## 8.0 FINDING OF NO SIGNIFICANT IMPACT FOR REDUCING THE IMPACT ON AT-RISK SALMON AND STEELHEAD BY CALIFORNIA SEA LIONS IN THE AREA DOWNSTREAM OF BONNEVILLE DAM ON THE COLUMBIA RIVER, OREGON AND WASHINGTON

National Marine Fisheries Service

National Oceanic and Atmospheric Administration Administrative Order 216-6 (NAO 216-6) (May 20, 1999) contains criteria for determining the significance of the impacts of a proposed action. In addition, the Council on Environmental Quality regulations at 40 C.F.R. 1508.27 state that the significance of an action should be analyzed both in terms of "context" and "intensity." Each criterion listed below is relevant in making a finding of no significant impact and has been considered individually, as well as in combination with the others. The proposed action, which NMFS has determined is the agency's preferred alternative, is the partial approval of the States' section 120 application for lethal removal of California sea lions at Bonneville Dam, under certain conditions. The significance of this action is analyzed based on the NAO 216-6 criteria and CEQ's context and intensity criteria. These include:

1) **Can the proposed action reasonably be expected to jeopardize the sustainability of any target species that may be affected by the action?**

Response: The target species for lethal removal include California sea lions. The target species for non-lethal deterrence include California sea lions and Steller sea lions. With respect to California sea lions, the lethal removal of up to 85 California sea lions from the population annually will have no effect on the overall range-wide abundance, distribution, and productivity of the California sea lion population because the number of sea lions involved will be extremely small compared to the number of animals that can be safely removed from the population (PBR) without affecting its status with respect to optimum sustainable population (OSP). For the United States stock of California sea lions the estimated PBR is 8,511 sea lions per year (Carretta et al. 2007). The estimated human-caused mortality for California sea lions during 1997 through 2001 was 1,476 animals annually (Carretta et al. 2006). If an additional 85 California sea lions were killed each year under the proposed action, the total human-caused mortalities will still represent less than 20 percent of the estimated PBR (subsections 4.4, Marine Mammals, and 5.1, Cumulative Effects). NMFS estimates that the States may be limited by practical considerations to approximately 30 animals annually, with the result that removals of California sea lions (and impacts on the population) will actually be lower.

Steller sea lions may leave the action area for some unspecified period of time, in response to lethal and non-lethal deterrence activities; however, displacement from the foraging area at Bonneville Dam is unlikely to affect the Steller sea lion individuals or population range-wide because there is ample room in the remainder of its range, including the lower Columbia River, for animals to relocate and thrive. Thus, an expected result of the proposed action is displacement of a small number of foraging Steller sea lions from the action area. However, there will be no effect on the range-wide abundance, distribution, or productivity of the population.

Harbor seals will for the most part be unaffected by the proposed action because fewer than five animals are observed in the action area annually (J. Koenings, WDFW; V. Moore, ODFW; and S. Huffaker, IDFG, pers. comm., November 13, 2006). A minimal number of animals may be temporarily disturbed by non-lethal deterrence activities but there will be no effect on the range-wide abundance, distribution, or productivity of the harbor seal population (subsection 4.4, Marine Mammals).

2) **Can the proposed action reasonably be expected to jeopardize the sustainability of any non-target species?**

Response: The proposed action is not expected to jeopardize the sustainability of non-target species for the following reasons.

*Salmonids:* There will be no direct effects to listed or non-listed salmonids from the proposed action. NMFS also believes that salmonids are unlikely to be harmed by under water explosive detonations during non-lethal deterrence activities because of the implementation of safety protocols designed to protect the fish. These protocols will reduce the likelihood of close exposure of salmonids to underwater explosive detonations by limiting the use of underwater explosives to areas away from the fishway entrances and further restricting their use when daily fish passage rates exceed 1000 fish. Direct effects from lethal removal activities targeting California sea lions, such as striking a fish with a bullet, are highly unlikely because salmonids are unlikely to congregate in proximity to the targeted predator, and the bullet speed and momentum drop rapidly on impact with the water. There will likely be an increase in survival (and hence an increase in the abundance and a decrease in the level of extinction risk) of listed adult salmonids under the proposed action because of the permanent removal of individually identifiable predatory California sea lions (subsection 4.5, Listed and Non-listed Salmonids).

