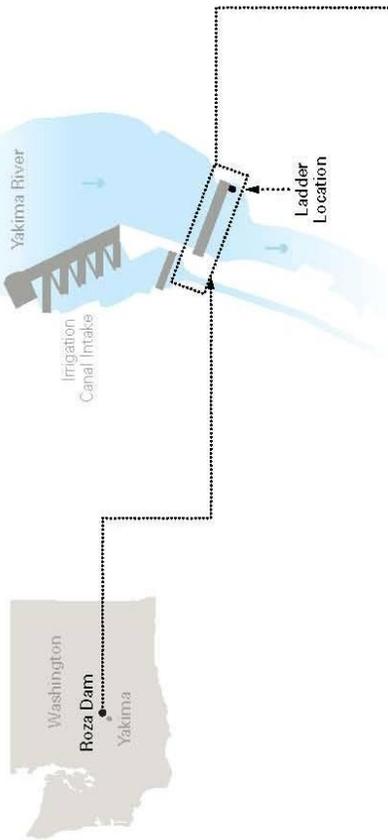


PTAGIS Information System  
Columbia Basin | ptagis.org

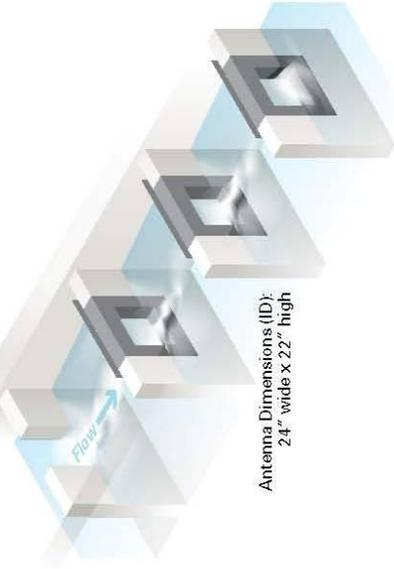
### Roza Dam Adult Fishway (RZF)

PITTag Interrogation Coil Map: Version 1.0, Cnfg. #100; September 2007

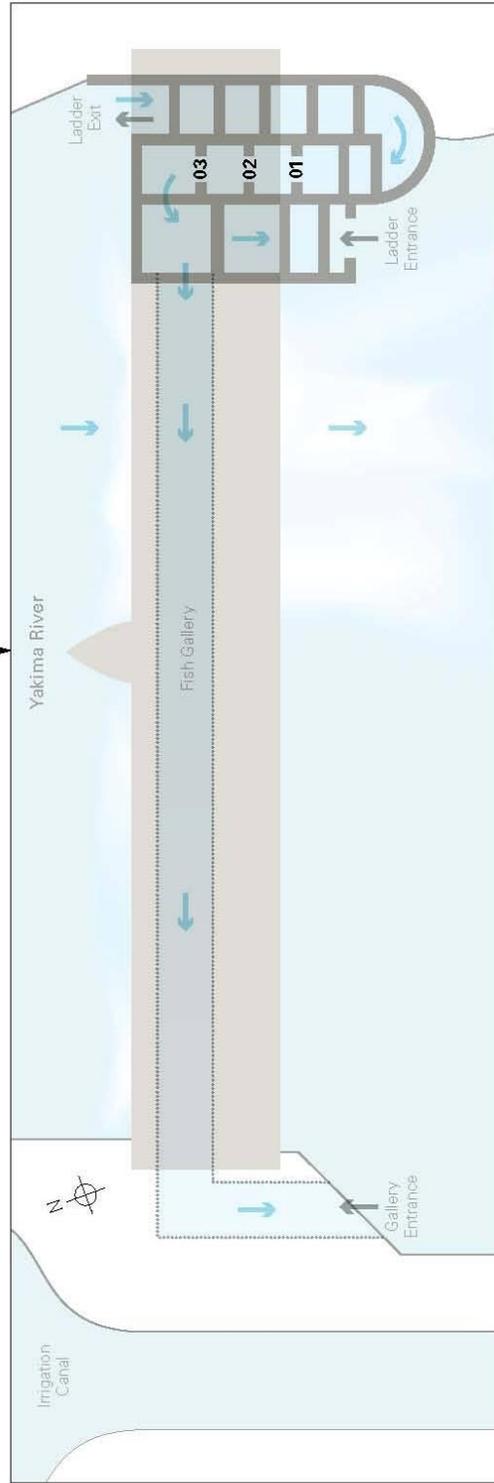
Site Overview:



Notched Weir Detail:



Site Detail:



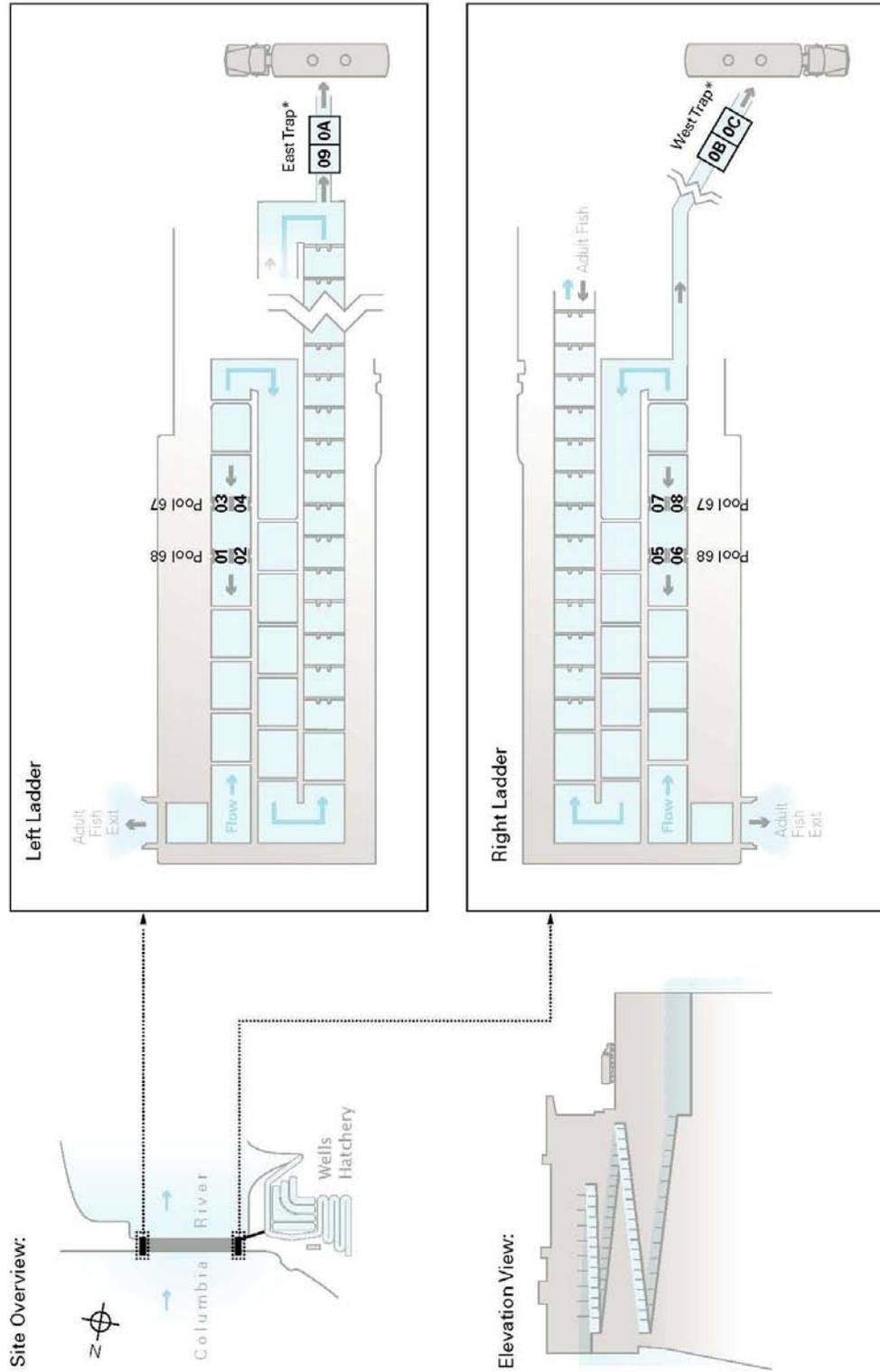
## C23. Wells Dam Fish Ladders (WEA)



PIT Tag Information Systems  
Columbia Basin

### Wells Dam Fish Ladders (WEA)

PIT Tag Interrogation Map, Version 1.1, Crfig. #110, Revised June, 2004  
Ladder Orifice Dimensions: 21" wide x 34.5" high



\*Trap fish are removed to the hatchery or trucked off-site.

## C24. Interrogation Site Configuration History

PIT Tag Interrogation Site transceiver and antenna ID codes are assigned by the agency operating the detection equipment. The current configuration information must be made available to PTAGIS before any detection data are submitted for processing. The following table (accessible online at [ftp://ftp.ptagis.org/Reports/TMT/site\\_con\\_spec.txt](ftp://ftp.ptagis.org/Reports/TMT/site_con_spec.txt)) provides the complete history of PIT tag antenna configurations at all registered interrogation sites.

SITE CONFIGURATION HISTORY							
As of 16-Nov-09							
Site Name	Monitor Name	-----Coil-----					
		1	2	3	4	5	6
AB1: Abernathy Creek FWS Tech Cntr.							
Prototype multiplexer installed to control three existing antennas.							
Seq. #110: From 24-Sep-03 To Present							
	RIGHT	01					
	CENTER	02					
	LEFT	03					
Seq. #100: From 24-Sep-01 To 24-Sep-03							
	RIGHT	A1					
	CENTER	A2					
	LEFT	A3					
AB2: Abernathy Creek Farmers Bridge							
4 x 1.5 meter antennas for USFWS in stream tests.							
Seq. #100: From 24-Sep-01 To 6-Nov-06							
	RIGHT	B1					
	LEFT	B2					
AB3: Lower Abernathy Creek							
Initial configuration.							
Seq. #100: From 1-Apr-09 To Present							
	In-stream Array	01	02	03			
B1J: BONNEVILLE PH1 JUVENILE							
Downstream Migrant Channel 1 (DSM1) Trap with flat plate detector. Not detecting when trap operates.							
Seq. #100: From 20-Feb-03 To 31-Jul-03							
	FLAT PLATE	01	02				
B2A: BONNEVILLE ADULT WA SHORE							
Installed dual ISO/400kHz monitors							
Seq. #110: From 22-Jan-01 To 6-Dec-02							
	400 KHZ NORTH	00	02	04			
	400 KHZ SOUTH	10	12	14			
	ISO NORTH	A4	A5				
	ISO SOUTH	B4	B5				

SITE CONFIGURATION HISTORY

(continued)

Site Name	Monitor Name	-----Coil-----					
		1	2	3	4	5	6
B2A: BONNEVILLE ADULT WA SHORE							
Seq. #100: From 7-May-98 To 22-Jan-01							
	NORTH	00	02	04	06		
	SOUTH	10	12	14	16		
	ISO NORTH	AA	BB				
	ISO SOUTH	CC	DD				
B2J: Bonneville PH2 Juvenile							
Installed FULL FLOW BYPASS							
Seq. #150: From 1-Mar-06 To Present							
	FULL FLOW BYPASS	01	02	03	04		
	SbyC SEPARATOR GATE	A1	A2	A3	A4		
	RIVER EXIT	81	82				
	SAMPLE ROOM	51	52				
	SbyC EAST TANK	E1	E2				
	SbyC WEST TANK	F1	F2				
	SAMPLE / SbyC EXIT	91	92	93			
Seq. #140: From 22-Jan-01 To 1-Mar-06							
	SbyC SEPARATOR GATE	A1	A2	A3	A4		
	RIVER EXIT	81	82				
	SAMPLE ROOM	51	52				
	SbyC EAST TANK	E1	E2				
	SbyC WEST TANK	F1	F2				
	SAMPLE / SbyC EXIT	91	92	93			
Seq. #130: From 22-Dec-99 To 22-Jan-01							
	SbyC SEPARATOR GATE	A1	A2	A3	A4		
	RIVER EXIT	81	82				
	SbyC EAST TANK	E1	E2				
	SbyC WEST TANK	F1	F2				
	SAMPLE / SbyC EXIT	91	92	93			
Seq. #120: From 19-Mar-99 To 22-Dec-99							
	MAIN	02	04	06	08		
Seq. #110: From 8-Feb-97 To 19-Mar-99							
	MAIN	02	04	06	08		
Seq. #100: From 1-Apr-96 To 8-Feb-97							
	SUBSAMPLE	D0					
BCC: BON PH2 Corner Collector							
Initial configuration, Bonneville Dam Second Powerhouse							
Corner Collector outfall channel detector							
Seq. #100: From 8-Apr-06 To Present							
	15x15 FULL-FLOW ANTE	01					

SITE CONFIGURATION HISTORY

(continued)

Site Name	Monitor Name	-----Coil-----					
		1	2	3	4	5	6
BCP: Butcher Creek Acclimation Pond							
Operated by Yakama Nation. Monitored release using FS-2001F-ISO transceivers and custom antennas.							
Seq. #100: From 1-Jan-03 To Present							
	POND EXIT	01	02				
BGM: Burlingame Dam and Canal							
Added new canal exit antenna.							
Seq. #110: From 12-Aug-08 To Present							
	Adult Fishway	F3	F4				
	Bypass Slot	F5	F6				
	Canal Intake	F1	F2				
	Canal Exit	FB					
Seq. #100: From 30-Oct-06 To 12-Aug-08							
	Adult Fishway	F3	F4				
	Bypass Slot	F5	F6				
	Canal Intake	F1	F2				
BO1: Bonneville Bradford Is. Ladder							
Includes new vertical slot antennas, plus existing orifice antennas in A- and B-Branch notched weirs							
Seq. #110: From 24-Feb-06 To Present							
	VERTICAL SLOT DETECT	01	02	03	04		
	A-BRANCH WEIR 50	05	06				
	A-BRANCH WEIR 49	07	08				
	A-BRANCH WEIR 48	09	0A				
	A-BRANCH WEIR 47	0B	0C				
	A-BRANCH WEIR 46	0D	0E				
	A-BRANCH WEIR 45	0F	10				
	A-BRANCH WEIR 44	11	12				
	A-BRANCH WEIR 43	13	14				
	B-BRANCH WEIR 50	15	16				
	B-BRANCH WEIR 49	17	18				
	B-BRANCH WEIR 48	19	1A				
	B-BRANCH WEIR 47	1B	1C				
	B-BRANCH WEIR 46	1D	1E				
	B-BRANCH WEIR 45	1F	20				
	B-BRANCH WEIR 44	21	22				
	B-BRANCH WEIR 43	23	24				

SITE CONFIGURATION HISTORY

(continued)

