

**FINAL REPORT AND RECOMMENDATIONS**  
**OF THE**  
**BONNEVILLE PINNIPED-FISHERY INTERACTION TASK FORCE**  
**MARINE MAMMAL PROTECTION ACT, SECTION 120**  
**April 2017**

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**Final Report and Recommendations  
Bonneville Pinniped-Fishery Interaction Task Force  
Marine Mammal Protection Act, Section 120**

**April 2017**

**BACKGROUND**

**Background and History**

On March 15, 2012, the National Marine Fisheries Service (NMFS) issued a Letter of Authorization (LOA) pursuant to Section 120 of the Marine Mammal Protection Act (MMPA) to the states of Washington, Oregon, and Idaho (states) to lethally remove certain individually identifiable California sea lions (CSLs) at Bonneville Dam that were deemed to be having a significant negative impact on the decline or recovery of at-risk salmon and steelhead. That LOA was slated to expire on June 30, 2016, and the states applied for a renewal.

As part of the MMPA Section 120 process, subsection (c)(5) states that:

*After implementation of an approved application, the Pinniped-Fishery Interaction Task Force [(Task Force)] shall evaluate the effectiveness of the permitted intentional lethal taking or alternative actions implemented. If implementation was ineffective in eliminating the problem interaction, the Task Force shall recommend additional actions. If the implementation was effective, the Task Force shall so advise the Secretary, and the Secretary shall disband the Task Force.*

On May 31, 2016, NMFS reconvened the Task Force to evaluate the States' application for a 5-year extension to the 2012 LOA based on a review of data for the first four years only. The Task Force deliberated on the following questions: 1) is pinniped predation on at-risk salmon and steelhead still a problem?; and 2) should NMFS approve or deny the States' application to continue the program through June 30, 2021? At the 2016 meeting, a total of twelve (12) Task Force members recommended approving the States' application; one recommended conditional approval with a shorter permit granted in order to allow the Task Force to explore additional data about population status and trends; and one Task Force member recommended denying the States' application as this member believes that the evidence does not show that the lethal program had been successful in achieving the expected benefit of "eliminating the problem interaction". Because the results of the final year of implementation were not available at the time the 2012 LOA expiration and corresponding renewal request in 2016, NMFS deferred the assessment of effectiveness until that information became available. In the interim, NMFS granted the states' request for a renewal on June 28, 2016, resulting in a new 5-year LOA starting July 1, 2016. (Note: Additional information regarding the MMPA Section 120 program may be found at the NOAA Fisheries West Coast Region website<sup>1</sup>).

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<sup>1</sup>[http://www.westcoast.fisheries.noaa.gov/protected\\_species/marine\\_mammals/authorized\\_states.html](http://www.westcoast.fisheries.noaa.gov/protected_species/marine_mammals/authorized_states.html)

NMFS re-convened the Task Force in 2017 upon completion of the program results for the five-year implementation. The purpose of this document is to provide NMFS with a report of the Task Force's review of the complete results of the prior 5-year implementation program and its recommendations regarding what, if any, additional actions should be implemented under the current 2016 LOA to improve the effectiveness of the lethal removal program.

### **The Role of the Task Force and NMFS' Expectations of the Task Force**

NMFS asked the Task Force to work together to develop recommendations that document the points of consensus reached by the group, as well as alternate points of view if consensus was not reached. NMFS requested that Task Force recommendations fairly reflect the full range of opinions of the group, acknowledging differences of opinion and including minority views with its recommendations. To enhance this process, NMFS provided a professional facilitator to manage the meetings of the Task Force, document Task Force deliberations, and assist the group in assembling its recommendations.

Prior to the session, NMFS provided the Task Force a summary information document titled, *Effectiveness Review of Marine Mammal Protection Act Section 120 Implementation under 2012 Letter of Authorization to Washington, Oregon, and Idaho, February 2017*. The report presented relevant information and data from the past five years, as well as the information requested by the Task Force at their May 31, 2016 meeting. Additional review materials provided to the Task Force included:

- *Epidemiological models to control the spread of information in marine mammals*, Schakner, et al., 2016.
- *Field Report: 2016 Pinniped Research and Management Activities at Bonneville Dam*, Brown, et al, 2016.
- *Final report and recommendations of the MMPA Section 120 Pinniped Fisheries Interaction Task Force: Columbia River – 3-year Review and Evaluation*, NMFS, 2010.
- *NMFS Report on Consideration of Statutory Factors in Section 120 of the Marine Mammal Protection Act*, NMFS, 2012.
- *Population specific migration timing effects on route survival of Chinook salmon through a variable lower river corridor*, Sorel, et al., 2017.