*Other Fish Species:* There will be no direct effects from the proposed action on other fish species (non-listed salmonids, white sturgeon, lamprey, and shad). These species will also be exposed to detonations from underwater firecrackers, and momentary startle responses in these species have been noted (R. Stansell, pers. comm., May 23, 2005). The effects of exposure will be minor and transitory, and no injuries or mortalities are anticipated from the use of firecrackers. There will likely be an increase in survival of white sturgeon and an increase in future recruitment resulting from displacement of Steller sea lions from the action area in response to lethal and non-lethal deterrence activities directed at California sea lions (subsection 4.6, Other Fish Species).

*Avian and Terrestrial Wildlife:* Avian and terrestrial wildlife on shore in proximity to aerial pyrotechnics and cracker shells will be momentarily startled by the unexpected sound but the effect will be local and temporary. No terrestrial or avian wildlife will be injured or killed as a result of the proposed action. Aerial pyrotechnics and cracker shells will not be used near sensitive avian nesting sites so disturbance of nesting eagles, peregrine falcons, and herons in the action area from use of these devices is unlikely. There will be no added effect from permanent lethal removal of a small number of California sea lions on other wildlife in the area because the removal will be conducted in close proximity to the dam structures and away from wildlife habitats downstream. Trapping (either for marking or lethal removal) will also be conducted in close proximity to the dam structures and away from wildlife habitats downstream. The use of firearms for lethal removal will have momentary effects equivalent to aerial pyrotechnics or cracker shells (subsection 4.8, Terrestrial and Avian Wildlife).

3) **Can the proposed action reasonably be expected to cause substantial damage to ocean and coastal habitats and/or essential fish habitat as defined under the Magnuson-Stevens Act and identified in Fisheries Management Plans?**

Response: There will be no effect on ocean or coastal habitats from the proposed action because the action area is in the lower Columbia River approximately 146 river miles from its confluence with the ocean. Any effects on water quality from the proposed action in the river will be short lived and localized, and will represent a miniscule proportion of the total contaminant load in the Columbia River system. There will be no negative effect on the 303(d) listing impairment status of the Columbia River because

any effects on water quality in the Columbia River will be small, short lived, and localized, and will represent a miniscule proportion of the total contaminant load in the Columbia River system. There will be no effect on EFH for coho or Chinook salmon because there will be no impact on water quality or substrate necessary for coho and Chinook to carry out spawning, breeding, feeding, or growth to maturity (subsection 4.3, Water Quality, and subsection 4.7, Fish Habitat).

4) **Can the proposed action be reasonably expected to have a substantial adverse impact on public health or safety?**

Response: The proposed action will not have a substantial adverse impact on public health or safety. Non-lethal deterrence activities under this alternative will pose some risk to the public but it is unlikely that vessels or projectiles will strike bystanders as the employees involved in non-lethal deterrence activities will be trained and experienced and will follow safety procedures established by the Corps. Safety procedures were implemented during non-lethal deterrence activities conducted in the action area in 2005 through 2007, and no accidents involving the public were reported. During lethal removal activities involving firearms, there is a remote risk of errant bullets ricocheting off the hard haul-out surfaces because of the bullet trajectories to the anticipated targets. If a ricochet should occur there is little likelihood that a bullet or bullet fragments will strike anyone because the haul-outs are located in a part of the project area that is not open to the public and the area is a large open space that is within the Corps' boat restriction zone. Risk of a stray bullet striking anyone will be further minimized by the States' safety plan, which will specify the type of weapons to be used, appropriate ammunition, the training required of marksmen, and the conditions under which animals could be shot, including public area closures as needed (subsection 4.17, Safety and Human Health).

5) **Can the proposed action reasonably be expected to adversely affect endangered or threatened species, marine mammals, or critical habitat of these species?**

Response: The proposed action will adversely impact individual non-listed predatory California sea lions (target species) because as many as 85 sea lions will be killed annually. However, permanent removal of this number from the population will have neither a measurable effect on the local abundance of California sea lions elsewhere in the lower Columbia River, nor will there be any effect on the overall range-wide abundance, distribution, and productivity of the California sea lion population because the number of sea lions involved is extremely small compared to the current number of animals (8,511) that can be safely removed from the population (PBR) without affecting its status with respect to OSP. The non-lethal deterrence activities that are part of the proposed action will temporarily displace pinnipeds from the foraging area below the dam but there is no evidence that past non-lethal deterrence efforts affected the numbers of pinnipeds at Bonneville Dam or their rate of predation. Future abundance of California sea lions at the dam will likely fluctuate in response to the fluctuations in prey, regardless of non-lethal deterrence activities.

