Endangered Species Act Section 7(a)(2) Consultation
Supplemental Biological Opinion

Supplemental Consultation on Reducing the Impacts on At-risk Salmon and Steelhead by California Sea Lions in the Area Downstream of Bonneville Dam on the Columbia River, Oregon and Washington

Action Agencies:	U.S. Army Corps of Engineers Bonneville Power Administration National Marine Fisheries Service
Consultation Conducted by:	The Protected Resources Division, Northwest Region, NOAA Fisheries' National Marine Fisheries Service
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Issued by:	for William W. Stelle, Jr. Regional Administrator
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Introduction

This supplemental biological opinion documents the National Marine Fisheries Service's (NMFS) proposed determination that the States of Idaho, Oregon, and Washington's (States) nuisance California sea lion removal program in the Columbia River from 2012 through 2016, complies with the standards of § 7(a)(2) of the Endangered Species Act (ESA). In a reinitiation of consultation NMFS is hereby supplementing the science, actions and conclusions of its March 12, 2008 (2008 BiOp) and February 20, 2009 (2009 BiOp) Biological Opinions for National Marine Fisheries Service, Bonneville Power Administration, and the U.S. Army Corps of Engineers (Corps).

On March 18, 2008, we (the National Marine Fisheries Service) issued a Letter of Authorization to the States authorizing them to remove certain California sea lions having a significant negative impact on at-risk ESA listed salmon and steelhead. That finding was made under Section 120 of the Marine Mammal Protection Act (MMPA). Before the MMPA determination was made, we also completed reviews under the National Environmental Policy Act (NEPA) and the ESA. NMFS action immediately faced legal challenge. On November 23, 2010, the Ninth Circuit instructed the district court to vacate our lethal removal authorization and remand the decision to NMFS for further explanation. The States' again requested authorization to lethally remove California sea lions from the Columbia River on December 7, 2010.

We reviewed the instructions from the Court, evaluated the States' request (Stelle 2011) and on May 12, 2011, we issued another Letter of Authorization to the States. In doing so, we also provided the additional explanation required by the court, prepared a NEPA Supplemental Information Report (NMFS 2011a), and prepared a memorandum addressing ESA consultation for the proposed authorization (May 10, 2011 memo). The May 2011 Letter of Authorization was challenged in Federal district court in Washington, D.C.. The plaintiffs alleged, similar to the 2008 lawsuit, that NMFS' issuance of the Section 120 Letter of Authorization violated the MMPA and NEPA. To ensure full compliance with all procedural requirements of Section 120, we notified the states on July 26, 2011, that we were withdrawing the May 12 authorization. The plaintiffs voluntarily dismissed their lawsuit after learning that NMFS withdrew the authorization. Shortly thereafter, the States submitted their most recent request, which is the subject of this consultation.

The purpose of this document is to complete the reinitiation of consultation on the 2009 BiOp pursuant to ESA Section 7(a)(2) for each species or designated critical habitat affected by the pinniped removal program. In doing so, NMFS is using the best science now available and taking into account the first four years of program implementation.

Consultation History and Background

Over the past decade, we have received funds to implement biological opinions for the Federal Columbia River Hydropower System. A portion of those funds has been granted to the Pacific States Marine Fisheries Commission to work with the Oregon Department of Fish and Wildlife (ODFW) and the Washington Department of Fish and Wildlife (WDFW) to reduce pinniped

predation on ESA-listed adult salmonids passing Bonneville Dam. In 2006 and 2007, we consulted with ourselves on the funding of that grant; we also consulted with the Corps who also funds and conducts (in partnership with ODFW and WDFW) non-lethal sea lion deterrence activities at Bonneville Dam. These consultations resulted in findings of "not likely to adversely affect" ESA listed salmonids or their designated critical habitats, or adversely affect Magnuson–Stevens Fishery Conservation and Management Act (MSA) essential fish habitat [consultation #s 2006/00481, 2006/01021, 2007/00896]. In 2006, Idaho Department of Fish and Game, ODFW and WDFW (collectively referred to as the States) applied for authority to lethally take, by intentional means, individually identifiable California sea lions in accordance with Section 120 of the MMPA in the vicinity of Bonneville Dam. We again consulted with ourselves on both the actions previously analyzed and on partially granting the States' application and reached a finding of not likely to jeopardize the continued existence of threatened or endangered salmonids or adversely modify their designated critical habitats, or adversely affect MSA essential fish habitat. The biological opinion also concluded that the action would not "jeopardize" the continued existence of the listed eastern distinct population segment of Steller sea lions and would have "no effect" on designated critical habitat for the species [consultation # 2008/00486].

During the first year of implementation of the 2008 letter of authorization (LOA), an accident occurred and two Steller sea lions died. Section 7 consultation was reinitiated and procedural modifications were adopted to reduce the likelihood of future mortality. The modified procedures were analyzed and a revised 2009 biological opinion and incidental take statement were prepared [consultation # 2008/08780]. The action and environmental conditions that provided the basis for the detailed description of the proposed action, action area, status of species and critical habitat, environmental baseline, and effects analysis including cumulative effects, as presented in the 2009 biological opinion are substantially unchanged, except for the minor updates presented here and are incorporated by reference.

Affected Species:

Endangered Upper Columbia River spring Chinook salmon (*Oncorhynchus tshawytscha*)
Endangered Snake River sockeye salmon (*O. nerka*)
Threatened Snake River spring/summer Chinook salmon (*O. tshawytscha*)
Threatened Lower Columbia River coho salmon (*O. kisutch*)
Threatened Columbia River chum salmon (*O. keta*)
Threatened Upper Columbia River steelhead (*O. mykiss*)
Threatened Snake River Basin steelhead (*O. mykiss*)
Threatened Middle Columbia River steelhead (*O. mykiss*)
Threatened Lower Columbia River steelhead (*O. mykiss*)
Threatened Eastern U.S. Stock Steller sea lion (*Eumetopias jubatus*)
Threatened southern distinct population segment of eulachon (*Thaleichthys pacificus*)
Threatened southern distinct population segment of green sturgeon (*Acipenser medirostris)*

Summary Description of the Proposed Action and Relationship of the Anticipated Impacts from the Action to the 2008 and 2009 Biological Opinions

The proposed action is to approve the States' August 2011 request for authorization to conduct a sea lion lethal removal program, with terms and conditions as described in the request, that is virtually identical to the program previously authorized in 2008 (i.e. – Alternative 3 from the 2008 environmental assessment (EA)). In particular, the measures, standards, and levels of sea lion removal identified in the 2008 LOA, evaluated in our 2008 EA and finding of no significant impact (FONSI), and analyzed in our 2008 and 2009 biological opinions will be continued, with the exception of two minor changes.

Proposed Action

The proposed sea lion removal program at Bonneville Dam includes two types of actions that may affect listed salmonids, green sturgeon, eulachon, and Steller sea lions. They are: (1) lethal removal of California sea lions, and (2) non-lethal deterrence of all pinnipeds, as described below. The proposal includes the amendments adopted in 2009 following a programmatic review of sea lion capture procedures conducted in response to the accidental deaths of six sea lions (including two Steller sea lions) on May 4, 2008. These actions would occur annually for a period of five years (2012-2016). The core period of operation of shore and boat based non-lethal deterrence would take place from early March through early June but removal of individually identified predatory sea lions, as proposed by the States' and authorized by NMFS under Section 120 of the MMPA, may occur at any time.

Lethal Removal of California Sea Lions

The proposed authorization allows the States to permanently remove (i.e., kill or place in permanent captivity) up to 92 California sea lions annually (1% of the potential biological removal (PBR) level for the population (Carretta et al. 2011[1])). Those animals would be removed from the action area described in the aforementioned BiOps by (1) catching them in a trap (floating dock-like structure that animals jump onto to rest and dry off) and either placing them in a display facility or killing them with lethal injection or gunshot, or (2) shooting them in the area below the dam. Various measures will be implemented to ensure that trapped animals are held, transported, and/or killed humanely; that Steller sea lions are not accidentally killed; and that public safety is maintained.

