



Oregon

Kate Brown, Governor

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12/1/2020

Barry Thom
Regional Administrator, West Coast Region
National Marine Fisheries Service
1201 Northeast Lloyd Boulevard, Suite 1100
Portland, OR 97232

RE: MMPA Section 120(f) Sea Lion Management Annual Report

Dear Mr. Thom:

The following information comprises the 2020 annual report to the National Marine Fisheries Service from eligible management entities regarding MMPA Section 120(f) management and monitoring activities of sea lions in the Columbia River Basin. This report documents compliance with the Terms and Conditions of our 2020 Authorization for lethal removal of predatory California sea lions (CSLs) and Steller sea lions (SSLs) in the Columbia River Basin, and its tributaries, from River Mile 112 to McNary Dam. The current Authorization was granted to The States of Oregon, Washington and Idaho, the Nez Perce Tribe, the Confederated Tribes of the Umatilla Indian Reservation, the Confederated Tribes of the Warm Springs Reservation of Oregon, the Confederated Tribes and Bands of the Yakima Nation, the Confederated Tribes of the Warm Springs Reservation of Oregon, the Confederated Tribes of the Grand Ronde Community, and the Confederated Tribes of the Siletz Indians of Oregon (with Eligible Entities having the option to delegate authority to the Columbia River Inter-Tribal Fish Commission) on August 14th, 2020 and is valid until August 14th, 2025 unless renewed or revoked.

Adherence to relevant Terms and Conditions are listed below, in addition to information regarding mandatory reporting requirements. The COVID-19 pandemic limited a variety of fieldwork opportunities, including presence at Bonneville Dam, between and within state travel, regularly scheduled boat-based monitoring and survey work, and many normal activities for all entities. Section 120(f) activities that did occur are detailed in this report, otherwise inhibited activities are noted. We thank you for your assistance and support of our work to monitor and reduce sea lion predation on threatened and endangered fish in the Columbia River Basin.

Sincerely,

Sheanna M Steingass
Marine Mammal Program Leader
Oregon Department of Fish and Wildlife

ANNUAL REPORT:
2020 COLUMBIA RIVER BASIN RESEARCH AND MANAGEMENT ACTIVITIES

Sheanna Steingass¹, Scott Pearson², Doug Hatch³, and Joe Dupont⁴

December 1, 2020

Submitted on behalf of all MMPA Section 120(f) Eligible Entities, including:

The State of Oregon
The State of Washington
The State of Idaho
The Nez Perce Tribe
The Confederated Tribes of the Umatilla Indian Reservation
The Confederated Tribes of the Warm Springs Reservation of Oregon
The Confederated Tribes and Bands of the Yakima Nation
The Confederated Tribes of the Warm Springs Reservation of Oregon
The Confederated Tribes of the Grand Ronde Community
The Confederated Tribes of the Siletz Indians of Oregon
The Columbia River Inter-Tribal Fish Commission

¹ Oregon Department of Fish and Wildlife

² Washington Department of Fish and Wildlife

³ Columbia River Inter-Tribal Fish Commission

⁴ Idaho Department of Fish and Game

Table of Contents

Section I: Terms and Conditions.....	4
Section II: Required Annual Reporting Components	6
Section III: Recommendations.....	9
Tables and Figures	11
Acknowledgments.....	15
Literature Cited	15
Appendix.....	16

Section I: Terms and Conditions

1. Authorization

All animals removed were within the designated boundaries of River Mile 112 and River Mile 292. No lethal removals were conducted in any tributary system during this reporting period. In total, six Steller sea lions were removed in the vicinity of Bonneville Dam (Table 1).

2. Permit Duration

This report covers management activities between August 14, 2020 (when the authorization was initially granted) and the current date of this report, December 1, 2020.

3. Eligible Entities

a) All removal efforts were conducted by eligible entities. Staff from the States of Washington and Oregon and the Columbia River Inter-Tribal Fish Commission participated in lethal removal of six adult male Steller sea lions at Bonneville Dam.

b) No removal activities were conducted at Willamette Falls as of the date of this report.

4. Delegation of Authority

Several entities delegated management authority to the Columbia River Inter-Tribal Fish Commission. These entities include the Confederated Tribes of the Umatilla Reservation, the Confederated Tribes and Bands of the Yakama Nation, and the Nez Perce Tribe.

5. Limit on Removals

a) The eligible entities did not remove, via permanent placement in captivity or lethal removal, more than 540 California sea lions (as of this report, no animals have been removed), or more than 176 Steller sea lions over the 5-year period of this permit (as of this report, six animals have been removed).

b) No animals were removed under other authorizations during this permitting period.

6. Manner of Removals

a) All animal removals during this reporting period were done with live trapping and capture methods (see Section II.iv).

b) Removals are now permitted at any time of year.

c) Under this permit, lethal removal is not contingent on nonlethal measures.

d) The use of firearms by the Eligible Entities is expressly prohibited and was not utilized.

e) The Eligible Entities appointed an Institutional Animal Care and Use Committee composed of veterinarians, marine mammal biologists and a non-affiliated member who

represented the community to advise the Eligible Entities on protocols for capture, darting, anesthetizing, holding, transferring and euthanasia of sea lions.

f) This IACUC was formed prior to any removal operations, and conducted a review and approval of proposed methodologies on October 5, 2020. These protocols were further approved by NMFS for use. The currently-approved Animal Care and Use Protocols (ACUP) and Letter of Assurance are included as attachments.

g) As the Eligible Entities did not plan on implementing darting methodologies for preliminary management, darting protocols were not developed for the consideration of the IACUC. However these protocols are in the process of development and will be approved by the IACUC in early 2021 before any management activities utilizing these methodologies.

h) The IACUC will reevaluate the methods and protocols by October 5, 2021 to determine any needed modifications.

i) Prior to management actions, NMFS reviewed and approved the IACUC Animal Care and Use Protocols finalized on October 5, 2020. Upon the one-year IACUC review, these methodologies will be presented to NMFS for annual approval in 2021.

j) The Eligible Entities coordinated with local law enforcement and tribes prior to sea lion removal activities as part of regular communication that maximized coordination and awareness.

k) All intentional taking was conducted by employees of Eligible Entities.

7) Disposition

a) No requests for permanent placement were made to NMFS for sea lions removed during this management period. Therefore, all captured animals were humanely euthanized.

b) Staff were given full safety trainings on handling of wildlife, including possible exposure to zoonoses and transmission of reverse zoonoses. Any staff participating in management or handling of animals utilized the appropriate Personal Protective Equipment, including safety glasses, nitrile gloves, work gloves, cutproof gloves, aprons and waterproof sleeves, waterproof boots, and additional PPE as related to mitigating risks related to COVID-19.

c) No tribes made requests for carcasses for educational or cultural uses.

8. Monitoring and Reporting

a) The Eligible Entities conducted full necropsies of removed animals and collected biological samples scientific research purposes including food habits, immunity, toxicology, pathogens, biometrics and general health.

b) The Eligible Entities reported all removals to the Regional Administrator of NMFS within 72 hours of removals. These reports were subsequently forwarded to the Task Force members via NMFS.

c) No carcasses were provided to tribes for cultural or educational use and therefore no reports were provided to the Regional Administrator of NMFS regarding these provisions.

d) COVID-19 continues to curtail normal volumes of fieldwork through 2020.

Monitoring and predation reports for work previously authorized at Willamette Falls were provided to NMFS in October 2020 (Wright et al. 2020, Steingass et al. 2020a, 2020b). The 2020 Bonneville Management report was also provided to NMFS at this time. In the future, these reports will be combined into this report on an annual basis, and in a comprehensive three-year report in 2023.

This report fulfills the reporting requirements for the period of management beginning August 14, 2020 until the present.

e) The Eligible Entities continue to evaluate the impacts of sea lion predation on at-risk fish species, and the effectiveness (benefits) of permanent removal of predatory sea lions as a method to reduce mortality on at-risk species. Monitoring and predation reports were submitted under previous authorization to NMFS in October 2020 (Wright et al. 2020, Steingass et al. 2020a, 2020b), and will be subsequently comprehensively submitted via this report in 2021.

- i. The Eligible Entities continue to evaluate key population parameters for at-risk fish species by means of a population viability analysis to estimate the effectiveness of permanent removal of predator sea lions as a method to reduce or eliminate mortality on at-risk fish species and estimate extinction risks to at-risk fish species.

Data regarding predation estimates and sea lion presence at Willamette Falls, Oregon can be found in the annual report submitted October 31, 2020 (Wright et al. 2020). Sea lion presence at Bonneville Dam has been estimated via remote camera imagery by ODFW staff (Figures 1 and 2) while the U.S. Army Corp of Engineers have collected data regarding pinniped abundance and predation at Bonneville Dam via visual observations (Figure 3). Estimates of predation are still being assimilated by USACE and a report is forthcoming.

- ii. The Eligible Entities will submit a three-year comprehensive report to NMFS by December 1, 2023.

9) The Eligible Entities understand that NMFS may modify, suspend, or revoke this authorization at any time with 72 hours' notice to the Eligible Entities.

Section II: Required Annual Reporting Components

- i. The number of sea lions observed in the action area.

