UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
West Coast Region
1201 NE Lloyd Boulevard, Suite 1100
PORTLAND, OREGON 97232-1274

February 26, 2016

Laurie Weitkamp
Research Fish Biologist
NMFS Northwest Fisheries Science Center
2032 SE OSU Drive
Newport, OR 97365

RE: Determination of Take for Research Purposes (23-16-NWFSC-108)

Dear Ms. Weitkamp:

National Marine Fisheries Service (NMFS) Interior Columbia Basin Office's Columbia Hydropower branch has determined that take associated with the study, "Importance of the Columbia River Estuary to forage fish populations and salmonid marine survival. Salmon parasites as indicators of life-histories, migration, and habitat use of juvenile salmon." is permitted in 2016 under the 2014 Federal Columbia River Power System (FCRPS) Supplemental Biological Opinion (2014 Opinion). If this research continues beyond 2016, the take allowed under the determination process must be updated annually. The estimated numbers of listed salmonids needed to complete this study in 2016 are given in the attached project summary.

Project Justification, Description, and Methods

Justification
This project directly addresses two RPAs, 61.1 and 61.2 as follows:

RPA. 61.1. Define importance of tidal freshwater/estuary/plume/nearshore.
This study directly addresses this RPA because it will greatly increase our understanding of fish health and movements as juvenile salmon move downstream through the hydro system and estuary. Sampling of the same stocks in marine waters by Northwest Fisheries Science Center (NWFSC), will allow direct comparisons to fish caught upstream, allowing us to characterize salmon during this critical freshwater-estuary-early ocean period. The metrics used to assess salmon condition were deliberately selected be responsive to immediate changes in salmon condition (e.g., due to increased food supply associated with marsh production), allowing us to be able to detect changes as salmon move through this sequence of environments. We will use genetics and tags to determine stock of origin, allowing us to follow discrete stocks as they move downstream. This information will allow us to determine how juvenile salmon change during this critical downstream migration period and identify locations or times where change is greatest, indicating areas/times of particular importance.

Description, Methodology, and Authorized take levels

See attached project summary

Terms, Conditions, and Requirements

Fish listed under the Endangered Species Act (ESA) must be handled with extreme care and kept in water to the maximum extent possible during sampling and processing. Adequate circulation and replenishment of water in holding units is required. When using gear that captures a mix of species, ESA-listed fish must be processed first, to the extent possible, to minimize the duration of handling stress. Endangered Species Act listed fish must be transferred using a sanctuary net (which holds water during transfer) whenever practical to prevent the added stress of being out of water. Should NMFS determine that a researcher's procedure is no longer acceptable; the researcher must immediately cease such activity until an acceptable alternative procedure can be developed with NMFS. To implement the Hydro research, monitoring & evaluation (RM&E) reasonable and prudent alternatives (RPAs), the Applicant shall ensure that all of the following conditions are met:

1. Researchers must not intentionally kill or cause to be killed any listed species unless a specific monitoring or evaluation proposal, approved by NMFS, specifically allows intentional lethal take.

2. Each ESA-listed fish handled out of water must be anesthetized to prevent injury or mortality.

3. Anesthetized fish must be allowed to recover (e.g., in a recovery tank) before being released. Fish that are simply counted but not handled must remain in water, but do not have to be anesthetized. Whenever possible, unintentional or indirect mortalities of ESA-listed fish that occur during scientific research and monitoring activities shall be used in place of intentional lethal take, if applicable.

4. Each researcher must ensure that the ESA-listed species are taken only by the means, in the areas, and for the purposes set forth in the research proposal, as limited by the terms and conditions.

5. Each researcher, in effecting the take authorized by the incidental take statement (ITS) (Chapter 14, 2008 Opinion – incorporated into the 2014 Opinion) and through NMFS' Take Determination Letters, is considered to have accepted the terms and conditions of the ITS and any additional terms or conditions required by NMFS' Take Determination Letters, and must be prepared to comply with the provisions of these two documents, and the applicable NMFS' regulations and the ESA.

6. Each researcher is responsible for the actions of any individual operating under the authority of the researcher's designated take authorization within the ITS of the 2014 Opinion and NMFS' Take Determination Letters.

7. Each researcher, staff member, or designated agent acting on the researcher's behalf must possess a copy of the ITS in the 2014 Opinion and the NMFS authorizing Take Determination letter when conducting the activities for which a take of ESA-listed species or other exception to ESA prohibitions is authorized herein.

8. Researchers may not transfer or assign a take authorization included within this determination to any other person(s), as person is defined in Section 3(12) of the ESA. The take authorization ceases to be in force or effective if transferred or assigned to any other person without prior authorization from NMFS.

9. Each researcher must obtain any other Federal, State, and local permits or authorizations necessary to conduct the activities provided for in this ITS.

10. Each researcher must coordinate with other applicable co-managers and researchers to ensure that no unnecessary duplication or adverse cumulative effects occur as a result of the researcher's activities.

11. National Marine Fisheries Service reserves the right to inspect research activities as they occur. This may include observation or review of research activities, facilities, records, etc., pertaining to ESA-listed species covered by this determination.

12. Under the terms of NMFS' regulations, a violation of any of the terms and conditions of this ITS will subject the offending researcher and/or any individual who is operating under the authority of this ITS to penalties as provided for in the ESA for authorized take.

13. Each researcher is responsible for biological samples collected from ESA-listed species as long as they are useful for research purposes. The terms and conditions concerning any samples collected remain in effect as long as the researcher maintains authority over and responsibility for the material taken. A researcher may not transfer biological samples to anyone not listed in the research proposal without obtaining prior written approval from NMFS. Any such transfer will be subject to such conditions, as NMFS deems appropriate.

14. NMFS may amend a take authorization identified in this determination, or adjust specific take levels after reasonable notice to the applicable researcher.

15. NMFS may revoke a take authorization identified in this ITS if the activities for which it provides are not carried out. If the activities are not carried out in accordance with the conditions of this ITS and the purposes and requirements of the ESA, or if NMFS otherwise determines that the continuation of activities would operate to the disadvantage of ESA-listed species.

Annual Reporting and Authorization Requirements

The conduct of scientific research and monitoring activities each year is contingent on submission and approval of a report on each proceeding year's research and monitoring activities. Researchers are providing annual reports summarizing the take of ESA-listed salmon and steelhead associated with their activity. These annual reports are to be provided to NMFS' designated Take Determination

Coordinator by December 1 of each year unless this date is otherwise modified by NMFS' authorizing Take Determination letter. The report must include the following:

1. A detailed description of scientific research and monitoring activities, including the total number of fish taken at each location, an estimate of the number of ESA-listed fish taken at each location, the manner of take, and the dates and locations of the take.

2. Measures taken to minimize disturbances to ESA-listed fish and the effectiveness of these measures, the condition of ESA-listed fish taken and used for research and monitoring, a description of the effects of research and monitoring activities on the subject species, the disposition of ESA-listed fish in the event of mortality, and a brief narrative of the circumstances surrounding fish injuries or mortalities to ESA-listed fish.

3. Any problems that arose during research and monitoring activities, and a statement as to whether the activities had any unforeseen effects.

4. Descriptions of how all take estimates were derived.

5. Steps that have been and will be taken to coordinate research and monitoring activities with those of other researchers.

6. Projects which employ blocking weirs must include a log of delay monitoring in their annual report. This log must include daily trap catches and numbers of fish observed below the weir (as per the methodology described in the projects weir operation plan). Any changes in weir operation or configuration will also be noted with the dates that they are in effect. Any periods when the weir was not in operation will also be noted.

Operational Reporting & Notification Requirements

1. Researchers must obtain NMFS' approval prior to implementing research protocols (e.g., changes in sampling locations or fish handling protocols) that differ from those considered in the Take Determination Letters, unless immediate deviation from these same protocols are necessary to reduce impacts to fish in hand. In this case, researchers must contact NMFS' designated Take Determination Coordinator or other designated staff as soon as possible to report on the situation (including reporting any resultant unexpected take), the actions taken by the research to minimize impacts to research fish, and coordination of additional actions that are necessary before the research can continue.

2. Each researcher must alert NMFS whenever the authorized level of take is exceeded, or if circumstances indicate that such an event is imminent. Notification should be made as soon as possible, but no later than 2 days after the authorized level of take is exceeded. The researcher must then submit a detailed written report to NMFS. Pending a review of the circumstances, NMFS may suspend the research and monitoring activities or implement reasonable measures and/or alternatives to allow research and monitoring activities to continue.

3. Each researcher must alert NMFS when a take of any ESA-listed species not included in the research proposal is killed, injured, or collected during the course of research and monitoring activities. Notification should be made as soon as possible, but no later than 2 days after the unauthorized take. The researcher must then submit a detailed written report to NMFS. Pending a review of the circumstances, NMFS may suspend research and monitoring activities or implement reasonable measures and/or alternatives to allow research and monitoring activities to continue.

4. In the case of ongoing studies, a report of actual take will be submitted to NMFS no less than 30 days before the request for take for the next year is submitted. For studies which only last 1 year, or upon termination of a multi-year study, a report of actual take will be submitted no less than 30 days after the activities described in the take determination letter cease. Take reports will include the numbers, life stage, species, and evolutionarily significant unit (ESU) of fish taken; the type of take (harass, handle, kill); and levels of incidental mortality. The reports will also include the location of the take (geographical names and Hydrologic Unit Code (HUC), and summarize take into blocks no larger than one month (i.e., take for April, May, etc.). Any of the incidents described in items 2 and 3 above (exceeded take limits, or incidental morality not covered by the take determination) will also be described in this report. The report will also include an evaluation if methodology can be improved to reduce take (especially incidental mortality).

Determinations by the FCRPS Branch for this research during the 2016 fish passage season and beyond will be made on an annual basis. The annual determination will depend upon information submitted in the research study's annual report, other new information, the annual anticipated status of fisheries stocks, and any subsequent review through regional review processes.

Please notify Lynne Krasnow, (503)231-2163, Lynne Krasnow@NOAA.GOV as soon as possible of any deviation from the terms and conditions in this determination. Please include the study's official title and the number (from the subject line) of the current Take Determination Letter in all communications regarding this study. Please provide the FCRPS Branch's Take Determination Coordinator, Blane Bellerud (503-231-2238, Blane.Bellerud@noaa.gov), with the annual report for this research study.