NMFS requested that the Task Force review the information and consider the following questions as it determined whether implementation of the lethal removal program was effective at eliminating the problem interaction or not, and if not, what additional actions it recommends:

(1) Is the current lethal removal program effectively reducing pinniped predation on at-risk salmonids? If not, what changes do you recommend?

(2) Does non-lethal hazing appear to be an effective aid in reducing sea lion predation on salmonids in the area? Should non-lethal efforts be modified (increased, reduced, or re-directed) to improve effectiveness?

(3) Do the criteria in the authorization for identifying predatory sea lions remain appropriate? If not, how could these criteria be modified to improve effectiveness?

(4) Are there other terms and conditions of authorization or aspects of the states' implementation of the removal activities that limit effectiveness of the permitted lethal removals? If so, what changes are recommended?

The facilitation team drafted this report of the Task Force's recommendations. For more in-depth reporting on the Task Force's deliberations, see Appendix B. The facilitators sought and incorporated Task Force members' feedback into the final version of both the session summary and this report.

### **Public Participation**

As required by the MMPA, the March 1-2, 2017 Task Force meeting was open to the public and the date, time and location of the meeting was posted on the NOAA Fisheries West Coast Region website, and announced through NOAA press releases. The public was not allowed to discuss or debate issues with the Task Force during the work session, however, time was allocated during the meeting to allow the public to provide or identify new or relevant information that could assist the Task Force in its deliberations. One (1) member of the public provided oral and written comments. (Note: A NMFS Staff member also provided comment, however, as such is not considered a member of the public, thus his comment is not provided here. The oral comment is summarized and attached in Appendix B and the written commentary is attached in Appendix F).

### **NMFS' Decision and Implementation Process**

Once the Task Force has completed its deliberations and submitted its recommendations, NMFS will determine a course of action informed by the Task Force recommendations. NMFS then will inform the Task Force, the states, and the public of its decisions.

### **Other Applicable Laws**

In addition to the MMPA and the process described above, NMFS made clear that they must also comply with National Environmental Policy Act (NEPA), the Endangered Species Act (ESA) and other relevant statutes in considering the States' application.

## **TASK FORCE RECOMMENDATIONS**

Process Overview: NMFS asked the Task Force to work together to develop recommendations that document the points of consensus reached by the group as well as the full range of opinion and alternate points of view when consensus was not reached. All of the Task Force members contributed to the development of a range of recommendations for NMFS to consider. The list of recommendations for each question stems from ideas generated during Task Force deliberations and was established as the list that would be provided to NMFS (see session summary). The recommendations below do not signal Task Force consensus on all recommendations. Instead, the list of recommendations represents a range of opinions expressed by Task Force members. Where consensus was reached, it is noted.

## **Has the Lethal Removal Program Eliminated the Problem Interaction?**

### ***Task Force Responses to NMFS' question:***

**All of the task force members present agreed that the removal program has not eliminated the problem interaction.**

Basis of Conclusion: Observations by the COE and others shows that CSL continue to consume salmon in the Bonneville Dam area. The problem interaction still remains.

**Question 1: *Is the current lethal removal program effectively reducing pinniped predation on at-risk salmonids? If not, what changes do you recommend?***

***Task Force Response to NMFS: The program is effectively eliminating pinniped predation by individual CSLs. However, the group was unable to reach consensus on whether the program has reduced overall pinniped predation on at-risk salmonids.***

All Task Force members acknowledged that killing an individual CSL eliminates that individual's impact on salmonids. However, the data on the total number of sea lions present at the dam, the continued addition of new CSL to the list of animals approved for lethal taking, and the trend in annual-predation rates indicate that new sea lions continue to arrive at Bonneville and prey upon salmonids. While the individual residence time at Bonneville Dam decreased between 2013 and 2016, leaving less time an animal is at the dam seen eating fish, the overall CSL abundance and percentage of the salmonid run seen eaten in 2016 was higher than in the past. Some members of the task force believe that predation by new CSL arrivals is additive – it occurs in addition to predation by animals that were already at Bonneville – and therefore, removal of animals prevents predation from being even higher. Other members of the task force felt that true replacement was occurring – and no fish are actually “saved” since animals that are removed are replaced by new immigrants as a result of the removal of prior animals residing in the area and the rate of predation remains unchanged.