Site Name	Monitor Name	-----Coil-----					
		1	2	3	4	5	6
B01: Bonneville Bradford Is. Ladder							
Seq. #100: From 7-Mar-02 To 24-Feb-06							
	LEFT BRANCH WEIR 50	01	02				
	LEFT BRANCH WEIR 49	03	04				
	LEFT BRANCH WEIR 48	05	06				
	LEFT BRANCH WEIR 47	07	08				
	LEFT BRANCH WEIR 46	09	0A				
	LEFT BRANCH WEIR 45	0B	0C				
	LEFT BRANCH WEIR 44	0D	0E				
	LEFT BRANCH WEIR 43	0F	10				
	RIGHT BRANCH WEIR 50	11	12				
	RIGHT BRANCH WEIR 49	13	14				
	RIGHT BRANCH WEIR 48	15	16				
	RIGHT BRANCH WEIR 47	17	18				
	RIGHT BRANCH WEIR 46	19	1A				
	RIGHT BRANCH WEIR 45	1B	1C				
	RIGHT BRANCH WEIR 44	1D	1E				
	RIGHT BRANCH WEIR 43	1F	20				

B02: Bonneville Cascades Is. Ladder  
 24 x 24 inch orifice detectors. Fish passing over weirs are undetectable.  
 Seq. #100: From 13-Mar-02 To Present

WEIR 45	0F	10
WEIR 46	0D	0E
WEIR 47	0B	0C
WEIR 48	09	0A
WEIR 49	07	08
WEIR 50	05	06
WEIR 51	03	04
WEIR 52	01	02

SITE CONFIGURATION HISTORY

(continued)

Site Name	Monitor Name	-----Coil-----					
		1	2	3	4	5	6
B03: Bonneville WA Shore Ladder/AFF							
Removed 400kHz monitors.							
Seq. #110: From 15-Dec-03 To Present							
	WEIR 59	01	02				
	WEIR 58	03	04				
	WEIR 57	05	06				
	WEIR 56	07	08				
	WEIR 55	09	0A				
	WEIR 54	0B	0C				
	WEIR 53	0D	0E				
	WEIR 52	0F	10				
	WEIR 37	11	12				
	WEIR 36	13	14				
	WEIR 35	15	16				
	WEIR 34	17	18				
	AFF NORTH FLUME [ISO	22	24	26	28		
	AFF SOUTH FLUME [ISO	32	34	36	38		
Seq. #100: From 6-Dec-02 To 15-Dec-03							
	WEIR 59	01	02				
	WEIR 36	13	14				
	WEIR 35	15	16				
	WEIR 34	17	18				
	AFF NORTH FLUME [ISO	20	22				
	AFF NORTH FLUME [400	24	26	28			
	AFF SOUTH FLUME [ISO	30	32				
	AFF SOUTH FLUME [400	34	36	38			
	WEIR 58	03	04				
	WEIR 57	05	06				
	WEIR 56	07	08				
	WEIR 55	09	0A				
	WEIR 54	0B	0C				
	WEIR 53	0D	0E				
	WEIR 52	0F	10				
	WEIR 37	11	12				
B04: Bonneville WA Ladder Slots							
Initial vertical slot configuration. This system is							
up-stream of both B02 and B03.							
Seq. #100: From 28-Feb-05 To Present							
	VERTICAL SLOT DETECT	01	02	03	04		

SITE CONFIGURATION HISTORY

(continued)

Site Name	Monitor Name	-----Coil-----					
		1	2	3	4	5	6
BVC: Beaver Creek, Methow River							
Initial configuration for Beaver Creek (Stokes).							
Seq. #100: From 1-Jan-09 To Present							
	Upper In-stream Arra	B1	B2				
	Middle In-stream Arr	B3	B4				
	Lower In-stream Arra	B5	B6				
BVJ: BONNEVILLE DAM DMS1 SUBSAMPLE							
Single coil subsample monitor. SMP sub-sample in PH 1 DSM channel. Made Main site 3/19/99.							
Seq. #110: From 1-Jan-94 To 20-Feb-03							
	SAMPLE ROOM	C0					
Seq. #100: From 1-May-92 To 1-Jan-94							
	SAMPLE ROOM	C0					
BVP: Beaver Creek Acclimation Pond							
New Inlet antenna 01; Outlet antennas renumbered to 02 and 03.							
Seq. #110: From 1-Jan-07 To Present							
	POND INLET	01					
	POND EXIT	02	03				
Seq. #100: From 1-Jan-06 To 1-Jan-07							
	POND EXIT	01	02				
BVX: Bonneville PH1 Juvenile (Exp.)							
Change coil numbers to begin with 01 rather than 00							
Seq. #120: From 28-Jul-00 To 20-Feb-03							
	FLAT PLATE NW QUAD	04					
	FLAT PLATE NE QUAD	03					
	FLAT PLATE SE QUAD	01					
	FLAT PLATE SW QUAD	02					
Seq. #110: From 6-Mar-00 To 28-Jul-00							
	FLAT PLATE NW QUAD	03					
	FLAT PLATE NE QUAD	02					
	FLAT PLATE SE QUAD	00					
	FLAT PLATE SW QUAD	01					
Seq. #100: From 6-May-96 To 6-Mar-00							
	FLAT PLATE	01	02				

SITE CONFIGURATION HISTORY

(continued)

Site Name	Monitor Name	-----Coil-----					
		1	2	3	4	5	6
BWL: Bonneville WA Shore Ladder							
ADULT LADDER PROTOTYPE OF UNDERWATER ORIFICE PIT TAG DETECTORS							
Seq. #100: From 23-Mar-01 To 3-Dec-02							
	Weir 34	AA	AB				
	Weir 35	BA	BB				
	Weir 36	CA	CB				
	Weir 37	DA	DB				
	Weir 44 - AFF	44					
	Weir 45 - AFF	45					
	Weir 47 - AFF	47					
	Weir 48 - AFF	48					
	Weir 52	2A	2B				
	Weir 53	3A	3B				
	Weir 54	4A	4B				
	Weir 55	5A	5B				
	Weir 56	6A	6B				
	Weir 57	7A	7B				
	Weir 58	8A	8B				
	Weir 59	9A	9B				

CAP: Carlton Acc. Pond

Originally reported as Monitored Release file. Converted to Interrogation data March, 2001.

Seq. #100: From 1-Jan-95 To 31-Dec-95	MAIN	AA					
---------------------------------------	------	----	--	--	--	--	--

CCP: Catherine Creek Acc. Pond

Associated specific DF-2001F transceivers with each of the four ponds.

Seq. #120: From 1-Mar-09 To Present							
	POND 1	01					
	POND 2	02					
	POND 3	03					
	POND 4	04					
Seq. #110: From 1-Apr-01 To 1-Mar-09							
	MAIN 1	01	02				
	MAIN 2	03	04				
	MAIN 3	05	06				
	MAIN 4	07	08				
Seq. #100: From 1-Jan-00 To 1-Apr-01							
	MAIN	04					

SITE CONFIGURATION HISTORY

(continued)

Site Name	Monitor Name	-----Coil-----					
		1	2	3	4	5	6
CFJ: Clark Flat Acc. Pond							
	Standardized coil and monitor names.						
	Seq. #110: From 22-Jan-01 To Present						
	EAST RIVER EXIT	A1	A2				
	WEST RIVER EXIT	B1	B2				
	Seq. #100: From 19-Mar-99 To 22-Jan-01						
	RIVER EXIT A	00	02				
	RIVER EXIT B	10	12				
CHL: Lower Chiwawa River							
	Initial configuration.						
	Seq. #100: From 1-Apr-08 To Present						
	Upper In-stream Arra	81	82	83			
	Lower In-stream Arra	84	85	86			
CHN: CHALLIS DIVERSION NORTH							
	Swapped CHN and CHS coils and controllers						
	Seq. #110: From 15-Sep-91 To 20-Oct-93						
	NORTH	F1					
	Seq. #100: From 1-Sep-91 To 15-Sep-91						
	NORTH	F5					
CHP: Chiwawa Acc. Pond							
	Monitored releases from two individual ponds.						
	Seq. #110: From 1-Mar-07 To Present						
	Pond 1	03	04				
	Pond 2	01	02				
	Seq. #100: From 1-Jan-95 To 31-May-96						
	MAIN	AA					
CHS: CHALLIS DIVERSION SOUTH							
	Swapped CHN and CHS coils and controllers						
	Seq. #110: From 15-Sep-91 To 3-Nov-92						
	SOUTH	F5					
	Seq. #100: From 1-Sep-91 To 15-Sep-91						
	SOUTH	F1					
CHU: Upper Chiwawa River							
	Initial configuration.						
	Seq. #100: From 1-Apr-08 To Present						
	Upper In-stream Arra	91	92	93			
	Lower In-stream Arra	94	95	96			

SITE CONFIGURATION HISTORY

(continued)

Site Name	Monitor Name	-----Coil-----					
		1	2	3	4	5	6
CLE: Cle Elum Dam Interim Bypass							
Initial configuration; two 5'x5' custom antennas pushed by FS-1001A transceivers.							
Seq. #100: From 1-Jun-06 To Present							
	Upstream Detector	01					
	Downstream Detector	02					
CLJ: Clearwater River Trap							
Operated by IDFG.							
Seq. #110: From 1-Jan-94 To Present							
	MAIN	D0					
Seq. #100: From 30-Mar-89 To 1-Jan-94							
	MAIN	D0					
CLP: Coulter Creek Acclimation Pond							
Operated by Yakama Nation. Two antennas at pond exits; one antenna downstream at channel confluence.							
Seq. #100: From 1-Jan-06 To Present							
	POND EXIT	01		02			
CR1: Chinook River Sea Resources CF							
Site operated by FWS at the Sea Resources Adult Capture Facility UTM 10 T 428419; 5124255							
Seq. #100: From 8-Sep-02 To 31-Oct-06							
	DOWNSTREAM	01					
	UPSTREAM	02					
CR2: Chinook River HWY 101 Bridge							
Reconfigured site with FS1001M multiplexed system.							
Seq. #110: From 14-Sep-04 To 25-Jul-06							
	EAST ANTENNA	04					
	MIDDLE ANTENNA	02					
	WEST ANTENNA	03					
Seq. #100: From 1-Oct-02 To 14-Sep-04							
	EAST ANTENNA	A1					
	MIDDLE ANTENNA	A2					
	WEST ANTENNA	A3					
CR3: Chinook River at Culvert							
Site operated by FWS. UTM 10T 427864; 5125771							
Seq. #100: From 1-Sep-03 To 6-Oct-06							
	MAIN	01					

SITE CONFIGURATION HISTORY

(continued)

Site Name	Monitor Name	-----Coil-----					
		1	2	3	4	5	6
DRP: Dryden Acc. Pond							
Originally reported as Monitored Release file. Converted to Interrogation file March 2001.							
	Seq. #100: From 1-Jan-94 To 31-Dec-96						
	MAIN	AA					
EMC: Eightmile Creek, Methow River							
Initial configuration for Eightmile Creek.							
	Seq. #100: From 1-Dec-08 To Present						
	Single In-Stream Ant	21					
ENL: Lower Entiat River							
Initial configuration.							
	Seq. #100: From 1-Oct-07 To Present						
	Upper In-stream Arra	21	22	23			
	Lower In-stream Arra	24	25	26			
ENM: Middle Entiat River							
Initial configuration.							
	Seq. #100: From 1-Mar-08 To Present						
	Upper In-stream Arra	51	52	53			
	Lower In-stream Arra	54	55	56			
ESJ: Easton Acc. Pond							
Standardized coil and monitor names.							
	Seq. #110: From 22-Jan-01 To Present						
	EAST RIVER EXIT	A1	A2				
	WEST RIVER EXIT	B1	B2				
	Seq. #100: From 19-Mar-99 To 22-Jan-01						
	RIVER EXIT A	20	22				
	RIVER EXIT B	30	32				
ESS: EFSF Salmon River at Parks Cr.							
Initial configuration for the East Fork South Fork Salmon River Instream Arrays at Parks Creek							
	Seq. #100: From 1-Mar-09 To Present						
	Upper In-stream Arra	A1	A2	A3	A4	A5	A6
	Lower In-stream Arra	B1	B2	B3	B4	B5	B6
ESX: Estuary Saltwater Experiment							
Experimental trawl detector; combined into TWX after 2005.							
	Seq. #100: From 1-Mar-03 To 9-Jun-05						
	MAIN	F1					

SITE CONFIGURATION HISTORY

(continued)

Site Name	Monitor Name	-----Coil-----					
		1	2	3	4	5	6
FDC: Feed Canal							
Initial configuration.							
Seq. #100: From 1-Mar-07 To Present							
	Headgate	A1	A2	A3	A4	A5	A6
	Diversion Screen	B1	B2	B3	B4	B5	
FDD: Feed Diversion Dam							
Initial Configuration for Feed Diversion Dam.							
Seq. #100: From 1-Nov-08 To Present							
	Upper Dam Notch	B1					
	Lower Dam Notch	B2					
	Adult Ladder Right,	B3					
	Adult Ladder Left, f	B4					
GL2: SF Gold Creek, Methow River							
Initial configuration for S.F. Gold Creek.							
Seq. #100: From 1-Jan-09 To Present							
	Single In-stream Ant	D6					
GLC: Gold Creek, Methow River							
Initial configuration for Gold Creek.							
Seq. #100: From 1-Jan-09 To Present							
	Upper In-stream Arra	E1	E2				
	Middle In-stream Arr	E3	E4				
	Lower In-stream Arra	E5	E6				
GOJ: Little Goose Dam Juvenile							
Added FULL FLOW BYPASS monitor to this configuration							
Seq. #150: From 6-Feb-09 To Present							
	FULL FLOW BYPASS	01	02	03	04		
	A-SEPARATOR GATE	A1	A2	A3	A4		
	B-SEPARATOR GATE	B1	B2	B3	B4		
	DIVERSION SBYC GATE	C1	C2	C3	C4		
	DIVERSION RIVER EXIT	91	92	93			
	SBYC RIVER EXIT	E1	E2	E3			
	A-RACEWAY / RIVER EX	11	12	13			
	B-RACEWAY / RIVER EX	21	22	23			
	SAMPLE ROOM	51	52				
	ADULT FISH RETURN	F1	F2				

SITE CONFIGURATION HISTORY

(continued)