Sincerely,

Ritchie J. Graves, Chief
Columbia Hydropower Branch
Interior Columbia Basin Office
NOAA Fisheries, West Coast Region

NOAA FISHERIES
NATIONAL MARINE FISHERIES SERVICE

Authorizations and Permits for Protected Species (APPS)

File #

Applicant Information

Name:	Laurie Weitkamp
Title:	Research Fish Biologist
Affiliation:	NMFS Northwest Fisheries Science Center, Conservation Biology Division
Address:	2032 SE OSU Drive
City,State,Zip:	Newport, OR 97365
Phone Number:	(541)867-0504
Fax Number:	(541)867-0505
Email:	laurie.weitkamp@noaa.gov

Project Information

File Number:	20246
Application Status:	**Submitted**
Project Title:	Renew: Baitfish/salmonid marine survival relationships in the Columbia River estuary. Role of disease as a factor affecting survival of juvenile salmonids in the esturine and marine environments.
Project Status:	Renewal
Previous Federal or State Permit:	19363
Permits Requested:	• Determination of Take Authorization under a Biological Opinion • Oregon Scientific Taking Permit for Fish and Marine and Freshwater Invertebrates *PLEASE NOTE: Oregon Scientific Taking Permits only cover take and transport in the state of Oregon. It is the applicant'sresponsibility to obtain the necessary permits from all other states that may be associated with this project.*
Where will activities occur?	Oregon (including Columbia River and offshore waters) Washington (including Columbia River and offshore waters)
State department of fish and game/wildlife:	N/A

Research Timeframe:	**Start:** 04/01/2016 **End:** 12/31/2016
Sampling Season/Project Duration:	Expect to sample from April through November, 2016. This is a 2 year project funded by the USACE.
Project Type(1):	Management/Applied Research
Project Type(2):	Monitoring

Project Description

Purpose: This project is being expanded in both geographic scope and the numbers of fish we expect to catch compared to previous years. The purpose is still to evaluate the importance of the Columbia River estuary to juvenile salmonid growth and marine survival, but now the focus is specifically the potential benefits of marsh habitat restoration on interior populations of Chinook salmon and steelhead. This will be done by assessing the physiological condition, origin, food habits, and parasites as factors influencing growth and survival of salmonids and document how salmon condition changes as juvenile salmon move downstream from Bonneville to the river mouth. This salmon condition information, paired with results from two sister studies (site-scale and flux), will be used to evaluate the benefits of habitat restoration to juvenile salmon. This study will also include sampling of interior stocks of salmon at upriver dams (Lower Granite, McNary, Bonneville) to determine their condition prior to reaching the estuary (at and below Bonneville).

This application serves a joint purpose: to apply for an Oregon Scientific Permit, but also apply for a FCRPS BiOp permit to compliment my Sect 10 permit. The increased take of listed juvenile salmon requested here are largely listed ad-clipped hatchery fish below Bonneville, and steelhead at Lower Granite, McNary, and Bonneville Dams. By contrast, I do not expect to catch as many wild fish as are allowed on my current Sect. 10 permit because it no longer reflects the composition of juvenile salmon in the river.

For the Oregon permit, I included generous numbers (1,000-4,000) of fish we will likely encounter in the upper reaches of the estuary (e.g., bass, perch, pikeminnow, etc.) because we have no idea how many we will actually catch; I really hope we don't catch anywhere close to this many!

Description: This project is being expanded from its former configuration (purse seining in the lower estuary) to include sampling of salmon at multiple locations from Bonneville Dam to the mouth to determine whether interior stocks of Chinook and steelhead benefit from marsh habitat restoration. Specifically, during the months of April, May, June and July, we will sample juvenile Chinook and steelhead at three general locations to determine how they change as they move downstream past restoration sites. The three locations are: 1) at and immediately below Bonneville Dam, 2) between Longview and Welch Island, and 3) below the Astoria bridge. Metrics used to characterize juvenile salmon include size and condition, physiological indicators (insulin-like growth factor [IGF], liver glycogen, hepatosomatic index), food habits, growth from otoliths, and parasites. We will use genetic stock identification and CWT or PIT tags to determine the origins of Chinook salmon and steelhead. This stock information will allow us to focus our efforts on interior stocks, but also allow us to determine the extent to which lower river stocks differ from interior populations as measured by these metrics.

For this project, juvenile salmon will be collected from the bypass systems at dams, by trawl and tow net downstream of Bonneville dam, and by purse seine in lower estuary (below Astoria). Purse seining will be conducted as previously described (sampling at 2 stations on either side of the river, making 6-8 sets per day on incoming tides). Tow netting and trawling will employ multiple short duration tows (no more the 10 minutes) to limit total catch size and minimize potential negative impacts to captured fishes, with at least 2 tows/hauls at each location. Regardless of the net used, all captured fish will be immediately transferred to large tubs with running water, then sorted by species, counted, and a subset (up to 30 of each species) will be lightly anesthetized (with MS-222), measured, allowed to recover and released. Chinook and steelhead used for physiological assessment will receive a lethal dose of MS-222, have blood and liver samples collected immediately, and the body frozen for laboratory analysis (diets, parasite, pathogens, scales, otoliths).

Biological Opinion

Biological Opinion: 2008/2014 FCRPS Biological Opinion

Objectives:
- Smolt to Adult Returns
- Life History
- Environmental Stressors
- Survival Monitoring

Justification: This project will address two RPAs: RPA. 61.1. Define importance of tidal freshwater/estuary/plume/nearshore AND RPA 61.2. Define migration/behavior affecting survival.
For 61.1, this study will document the condition of juvenile salmon as they move downstream through the hydrosystem and estuary to increase our understanding of fish health and movements during this critical period. We will accomplish this by sampling juvenile salmon (with a focus on interior stocks of Chinook and steelhead) at several dams (Lower Granite, McNary, Bonneville) and at multiple locations between Bonneville Dam and the Columbia River mouth. Sampling of the same stocks in marine waters will be accomplished by the NWFSC ocean surveys, allowing direct comparisons to fish caught upstream. We will assess salmon condition using metrics including size (length, weight, condition factor), diets, parasites, and physiology (insulin-like growth factor 1, liver glycogen, hepatosomatic index, energy content). We will use genetics and tags to determine stock of origin, allowing us to follow discrete stocks as they move downstream. This information will allow us to determine how juvenile salmon change during this critical downstream migration period and identify locations or times where change is greatest, indicating areas/times of particular importance.
For 61.2, This study will allow us to define migration/behavior affecting survival by characterizing juvenile salmon as they move downstream through the hydrosystem and estuary. We will document the condition of juvenile salmon at several dams (Lower Granite, McNary, Bonneville) and at multiple locations between Bonneville Dam and the Columbia River mouth to determine how their condition changes as they move downstream. We will use Genetic Stock Identification (including Parental Based Tagging) and tags to determine stock of origin, allowing us to focus on specific stocks of fish, particularly interior Chinook and steelhead. This lon

Review: This project has been extensively reviewed by the USACE.

Supplemental Information

Methods: The attached proposal describes the field work and methodology; this permit is just for the landscape scale work (a separate permit will cover the site scale work). We will be lethally sampling juvenile Chinook and steelhead at at several locations below Bonneville Dam to determine their condition (size, diets, parasites, physiology) as they move downstream in order to relate it to restoration of marsh habitat which likely produces prey. These fish will have been caught with purse seines, beach seines, townet, and small trawl. We will also collect juvenile steelhead at from the bypass systems of three Columbia River dams (McNary, Lower Granite, Bonneville) to determine the condition of salmon entering our study area. We will use genetics and tags (CWTs, PIT) to determine origins of fish so we can specifically focus on interior stocks of salmon.

Lethal Take: We already have a Section 10 permit, which covers the take of most of the fish we will keep. We need additional take for 300 juvenile steelhead at the dams, plus listed hatchery Chinook, steelhead, and coho, and natural steelhead, coho and sockeye salmon, from 1 to 75 (Snake clipped hatchery steelhead) beyond our current take limits.

Anticipated Effects on Animals: Based on our experience and observations, we believe our traditional sampling equipment (purse seine) causes very little descaling or injury to fish, and fish are generally in good condition when we release them. Proof of this is a PIT-tagged steelhead that we caught and released as a juvenile, which was detected 2 years later as an adult at Bonneville dam.
The townet and trawl are expected to cause some descaling, but towing at slow speeds for short duration should minimize harm to fish. In addition, the townet has a zipper in the codend, so fish can easily be removed from the net and placed in water with minimal delay.

Measures to Minimize Effects: Adult salmonids are rarely caught be will be released without handling or removing from the water. All fish, including juvenile salmonids, will be worked down into the purse seine or trawl/townet codend. A reservoir dip net will be used to keep all fish in water when transferring from the net to holding tubs with running water. All fish that will be measured will be anaesthetized before identification and measurement, and allowed to fully recover in running water before release. Salmonids to be sacrificed will be given a lethal dose of MS-222. The tow net and trawl will use short (max. 10 min) tow times to avoid catching more fish than needed and minimizing the impacts to captured fishes.

Disposition of Tissues: Tissues from these fish will be disposed in the appropriate method. In most cases, this will be the municipal garbage system.

Public Availability of Product/Publications: Three papers resulting from this project have been published in the peer-reviewed scientific literature: Weitkamp et al. 2012 (Fish. Bull., U.S. 110:426-450) describes the first 4 years of study; Weitkamp et al. 2015 (Fish. Bull. 113:213-226) uses data from this study and historic data to characterize Pacific and river lamprey in the estuary; Weitkamp et al. 2015 (Marine and Coastal Fisheries, 7:370-392) documents stock-specific variation in the size and timing of juvenile Chinook and steelhead. Several other manuscript are in preparation, including: 1) a comparison of purse and beach seine catches, 2) a study evaluating environmentally-driven variation in the estuarine fish community, and 3) comparison of the estuarine fish community with avian predator diets.

Biologist Comments

Date	From	Comments
01/21/2016	Robert Bradley	No issues with this sampling from the district perspective, but since work is in the mainstem Columbia River please consult ODFW Columbia River Management staff for input. Also, please report any chum encounters to the Chum Reintroduction program (Kris Homel).
02/03/2016	Tom Rien	I do not have any particular concerns, but we should ask them to keep apprised of and minimize interactions with fisheries. This is especially true since they are expanding into as yet undefined locations and using gear quite similar to upcoming commercial fisheries. entered from em to HH.

Federal Information

Federal Agency	Type	Authorization Number and Title	Date Signed	Expiration Date	Listing Units/Stocks Covered	Comments
National Marine Fisheries Service (NMFS)	Section 10 permit	1290-7R, The importance of the Columbia River estuary to forage fish populations and salmonid marine survival	03/23/2012	12/31/2016	Chinook Salmon, Snake River fall-run (NMFS Threatened);Chinook Salmon, Snake River spring/summer-run (NMFS Threatened);Sockeye Salmon, Snake River (NMFS Endangered);Steelhead, Upper Columbia River (NMFS Threatened);Steelhead, Snake River Basin (NMFS Threatened);Coho Salmon, Lower Columbia River (NMFS Threatened);Steelhead, Lower Columbia River (NMFS Threatened);Steelhead, Middle Columbia River (NMFS Threatened);Steelhead, Upper Willamette River (NMFS Threatened);Chinook Salmon, Lower Columbia River (NMFS Threatened);Chinook Salmon, Upper Willamette River (NMFS Threatened);Chinook Salmon, Upper Columbia River spring-run (NMFS Endangered);Chum Salmon, Columbia River (NMFS Threatened);Eulachon, Southern DPS (NMFS Threatened);Green Sturgeon, Southern DPS (NMFS Threatened)	

Location/Take Information

Marine Location
Research Area: Pacific Ocean **State:** OR **Sub Basin (4th Field HUC):** Lower Columbia **Estuary:** Columbia River
Sale in Oregon of species taken: None
Location Description: We will sample at beach and purse seine sites in the lower Columbia estuary, and tow net at additional sites in the estuary (to be determined).