ODFW staff performed Willamette River boat surveys weekly as COVID-19 safety measures allowed. During these seven individual surveys between August 14, 2020 and the present, a total of five individual Steller sea lions in the Willamette River (Table 2).

Due to safety implications of the COVID-19 pandemic, previously-conducted river surveys for pinniped abundance in the Columbia River performed by the Columbia River Inter-Tribal Fish Commission were not possible. Instead, in-person counts of pinniped abundance at Bonneville Dam served as a low-risk option for monitoring of animals. Additionally, remote monitoring by camera at both Willamette Falls and Bonneville Dam were bolstered with the addition of new cameras and counting efforts to continue to collect robust data where safety considerations limited or caused cancellation of normal field activities.

For the reporting period of August 14, 2020 through November 11, 2020 the State of Oregon collected sea lion abundance data via an array of automated cameras mounted on the trap array at Bonneville Dam, with one camera pointing towards the end of Tower Island where a raft of male Steller sea lions is known to aggregate. ODFW staff visually counted sea lion abundance hourly presence on images, and maximum daily and average values were calculated based on each hourly data point to estimate abundance through time.

Both the maximum and mean daily abundances of these animals at Bonneville Dam are represented in Figures 1 and 2. In short, daily abundance remained relatively low (less than 10 animals) through the end of September, and increased until mid-October when an estimated maximum of 45 animals (via ODFW data, Figure 1) were present on October 15, 2020. Presence remained fairly stable with a mean of 14-29 animals through November 11, 2020, the last available point of summarized data.

In addition to counts performed by ODFW, the U.S. Army Corp of Engineers performed a daily onsite visual assessment of sea lions during the same time window, with the last available data point being October 6, 2020 (Figure 3). Due to the in-person nature of these observations, the USACE data represents a more accurate point count of presence and therefore numbers differ from ODFW counts due to differences in methodology. The estimated number of individuals varied from a maximum value of 68 SSLs on September 28, 2020 and an estimated minimum of 21 individuals on October 26, 2020.

- ii. The specific locations (e.g., latitude-longitude or river mile) where the Eligible Entities captured individual sea lions.

All animals captured during this reporting period (August 14, 2020 until present) were captured using the trap array within the Boat Restricted Zone at Bonneville Dam, Columbia River Mile 146 (45.6392°, -121.9521°) (Table 1).

- iii. The number of sea lions killed or transferred by species.

In total, six adult male Steller sea lions were humanely euthanized as detailed in Table 1.

iv. The method of removal.

Sea lions were captured by ODFW, WDFW and CRITFC staff using haul-out traps placed in dam tailraces. Sea lions use these traps as haul-out sites, entering and exiting traps via a vertically-sliding door which was pad-locked open prior to a scheduled capture attempt. Tailrace traps were monitored by state, federal, and private security staff. In addition, wireless trap monitoring sensors were installed on all trap doors to automatically notify all project staff by text in the event of an unplanned trap closure.

Tailrace trap doors were closed using a remote-controlled magnetic release mechanism. Once sea lions were captured they were herded into holding cages on a barge built specifically to handle sea lions. As no NMFS-approved zoo or aquarium facilities were available to receive candidate sea lions for permanent holding, all six Steller sea lions were chemically euthanized by a veterinarian. Euthanized animals were necropsied under veterinary supervision and various samples (e.g., teeth, tissue, blood, whiskers) were collected. (See Appendix).

v. The number of prey observed taken by sea lions throughout the action area.

During weekly Willamette River boat surveys by ODFW staff, four separate predation events were noted (two animals consuming sturgeon, one SSL consuming a salmonid of an unidentified species, and one predation event on an unknown fish) (Table 2).

Due to the COVID-19 pandemic, in-person monitoring of predation was limited by Eligible Entities. In many cases for entities, fieldwork involving travel or medium- to high-risk activities were replaced in 2020 by lower-risk remote monitoring or research methodologies, and activities at Bonneville Dam were minimized where possible. While cameras placed at Bonneville Dam and Willamette Falls did assist in monitoring pinniped presence at these specific locations, they did not provide data regarding predation events. Due to this temporary lack of data, bioenergetic assessment of predation impacts will require additional data in order to be conducted and assessed.

vi. The impacts of sea lion predation (e.g., percent predation) on affected at-risk fish stocks in the Columbia River Basin.

During this reporting period (August 14, 2020 through December 1, 2020), spring and summer run stocks (spring/summer Chinook, eulachon) were not present in the study area. The initial fieldwork reported here represents the first collection of a limited number of Steller sea lion gastrointestinal tracts as a part of Section 120(f) authorization; analysis of prey composition of the six animals removed in October and November 2020 is ongoing.

California sea lions were not present in the study area for this reporting period. Continued data collection and analyses will inform the impacts of sea lion predation on at-risk fish stocks in the study area. At the present time, the COVID-19 pandemic continues to limit travel and fieldwork

opportunities. COVID-19 limitations and a currently small sample size (n=6) do not yet lend enough data to support a robust model of predation impacts from August 14, 2020 through December 1, 2020. This data continues to be compiled and will be presented in the 2021 Annual Report.

- vii. The preemptive measures, e.g., non-lethal deterrence, taken to reduce sea lion predation on at-risk fish stocks.

Non-lethal hazing of sea lions at Bonneville Dam was, and is currently being conducted by USDA staff in 2020. These activities will be included in the forthcoming USACE report of activities at Bonneville Dam. Non-lethal hazing is not a requirement of lethal management at Willamette Falls, and there was limited animal presence there during the reporting period; thus, no non-lethal deterrence measures took place at this location.

- viii. The Eligible Entity's compliance with the terms and conditions of this authorization, and plans for future actions in compliance with this authorization.

See, "Terms and Conditions" below.

For animals that are provided to the tribes, registration is required within 30 days, and reports are required every six months.

The Eligible Entities shall provide reports to the Regional Administrator, NMFS, West Coast Region, consistent with the marine mammal regulations at 50 CFR 216.22(b) and 50 CFR 216.22(c) regarding all sea lion carcasses provided to tribes for educational and cultural uses.

Section III: Recommendations

1. NMFS requests that the Eligible Entities develop a long-term management strategy to prevent the future recruitment of sea lions into the 120(f) geographic area.

In response to this recommendation, the Eligible Entities are first focusing on removal of habituated animals in key management areas; specifically Bonneville Dam and Willamette Falls. Management actions in 2018-19 at Willamette Falls resulted in the removal of 33 adult male California sea lions that were present in the area. The result was a significant decrease in the number of returning animals, suggesting that a habituated pool of animals further incentivizes other animals to recruit at these sites.

A test acoustic deterrence device is currently deployed at Ballard Locks, WA and the Eligible Entities plan on discussing and pursuing newly-developed methodologies, including acoustic deterrence, to prevent the recruitment of sea lions into the 120(f) geographic area. This discussion is ongoing and pending results of the currently-deployed test device.

2. The Eligible Entities are continuing to pursue non-lethal methods to reduce sea lion predation on at-risk fish stocks. As of this time, no commercially-available devices have been proven but discussions are ongoing in regards to evaluating and testing this technology.
3. The Eligible Entities have been conducting full necropsies on euthanized sea lions to monitor sea lion age, disease, diet and health trends in sea lion populations. Each removal animal has undergone a full necropsy, and the currently-ongoing analyses are included in the Appendix.
4. As of the time of this report, the Eligible Entities have not begun to explore opportunities to displace and/or minimize the use of manmade haul outs by sea lions in the Columbia River.
5. The Eligible Entities are conducting ongoing abundance assessments of sea lions, including monitoring of marked individuals within the management area, to assess recruitment rates of sea lions after habituated animals are removed. Sea lion presence is being monitored by remote camera data (daily), in-person observation programs (daily at Bonneville Dam, and January-May at Willamette Falls), and boat-based Willamette River sea lion surveys (weekly).
6. As of the time of this report, the Eligible Entities have not yet monitored Steller sea lion rookeries in northern California, Oregon and Washington. Staff from ODFW generally assist with this fieldwork annually during breeding season.
7. The Eligible Entities (primarily: ODFW) are in the process of developing an app which can be made publicly available (it is currently still in testing and for use of state staff only) and can be used by members of the public to report fisheries interactions, stranded animals, or sea lion sightings within the management area.
8. As of the time of this report, the Eligible Entities have not yet begun the discussion of setting up a program in coordination with NMFS which would support or help secure the funds needed for monitoring to evaluate success of the lethal removal program.
9. In December 2020, the Eligible Entities plan on a joint discussion of current bioenergetic evaluation methodologies in order to develop a coordinated multi-entity plan for quantifying predation, pinniped energetic modeling and estimating the expected benefits of the Section 120 program.

Tables and Figures

Table 1. Description and relevant data for lethally removed sea lions between August 14, 2020 and December 1, 2020. Bonneville Dam Coordinates = 45.6392, -121.9521.