The proposed action will adversely affect a small number of listed individual Steller sea lions that will be disturbed by non-lethal deterrence activities directed at pinnipeds below the dam and lethal deterrence activities directed at California sea lions. It is expected that these individuals will leave the action area for some unspecified period of time. However, once displaced from the foraging area at Bonneville Dam the effect of deterrence activities will be insignificant for individual Steller sea lions or the population range-wide because there is ample room in the remainder of the species' range, including the lower Columbia River, for animals to relocate and thrive. Thus, an expected result of the proposed action is increased displacement of a small number of foraging Steller sea lions from the action area but no effect on the

range-wide abundance, distribution, or productivity of the population. There will be no effect on Steller sea lion critical habitat because the nearest critical habitat is geographically remote from the action area.

A minimal number of harbor seals may be adversely affected by temporary disturbance from non-lethal deterrence activities but there will be no effect on the range-wide abundance, distribution, and productivity of the harbor seal population (subsection 4.4, Marine Mammals).

The proposed action will likely increase survival of ESA listed salmonids by reducing predation (beneficial effect). Because there will be no negative effect on riparian areas, substrate, or water quality, no negative impacts to salmonid critical habitat are anticipated (e.g., spawning sites, juvenile rearing areas and migration corridors, adult migration corridors, food resources, water quality and quantity, and riparian vegetation) (subsection 4.7, Fish Habitat).

6) **Can the proposed action be expected to have a substantial impact on bio-diversity and/or ecosystem function within the affected area (e.g., benthic productivity, predator-prey relationships, etc)?**

Response: The proposed action will have no effect on benthic productivity because the action will not occur near the benthos; little action will occur in riparian or nearshore areas, so they will not be affected (subsection 4.7, Fish Habitat). Lethal removal of a small number of predatory California sea lions after active non-lethal deterrence will have negligible effect on bio-diversity in the action area. In spite of limited removals, the abundance of sea lions will continue to fluctuate in response to available prey. The proposed action will not eliminate California sea lions from the action area (the Bonneville Dam tailrace). Although the proposed action will allow lethal removal of up to 85 California sea lions, it is most likely that only 30 sea lions will be removed in any year, given the restrictions imposed on removals (identification must be certain and free-ranging animals may only be shot on land or in a restricted area of the river). California sea lions that are not removed are thus likely to remain in the action area, and there are likely to continue to be California sea lions throughout the lower Columbia. Similarly, though non-lethal deterrence may temporarily cause Steller sea lions and harbor seals to leave the area, it is likely they will return, though their levels of predation may be reduced.

The lower Columbia River has been described as a highly altered and degraded ecosystem and active programs have been implemented to control both marine mammal and avian predators in the tailrace at Bonneville Dam. The purpose of these programs, and the one proposed here, is to bring the predator-prey relationship back to a balance that is closer to what would occur in an unaltered environment.

7) **Are significant social or economic impacts interrelated with natural or physical environmental effects?**

Response: The effects of the proposed action on the social and economic environment will be very limited. Employment of a few seasonal temporary personnel needed to carry out the action will have no measurable effect on the local economy. Depending on the success of the lethal removal measures it is possible that pinniped predation will decrease, and that there will be a modest improvement in salmonid survival. This will be compatible with goals of protecting cultural and natural resources under the Columbia River Gorge National Scenic Area Designation (subsection 4.10, Social and Economic Resources).

**8) Are the effects on the quality of the human environment likely to be highly controversial?**

Response: It is widely acknowledged that California sea lions located at Bonneville Dam prey upon at-risk salmonids as they congregate around the dam. However, there is disagreement among various constituents as to the significance of sea lion predation on at-risk salmonids and whether these pinnipeds should be held responsible for declining salmonid runs or delays in recovery. NMFS received a number of comments from the public expressing support for and opposition to the proposed action. However, NMFS does not believe a substantial dispute exists as to the size, nature or effect of the preferred alternative.