Take Information

Line	Ver	Species	Listing Unit/Stock	Production /Origin	Life Stage	Sex	Expected Take	Indirect Mort	Takes Per Animal	Take Action	Observe /Collect Method	Procedure	Run	Transport Record	Begin Date	End Date
1		Anchovy, Northern	NA	Natural	Juvenile	Unknown	1000	0		Intentional (Directed) Mortality	Seine, Purse		Mixed	N/A	4/15/2016	12/31/2016
2		Herring, Pacific	NA	Natural	Juvenile	Unknown	1000	0		Intentional (Directed) Mortality	Seine, Purse		Mixed	N/A	4/15/2016	12/31/2016

3		Stickleback, Threespine	NA	Natural	Adult	Unknown	100000	100		Capture/Handle/Release Fish	Seine, Purse		N/A	N/A	4/15/2016	12/31/2016
4		Salmon, Chinook	Upper Willamette River (NMFS Threatened)	Natural	Juvenile	Male and Female	35	0		Intentional (Directed) Mortality	Seine, Purse	Anesthetize	Spring	N/A	4/15/2016	12/31/2016
5		Salmon, Chinook	Upper Willamette River (NMFS Threatened)	Listed Hatchery Intact Adipose	Juvenile	Male and Female	1	0		Intentional (Directed) Mortality	Seine, Purse	Anesthetize	Spring	N/A	4/15/2016	12/31/2016
6		Salmon, Chinook	Lower Columbia River (NMFS Threatened)	Natural	Juvenile	Unknown	81	0		Capture/Mark, Tag, Sample Tissue/Release Live Animal	Seine, Purse	Anesthetize; Tissue Sample Fin or Opercle	Mixed	N/A	4/15/2016	12/31/2016
7		Salmon, Chinook	Lower Columbia River (NMFS Threatened)	Natural	Juvenile	Unknown	50	0		Intentional (Directed) Mortality	Seine, Purse	Anesthetize	Mixed	N/A	4/15/2016	12/31/2016
8		Salmon, Chinook	Lower Columbia River (NMFS Threatened)	Listed Hatchery Intact Adipose	Juvenile	Unknown	50	0		Capture/Mark, Tag, Sample Tissue/Release Live Animal	Seine, Purse	Anesthetize; Tissue Sample Fin or Opercle	Mixed	N/A	4/15/2016	12/31/2016
9		Salmon, Chinook	Lower Columbia River (NMFS Threatened)	Listed Hatchery Intact Adipose	Juvenile	Unknown	30	0		Intentional (Directed) Mortality	Seine, Purse	Anesthetize	Mixed	N/A	4/15/2016	12/31/2016
10		Salmon, Chinook	Snake River spring/summer-run (NMFS Threatened)	Natural	Juvenile	Male and Female	5	0		Capture/Mark, Tag, Sample Tissue/Release Live Animal	Seine, Purse	Anesthetize; Tissue Sample Fin or Opercle	Spring/Summer	N/A	4/15/2016	12/31/2016
11		Salmon, Chinook	Snake River spring/summer-run (NMFS Threatened)	Natural	Juvenile	Male and Female	7	0		Intentional (Directed) Mortality	Seine, Purse	Anesthetize	Spring/Summer	N/A	4/15/2016	12/31/2016
12		Salmon, Chinook	Snake River spring/summer-run (NMFS Threatened)	Listed Hatchery Intact Adipose	Juvenile	Male and Female	3	0		Intentional (Directed) Mortality	Seine, Purse	Anesthetize	Spring/Summer	N/A	4/15/2016	12/31/2016
13		Salmon, Chinook	Snake River fall-run (NMFS Threatened)	Natural	Juvenile	Male and Female	5	0		Capture/Mark, Tag, Sample Tissue/Release Live Animal	Seine, Purse	Anesthetize; Tissue Sample Fin or Opercle	Fall	N/A	4/15/2016	12/31/2016
14		Salmon, Chinook	Snake River fall-run (NMFS Threatened)	Natural	Juvenile	Male and Female	3	0		Intentional (Directed) Mortality	Seine, Purse	Anesthetize	Fall	N/A	4/15/2016	12/31/2016
15		Salmon, Chinook	Snake River fall-run (NMFS Threatened)	Listed Hatchery Intact Adipose	Juvenile	Male and Female	4	0		Capture/Mark, Tag, Sample Tissue/Release Live Animal	Seine, Purse	Anesthetize; Tissue Sample Fin or Opercle	Fall	N/A	4/15/2016	12/31/2016

16		Salmon, Chinook	Snake River fall-run (NMFS Threatened)	Listed Hatchery Intact Adipose	Juvenile	Male and Female	4	0		Intentional (Directed) Mortality	Seine, Purse	Anesthetize	Fall	N/A	4/15/2016	12/31/2016
17		Salmon, Chinook	Upper Columbia River spring-run (NMFS Endangered)	Natural	Juvenile	Male and Female	1	0		Capture/Mark, Tag, Sample Tissue/Release Live Animal	Seine, Purse	Anesthetize; Tissue Sample Fin or Opercle	Spring	N/A	4/15/2016	12/31/2016
18		Salmon, Chinook	Upper Columbia River spring-run (NMFS Endangered)	Natural	Juvenile	Male and Female	5	0		Intentional (Directed) Mortality	Seine, Purse	Anesthetize	Spring	N/A	4/15/2016	12/31/2016
19		Salmon, Chinook	Upper Columbia River spring-run (NMFS Endangered)	Listed Hatchery Intact Adipose	Juvenile	Male and Female	3	0		Intentional (Directed) Mortality	Seine, Purse	Anesthetize	Spring	N/A	4/15/2016	12/31/2016
20		Salmon, sockeye	Snake River (NMFS Endangered)	Natural	Juvenile	Male and Female	15	1		Capture/Mark, Tag, Sample Tissue/Release Live Animal	Seine, Purse	Anesthetize; Tissue Sample Fin or Opercle	Mixed	N/A	4/15/2016	12/31/2016
21		Steelhead	Upper Columbia River (NMFS Threatened)	Natural	Juvenile	Male and Female	5	0		Intentional (Directed) Mortality	Seine, Purse	Anesthetize	Summer	N/A	4/15/2016	12/31/2016
22		Steelhead	Upper Columbia River (NMFS Threatened)	Listed Hatchery Intact Adipose	Juvenile	Male and Female	12	0		Intentional (Directed) Mortality	Seine, Purse	Anesthetize	Summer	N/A	4/15/2016	12/31/2016
23		Steelhead	Upper Willamette River (NMFS Threatened)	Natural	Juvenile	Male and Female	6	0		Intentional (Directed) Mortality	Seine, Purse	Anesthetize	Winter	N/A	4/15/2016	12/31/2016
24		Steelhead	Lower Columbia River (NMFS Threatened)	Natural	Juvenile	Male and Female	12	0		Intentional (Directed) Mortality	Seine, Purse	Anesthetize	Summer	N/A	4/15/2016	12/31/2016
25		Steelhead	Snake River Basin (NMFS Threatened)	Natural	Juvenile	Male and Female	17	0		Intentional (Directed) Mortality	Seine, Purse	Anesthetize	Summer	N/A	4/15/2016	12/31/2016
26		Steelhead	Snake River Basin (NMFS Threatened)	Listed Hatchery Intact Adipose	Juvenile	Male and Female	15	0		Intentional (Directed) Mortality	Seine, Purse	Anesthetize	Summer	N/A	4/15/2016	12/31/2016
27		Steelhead	Middle Columbia River (NMFS Threatened)	Natural	Juvenile	Male and Female	84	0		Intentional (Directed) Mortality	Seine, Purse	Anesthetize	Summer	N/A	4/15/2016	12/31/2016
28		Steelhead	Middle Columbia River (NMFS Threatened)	Listed Hatchery Intact Adipose	Juvenile	Male and Female	3	0		Intentional (Directed) Mortality	Seine, Purse	Anesthetize	Summer	N/A	4/15/2016	12/31/2016

29		Salmon, chum	Columbia River (NMFS Threatened)	Natural	Juvenile	Male and Female	300	4		Capture/Mark, Tag, Sample Tissue/Release Live Animal	Seine, Purse	Anesthetize; Tissue Sample Fin or Opercle	Mixed	N/A	4/15/2016	12/31/2016
30		Salmon, coho	Lower Columbia River (NMFS Threatened)	Natural	Juvenile	Male and Female	18	0		Capture/Mark, Tag, Sample Tissue/Release Live Animal	Seine, Purse	Anesthetize; Tissue Sample Fin or Opercle	Mixed	N/A	4/15/2016	12/31/2016
31		Salmon, coho	Lower Columbia River (NMFS Threatened)	Natural	Juvenile	Male and Female	15	0		Intentional (Directed) Mortality	Seine, Purse	Anesthetize	Mixed	N/A	4/15/2016	12/31/2016
32		Salmon, coho	Lower Columbia River (NMFS Threatened)	Listed Hatchery Intact Adipose	Juvenile	Male and Female	15	0		Capture/Mark, Tag, Sample Tissue/Release Live Animal	Seine, Purse	Anesthetize; Tissue Sample Fin or Opercle	Mixed	N/A	4/15/2016	12/31/2016
33		Salmon, coho	Lower Columbia River (NMFS Threatened)	Listed Hatchery Intact Adipose	Juvenile	Male and Female	30	0		Intentional (Directed) Mortality	Seine, Purse	Anesthetize	Mixed	N/A	4/15/2016	12/31/2016
34		Sardine	NA	Natural	Juvenile	Unknown	1000	0		Intentional (Directed) Mortality	Seine, Purse		Mixed	N/A	4/15/2016	12/31/2016
35		Smelt, Whitebait	NA	Natural	Juvenile	Unknown	2000	2		Capture/Handle/Release Fish	Seine, Purse		Mixed	N/A	4/15/2016	12/31/2016
36		Marine Fish - not listed here	NA	Natural	Juvenile	Unknown	2000			Capture/Handle/Release Fish	Seine, Purse		Mixed	N/A	4/15/2016	12/31/2016
37		Salmon, Chinook	Unspecified	Unlisted Hatchery	Juvenile	Unknown	1200	0		Intentional (Directed) Mortality	Seine, Purse		Mixed	N/A	4/15/2016	12/31/2016
38		Flounder, Starry	NA	Natural	Juvenile	Unknown	25	2		Capture/Handle/Release Fish	Seine, Purse		Mixed	N/A	4/15/2016	12/31/2016
39		Anchovy, Northern	NA	Natural	Juvenile	Unknown	600000			Capture/Handle/Release Fish	Seine, Purse		Mixed	N/A	4/15/2016	12/31/2016
40		Herring, Pacific	NA	Natural	Juvenile	Unknown	50000		10	Capture/Handle/Release Fish	Seine, Purse		Mixed	N/A	4/15/2016	12/31/2016
41		Sardine	NA	Natural	Juvenile	Unknown	20000	1000		Capture/Handle/Release Fish	Seine, Purse		Mixed	N/A	4/15/2016	12/31/2016
42		Smelt, Whitebait	NA	Natural	Juvenile	Unknown	2000	0		Intentional (Directed) Mortality	Seine, Purse		Mixed	N/A	4/15/2016	12/31/2016
43		Surfperch (unknown)	NA	Natural	Juvenile	Unknown	10000	50		Capture/Handle/Release Fish	Seine, Purse		Mixed	N/A	4/15/2016	12/31/2016
44		Crab, Dungeness	NA	Natural	Adult	Unknown	800	2		Capture/Handle/Release Fish	Seine, Purse		Mixed	N/A	4/15/2016	12/31/2016
45		Salmon, Chinook	Unspecified	Unlisted Hatchery	Juvenile	Unknown	750	10		Capture/Handle/Release Fish	Seine, Purse	Anesthetize	Mixed	N/A	4/15/2016	12/31/2016