Species	Removal Date	Disposition	Location	Appendix ID	Aka	Mark Date	Mark Type	Serial Number
SSL	10/14/2020	Euthanized via chemical euthanasia	Bonneville Dam	N/A	EB001	N/A	N/A	N/A
SSL	10/15/2020	Euthanized via chemical euthanasia	Bonneville Dam	N/A	EB002	N/A	N/A	N/A
SSL	10/22/2020	Euthanized via chemical euthanasia	Bonneville Dam	N/A	N/A	O-53	Brand	N/A
SSL	11/03/2020	Euthanized via chemical euthanasia	Bonneville Dam	N/A	EB003	N/A	N/A	N/A
SSL	11/04/2020	Euthanized via chemical euthanasia	Bonneville Dam	N/A	O-44	5/16/2017	Brand	N/A
SSL	11/05/2020	Euthanized via chemical euthanasia	Bonneville Dam	N/A	EB004	N/A	N/A	N/A

Table 2. Monitoring data from Willamette River boat surveys within management area, beginning on September 24, 2020 through November 19, 2020.

Date	Start Time	End Time	Start Location	End Location	Return Time	Zc Count	Ej Count
9/24/2020	1034	1345	Willamette Falls	Columbia River	1440	0	0
10/8/2020	930	1235	Willamette Falls	Columbia River	1345	0	0
10/23/2020			Willamette Falls	Fremont Bridge	1430	0	0
10/30/2020	1050	1340	Willamette Falls	Columbia River	1500	0	2
11/5/2020	930	1209	Willamette Falls	St. Johns Bridge	1256	0	1
11/12/2020	937	1144	Willamette Falls	Columbia River	1305	0	1
11/19/2020	1022	1315	Willamette Falls	Columbia River	1407	0	1

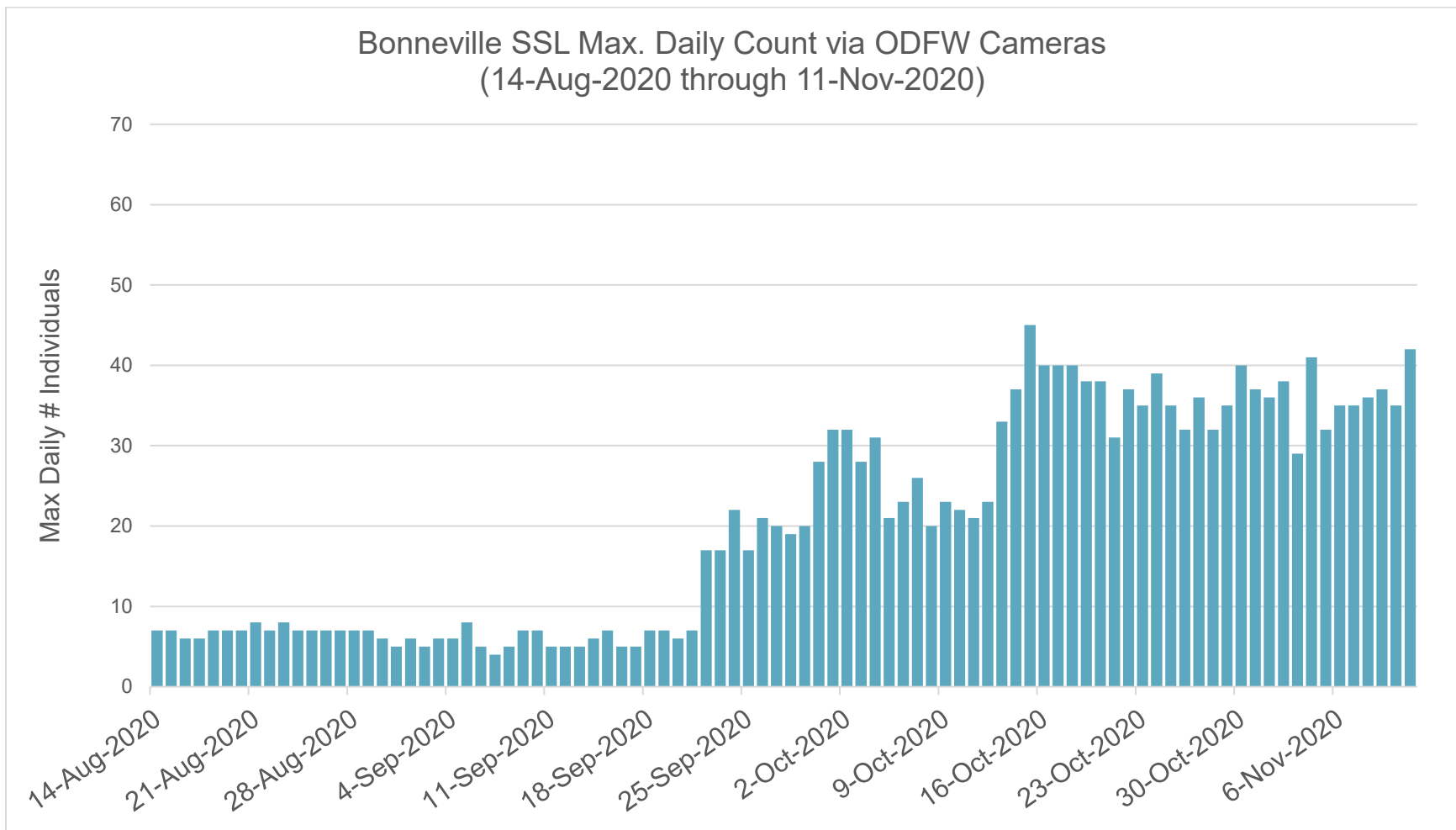


Figure 1. Maximum daily abundance of Steller sea lion individuals present at Bonneville Dam based on ODFW trail cameras placed on traps and facing Tower Island during this reporting period, beginning on August 14, 2020.

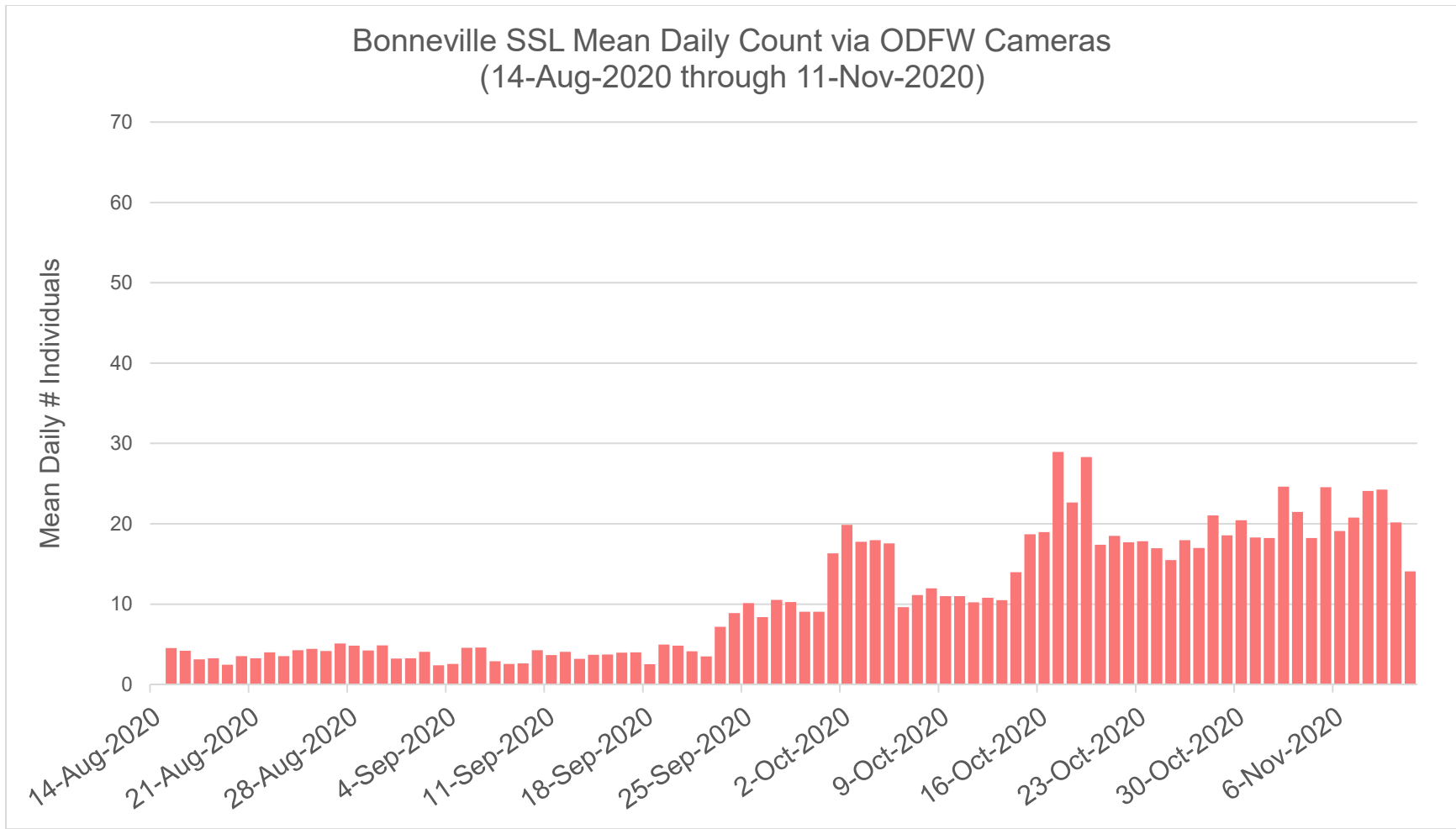


Figure 2. Mean daily abundance of Steller sea lion individuals present at Bonneville Dam based on ODFW trail cameras place on traps and facing Tower Island during this reporting period, beginning on August 14, 2020.