Non-Lethal Deterrence Activities

Funded by NMFS, the Corps, and the Bonneville Power Administration (BPA), the States (in partnership with the Corps and Columbia River Inter- Tribal Fish Commission (CRITFC)) propose to continue using non-lethal sea lion deterrence methods including: above water (vessel chasing, cracker shells, aerial pyrotechnics, rubber projectiles) and under water (sea lion exclusion devices (physical barriers), acoustic deterrent devices, and underwater firecrackers). A

[1] In the States' 2006 application, the PBR was 8,333 animals out of an estimated population of 237,000. In 2007 the population estimate, based on pup counts, was revised to 238,000 with a minimum population size (N_{min}) of 141, 842 and the calculated PBR was 8,511. In 2008, NMFS authorized removal of 1% of the PBR which was 85 animals. Carretta et al. 2011 estimates the current California sea lion population to be 296,750. The new PBR is now calculated at 9,200. As such, NMFS evaluation of the States' 2011 application is for the removal of 1% of PBR, which is 92 animals.

detailed description of these techniques was provided in the previous biological opinions and is incorporated by reference. Non-lethal hazing tools will be used on Steller sea lions observed on or around the sea lion traps below the dam to minimize their use of the trap platforms as resting areas.

The Corps has specified safety protocols for using underwater firecrackers within the boat-restricted zone for the protection of personnel and juvenile and adult salmonids:

- A 100-foot minimum approach distance for boats near all project structures
- A 150-foot minimum approach distance from fishway entrances
- No use of firecrackers within 300 feet of all fishways, floating orifices, Bonneville Powerhouse 2 Corner Collector, smolt monitoring facility outfalls, or within 150 feet of any shoreline or shallow area
- No more than five firecrackers per animal per encounter within the boat restricted zone
- No firecracker use within the boat-restricted zone once fish counts reach 1,000 fish per day

Seal bombs would be deployed according to manufacturer's instructions and in compliance with Corps' safety protocols. Approximately 2,500 seal bombs would be used each season during non-lethal deterrence activities.

Capture, Marking, and Relocation

Sea lions would be captured at the dam using up to four or more caged floating platforms that would be placed in locations readily accessible to the animals. The cages operate with electronically operated drop type doors which, when tripped, fall into place securing the cage and the sea lions inside. The trap door closing mechanisms are fitted with mechanical retaining pins and magnetic releases to activate the door closing systems. California sea lions would be handled and potentially marked according to protocols outlined in the MMPA permit held by ODFW. Steller sea lions may be handled pursuant to a separately issued MMPA/ESA Scientific Research Permit (Number 14326) or immediately released from the trap with minimal handling and according to agency pinniped safe handling protocols. When trapping activities are not scheduled, the trap doors will be secured with mechanical or electronic magnetic locks so that the doors cannot be accidentally tripped. Under these circumstances the locked traps will be monitored several times per day for animal presence and trap condition.

During active capture operations the traps would be unlocked and monitored hourly throughout the day to be sure the doors remain open until intentionally tripped. The traps would be monitored day and night using a combination of physical visits to the trap site, viewing from the Washington shoreline, and/or remote camera observation as visibility permits.

Changes from the Previous Action

The specific changes in the current proposed authorization compared with the 2008 LOA are 1) the elimination of the 1% average salmonid predation rate threshold for suspending lethal removal activities (Condition 15 in the 2008 LOA); and 2) modification of criteria for defining "individually identifiable predatory California sea lion" to also include animals seen taking salmonids in the fish ladders or above Bonneville Dam.

The detailed rationale for these changes is presented in the Supplemental Information Report prepared for the proposed action. The 1% average salmonid predation rate threshold for suspending activities is unnecessary because the number of California sea lions (CSLs) that would be authorized for removal under the proposed action (1% of the potential biological removal level for the marine mammal stock) is adequate to protect the sea lion population. Salmonid predation rate expressed as a percentage of the adult return fluctuates widely with the strength of the run. It is an unreliable measure of the risk posed by predation on listed salmonids because predation at or below 1% of the run return can represent several thousand fish indicating that predation is not controlled and the risk of continuing predation can still be high.

The minor modification to include CSLs observed taking salmonids in the fish ladders or above the dam will address circumstances such as the one observed sea lion (C697) preying on salmonids above Bonneville Dam in 2010, and the possibility that additional CSLs may learn to successfully forage in the fish ladders or above the dam in the future. Sea lion C697 had been observed in the tailrace numerous times before being observed taking fish in the forebay. He was captured and released downstream (because he hadn't been observed taking fish in the tailrace observation area prior to moving upstream). The 2008 LOA required that to be eligible for removal a sea lion must have been observed taking salmonids in the observation area below the dam. Ultimately C697 captured above the dam and released on the coast, returned, was observed taking salmonids below the dam, and was removed. The delayed removal resulted in additional predation by this individual prior to recapture.

Except for these minor changes to the administration of the authorization, there are no changes to the three activities specified above (lethal removal, non-lethal deterrence, and capture) from those implemented in 2008, 2009 and 2010 under the 2008 LOA, and 2011 under the 2011 LOA. This document provides a brief summary and update of the Environmental Baseline and the Effects Analysis from the 2008 and 2009 biological opinions to examine the anticipated impacts from implementation of our proposed authorization to the States to lethally remove California sea lions, our and BPA's funding of non-lethal sea lion deterrence activities, and the Corps' continuing program to deter nuisance sea lions from entering the adult fish passage system at Bonneville Dam for the period of 2012 through 2016

Action Area

The proposed action would be implemented at Bonneville Dam. Bonneville Dam is located on the Columbia River at river mile 146, approximately 42 highway miles east of Portland, Oregon. The Oregon-Washington state boundary lies along the main Columbia River channel, dividing the project area between the two states. The Bonneville Lock and Dam facility includes two navigation locks, two powerhouses, a spillway, fish passage facilities, a fish hatchery, and two visitor complexes administered by the Corps.

The action area is the Columbia River from approximately river mile 140 – 147. The proposed action would occur in the section of the Columbia River starting at navigation marker 85 (approximately river mile 140) continuing upstream to the immediate vicinity of the Bonneville tailrace, dam and forebay. This is a slight change from the area described in 2009 because an additional mile has been added upstream of the dam in the forebay area to accommodate

observations of predation in that area. The downstream "observation area" (composed of three zones) used by the Corps in their monitoring efforts and the Boat Restricted Zone (BRZ) remain unchanged from the area described in the 2008 and 2009 biological opinions. Observers at the dam may conduct observations in the forebay to document sea lion abundance, attendance, and predation in the area. As with the prior authorization, California sea lions would only be shot within the BRZ. The trapping, marking and possible lethal injection operations would occur within the BRZ or in the forebay, as well as at an existing and permitted sea lion trapping operation (Astoria, Oregon). The forebay has been added to the description of the area where trapping may occur. For clarification, however, we specifically consider that the 2008 authorization allowed trapping activities coastwide except for rookeries. The coastwide trapping authorization is unchanged in the proposed action considered here[2].

STATUS OF THE SPECIES AND CRITICAL HABITAT

The ESA defines species to include "any subspecies of fish or wildlife or plants, and any distinct population segment (DPS) of any species of vertebrate fish or wildlife which interbreeds when mature." An 'evolutionarily significant unit' (ESU) of Pacific salmon (Waples 1991) and a 'distinct population segment' (DPS) of steelhead (71 FR 834; January 5, 2006) are considered to be 'species,' as defined in section 3 of the ESA.

Recently Listed Species

Two additional species, listed under the ESA were not included in the 2009 biological opinion. The southern DPS of eulachon (*Thaleichthys pacificus*) listed as threatened in 2010 (75 FR 13012, March 18, 2010) and the southern DPS of green sturgeon (*Acipenser medirostris*) listed as threatened in 2006 (71 FR 17757, April 7, 2006). Critical habitat has been designated for both of these species (74 FR 52300, October 9, 2009 (sturgeon); 76 FR 65324, October 20, 2011(eulachon)). This document will serve as our determination that the proposed action is not likely to adversely affect these species and their critical habitats.