46		Salmon, coho	Unspecified	Unlisted Hatchery	Juvenile	Unknown	500	0		Intentional (Directed) Mortality	Seine, Purse		Mixed	N/A	4/15/2016	12/31/2016
47		Salmon, sockeye	NA	Natural	Juvenile	Unknown	200	5		Capture/Handle/Release Fish	Seine, Purse	Anesthetize	Mixed	N/A	4/15/2016	12/31/2016
48		Steelhead	Unspecified	Unlisted Hatchery	Juvenile	Unknown	500	2		Capture/Handle/Release Fish	Seine, Purse	Anesthetize	N/A	N/A	4/15/2016	12/31/2016
49		Lamprey (unknown)	NA	Natural	Juvenile	Unknown	25	2		Capture/Handle/Release Fish	Seine, Purse		Mixed	N/A	4/15/2016	12/31/2016
50		Lamprey, Pacific	NA	Natural	Juvenile	Unknown	25	2		Capture/Handle/Release Fish	Seine, Purse		Mixed	N/A	4/15/2016	12/31/2016
51		Sole, English	NA	Natural	Juvenile	Unknown	100	2		Capture/Handle/Release Fish	Seine, Purse		Mixed	N/A	4/15/2016	12/31/2016
52		Salmon, Chinook	Unspecified	Unlisted Hatchery	Juvenile	Unknown	20	2		Capture/Mark, Tag, Sample Tissue/Release Live Animal	Seine, Purse	Anesthetize; Tissue Sample Fin or Opercle	Mixed	N/A	4/15/2016	12/31/2016
53		Shad, American	NA	Natural	Juvenile	Unknown	50000	200		Capture/Handle/Release Fish	Seine, Purse		N/A	N/A	4/15/2016	12/31/2016
54		Flatfish - not listed here	NA	Natural	Juvenile	Unknown	500	20		Capture/Handle/Release Fish	Seine, Purse		N/A	N/A	4/15/2016	12/31/2016
55		Smelt, Surf	NA	Natural	Unknown	Unknown	50000	0		Capture/Handle/Release Fish	Seine, Purse		N/A	N/A	4/15/2016	12/31/2016
56		Smelt, Surf	NA	Natural	Unknown	Unknown	400	0		Intentional (Directed) Mortality	Seine, Purse		N/A	N/A	4/15/2016	12/31/2016
57		Greenling, Kelp	NA	Natural	Juvenile	Unknown	9	0		Capture/Handle/Release Fish	Seine, Purse		N/A	N/A	4/15/2016	12/31/2016
58		Greenling, Kelp	NA	Natural	Juvenile	Unknown	5	0		Intentional (Directed) Mortality	Seine, Purse		N/A	N/A	4/15/2016	12/31/2016
59		Lingcod	NA	Natural	Juvenile	Unknown	50	0		Capture/Handle/Release Fish	Seine, Purse		N/A	N/A	4/15/2016	12/31/2016
60		Lingcod	NA	Natural	Juvenile	Unknown	10	0		Intentional (Directed) Mortality	Seine, Purse		N/A	N/A	4/15/2016	12/31/2016
61		Smelt, Longfin	NA	Natural	Adult	Unknown	500	0		Capture/Handle/Release Fish	Seine, Purse		N/A	N/A	4/15/2016	12/31/2016
62		Smelt, Longfin	NA	Natural	Adult	Unknown	100	0		Intentional (Directed) Mortality	Seine, Purse		N/A	N/A	4/15/2016	12/31/2016
63		Sandlance	NA	Natural	Unknown	Unknown	5000	20		Capture/Handle/Release Fish	Seine, Purse		N/A	N/A	4/15/2016	12/31/2016
64		Tomcod	NA	Natural	Juvenile	Unknown	1	0		Capture/Handle/Release Fish	Seine, Purse		N/A	N/A	4/15/2016	12/31/2016

65		Tomcod	NA	Natural	Juvenile	Unknown	3	0		Intentional (Directed) Mortality	Seine, Purse		N/A	N/A	4/15/2016	12/31/2016
66		Gunnel	NA	Natural	Adult	Unknown	50	0		Capture/Handle/Release Fish	Seine, Purse		N/A	N/A	4/15/2016	12/31/2016
67		Sculpin (unknown)	NA	Natural	Juvenile	Unknown	7	0		Capture/Handle/Release Fish	Seine, Purse		N/A	N/A	4/15/2016	12/31/2016
68		Sculpin, Pacific Staghorn	NA	Natural	Adult	Unknown	200	5		Capture/Handle/Release Fish	Seine, Purse		N/A	N/A	4/15/2016	12/31/2016
69		Shrimp, Crangon	NA	N/A	Adult	Unknown	200	0		Capture/Handle/Release Fish	Seine, Purse		N/A	N/A	4/15/2016	12/31/2016
70		Surfperch, Shiner	NA	Natural	Adult	Unknown	5000	0		Capture/Handle/Release Fish	Seine, Purse		N/A	N/A	4/15/2016	12/31/2016
71		Steelhead	Lower Columbia River (NMFS Threatened)	Listed Hatchery Intact Adipose	Juvenile	Male and Female	3	0		Intentional (Directed) Mortality	Seine, Purse	Anesthetize	Summer	N/A	4/15/2016	12/31/2016
72		Shad, American	NA	Natural	Unknown	Unknown	100	0		Intentional (Directed) Mortality	Seine, Purse		N/A	N/A	4/15/2016	12/31/2016
73		Surfperch, Shiner	NA	Natural	Unknown	Unknown	100	0		Intentional (Directed) Mortality	Seine, Purse		N/A	N/A	4/15/2016	12/31/2016
74		Lamprey, Pacific	NA	Natural	Unknown	Unknown	25	0		Intentional (Directed) Mortality	Seine, Purse		N/A	N/A	4/15/2016	12/31/2016
75		Lamprey, River	NA	Natural	Juvenile	Unknown	25	0		Intentional (Directed) Mortality	Seine, Purse		N/A	N/A	4/15/2016	12/31/2016
76		Sandlance	NA	Natural	Unknown	Unknown	100	0		Intentional (Directed) Mortality	Seine, Purse		N/A	N/A	4/15/2016	12/31/2016
77		Steelhead	Unspecified	Unlisted Hatchery	Juvenile	Unknown	560	0		Intentional (Directed) Mortality	Seine, Purse		N/A	N/A	4/15/2016	12/31/2016
78		Salmon, coho	Unspecified	Unlisted Hatchery	Juvenile	Unknown	500	0		Capture/Handle/Release Fish	Seine, Purse		N/A	N/A	4/15/2016	12/31/2016
79		Steelhead	Snake River Basin (NMFS Threatened)	Listed Hatchery Adipose Clip	Juvenile	Male and Female	62	2		Capture/Mark, Tag, Sample Tissue/Release Live Animal	Seine, Purse	Tissue Sample Fin or Opercle	Summer	N/A	4/15/2016	12/31/2016
80		Steelhead	Upper Columbia River (NMFS Threatened)	Listed Hatchery Adipose Clip	Juvenile	Male and Female	16	1		Capture/Mark, Tag, Sample Tissue/Release Live Animal	Seine, Purse	Anesthetize; Tissue Sample Fin or Opercle	Summer	N/A	4/15/2016	12/31/2016

81		Steelhead	Middle Columbia River (NMFS Threatened)	Listed Hatchery Adipose Clip	Juvenile	Male and Female	18	1		Capture/Mark, Tag, Sample Tissue/Release Live Animal	Seine, Purse	Anesthetize; Tissue Sample Fin or Opercle	Summer	N/A	4/15/2016	12/31/2016
82		Steelhead	Lower Columbia River (NMFS Threatened)	Listed Hatchery Adipose Clip	Juvenile	Male and Female	25	1		Capture/Mark, Tag, Sample Tissue/Release Live Animal	Seine, Purse	Anesthetize; Tissue Sample Fin or Opercle	Winter	N/A	4/15/2016	12/31/2016
83		Pipefish, Bay	NA	Natural	Adult	Unknown	10	0		Capture/Handle/Release Fish	Seine, Purse	Anesthetize	N/A	N/A	4/15/2016	12/31/2016
84		Trout, Cutthroat	Southwestern Washington/Columbia River	Unlisted Hatchery	Unknown	Unknown	100	3		Capture/Handle/Release Fish	Seine, Purse	Anesthetize	N/A	N/A	4/15/2016	12/31/2016
85		Perch, Yellow	NA	Natural	Adult	Unknown	1000	5		Capture/Handle/Release Fish	Seine, Purse	Anesthetize	N/A	N/A	4/15/2016	12/31/2016
86		Eulachon	Southern DPS (NMFS Threatened)	Natural	Adult	Unknown	10	5		Capture/Handle/Release Fish	Seine, Purse	Anesthetize	N/A	N/A	4/15/2016	12/31/2016
87		Sturgeon, green	Southern DPS (NMFS Threatened)	Natural	Adult	Unknown	2	0		Capture/Handle/Release Fish	Seine, Purse		N/A	N/A	4/15/2016	12/31/2016
88		Salmon, Chinook	Lower Columbia River (NMFS Threatened)	Listed Hatchery Adipose Clip	Juvenile	Unknown	450	4		Capture/Mark, Tag, Sample Tissue/Release Live Animal	Seine, Purse	Anesthetize; Tissue Sample Fin or Opercle	Mixed	N/A	4/15/2016	12/31/2016
89		Salmon, Chinook	Lower Columbia River (NMFS Threatened)	Listed Hatchery Adipose Clip	Juvenile	Unknown	225	0		Intentional (Directed) Mortality	Seine, Purse		Mixed	N/A	4/15/2016	12/31/2016
90		Salmon, Chinook	Snake River fall-run (NMFS Threatened)	Listed Hatchery Adipose Clip	Juvenile	Male and Female	15	0		Capture/Mark, Tag, Sample Tissue/Release Live Animal	Seine, Purse	Anesthetize; Tissue Sample Fin or Opercle	Fall	N/A	4/15/2016	12/31/2016
91		Salmon, Chinook	Snake River fall-run (NMFS Threatened)	Listed Hatchery Adipose Clip	Juvenile	Male and Female	10	0		Intentional (Directed) Mortality	Seine, Purse	Anesthetize	Fall	N/A	4/15/2016	12/31/2016
92		Salmon, Chinook	Snake River spring/summer-run (NMFS Threatened)	Listed Hatchery Adipose Clip	Juvenile	Male and Female	20	1		Capture/Mark, Tag, Sample Tissue/Release Live Animal	Seine, Purse	Anesthetize; Tissue Sample Fin or Opercle	Spring/Summer	N/A	4/15/2016	12/31/2016