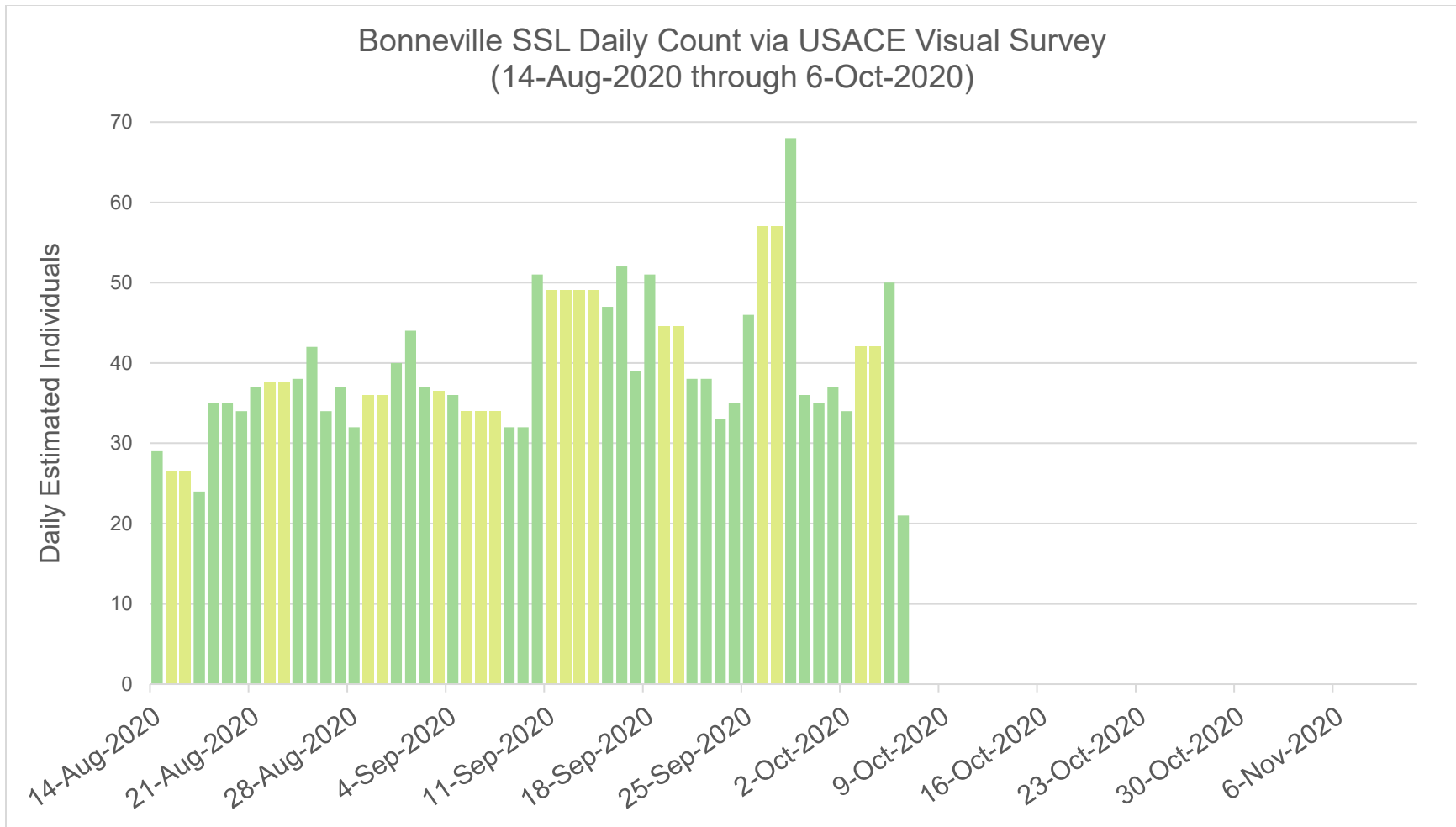


Figure 3. Estimated daily abundance of Steller sea lion individuals at Bonneville Dam based on direct observations by USACE staff, beginning on August 14, 2020. Data provided by K. Tidwell, U.S. Army Corp. of Engineers. Lighter bars depict interpolated counts (non-sampling days) while darker bars reflect actual visual counts.

Acknowledgments

We wish to acknowledge and thank all those who have, and continue to, cooperate in the conduct of this work:

- CRITFC: Bob Lessard, John Whiteaker, Bobby Begay, Theodore Walsey, Aaron Ikemoto, and Devayne Lewis.
- NMFS: Robert Anderson, Scott Rumsey, Robert DeLong.
- ODFW: Mike Brown, Colin Gillin DVM, Julia Burco DVM, Susan Riemer, Greg Davis and the Bonneville Hatchery staff, Chris Kern, David Fox.
- PSMFC: Dave Colpo, Sarah Kirk.
- USACE: Kyle Tidwell, Ben Hausmann, Jerry Carol, Mike Roth, Brian Smith, the Bonneville Rigging Crew, Patricia Madson, Karrie Gibbons, Bjorn van der Leeuw, Robert Wertheimer, Nathan Zorich, Brett Carrothers, Kristen Bayley, and Lindsay Magill.
- USDA Wildlife Services staff.
- WDFW: Trever Barker, Coral Pasi, Kessina Lee, Scott Pearson.
- IDFG: Joe Dupont, Christine Kozfkay
- Safety and Security: Chris Allori, Oregon State Police; Murray Schlenker and Jeff Wickersham, Washington Department of Fish and Wildlife; and Jennifer Baker and Greg Webb, USACE.

Funding was provided by ODFW, WDFW, NMFS, and BPA. Activities were authorized under National Marine Fisheries Service (NMFS) Marine Mammal Protection Act §109(h) and §120.

Literature Cited

Wright B, Steingass S, Owen C, Warren E, Brown M, Valentine S, Triplett B, Kroneberger Z. ANNUAL REPORT: PINNIPED MONITORING AT WILLAMETTE FALLS, 2019-2020
October 28, 2020.

Steingass S. MEMO: PINNIPED MANAGEMENT AT WILLAMETTE FALLS, 2019-2020
October 28, 2020.

Steingass S. MEMO: PINNIPED MANAGEMENT AT BONNEVILLE DAM, 2020 October 28,
2020.

Appendix

***Assurance of Animal Care and Use
Form***

IACUC Use Only

IACUC Number: USDA Classification: C / D / E _____
ODFW/WDFW/IDFG 2020-2
(Circle One)

Date Received: 9 September 2020 **Initial Review Date:** 10 September 2020
Second review:
Third review: 5 October 2020 IACUC Meeting

IACUC Training Complete:

IACUC Recommendations: Approved: Not Approved:

Withhold Approval Pending Modification

Type of Submission: New Modification
3-Year Renewal

IACUC Chair Signature: _____ **Date:** 9 Oct. 2020

Columbia River Predatory California and Steller Sea Lion Lethal Removal **Section 120(f) Authorization Animal Care and Use Form**

This is a modification request to an Approved Protocol contained in the Assurance of Animal Care and Use (AAC&U) Form with IACUC Number ODFW, WDFW & IDFW 2020-1 entitled “Columbia River Predatory California sea lion Removal” dated 11 March 2020.

A. Administrative Data

Project Title: Columbia River Predatory California and Steller Sea Lion Lethal Removal

Institutions: State of Washington, State of Oregon, State of Idaho, Nez Perce Tribe, Confederated Tribes of the Umatilla Indian Reservation, Confederated Tribes of the Warm Springs Reservation of Oregon; The Confederated Tribes and Bands of the Yakama Nation; Confederated Tribes of the Grand Ronde Community; Confederated Tribes of the Siletz Indians of Oregon, and the Columbia River Intertribal Fish Commission (representing: Nez Perce Tribe, Confederated Tribes and Bands of the Yakama Nation, Confederated Tribes of the Umatilla)

Principal Investigators: Sheanna Steingass (ODFW), Scott Pearson (WDFW), Chris Kozfkay (IDFG), Douglas Hatch (CRITFC).

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Initial Submission **Renewal** **or Modification XX**

Project Title: Columbia River Predatory California Sea Lion Removal

Anticipated Start Date: September 21, 2020 **Anticipated End Date:** Ongoing

Duration of Approved Protocol: ___ Sept 2020 through ___ Sept 2023

Study Site(s) Location (or Where Animals Will Be Housed): Bonneville Lock and Dam (River mile 145), Willamette Falls (Willamette River), Columbia River sites at River Mile 112 to 292, Columbia River Tributaries

Other approved IACUC Animal Care and Use Assurance relating to this project:

Permits: Identify all relevant permits (Federal, State and other) necessary to conduct this project. Provide permit type(s), permit number(s), and expiration date(s). Please indicate if a permit application is pending a decision.

