

**FINAL REPORT AND RECOMMENDATIONS
OF THE
MARINE MAMMAL PROTECTION ACT,
SECTION 120**

**PINNIPED-FISHERY INTERACTION TASK FORCE:
COLUMBIA RIVER**

3-YEAR REVIEW AND EVALUATION

December 17, 2010

**Marine Mammal Protection Act,
Section 120
Pinniped-Fishery Interaction Task Force**

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NOAA FISHERIES
Pinniped-Fishery Interaction Task Force
Section 120 Task Force
3-Year Evaluation Report

December 17, 2010

BACKGROUND

History of the Current Application

On December 5, 2006, NMFS received an application co-signed by the Washington Department of Fish and Wildlife, the Oregon Department of Fish and Wildlife and the Idaho Department of Fish and Game (the States), requesting authorization to kill individually identifiable California sea lions in the Columbia River, which are having a significant negative impact on the recovery of threatened and endangered Pacific salmon and steelhead, under Section 120 of the Marine Mammal Protection Act (MMPA). The application described the affected salmon and steelhead runs; the means of identifying individual pinnipeds; the problem interactions between pinnipeds and listed salmonids at and below Bonneville Dam; and the expected benefits of the potential taking of pinnipeds. The application also documented past non-lethal efforts to prevent the problem interactions.

NMFS determined that the application provided sufficient evidence to warrant establishing a Task Force and published the required *Federal Register* notice on January 30, 2007. In the notice NMFS solicited public comment on the States' application and requested additional information. The Task Force, representing the academic, scientific, and conservation communities, Tribes, Federal and State agencies, considered the available information and public comments in the fall of 2007. The Task Force formally transmitted its recommendations to NMFS on November 5, 2007. NMFS considered the Task Force recommendations and, on March 17, 2008, notified the States of its partial approval of their application in a letter of authorization (LOA). The LOA specified the terms and conditions for authorized lethal removal of individually identifiable predatory California sea lions. Unless modified, extended, or suspended, the current LOA remains in effect through June 30, 2012.

MMPA Section 120(c)(5) requires Task Force evaluation of the effectiveness of the permitted lethal taking. Although the MMPA does not mandate the timing of the evaluation, NMFS adopted a recommendation from the Task Force and specified, in the LOA, that the evaluation take place following three years of implementation.

The States conducted removal activities during part or all of three seasons of salmonid migration (2008 - 2010) since LOA issuance. During these activities, the States and the

Columbia River Inter-Tribal Fish Commission (CRITFC) conducted non-lethal on-water hazing of sea lions, and the U.S. Army Corps of Engineers (Corps) modified the fish passage facilities at the dam to exclude sea lions and conducted active hazing from the dam and shoreline. The Corps also continued to monitor predation and fish passage at Bonneville Dam. The States permanently removed (i.e. transferred to public display or euthanized) a total of 37 individually identified predatory sea lions. NMFS updated the list of identified predatory sea lions authorized for removal several times to include animals that met the criteria since the authorization was first issued. NMFS provided the Task Force with periodic updates of these activities, including weekly updates on salmonid predation and passage, as well as predatory sea lion removal reports and updated lists of predatory sea lions.

Purpose of Reconvening the Task Force in 2010

NMFS reconvened the Task Force to review the accumulated data and evaluate the effectiveness of the program to lethally remove certain California sea lions below Bonneville Dam. NMFS sought specific recommendations from the Task Force related to continuing the program. In formulating those recommendations, NMFS asked the Task Force to follow a process and address specific questions identified below under “NMFS’ Expectations of the Task Force”. The MMPA requires that the Task Force “...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 NMFS, and NMFS shall disband the Task Force.”

NMFS’ Expectations of the Task Force

In evaluating the effectiveness of the State’s lethal removal program, 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 alternate points of view if consensus were not achieved. NMFS asked that Task Force recommendations “fairly reflect the full range of opinion of the group”. NMFS expected that the Task Force would acknowledge differences of opinion and include minority views with its recommendations.

To enhance this process, NMFS provided professional facilitators to manage the meetings of the Task Force, record meeting notes, and assist the group in assembling its recommendations. The facilitators utilized a 1-5 scale for testing the strength of Task Force members support for various decisions: 1 being very supportive of the action or decision and 5 being not at all supportive (and would actively take action to stop the decision from moving forward). This report was drafted by the facilitators and Task Force members’ feedback was incorporated into the final version of this report. In those areas where “consensus” was achieved, it indicates that members all showed 1s or 2s when the facilitator tested support for an idea.

For the evaluation, NMFS requested that the Task Force review all available information in light of their prior recommendations and the terms and conditions of the current LOA. To this end, the Task Force heard the States, Corps, and CRITFC present information and

analysis on implementation of lethal removals and non-lethal alternatives, sea lion presence at the dam, predation on salmonids, and fish passage at the dam. To aid the Task Force's evaluation of the success of implementation, NMFS requested that the Task Force consider the following questions as it determined whether to recommend modifications to the lethal removal program:

- (1) The Task Force previously recommended as an interim criterion for determining the effectiveness of the program that the average observed salmonid predation rate falls below one percent of the observed fish passage at Bonneville Dam. Does this criterion remain useful for evaluating effectiveness of the permitted lethal removal? 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? Have new non-lethal techniques been shown to be effective at deterring pinnipeds from predation that may be applicable to this interaction?
- (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) Does the available evidence suggest removal activities may be displacing sea lions to other sites along the Columbia River? If so, does this displacement present predation issues at other sites where salmonids are vulnerable?
- (5) 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?