Southern DPS of Eulachon

Eulachon occur in the Columbia River and many of the major tributaries in the lower Columbia River Basin (Gustafson et al. 2010). Historically the range of eulachon in the Columbia River likely extended as far upstream as Cascade rapids (Oregon Fish Commission 1953), although some fish may have ascended as far as Hood River (Smith and Saalfeld 1955), bypassing Cascade Rapids via Cascade Locks. Following completion of Bonneville Dam both Cascade Rapids and Cascade Locks were submerged, removing the rapids as a passage barrier. It is highly unlikely that eulachon can ascend the Bonneville Dam fish ladder, but they have been documented passing through the dam shipping locks (Oregon Fish Commission, 1953) and smolt bypass facilities (Martinson et al. 2010). Eulachon have been reported upstream of the dam in

[2] The only sea lion trap in current operation outside of the area immediate to Bonneville Dam is located in the East Mooring Basin, in Astoria Oregon. That research and monitoring trap has been in operation since the early 1990s. While it has been used to capture and tag, and lethally remove California sea lions, it has never had a Steller sea lion haul out on it (Brown Pers Comm. January 13, 2012). If a Steller sea lion was to haul out on the Astoria Trap, or for that matter any coastal traps used in the future to capture California sea lions for lethal removal, it would be released unharmed. Any impact that may result to a Steller sea lion on a trap in Astoria would be equivalent to the impact of a Steller sea lion being subjected to trapping activities at Bonneville Dam.

several years, including significant numbers in 1945 and 1953 (Oregon Fish Commission 1953; Smith and Saalfeld 1955) and sporadically in recent years, 1988 (Johnsen et al., 1988), 2003 (Corps, 2003), and 2005 (Martinson et al., 2010). It is unknown whether eulachon spawn in the Columbia River in the immediate vicinity of Bonneville Dam, but the nearest documented eulachon spawning area is the Sandy River at Columbia River mile 120.

Eulachon behavior in the area immediately downstream of Bonneville Dam is poorly studied. We assume that eulachon movements are restricted to slower moving water because of their size and purported poor swimming ability (Lewis et al. 2002) and used juvenile salmonids as a surrogate for estimating potential behavioral effects. The number of eulachon that ascend as far as Bonneville Dam is unpredictable but expected to be small because the majority of the eulachon entering the river either spawn in the lower river or are drawn to down river tributaries to spawn (including the Cowlitz, Grays, Kalama, Lewis, and Sandy Rivers).

The chance of effects from sea lion deterrence activities impacting eulachon are discountable and/or insignificant because of the remote likelihood of exposure, the existing safety protocols, and the limited nature of the anticipated effects. Eulachon have not been documented in the area since 2005 and only sporadically before that. Safety protocols for underwater firecracker use that have been in place since 2006 to protect both adult and juvenile salmonids would also likely benefit eulachon in the highly unlikely event that they were present in the areas in which deterrence activities are conducted. There have been no reported surface behaviors, injuries or mortalities of eulachon associated with the non-lethal pinniped deterrence activities conducted in the action area for the last seven years (2005 through 2011). Under water firecrackers are most often used in proximity to the power houses to initiate vessel pursuit of sea lions and the strong currents in the areas below the power houses would not be accessible to eulachon. Exposure to vessel noise and residual sound energy from aerial and underwater deterrents may elicit a short-term startle response from fish but it is not anticipated to cause individual fish to abandon or significantly alter their normal behavior, and would therefore be insignificant. Residues from pyrotechnics (paper, carbon, sulfur) would be carried away by the wind or quickly diluted in the flowing water and therefore would have no measurable effects. Underwater firecrackers have not been used in the lock chamber or fish bypass facilities where eulachon have been documented. NMFS concludes that the proposed action would not adversely affect the southern DPS of eulachon.

Critical habitat was designated for eulachon on October 20, 2011 (76 FR 65324).Critical habitat for eulachon includes portions of 16 rivers and streams in California, Oregon, and Washington. All of these areas are designated as migration and spawning habitat for this species. In Oregon, 24.2 miles of the lower Umpqua River, 12.4 miles of the lower Sandy River, and 0.2 miles of Tenmile Creek have been designated. The mainstem Columbia River from the mouth to the base of Bonneville Dam, a distance of 143.2 miles is also designated as critical habitat. The lateral extent of critical habitat is defined as the width of the stream channel defined by the ordinary high water line, as defined by the U.S. Army Corps of Engineers in 33 CFR 329.11.

The physical or biological features of freshwater spawning and incubation sites, include water flow, quality and temperature conditions and suitable substrate for spawning and incubation, as well as migratory access for adults and juveniles. These features are essential to conservation

because without them the species cannot successfully spawn and produce offspring. The physical or biological features of freshwater migration corridors associated with spawning and incubation sites include water flow, quality and temperature conditions supporting larval and adult mobility, abundant prey items supporting larval feeding after the yolk sac is depleted and free passage (no obstructions) for adults and juveniles. These features are essential to conservation because they allow adult fish to swim upstream to reach spawning areas and they allow larval fish to proceed downstream and reach the ocean.

The effects of the actions on eulachon critical habitat are expected to be insignificant. The proposed action will not affect river flow; and will not alter the abundance or distribution of other fish species in the area (therefore no effect on forage). Any artificial obstructions to fish passage are likely to be minor and temporary. Adult fish passing through the action area are traveling below the surface of the water and are likely attempting to avoid pinnipeds. Vessel activity, underwater firecrackers and rubber or live bullets are unlikely to cause more than a momentary obstruction to fish passage, if at all. The proposed action will not substantially affect water quality. Vessel discharges or spills associated with the deterrence activities are likely to be minor and quickly dissipate in the fast-moving and large river. NMFS concludes that the proposed action may affect, but is not likely to adversely affect southern DPS eulachon critical habitat.

Southern DPS of Green Sturgeon

Green sturgeon may occur in the Columbia from the mouth to Bonneville Dam but abundance in the river is concentrated in the lower estuary below river mile 46. Observers at Bonneville Dam have reported predation by pinnipeds on white sturgeon below the dam from 2002 to 2011 but no predation events involving green sturgeon have been reported. There have been no reported surface behaviors, injuries or mortalities of green sturgeon associated with the non-lethal pinniped deterrence activities conducted in the action area for the last seven years (2005 through 2011). Green sturgeon are a bottom-oriented species and have been observed to hold in deep pools throughout the spring and summer months to feed and conserve energy (Benson et al. 2007; Erickson et al. 2002). It is likely that any green sturgeon in the action area would not be found near the surface, thus their exposure to the effects of the proposed action would be minimized.

Based on the low likelihood of occurrence, existing safety protocols, and lack of any observed evidence of exposure to previous activities, NMFS has determined that activities under the proposed authorization, including non-lethal pinniped deterrence activities are not likely to adversely affect listed green sturgeon.

Critical habitat was designated for green sturgeon in 2009 (74 FR 52300; October 9, 2009) and includes the lower Columbia River estuary below river mile 46. There is no designated critical habitat for green sturgeon in the action area and the area in the Columbia River from river mile 46 to Bonneville Dam is considered to be of low conservation value for the species. NMFS concludes that the proposed action would not adversely affect green sturgeon critical habitat.

Columbia River Basin Salmon and Steelhead

In the Columbia River basin there are currently13 ESUs/DPSs of salmon and steelhead listed as threatened or endangered under the ESA. Of these 13 listed species, nine have a geographic range that overlaps with the action area and have juvenile or adult run-timing that coincides with the period when pinnipeds are present below Bonneville Dam and would therefore be present when the California sea lion removal program takes place.