### **Task Force Recommendations:**

Consensus was not reached on any recommendations; some, but not all, task force members supported several of these considerations.

#### **1. Enhance the ability to identify animals for removal.**

Rationale: Currently, the LOA permits the States to lethally remove no more than 92 CSL annually. The program has never been fully implemented to achieve that level and as a result many believed it has not been as effective as it could be. Some members thought that increasing the number of individual CSLs on the list of animals approved for removal might allow for increases in removal and a decrease in predation, while others recognized that staffing and resource limitations may prevent this anyway. Because individual residence time has decreased, there are fewer days/time that observers may see

an animal eating salmon at the dam. Consideration was given to changing the criteria in the current LOA to one or more of the following:

- a. “An animal may be removed if it is individually identifiable and has been seen eating salmon, or has been observed in the observation area for X days”. (See options below for new number of days)

**Option 1:** Use data to analyze the probability of consumption of at-risk salmonids based on how many days an animal has been in the area. Then use this number to determine the appropriate number of observation days needed.

**Option 2:** Reduce the number of days of observation from 5 days to 3 days, regardless of a probability analysis.

**Option 3:** Reduce the number of days of observation from 5 days to 2 days, regardless of a probability analysis.

- b. For CSL who manage to make it above Bonneville dam, instead of requiring individual identification of these animals, consider relaxing the criteria for “individually identifiable”:

**Option 1:** Automatically add them to the removal list. Inclusion on the removal list would be automatic for CSLs above the dam due to the presumption that they are eating at-risk salmonids above the dam.

**Option 2:** Increase efforts to mark these animals, even temporarily, for instance when they haul-out at marinas or elsewhere. Then apply the observation requirements as noted in (a) above.

**Option 3:** Where possible, use scat analysis to determine whether individuals have consumed salmon above the dam.

**Alternative View:** Halt the lethal removal program because it is, and will continue to be, ineffective at eliminating pinniped predation on at-risk salmonids. Instead, consider using Section 109 or other parts of the MMPA that may be more appropriate to the stated goal, since eliminating individual animals at the Dam cannot be effective when others simply take their place.

**2. Prioritize removing as many animals as possible early in the season in order to protect early migrating runs of ESA-listed salmon whose conservation status is more in question.**

Rationale: NMFS reported that the early portion of the salmon run contains some of the most at-risk portions of the spring Chinook runs. Focusing efforts to remove problem CSL at this time may reduce predation on these at-risk ESA listed spring Chinook. Agency pinniped staff pointed out that they conduct operations as early as possible and there may be little opportunity to further increase the level of actions early in the season.

- 3. Enhance the ability to expedite approval of lethal removal. The agencies responsible for taking actions should continue to work together to find ways to streamline the removal program.**

Rationale: The 2016 data suggest that the efficiency of the removal program has increased, that is, changes in NMFS' approval of removals has facilitated an increase in the number of animals removed in 2016. This increase is believed due to process changes at NMFS, which resulted in more frequent updates to the removal list and the states removing more animals. Many Task Force members felt this effort should be continued.

- 4. Establish a time at which point NMFS will declare that it is/is not possible to remove the maximum number of CSLs permitted by the LOA, and the program is/is not working.**

Rationale: Many Task Force members were concerned that the program might be continued through the LOA process, even when it is not meeting the overall goals of the program. The group supported clarifying a target date to end the program including when/if there are not sufficient resources to implement it fully or it was clear that the removals were not eliminating the problem interaction. (Note: one member felt that the time for determining effectiveness has already been reached, that the program has already failed to reach its goals, and the program should be terminated now).