Site Name	Monitor Name	-----Coil-----					
		1	2	3	4	5	6
GOJ: Little Goose Dam Juvenile							
Seq. #140: From 1-Jan-06 To 5-Feb-09	A-SEPARATOR GATE	A1	A2	A3	A4		
	B-SEPARATOR GATE	B1	B2	B3	B4		
	DIVERSION SBYC GATE	C1	C2	C3	C4		
	DIVERSION RIVER EXIT	91	92	93			
	SBYC RIVER EXIT	E1	E2	E3			
	A-RACEWAY / RIVER EX	11	12	13			
	B-RACEWAY / RIVER EX	21	22	23			
	SAMPLE ROOM	51	52				
	ADULT FISH RETURN	F1	F2				
	SAMPLE ROOM	A0	A2	A4			
Seq. #130: From 7-Mar-02 To 1-Jan-06	A-SEPARATOR GATE	A1	A2	A3	A4		
	B-SEPARATOR GATE	B1	B2	B3	B4		
	DIVERSION SBYC GATE	C1	C2	C3	C4		
	DIVERSION RIVER EXIT	91	92	93			
	SBYC RIVER EXIT	E1	E2	E3			
	A-RACEWAY / RIVER EX	11	12	13			
	B-RACEWAY / RIVER EX	21	22	23			
	SAMPLE ROOM	51	52				
Seq. #120: From 10-Jan-00 To 7-Mar-02	A-SEPARATOR GATE	A1	A2	A3	A4		
	A-RACEWAY / RIVER EX	11	12	13			
	A-DIVERSION / SbyC G	C1	C2	C3			
	B-SEPARATOR GATE	B1	B2	B3	B4		
	B-RACEWAY / RIVER EX	21	22	23			
	B-DIVERSION / SbyC G	D1	D2	D3			
	SAMPLE ROOM	51	52				
	DIVERSION RIVER EXIT	91	92	93			
Seq. #110: From 1-Apr-90 To 10-Jan-00	A-SEPARATOR GATE	40	42	44	46		
	A-RACEWAY/EXIT	90	92	94	96		
	A-DIVERSION	A0	A2	A4			
	B-SEPARATOR GATE	48	4A	4C	4E		
	B-RACEWAY/EXIT	98	9A	9C	9E		
	B-DIVERSION	A6	A8	AA			
	SAMPLE ROOM	50	52				
	DIVERSION EXIT	54	56	58	5A		
Seq. #100: From 1-Jan-86 To 1-Apr-90	UNKNOWN GROUP 1	30	32	34	36	38	3A
	UNKNOWN GROUP 2	3C	3E	48	4A	4C	4E
	A-MAIN	40	42	44	46		
	B-MAIN	90	92	94	96		
	SAMPLE ROOM	A0	A2	A4			

SITE CONFIGURATION HISTORY

(continued)

Site Name	Monitor Name	-----Coil-----					
		1	2	3	4	5	6
GRA: Lower Granite Dam Adult							
Removed 400kHz monitors.							
Seq. #140: From 15-Dec-03 To Present							
	WEIR 733	01	02				
	WEIR 732	03	04				
	WEIR 731	05	06				
	WEIR 730	07	08				
	ISO WEST	12	14	16	18		
	ISO EAST	22	24	26	28		
Seq. #130: From 20-Feb-03 To 15-Dec-03							
	WEIR 733	01	02				
	WEIR 732	03	04				
	WEIR 731	05	06				
	WEIR 730	07	08				
	400 KHZ WEST	14	16	18			
	ISO WEST	10	12				
	400 KHZ EAST	24	26	28			
	ISO EAST	20	22				
Seq. #120: From 22-Jan-01 To 20-Feb-03							
	400 KHZ EAST	00	02	04			
	ISO EAST	A4	A5				
	400 KHZ WEST	10	12	14			
	ISO WEST	B4	B5				
Seq. #110: From 1-Feb-95 To 22-Jan-01							
	EAST	00	02	04	06	08	
	WEST	10	12	14	16	18	
Seq. #100: From 1-Jan-87 To 1-Feb-95							
	EAST	00	02	08	0A		
	WEST	04	06	0C	0E		

GRJ: Lower Granite Dam Juvenile

Added new EAST RACEWAY 10, BYPASS RIVER EXIT and RCWY-10 DIVERSION monitors.

Seq. #140: From 1-Mar-07 To Present

A-SEPARATOR GATE	A1	A2			
B-SEPARATOR GATE	B1	B2			
RACEWAY WEST / RIVER	21	22	23		
RCWY-10 GATE	11	12			
RACEWAY EAST	71	72			
EAST RACEWAY 10	31	32			
BYPASS RIVER EXIT	81	82			
DIVERSION / SbyC GAT	C1	C2			
SbyC GATE	D1	D2			
DIVERSION RIVER EXIT	91	92			
SAMPLE TANK	51	52	53		
ADULT FISH RETURN	F1	F2			

SITE CONFIGURATION HISTORY

(continued)

Site Name	Monitor Name	-----Coil-----					
		1	2	3	4	5	6
GRJ: Lower Granite Dam Juvenile							
Seq. #130: From 1-Jan-06 To 1-Mar-07							
	A-SEPARATOR GATE	A1	A2				
	B-SEPARATOR GATE	B1	B2				
	DIVERSION / SbyC GAT	C1	C2	C3	C4		
	DIVERSION RIVER EXIT	91	92	93			
	SbyC GATE	D1	D2	D3			
	RACEWAY WEST / RIVER	21	22	23			
	RACEWAY EAST / RIVER	11	12	13			
	SAMPLE TANK	51	52	53			
	ADULT FISH RETURN	F1	F2				
Seq. #120: From 3-Jan-00 To 1-Jan-06							
	A-SEPARATOR GATE	A1	A2				
	B-SEPARATOR GATE	B1	B2				
	DIVERSION / SbyC GAT	C1	C2	C3	C4		
	DIVERSION RIVER EXIT	91	92	93			
	SbyC GATE	D1	D2	D3			
	RACEWAY WEST / RIVER	21	22	23			
	RACEWAY EAST	11	12	13			
	SAMPLE TANK	51	52	53			
Seq. #110: From 1-Jan-94 To 20-Jan-00							
	A-SEPARATOR GATE	28	2A				
	B-SEPARATOR GATE	2C	2E				
	RACEWAY EAST	10	12	14	16		
	RACEWAY WEST/EXIT	18	1A	1C	1E		
	DIVERSION 1	36	38	3A			
	DIVERSION 2	30	32	34			
	SUBSAMPLE	20	22	24	26		
Seq. #100: From 25-Mar-88 To 1-Jan-94							
	A-SEPARATOR GATE	28	2A				
	B-SEPARATOR GATE	2C	2E				
	RACEWAY EAST	10	12	14	16		
	RACEWAY WEST/EXIT	18	1A	1C	1E		
	DIVERSION 1	36	38	3A			
	DIVERSION 2	30	32	34			
	SUBSAMPLE	20	22	24	26		
GRP: Grande Ronde Acc. Pond							
Grande Ronde Pond -- Using FS2001 Portable Detectors. RM 198							
above Vey Meadows. ODFW.							
Seq. #100: From 1-Feb-02 To Present							
	MAIN 1		01				
	MAIN 2		02				
	MAIN 3		03				
	MAIN 4		04				

SITE CONFIGURATION HISTORY

(continued)

Site Name	Monitor Name	-----Coil-----					
		1	2	3	4	5	6
GRX: LOWER GRANITE EXPERIMENTAL							
Separation by code experimental sub-site.							
Seq. #100: From 27-Feb-96 To 1-Sep-99							
	DIVERSION RIVER GATE	70	72	74	76		
	DIVERSION RIVER EXIT	80	82	84	86		
	DIVERSION HOLD TANK	90	92	94	96		
HLM: Potlatch River near Helmer							
Initial configuration for new HLM site.							
Seq. #100: From 1-Sep-09 To Present							
	Upper Left 20-ft Ant	A1					
	Upper Right 10-ft An	A2					
	Lower Left 20-ft Ant	A3					
	Lower Right 20-ft An	A4					
HLX: Hemlock Dam Fish Ladder Exp.							
Initial Configuration. Hemlock Dam is located on Trout Creek							
a tributary of the Wind River in WA							
Seq. #100: From 12-Jul-04 To 1-Jul-09							
	UPSTREAM		15				
	DOWNSTREAM		22				
HYC: Hayden Creek In-stream Array							
Initial configuration: parallel antennae A1 and A2.							
Seq. #100: From 1-Aug-09 To Present							
	In-stream Array		A1	A2			
ICH: Ice Harbor Dam (Combined)							
ICH supersedes IHA. This configuration incorporates a Full							
Flow Bypass monitor with the adult ladder							
Seq. #100: From 1-Apr-05 To Present							
	LEFT LADDER WEIR 438	01	02				
	LEFT LADDER WEIR 437	03	04				
	LEFT LADDER WEIR 436	05	06				
	LEFT LADDER WEIR 435	07	08				
	RIGHT LADDER WEIR 43	09	0A				
	RIGHT LADDER WEIR 43	0B	0C				
	RIGHT LADDER WEIR 43	0D	0E				
	RIGHT LADDER WEIR 43	0F	10				
	FULL FLOW BYPASS	A1	A2	A3	A4		

SITE CONFIGURATION HISTORY

(continued)

Site Name	Monitor Name	-----Coil-----					
		1	2	3	4	5	6
IHA: Ice Harbor Adult							
Ice Harbor Fish Ladders consist of a vertical slot weir and orifice (S/O).							
Seq. #100: From 1-Mar-03 To 1-Apr-05							
	Left Ladder Weir 438	01	02				
	Left Ladder Weir 437	03	04				
	Left Ladder Weir 436	05	06				
	Left Ladder Weir 435	07	08				
	Right Ladder Weir 43	09	0A				
	Right Ladder Weir 43	0B	0C				
	Right Ladder Weir 43	0D	0E				
	Right Ladder Weir 43	0F	10				
IMJ: Imnaha River Trap							
Coil ID changed from AA to B8; controller ID unchanged							
Seq. #110: From 1-Jan-95 To 19-Apr-99							
	MAIN			B8			
Seq. #100: From 12-Apr-94 To 1-Jan-95							
	MAIN			AA			
JCJ: Jack Creek Acc. Pond							
Standardized coil and monitor names.							
Seq. #110: From 22-Jan-01 To Present							
	NORTH RIVER EXIT	A1	A2				
	SOUTH RIVER EXIT	B1	B2				
Seq. #100: From 25-Feb-00 To 22-Jan-01							
	RIVER EXIT A	40	42				
	RIVER EXIT B	50	52				
JD1: John Day River, McDonald Ferry							
Initial site definition.							
Seq. #100: From 1-Sep-07 To Present							
	Lower In-stream Arra	04	05	06			
	Upper In-stream Arra	01	02	03			
JDJ: John Day Dam Juvenile							
Added new Full Flow Bypass array, with antennas 01 - 04.							
Seq. #160: From 1-Mar-07 To Present							
	FULL FLOW BYPASS	01	02	03	04		
	SbyC SEPARATOR GATE	A1	A2	A3	A4		
	RIVER EXIT	81	82	83	84		
	SAMPLE ROOM	51	52	53	54		
	SbyC GATE	C1	C2	C3	C4		
	SbyC EAST TANK	E1	E2				
	SbyC WEST TANK	F1	F2				
	SAMPLE / SbyC EXIT	91	92	93	94		
	ADULT FISH RETURN	61	62				

SITE CONFIGURATION HISTORY

(continued)

Site Name	Monitor Name	-----Coil-----					
		1	2	3	4	5	6
JDJ: John Day Dam Juvenile							
Seq. #150:	From 1-Mar-05 To 1-Mar-07						
	SbyC SEPARATOR GATE	A1	A2	A3	A4		
	RIVER EXIT	81	82	83	84		
	SAMPLE ROOM	51	52	53	54		
	SbyC GATE	C1	C2	C3	C4		
	SbyC EAST TANK	E1	E2				
	SbyC WEST TANK	F1	F2				
	SAMPLE / SbyC EXIT	91	92	93	94		
	ADULT FISH RETURN	61	62				
Seq. #140:	From 16-Dec-99 To 1-Mar-05						
	SbyC SEPARATOR GATE	A1	A2	A3	A4		
	SAMPLE ROOM	51	52	53	54		
	RIVER EXIT	81	82	83	84		
	SbyC GATE	C1	C2	C3	C4		
	SAMPLE / SbyC EXIT	91	92	93	94		
	SbyC EAST TANK	E1	E2				
	SbyC WEST TANK	F1	F2				
Seq. #130:	From 2-Mar-98 To 16-Dec-99						
	SBC SEPARATOR	00	02	04	06		
	SUBSAMPLE	70	72	74	76		
	RIVER EXIT ISO	20	21	22	23		
	SBC HOLD TANK	10	12	14	16		
	SAMPLE ROOM RIVER EX	90	91				
	SAMPLE ROOM RIVER EX	94	96				
	SBC HOLD TANK 2	18	1A				
	SBC HOLD TANK 1	1C	1E				
Seq. #120:	From 6-May-96 To 2-Mar-98						
	GATEWELL 3C	F8					
	SAMPLE ROOM	F4					
	GATEWELL 3B	F6					
Seq. #110:	From 1-Apr-95 To 6-May-96						
	SAMPLE ROOM	F4					
	SAMPLE BYPASS	F6					
Seq. #100:	From 1-Jan-92 To 1-Apr-95						
	SAMPLE ROOM	F4					

JUL: Potlatch River near Juliaetta

Initial configuration for new JUL site, with one MUX transceiver and antennas A1-A6.