93		Salmon, Chinook	Snake River spring/summer-run (NMFS Threatened)	Listed Hatchery Adipose Clip	Juvenile	Male and Female	37	0		Intentional (Directed) Mortality	Seine, Purse	Anesthetize	Spring/Summer	N/A	4/15/2016	12/31/2016
94		Salmon, Chinook	Upper Columbia River spring-run (NMFS Endangered)	Listed Hatchery Adipose Clip	Juvenile	Male and Female	3	0		Capture/Mark, Tag, Sample Tissue/Release Live Animal	Seine, Purse	Anesthetize; Tissue Sample Fin or Opercle	Spring	N/A	4/15/2016	12/31/2016
95		Salmon, Chinook	Upper Columbia River spring-run (NMFS Endangered)	Listed Hatchery Adipose Clip	Juvenile	Male and Female	5	0		Intentional (Directed) Mortality	Seine, Purse	Anesthetize	Spring	N/A	4/15/2016	12/31/2016
96		Salmon, Chinook	Upper Columbia River spring-run (NMFS Endangered)	Listed Hatchery Intact Adipose	Juvenile	Male and Female	5	0		Capture/Mark, Tag, Sample Tissue/Release Live Animal	Seine, Purse	Anesthetize; Tissue Sample Fin or Opercle	Spring	N/A	4/15/2016	12/31/2016
97		Salmon, Chinook	Upper Willamette River (NMFS Threatened)	Listed Hatchery Intact Adipose	Juvenile	Male and Female	3	0		Capture/Mark, Tag, Sample Tissue/Release Live Animal	Seine, Purse	Anesthetize; Tissue Sample Fin or Opercle	Spring	N/A	4/15/2016	12/31/2016
98		Salmon, Chinook	Upper Willamette River (NMFS Threatened)	Listed Hatchery Adipose Clip	Juvenile	Male and Female	85	0		Intentional (Directed) Mortality	Seine, Purse	Anesthetize	Spring	N/A	4/15/2016	12/31/2016
99		Salmon, Chinook	Upper Willamette River (NMFS Threatened)	Listed Hatchery Adipose Clip	Juvenile	Male and Female	42	2		Capture/Mark, Tag, Sample Tissue/Release Live Animal	Seine, Purse	Anesthetize; Tissue Sample Fin or Opercle	Spring	N/A	4/15/2016	12/31/2016
100		Salmon, Chinook	Upper Willamette River (NMFS Threatened)	Natural	Adult	Male and Female	3	0		Capture/Handle/Release Fish	Seine, Purse		Spring	N/A	4/15/2016	12/31/2016
101		Salmon, Chinook	Upper Willamette River (NMFS Threatened)	Listed Hatchery Adipose Clip	Adult	Male and Female	3	0		Capture/Handle/Release Fish	Seine, Purse		Spring	N/A	4/15/2016	12/31/2016
102		Salmon, coho	Lower Columbia River (NMFS Threatened)	Listed Hatchery Adipose Clip	Juvenile	Male and Female	200	5		Capture/Mark, Tag, Sample Tissue/Release Live Animal	Seine, Purse	Anesthetize; Tissue Sample Fin or Opercle	Fall	N/A	4/15/2016	12/31/2016
103		Salmon, coho	Lower Columbia River (NMFS Threatened)	Listed Hatchery Adipose Clip	Juvenile	Male and Female	100	0		Intentional (Directed) Mortality	Seine, Purse	Anesthetize	Fall	N/A	4/15/2016	12/31/2016

104		Salmon, coho	Lower Columbia River (NMFS Threatened)	Natural	Adult	Male and Female	3	0		Capture/Handle/Release Fish	Seine, Purse		Fall	N/A	4/15/2016	12/31/2016
105		Salmon, coho	Lower Columbia River (NMFS Threatened)	Listed Hatchery Intact Adipose	Adult	Male and Female	3	0		Capture/Handle/Release Fish	Seine, Purse		Fall	N/A	4/15/2016	12/31/2016
106		Salmon, coho	Lower Columbia River (NMFS Threatened)	Listed Hatchery Adipose Clip	Adult	Male and Female	3	0		Capture/Handle/Release Fish	Seine, Purse		Fall	N/A	4/15/2016	12/31/2016
107		Steelhead	Lower Columbia River (NMFS Threatened)	Listed Hatchery Intact Adipose	Juvenile	Male and Female	15	0		Capture/Mark, Tag, Sample Tissue/Release Live Animal	Seine, Purse	Anesthetize; Tissue Sample Fin or Opercle	Mixed	N/A	4/15/2016	12/31/2016
108		Steelhead	Lower Columbia River (NMFS Threatened)	Listed Hatchery Adipose Clip	Juvenile	Male and Female	35	0		Intentional (Directed) Mortality	Seine, Purse	Anesthetize	Mixed	N/A	4/15/2016	12/31/2016
109		Steelhead	Lower Columbia River (NMFS Threatened)	Natural	Juvenile	Male and Female	50	0		Capture/Mark, Tag, Sample Tissue/Release Live Animal	Seine, Purse	Anesthetize; Tissue Sample Fin or Opercle	Mixed	N/A	4/15/2016	12/31/2016
110		Steelhead	Middle Columbia River (NMFS Threatened)	Natural	Adult	Male and Female	3	0		Capture/Handle/Release Fish	Seine, Purse		Winter	N/A	4/15/2016	12/31/2016
111		Steelhead	Middle Columbia River (NMFS Threatened)	Listed Hatchery Adipose Clip	Adult	Male and Female	3	0		Capture/Handle/Release Fish	Seine, Purse		Winter	N/A	4/15/2016	12/31/2016
112		Steelhead	Middle Columbia River (NMFS Threatened)	Natural	Juvenile	Male and Female	65	0		Capture/Mark, Tag, Sample Tissue/Release Live Animal	Seine, Purse	Anesthetize; Tissue Sample Fin or Opercle	Summer	N/A	4/15/2016	12/31/2016
113		Steelhead	Middle Columbia River (NMFS Threatened)	Listed Hatchery Intact Adipose	Juvenile	Male and Female	10	0		Capture/Mark, Tag, Sample Tissue/Release Live Animal	Seine, Purse	Anesthetize; Tissue Sample Fin or Opercle	Summer	N/A	4/15/2016	12/31/2016
114		Steelhead	Middle Columbia River (NMFS Threatened)	Listed Hatchery Adipose Clip	Juvenile	Male and Female	28	0		Intentional (Directed) Mortality	Seine, Purse	Anesthetize	Summer	N/A	4/15/2016	12/31/2016
115		Steelhead	Snake River Basin (NMFS Threatened)	Natural	Adult	Male and Female	3	0		Capture/Handle/Release Fish	Seine, Purse		Summer	N/A	4/15/2016	12/31/2016

116		Steelhead	Snake River Basin (NMFS Threatened)	Listed Hatchery Adipose Clip	Adult	Male and Female	3	0		Capture/Handle/Release Fish	Seine, Purse		Summer	N/A	4/15/2016	12/31/2016
117		Steelhead	Snake River Basin (NMFS Threatened)	Natural	Juvenile	Male and Female	60	0		Capture/Mark, Tag, Sample Tissue/Release Live Animal	Seine, Purse	Anesthetize; Tissue Sample Fin or Opercle	Summer	N/A	4/15/2016	12/31/2016
118		Steelhead	Snake River Basin (NMFS Threatened)	Listed Hatchery Adipose Clip	Juvenile	Male and Female	100	0		Intentional (Directed) Mortality	Seine, Purse	Anesthetize	Summer	N/A	4/15/2016	12/31/2016
119		Steelhead	Snake River Basin (NMFS Threatened)	Listed Hatchery Intact Adipose	Juvenile	Male and Female	30	0		Capture/Mark, Tag, Sample Tissue/Release Live Animal	Seine, Purse	Anesthetize; Tissue Sample Fin or Opercle	Summer	N/A	4/15/2016	12/31/2016
120		Steelhead	Upper Columbia River (NMFS Threatened)	Natural	Juvenile	Male and Female	10	0		Capture/Mark, Tag, Sample Tissue/Release Live Animal	Seine, Purse	Anesthetize; Tissue Sample Fin or Opercle	Summer	N/A	4/15/2016	12/31/2016
121		Steelhead	Upper Columbia River (NMFS Threatened)	Listed Hatchery Intact Adipose	Juvenile	Male and Female	12	0		Capture/Mark, Tag, Sample Tissue/Release Live Animal	Seine, Purse	Anesthetize; Tissue Sample Fin or Opercle	Summer	N/A	4/15/2016	12/31/2016
122		Steelhead	Upper Columbia River (NMFS Threatened)	Listed Hatchery Adipose Clip	Juvenile	Male and Female	25			Intentional (Directed) Mortality	Seine, Purse	Anesthetize	Summer	N/A	4/15/2016	12/31/2016
123		Steelhead	Upper Willamette River (NMFS Threatened)	Natural	Juvenile	Male and Female	15	0		Capture/Mark, Tag, Sample Tissue/Release Live Animal	Seine, Purse	Anesthetize; Tissue Sample Fin or Opercle	Winter	N/A	4/15/2016	12/31/2016
124		Salmon, Chinook	Lower Columbia River (NMFS Threatened)	Natural	Adult	Male and Female	2	0		Capture/Handle/Release Fish	Seine, Purse		Mixed	N/A	4/15/2016	12/31/2016
125		Salmon, Chinook	Snake River spring/summer-run (NMFS Threatened)	Listed Hatchery Intact Adipose	Juvenile	Male and Female	10	0		Capture/Mark, Tag, Sample Tissue/Release Live Animal	Seine, Purse	Anesthetize; Tissue Sample Fin or Opercle	Spring/Summer	N/A	4/15/2016	12/31/2016
126		Salmon, Chinook	Upper Willamette River (NMFS Threatened)	Natural	Juvenile	Male and Female	17	0		Capture/Mark, Tag, Sample Tissue/Release Live Animal	Seine, Purse	Anesthetize; Tissue Sample Fin or Opercle	Spring	N/A	4/15/2016	12/31/2016
127		Lamprey, River	NA	Natural	Juvenile	Male and Female	25	0		Capture/Handle/Release Fish	Seine, Purse	Anesthetize	N/A	N/A	4/15/2016	12/31/2016