The nine ESUs/DPSs of salmonids whose spatial and temporal distributions coincide with the presence of pinnipeds in the action area are the: (1) Upper Columbia River spring-run Chinook salmon ESU; (2) Snake River spring/summer-run Chinook salmon ESU; (3) Snake River sockeye salmon ESU; (4) Upper Columbia River steelhead DPS; (5) Snake River Basin steelhead DPS; (6) Middle Columbia River steelhead DPS; (7) Lower Columbia River steelhead DPS; (8) Columbia River chum salmon ESU, and (9) Lower Columbia River coho salmon ESU. The extinction risk and ESA listing classifications for these ESUs/DPSs was recently confirmed (76 FR 50448, August 15, 2011). This review found salmonid population status remains substantially unchanged or slightly improved from that described in 2009. Therefore, the species descriptions, listing history, viability ratings and current status reported in the 2009 biological opinion are incorporated by reference. *See also* 2011 Salmonid Status Reviews.

Salmonid Critical Habitat

Critical habitat has been designated for 12 of the 13 listed salmonids in the Columbia River basin (the exception being lower Columbia River coho salmon[3]). The proposed action would occur in the designated critical habitat of 10 ESUs/DPSs with designated critical habitat (that is, all nine salmonids affected by the proposed action and one not affected by the action). The dates of designation and a general description of the area designated, for the affected ESUs/DPSs, with federal register citations (58 FR 68543; December 28, 1993, 64 FR 57399; October 25, 1999, 70 FR 52630; September 2, 2005) were provided in the 2009 biological opinion and are incorporated by reference.

Steller Sea Lions

Steller sea lions were listed as threatened under the ESA in 1990 (55 FR 49204; November 26, 1990) across their entire range. Further research on stock structure and continued declines in the western portion of the population led to a listing of the western U.S. DPS as endangered in 1997 (FR 62, 24345; May 5, 1997) however the eastern U.S. DPS remained listed as threatened. Steller sea lions in Washington and Oregon are from the eastern DPS[4]. The Recovery Plan for the Steller Sea Lion, published March 5, 2008 (73 FR 11872; March 5, 2008) identified eight factors as having the potential to influence the population including (1) predation; (2) harvest, killing, and other human impacts; (3) entanglement in debris; (4) parasitism and disease; (5) toxic substances; (6) global climate change; (7) reduced prey biomass and quality; and (8) disturbance. With exceptions in southern and central California, populations associated with the majority of west coast rookeries from northern California to southeast Alaska have either increased or stabilized at relatively high levels in recent years. General life history, distribution

[3] Critical habitat for Columbia River coho salmon is expected to be proposed in early 2012.

[4] On August 30, 2010, the states of Alaska, Washington and Oregon submitted petitions to de-list the eastern US stock of Steller sea lions. NMFS is currently conducting a status review of Steller sea lions but has not yet announced the results of that review.

and population status information with references were provided in the 2009 biological opinion, remain unchanged and are incorporated by reference.

Steller Sea Lion Critical Habitat

There is no critical habitat for Steller sea lions designated within the action area. A review of the status of critical habitat for the eastern U.S. DPS of Steller sea lions can be found in the final Steller sea lion Recovery Plan (NMFS 2008).

ENVIRONMENTAL BASELINE IN THE ACTION AREA

Environmental baselines for biological opinions are defined by regulation at 50 CFR 402.02, which states that an environmental baseline includes the past and present impacts of all Federal, State, or private actions and other human activities in the action area, the anticipated impacts of all proposed Federal projects in the action area that have already undergone formal or early section 7 consultation, and the impact of State or private actions which are contemporaneous with the consultation in process.

Listed Salmonids

The environmental baseline for listed salmonids in the action area, including elements of critical habitat in freshwater migration corridors, is functionally the same from the conditions described in the 2009 biological opinion and is incorporated by reference. While the level of non-lethal deterrence effort may have varied since the previous analysis, the impacts are similar to those previously identified.

Steller Sea Lions

Steller sea lions were first observed below Bonneville Dam in 2003 when three individuals were reported. By 2006, that number had grown to 11 (compared to more than 70 individually identified California sea lions) (Stansell 2010). During the 2007 season, Steller sea lions were first observed at the dam on December 10, 2006. Up to nine Steller sea lions were observed on any one day during the early spring, but numbers and attendance at the dam dropped dramatically following the initiation of concentrated hazing effort on February 28, 2007. The first Steller sea lion seen in the tailrace at the beginning of the 2008 season was observed on November 6, 2007. The estimated number of individual pinnipeds observed at Bonneville Dam in 2008 was higher than estimates from the previous three years (Tackley et al 2008). Up to 17 Steller sea lions were observed on any one day during the spring, but unlike their behavior in 2006 and 2007, Steller sea lions did not leave after dam- and boat-based hazing commenced in 2008. The minimum estimated total number of Steller sea lions at the dam was 39 in 2008, 26 in 2009, 75 in 2010, and 89 in 2011. The 2008 through 2011 Steller sea lion estimates were made using different methodology initiated by the Corps in 2009 (Stansell et al 2009). Prior to 2009, the maximum daily count of Steller sea lion observed during the season was used as the minimum estimated number present during that year. In 2009, the Corps began a review of Steller sea lion observation data and used observations of unique markings (anatomical features, color patterns, scars, etc) to identify individual animals and refine the minimum estimated number of Steller sea lions present. The methodology is similar to that used when assessing California sea lions at the dam. Applying the new methodology to data from the 2008 season,

the Corps estimated that the minimum number of SSLs at the dam was 39 (32% of the total pinnipeds present), or more than twice as many as was estimated using the maximum daily count (17) as the basis for the estimate for that year. The minimum estimated total number of Steller sea lions was 26 in 2009 (32%) but jumped to 89 in 2011 or 62% of all pinnipeds present. Using the new methodology consistently over the four years from 2008 – 2011 changes the baseline estimate for Steller sea lions beginning in 2008 but also indicates that there was an actual increase in the number of Steller sea lions present at the dam between 2008 and 2011.

Steller sea lions at Bonneville Dam feed primarily on white sturgeon (Stansell 2007). Additional summary data from the Corps for 2002 – 2007 identifies prey preference by species, attributing 99.2 percent of observed salmonid take to California sea lions, 99.2 percent of observed lamprey take to California sea lions, and 97.8 percent of observed sturgeon take to Steller sea lions (R. Stansell, pers. comm., Corps, September 4, 2007). Observations in 2008 showed similar trends, with 96.2 percent of the salmonid predation being attributed to California sea lions and 97.7 percent of white sturgeon takes coming from Steller sea lions (Tackley et al 2008). In 2008 – 2011 salmonid consumption by Steller sea lions began to increase. Table 1 shows the expanded catch of salmonids by California sea lions and Steller sea lions based on surface observations. California sea lions still take the majority of salmonids at the dam but Steller sea lion predation was greater than 28% of the salmonids taken by pinnipeds in 2011. Regardless of increasing numbers of Steller sea lions at the dam, the action area is one of many areas available to Steller sea lions for foraging and we consider it to be of marginal importance given that the vast majority of Steller sea lions in the lower Columbia are concentrated in the lower estuary near the mouth of the river (up to 1000 animals seasonally at the South jetty). The individuals present in the action area represent a small fraction of the overall Steller sea lion population.

Table 1 –Estimates of Salmonids Caught by California and Steller sea lions based on Surface Observations 2002 through 2011

		All Pinnipeds			CSL			SSL	
	Total	Estimated	%		Estimated	%		Estimated	%
	Salmonid	Salmonid	Run		Salmonid	Catch		Salmonid	Catch
Year	Passage	Catch	Taken		Catch	Taken		Catch	Taken
2002	281,785	1,010	0.36%		1,010	100%		0	0%
2003	217,934	2,329	1.06%		2,329	100%		0	0%
2004	186,770	3,533	1.86%		3,516	99.5%		13	0.5%
2005	81,252	2,920	3.47%		2,904	99.5%		16	0.5%
2006	105,063	3,023	2.80%		2,944	97.4%		76	2.6%
2007	88,476	3,859	4.18%		3,846	99.6%		13	0.4%
2008	147,534	4,466	2.94%		4,294	96.1%		172	3.9%
2009	186,060	4,489	2.36%		4,037	89.9%		452	10.1%
2010	267,184	6,081	2.23%		5,095	83.8%		986	16.2%
2011	223,380	3,557	1.60%		2,527	71.0%		1,030	28.9%

Source: Expanded estimates of observed predation Stansell et al 2011.