Seq. #100:	From 2-Oct-08 To Present						
	In-stream Array	A1	A2	A3	A4	A5	A6

SITE CONFIGURATION HISTORY

(continued)

Site Name	Monitor Name	-----Coil-----					
		1	2	3	4	5	6
KCB: Kiwanis Camp Bridge, Mill C							
Mill Creek, Walla Walla River Subbasin. ODFW, USFWS and USFS project.							
Seq. #100: From 10-May-05 To Present							
	COIL 1					01	
	COIL 2					02	
	COIL 3					03	
	COIL 4					04	
	COIL 5					05	
KHS: Big Bear Cr. @ Kendrick HS							
Antenna A4 moved from upstream array to downstream array.							
Seq. #110: From 9-Oct-08 To Present							
	Upper In-stream Arra	A1	A2	A3			
	Lower In-stream Arra	A4	A5	A6			
Seq. #100: From 1-Dec-07 To 22-Oct-08							
	Upstream Pass-Over A	A1	A2	A3	A4		
	Downstream Pass-Over	A5	A6				
KRS: SF Salmon River at Krassel Cr.							
Initial configuration.							
Seq. #100: From 22-Jan-08 To Present							
	In-river Pass-over M	01	02	03	04	05	
LAP: Lapwai Creek, near its mouth							
Initial configuration for Lapwai Creek.							
Seq. #100: From 1-Oct-08 To Present							
	Upper In-stream Arra	A1					
	Lower In-stream Arra	A2					
LBC: Libby Creek, Methow River							
Initial configuration for Libby Creek.							
Seq. #100: From 1-Jan-09 To Present							
	Single In-stream Ant	C4					
LLR: Lower Lemhi River							
Initial configuration: parallel in-stream antennae.							
Seq. #100: From 1-Aug-09 To Present							
	In-stream Array	A1	A2	A3			

SITE CONFIGURATION HISTORY

(continued)

Site Name	Monitor Name	-----Coil-----					
		1	2	3	4	5	6
LMJ: Lower Monumental Dam Juvenile							
Added new Full Flow Bypass monitor, antennas 01 - 04; renumbered B-Exit antennas to 61 and 62.							
Seq. #150: From 1-Mar-07 To Present							
	FULL FLOW BYPASS	01	02	03	04		
	A-SEPARATOR GATE	A1	A2	A3	A4		
	A-DIVERSION	31	32	33			
	A-RACEWAY	11	12	13			
	B-SEPARATOR GATE	B1	B2	B3	B4		
	B-DIVERSION	41	42	43			
	B-RACEWAY	21	22	23			
	DIVERSION RIVER EXIT	91	92	93			
	SAMPLE ROOM	51	52				
	A-EXIT	81	82				
	B-EXIT	61	62				
	ADULT FISH RETURN	F1	F2				
Seq. #140: From 1-Jan-06 To 1-Mar-07							
	A-SEPARATOR GATE	A1	A2	A3	A4		
	A-DIVERSION	31	32	33			
	A-RACEWAY	11	12	13			
	B-SEPARATOR GATE	B1	B2	B3	B4		
	B-DIVERSION	41	42	43			
	B-RACEWAY	21	22	23			
	DIVERSION RIVER EXIT	91	92	93			
	SAMPLE ROOM	51	52				
	A-EXIT	81	82				
	B-EXIT	01	02				
	ADULT FISH RETURN	F1	F2				
Seq. #130: From 26-Jan-00 To 1-Jan-06							
	A-SEPARATOR GATE	A1	A2	A3	A4		
	A-DIVERSION	31	32	33			
	A-RACEWAY	11	12	13			
	B-SEPARATOR GATE	B1	B2	B3	B4		
	B-DIVERSION	41	42	43			
	B-RACEWAY	21	22	23			
	DIVERSION RIVER EXIT	91	92	93			
	SAMPLE ROOM	51	52				
	A-EXIT	81	82				
	B-EXIT	01	02				
Seq. #120: From 27-Feb-96 To 22-Jan-00							
	A-SEPARATOR GATE	00	02	04	06		
	A-DIVERSION	20	22	24	26		
	A-RACEWAY	10	12	14	16		
	A-EXIT	30	32	34	36		
	B-SEPARATOR GATE	08	0A	0C	0E		
	B-DIVERSION	28	2A	2C	2E		
	B-RACEWAY	18	1A	1C	1E		
	B-EXIT	38	3A	3C	3E		
	DIVERSION EXIT	40	42	44	46		
	SAMPLE ROOM	48	4A				

SITE CONFIGURATION HISTORY

(continued)

Site Name	Monitor Name	-----Coil-----					
		1	2	3	4	5	6
LMJ: Lower Monumental Dam Juvenile							
Seq. #110: From 1-Jan-94 To 27-Feb-96							
	A-SEPARATOR	00	02				
	A-SEPARATOR GATE	04	06				
	A-DIVERSION	20	22	24	26		
	A-RACEWAY	10	12	14	16		
	A-EXIT	30	32	34	36		
	B-SEPARATOR	08	0A				
	B-SEPARATOR GATE	0C	0E				
	B-DIVERSION	28	2A	2C	2E		
	B-RACEWAY	18	1A	1C	1E		
	B-EXIT	38	3A	3C	3E		
	DIVERSION EXIT	40	42	44	46		
	SAMPLE ROOM	48	4A				
Seq. #100: From 25-Apr-93 To 1-Jan-94							
	A-SEPARATOR	00	02				
	A-SEPARATOR GATE	04	06				
	A-DIVERSION	20	22	24	26		
	A-RACEWAY	10	12	14	16		
	A-EXIT	30	32	34	36		
	B-SEPARATOR	08	0A				
	B-SEPARATOR GATE	0C	0E				
	B-DIVERSION	28	2A	2C	2E		
	B-RACEWAY	18	1A	1C	1E		
	B-EXIT	38	3A	3C	3E		
	DIVERSION EXIT	40	42	44	46		
	SAMPLE ROOM	48	4A				
LMR: Lower Methow River at Pateros							
Initial configuration for Lower Methow River Instream Arrays							
Seq. #100: From 1-Mar-09 To Present							
	In-stream Array	A1	A2	A3	A4	A5	A6
LOP: Lostine River Acc. Pond							
Initial Configuration							
Seq. #100: From 1-Jan-02 To Present							
	SOUTH RIVER EXIT	01	02				
	NORTH RIVER EXIT	11	12				
LRW: Lemhi River Weir							
Initial configuration: parallel in-stream antennae.							
Seq. #100: From 1-Aug-09 To Present							
	In-stream Array	A1	A2				

SITE CONFIGURATION HISTORY

(continued)

Site Name	Monitor Name	-----Coil-----					
		1	2	3	4	5	6
LTR: Lower Tucannon River							
	Removed A0 transceiver; re-installed C0 transceiver and deployed new PVC antennas.						
	Seq. #120: From 1-Sep-09 To Present						
	Upstream Left In-str	C1	C2	C3			
	Dwnstrm Right In-str	C4	C5	C6			
	Seq. #110: From 20-Nov-07 To 5-Oct-09						
	RR Bridge Pass-throu	A1	A2	A3	A4	A5	A6
	Upstream Flat Plate	B1	B2	B3	B4	B5	B6
	Downstream Flat Plat	C1	C2	C3	C4	C5	C6
	Seq. #100: From 13-Oct-05 To 20-Nov-07						
	Crump Weir Array	A1	A2	A3	A4	A5	A6
	Upstream Flat Plate	B1	B2	B3	B4	B5	B6
	Downstream Flat Plat	C1	C2	C3	C4	C5	C6
LWD: Lowden Diversion Dam							
	Initial configuration.						
	Seq. #100: From 29-Nov-07 To Present						
	Fish Ladder Entrance						12
LWE: Lower Wenatchee River							
	Initial configuration.						
	Seq. #100: From 1-Oct-09 To Present						
	In-stream Array	B1	B2	B3	B4	B5	B6
LWL: Ltl. White Salmon NFH returns							
	Initial configuration for new Little White Salmon adult ladder site.						
	Seq. #100: From 1-Oct-09 To Present						
	Upstream						01
	Downstream						02
LWN: Little Wenatchee River							
	Initial configuration.						
	Seq. #100: From 1-Apr-09 To Present						
	Upper In-stream Arra	B1	B2	B3			
	Lower In-stream Arra	B4	B5	B6			
MAD: Mad River, Entiat River Basin							
	Initial configuration.						
	Seq. #100: From 1-Oct-07 To Present						
	Upper In-stream Arra	31	32				
	Middle In-stream Arr	33	34				
	Lower In-stream Arra	35	36				

SITE CONFIGURATION HISTORY

(continued)

Site Name	Monitor Name	-----Coil-----					
		1	2	3	4	5	6
MC1: McNary Oregon Shore Ladder							
Includes counting window detector. Orifice detectors 26 x 26 inches. Initial installation.							
Seq. #100: From 7-Mar-02 To Present							
	COUNTING WINDOW	01	02				
	WEIR 288	03	04				
	WEIR 287	05	06				
	WEIR 286	07	08				
	WEIR 284	09	0A				
	WEIR 283	0B	0C				
	WEIR 282	0D	0E				
	WEIR 280	0F	10				
	WEIR 279	11	12				
MC2: McNary Washington Shore Ladder							
Added COUNTING WINDOW							
Seq. #120: From 1-Mar-06 To Present							
	COUNTING WINDOW	01	02	03			
	WEIR 312	04	05				
	WEIR 311	06	07				
	WEIR 309	08	09				
	WEIR 308	0A	0B				
	WEIR 306	0C	0D				
	WEIR 305	0E	0F				
	WEIR 303	10	11				
	WEIR 302	12	13				
Seq. #110: From 7-Mar-02 To 1-Mar-06							
	WEIR 312	01	02				
	WEIR 311	03	04				
	WEIR 309	05	06				
	WEIR 308	07	08				
	WEIR 306	09	0A				
	WEIR 305	0B	0C				
	WEIR 303	0D	0E				
	WEIR 302	0F	10				

SITE CONFIGURATION HISTORY

(continued)

Site Name	Monitor Name	-----Coil-----					
		1	2	3	4	5	6
MCD: Mill Creek Diversion Project							
Now MUXed at Division Works Fish Ladder; added new 'A2' antenna.							
Seq. #160:	From 1-Nov-08 To Present						
	Diversion Dam Fish L	02	03				
	Diversion Dam Lo-Flo	01	04	05			
	Division Works Fish	A1	A2				
Seq. #150:	From 27-Nov-07 To 3-Nov-08						
	Diversion Dam Fish L	02	03				
	Diversion Dam Lo-Flo	01	04	05			
	Division Works Fish	A1					
Seq. #140:	From 6-Nov-07 To 20-Nov-07						
	Diversion Dam Fish L	02	03				
	Diversion Dam Lo-Flo	01	04	05			
	Yellowhawk Creek Fla	FF					
	Division Works Fish	A1					
Seq. #130:	From 1-Feb-07 To 6-Nov-07						
	Diversion Dam Fish L	02	03				
	Diversion Dam Spillw	04	05				
	Yellowhawk Creek Fla	FF					
	Division Works Fish	A1					
Seq. #120:	From 31-Oct-06 To 1-Feb-07						
	Diversion Dam Fish L	02	03				
	Diversion Dam Spillw	04	05				
	Yellowhawk Creek Fla	FF					
Seq. #110:	From 1-Aug-06 To 31-Oct-06						
	Fish Ladder	02	03				
	Low FLOW Outlet (Spi	04	05				
Seq. #100:	From 9-May-05 To 1-Aug-06						
	Spillway Antenna	01					
	Upper Fish Ladder An	02					
	Lower Fish Ladder An	03					

MCJ: McNary Dam Juvenile

Added Adult Fish Return Monitor to site.

Seq. #160:	From 17-Jun-03 To Present						
	FULL FLOW BYPASS	01	02	03	04		
	SBYC A-SEPARATOR GAT	A1	A2	A3	A4		
	A-DIVERSION	31	32	33			
	SBYC A-RACEWAY RIVER	C1	C2	C3	C4		
	A-RACEWAY	11	12	13			
	A-SUBSAMPLE	61	62	63			
	SBYC B-SEPARATOR GAT	B1	B2	B3	B4		
	B-DIVERSION	41	42	43			
	SBYC B-RACEWAY RIVER	D1	D2	D3	D4		
	B-RACEWAY	21	22	23			
	B-SUBSAMPLE	71	72	73			
	SAMPLE ROOM	51	52				
	RIVER-1 EXIT	81	82	83	84		
	RIVER-2 EXIT	91	92	93			
	ADULT FISH RETURN	F1	F2				

SITE CONFIGURATION HISTORY

(continued)

Site Name	Monitor Name	-----Coil-----					
		1	2	3	4	5	6
MCJ: McNary Dam Juvenile							
	Seq. #150: From 20-Feb-03 To 17-Jun-03						
	FULL FLOW BYPASS	01	02	03	04		
	SBYC A-SEPARATOR GAT	A1	A2	A3	A4		
	A-SUBSAMPLE	61	62	63			
	A-RACEWAY	11	12	13			
	A-DIVERSION	31	32	33			
	RIVER-1 EXIT	81	82	83	84		
	SBYC A-RACEWAY RIVER	C1	C2	C3	C4		
	SBYC B-SEPARATOR GAT	B1	B2	B3	B4		
	B-SUBSAMPLE	71	72	73			
	B-RACEWAY	21	22	23			
	B-DIVERSION	41	42	43			
	RIVER-2 EXIT	91	92	93			
	SBYC B-RACEWAY RIVER	D1	D2	D3	D4		
	SAMPLE ROOM	51	52				
	Seq. #140: From 21-Jan-00 To 20-Feb-03						
	A-SEPARATOR GATE	A1	A2	A3	A4		
	A-SUBSAMPLE	61	62	63			
	A-RACEWAY	11	12	13			
	A-DIVERSION	31	32	33			
	RIVER-1 EXIT	81	82	83	84		
	B-SEPARATOR GATE	B1	B2	B3	B4		
	B-SUBSAMPLE	71	72	73			
	B-RACEWAY	21	22	23			
	B-DIVERSION	41	42	43			
	RIVER-2 EXIT	91	92	93			
	SAMPLE ROOM	51	52				
	Seq. #130: From 2-Mar-98 To 21-Jan-00						
	A-SEPARATOR GATE	00	02	50	52		
	A-SUBSAMPLE	30	32	34			
	A-RACEWAY	10	12	14	16		
	A-DIVERSION	20	22	24	26		
	RIVER-1	40	42	44	46		
	B-SEPARATOR GATE	08	0A	54	56		
	B-SUBSAMPLE	36	38	3A			
	B-RACEWAY	18	1A	1C	1E		
	B-DIVERSION	28	2A	2C	2E		
	RIVER-2	48	4A	4C	4E		
	SAMPLE ROOM	3C	3E				
	B-RACEWAY ISO	A1	A2	A3	A4		
	RIVER-2 ISO	B1	B2	B3	B4		
	RIVER-1 ISO	C1	C2	C3	C4		
	400 Test	80	82	84	86		

SITE CONFIGURATION HISTORY

(continued)

Site Name	Monitor Name	-----Coil-----					
		1	2	3	4	5	6
MCJ: McNary Dam Juvenile							
Seq. #120: From 27-Feb-96 To 2-Mar-98							
	A-SEPARATOR GATE	00	02	50	52		
	A-SUBSAMPLE	30	32	34			
	A-RACEWAY	10	12	14	16		
	A-DIVERSION	20	22	24	26		
	RIVER-1	40	42	44	46		
	B-SEPARATOR GATE	08	0A	54	56		
	B-SUBSAMPLE	36	38	3A			
	B-RACEWAY	18	1A	1C	1E		
	B-DIVERSION	28	2A	2C	2E		
	RIVER-2	48	4A	4C	4E		
	SAMPLE ROOM	3C	3E				
Seq. #110: From 1-Jan-94 To 27-Feb-96							
	A-SEPARATOR	50	52				
	A-SEPARATOR GATE	00	02				
	A-SUBSAMPLE	30	32	34			
	A-RACEWAY	10	12	14	16		
	A-DIVERSION	20	22	24	26		
	A-RIVER	40	42	44	46		
	B-SEPARATOR	54	56				
	B-SEPARATOR GATE	08	0A				
	B-SUBSAMPLE	36	38	3A			
	B-RACEWAY	18	1A	1C	1E		
	B-DIVERSION	28	2A	2C	2E		
	B-RIVER	48	4A	4C	4E		
	SAMPLE ROOM	3C	3E				
	UNKNOWN	01	07	09			
Seq. #100: From 1-Jan-86 To 1-Jan-94							
	A-MAIN	68	6A	6C	6E		
	B-MAIN	60	62	64	66		
	A-SUB	70	72	74	76		
	SAMPLE ROOM	80	82				
MCX: MCNARY JUVENILE EXPERIMENTAL							
INITIAL INSTALLATION OF LARGE INTERROGATION COILS ON MAIN							
BYPASS FLUME: FULL FLOW BYPASS							
Seq. #110: From 13-Mar-02 To 20-Feb-03							
	FULL FLOW BYPASS 38	01	02	03	04		
Seq. #100: From 20-Feb-98 To 31-Dec-98							
	ISO B-RACEWAY	A1	A2	A3	A4		
	ISO RIVER-1	B1	B2	B3	B4		