In addition to these questions, NMFS encouraged the Task Force to consider other issues related to effectiveness, as time allowed and the Task Force deemed appropriate.

Public Participation

As required by the MMPA, Task Force meetings were open to the public and the date, time and location of evaluation meetings were posted for the public on the NMFS' Northwest Region website and announced through NMFS press releases. The public was not allowed to discuss or debate issues with the Task Force during working sessions, but time was allocated on the second day of each two-day meeting session to allow the public to provide or identify new or relevant information that could assist the Task Force in its deliberations. In addition, the facilitation team provided comment sheets for anyone who wanted to share written comments with the Task Force throughout the process. These comments were distributed as hard copies to all Task Force members.

NMFS' Decision and Implementation Process

NMFS clarified that, once the Task Force completed its deliberations and submitted its recommendations, NMFS would determine a course of action informed by the Task Force recommendations. These actions could include: no modifications to the currently approved protocols, modification of the intentional removal authority through altered terms and conditions in the letter of authorization, modifications to the non-lethal deterrence measures, or determination that the permitted lethal removals have been effective.

Other Applicable Laws

NMFS made it clear that, besides the MMPA process described above, in considering the States' application, NMFS must also comply with the National Environmental Protection Act, the Endangered Species Act and other relevant statutes. After considering the deliberations and/or recommendations of the Task Force, NMFS could modify the terms and conditions of the lethal removal authority. Should that occur, NMFS would, as appropriate, evaluate the effects of the modification on the environment including threatened or endangered species.

TASK FORCE ANSWERS TO NMFS' QUESTIONS & RECOMMENDATIONS

PREAMBLE: Under the current Section 120 as authorized under the MMPA, the Task Force finds that the current program (hazing, identifying, trapping, and removing) has not been effective at allowing the authorization to be fully implemented, nor at reducing predation on listed salmonids to less than 1%.

***NMFS Question 1:** The Task Force previously recommended as an interim criterion for determining the effectiveness of the program that the average observed salmonid predation rate falls below one percent of the observed fish passage at Bonneville Dam. Does this criterion remain useful for evaluating effectiveness of the permitted lethal removal? If not, what changes do you recommend?*

The Task Force agreed by consensus to the following recommendation in response to Question 1:

The 1% criterion should not be changed at this time, as it has not yet been tested. If the ratio of wild and hatchery fish changes substantially, there may need to be an adjustment to this target.

BASIS OF RECOMMENDATION ON QUESTION ONE:

The majority of the task force acknowledged that some progress has been made toward the goal of 1% or less predation on listed adult salmonids. The predation rate appears to have moved from 4% in 2004 to 2-3%, according to 2010 estimates. That said, the Task Force found that the percentage of impact is very dependent on other factors that are uncertain, fluctuate over time, and/or are outside the control of this process. These factors include: fish run size; the ratio of hatchery to wild fish; and other impacts limiting salmon abundance (e.g. hydro, harvest, and habitat) and their relative contributions to

recovery. The primary factor, the Task Force learned, was the variation in run size from year to year. The Task Force also learned that fewer CSLs were captured and removed (40 over a three year period) than the majority had advised in 2007 and were authorized under NMFS' criteria (up to 85 per year if there were enough CSLs identified as significant offenders). The majority of the Task Force found this to be an important consideration in determining the effectiveness of the interim criterion.

To aid their decision, the Task Force requested and reviewed information on spill operations; fish passage; genetic make up of salmonids; and the timing of pinniped presence and predation. The States and CRITFC reported that the timing of Upper Columbia Spring Chinook and Snake River Spring/Summer Chinook detections aligns with the presence of pinnipeds. These data confirmed that listed populations are available for take during the time that CSLs are in the area and at similar times as the unlisted populations; although, the proportion of the various salmonid populations (listed/unlisted) being taken by CSL during that time was not conclusively reported.

The Task Force acknowledged that Section 120 is not the most effective long term tool for resolving the pinniped-fishery interaction dilemma at Bonneville Dam or other areas in which there are growing problems in Oregon and Washington waters. Still, there was an expressed desire by a majority of the Task Force members to maintain the current authority and strengthen the level of resources in the short term, while pursuing other longer term and effective strategies (including possibly using other sections of the MMPA, e.g. Sections 101 or 109).