EFFECTS OF THE PROPOSED ACTIONS

NMFS section 7 regulations at 50 CFR 402.02 define the effects of the action as "the direct and indirect effects of an action on the species or critical habitat, together with the effects of other activities that are interrelated or interdependent with that action, that will be added to the environmental baseline." 50 CFR part 402 directs us to determine whether the effects of an action can "reasonably would be expected . . . to reduce appreciably the likelihood of both survival and recovery of a listed species in the wild by reducing the reproduction, numbers, or distribution of that species." This is known as the jeopardy determination. This biological opinion does not rely on the regulatory definition of 'destruction or adverse modification' of critical habitat at 50 C.F.R. 402.02. Instead, we have relied upon the statutory provisions of the ESA to complete the following analysis with respect to critical habitat.[5]

Effects on Critical Habitat

Salmonid Critical Habitat

The field activities to be conducted under the proposed authorization are the same as those previously analyzed in the 2009 biological opinion (incorporated by reference) and no new effects on salmonid critical habitat are anticipated.

Steller Sea Lion Critical Habitat

There would be no effect on Steller sea lion critical habitat because there is no designated habitat within hundreds of miles of the action area (the closest critical habitat is off the Southern Oregon coast).

Effects on Species

Effects on Salmonids

The potential direct and indirect effects on listed salmonids from the pinniped deterrence program at Bonneville Dam remain unchanged from the 2009 biological opinion (incorporated by reference) because activities at the dam will be the same as those previously assessed. The effects of surface activities directed at sea lions, vessel hazing, aerial pyrotechnics, and cracker shells present no new or unknown risks compared to those previously considered. Safety protocols for the use of underwater firecrackers that were implemented to protect fish will remain in place.

In 2005, the first year of non-lethal sea lion deterrence testing below Bonneville Dam, approximately 100 juvenile and one adult salmonids were observed reacting (coming to the surface, erratic swimming) to the use of seal bombs. This event led to the establishment of the seal bomb use protocol described above. No adult or juvenile salmonids were observed reacting, injured, or killed during the non-lethal sea lion deterrence activities during sea lion control operations in 2006, 2007, or in 2008 (NMFS 2007 and Brown et al 2008). Field reports prepared by Corps and the States on activities conducted between 2008 and 2011 did not address salmonid

[5] Memorandum from William T. Hogarth to Regional Administrators, Office of Protected Resources, NMFS (Application of the "Destruction or Adverse Modification" Standard Under Section 7(a)(2) of the Endangered Species Act) (November 7, 2005).

injury or mortality resulting from non-lethal deterrence activities. The Corps, however, confirmed that no injuries or mortalities of salmonids associated with non-lethal pinniped deterrence measures have been observed since 2008 and that they have no evidence to suggest any fish injured or killed due to any of the hazing/non-lethal deterrents over the years (R. Stansell pers. comm. 2012). The observations conducted between 2008 and 2011 have not revealed any new or unanticipated effects on listed salmonids.

Take – The estimated abundances of returning adults and juvenile salmonids migrating through the action area are expected to fall within the range examined in 2009. Given the numbers of listed fish (both adult and juvenile) likely to be present during the action, the small likelihood of actually encountering them, and the even smaller chance that they will suffer any permanent ill effects from any such encounters, NMFS determined that the non-lethal deterrence and removal actions are likely to cause the following levels of take. For the duration of the action (2012 through 2016), and based on the observations made in 2005, we anticipate a yearly harassment of up to 100 adult salmonids and a lethal take of up to 10 adult salmonids. Because all the ESUs and DPSs will be distributed throughout the action area in a more or less random fashion, those numbers represent totals for all species combined. Further, and for the same reasons, we also anticipate that up to 1,000 salmonid smolts may be harassed, and up to 100 salmonid smolts may be killed yearly. The list of affected species and estimates of potential impact between life stages were presented in Tables 9 & 10 in the 2009 biological opinion and are incorporated by reference. Given that there have been no observed salmonid injuries or mortalities following the implementation of protective safety measures for underwater firecrackers, the previous take estimate has not been exceeded and appears conservative and adequate for the proposed action through 2016.

Effects on Steller sea lions

The deterrence activities conducted in the field under the proposed authorization will not change and there are no new or anticipated direct effects beyond those previously assessed in the 2009 biological opinion (incorporated by reference).[6] ODFW, WDFW, and CRITFC conducted non-lethal pinniped deterrence activities from boats downstream of the dam during the four years since the issuance of the 2008 LOA. In 2008, boat based hazers deployed 9,225 crackershells, 3,148 seal bombs, 590 rubber buckshot rounds resulting in 523 Steller sea lion harassment takes during 1,353 reported hazing events as animals were chased from the observation area (Brown et al. 2008). Even though Steller sea lion numbers increased from 2008 through 2011 the number of harassment takes declined as boat hazing crews became more involved in sea lion trapping activities which will be discussed further below. In 2009, 10,227 crackershells, 1,627 seal bombs, 168 rubber buckshot rounds were used resulting in 427 Steller sea lion takes by harassment (Brown et al. 2009). In 2010, 337 Steller sea lion takes by harassment were reported with 4,921 crackershells, 777 seal bombs, and 97 rubber buckshot rounds deployed (Brown et al. 2010). In 2011, 359 Steller sea lion takes by harassment were reported with 7,839 crackershells and 2,439 seal bombs. (Brown et al. 2011) Individual Steller sea lions may be harassed multiple times over the course of a day as they move from place to place around the tailrace or from day

[6] The taking of Steller sea lions in a humane manner by governmental officials or their designees acting in the course of their official duties related to the nonlethal removal of nuisance animals is authorized by 50 CFR 223.202(b)(2). Consequently, the take of Steller sea lions anticipated to occur under this removal and deterrence program is not prohibited and does not require a separate take exemption.

to day over the course of a season. The observations conducted between 2008 and 2011 have not revealed any new or unanticipated effects on listed Steller sea lions.

Harassment - In 2008, the non-lethal deterrence activities took place during daylight hours over 89 days from December 12, 2007 through May 15, 2008. A total of 523 harassment "takes" of Steller sea lions were recorded during 749 hazing events. (California sea lions are the primary target for hazing activities, multiple animals may be "taken" in a single hazing event and animals that return repeatedly may be taken multiple times.) The harassment take therefore exceeded the estimate in the 2008 biological opinion (Tracking Number F/NWR/2008/00486). The main reason for this is that the animals showed increased tolerance to the hazing activity in 2008. In addition, the number of Steller sea lions present during the season increased substantially in 2008 over 2006/07 levels. Given the observed increase in numbers of Steller sea lions in 2008, combined with the observed behavioral changes we concluded, in the 2009 biological opinion, that the trend would likely stabilize or continue to increase. Accordingly, and based on the experience in 2008, we estimated up to 889 harassment takes of Steller sea lions could occur annually throughout the period of 2009 through 2012 (consultation # 2008/08780). Although the trend in abundance has continued upward, actual harassment takes of Steller sea lions have declined as shown above. Based on the observed take levels under the prior authorization and activities as amended in 2009, the estimated take level (889) was not exceeded in 2009, 2010, and 2011, and appears conservative and adequate for the proposed action through 2016. It is unlikely that the non-lethal deterrence activities will kill or injure any animals because no marine mammal injuries or mortalities have been observed during the four years the program has run so far. In addition, no Steller sea lions have been injured or killed during trapping operations since additional safety measures were implemented in 2009. Those safety measures will remain in place under the proposed authorization.

Cumulative Effects

Cumulative effects are those effects of future Tribal, state, local or private activities, not involving Federal activities that are reasonably certain to occur within the action area. Because the action are is located in close proximity to Bonneville Dam and entirely within the Columbia River Gorge National Scenic Area, we anticipate that *all* future activities that could in any way alter habitat or affect listed species will undergo Federal consultation. Therefore, there are not likely to be any cumulative effects—as the ESA defines them—that would impact listed species in the action area.