As described in the EA, the environmental effect of permanently removing a limited number of sea lions (up to 1 percent of PBR or 85 animals per year) will be insignificant from a biological perspective because the California sea lion population can withstand this level of removal (subsection 4.4.3, Alternative 3: Lethal Removal of Individually Identifiable Predatory California Sea Lions After Active Non-lethal Deterrence (Proposed Action)). The most recent stock assessment report reveals the current population estimate for the United States stock of California sea lions is 238,000 (Carretta et al. 2007) and has now reached carrying capacity. The removal of as many as 85 animals from the California sea lion population will have no effect on the overall range-wide abundance, distribution, and productivity of the California sea lion population because the number of sea lions involved is extremely small compared to the current number of animals (8,511) that can be safely removed from the population (PBR) without affecting its status with respect to OSP (subsection 3.4.2, Species Status, Distribution, and Abundance). The removal of up to 85 California sea lions in the area below the dam could reduce the number of sea lions present in the relatively small action area (the one-mile stretch of river below the dam) but will have no effect on the distribution of the remaining sea lions in the lower river.

In sum, the majority of environmental effects will be minimal, localized, and transitory in nature and will not result in permanent alteration of the physical environment. Pinnipeds exposed to active non-lethal deterrence will be temporarily displaced, as has been observed in previous years, but will quickly return to forage. A small number of individually identifiable predatory California sea lions will be permanently removed (either to permanent captivity or killed) annually and will no longer be present at the dam.

**9) Can the proposed action reasonably be expected to result in substantial impacts to unique areas, such as historic or cultural resources, park land, prime farmlands, wetlands, wild and scenic rivers or ecologically critical areas?**

Response: The proposed action will not result in substantial impacts to unique areas. Non-lethal deterrence measures under the proposed action will include land-based activities but none of these measures will have the potential to affect cultural resources in the action area. No ground-disturbing activities will take place. When lethal removal activities are underway, some Bonneville Project roads and facilities may be temporarily closed to protect public safety. Portions of the eastern shoreline of Hamilton Island, within the Fort Cascades National Historic Site, may also be closed. Such temporary closures will not affect the historic significance of these sites. No sites upstream of the dam, including "in-lieu" treaty fishing access sites, will be closed during lethal removal activities. It is likely that pinniped predation at the Bonneville Lock and Dam will decrease, and that there will be some improvement in salmon survival under the proposed action. This could result in increased availability of this cultural resource for treaty tribes in the action area (subsection 4.12, Cultural Resources).

**10) Are the effects on the human environment likely to be highly uncertain or involve unique or unknown risks?**

Response: The effects of the proposed action are well known and will not involve unique or unknown risk. The effects of active non-lethal deterrence activities, including live capture using a floating trap, have been previously tested in a number of locations and have been shown to be safe and non-injurious. Lethal removal activities involving firearms will be managed to minimize the risk of errant discharges (marksmen on land or stable structures, safe lines of fire, temporary area closures). The effect of lethal removals on the United States stock of California sea lions is well known: removing up to 85 animals, particularly the male California sea lions identified as candidates for removal at Bonneville Dam, will be inconsequential at the population level. As explained above and in the EA, the removal of as many as 85 animals from the California sea lion population will have no effect on the overall range-wide abundance, distribution, or productivity of the California sea lion population because the number of sea lions involved is extremely small compared to the current number of animals (8,511) that can be safely removed from the population (PBR) without affecting its status with respect to OSP (subsection 3.4.2, Species Status, Distribution, and Abundance). It is also known that pinniped removal will result in improved salmonid survival, although it is not possible to determine how much of a survival improvement will occur until the lethal removal program is implemented.

**11) Is the proposed action related to other actions with individually insignificant, but cumulatively significant impacts?**

Response: There are two resources that have the potential for cumulative effects when the proposed action is added to past, present, and reasonably foreseeable future actions: California sea lions and salmonids. The estimated level of human caused mortality for California sea lions range wide is below the estimated PBR for the population. An additional 85 animals removed (killed, captured) in the action area each year will still leave total California sea lion mortalities at a fraction of the estimated PBR. Thus the proposed action will not have cumulative impacts on the California sea lion population.

Many factors have led to the decline and are preventing the recovery of listed salmonids. Implementation of the proposed action will make a contribution to improving survival of returning adult salmonids. While as a single action it is not sufficient to recover these listed species, there is no single action available that will accomplish that goal. The proposed action will make an incremental contribution, in addition to other efforts, to decreasing mortality from known sources (Section 5.0, Cumulative Effects).