- 5. Find additional resources to support a second removal crew and or added observation technology.**

Rationale: Despite the recent increase in animals removed in 2016, the success of the program removing CSL is not limited by the number of CSL on the list, instead many Task Force members felt it is limited by staffing and equipment resources. Cameras have been installed and a qualitative sampling method was developed, both of which have been helpful in reducing the crew's workload, while enhancing efficiency. Some Task Force members believe the program would be more successful if additional resources were provided to expand the crews for trapping, marking and observation, expand the technology/equipment used to identify individuals, and/or increase observation equipment and mobility, including adding observers to ships travelling up river to get estimates of predation below the dam and identify individual CSLs. Some Task Force members thought NMFS should play a role seeking additional funding sources to increase probability of achieving the take numbers allowed.

- 6. Assess and analyze whether there are trap shy animals and what their associated impacts to the salmonid population might be compared to the animals that are successfully trapped and removed.**



Rationale: Some Task Force members were uncertain about whether there are trap shy individuals at Bonneville Dam and the effects of the trap shy animals on the overall predation rates. Studying them might provide answers: Are there components of the population that are trap shy and then are difficult to re-catch that may be affecting predation more than the animals that are successfully trapped and removed?

7. **NMFS should work with coastal cities to discourage hauling-out at piers and other locations near the mouth of the river.**

Rationale: As animals are removed at Bonneville, more space is available at the limited haul outs for others to recruit up river to take their place. Increased numbers of CSL at Bonneville are coincident with dramatic increases of CSL hauling out in the lower river. In order to help limit the pool of animals available to travel upriver to the dam, NMFS should continue to work with municipalities at the mouth of the river such as Astoria and Rainer, to take steps needed to discourage CSL from hauling out in these areas.

8. **Determine alternative methods to improve estimates of the predation happening outside the current observation zone below the dam.**

- a. Place observers on ships as they travel upriver.
- b. Allow for the use of State and tribal agency staff as observers in addition to USACE.
- c. Explore other mobile observation (drones, portable platforms, etc.)

Rationale: Managers at the dam noted difficulty meeting both tests: individually identifying an animal over a certain number of days AND proving that he was eating fish. This results in more effort and observation time being required to meet the listing criteria. This is made more difficult with the recent reduction of staff and observation hours. Agency staff noted that it would be difficult to expand the observation area and still utilize the same sampling method and that any expansion beyond the area currently covered under the LOA would likely require an amendment to the current LOA

***Question 2: Does non-lethal hazing appear to be an effective aid in reducing sea lion predation on salmonids in the area? Should non-lethal efforts be modified (increased, reduced, or re-directed) to improve effectiveness?***

***Task Force Responses to NMFS' question:***

**The Task Force continues to find that hazing efforts are ineffective in halting the predation.**

**Task Force Recommendations:**

Consensus is noted for one recommendation; however, for other recommendations the degree of task force support varied.

1. **Drop the requirement for hazing prior to adding an animal to the list for removal.**  
{Note: NMFS clarified that Section 120 of the MMPA, and terms of the current LOA, requires hazing (or other non-lethal deterrence) prior to adding a CSL to the removal list.}
2. **Discontinue in-river hazing while maintaining and increasing at-dam hazing.**  
{Consensus of the group for this suggestion}
  - Specifically, maintain and increase hazing near the fish ladder, where there is higher risk for salmon and thus greater impact of predation.
3. **Consider an analysis of boat hazing efforts to determine short-term impacts on predation.**
4. **Explore other non-lethal alternatives, as tools arise.**
5. **Consider adding other methods of lethal removal as part of the hazing effort.**  
Note: while the Task Force recognized that there are safety and implementation challenges with using firearms, using shot guns or other methods should be considered because it may increase the overall level of removals beyond what is possible with the current trapping methodology, and firearms are already permitted in the LOA.
6. **Consider using the historical deterrence approach of leaving a dead carcass in the area for sea lions to see.** {Note: pinniped experts concurred that there is no evidence that this action would be effective}.

**Basis for Recommendations:** Hazing is conducted both from boats (to encourage the animals to go downstream) and at the dam near the fish ladder. The Task Force heard that hazing has an immediate impact of deterring a CSL. However, within 30 minutes after hazing the CSL often returns and individuals develop a tolerance to hazing over time. Some Task Force members felt that the at-dam hazing near the fish ladder was effective, and could be increased or maintained, because it deters CSL from congregating at the ladder and taking fish as they enter the ladder. Task Force members thought an analysis could provide more information on the short-term impacts of boat hazing efforts. Some members thought that adding lethal removal by shooting animals from the hazing vessel, might generate a repellent effect on CSLs and might be worth trying.