Integration and Synthesis

The Integration and Synthesis section is the final step of NMFS' assessment of the risk posed to species and critical habitat as a result of implementing the proposed action. In this section, we add the effects of the action to the environmental baseline and the cumulative effects to formulate the agency's biological opinion as to whether the proposed action is likely to: (1) result in appreciable reductions in the likelihood of both survival and recovery of the species in the wild by reducing its numbers, reproduction, or distribution; or (2) reduce the value of designated or proposed critical habitat for the conservation of the species. These assessments are made in full consideration of the status of the species and critical habitat.

The status of the salmon ESUs and steelhead DPSs affected by the proposed action varies. As noted in our most recent 5-year review, some species, such as the UCR spring-run Chinook salmon remain at high risk, while other species, such as the MCR steelhead are at lower risk but may still become endangered in the foreseeable future. Increased pinniped predation has been identified as a threat to all of the salmon and steelhead species addressed by this consultation. The proposed action will reduce pinniped predation and should improve the abundance and productivity of the salmon and steelhead species affected by the proposed action. A very small number of salmon or steelhead may be killed or injured by the proposed action. When considered in the context of total ESU and DPS abundance, the number of fish killed (10 adults and 100 juveniles per year) and harassed (100 adults and 1,000 juveniles) at irregular and unpredictable intervals is far too small to cause any measurable effect of population abundance or productivity given the uncertainty in estimating extinction risk. Additionally, these effects are spread over all of the ESUs and DPSs and no one species is likely to be disproportionally affected. It is likely that no more than 1 adult and approximately 10 juveniles from each species will actually be killed by the proposed action. For these reasons, neither the survival nor the recovery of any salmonid species is likely to be appreciably reduced. Given, the anticipated reduction in pinniped predation, salmonid species likely will benefit from this action.

As noted in the 2009 biological opinion, critical habitat for salmon and steelhead in the Columbia River basin has been degraded by a number of human activities including hydropower development, urban development, agriculture, timber harvest, mining, and road construction. Although the proposed action will occur within an area designated as critical habitat for a number of salmon and steelhead species, no long-term effects on critical habitat will occur. Critical habitat within the action area is only used as a migration corridor for salmon and steelhead. The elements of free passage and water quality may be temporarily impacted by the use of explosives, but this effect will be temporary and of short duration. The proposed action will have no measureable effect on the ability of this critical habitat to serve its intended conservation role (providing an adequate freshwater migration corridor to and from spawning areas).

As described above, this program may result in short term disturbance or displacement from the area immediately below Bonneville Dam but is not expected to have any lasting adverse effect on the Steller sea lions that travel up the river from its mouth (146 miles) where the majority of Steller sea lions in the estuary congregate. We anticipate that the entire deterrence and removal operation will have no measurable impact on the range wide abundance or reproduction of the species. Since boat based non-lethal hazing began in 2005 there have been no observed injuries to Steller sea lions associated with the activity. Observations of Steller sea lions at the dam since 2008 show that individual animals have become tolerant of the disturbance, move to avoid vessel hazing, but return from day to day and season to season. In addition the number of Steller sea lions in the area increased over time indicating that non-lethal deterrence has not precluded the species from entering or foraging in the tailrace. New equipment and operating procedures for the sea lion trapping activities at the dam have reduced the risk of accidental entrapment for animals hauling out on the traps including Steller sea lions. There have been no accidental entrapments, injuries or mortalities at the traps since the new procedures were implemented in 2009. The anticipated effects, primarily, short term disturbance or displacement of Steller sea

lions in the area downstream from Bonneville Dam, will have no measurable impact on the reproduction, numbers, or distribution of Steller sea lions and therefore will not appreciably reduce the survival or the recovery of the species.

Conclusion

After reviewing the current status of the listed species, the environmental baseline within the action area, the effects of the proposed action, and cumulative effects, it is NMFS' biological opinion that the proposed action is not likely to jeopardize the continued existence of listed salmonid stocks or Steller sea lions or to destroy or adversely modify these species designated critical habitat.

As noted above, we have also determined that the proposed action is not likely to adversely affect the southern DPS of eulachon, the southern DPS of green sturgeon, or their critical habitats.

INCIDENTAL TAKE STATEMENT

Section 9 of the ESA and Federal regulation pursuant to section 4(d) of the ESA prohibit the take of endangered and threatened species, respectively, without a special exemption. Take is defined as to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or to attempt to engage in any such conduct. Harm is further defined by regulation to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing essential behavioral patterns, including breeding, feeding, or sheltering. Incidental take is defined as take that is incidental to, and not the purpose of, the carrying out of an otherwise lawful activity. For purposes of this consultation, we interpret "harass" to mean an intentional or negligent action that has the potential to injure an animal or disrupt its normal behaviors to a point where such behaviors are abandoned or significantly altered.[7] Section 7(b)(4) and Section 7(o)(2) provide that taking that is incidental to an otherwise lawful agency action is not considered to be prohibited taking under the ESA, if that action is performed in compliance with the terms and conditions of this incidental take statement.

Amount or Extent of Take

The proposed actions will take place in the Columbia River mainstem near Bonneville Dam during times when they will likely have an adverse effect on juvenile and adult endangered upper Columbia River spring Chinook salmon, endangered Snake River sockeye salmon, threatened

[7] NMFS has not adopted a regulatory definition of harassment under the ESA. The World English Dictionary defines harass as "to trouble, torment, or confuse by continual persistent attacks, questions, etc." The U.S. Fish and Wildlife Service defines "harass" in its regulations as an intentional or negligent act or omission which creates the likelihood of injury to wildlife by annoying it to such an extent as to significantly disrupt normal behavioral patterns which include, but are not limited to, breeding, feeding, or sheltering (50 CFR 17.3). The interpretation we adopt in this consultation is consistent with our understanding of the dictionary definition of harass and is consistent with the U.S. Fish and Wildlife interpretation of the term.

Snake River spring/summer-run Chinook salmon, threatened lower Columbia River coho salmon, threatened Columbia River chum salmon, threatened upper Columbia River steelhead, threatened Snake River Basin steelhead, threatened middle Columbia River steelhead, and threatened lower Columbia River steelhead. Salmonid habitat in this area will not be affected to any measurable degree.

Incidental take will include the following: (1) harassment of juvenile and adult fish by the use of vessels and sea lion deterrence devices (see Proposed Action); and (2) actual salmonid mortalities (both adult and juvenile) due to the use of sea lion deterrence devices

NMFS anticipates that up to 1,000 juvenile individuals of the listed salmonid species considered in the consultation will be harassed during the proposed activities and a maximum of 100 may be killed. NMFS further anticipates that 100 adult individuals may be harassed and 10 may be killed during the course of the proposed activities[8]. These take levels are for *each year* of the five-year planned deterrence and removal operation. Because the individual fish that are likely to be harassed or killed by this action are from different listed species that would be distributed relatively randomly in the action area and, moreover, are similar to each other in appearance and life history (and to unlisted species that occupy the same area), it is not possible to assign this take to individual listed species.

As stated above, the actions are not likely to have any measurable effect on habitat; therefore we do not anticipate there will be any take associated with habitat alterations.

The estimated numbers of salmonids to be harassed and killed are thresholds for reinitiating consultation. Exceeding any of these limits will trigger the reinitiation provisions of this Opinion.

Reasonable and Prudent Measures and Terms and Conditions

"Reasonable and prudent measures" are nondiscretionary measures to minimize the amount or extent of incidental take (50 CFR 402.02). "Terms and conditions" implement the reasonable and prudent measures (50 CFR 402.14). These must be carried out for the exemption in section 7(o)(2) to apply.

Reasonable and Prudent Measures
The action agencies shall ensure that:

1. The Corps' safety protocols for using deterrence devices are followed.
2. Non-lethal Deterrence measures are carried out in accordance with the devices' manufacturers' instructions.
3. NMFS receives a yearly monitoring report on the deterrence, capture, and removal activities.

[8] Crews that are using sea lion deterrence devices are trained to observe for impacts to marine mammals and fish species. If fish are taken they will be collected and recorded, and those takes reported to NMFS.