128		Stickleback, Threespine	NA	Natural	Adult	Unknown	300			Intentional (Directed) Mortality	Seine, Purse	Anesthetize	N/A	N/A	4/15/2016	12/31/2016
129		Bass, Largemouth	NA	Natural	Unknown	Unknown	1000	5		Capture/Handle/Release Fish	Net, seine		N/A	N/A	4/15/2016	12/31/2016
130		Bass, Smallmouth	NA	Natural	Unknown	Unknown	1000	5		Capture/Handle/Release Fish	Net, seine		N/A	N/A	4/15/2016	12/31/2016
131		Bluegill	NA	Natural	Unknown	Unknown	1000	5		Capture/Handle/Release Fish	Net, seine		N/A	N/A	4/15/2016	12/31/2016
132		Bullhead, Brown	NA	Natural	Unknown	Unknown	1000	5		Capture/Handle/Release Fish	Net, seine		N/A	N/A	4/15/2016	12/31/2016
133		Carp, Common	NA	Natural	Unknown	Unknown	1000	5		Capture/Handle/Release Fish	Net, seine		N/A	N/A	4/15/2016	12/31/2016
134		Crappie, Black	NA	Natural	Unknown	Unknown	1000	5		Capture/Handle/Release Fish	Net, seine		N/A	N/A	4/15/2016	12/31/2016
135		Goby, Amur	NA	Natural	Unknown	Unknown	1000	5		Capture/Handle/Release Fish	Net, seine		N/A	N/A	4/15/2016	12/31/2016
136		Goldfish	NA	Natural	Unknown	Unknown	1000	5		Capture/Handle/Release Fish	Net, seine		N/A	N/A	4/15/2016	12/31/2016
137		Kilifish, Banded	NA	Natural	Unknown	Unknown	1000	5		Capture/Handle/Release Fish	Net, seine		N/A	N/A	4/15/2016	12/31/2016
138		Mosquitofish	NA	Natural	Unknown	Unknown	1000	5		Capture/Handle/Release Fish	Net, seine		N/A	N/A	4/15/2016	12/31/2016
139		Peamouth	NA	Natural	Unknown	Unknown	4000	20		Capture/Handle/Release Fish	Net, seine		N/A	N/A	4/15/2016	12/31/2016
140		Perch, Yellow	NA	Natural	Unknown	Unknown	4000	20		Capture/Handle/Release Fish	Net, seine		N/A	N/A	4/15/2016	12/31/2016
141		Pikeminnow, Northern	NA	Natural	Unknown	Unknown	4000	20		Capture/Handle/Release Fish	Net, seine		N/A	N/A	4/15/2016	12/31/2016
142		Pumpkinseed	NA	Natural	Unknown	Unknown	1000	5		Capture/Handle/Release Fish	Net, seine		N/A	N/A	4/15/2016	12/31/2016
143		Sculpin, Prickly	NA	Natural	Unknown	Unknown	1000	5		Capture/Handle/Release Fish	Net, seine		N/A	N/A	4/15/2016	12/31/2016
144		Shiner, golden	NA	Natural	Unknown	Unknown	1000	5		Capture/Handle/Release Fish	Net, seine		N/A	N/A	4/15/2016	12/31/2016
145		Sucker, Largescale	NA	Natural	Unknown	Unknown	4000	20		Capture/Handle/Release Fish	Net, seine		N/A	N/A	4/15/2016	12/31/2016

Freshwater Location
Research Area: Pacific Ocean **State:** WA **Sub Basin (4th Field HUC):** Lower Snake-Tucannon **Stream Name:** Lower Snake River
Sale in Oregon of species taken: None
Location Description: smolt bypass at Lower Granite Dam

Take Information

Line	Ver	Species	Listing Unit/Stock	Production /Origin	Life Stage	Sex	Expected Take	Take Action	Observe /Collect Method	Procedure	Run	Transport Record	Begin Date	End Date
1		Steelhead	Snake River Basin (NMFS Threatened)	Listed Hatchery Adipose Clip	Juvenile	Unknown	25	Intentional (Directed) Mortality	Dam bypass, gatewell, orifice, etc. (only if associated with fish handling)		Summer	N/A	4/1/2016	12/31/2016
2		Steelhead	Snake River Basin (NMFS Threatened)	Listed Hatchery Intact Adipose	Juvenile	Unknown	6	Intentional (Directed) Mortality	Dam bypass, gatewell, orifice, etc. (only if associated with fish handling)		Summer	N/A	4/1/2016	12/31/2016
3		Steelhead	Snake River Basin (NMFS Threatened)	Natural	Juvenile	Unknown	4	Intentional (Directed) Mortality	Dam bypass, gatewell, orifice, etc. (only if associated with fish handling)		Summer	N/A	4/1/2016	12/31/2016
13		Steelhead		Unlisted Hatchery	Juvenile	Unknown	75	Intentional (Directed) Mortality	Dam bypass, gatewell, orifice, etc. (only if associated with fish handling)		N/A	N/A	4/1/2016	12/31/2016
		Details: miscellaneous hatchery stock												

Freshwater Location
Research Area: Pacific Ocean **State:** OR **Sub Basin (4th Field HUC):** Middle Columbia-Hood **Stream Name:** Middle Columbia
Sale in Oregon of species taken: None
Location Description: Smolt bypass at Bonneville Dam (Oregon side only)

Take Information

Line	Ver	Species	Listing Unit/Stock	Production /Origin	Life Stage	Sex	Expected Take	Take Action	Observe /Collect Method	Procedure	Run	Transport Record	Begin Date	End Date
1		Steelhead	Snake River Basin (NMFS Threatened)	Listed Hatchery Adipose Clip	Juvenile	Unknown	10	Intentional (Directed) Mortality	Dam bypass, gatewell, orifice, etc. (only if associated with fish handling)		Summer	N/A	4/1/2016	12/31/2016
2		Steelhead	Snake River Basin (NMFS Threatened)	Listed Hatchery Intact Adipose	Juvenile	Unknown	4	Intentional (Directed) Mortality	Dam bypass, gatewell, orifice, etc. (only if associated with fish handling)		Summer	N/A	4/1/2016	12/31/2016
3		Steelhead	Snake River Basin (NMFS Threatened)	Natural	Juvenile	Unknown	3	Intentional (Directed) Mortality	Dam bypass, gatewell, orifice, etc. (only if associated with fish handling)		Summer	N/A	4/1/2016	12/31/2016
4		Steelhead	Upper Columbia River (NMFS Threatened)	Listed Hatchery Adipose Clip	Juvenile	Unknown	6	Intentional (Directed) Mortality	Dam bypass, gatewell, orifice, etc. (only if associated with fish handling)		Summer	N/A	4/1/2016	12/31/2016
5		Steelhead	Upper Columbia River (NMFS Threatened)	Listed Hatchery Intact Adipose	Juvenile	Unknown	3	Intentional (Directed) Mortality	Dam bypass, gatewell, orifice, etc. (only if associated with fish handling)		Summer	N/A	4/1/2016	12/31/2016
6		Steelhead	Upper Columbia River (NMFS Threatened)	Natural	Juvenile	Unknown	2	Intentional (Directed) Mortality	Dam bypass, gatewell, orifice, etc. (only if associated with fish handling)		Summer	N/A	4/1/2016	12/31/2016
7		Steelhead	Middle Columbia River (NMFS Threatened)	Listed Hatchery Adipose Clip	Juvenile	Unknown	6	Intentional (Directed) Mortality	Dam bypass, gatewell, orifice, etc. (only if associated with fish handling)		Mixed	N/A	4/1/2016	12/31/2016

8		Steelhead	Middle Columbia River (NMFS Threatened)	Listed Hatchery Intact Adipose	Juvenile	Unknown	2	Intentional (Directed) Mortality	Dam bypass, gatewell, orifice, etc. (only if associated with fish handling)		Mixed	N/A	4/1/2016	12/31/2016
9		Steelhead	Middle Columbia River (NMFS Threatened)	Natural	Juvenile	Unknown	5	Intentional (Directed) Mortality	Dam bypass, gatewell, orifice, etc. (only if associated with fish handling)		Mixed	N/A	4/1/2016	12/31/2016
10		Steelhead	Lower Columbia River (NMFS Threatened)	Listed Hatchery Adipose Clip	Juvenile	Unknown	2	Intentional (Directed) Mortality	Dam bypass, gatewell, orifice, etc. (only if associated with fish handling)		Mixed	N/A	4/1/2016	12/31/2016
11		Steelhead	Lower Columbia River (NMFS Threatened)	Listed Hatchery Intact Adipose	Juvenile	Unknown	1	Intentional (Directed) Mortality	Dam bypass, gatewell, orifice, etc. (only if associated with fish handling)		Mixed	N/A	4/1/2016	12/31/2016
12		Steelhead	Lower Columbia River (NMFS Threatened)	Natural	Juvenile	Unknown	1	Intentional (Directed) Mortality	Dam bypass, gatewell, orifice, etc. (only if associated with fish handling)		Mixed	N/A	4/1/2016	12/31/2016
13		Steelhead		Unlisted Hatchery	Juvenile	Unknown	75	Intentional (Directed) Mortality	Dam bypass, gatewell, orifice, etc. (only if associated with fish handling)		N/A	N/A	4/1/2016	12/31/2016
		Details: miscellaneous hatchery stock												

Freshwater Location
Research Area: Pacific Ocean **State:** OR **Sub Basin (4th Field HUC):** Middle Columbia-Lake Wallula **Stream Name:** Columbia River
Sale in Oregon of species taken: None
Location Description: Smolt Bypass at McNary Dam (Oregon side only)

Take Information

Line	Ver	Species	Listing Unit/Stock	Production /Origin	Life Stage	Sex	Expected Take	Take Action	Observe /Collect Method	Procedure	Run	Transport Record	Begin Date	End Date
1		Steelhead	Snake River Basin (NMFS Threatened)	Listed Hatchery Adipose Clip	Juvenile	Unknown	20	Intentional (Directed) Mortality	Dam bypass, gatewell, orifice, etc. (only if associated with fish handling)		Summer	N/A	4/1/2016	12/31/2016
2		Steelhead	Snake River Basin (NMFS Threatened)	Listed Hatchery Intact Adipose	Juvenile	Unknown	4	Intentional (Directed) Mortality	Dam bypass, gatewell, orifice, etc. (only if associated with fish handling)		Summer	N/A	4/1/2016	12/31/2016
3		Steelhead	Snake River Basin (NMFS Threatened)	Natural	Juvenile	Unknown	2	Intentional (Directed) Mortality	Dam bypass, gatewell, orifice, etc. (only if associated with fish handling)		Summer	N/A	4/1/2016	12/31/2016
4		Steelhead	Upper Columbia River (NMFS Threatened)	Listed Hatchery Adipose Clip	Juvenile	Unknown	8	Intentional (Directed) Mortality	Dam bypass, gatewell, orifice, etc. (only if associated with fish handling)		Summer	N/A	4/1/2016	12/31/2016
5		Steelhead	Upper Columbia River (NMFS Threatened)	Listed Hatchery Intact Adipose	Juvenile	Unknown	3	Intentional (Directed) Mortality	Dam bypass, gatewell, orifice, etc. (only if associated with fish handling)		Summer	N/A	4/1/2016	12/31/2016
6		Steelhead	Upper Columbia River (NMFS Threatened)	Natural	Juvenile	Unknown	2	Intentional (Directed) Mortality	Dam bypass, gatewell, orifice, etc. (only if associated with fish handling)		Summer	N/A	4/1/2016	12/31/2016
7		Steelhead	Middle Columbia River (NMFS Threatened)	Listed Hatchery Adipose Clip	Juvenile	Unknown	1	Intentional (Directed) Mortality	Dam bypass, gatewell, orifice, etc. (only if associated with fish handling)		Mixed	N/A	4/1/2016	12/31/2016
8		Steelhead	Middle Columbia River (NMFS Threatened)	Listed Hatchery Intact Adipose	Juvenile	Unknown	2	Intentional (Directed) Mortality	Dam bypass, gatewell, orifice, etc. (only if associated with fish handling)		Mixed	N/A	4/1/2016	12/31/2016
9		Steelhead	Middle Columbia River (NMFS Threatened)	Natural	Juvenile	Unknown	2	Intentional (Directed) Mortality	Dam bypass, gatewell, orifice, etc. (only if associated with fish handling)		Mixed	N/A	4/1/2016	12/31/2016