**12) Is the proposed action likely to adversely affect districts, sites, highways, structures, or objects listed or eligible for listing in the National Register of Historic Places or may cause loss or destruction of significant scientific, cultural, or historical resources?**

Response: The proposed action will have no adverse effects on districts, sites, highways, structures, or objects listed or eligible for listing in the National Register of Historic Places or cause loss or destruction of significant scientific, cultural, or historical resources, because sea lion removal measures will not alter the physical environment or result in impacts to dam and/or lock operations or highway closures. There will be no effect on the overall recreational use of the area with the exception of temporary closures of Corps controlled access roads or visitor centers. Portions of the eastern shoreline of Hamilton Island, within the Fort Cascades National Historic Site, may be temporarily closed but this will not affect the historic significance of these sites. No site upstream of the dam, including the "in lieu" treaty fishing access sites (subsections 4.10, Social and Economic Resources; 4.11, Tourism and Recreations; 4.12, Cultural Resources; and 4.15, Transportation).

**13) Can the proposed action reasonably be expected to result in the introduction or spread of non-indigenous species?**

Response: The proposed action is not expected to import, introduce, or contribute to the spread of non-indigenous species because vessels and equipment used for the project are already in use by the States in Columbia River projects or will be fabricated or purchased for the project.

**14) Is the proposed action likely to establish a precedent for future actions with significant effects or represent a decision in principle about a future consideration?**

Response: The proposed action will not establish a precedent for future actions or represent a decision in principle because the proposed action is in response to the specific circumstances outlined in the States' application for lethal removal authority under MMPA Section 120. NMFS, the task force, and States will continue to monitor and evaluate the effectiveness of the actions taken under the authorization. If necessary, NMFS may consult with the task force and the States to determine whether the authorization should be modified or extended, should an extension be requested by the States. The proposed action is specific to the action area described and is not applicable beyond the scope of the subject application received from the States. No additional applications have been received or are under consideration at this time.

**15) Can the proposed action reasonably be expected to threaten a violation of Federal, state, or local law or requirements imposed for the protection of the environment?**

Response: The proposed action will be conducted in a manner complementary to other Federal, state, tribal, and local plans and policies addressing salmon and steelhead survival in the Columbia River basin. The proposed action will be limited to those activities necessary to reduce adult salmonid losses due to pinniped predation and will be conducted in a manner consistent with all laws (subsection 1.4, Relationship to Other Plans and Policies).

**16) Can the proposed action reasonably be expected to result in cumulative adverse effects that could have a substantial effect on the target species or non-target species?**

Response: The proposed action will not result in substantial cumulative adverse effects on target or non-target species for the reasons outlined in response to question 11 above.

## 8.1 List of Reviewers

- Kathe Hawe, NWR NEPA Coordinator
- Donna Darm, NWR Protected Resources ARA
- Barry Thom, NWR Deputy Administrator
- Mark Hodor, Office of General Counsel

## 8.2 References

Carretta, J. V., K. A. Forney, M. M. Muto, J. Barlow, J. Baker, B. Hanson, and M. S. Lowry. 2006. U. S. Pacific marine mammal stock assessments: 2005. National Oceanic and Atmospheric Administration Technical Memorandum, NMFS-SWFSC-388. March 2006. 317 pages.

Carretta, J. V., K. A. Forney, M. S. Lowry, J. Barlow, J. Baker, B. Hanson and M. M. Muto. 2007. Draft U. S. Pacific marine mammal stock assessments: 2007. National Oceanic and Atmospheric Administration Technical Memorandum, NMFS-SWFSC-XXX. May 2007. 176 pages.

Stansell, R., Project Leader, Fisheries Field Unit, U.S. Army Corps of Engineers, Bonneville Dam, Cascade Locks, OR. May 23, 2005. Personal communication to the Record regarding Impact to Fish During Sea Lion Hazing.

Washington Department of Fish and Wildlife (WDFW), Oregon Department of Fish and Wildlife (ODFW) and Idaho Department of Fish and Game (IDFG), Directors. November 13, 2006. Personal communication, letter and application to William Hogarth, Assistant Administrator for Fisheries, National Marine Fisheries Service, regarding request for MMPA Section 120 Pinniped Removal Authority.

## 8.3 Concurrence

In view of the information presented in the EA and analysis prepared for the action titled "Reducing the Impact on At-risk Salmon and Steelhead by California Sea Lions in the Area Downstream of Bonneville Dam on the Columbia River, Oregon and Washington," it is hereby determined that the approval by NMFS of this the action will not significantly impact the quality of the human environment as described above and in the EA. In addition, all beneficial and adverse impacts of the proposed action have been addressed to reach conclusion of no significant impacts. Accordingly, preparation of an Environmental Impact Statement is not necessary.

D. Robert Lohn

D. Robert Lohn, Regional Administrator

Date 3-12-08