Terms and Conditions

1. To implement reasonable and prudent measure #1, the action agencies shall ensure that:

- Boats keep a 100-foot minimum approach distance from all project structures.
- Boats keep a 150-foot minimum approach distance from fishway entrances.
- No firecrackers are used within 300 feet of any fishway, floating orifice, Bonneville Powerhouse 2 Corner Collector, smolt monitoring facility outfall, or within 150 feet of any shoreline or shallow area.
- Firecracker use is limited to no more than five per animal per encounter within the boat restricted zone.
- No firecracker is used within the boat-restricted zone once fish counts reach 1,000 fish per day.
- Seal bombs are deployed according to manufacturer's instructions and in compliance with Corps' safety protocols.

2. To implement reasonable and prudent measure #2, the action agencies shall ensure that:
   - All operators read, understand, and follow the manufacturers' instructions for all non-lethal deterrence devices.

3. To implement reasonable and prudent measure #3, the action agencies shall ensure that:
   - A full report is sent to NMFS by December 30th every year.
   - The report fully describes the year's deterrence and removal activities—particularly noting the number of listed salmonids taken and the location, the type of take, the numbers, the take dates.
   - The report gives a brief description of the project's results with regard to removing and deterring California sea lions—including an estimate of how many salmonids were saved from predation.
   - The reports are sent to:

Garth Griffin, Protected Resources Branch Chief
National marine Fisheries Service
1201 N.E. Lloyd Boulevard, Suite 1100
Portland, Oregon 97232

Conservation Recommendations

Section 7(a)(1) of the ESA directs Federal agencies to use their authorities to further the purposes of the ESA by carrying out conservation programs for the benefit of the threatened and endangered species. Specifically, conservation recommendations are suggestions regarding discretionary measures to minimize or avoid adverse effects of a proposed action on listed species or critical habitat or regarding the development of information (50 CFR 402.02). No conservation measures have been identified at this time for the actions evaluated in this opinion.

Reinitiation of Consultation

As provided in 50 CFR 402.16, reinitiation of formal consultation is required where discretionary Federal agency involvement or control over the action has been retained (or is authorized by law) and if: (1) the amount or extent of incidental take is exceeded, (2) new information reveals effects of the agency action on listed species or designated critical habitat in a manner or to an extent not considered in this opinion, (3) the agency action is subsequently modified in a manner that causes an effect on the listed species or critical habitat not considered in this opinion, or 4) a new species is listed or critical habitat designated that may be affected by the action.

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REVISED INCIDENTAL TAKE STATEMENT

Introduction

The Incidental Take Statement (ITS) for the National Marine Fisheries Service's (NMFS) Supplemental Biological Opinion (F/NWR/2011/05874; February 29, 2012) has been revised to address the incidental take of Steller sea lions. In 2008, 2009, and 2012, NMFS issued biological opinions evaluating the effects of two types of actions that may affect listed salmonids, green sturgeon, eulachon, and Steller sea lions: (1) lethal removal of California sea lions, and (2) non-lethal deterrence of all pinnipeds.[1] These actions and effects to listed species are described more fully in NMFS' 2012 supplemental biological opinion and previous biological opinions related to this action (e.g., 2008 BiOp (consultation #2008/00486) and 2009 BiOp (consultation # 2008/08780)). NMFS determined that the effects of the lethal removal and non-lethal deterrence actions complied with the standards of Section 7(a)(2) of the ESA. During these consultations, NMFS issued ITSs that specified the amount or extent of incidental take, the effect of such take, and those reasonable prudent measures deemed necessary or appropriate to minimize the impact of the incidental take on populations of salmon and steelhead listed as threatened species or endangered species under the ESA.

We have revised the ITS in light of the recent decision in *Center for Biological Diversity, et al. v. Salazar, et al.*, 2012 WL 3570667 (9th Cir. August 21, 2012), in which the court stated that the ESA requires an ITS for the taking of an endangered or threatened species incidental to the proposed action and that ". . . exemption from Section 9 take prohibitions does not negate the separate requirement that the Service 'will provide' an ITS along with its BiOp." The court stated that, even where the incidental take is not prohibited, an ITS serves to identify the amount or extent of incidental take sufficient to allow a future determination of whether the anticipated incidental take has been exceeded, such that reinitiation of consultation may be required. NMFS previously had not included an ITS for Steller sea lions because the take was not prohibited under existing agency regulations and research permits. Although NMFS did not exempt the take of Steller sea lions in the original ITS, we identified the amount and type of take likely to occur from non-lethal deterrence actions in the "Effects on Steller sea lions" section of the biological opinion, which serves as a basis for determining whether the extent of incidental take anticipated to occur as a result of the non-lethal deterrence actions is exceeded. For the lethal removal action under review, we did not find that the lethal removal activities (e.g., euthanasia or shooting) are likely to result in the take of Steller sea lions. Although we do not believe that an ITS is necessary to either exempt incidental take of Steller sea lions or specify the amount or extent of incidental take from non-lethal deterrence actions, we have now revised the ITS to address the Ninth Circuit's opinion in *Center for Biological Diversity, et al. v. Salazar, et al*.

The revised ITS addresses Steller sea lions and it also fully incorporates, and does not change, the prior ITS that addressed salmonid species. Moreover, the information presented below does not, in any way, alter the conclusions we reached in our February 29, 2012, supplemental biological opinion, which continues to remain valid. In addition, no new information about the effects of the action or any other basis exists to require reinitiation of the opinion. Finally,

[1] Both Steller and California sea lions occurring near Bonneville Dam are considered nuisance animals for which non-lethal harassment is permissible under both the ESA and MMPA.

because the revised ITS only serves to bring it into conformance with Ninth Circuit decision, it does not substantively change or alter the original analyses; thus, reinitiation of formal consultation, as described in 50 C.F.R. § 402.16, is not required.

We have also included an additional reasonable and prudent measure and term and condition as it relates to the revised trapping protocols. The original ITS has also been reorganized to some degree to better integrate the results of our work.

Section 9 of the ESA and Federal regulation pursuant to section 4(d) of the ESA prohibit the take of endangered and threatened species, respectively, without a special exemption. Take is defined as to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or to attempt to engage in any such conduct. Harm is further defined by regulation to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing essential behavioral patterns, including breeding, feeding, or sheltering. Incidental take is defined as take that is incidental to, and not the purpose of, the carrying out of an otherwise lawful activity. For purposes of this consultation, we interpret "harass" to mean an intentional or negligent action that has the potential to injure an animal or disrupt its normal behaviors to a point where such behaviors are abandoned or significantly altered.[2] Section 7(b)(4) and Section 7(o)(2) provide that taking that is incidental to an otherwise lawful agency action is not considered to be prohibited taking under the ESA, if that action is performed in compliance with the terms and conditions of this incidental take statement.

Amount or Extent of Take

The proposed actions will take place in the Columbia River mainstem near Bonneville Dam during times when they will likely have an adverse effect on juvenile and adult endangered upper Columbia River spring Chinook salmon, endangered Snake River sockeye salmon, threatened Snake River spring/summer-run Chinook salmon, threatened lower Columbia River coho salmon, threatened Columbia River chum salmon, threatened upper Columbia River steelhead, threatened Snake River Basin steelhead, threatened middle Columbia River steelhead, threatened lower Columbia River steelhead, and threatened Steller sea lions. Salmonid and Steller sea lion habitat in this area will not be affected to any measurable degree.

<u>ESA-Listed Salmonids</u>

Incidental take will include the following: (1) harassment of juvenile and adult fish by the use of vessels and sea lion deterrence devices (see Proposed Action); and (2) actual salmonid mortalities (both adult and juvenile) due to the use of sea lion deterrence devices

[2] NMFS has not adopted a regulatory definition of harassment under the ESA. The World English Dictionary defines harass as "to trouble, torment, or confuse by continual persistent attacks, questions, etc." The U.S. Fish and Wildlife Service defines "harass" in its regulations as an intentional or negligent act or omission which creates the likelihood of injury to wildlife by annoying it to such an extent as to significantly disrupt normal behavioral patterns which include, but are not limited to, breeding, feeding, or sheltering (50 CFR 17.3). The interpretation we adopt in this consultation is consistent with our understanding of the dictionary definition of harass and is consistent with the U.S. Fish and Wildlife interpretation of the term.