10		Steelhead	Unspecified	Listed Hatchery Adipose Clip	Juvenile	Unknown	72	Intentional (Directed) Mortality	Dam bypass, gatewell, orifice, etc. (only if associated with fish handling)		Mixed	N/A	4/1/2016	12/31/2016

Project Contacts

Primary Contact: Laurie A Weitkamp

Principal Investigator: Laurie A Weitkamp

Other Personnel:

Name	Role(s)
Brian Beckman	Co-Investigator
Paul J Bentley	Co-Investigator
Kurt L Fresh	Co-Investigator
Susan Hinton	Co-Investigator
Kym Jacobson	Co-Investigator
Jessica Miller	Co-Investigator
Curtis Roegner	Co-Investigator
David Teel	Co-Investigator
Don VanDoornik	Co-Investigator

Collector Comments: We will be hiring several new staff for the field work as needed. We will also be working with other NMFS researchers when we can to minimize duplication of effort.

Attachments

Contact - Curtis Roegner C2270T5RoegnerCV10.doc (Added Mar 5, 2010)

Contact - Jessica Miller C1800T5JMiller_CVS_2014.pdf (Added Apr 8, 2014)

Contact - Kurt L Fresh C2660T5Kurt Resume Complete.doc (Added Oct 21, 2011)

Contact - Susan Hinton C124T5HintonCVFor2010esapermit.doc (Added Feb 26, 2010)

Federal Authorization - P17954T2Sci Res Permit 1290-7R.pdf (Added Jan 12, 2016)

Federal Authorization - P19363T2ESA 1290-7R permit.pdf (Added Jan 12, 2016)

Project Description - P20246T1AFEP2016_EST-P-15-01_AEMR_FinalProposal_122215.pdf (Added Feb 2, 2016)

References - P17954T12Weitkamp et al. 2012 EPS.pdf (Added Jan 12, 2016)

References - P20246T12Weitkampetal2015LampreyinColumbiaestuary.pdf (Added Jan 13, 2016)

References - P20246T12Weitkampetal2015sizetimingjuvenilesalmonCRE.pdf (Added Jan 13, 2016)

Renewal Summary

Are you making any changes, other than dates, from the previous application? Yes

If Yes, please briefly summarize the changes you are making:
We are expanding the study to intensively sample a larger area of the Columbia River estuary (from directly below Bonneville to the mouth including collections at Lower Granite, McNary, and Bonneville Dams) therefore the current application reflects the increased numbers of fish we anticipate catching and releasing, and increased numbers of juvenile salmon we will keep. In essence, I am applying for a FCRPS BiOp permit combined with my State of Oregon permit as instructed by our (NWFSC) ESA permit person. Most of the increased take are for listed clipped juvenile hatchery fish or unlisted fish. My Sect. 10 ESA permit no longer reflects the composition of juvenile salmon in the Columbia and many of my current take limits are much higher than needed (I will be renewing the permit this year). We have included generous limits for fish we will likely encounter in the upper reaches of the estuary, but hope we don't actually catch this many fish (all will be released).

Summary of Take Information by Location

Original Location: N/A, New Location in Renewal
Renewed Location: State/Territory: OR; Middle Columbia-Hood; Middle Columbia (Smolt bypass at Bonneville Dam (Oregon side only))

Species	Population	Capture Method	Lifestage	Production or Origin	Previous Anticipated Take	Previous Indirect Mortality	Reported Actual Take	Reported Indirect Mortality	Current Anticipated Take	Current Indirect Mortality
Steelhead		Dam bypass, gatewell, orifice, etc. (only if associated with fish handling)	Juvenile	Unlisted Hatchery					75	
Steelhead	Lower Columbia River	Dam bypass, gatewell, orifice, etc. (only if associated with fish handling)	Juvenile	Listed Hatchery Adipose Clip					2	
Steelhead	Lower Columbia River	Dam bypass, gatewell, orifice, etc. (only if associated with fish handling)	Juvenile	Listed Hatchery Intact Adipose					1	
Steelhead	Lower Columbia River	Dam bypass, gatewell, orifice, etc. (only if associated with fish handling)	Juvenile	Natural					1	
Steelhead	Middle Columbia River	Dam bypass, gatewell, orifice, etc. (only if associated with fish handling)	Juvenile	Listed Hatchery Adipose Clip					6	
Steelhead	Middle Columbia River	Dam bypass, gatewell, orifice, etc. (only if associated with fish handling)	Juvenile	Listed Hatchery Intact Adipose					2	
Steelhead	Middle Columbia River	Dam bypass, gatewell, orifice, etc. (only if associated with fish handling)	Juvenile	Natural					5	
Steelhead	Snake River Basin	Dam bypass, gatewell, orifice, etc. (only if associated with fish handling)	Juvenile	Listed Hatchery Adipose Clip					10	
Steelhead	Snake River Basin	Dam bypass, gatewell, orifice, etc. (only if associated with fish handling)	Juvenile	Listed Hatchery Intact Adipose					4	
Steelhead	Snake River Basin	Dam bypass, gatewell, orifice, etc. (only if associated with fish handling)	Juvenile	Natural					3	

Steelhead	Upper Columbia River	Dam bypass, gatewell, orifice, etc. (only if associated with fish handling)	Juvenile	Listed Hatchery Adipose Clip					6	
Steelhead	Upper Columbia River	Dam bypass, gatewell, orifice, etc. (only if associated with fish handling)	Juvenile	Listed Hatchery Intact Adipose					3	
Steelhead	Upper Columbia River	Dam bypass, gatewell, orifice, etc. (only if associated with fish handling)	Juvenile	Natural					2	

Original Location: N/A, New Location in Renewal
Renewed Location: State/Territory: OR; Middle Columbia-Lake Wallula; Columbia River (Smolt Bypass at McNary Dam (Oregon side only))

Species	Population	Capture Method	Lifestage	Production or Origin	Previous Anticipated Take	Previous Indirect Mortality	Reported Actual Take	Reported Indirect Mortality	Current Anticipated Take	Current Indirect Mortality
Steelhead	Middle Columbia River	Dam bypass, gatewell, orifice, etc. (only if associated with fish handling)	Juvenile	Listed Hatchery Adipose Clip					1	
Steelhead	Middle Columbia River	Dam bypass, gatewell, orifice, etc. (only if associated with fish handling)	Juvenile	Listed Hatchery Intact Adipose					2	
Steelhead	Middle Columbia River	Dam bypass, gatewell, orifice, etc. (only if associated with fish handling)	Juvenile	Natural					2	
Steelhead	Snake River Basin	Dam bypass, gatewell, orifice, etc. (only if associated with fish handling)	Juvenile	Listed Hatchery Adipose Clip					20	
Steelhead	Snake River Basin	Dam bypass, gatewell, orifice, etc. (only if associated with fish handling)	Juvenile	Listed Hatchery Intact Adipose					4	
Steelhead	Snake River Basin	Dam bypass, gatewell, orifice, etc. (only if associated with fish handling)	Juvenile	Natural					2	
Steelhead	Unspecified	Dam bypass, gatewell, orifice, etc. (only if associated with fish handling)	Juvenile	Listed Hatchery Adipose Clip					72	
Steelhead	Upper Columbia River	Dam bypass, gatewell, orifice, etc. (only if associated with fish handling)	Juvenile	Listed Hatchery Adipose Clip					8	
Steelhead	Upper Columbia River	Dam bypass, gatewell, orifice, etc. (only if associated with fish handling)	Juvenile	Listed Hatchery Intact Adipose					3	
Steelhead	Upper Columbia River	Dam bypass, gatewell, orifice, etc. (only if associated with fish handling)	Juvenile	Natural					2	

Original Location: N/A, New Location in Renewal
Renewed Location: State/Territory: WA; Lower Snake-Tucannon; Lower Snake River (smolt bypass at Lower Granite Dam)

Species	Population	Capture Method	Lifestage	Production or Origin	Previous Anticipated Take	Previous Indirect Mortality	Reported Actual Take	Reported Indirect Mortality	Current Anticipated Take	Current Indirect Mortality
Steelhead		Dam bypass, gatewell, orifice, etc. (only if associated with fish handling)	Juvenile	Unlisted Hatchery					75	
Steelhead	Snake River Basin	Dam bypass, gatewell, orifice, etc. (only if associated with fish handling)	Juvenile	Listed Hatchery Adipose Clip					25	

Steelhead	Snake River Basin	Dam bypass, gatewell, orifice, etc. (only if associated with fish handling)	Juvenile	Listed Hatchery Intact Adipose	6
Steelhead	Snake River Basin	Dam bypass, gatewell, orifice, etc. (only if associated with fish handling)	Juvenile	Natural	4

Original Location: State/Territory: OR; Lower Columbia; Columbia River (We will sample at beach and purse seine sites in the lower Columbia estuary, and tow net at additional sites in the estuary (to be determined).)
Renewed Location: State/Territory: OR; Lower Columbia; Columbia River (We will sample at beach and purse seine sites in the lower Columbia estuary, and tow net at additional sites in the estuary (to be determined).)