SITE CONFIGURATION HISTORY

(continued)

Site Name	Monitor Name	-----Coil-----					
		1	2	3	4	5	6
MRB: Methow River Basin							
Initial configuration for instream detections in the lower Methow River Basin below Twisp.							
Seq. #100: From 15-Sep-04 To 1-Jan-09							
	Upper Beaver Creek a	A2					
	Beaver Creek MUX at	B1	B2	B3	B4	B5	B6
	Beaver Creek at RKM	A4					
	Lower Beaver Creek a	A6					
	Libby Creek at RKM 2	C2					
	Libby Creek near mou	C4					
	Gold Creek at RKM 9	D2					
	Foggy Dew Creek near	D4					
	South Fork Gold Cree	D6					
	Gold Creek near mout	E1	E2	E3	E4	E5	E6
MSC: Methow River Side Channels							
Initial configuration for Methow River side channels.							
Seq. #100: From 1-Jan-09 To Present							
	Upper In-stream Ante	32					
	Lower In-stream Ante	34					
MWC: Maxwell Canal							
Initial configuration.							
Seq. #100: From 1-Mar-07 To Present							
	Headgate	A1					
	Diversion Screen	B1					
MWE: Middle Wenatchee River							
Initial configuration.							
Seq. #100: From 1-Mar-09 To Present							
	In-stream Array	71	72	73	74	75	76
NAL: Lower Nason Creek							
Initial configuration.							
Seq. #100: From 1-Apr-08 To Present							
	Upper In-stream Arra	61	62	63			
	Lower In-stream Arra	64	65	66			
NAU: Upper Nason Creek							
Initial configuration.							
Seq. #100: From 1-Oct-07 To Present							
	Upper In-stream Arra	41	42	43			
	Lower In-stream Arra	44	45	46			

SITE CONFIGURATION HISTORY

(continued)

Site Name	Monitor Name	-----Coil-----					
		1	2	3	4	5	6
NBA: Nursery Bridge Adult							
Single antenna 03 now spans the entire width of the low-flow spillway.							
Seq. #150: From 21-Sep-09 To Present							
	East [New] Ladder	01	02				
	West [Old] Ladder	B1					
	Low Flow Spillway	03					
Seq. #140: From 1-Sep-07 To 21-Sep-09							
	East [New] Ladder	01	02				
	West [Old] Ladder	B1					
	Low Flow Spillway	03	04	05			
Seq. #130: From 1-Mar-07 To 1-Sep-07							
	East [New] Ladder	01	02				
	West [Old] Ladder	B1					
	Low Flow Spillway	04	05				
Seq. #120: From 20-Jul-06 To 1-Mar-07							
	East (New) Ladder	01	02				
	West (Old) Ladder	B1					
Seq. #110: From 25-May-04 To 20-Jul-06							
	Coil 01	01					
	Coil B1	B1					
Seq. #100: From 31-Oct-03 To 25-May-04							
	Coil 01	01					
OMK: Omak Creek Instream Array							
Initial configuration for Instream Array on lower Omak Creek.							
Seq. #100: From 1-Jan-06 To Present							
	In-stream Array	01	02	03	04	05	06
ORB: Oasis Road Bridge							
All antennae relocated to below the bridge.							
Seq. #130: From 15-Oct-09 To Present							
	Pass-over [downstrea	B1					
	Pass-through [downst	B2					
	Pass-through [downst	B3					
	Pass-through [downst	B4					
	Pass-through [downst	B5					
	Pass-over [downstrea	B6					
Seq. #120: From 21-Jan-09 To 15-Oct-09							
	Pass-through [downst	B1					
	Pass-over [upstream]	B2					
	Pass-through [downst	B3					
	Pass-over [upstream]	B4					
	Pass-over [upstream]	B5					
	Pass-through [downst	B6					

SITE CONFIGURATION HISTORY

(continued)

Site Name	Monitor Name	-----Coil-----					
		1	2	3	4	5	6
ORB: Oasis Road Bridge							
Seq. #110: From 1-Oct-06 To 21-Jan-09							
	Upstream Flat-plate	A1	A2	A3	A4	A5	A6
	Downstream Pass-thro	B1	B2	B3	B4	B5	B6
Seq. #100: From 6-Sep-05 To 1-Oct-06							
	Coil 1	01					
	Coil 2	02					
	Coil 3	03					
	Coil 4	04					
	Coil 5	05					
	Coil 6	06					
PES: Peshastin Creek							
Initial configuration.							
Seq. #100: From 1-May-07 To Present							
	Upper In-stream Arra	11	12	13			
	Lower In-stream Arra	14	15	16			
PRA: Priest Rapids Adult							
Added MUXed antennas A1 - A3 in the left [East] Off-Ladder							
Adult Fish Trap [OLAFT]							
Seq. #110: From 5-Jun-07 To Present							
	Left [East] Ladder A	A1	A2	A3			
	Left [East] Ladder W	01	02				
	Left [East] Ladder W	03	04				
	Right [West] Ladder	05	06				
	Right [West] Ladder	07	08				
Seq. #100: From 6-Dec-02 To 5-Jun-07							
	Left Ladder Weir 3	01	02				
	Left Ladder Weir 7	03	04				
	Right Ladder Weir 3	05	06				
	Right Ladder Weir 5	07	08				
PRJ: Prosser Dam (Chandler Dvrsn.)							
Initial ISO Configuration. Superceded by PRO Oct. 19, 2004.							
Seq. #120: From 10-Nov-99 To 3-Jul-04							
	SEPARATOR / SAMPLE	A1	A2	A3			
	SAMPLE ROOM EXIT	51	52				
Seq. #110: From 1-Jan-94 To 10-Nov-99							
	SEPARATOR	C8	CA	CC	CE		
	SAMPLE ROOM	C4	C6				
Seq. #100: From 25-Apr-89 To 1-Jan-94							
	SEPARATOR	C8	CA	CC	CE		
	SAMPLE ROOM	C4	C6				

SITE CONFIGURATION HISTORY

(continued)

Site Name	Monitor Name	-----Coil-----					
		1	2	3	4	5	6
PRO: Prosser Diversion Dam Combined							
This configuration adds counting window detectors from the middle and right ladders to previous.							
Seq. #110: From 30-Aug-05 To Present							
	Smolt Bypass Separat	A1	A2	A3			
	Smolt Bypass Sample	51	52				
	Left Bank LDR Counti	01	02				
	Middle LDR Counting	03	04				
	Right Bank LDR Count	05	06				
Seq. #100: From 19-Oct-04 To 30-Aug-05							
	Separator / Sample	A1	A2	A3			
	Sample Room Exit	51	52				
	Left Bank LDR Counti	01	02				
RBF: Round Butte Fish Xfer Facility							
Initial configuration for Round Butte Dam Fish Transfer Facility site							
Seq. #100: From 1-Mar-09 To Present							
	Fish Transfer Pipe	01	02	03	04		
RCL: Rock Creek (WA) at rkm 5							
Initial configuration.							
Seq. #100: From 1-Nov-09 To Present							
	Upper In-stream Arra	A1	A2				
	Middle In-stream Arr	A3	A4				
	Lower In-stream Arra	A5	A6				
RCS: Rock Creek (WA) at rkm 14							
Initial configuration.							
Seq. #100: From 1-Nov-09 To Present							
	Upper In-stream Arra	B1	B2				
	Middle In-stream Arr	B3	B4				
	Lower In-stream Arra	B5	B6				
RCX: Rattlesnake Creek Flat Plates							
Six coil Multiplexer configuration							
Seq. #120: From 1-Nov-03 To Present							
	Coil 1	01					
	Coil 2	02					
	Coil 3	03					
	Coil 4	04					
	Coil 5	05					
	Coil 6	06					

SITE CONFIGURATION HISTORY

(continued)

Site Name	Monitor Name	-----Coil-----					
		1	2	3	4	5	6
RCX: Rattlesnake Creek Flat Plates							
Seq. #110: From 15-May-03 To 1-Nov-03							
	Coil 1					01	
	Coil 2					02	
	Coil 3					03	
	Coil 4					04	
Seq. #100: From 21-Aug-01 To 15-May-03							
	Upstream Flat-Plate					AA	
	Downstream Flat-Plat					BB	
RFA: REDFISH LK CR TRAP JUVENILE A							
Redfish Lake Creek Trap operated by IDFG.							
Seq. #100: From 13-Apr-95 To 1-Jun-95							
	RIVER EXIT					F3	
RFB: REDFISH LK CR TRAP JUVENILE B							
Redfish Lake Creek Trap (B) operated by IDFG; No detections							
were ever reported at this location.							
Seq. #100: From 13-Apr-95 To 1-Jun-95							
	RIVER EXIT					F5	
RFP: Rolfling Acclimation Pond							
Operated by Yakama Nation. Monitored release using							
FS-2001F-ISO transceivers and custom antennas.							
Seq. #100: From 1-Jan-04 To Present							
	POND EXIT					01	02
RIA: Rock Island Adult							
Rock Island Dam is owned and operated by Chelan County PUD.							
Seq. #100: From 1-Feb-03 To Present							
	Left Ladder Baffle 4					01	02
	Left Ladder Baffle 2					03	04
	Middle Ladder Baffle					05	06
	Middle Ladder Baffle					07	08
	Right Ladder Baffle					09	0A
	Right Ladder Baffle					0B	0C
ROZ: ROSA DAM JUVENILE							
Dates are accurate; equipment configuration must be established							
Seq. #100: From 26-Mar-92 To 30-May-92							
	MAIN					C0	

SITE CONFIGURATION HISTORY

(continued)

Site Name	Monitor Name	-----Coil-----					
		1	2	3	4	5	6
RPJ: Rapid River Hatchery Pond							
Underwater unit coil failed. Replaced underwater orifice with underwater U shaped antenna.							
Seq. #120: From 15-Mar-02 To Present							
	UPSTREAM EXIT ARRAY	01	02	03	04		
	DOWNSTREAM EXIT ARRA	05	06	07	08		
Seq. #110: From 1-Mar-01 To 15-Mar-02							
	UNDERFLOW ORIFICE	01	02	03			
	OVERFLOW U-ANTENNEA	04	05	06	07		
Seq. #100: From 19-Apr-99 To 1-Mar-01							
	UNDERFLOW ORIFICE	00	01	02			
	OVERFLOW DOWNSTREAM	03	04	05	06		
	OVERFLOW UPSTREAM	07	08	09	0A		
RRF: Rocky Reach Fishway							
Initial configuration							
Seq. #100: From 1-Mar-06 To Present							
	WEIR 6	01	02				
	WEIR 4	03	04				
RRJ: Rocky Reach Dam Juvenile							
2000 Update. Site converted to ISO 134.2kHz except for coils 77 and 88 which are 134.2 kHz Non-ISO.							
Seq. #140: From 25-Feb-00 To 23-Aug-02							
	SURFACE COLLECTOR 1	11	22	33	44		
	SURF COL 2/UNIT 1,2	05	06				
	BACKUP GATEWELL/SURF	77	88				
	JUV COLLECTION FACIL	55					
Seq. #130: From 26-Apr-99 To 25-Feb-00							
	SURFACE COLLECTOR 24	11	22	33	44		
	GATEWELL SAMPLE	05	06	A0	A2	A4 A6	
	BACKUP GATEWELL/SURF	77	88				
	SAMPLE	AA					
Seq. #120: From 11-Mar-98 To 26-Apr-99							
	SURFACE COLLECTOR 24	11	22	33	44		
	GATEWELL SAMPLE	A0	A2	A4	A6		
	BACKUP GATEWELL/SURF	77	88				
Seq. #110: From 4-Apr-97 To 11-Mar-98							
	SURFACE COLLECTOR 24	11	22	33	44		
	GATEWELL COLLECTION	05	06				
	BACKUP GATEWELL/SURF	77	88				
Seq. #100: From 10-Apr-96 To 4-Apr-97							
	SURFACE COLLECTOR 24	11	22	33	44		
	GATEWELL COLLECTOR 6	55	88				
	SURFACE COLLECTOR 6	66	77				

SITE CONFIGURATION HISTORY  
(continued)

Site Name	Monitor Name	-----Coil-----					
		1	2	3	4	5	6
RZF: Roza Dam Fishway							
Initial configuration for new installation in the adult fishway at Roza Dam.							
	Seq. #100: From 1-Sep-07 To Present						
	Upstream Weir	01					
	Middle Weir	02					
	Downstream Weir	03					
SAJ: Salmon River Trap							
Salmon River Juvenile trap operated by IDFG.							
	Seq. #110: From 1-Jan-94 To Present						
	MAIN	D8					
	Seq. #100: From 28-Mar-93 To 1-Jan-94						
	MAIN	D8					
SCP: Spring Creek Acclimation Pond							
Initial configuration for Spring Creek Acc. Pond, at the back channel of Winthrop NFH.							
	Seq. #100: From 1-Mar-08 To Present						
	Pond Exit 1	01					
	Pond Exit 2	02					
SFG: SF Salmon at Guard Station Br.							
Initial configuration for the SF Salmon River Instream Array at the Guard Station Road Bridge							
	Seq. #100: From 1-Mar-09 To Present						
	In-stream Array	A1	A2	A3	A4	A5	A6
SFL: Shipherd Falls Ladder							
Initial configuration.							
	Seq. #100: From 1-Apr-09 To Present						
	Ladder Slot #2 - ups	F1					
	Ladder Slot #3 - dow	F2					
SIP: Similkameen Acc. Pond							
Originally reported as Monitored Release file. Converted to Interrogation data Mar. 2001.							
	Seq. #100: From 1-Jan-96 To 31-Dec-96						
	MAIN	AA					
SNJ: Snake River Trap							
Snake River Juvenile Trap operated by IDFG.							
	Seq. #110: From 1-Jan-94 To Present						
	MAIN	D4	D6				
	Seq. #100: From 23-Mar-89 To 1-Jan-94						
	MAIN	D4	D6				

SITE CONFIGURATION HISTORY

(continued)