Permit Type	Permit Number	Expiration Date
NMFS Permit & Letter of Authorization		August 14, 2025
Oregon Fish & Wildlife Statutes	OARs	
Washington F&W Statutes	RCWs	

*The NMFS policy intends to comply with the **Animal Welfare Act (AWA)** - Title 7 of U.S. Code §2131 et. seq. and implementing regulations and adhere to the principles of the **U.S. Government Principles for the Utilization and Care of Vertebrate Animals Used in Testing, Research, and Training (USGP)** and follow the guidelines in the **National Research Council Guide for the Care and Use of Laboratory Animals**.*

B. Justifications

This is a modification request to an Approved Protocol contained in the Assurance of Animal Care and Use (AAC&U) Form with IACUC Number ODFW,WDFW & IDFW 2020-1 entitled “Columbia River Predatory California sea lion Removal” dated 12 March 2020.

In accordance with USGP #2, “Procedures involving animals should be designed and performed with due consideration of their relevance to human or animal health, the advancement of knowledge, or the good of society.”

1. Research Goals:

a. What are the scientific issues addressed by the research? Specifically, how will this research improve human or animal health or advance knowledge?

Predatory California and Steller sea lions foraging for salmonids, sturgeon, lamprey and other species in the Columbia River below Bonneville Dam are having a significant negative impact on the recovery of populations of threatened and endangered (T&E) fish populations. This action, as permitted by 2020 Amendments to the Marine Mammal Protection Act, will reduce predator-associated mortality of fish stocks from depleted or ESA-listed populations. In particular, salmonids attempting to pass fishways to reach upriver spawning areas are subjected to bottleneck effects as they stage below upriver obstacles or attempt to pass through fish ladders. The objective of this work is to remove a number of upriver, habituated individual California and Steller sea lions from a large, robust, and healthy populations to protect T&E salmonids, lamprey and sturgeon, many from very small and highly at-risk populations. This management tool was provided to the states by the U.S. Congress in Section 120 of the MMPA, as originally amended in 1994. This current management authorization was granted the states by the Dept of Commerce, NOAA-NMFS under a Permit and Letter of Authorization (LOA) dated August 14, 2020, providing authorization for a duration of five years until August 14, 2025.

b. What are the specific goals of the animal studies described in this protocol?

The goal of this work is to reduce pinniped predation on T&E salmonids, and populations of lamprey, sturgeon and other at-risk stocks in the lower Columbia River (River Mile 112 to McNary Dam, River Mile 292) and its tributaries to aid in the recovery of these fish populations. This will be accomplished by lethally removing California and Steller

sea lions in these areas. After pinnipeds are captured and euthanized, numerous biological samples (e.g., GI tracts, blood, tissues, organs, teeth) will be collected for a variety of scientific study purposes including food habits analyses, histology, and studies of pathogens and disease.

2. Explain why animal studies are preferred to non-animal alternatives in achieving these research goals.

The permanent removal of these predatory sea lions is required to achieve the objective of protecting fish stocks in the Columbia River. Multiple years of capture and transport, capture and hold, and all other non-lethal tools currently available have been shown to be statistically and biologically ineffective in reducing pinniped predation in these areas.

In accordance with the Animal Welfare Act – “...the principal investigator has provided written assurance that the activities do not unnecessarily duplicate previous experiments.”

3. Does this research duplicate previous experiments? YES XX NO

If YES, please explain why this duplication is necessary.

4. Do the animal procedures planned for this research involve only simple field observation with no impact on either the animals or their environment? (e.g. Aerial surveys, brand or tag resighting, focal “animal” follow, vessel surveys)

YES XX NO

If YES, it is not necessary to complete the informational sections of this protocol form. Instead, answer the following:

- a. Use Appendix A to describe the study activities. Include all precautions to ensure no adverse impact on the study animals and their environment.
- b. Include copies of any required permits.
- c. Sign this form under Section H
- d.

If NO, the remainder of this form must be completed. (but complete Appendix A for observational studies and then, proceed to the next section.

In accordance with the USGP #3, “The animal selected for a procedure should be of an appropriate species and quality and the minimum number required to obtain valid results.”

5. List the research species (and stock) and describe why is the most appropriate species to use in these studies:

California sea lions (*Zalophus californianus*), U.S. Stock; Steller sea lions (*Eumetopias jubatus*), The relatively small number of adult and sub-adult male sea lions present within the management zone of the Columbia River are responsible for significant mortalities of adult salmonids, sturgeon and lamprey below Bonneville Dam, Willamette Falls and other sites along the lower Columbia River and its tributaries (Tidwell et al. 2019, Rub et al. 2019, Falcy 2017). Removal of predatory sea lions in this area will permit more salmonids to reach upriver spawning areas contributing to the recovery of these T&E fish populations, prevent predation on other fish stocks, and reduce the numbers of animals annually recruiting to bottleneck sites where fish are especially vulnerable.

6. How many animals do you plan to use for the protocol? Please provide a justification for the numbers of animals used (e.g., statistical power, survey, etc).

The NMFS Bonneville Pinniped-Fishery Interaction Task Force set the maximum lethal removal number for this project to be 540 California sea lions and 176 Steller sea lions over the 5-year period of the permit. **These management actions will not exceed 10% of the potential biological removal (PBR) levels for either species.**

Complete the following table below to define the numbers(s) of animal(s) to be used in each category and type procedure(s). Use the following animal welfare categories:

Category (adapted from AWAR):

B: applies only to animals held captive in non-research status (display, rehabilitation, brood stock, holding).

C: applies to little or momentary pain or discomfort

D: applies to potential discomfort or pain which is relieved by the appropriate anesthetic or analgesic

E: applies to discomfort or pain which is not relieved thus requires written justification and full IACUC approval and documented in the annual report to APHIS (must consider the 3 R's)

Species (Common Name)	Age/Sex	Category C (procedure)	Category D (procedure)	Category E (procedure)	Total # of animals needed for duration of project
	Adult and subadult males	A maximum of 540 during the study period,	A maximum of 540 during the study	NA	540 maximum

California sea lion (<i>Zalophus californianus</i>)		minor pain or discomfort during trapping and transport to work facility. or trapping and release at site of capture	period, chemically anesthetized and euthanized		
Steller sea lion (<i>Eumetopias jubatus</i>)	Adult and subadult males	A maximum of 176 during the study period, minor pain or discomfort during trapping and transport to work facility, or trapping and release at site of capture.	A maximum of 176 during the study period, chemically anesthetized and euthanized.	NA	176 maximum

In accordance with the AWA: “The principal investigator has considered alternative to procedures that may cause more than momentary or slight pain or distress to the animals, and has provided a written narrative description of the methods and sources (e.g. the Animal Welfare Information Center) used to determine that alternative were not available....”

7. If you have placed any animal numbers in categories D and E, you must complete the following (use Appendix B if additional space is necessary)

a. Explain why the pain or discomfort cannot be relieved and what procedure will be used to minimize discomfort.

Capture and handling of pinnipeds by use of floating traps, transfer cages, and squeeze cages result in no pain and very little physical discomfort to pinnipeds included in this work. California and Steller sea lions that are to be euthanized are given appropriate primary (e.g. Telazol) and/or secondary (Telazol, Midazolam, Xylazine, or Medetomidine) doses of anesthetic (e.g., Telazol, Xylazine) via direct injection (syringe or jabstick) to be administered to the animal in the squeeze cage or transfer cage, to effect, prior to final euthanasia. Secondary means of euthanasia occurs after the animal is unresponsive, and is given via approved chemical or physical means (e.g., sodium pentobarbital (Euthasol), potassium chloride or overdose of an anesthetic, or captive bolt).

Darting

As of the time of this writing, darting of free-ranging animals will not be used as a management tool under Section 120(f) authorization while method development is in progress. Once methods are appropriately developed and documented, the applicants will submit a modification request and the IACUC will review and approve methodologies that may include chemical immobilization methods via darting. This may also include

additional training for staff, development of protocols, and application of tracking technologies such as acoustic pingers to assist in retrieval of animals and darts.

b. What informational methods and resources did you use to determine that (no-animal or non-painful) alternative were not appropriate for this research?

- i. Include the databases that were searched (include keywords used).**
- ii. Include literature citations**
- iii. Include meetings with knowledgeable individuals (name, date)**
- iv. Include other methods/resources**

Beginning in the early 2000s, the number of California, and subsequently Steller sea lions observed foraging for salmonids below Bonneville Dam has increased annually (along with the number of salmonids, lamprey and sturgeon killed by these predators). Beginning in 2005, through 2008, the States of Oregon and Washington used all available non-lethal tools, at increasing levels of intensity, in efforts to non-lethally deter California sea lions from foraging at this location. Over that period and to this date, non-lethal hazing has proven to be ineffective at deterring CSL and reducing their predation rates on salmonids at this site (Brown et al. 2008, Annual Report on Field Activities at Bonneville Dam, Willamette Falls Task Force Meeting 2018). Known individual California sea lions observed killing salmonids below Bonneville Dam exposed to significant hazing efforts continue to kill salmonids and return to this area to forage year after year, despite ongoing hazing efforts by USACE. As a result of the failure of effective non-lethal tools to reduce predation, and at the recommendation of the NMFS Pinniped-Fishery Interaction Task Force, NMFS has issued a Permit & Letter of Authorization to the states and tribes for lethal removal of California and Steller sea lions between River Mile 112 and 292 in the Columbia River and Columbia River Tributaries, under certain outlined criteria and methodologies.