**Question 3:** *Do the criteria in the authorization for identifying predatory sea lions remain appropriate? If not, how could these criteria be modified to improve effectiveness?*

**Task Force Response to NMFS' Question:**

**Some aspects of the criteria may not be appropriate and should be modified to address issues noted above regarding identifying individual CSL.**

### **Task Force Recommendations:**

The Task Force reached consensus on one of these recommendations; some, but not all, task force members supported the other.

1. **Change the current criteria for identifying animals for removal** (See recommendation #1 under NMFS Question 1).

Rationale: Under the current LOA, all of the criteria for must be met to identify an individual CSL for the removal list.

2. **Add the latitude to use additional measures to mark and identify individual CSLs when appropriately and scientifically implemented** {*Consensus of the group for these suggestions*):

- a. Use temporary marking techniques, such as paint balls.
- b. Explore the use of PIT tag, or other potential methods for tagging (radio acoustic, satellite) to mark animals and add detection arrays at traps or other locations in order to identify animals.
- c. Increase observation staff's capacity to observe from multiple locations and increase the mobility of the observation crew.

Rationale: The MMPA and the 2016 LOA require that individual CSL be identifiable before being added to the removal list. Identifying an animal as an individual is a legal requirement, which requires that the animal is distinguished from others on any given day, year, or location. In the past, identification has been achieved using human-made and natural markings, such as alphanumeric brands, tags, and scars.

Some Task Force members suggested including additional methods to help identify individual CSLs that would meet the MMPA statutory requirements including: size criteria, location at or above the dam, and installing PIT or radio tags in the CSLs and installing detection arrays at the mouth of the traps or other locations to confirm identification. The Task Force briefly considered whether behavioral characteristics might be sufficient identifiers, but noted that behavioral characteristics may be difficult to describe and prove sufficiently for identifying the individual and the Task Force did not reach consensus on use of behavioral characteristics to identify animals.

**Question 4: *Are there other terms and conditions of authorization or aspects of the states' implementation of the removal activities that limit effectiveness of the permitted lethal removals? If so, what changes are recommended?***

#### **Task Force majority response:**

**A number of changes might increase the effectiveness of the overall lethal removal program. Some members of the Task Force felt that these changes might best be made in the terms and conditions portion of the LOA.**

### **Task Force Recommendations:**

Consensus was not reached on any recommendations; however, some, but not all, Task Force members supported several of these considerations.

1. **Change the current criteria for identifying animals for removal** (See recommendation #1 under NMFS Question 1).
2. **Consider the benefit of formalizing the need to streamline removal request processing efficiencies in the LOA Terms and Conditions. If the benefit is high, add the language.**

### **CONCLUDING REMARKS OF THE FACILITATOR**

The complexities of this issue continue and all members of the Task Force agreed that the pinniped fishery interactions have not been eliminated by the state's program. Still, NMFS and the Task Force once again explored the on-going interactions between pinnipeds and listed fish, the effectiveness of the removal program, and the impacts to ESA-listed spring salmonids in the Columbia River system. While consensus was reached on only a few of the suggestions for changing the program, the Task Force was able to provide NMFS with a range of alternatives as it considers the program's efficacy and next steps. Cautions and concerns expressed by Task Force members in the early days of this program have remained or deepened for some members, while others remain optimistic that the program is having a modest degree of success. Regardless of their opinion on the topic, Task Force members remained engaged and attentive to the issues and questions raised by NMFS. As before, it was an honor to work with this Task Force.

*Facilitator's Note: This report was written by the facilitation team at DS Consulting. Task Force members were given the opportunity to review an initial draft, and their edits were included in a 'near final' draft. The near final draft was sent again for final review and refinements. Five Task Force members and one Technical Support staff responded to one or both drafts with edits. All members of the Task Force were given an opportunity to approve this final report.*

*Final Summary respectfully submitted this 19th of April, 2017*

*Donna Silverberg  
Owner, DS Consulting*