Site Name	Monitor Name	-----Coil-----					
		1	2	3	4	5	6
SSJ: SUNNYSIDE JUVENILE							
Dates and coil/controller data accurate; monitor name must be researched							
	Seq. #100: From 11-Apr-91 To 5-Jun-91						
	MAIN					FF	
SUJ: Sullivan Dam Juvenile							
Added new monitor for North Fish Bypass, with antenna A1.							
	Seq. #120: From 1-Feb-07 To Present						
	North Fish Bypass					A1	
	SAMPLE ROOM					51	
	FULL FLOW - UNIT 13	01	02	03	04	05	06
	Seq. #110: From 19-Oct-05 To 1-Feb-07						
	SAMPLE ROOM					51	
	FULL FLOW - UNIT 13	01	02	03	04	05	06
	Seq. #100: From 1-Jan-94 To 19-Oct-05						
	SAMPLE ROOM					AA	
SWT: Sweetwater Cr. near its mouth							
Initial configuration for Sweetwater Creek.							
	Seq. #100: From 1-Aug-08 To Present						
	Upper In-stream Arra					B1	
	Lower In-stream Arra					B2	
TAY: Big Creek at Taylor Ranch							
Initial configuration for the instream detection system around the Big Creek Bridge at Taylor Ranch.							
	Seq. #100: From 1-Jul-06 To Present						
	Upper In-stream Arra	A1	A2	A3	A4	A5	A6
	Lower In-stream Arra	B1	B2	B3	B4	B5	B6
TMA: 3-Mile Falls Dam Adult Fishway							
An FS-1001M MUX transceiver now powers a single pass-by antenna at the counting window.							
	Seq. #110: From 24-Apr-06 To 8-Nov-06						
	Fish Ladder Viewing	01	02	03	04	05	06
	Seq. #100: From 7-Mar-02 To 24-Apr-06						
	FS2001 PORTABLE WITH	01					
TMF: Three Mile Falls Dam Combined							
Initial configuration. Combines and replaces old TMJ and TMA detections sites.							
	Seq. #100: From 8-Nov-06 To Present						
	Juvenile Fish Sub-sa	51	52				
	Juvenile Fish Bypass	81					
	Adult Fish Ladder	01					

SITE CONFIGURATION HISTORY

(continued)

Site Name	Monitor Name	-----Coil-----					
		1	2	3	4	5	6
TMJ: 3-Mile Falls Dam Smolt Bypass							
Revised existing RIVER EXIT monitor name to SAMPLE FACILITY and added a new RIVER EXIT monitor.							
Seq. #130:	From 1-Jan-06 To 12-Jul-06						
	Sample Facility	10	11				
	River Exit	91					
Seq. #120:	From 28-Jan-04 To 1-Jan-06						
	RIVER EXIT	10	11				
Seq. #110:	From 6-Mar-00 To 28-Jan-04						
	RIVER EXIT	10	11				
Seq. #100:	From 19-Mar-99 To 6-Mar-00						
	RIVER EXIT	10					
TRB: Tucannon Railroad Bridge							
Initial configuration for new Tucannon Railroad Bridge site.							
Seq. #100:	From 1-Nov-05 To Present						
	Crump Weir Array	01	02	03	04	05	06
TRC: Trout Creek, Wind River							
Initial site configuration.							
Seq. #100:	From 1-Sep-07 To Present						
	Upper In-stream Arra	01	02				
	Middle In-stream Arr	03	04				
	Lower In-stream Arra	05	06				
TST: Test Site							
THIS SITE CODE USED FOR PSMFC TESTING PURPOSES							
Seq. # 10:	From 22-Apr-00 To Present						
	TEST MONITOR 1	01	02	03	04	05	06
	TEST MONITOR 2	07	08	09	0A	0B	0C
TUF: Tumwater Dam Adult Fishway							
Initial configuration.							
Seq. #100:	From 15-Jan-08 To Present						
	Weir 18	A1					
	Weir 15	A2					
TWR: Lwr Twisp Rvr near MSRF Ponds							
Initial configuration for lower Twisp River Instream Arrays							
Seq. #100:	From 15-Jul-08 To Present						
	Upper In-stream Arra	B1	B2	B3			
	Lower In-stream Arra	B4	B5	B6			

SITE CONFIGURATION HISTORY  
(continued)

Site Name	Monitor Name	-----Coil-----					
		1	2	3	4	5	6
TWX: Estuary Towed Array (Exp.)							
Contains new Shoreline and Matrix (experimental) detectors as well as Primary Trawl detector							
Seq. #160: From 1-Mar-06 To Present							
	Primary Trawl	A1	A2	A3	A4	A5	A6
	Shoreline Sampler	B1	B2	B3	B4	B5	B6
	Matrix [Experimental	C1	C2	C3	C4	C5	C6
Seq. #150: From 13-Mar-02 To 1-Mar-06							
	LARGE TRAWL	00	01				
	SMALL TRAWL	F1					
Seq. #140: From 1-Apr-01 To 13-Mar-02							
	RIVER EXIT	00	01				
Seq. #130: From 30-Mar-00 To 1-Apr-01							
	RIVER EXIT	00					
Seq. #120: From 26-Apr-99 To 30-Mar-00							
	RIVER EXIT	9E					
	RIVER EXIT	36					
	RIVER EXIT	00	02				
	RIVER EXIT	5A					
Seq. #110: From 1-Mar-98 To 26-Apr-99							
	RIVER EXIT	9E					
	RIVER EXIT	36					
	RIVER EXIT	5A					
Seq. #100: From 13-Apr-95 To 1-Mar-98							
	RIVER EXIT	20	22				
	RIVER EXIT	10	12				
UM1: Umatilla River USFWS							
NF Umatilla R. at Umatilla Forks Nat. Cmpgrnd. (USFWS)							
Seq. #100: From 20-Oct-04 To Present							
	Left Antenna	01					
	Right Antenna	02					
UM2: Umatilla River Instream Array							
Initial configuration for new instream flat-plate installation on the mainstem Umatilla River.							
Seq. #100: From 1-Aug-07 To Present							
	In-stream Array	F1	F2	F3	F4	F5	F6
UWE: Upper Wenatchee River							
Initial configuration.							
Seq. #100: From 1-Oct-09 To Present							
	In-stream Array	A1	A2	A3	A4	A5	A6

SITE CONFIGURATION HISTORY

(continued)

Site Name	Monitor Name	-----Coil-----					
		1	2	3	4	5	6
VC1: Valley Creek, Upstream Site							
New MUX installation with at least two speedbump-style antennas.							
Seq. #110: From 6-Sep-07 To Present							
	Speedbump Antenna Ar	01	02	03	04	05	06
Seq. #100: From 10-Jul-02 To 6-Sep-07							
	MAIN	A1					
VC2: Valley Creek, Downstream Site							
New MUX installation with at least two speedbump-style antennas.							
Seq. #110: From 6-Sep-07 To Present							
	Speedbump Antenna Ar	01	02	03	04	05	06
Seq. #100: From 10-Jul-02 To 6-Sep-07							
	MAIN	A1					
WAJ: WANAPUM DAM JUVENILE (G-DIP)							
Date and coil/controller data accurate; monitor name must be verified							
Seq. #100: From 28-Apr-94 To 3-Jun-94							
	MAIN	F0					
WE1: WELLS LEFT LADDER TEMPORARY							
Temporary EMI noise monitoring at Wells Dam.							
Seq. #100: From 24-Sep-01 To 2-Jan-02							
	CENTER EMI TESTING O	A1					
WE2: WELLS RIGHT LADDER TEMPORARY							
Temporary EMI noise monitoring at Wells Dam							
Seq. #100: From 24-Sep-01 To 2-Jan-02							
	CENTER EMI TESTING O	B1					
WEA: Wells Dam, DCPUD Adult Ladders							
New antenna IDs B1 - B3 at the West Trap entrance							
Seq. #120: From 12-May-08 To Present							
	Left Ladder Pool 68	01	02				
	Left Ladder Pool 67	03	04				
	Right Ladder Pool 68	05	06				
	Right Ladder Pool 67	07	08				
	East Trap	09	0A				
	West Trap	B1	B2	B3			
Seq. #110: From 28-Jun-04 To 13-May-08							
	Left Ladder Pool 68	01	02				
	Left Ladder Pool 67	03	04				
	Right Ladder Pool 68	05	06				
	Right Ladder Pool 67	07	08				
	East Trap	09	0A				
	West Trap	0B	0C				
Seq. #100: From 2-Jan-02 To 28-Jun-04							
	Left Ladder Pool 68	01	02				
	Left Ladder Pool 67	03	04				
	Right Ladder Pool 68	05	06				
	Right Ladder Pool 67	07	08				

SITE CONFIGURATION HISTORY

(continued)

Site Name	Monitor Name	-----Coil-----					
		1	2	3	4	5	6
WFC: Wolf Creek, Methow River							
Initial configuration for Wolf Creek.							
Seq. #100: From 1-Dec-08 To Present							
	Single In-stream Ant	11					
WFF: Willamette Falls Fishway							
All fish must pass these weirs on either side of the counting window at Willamette Falls fish ladder							
Seq. #100: From 28-Dec-05 To Present							
	WEIR UPSTREAM OF WIN	01	02				
	WEIR DOWNSTREAM OF W	03	04				
WHC: Lwr White Creek, Klickitat Bsn							
Initial configuration.							
Seq. #100: From 1-Oct-09 To Present							
	Upper In-stream Arra	01	02				
	Middle In-stream Arr	03	04				
	Lower In-stream Arra	05	06				
WPJ: WAPATO DIVERSION JUVENILE							
Dates and coil/controller data are accurate; monitor name must be reviewed							
Seq. #100: From 8-May-91 To 5-Jun-91							
	MAIN						FB
WSH: Warm Springs Hatchery							
Initial configuration for adult fishway detectors at Warm Springs NFH.							
Seq. #100: From 1-Feb-08 To Present							
	Adult Fishway	01	02				
WTL: White River, Wenatchee Basin							
Initial configuration.							
Seq. #100: From 1-Apr-09 To Present							
	Upper In-stream Arra	B1	B2	B3			
	Lower In-stream Arra	B4	B5	B6			
WW1: Harris Bridge S F Walla Walla							
MUX transceiver with antennas upstream and downstream of the Bridge at Harris Park.							
Seq. #120: From 7-Oct-06 To Present							
	Upstream of Bridge	01	02	03			
	Downstream of Bridge	04	05	06			
Seq. #110: From 3-Sep-02 To 7-Oct-06							
	LEFT	A1					
	RIGHT	A2					
Seq. #100: From 3-Sep-02 To 3-Sep-02							
	LEFT	A1					
	RIGHT	A2					

SITE CONFIGURATION HISTORY

(continued)

Site Name	Monitor Name	-----Coil-----					
		1	2	3	4	5	6
WW2: SF Walla Walla at Bear Creek							
Original FS-1001A transceivers replaced with FS-1001M MUX transceiver.							
Seq. #110: From 17-Nov-05 To Present							
	LEFT	01					
	RIGHT	02					
Seq. #100: From 3-Sep-02 To 17-Nov-05							
	LEFT	A1					
	RIGHT	A2					
Y1J: YAKIMA RIVER TRAP JUVENILE							
Dates and coil/controller data are correct; monitor name must be verified							
Seq. #100: From 4-May-90 To 11-Jun-90							
	MAIN	B8					
YHC: Yellowhawk Creek							
Original definition for new Yellowhawk Creek site, with headgate (A1) and Wa-High (B1) antennas.							
Seq. #100: From 1-Dec-06 To Present							
	Instream antenna at	A1					
	Instream antenna at	B1					
ZEN: Secesh River at Zena Cr. Ranch							
Initial configuration for the Secesh River Instream Arrays near Zena Creek Ranch							
Seq. #100: From 1-Mar-09 To Present							
	Upper In-stream Arra	A1	A2	A3	A4	A5	A6
	Lower In-stream Arra	B1	B2	B3	B4	B5	B6

## C25. Interrogation Site Operations History

Site Code	Interrogation Site Name	Organization	Date Range
<b>AB1</b>	Abernathy Creek, Technology Center Bridge	USFWS	2001 -
<b>AB2</b>	Abernathy Creek, Farmer's Bridge	USFWS	2001 - 2006
<b>AB3</b>	Lower Abernathy Creek	USFWS	2009 -
<b>B1J</b>	Bonneville Dam DSM1 Flat Plate Detector	PSMFC	2003 - 2003
<b>B2A</b>	Bonneville Dam Adult Fish Facility	PSMFC	1998 - 2002
<b>B2J</b>	Bonneville Dam PH2 Juvenile Bypass System	PSMFC	1996 -
<b>BCC</b>	Bonneville Dam PH2 Corner Collector	PSMFC	2006 -
<b>BCP</b>	Butcher Creek Acclimation Pond	YINN	2004 -
<b>BGM</b>	Burlingame Diversion Dam	USFWS	2007 -
<b>BO1</b>	Bonneville Dam Bradford Island Fishway	PSMFC	2002 -
<b>BO2</b>	Bonneville Dam Cascades Island Fishway	PSMFC	2002 -
<b>BO3</b>	Bonneville Dam WA Shore Fishway & AFF	PSMFC	2003 -
<b>BO4</b>	Bonneville Dam WA Shore Vertical Slots	PSMFC	2005 -
<b>BVC</b>	Beaver Creek In-stream Array, Methow River	USGS	2009 -
<b>BVJ</b>	Bonneville Dam DSM1 Subsample	PSMFC	1992 - 1999
<b>BVP</b>	Beaver Creek Acclimation Pond	YINN	2006 -
<b>BVX</b>	Bonneville Dam PH1 Flat Plate (Experimental)	PSMFC	1996 - 2002
<b>BWL</b>	Bonneville Dam Washington Shore Fishway	PSMFC	2001 - 2002
<b>CAP</b>	Carlton Acc. Pond	Unknown	1995 - 1995
<b>CCP</b>	Catherine Creek Acclimation Pond	CTUIR	2000 -
<b>CFJ</b>	Clark Flat Acclimation Ponds	PSMFC	1999 -
<b>CHL</b>	Lower Chiwawa River	WDFW	2008 -
<b>CHN</b>	Challis - North	Unknown	1991 - 1993
<b>CHP</b>	Chiwawa Acclimation Pond	BIOMRK	1995 -
<b>CHS</b>	Challis - South	Unknown	1991 - 1992
<b>CHU</b>	Upper Chiwawa River	WDFW	2008 -
<b>CLE</b>	Cle Elum Dam Interim Spillway Bypass	YINN	2006 -
<b>CLJ</b>	Clearwater River Trap	IDFG	1989 -
<b>CLP</b>	Coulter Creek Acclimation Pond	YINN	2006 -
<b>CR1</b>	Chinook River at Sea Resources Hatchery	SEARES	2002 - 2006
<b>CR2</b>	Chinook River at HWY 101 Bridge	SEARES	2002 - 2006
<b>CR3</b>	Chinook River at a Culvert	SEARES	2004 - 2006
<b>DRP</b>	Dryden Acc. Pond	Unknown	1994 - 1996
<b>EMC</b>	Eightmile Creek In-stream Array, Methow River	USGS	2008 -
<b>ENL</b>	Lower Entiat River	USFWS	2007 -
<b>ENM</b>	Middle Entiat River	USFWS	2008 -
<b>ESJ</b>	Easton Acclimation Pond	PSMFC	1999 -
<b>ESS</b>	East Fk South Fk Salmon River at Parks Cr.	NNPT	2009 -
<b>ESX</b>	Estuary Saltwater Trawl (Experimental)	NNMFS	2004 - 2005
<b>FDC</b>	Feed Canal, Umatilla River	USFWS	2006 -
<b>FDD</b>	Feed Diversion Dam	USFWS	2008 -
<b>GL2</b>	SF Gold Creek In-stream Array, Methow River	USGS	2009 -
<b>GLC</b>	Gold Creek In-stream Array, Methow River	USGS	2009 -
<b>GOJ</b>	Little Goose Dam Juvenile Bypass System	PSMFC	1987 -
<b>GRA</b>	Lower Granite Dam Adult Fishway and Trap	PSMFC	1988 -
<b>GRJ</b>	Lower Granite Dam Juvenile Bypass System	PSMFC	1988 -