Literature Cited

Falcy M. Population viability of Willamette River winter steelhead: An assessment of the effect of sea lions at Willamette Falls. Oregon Department of Fish and Wildlife, Corvallis. 2017.

Tidwell KS, Van der Leeuw BK, Magill LN, Carrother BA, Wetheimer RH, Bayley KN. Evaluation of Pinniped Predation on Adult Salmonids and Other Fish in the Bonneville Dam Tailrace: 2017. US Army Corps of Engineers, Bonneville Lock and Dam; 2019 Jan 24.

Wargo Rub AM, Som NA, Henderson MJ, Sandford BP, Van Doornik DM, Teel DJ, Tennis MJ, Langness OP, van der Leeuw BK, Huff DD. Changes in adult Chinook salmon (*Oncorhynchus tshawytscha*) survival within the lower Columbia River amid increasing pinniped abundance. Canadian Journal of Fisheries and Aquatic Sciences. 2019;76(10):1862-73.

C. Experimental Procedures

1. General Procedures. *(Detail research procedures in Appendix A)*

In accordance with the AWA, “Procedures that may cause more than momentary or slight pain or distress to the animals will a) be performed with appropriate sedatives, analgesics, or anesthetics unless withholding such agents is justified for scientific reasons in writing by the principal investigator and will continue for only the necessary period of time; b) involve in their planning, consultation with the attending veterinarian..., c) not include the use of paralytics without anesthesia...”

Capture, Samples and methods of collection

Sample Type	Collection method	Sample size	Number of animals
None	Trap, barge, release or euthanize	Up to 540 CSL, 176 SSL during study period	Up to 540 CSL, 176 SSL during study period
Entire carcass	Trap, barge, release and euthanize identified and authorized animal	Up to 540 CSL, 176 SSL	Up to 540 CSL, 176 SSL
Blood from deceased animals	Syringe	10-60 ml per sample	Up to 540 CSL, 176 SSL
Tissues, organs, skeletal remains	Necropsy and pathological/histological preparation	Samples of tissues from major organs and tissue types; Multiple samples	Up to 540 CSL, 176 SSL

		from up to 540 CSL, 176 SSL	
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2. Animal Restraint

a. Physical (*Describe method, duration, equipment used*)

Sea lions are captured on a floating trap used by animals for a resting area. Traps are locked open (unarmed) when staff are not present or weather conditions (excessive heat, cold or precipitation) prohibit a safe working environment to prevent accidental or unintended trapping which could result in injuries or mortality to animals. Trap doors are closed by an magnetized remote release system (TrapSmart™) by team members within line of sight of traps and animals. Tarps are lowered around the seven foot chain-link walls of the trap to calm animals and reduce visual stimuli that might excite them.. Animals may be moved between traps via an enclosed chain link tunnel system and either retained or released. Animals that are to be transported and removed are herded from the trap into a transfer cage which is tall enough for the animals to walk into on a handling barge. In rare cases sea lions that are not possible to move either due to size (i.e. over 1500lbs) or behavior may be chemically immobilized in the trap, removed mechanically by crane or wench, and placed in a transfer cage and moved by vehicle to the designated work area for processing. Animals are transported via barge and transfer cage, then subsequently into a transfer cage on the back of a vehicle to the work area for processing. Chemical immobilization will take place by use of a jab pole or blow dart – whichever can be most safely administered- to deploy a dose of immobilizing drugs (i.e. Telazol-see chemical restraint table). At the work site, live sea lions are restrained in a squeeze cage at the work area where injectable or gas anesthesia or sedation and euthanasia are administered (see chemical restraint table). A variety of biological samples are collected from each euthanized animal prior to disposal or transfer of the carcass to tribal co-managers.

b. Chemical

Anesthetics and Analgesics:

If anesthetics or analgesics are to be used, please provide the following information: procedure, anesthetic, dose and method of administration

Procedure	Anesthetic	Dose & Method of Administration; Reference	Duration	Intervention
Anesthesia	Telazol	IM injection 1-4 mg/kg		
Anesthesia	Telazol Ketamine Xylaxine	1-4 mg/kg IM 0.5-1.0 mg/kg IM 0.5-1.0 mg/kg IM		
Anesthesia	Telazol	1-4 mg/kg IM		

	Xylazine	1-2 mg/kg IM		
Anesthesia	Isoflurane gas	Cone / mask induction and maintenance at 3-5% saturation.		
Sedation	Diazepam	0.1-0.2 mg/kg IM		
Sedation	Midazolam	0.15-0.2 mg/ kg IM		

3. Marking and Instrumentation(Describe mark or tag type, or instrument type to be used. Provide mass of attachment device, range of body mass of study animal, device mass a proportion of body mass and the recommended device mass as a percent of body mass)

Tag or Instrument	Size (dimensions & mass)	% of body mass	Attachment Method
Duflex flipper tag	2.25x7/8" 5g	(<<1.00%)	Punch
Branded Digits	5" lettering	N/A	Hot Iron Brand

In accordance with AWA: "Activities that involve surgery include appropriate provision for pre-operative and post-operative care of the animal in accordance with established veterinary medical and nursing practices. All survival surgery will be performed using aseptic procedures, including surgical gloves, masks, sterile instruments, and aseptic techniques."

4. Surgical Procedures – Is surgery to be performed? YES NO

a. If YES, list surgery location/room:

b. If YES,

i. is it a terminal procedure?

YES NO

ii. is it a survival procedure?

YES NO

c. If YES, then describe the surgical procedure to be performed in Appendix A. Be sure to include the protocol to be followed to ensure asepsis.

d. If aseptic procedures are not to be performed, use this space below to justify why not and describe the procedure of choice.

e. Describe the post-operative care (both immediate and long-term).

5. Injury to animals – Accidental injuries which might occur to animals during handling (Describe the most likely injuries which might occur to research animals, how frequent injuries are expected and planned procedures to treat injuries.)

Possible injuries to CSL that will be euthanized, held, or released include minor scrapes, abrasions, and bites during the trapping and marking operations (Appendix A). This type of superficial injury may occur in up to 10% of animals handled during any trapping

and/or marking operation. Traps are locked (disarmed) open when not in use to prevent accidental or unintended trapping which could result in injury or mortality. When traps are open, at least three staff will be available and in the area in case emergency response is needed. Animals being held or transported are monitored for physiological distress and continually cooled with pumped water to prevent overheating in warm conditions.

6. Euthanasia – All methods of euthanasia must follow the American Veterinary Medical Association Guidelines for the Euthanasia of Animals: 2013 Edition. (2013, 102 pp). Any deviations must be scenically justified. Even if you do not intend to euthanize animals as part of the project, a method of euthanasia must be listed in case of emergency. (Describe agent, dose and route of administration).

-Will the animals be terminated if severely injured during handling?

YES **NO**

-Will animals be terminated as part of handling protocol

YES **NO**

If YES, provide the method of euthanasia and disposal of animal upon completion. If NO, provide method of euthanasia in case of emergency.

Method		Disposal
Pentobarbital sodium	IV 60-120 mg /kg or 1ml/4.5 kg (10-20 lbs) BW to effect	Incineration or burial*
Potassium Chloride	IV, IC 75 -150 mg/kg [34.1 to 68.2 mg/lb] BW of potassium chloride	Rendering facility*
Overdose of anesthetic (Telazol or similar)	Dosages on previous page, table of Anesthetics	Rendering facility*
Captive Bolt	Administered to Cranium	Rendering facility, Incineration or burial*

**Depending on means of euthanasia and human safety considerations, tribal co-managers may request use of the carcass or parts of the carcass for traditional use purposes. This will occur on a case-by-case basis with a Memorandum of Understanding between ODFW/WDFW and tribal recipients.*

Please consult NMFS Research Protocol Guidelines (TBD) for acceptable practices. (AVMA Guidelines, AAZV Guidelines, etc.)

In accordance with the AWA, “Personnel conducting procedures on the species being maintained or studied will be appropriately qualified and trained in those procedures.”

7. Training

Please describe below the training and qualifications of yourself and other individuals who are included in this protocol. In particular, please be very specific about the hands-on training of those individuals performing procedures which may produce animal discomfort (i.e., restraint, injections, blood collection, surgery, tagging, biopsy, tooth extraction, urine, fecal, gastric, milk, semen, sample collection, euthanasia, etc.). Use Appendix B to further describe training and experience.

The state program leaders and veterinary staff directing this work have at more than 20 years combined experience in capturing, handling and marking pinnipeds from California to Alaska (Appendix B). This experience includes a wide variety of methods and equipment for accomplishing this work. All euthanasia procedures will be conducted and overseen by licensed agency veterinarians, including Colin Gillin and/or Julia Burco (ODFW), Kristin Mansfield and/or Katherine Haman (WDFW), and Nicole Walrath (IDFG). Program leaders have extensive experience performing necropsies and collecting biological samples of all types. All ODFW and WDFW project support staff have multiple years of direct experience in pinniped capture, handling, marking, necropsies, and biological sample collection. Several support staff and veterinarians have worked on this project since its inception providing extensive experience related to procedures and methodologies described herein. All support staff were trained directly by the state program leaders and several have had additional experience with similar programs conducted in other areas.