NMFS anticipates that up to 1,000 juvenile individuals of the listed salmonid species considered in the consultation will be harassed during the proposed activities and a maximum of 100 may be killed. NMFS further anticipates that 100 adult individuals may be harassed and 10 may be killed during the course of the proposed activities[3]. These take levels are for *each year* of the five-year planned deterrence and removal operation. Because the individual fish that are likely to be harassed or killed by this action are from different listed species that would be distributed relatively randomly in the action area and, moreover, are similar to each other in appearance and life history (and to unlisted species that occupy the same area), it is not possible to assign this take to individual listed species.

As stated above, the actions are not likely to have any measurable effect on habitat; therefore we do not anticipate there will be any take associated with habitat alterations.

The estimated numbers of salmonids to be harassed and killed are thresholds for reinitiating consultation. Exceeding any of these limits will trigger reinitiation of the biological opinion.

ESA-Listed Steller Sea Lions

The types of removal and nonlethal deterrence activities conducted in the field under the proposed action will not change over the course of the term of the action and there are no new or anticipated effects beyond those previously assessed in the biological opinions referenced above. Federal, state, and local officials conducted non-lethal pinniped deterrence activities from boats downstream of the dam during the four years since the issuance of the 2008 LOA.

Based on the results of non-lethal deterrence activities (hazing, harassment, and trapping activities) conducted since 2008, NMFS estimated up to 894 takes of Steller sea lions (889 incidents of harassment and 5 incidental captures) could occur annually throughout the period of 2008 through 2012.[4] As reflected in the 2012 supplemental biological opinion, the actual amount of take, by harassment, that occurred during this timeframe was 523 takes in 2008; 427 takes in 2009, 337 takes in 2010, and 359 takes in 2011; and, 371 takes in 2012.[5] In addition, since 2009 only one Steller sea lion has been captured in a Bonneville Dam trap related to non-lethal deterrence actions, and no Stellers have been captured in any other trap operated by the states, e.g., in Astoria, Oregon as part of non-lethal deterrence activities.[6]

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[3] Crews that are using sea lion deterrence devices are trained to observe for impacts to marine mammals and fish species. If fish are taken they will be collected and recorded, and those takes reported to NMFS.

[4] The Section 120 MMPA authorization only allows the take, by lethal means (euthanizing or shooting), of California sea lions. Thus, any take of Steller sea lions would be (and has been) related to the non-lethal deterrence, capture, and marking activities, which are not prohibited takes and/or have been authorized by separate permits. Take of Steller sea lions from lethal activities authorized for California sea lions is not anticipated. In particular, Steller sea lions are unlikely to be shot in the event the states engage in shooting of California sea lions due to the existing protocols and, to a lesser degree, the states unwillingness to use shooting as a removal technique.

[5] In 2012, the takes occurred from the use of 1,207 cracker shells and 417 seal bombs. (Personal communication: Wright, B. Marine Mammal Program, ODFW with G. Griffin, NOAA Fisheries NWR/PRD. September 11, 2012. Email response re. 2012 Steller sea lion hazing as part of the California sea lion removal program below Bonneville Dam.)

[6] There have been additional captures of Steller sea lions since 2009, but those takes are authorized by a separate MMPA/ESA research permit (#14326).

Despite the upward trend in Steller sea lion abundance, actual harassment and capture takes of Steller sea lions have declined and are well within the range identified and evaluated in the biological opinion. It is also unlikely that the non-lethal deterrence activities will kill or injure any animals because no marine mammal injuries or mortalities have been observed during the four years the program has run so far and no animals have been killed or injured from trapping operations since the additional safety measures were implemented in 2009. Therefore, based on the observed take levels and as reflected in the biological opinion, NMFS estimates that up to 889 harassment takes and 5 incidental captures of Steller sea lions will occur each year through 2016.

The estimated numbers of 889 incidents of harassment and 5 incidental captures of Steller sea lions per year are thresholds for reinitiating consultation. Exceeding either of these limits will trigger reinitiation of the biological opinion.

Effect of Take

As described more fully in the February 29, 2012, supplemental biological opinion and those incorporated by reference, NMFS determined that the level of anticipated take of ESA-listed salmonids and the eastern DPS of Steller sea lions is not likely to jeopardize the continued existence of listed salmonid stocks or Steller sea lions or to destroy or adversely modify these species designated critical habitat.

Reasonable and Prudent Measures and Terms and Conditions

"Reasonable and prudent measures" are nondiscretionary measures to minimize the amount or extent of incidental take (50 CFR 402.02). "Terms and conditions" implement the reasonable and prudent measures (50 CFR 402.14). These must be carried out for the exemption in section 7(o)(2) to apply.

Reasonable and Prudent Measures
The action agencies shall ensure that:

1. The Corps' safety protocols for using deterrence devices are followed.
2. Non-lethal Deterrence measures are carried out in accordance with the devices' manufacturers' instructions.
3. NMFS receives a yearly monitoring report on the deterrence, capture, and removal activities.
4. The revised trapping protocols discussed in the February 20, 2009, supplemental biological opinion and the States' letter to NMFS dated August 27, 2008, are implemented.

Terms and Conditions

1. To implement reasonable and prudent measure #1, the action agencies shall ensure that:

- Boats keep a 100-foot minimum approach distance from all project structures.
- Boats keep a 150-foot minimum approach distance from fishway entrances.
- No firecrackers are used within 300 feet of any fishway, floating orifice, Bonneville Powerhouse 2 Corner Collector, smolt monitoring facility outfall, or within 150 feet of any shoreline or shallow area.
- Firecracker use is limited to no more than five per animal per encounter within the boat restricted zone.
- No firecracker is used within the boat-restricted zone once fish counts reach 1,000 fish per day.
- Seal bombs are deployed according to manufacturer's instructions and in compliance with Corps' safety protocols.

2. To implement reasonable and prudent measure #2, the action agencies shall ensure that:
   - All operators read, understand, and follow the manufacturers' instructions for all non-lethal deterrence devices.

3. To implement reasonable and prudent measure #3, the action agencies shall ensure that:
   - A full report is sent to NMFS by December 30th every year.
   - The report fully describes the year's deterrence and removal activities—particularly noting the number of listed salmonids and Steller sea lions taken and the location, the type of take, the numbers, and the take dates.
   - The report gives a brief description of the project's results with regard to removing and deterring California sea lions—including an estimate of how many salmonids were saved from predation.
   - The reports are sent to:

     Garth Griffin, Protected Resources Branch Chief
     National marine Fisheries Service
     1201 N.E. Lloyd Boulevard, Suite 1100
     Portland, Oregon 97232

4. To implement reasonable and prudent measure #4, the States and NMFS shall ensure that:
   - All personnel involved in trapping operations read, understand, and carry out the revised trapping protocols.

Conservation Recommendations

Section 7(a)(1) of the ESA directs Federal agencies to use their authorities to further the purposes of the ESA by carrying out conservation programs for the benefit of the threatened and endangered species. Specifically, conservation recommendations are suggestions regarding discretionary measures to minimize or avoid adverse effects of a proposed action on listed species or critical habitat or regarding the development of information (50 CFR 402.02). No conservation measures have been identified at this time for the actions evaluated in this opinion.

Reinitiation of Consultation

As provided in 50 CFR 402.16, reinitiation of formal consultation is required where discretionary Federal agency involvement or control over the action has been retained (or is authorized by law) and if: (1) the amount or extent of incidental take is exceeded, (2) new information reveals effects of the agency action on listed species or designated critical habitat in a manner or to an extent not considered in this opinion, (3) the agency action is subsequently modified in a manner that causes an effect on the listed species or critical habitat not considered in this opinion, or 4) a new species is listed or critical habitat designated that may be affected by the action.