<b>Site Code</b>	<b>Interrogation Site Name</b>	<b>Organization</b>	<b>Date Range</b>
<b>GRP</b>	Grande Ronde Acclimation Pond	CTUIR	2002 -
<b>GRX</b>	Lower Granite Dam Sep-by-Code (Experimental)	PSMFC	1995 - 1999
<b>HLM</b>	Potlatch River near Helmer	IDFG	2009 -
<b>HLX</b>	Hemlock Dam (Trout Cr, Wind River) Fishway	USGS	2004 - 2009
<b>HYC</b>	Hayden Creek in-stream array, Lemhi Basin	IDFG	2009 -
<b>ICH</b>	Ice Harbor Dam Fishways and Juvenile Bypass	PSMFC	2005 -
<b>IHA</b>	Ice Harbor Adult Fishways	PSMFC	2003 - 2005
<b>IMJ</b>	Imnaha River Juvenile Trap	Unknown	1994 - 1999
<b>JCJ</b>	Jack Creek Acclimation Pond	PSMFC	2000 -
<b>JD1</b>	John Day River near McDonald Ferry at RM 20	NNMFS	2007 -
<b>JDJ</b>	John Day Dam Juvenile Bypass System	PSMFC	1992 -
<b>JUL</b>	Potlatch River near Juliaetta	IDFG	2008 -
<b>KCB</b>	Kiwanis Camp Bridge, upper Mill Creek	USFWS	2005 -
<b>KHS</b>	Big Bear Cr. at Kendrick HS	IDFG	2007 -
<b>KRS</b>	SF Salmon River at Krassel Cr.	NNPT	2008 -
<b>LAP</b>	Lapwai Creek near the mouth	UIDAHO	2008 -
<b>LBC</b>	Libby Creek In-stream Array, Methow River	USGS	2009 -
<b>LLR</b>	Lower Lemhi River ISA at Salmon	IDFG	2009 -
<b>LMJ</b>	Lower Monumental Dam Juvenile Bypass	PSMFC	1993 -
<b>LMR</b>	Lower Methow River near Pateros	WDFW	2009 -
<b>LOP</b>	Lostine River Acclimation Pond	NNPT	2002 -
<b>LRW</b>	Lemhi River ISA below the IDFG weir	IDFG	2009 -
<b>LTR</b>	Lower Tucannon River, near the river mouth	USFWS	2005 -
<b>LWD</b>	Lowden Diversion Dam	USFWS	2007 -
<b>LWE</b>	Lower Wenatchee River	WDFW	2009 -
<b>LWL</b>	Little White Salmon NFH adult fish ladder	USFWS	2009 -
<b>LWN</b>	Little Wenatchee River	WDFW	2009 -
<b>MAD</b>	Mad River, Entiat River Basin	USFWS	2008 -
<b>MC1</b>	McNary Dam Oregon Shore Fishway	PSMFC	2002 -
<b>MC2</b>	McNary Dam Washington Shore Fishway	PSMFC	2002 -
<b>MCD</b>	Mill Creek Diversion Project	USFWS	2005 -
<b>MCJ</b>	McNary Dam Juvenile Bypass System	PSMFC	1988 -
<b>MCX</b>	McNary Dam Juvenile Experimental Site	PSMFC	1996 - 2002
<b>MRB</b>	Lower Methow River Basin below Twisp	USGS	2004 - 2008
<b>MSC</b>	Methow River Side Channel Array	USGS	2009 -
<b>MWC</b>	Maxwell Canal, Umatilla River	USFWS	2007 -
<b>MWE</b>	Middle Wenatchee River	WDFW	2009 -
<b>NAL</b>	Lower Nason Creek	YINN	2008 -
<b>NAU</b>	Upper Nason Creek	YINN	2007 -
<b>NBA</b>	Nursery Bridge Diversion Dam Fishways	USFWS	2003 -
<b>OMK</b>	Omak Creek Crump Weir	CCT	2006 -
<b>ORB</b>	Oasis Road Bridge, lower Walla Walla River	USFWS	2005 -
<b>PES</b>	Peshastin Creek	WDFW	2007 -
<b>PRA</b>	Priest Rapids Dam Adult Fishways	GPUD	2003 -
<b>PRJ</b>	Prosser Dam screened Juvenile Diversion	PSMFC	1989 - 2004
<b>PRO</b>	Prosser Dam Fishways and screened Diversion	PSMFC	2004 -
<b>RBF</b>	Round Butte Dam Fish Transfer Facility	PGE	2009 -

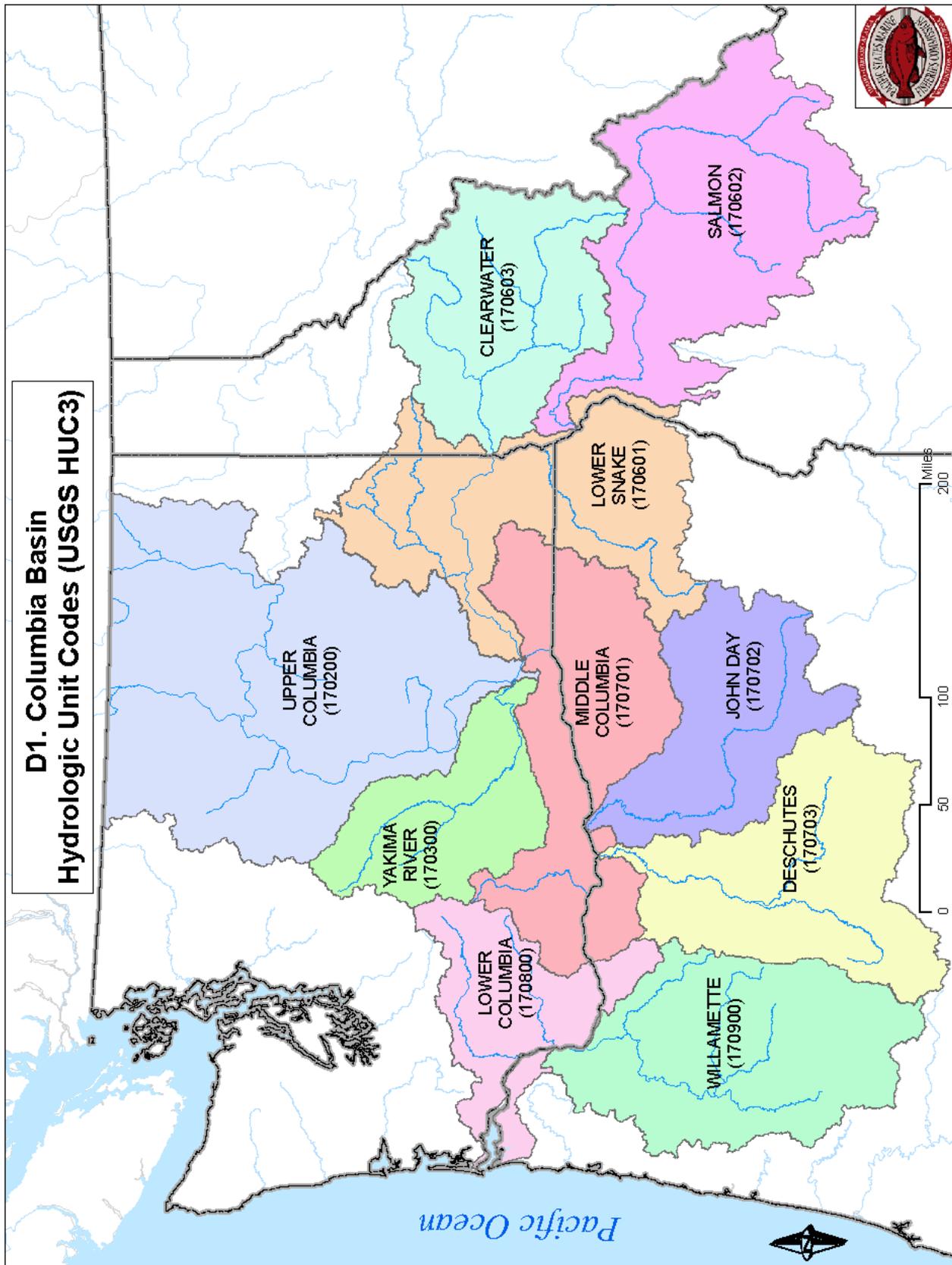
<b>Site Code</b>	<b>Interrogation Site Name</b>	<b>Organization</b>	<b>Date Range</b>
<b>RCL</b>	Rock Creek (WA) near Yakima Nation	USGS	2009 -
<b>RCS</b>	Rock Creek (WA) at Squaw Creek	USGS	2009 -
<b>RCX</b>	Rattlesnake Creek Flat Plates (Experimental)	USGS	2001 - 2007
<b>RFP</b>	Rolfing Acclimation Pond	YINN	2004 -
<b>RIA</b>	Rock Island Dam Adult Fishways	CPUD	2003 -
<b>ROZ</b>	Roza Dam Juvenile Diversion	Unknown	1992 - 1992
<b>RPJ</b>	Rapid River Hat. Juvenile Volitional Release	PSMFC	1999 -
<b>RRF</b>	Rocky Reach Fishway	CPUD	2006 -
<b>RRJ</b>	Rocky Reach Dam Juvenile Bypass System	PSMFC	1996 - 2002
<b>RZF</b>	Roza Dam Adult Fishway	PSMFC	2007 -
<b>SAJ</b>	Salmon River Trap	IDFG	1993 -
<b>SCP</b>	Spring Creek Acc. Pond behind Winthrop NFH	YINN	2008 -
<b>SFG</b>	SF Salmon River near Guard Station Rd. Bridge	NNPT	2009 -
<b>SFL</b>	Shipherd Falls Ladder	WDFW	2009 -
<b>SIP</b>	Similkameen Acc. Pond	Unknown	1996 - 1996
<b>SNJ</b>	Snake River Trap	IDFG	1989 -
<b>SSJ</b>	Sunnyside Dam Juvenile Diversion	Unknown	1991 - 1991
<b>SUJ</b>	Sullivan Dam Juvenile Bypass System	PGE	1999 -
<b>SWT</b>	Sweetwater Creek near its mouth	UIDAHO	2008 -
<b>TAY</b>	Big Creek (Idaho) at Taylor Ranch	NNMFS	2006 -
<b>TMA</b>	Three Mile Falls Dam Adult Fishway	USFWS	2002 - 2006
<b>TMF</b>	Three Mile Falls Dam Fishway and Diversion	USFWS	2006 -
<b>TMJ</b>	Three Mile Falls Dam Juvenile Diversion	USFWS	1999 - 2006
<b>TRC</b>	Trout Creek In-stream Detection, Wind River	USGS	2007 -
<b>TST</b>	PTAGIS Test Site	PSMFC	2000 -
<b>TUF</b>	Tumwater Dam Adult Fishway	CPUD	2008 -
<b>TWR</b>	Lower Twisp River near MSRF Ponds	WDFW	2008 -
<b>TWX</b>	Estuary Towed Array (Experimental)	NNMFS	1996 -
<b>UM1</b>	NF Umatilla River at Forks Campground Bridge	USFWS	2004 -
<b>UM2</b>	Umatilla River Array above Imeques Acc. Pond	USFWS	2007 -
<b>UWE</b>	Upper Wenatchee River	WDFW	2009 -
<b>VC1</b>	Valley Creek, in-river at Stanley, ID	NNMFS	2002 -
<b>VC2</b>	Valley Creek, in-river below Stanley, ID	NNMFS	2002 -
<b>WAJ</b>	Wanapum Dam Juvenile (gatewell dip)	Unknown	1994 - 1994
<b>WEA</b>	Wells Dam Adult Fishways	DC1PUD	2002 -
<b>WFC</b>	Wolf Creek In-stream Array, Chewuck River	USGS	2008 -
<b>WFF</b>	Willamette Falls Adult Fishway	ODFW	2005 -
<b>WHC</b>	Mouth of White Creek, Klickitat River Basin	YINN	2009 -
<b>WPJ</b>	Wapato Dam Juvenile Diversion	Unknown	1991 - 1991
<b>WSH</b>	Adult fishway at Warm Springs NFH	USFWS	2008 -
<b>WTL</b>	White River, Wenatchee Basin	WDFW	2009 -
<b>WW1</b>	SF Walla Walla River at Harris Park Bridge	USFWS	2002 -
<b>WW2</b>	SF Walla Walla River at Bear Creek	USFWS	2002 -
<b>Y1J</b>	Yakima River Trap	Unknown	1990 - 1990
<b>YHC</b>	Yellowhawk Creek	USFWS	2006 -
<b>ZEN</b>	Secesh River near Zena Creek Ranch	NPT	2009 -

This page left intentionally blank.