Species	Population	Capture Method	Lifestage	Production or Origin	Previous Anticipated Take	Previous Indirect Mortality	Reported Actual Take	Reported Indirect Mortality	Current Anticipated Take	Current Indirect Mortality
Anchovy, Northern	NA	Seine, Purse	Juvenile	Natural	601000	0	6	0	601000	0
Bass, Largemouth	NA	Net, seine	Unknown	Natural	200	2	0	0	1000	5
Bass, Smallmouth	NA	Net, seine	Unknown	Natural	200	2	0	0	1000	5
Bluegill	NA	Net, seine	Unknown	Natural	200	2	0	0	1000	5
Bullhead, Brown	NA	Net, seine	Unknown	Natural	200	2	0	0	1000	5
Carp, Common	NA	Net, seine	Unknown	Natural	200	2	0	0	1000	5
Crab, Dungeness	NA	Seine, Purse	Adult	Natural	800	2	0	0	800	2
Crappie, Black	NA	Net, seine	Unknown	Natural	200	2	0	0	1000	5
Eulachon	Southern DPS	Seine, Purse	Adult	Natural	10	5	0	0	10	5
Flatfish - not listed here	NA	Seine, Purse	Juvenile	Natural	500	20	0	0	500	20
Flounder, Starry	NA	Seine, Purse	Juvenile	Natural	25	2	0	0	25	2
Goby, Amur	NA	Net, seine	Unknown	Natural	200	2	0	0	1000	5
Goldfish	NA	Net, seine	Unknown	Natural	200	2	0	0	1000	5
Greenling, Kelp	NA	Seine, Purse	Juvenile	Natural	14	0	0	0	14	0
Gunnel	NA	Seine, Purse	Adult	Natural	50	0	0	0	50	0
Herring, Pacific	NA	Seine, Purse	Juvenile	Natural	51000	0	0	0	51000	0
Kilifish, Banded	NA	Net, seine	Unknown	Natural	200	2	0	0	1000	5
Lamprey (unknown)	NA	Seine, Purse	Juvenile	Natural	25	2	0	0	25	2
Lamprey, Pacific	NA	Seine, Purse	Juvenile	Natural	25	2	0	0	25	2
Lamprey, Pacific	NA	Seine, Purse	Unknown	Natural	25	0	0	0	25	0
Lamprey, River	NA	Seine, Purse	Juvenile	Natural	50	0	0	0	50	0
Lingcod	NA	Seine, Purse	Juvenile	Natural	60	0	0	0	60	0
Marine Fish - not listed here	NA	Seine, Purse	Juvenile	Natural	2000		0	0	2000	
Mosquitofish	NA	Net, seine	Unknown	Natural	200	2	0	0	1000	5
Peamouth	NA	Net, seine	Unknown	Natural	500	5	0	0	4000	20
Perch, Yellow	NA	Net, seine	Unknown	Natural	500	5	0	0	4000	20
Perch, Yellow	NA	Seine, Purse	Adult	Natural	50	0	0	0	1000	5

Pikeminnow, Northern	NA	Net, seine	Unknown	Natural	500	5	0	0	4000	20
Pipefish, Bay	NA	Seine, Purse	Adult	Natural	10	0	0	0	10	0
Pumpkinseed	NA	Net, seine	Unknown	Natural	200	2	0	0	1000	5
Salmon, Chinook	Lower Columbia River	Seine, Purse	Adult	Natural	2	0	0	0	2	0
Salmon, Chinook	Lower Columbia River	Seine, Purse	Juvenile	Listed Hatchery Adipose Clip	675	4	1	1	675	4
Salmon, Chinook	Lower Columbia River	Seine, Purse	Juvenile	Listed Hatchery Intact Adipose	80	0	0	0	80	0
Salmon, Chinook	Lower Columbia River	Seine, Purse	Juvenile	Natural	131	0	0	0	131	0
Salmon, Chinook	Snake River fall-run	Seine, Purse	Juvenile	Listed Hatchery Adipose Clip	25	0	0	0	25	0
Salmon, Chinook	Snake River fall-run	Seine, Purse	Juvenile	Listed Hatchery Intact Adipose	8	0	0	0	8	0
Salmon, Chinook	Snake River fall-run	Seine, Purse	Juvenile	Natural	8	0	0	0	8	0
Salmon, Chinook	Snake River spring/summer-run	Seine, Purse	Juvenile	Listed Hatchery Adipose Clip	25	0	0	0	57	1
Salmon, Chinook	Snake River spring/summer-run	Seine, Purse	Juvenile	Listed Hatchery Intact Adipose	13	0	0	0	13	0
Salmon, Chinook	Snake River spring/summer-run	Seine, Purse	Juvenile	Natural	12	0	0	0	12	0
Salmon, Chinook	Unspecified	Seine, Purse	Juvenile	Unlisted Hatchery	1220	7	3	3	1970	12
Salmon, Chinook	Upper Columbia River spring-run	Seine, Purse	Juvenile	Listed Hatchery Adipose Clip	4	0	0	0	8	0
Salmon, Chinook	Upper Columbia River spring-run	Seine, Purse	Juvenile	Listed Hatchery Intact Adipose	8	0	0	0	8	0
Salmon, Chinook	Upper Columbia River spring-run	Seine, Purse	Juvenile	Natural	6	0	0	0	6	0
Salmon, Chinook	Upper Willamette River	Seine, Purse	Adult	Listed Hatchery Adipose Clip	3	0	0	0	3	0
Salmon, Chinook	Upper Willamette River	Seine, Purse	Adult	Natural	3	0	0	0	3	0
Salmon, Chinook	Upper Willamette River	Seine, Purse	Juvenile	Listed Hatchery Adipose Clip	70	0	0	0	127	2
Salmon, Chinook	Upper Willamette River	Seine, Purse	Juvenile	Listed Hatchery Intact Adipose	4	0	0	0	4	0
Salmon, Chinook	Upper Willamette River	Seine, Purse	Juvenile	Natural	52	0	0	0	52	0
Salmon, chum	Columbia River	Seine, Purse	Juvenile	Natural	300	4	0	0	300	4
Salmon, coho	Lower Columbia River	Seine, Purse	Adult	Listed Hatchery Adipose Clip	3	0	0	0	3	0

Salmon, coho	Lower Columbia River	Seine, Purse	Adult	Listed Hatchery Intact Adipose	3	0	0	0	3	0
Salmon, coho	Lower Columbia River	Seine, Purse	Adult	Natural	3	0	0	0	3	0
Salmon, coho	Lower Columbia River	Seine, Purse	Juvenile	Listed Hatchery Adipose Clip	240	1	0	0	300	5
Salmon, coho	Lower Columbia River	Seine, Purse	Juvenile	Listed Hatchery Intact Adipose	45	0	0	0	45	0
Salmon, coho	Lower Columbia River	Seine, Purse	Juvenile	Natural	27	0	0	0	33	0
Salmon, coho	Unspecified	Seine, Purse	Juvenile	Unlisted Hatchery	1000	0	0	0	1000	0
Salmon, sockeye	NA	Seine, Purse	Juvenile	Natural	97	2	0	0	200	5
Salmon, sockeye	Snake River	Seine, Purse	Juvenile	Natural	5	1	0	0	15	1
Sandlance	NA	Seine, Purse	Unknown	Natural	1100	0	0	0	5100	20
Sardine	NA	Seine, Purse	Juvenile	Natural	21000	1000	0	0	21000	1000
Sculpin (unknown)	NA	Seine, Purse	Juvenile	Natural	7	0	0	0	7	0
Sculpin, Pacific Staghorn	NA	Seine, Purse	Adult	Natural	50	0	0	0	200	5
Sculpin, Prickly	NA	Net, seine	Unknown	Natural	100	1	0	0	1000	5
Shad, American	NA	Seine, Purse	Juvenile	Natural	10000	200	2027	5	50000	200
Shad, American	NA	Seine, Purse	Unknown	Natural	100	0	0	0	100	0
Shiner, golden	NA	Net, seine	Unknown	Natural	200	2	0	0	1000	5
Shrimp, Crangon	NA	Seine, Purse	Adult	N/A	200	0	5	0	200	0
Smelt, Longfin	NA	Seine, Purse	Adult	Natural	600	0	0	0	600	0
Smelt, Surf	NA	Seine, Purse	Unknown	Natural	50400	0	0	0	50400	0
Smelt, Whitebait	NA	Seine, Purse	Juvenile	Natural	4000	2	0	0	4000	2
Sole, English	NA	Seine, Purse	Juvenile	Natural	100	2	0	0	100	2
Steelhead	Lower Columbia River	Seine, Purse	Juvenile	Listed Hatchery Adipose Clip	20	10	0	0	60	1
Steelhead	Lower Columbia River	Seine, Purse	Juvenile	Listed Hatchery Intact Adipose	18	0	0	0	18	0
Steelhead	Lower Columbia River	Seine, Purse	Juvenile	Natural	62	0	0	0	62	0
Steelhead	Middle Columbia River	Seine, Purse	Adult	Listed Hatchery Adipose Clip	3	0	0	0	3	0
Steelhead	Middle Columbia River	Seine, Purse	Adult	Natural	3	0	0	0	3	0
Steelhead	Middle Columbia River	Seine, Purse	Juvenile	Listed Hatchery Adipose Clip	10	0	0	0	46	1
Steelhead	Middle Columbia River	Seine, Purse	Juvenile	Listed Hatchery Intact Adipose	13	0	0	0	13	0
Steelhead	Middle Columbia River	Seine, Purse	Juvenile	Natural	149	0	0	0	149	0

Steelhead	Snake River Basin	Seine, Purse	Adult	Listed Hatchery Adipose Clip	3	0	0	0	3	0
Steelhead	Snake River Basin	Seine, Purse	Adult	Natural	3	0	0	0	3	0
Steelhead	Snake River Basin	Seine, Purse	Juvenile	Listed Hatchery Adipose Clip	45	0	0	0	162	2
Steelhead	Snake River Basin	Seine, Purse	Juvenile	Listed Hatchery Intact Adipose	40	0	0	0	45	0
Steelhead	Snake River Basin	Seine, Purse	Juvenile	Natural	77	0	0	0	77	0
Steelhead	Unspecified	Seine, Purse	Juvenile	Unlisted Hatchery	800	2	0	0	1060	2
Steelhead	Upper Columbia River	Seine, Purse	Juvenile	Listed Hatchery Adipose Clip	9	0	0	0	41	1
Steelhead	Upper Columbia River	Seine, Purse	Juvenile	Listed Hatchery Intact Adipose	24	0	0	0	24	0
Steelhead	Upper Columbia River	Seine, Purse	Juvenile	Natural	15	0	0	0	15	0
Steelhead	Upper Willamette River	Seine, Purse	Juvenile	Natural	18	0	0	0	21	0
Stickleback, Threespine	NA	Seine, Purse	Adult	Natural	50300		0	0	100300	100
Sturgeon, green	Southern DPS	Seine, Purse	Adult	Natural	2	0	0	0	2	0
Sucker, Largescale	NA	Net, seine	Unknown	Natural	200	2	0	0	4000	20
Surfperch (unknown)	NA	Seine, Purse	Juvenile	Natural	10000	50	0	0	10000	50
Surfperch, Shiner	NA	Seine, Purse	Adult	Natural	5000	0	0	0	5000	0
Surfperch, Shiner	NA	Seine, Purse	Unknown	Natural	100	0	0	0	100	0
Tomcod	NA	Seine, Purse	Juvenile	Natural	4	0	0	0	4	0
Trout, Cutthroat	Southwestern Washington/Columbia River	Seine, Purse	Unknown	Unlisted Hatchery	5	0	0	0	100	3

Status

Application Status: Submitted
Date Submitted: January 17, 2016
Last Date Archived: February 26, 2016

- **Determination of Take Authorization under a Biological Opinion**
  Current Status: N/A **Status Date:** February 2, 2016
  Expire Date:

- **Oregon Scientific Taking Permit for Fish and Marine and Freshwater Invertebrates**

  Current Status: N/A **Status Date:**

  Expire Date:

Modification Requests

This section is currently empty.

Reports

This section is currently empty.