Each year, staff involved in handling or managing animals in the field are required to complete an in-person (or virtual) training by their Program Leaders that includes considerations for animal handling safety, euthanasia, and psychological effects staff may experience in relation to euthanasia of wildlife. They also are required to read a material packet regarding the ethical use and treatment of animals and wildlife in research.

D. Husbandry Practices (laboratory and field)

Temporary holding (period greater than 1 hour and less than 24 hours)

Long term holding (periods greater than 24 hours)

(Describe holding facilities or equipment, i.e. pens, cages, nets ,shade, water, etc.)

1. Will the research require holding the animals in captivity? YES NO

2. If YES, describe the husbandry practices that will be used.

Sea lions to be lethally removed or permanently placed under human care in an NMFS-approved facility may be held in transfer cages or a specially built trailer for up to 48 hours. In the case of permanent placement, the purpose for holding is to perform a veterinary health assessment and transfer the animal alive to an approved placeholder facility for quarantine. In the case of lethal removal, animals may be held overnight prior to euthanasia. In both cases, animals are held in a secure area and monitored with access permitted only to authorized staff. The holding area is temperature-controlled and with light adjusted as appropriate. Requests for animals for permanent holding are facilitated by federal partners, the interim holding facility (local aquarium or zoo), and the approved permanent holding facility (aquarium or zoo).

3. If YES, describe procedures for disposition of dead animals, including whether or not a necropsy will be performed.

Necropsies and biological sample collection are performed on all sea lions that are euthanized. Multiple biological samples are archived, cataloged and can be made available to external collaborators or researchers for study and analyses as appropriate, via proper permitting and sample use agreements completed by the requesting party. Carcasses (minus biological samples, GI tracts, and skulls) will usually be transported to a rendering plant for disposal, or transferred to tribal co-managers via a Memorandum of Understanding. Other carcass disposal options include incineration or landfill burial.

4. Will the animals be removed from the facility? YES NO

a. If YES, for how long?

For the life of the animal

b. If YES, to where?

Occasionally live California or Steller sea lions may be made available to permanent holding facilities in the U.S. at the request of the facility and with the approval of NMFS.

c. If YES, will they be returned to the facility? YES NO

d. If NO, why not?

California and Steller sea lions on the approved removal list will either be euthanized at the project work facility or will be transferred to a permanent holding facility and will not be returned to the project or released into the wild.

E. Environmental Safety

1. Are infectious agents to be used and is there potential for exposure?

YES NO

If YES, the agent(s) is.....

If YES, is the agent infectious to humans?

YES NO

2. Are chemical hazards to be used?

YES NO

If YES, the chemical hazard is.....

3. Are radioisotopes to be used?

YES NO

If YES, the radioisotope is.....

4. Are other biohazards of concern like exposure to zoonotic agents?

YES NO

IF YES, the biohazard(s) is.....

A range of diseases that naturally occur in the CSL population, including bacterial and viral agents. Some of these are potentially zoonotic:

- *Leptospira* spp., found primarily in urine samples
- *Brucella pinnipedialis*, *B. ceti*, Brucellosis
- *Bisgaardia hudsonensis*, seal finger
- *Mycoplasma phocacerebrale*, *M. phocarhinis*, *M. phocidae*, mycoplasmosis
- *Calicivirus*, San Miguel sea lion virus, seal finger
- *Parapoxvirus*, seal finger
- *Mycobacteriia marinum*, *M. pinnipedii*, Mycobacteriosis
- *Erysipelothrix insidiosa*, Erysipeloid
- *Coxiella burnetti*
- *Toxoplasma gondii*, Toxoplasmosis
- *Ajellomyces dermatiditis*, Blastomycosis
- *Lacazia lobio*, Blastomycosis
- Influenza A

Note – If any of the above questions are answered YES, all procedures must comply with NMFS Environmental Safety requirements (TBD).

F. Use of Controlled and/or Prescription Substances (*Source, arrangements for use, ordering, record keeping, storage and precautions taken to avoid unauthorized access*)

Drugs for animal sedation and euthanasia are administered by licensed state veterinarians for this project. They acquire the drugs and maintain a record of purchase, storage, use and disposal of all drugs used.

G. Occupational Health and Safety

Awareness and monitoring for potential Post-Traumatic Stress Disorder (PTSD) in project staff resulting from participation in lethal sea lion removal work under MMPA Section 120 authorizations

It has come to the attention of this IACUC that employees involved with the repeated euthanasia of apparently healthy, live animals can suffer from post-traumatic symptoms. Studies of this phenomenon have shown the negative effects on employee mental health can include compassion fatigue, burnout, subconscious fears or anxieties, the general hardening of emotions, depression, and the development of unhealthy coping mechanisms (e.g. substance abuse). These studies also reported the initial negative responses to exposure to repeated euthanasia may include abhorrence, shock and/or trauma.

We aim to be aware and proactive in addressing potential issues that may arise related to the experiences of our employees.

Members of this IACUC have discussed these issues and identified several actions that might be taken to promptly address issues and conditions in responding to the needs of our field staff including:

- Prior to the initiation of work each season, our project leaders and veterinary staff will discuss with all management staff the importance of demonstrating respect and ethical treatment of the animals that we capture, handle and ultimately may euthanize as part of project operations. These cautions and sensitivities will be repeated through the season as appropriate and needed.
- An annual in-person or virtual training for all project personnel that discusses animal welfare and the concept of euthanasia. The training describes the effects of handling and anesthesia on wildlife and prioritizing the animal's state of wellbeing in all stages of capture, handling, and euthanasia. Another part of that training discusses PITS (perpetuation-induced traumatic stress), compassion fatigue or burnout, potential symptoms, and state and agency employee assistance resource programs available to staff.

Conversations will be conducted before, during and after the season to address the need for all staff to be aware of any possible negative feelings or responses that might result from this work, particularly as a result of the acts of euthanizing and processing (performing necropsy and disposing of) the animals.

Additionally, we will encourage staff to feel comfortable discussing concerns with supervisors. Staff, supervisors or crew leads are not to diagnose themselves or others, but are encouraged to seek professional medical or counseling assistance if they feel

they (or staff working on the project) are affected by PITS (perpetuation-induced traumatic stress), compassion fatigue or burnout related to project activities.

State agency Human Resources and Safety Programs for information on exposure of staff to PTSD is also available as a resource to staff.

Concerns or other discussions by staff related to work performance and production, and employee attitude toward the work and sense of overall wellbeing should be directed to managers or crew leads. Staff will be provided appropriate options for addressing any concerns or health needs as a result of field operations, including reminders of how to access specific health resources including the Oregon and Washington Employee Assistance Programs (EAPs).

Resources:

Oregon

<https://www.oregon.gov/dcbs/RightStart/Pages/EAP.aspx>

<https://inside.dfw.state.or.us/safety/wellness.asp>

Washington

<https://des.wa.gov/services/hr-finance/washington-state-employee-assistance-program-eap>

<http://inside.dfw.wa.gov/employees/wellness/stress.html>

G. Training on Animal Care and Use

Have you and all of the personnel listed in the table below as investigators completed Training Module 1 of the AFSC/NWFSC Animal Care and Use Training Program?

YES NO

If **NO**, you must complete this Training Module before the IACUC will consider this Animal Care and Use Assurance Form.

Animal Welfare Act IACUC Training Module 1

List all the names and telephone numbers of personnel associated with this project and identified in this protocol who will work with animals or animal tissue. Check the appropriate box to indicate whether or not each individual has completed the NMFS Animal Care and Use Training Program.