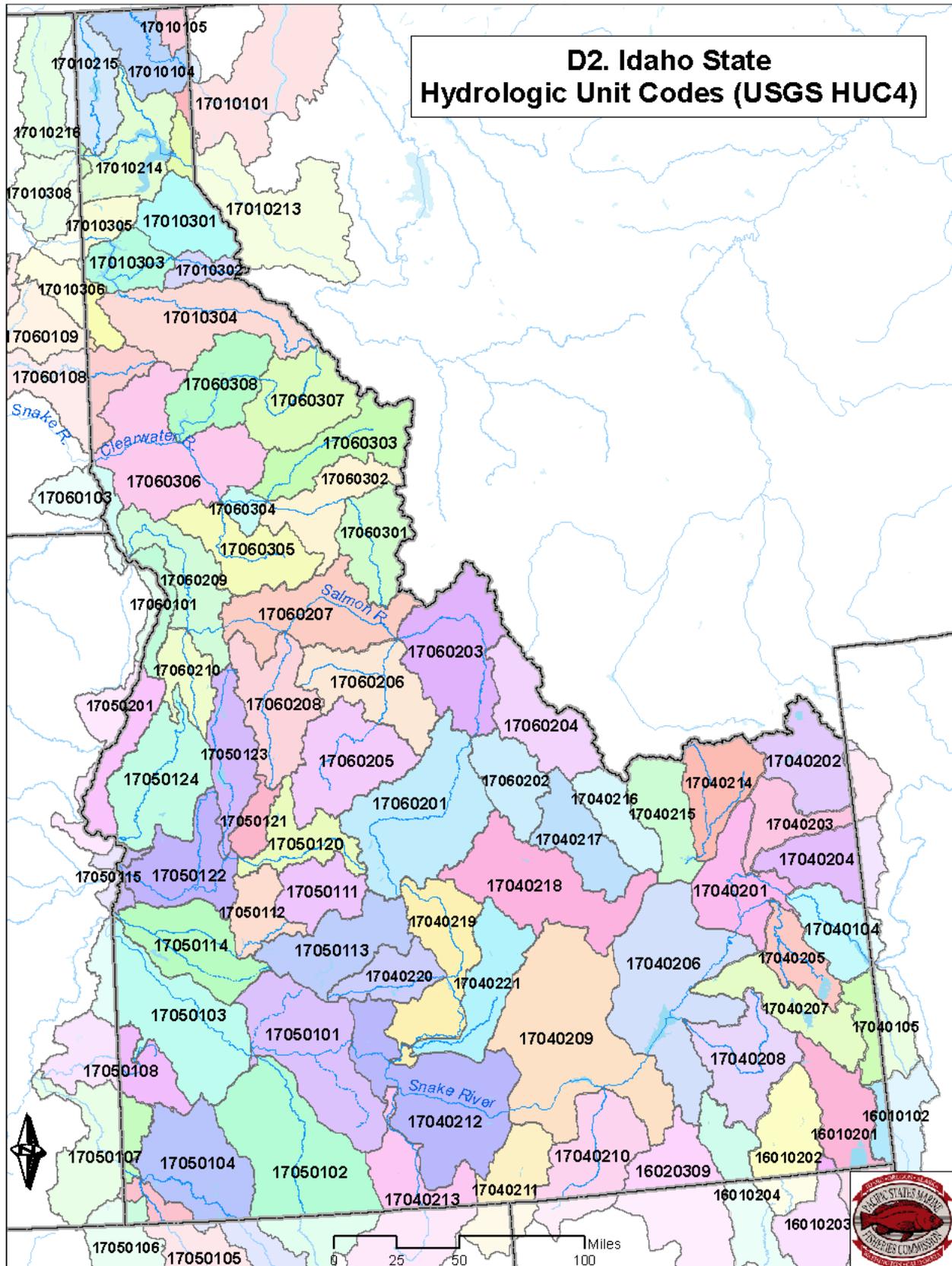
## **Appendix D. Columbia Basin Hydrologic Unit Code (HUC) Maps**

The following maps illustrate the hydrologic basins (HUC3) and sub-basins (HUC4) within the Columbia Basin.

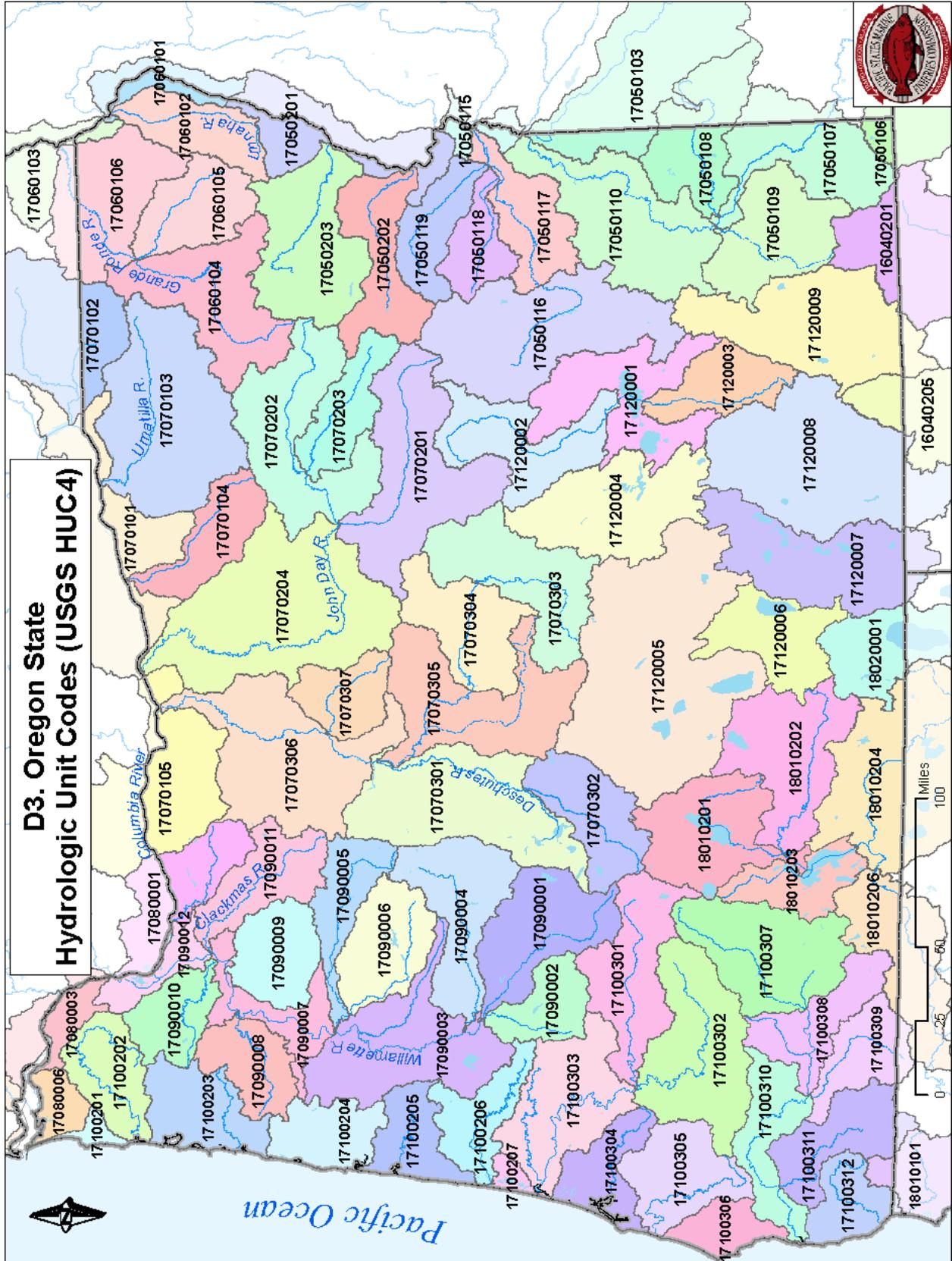
## D1. Columbia Basin Hydrologic Unit Codes (USGS HUC3)



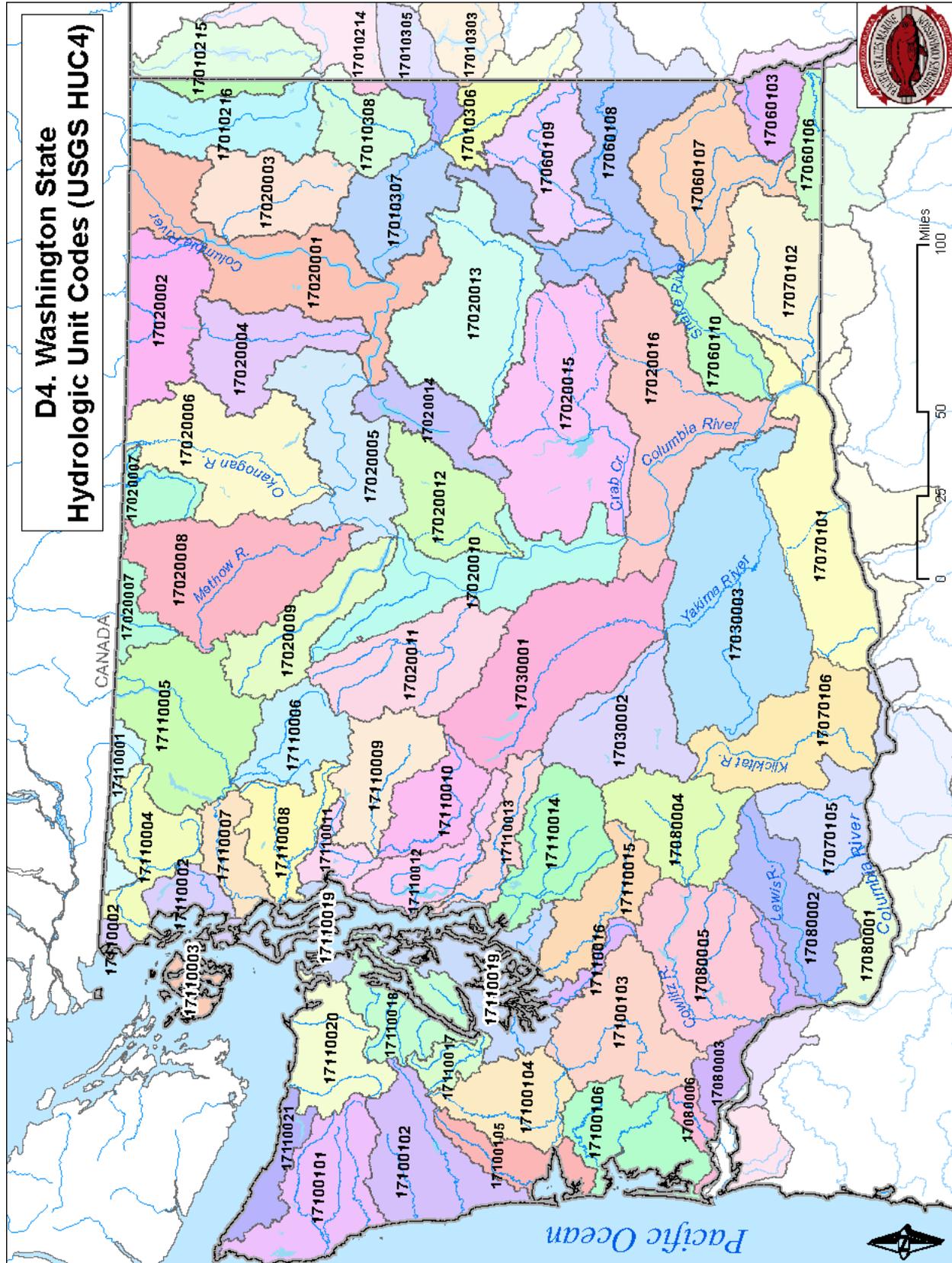
## D2. Idaho State Hydrologic Unit Codes (USGS HUC4)



### D3. Oregon State Hydrologic Unit Codes (USGS HUC4)



## D4. Washington State Hydrologic Unit Codes (USGS HUC4)



This page left intentionally blank.

# Appendix E. Perpetual Day-of-Year (DoY) Calendars

## E1. Perpetual DoY Calendar — Non-Leap Years

Day	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec	Day
1	001	032	60	91	121	152	182	213	244	274	305	335	1
2	002	033	061	092	122	153	183	214	245	275	306	336	2
3	003	034	062	093	123	154	184	215	246	276	307	337	3
4	004	035	063	094	124	155	185	216	247	277	308	338	4
5	005	036	064	095	125	156	186	217	248	278	309	339	5
6	006	037	065	096	126	157	187	218	249	279	310	340	6
7	007	038	066	097	127	158	188	219	250	280	311	341	7
8	008	039	067	098	128	159	189	220	251	281	312	342	8
9	009	040	068	099	129	160	190	221	252	282	313	343	9
10	010	041	069	100	130	161	191	222	253	283	314	344	10
11	011	042	070	101	131	162	192	223	254	284	315	345	11
12	012	043	071	102	132	163	193	224	255	285	316	346	12
13	013	044	072	103	133	164	194	225	256	286	317	347	13
14	014	045	073	104	134	165	195	226	257	287	318	348	14
15	015	046	074	105	135	166	196	227	258	288	319	349	15
16	016	047	075	106	136	167	197	228	259	289	320	350	16
17	017	048	076	107	137	168	198	229	260	290	321	351	17
18	018	049	077	108	138	169	199	230	261	291	322	352	18
19	019	050	078	109	139	170	200	231	262	291	323	353	19
20	020	051	079	110	140	171	201	232	263	293	324	354	20
21	021	052	080	111	141	172	202	233	264	294	325	355	21
22	022	053	081	112	142	173	203	234	265	295	326	356	22
23	023	054	082	113	143	174	204	235	266	296	327	357	23
24	024	055	083	114	144	175	205	236	267	297	328	358	24
25	025	056	084	115	145	176	206	237	268	298	329	359	25
26	026	057	085	116	146	177	207	238	269	299	330	360	26
27	027	058	086	117	147	178	208	239	270	300	331	361	27
28	028	059	087	118	148	179	209	240	271	301	332	362	28
29	029		088	119	149	180	210	241	272	302	333	363	29
30	030		089	120	150	181	211	242	273	303	334	364	30
31	031		090		151		212	243		304		365	31
Day	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec	Day

## E2. Perpetual DoY Calendar — Leap Years

Day	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec	Day
1	001	032	061	092	122	153	183	214	245	275	306	336	1
2	002	033	062	093	123	154	184	215	246	276	307	337	2
3	003	034	063	094	124	155	185	216	247	277	308	338	3
4	004	035	064	095	125	156	186	217	248	278	309	339	4
5	005	036	065	096	126	157	187	218	249	279	310	340	5
6	006	037	066	097	127	158	188	219	250	280	311	341	6
7	007	038	067	098	128	159	189	220	251	281	312	342	7
8	008	039	068	099	129	160	190	221	252	282	313	343	8
9	009	040	069	100	130	161	191	222	253	283	314	344	9
10	010	041	070	101	131	162	192	223	254	284	315	345	10
11	011	042	071	102	132	163	193	224	255	285	316	346	11
12	012	043	072	103	133	164	194	225	256	286	317	347	12
13	013	044	073	104	134	165	195	226	257	287	318	348	13
14	014	045	074	105	135	166	196	227	258	288	319	349	14
15	015	046	075	106	136	167	197	228	259	289	320	350	15
16	016	047	076	107	137	168	198	229	260	290	321	351	16
17	017	048	077	108	138	169	199	230	261	291	322	352	17
18	018	049	078	109	139	170	200	231	262	291	323	353	18
19	019	050	079	110	140	171	201	232	263	293	324	354	19
20	020	051	080	111	141	172	202	233	264	294	325	355	20
21	021	052	081	112	142	173	203	234	265	295	326	356	21
22	022	053	082	113	143	174	204	235	266	296	327	357	22
23	023	054	083	114	144	175	205	236	267	297	328	358	23
24	024	055	084	115	145	176	206	237	268	298	329	359	24
25	025	056	085	116	146	177	207	238	269	299	330	360	25
26	026	057	086	117	147	178	208	239	270	300	331	361	26
27	027	058	087	118	148	179	209	240	271	301	332	362	27
28	028	059	088	119	149	180	210	241	272	302	333	363	28
29	029	060	089	120	150	181	211	242	273	303	334	364	29
30	030		090	121	151	182	212	243	274	304	335	365	30
31	031		091		152		213	244		305		366	31
Day	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec	Day