IACUC Training	Name	Affiliation	Phone	Email
<input checked="" type="checkbox"/> Y <input type="checkbox"/> N	Sheanna Steingass	ODFW	541-257-7118	sheanna.m.steingass@state.or.us
<input checked="" type="checkbox"/> Y <input type="checkbox"/> N	Michael Brown	ODFW	971-707-1764	michael.l.brown@state.or.us
<input checked="" type="checkbox"/> Y <input type="checkbox"/> N	Bryan Wright	ODFW	541-757-5225	bryan.e.wright@state.or.us
<input checked="" type="checkbox"/> Y <input type="checkbox"/> N	Shay Valentine	ODFW/PSMFC	360-789-2627	shay.w.valentine@state.or.us
<input checked="" type="checkbox"/> Y <input type="checkbox"/> N	Bradley Triplett	ODFW	971-673-6018	Bradley.z.triplett@state.or.us
<input checked="" type="checkbox"/> Y <input type="checkbox"/> N	Zane Kroneberger	ODFW	928-814-6265	zane.p.kroneberger@state.or.us
<input checked="" type="checkbox"/> Y <input type="checkbox"/> N	Buddy Phibbs	ODFW	541-602-0240	Buddyphibbs10@hotmail.com
<input checked="" type="checkbox"/> Y <input type="checkbox"/> N	Colin Gillin	ODFW (Vet)	541-231-9271	colin.m.gillin@state.or.us
<input checked="" type="checkbox"/> Y <input type="checkbox"/> N	Julia Burco	ODFW (Vet)	541-207-7305	julia.d.burco@state.or.us
<input checked="" type="checkbox"/> Y <input type="checkbox"/> N	Kristin Mansfield	WDFW (Vet)	509-892-1001 ext. 326	kristin.mansfield@dfw.wa.gov
<input checked="" type="checkbox"/> Y <input type="checkbox"/> N	Katherine Haman	WDFW (Vet)	360-902-2832	katherine.haman@dfw.wa.gov
<input checked="" type="checkbox"/> Y <input type="checkbox"/> N	Nicole Walrath	IDFG (Vet)	208-960-4600	nicole.walrath@idfg.idaho.gov
<input checked="" type="checkbox"/> Y <input type="checkbox"/> N	Dyanna Lambourn	WDFW	253-208-2427	Dyanna.lambourn@dfw.wa.gov
<input checked="" type="checkbox"/> Y <input type="checkbox"/> N	Elliot Johnson	WDFW	916-580-4923	elliott.johnson@dfw.wa.gov
<input checked="" type="checkbox"/> Y <input type="checkbox"/> N	Trever Barker	WDFW	360-609-8128	Trever.barker@dfw.wa.gov
<input checked="" type="checkbox"/> Y <input type="checkbox"/> N	Coral Pasi	WDFW	717-422-2506	coral.pasi@dfw.wa.gov
<input checked="" type="checkbox"/> Y <input type="checkbox"/> N	Doug Hatch	CRITFC	503-731-1263	hatd@critfc.org
<input checked="" type="checkbox"/> Y <input type="checkbox"/> N	John Whiteaker	CRITFC	503-476-7649	whij@critfc.org
<input checked="" type="checkbox"/> Y <input type="checkbox"/> N	Devayne Lewis	CRITFC	503-238-0667	dlewis@critfc.org
<input checked="" type="checkbox"/> Y <input type="checkbox"/> N	Theodore Walsey	CRITFC	503-238-0667	rwalsey@critfc.org

I. Assurance

I attest to the accuracy and completeness of the information provided. As a permitted managing party, I promise to ensure this work with animals is conducted in accordance with the outlined protocols as approved by the Columbia River California sea lion lethal removal IACUC under the NMFS Animal Care and Use Policy. I will not make any substantive changes in the above protocol without first obtaining the approval of the NMFS IACUC, and I will not use any procedures not included in this form.

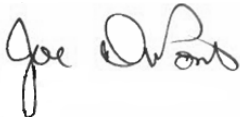
Principal Investigators/Applicants:




Sheanna Steingass
Oregon Dept. of Fish and Wildlife
Sheanna.m.steingass@state.or.us
Signed: 9/29/2020



Katherine Haman
Washington Dept. of Fish & Wildlife
Katherine.haman@state.or.us
Signed: 10/1/2020



Joe DuPont
Idaho Dept. of Fish and Game
Joe.dupont@idfg.idaho.gov
Signed: 10/1/2020

Signed:  10-9-20

Robert A Brunoe
Confederated Tribes of the Warm Springs Reservation
Robert.brunoe@ctwsbnr.org
Signed: 10/9/20



Douglas Hatch
Columbia River Intertribal Fish Commission
hatd@critfc.org
Signed: 9/29/2020

Douglas Hatch, signing for:

Dave Johnson
Nez Perce Tribe
davej@nezperce.org

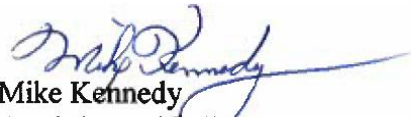
Carl Scheeler
Confederated Tribes of the Umatilla Reservation
carlscheeler@ctuir.org

Phillip Rigdon
Confederated Tribes and Bands of the Yakama Nation
prigdon@yakama.com

Members of the Willamette Committee (who have not signed above):



Kelly Dirksen
Kelly.dirkson@grandronde.org
Confederated Tribes of Grand Ronde
Signed: 9/28/2020



Mike Kennedy
Confederated Tribes of Siletz Indians
Signed: 10/5/2020

Robert A Brunoe
Confederated Tribes of the Warm Springs Reservation
Signed above.

Carl Scheeler
Confederated Tribes of the Umatilla Reservation
Signed above.

Sheanna Steingass
Oregon Dept. of Fish and Wildlife
Signed above.

Appendix A

Experimental Procedures Description(s)

Describe the animal procedures that are to be performed and the necessity in fulfilling the goals and objectives of the project. Be sure to be specific about any procedures which may impact the health and comfort of the study animals (e.g., frequency of performance of any procedures, methods of restraint, blood sample volumes, etc.). Please provide a justification for the animal numbers used.

Additional procedures continued from above:

- Blocking panels between traps are used to prevent animals from hauling out in-between traps where they potentially could become injured or entangled. Each panel is made of 3/8" thick x 48" wide commercial grade rubber belting material. Belting is 54" high and hangs from top of trap corner posts with 1/2" Blue Steel line with no gap at the bottom decking. Note: bottom of the panel can be secured to the corner posts with short lines if needed.

Appendix B

Training and Experience description(s)

The state program leaders directing this work (Steingass, Brown and WDFW staff- TBD) have at least a combined 20 years of experience in capturing, handling and marking pinnipeds from California to Alaska. This experience includes a wide variety of methods and equipment for accomplishing this work. All euthanasia procedures will be conducted and overseen by licensed agency veterinarians, including Colin Gillin and/or Julia Burco (ODFW), Kristin Mansfield and/or Katherine Haman (WDFW), and Nicole Walrath (IDFG). Program leaders have extensive experience performing necropsies and collecting biological samples of all types. All ODFW and WDFW project support staff have multiple years of direct experience in pinniped capture, handling, marking, necropsies, and biological sample collection. Several support staff and veterinarians have worked on this project since its inception providing extensive experience related to procedures and methodologies described herein. All support staff were trained directly by the state program leaders and several have had additional experience with similar programs conducted in other areas.



UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE

AFSC, MARINE MAMMAL LABORATORY

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10 October 2020

MEMORANDUM FOR: Sheanna Steingass, Katherine Haman, Joe DuPont, Robert A Brunoe, Douglas Hatch, Dave Johnson, Carl Scheeler, Phillip Rigdon, Kelly Dirksen, Mike Kennedy

FROM: Robert L. DeLong, Chair, Columbia River Sea Lion Lethal Removal Institutional Animal Care and Use Committee

SUBJECT: Letter of Assurance for IACUC Protocol Review and approval of a 3 year modification of Columbia River Predatory California Sea Lion Removal (ODFW, WDFW & IDFG 2020 – 1) to include Steller sea lions and increase the geographic area of the management action

I am pleased to notify you that your Assurance of Animal Care and Use (AAC&U) Form with IACUC Number ODFW, WDFW & IDFG 2020-2 entitled “Columbia River Predatory California and Steller Sea Lion Lethal Removal” was approved by unanimous vote by the IACUC on 5 October 2020 and now is an IACUC approved protocol.

This memorandum serves as a Letter of Assurance of Compliance (ODFW, WDFW & IDFG 2020 –2) with Animal Welfare Act Regulations and National Marine Fisheries Service IACUC Policy. This IACUC approved “Modification” is a three year renewal and has an expiration of 8 October 2023. I note that the approved protocol is limited to trapping, capturing and lethal removing sea lions at Bonneville Lock and Dam, Willamette Falls and Columbia River sites at River Mile 112 to 292 and Columbia River Tributaries. If you anticipate any significant changes in methods, personnel or number of animals used please inform the IACUC and submit a request for a modification describing the significant change. The IACUC will then convene a review of the modification request.

A copy of the approved protocol is attached.

Copy: Kelly Susewind
Curtis Melcher
Ed Schriever
Robin Brown
Colin Gillin
Kessina Lee
Robert Anderson



Grant/Project	Tissue	Purpose
Biometrics	Length, girth, blubber depth, body weight	Body condition, health data
OSG 2020-2022	Whole blood	Total and methylmercury
OSG 2020-2022	Whole blood	PFAs (Flame retardants)
OSG 2020-2022	Whole blood	Immune Assays
Leptospirosis Study, Prager UCLA	Whole Blood	Serology
Food Habits	Gastro- Intestinal Tract	Food Habits
OSG 2020-2022	Feces	Domoic acid; Molecular parasitology
OSG 2020-2022	Blubber	PBDE Analysis; PCBs, DDTs, Organochlorines
OSG 2020-2022	Whiskers	Stable isotopes and total mercury
OSG 2020-2022	Lip	Contaminants
OSG 2020-2022	Fur	Heavy metals
Archive for NMFS	Nasal Swab	Archive for National SARS-CoV-2 Baseline Monitoring
Archive for NMFS	Rectal Swab	Archive for National SARS-CoV-2 Baseline Monitoring
Archive/Contaminants	Muscle	Heavy metals
EPA 2020	Urine	Arsenic speciation
Leptospirosis Study	Urine	Leptospira PCR, Morbillivirus
OHV Monitoring (ongoing)	Reproductive Tract	Urogenital Cancer/OHV Prevalence
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Appendix Table 1. List of current samples and data being collected from lethally-removed animals to monitor sea lion individual/population health.