***NMFS 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? Have new non-lethal techniques been shown to be effective at deterring pinnipeds from predation that may be applicable to this interaction?*

The Task Force agreed by consensus to the following recommendation in response to Question 2:

The Task Force finds that the current hazing program does not appear to be effective at reducing predation in the area at this time. As such, the Task Force recommends removing non-lethal hazing as a condition of the States' permit. Instead, allow the management agencies to modify the hazing plan as they deem necessary to enhance removal efforts and ask that any methods utilized continue to be monitored, evaluated and adapted to meet the overall goal of reducing predation to 1% or less. The Task Force suggests that the States:

- **Explore using effective alternative technologies;**
- **Evaluate the acoustic environment around Bonneville Dam and, if feasible, consider using acoustic hazing in combination with boat hazing and turn off when hazing is not underway (off/on of acoustics to test effectiveness);**

- **Redirect resources to support the overall program of reducing predation; and**
- **Continue to seek expert advice.**

To enhance the program, NMFS and other regional entities should also pursue funding to support these efforts.

BASIS OF RECOMMENDATION ON QUESTION TWO:

The Task Force heard from the States and Corps that the current boat and dam based hazing program had been relatively ineffective at discouraging or stopping CSL predation to the extent necessary to reach the goal of 1% of the listed runs. The Task Force heard about challenges with conflicting management actions – keeping the CSLs off the haul out sites while encouraging them to enter the traps. The States reported that the current program includes nighttime hazing to encourage sea lions to move off the walls and into the traps. The States noted that Steller sea lions are also a growing presence and, because of their protected status, hazing is the only tool available for addressing Steller predation of salmon. The Task Force agreed that displacing Stellers that use the traps as haul out sites would allow for CSLs to take advantage of these areas, thereby improving the ability to trap, mark and remove eligible CSLs from the area. The Task Force found that the Sea Lion Exclusion Devices (SLEDs) installed by the Corps were proving to be effective at keeping the sea lions out of certain areas around the dam and should be continued.

In evaluating the hazing program, the Task Force considered a presentation regarding a report from the International Marine Animal Training Association (IMATA) that suggested hazing might be effective on ‘naïve’ animals (e.g. those inexperienced animals newly exposed to this type of deterrent) more so than their more experienced counterparts (e.g. those that have been exposed to hazing efforts in the past). They also heard that the use of Acoustic Deterrent Devices (ADDs) may be effective but only during times of limited background noise. This information indicates that the ADD would not be effective when high spill, bubbles and other sounds are present.

The States reported that they do not currently have enough resources required to be effective at impacting or removing CSLs using non-lethal efforts; the amount of boats, time and devices needed to sustain non-lethal techniques is neither available nor sustainable.

While the majority of Task Force members supported at least the same level of resource commitment to the overall effort of reducing pinniped predation, they also felt these resources could be directed in a way that produced a more successful outcome.

The Task Force considered whether and to what extent CSLs learn foraging behavior or are deterred from foraging by observing the success or punishment of other animals. Some members suggested the States should test a combination of lethal and non-lethal techniques, by exposing a euthanized individual to other CSLs while simultaneously implementing non-lethal hazing, to study and determine its effectiveness. Others felt this would not be a useful experiment and that it could even lead to public opposition that

would have an adverse impact on the overall management program. Ultimately, not all task force members agreed to make this specific recommendation, but did agree that the States and Corps should explore options at their discretion to maximize the resources and authorities available to reduce predation on endangered salmon in the Columbia River system.

With regard to new non-lethal techniques, the Task Force was presented an update on an electric grid developed by Smith-Root that they had heard about in 2007. Since 2007, this technique was tested and found to have a negative impact on migrating spring Chinook. As such, this tool was deemed unacceptable.

The Marine Mammal Commission (MMC) reported that an additional non-lethal technique, taste aversion using lithium salt tethered to a fish, was tested at Ballard Locks but not proven effective and would be very challenging to implement given the geographic scale of the Bonneville dam area. The MMC also offered that next steps with the hazing effort might include: increasing sea lion exclusion zone (SLEZ) areas; combining on/off acoustics with hazing; and requesting IMATA to do a follow up assessment and then share recommendations for implementing non-lethal techniques. The Task Force also heard a suggestion for creating a holding area for captured CSLs to hold them during the critical fish migration period. While the Task Force did not agree to offer this specific recommendation, it might be explored by the management agencies as an ‘alternative technology’.

***NMFS 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?*

The Task Force agreed by consensus to the following recommendation in response to Question 3:

The criteria for identifying predatory CSLs are cumbersome and may reduce effectiveness of the program to manage predation on endangered salmonids.

Removal Considerations (Trapping):

To increase effectiveness so that reducing predation to 1% or less is possible, more animals must be trapped in order to be removed.

- **To do this, a more effective trapping program must be in place.**
- **This includes: more traps; more people available to work the traps seven days a week; actions to preclude Steller sea lions from impeding use of traps by CSLs; and decreasing other haul out areas.**

To increase effectiveness to reduce predation over time, monitoring and evaluation of the effectiveness of the trapping methods should be completed.

To enhance the program, NMFS and other regional entities should also pursue funding to support these efforts, and redirect resources to support the overall program of reducing predation.

2010 Criteria Modifications: Lethal Take Options:

The Task Force agreed by consensus to the following recommendation:

The Task Force finds that the current lethal removal program, as applied, has not been effective at reducing predation to 1% in the area at this time.

As such, a majority of the Task Force recommends the following, including modification to the terms and conditions of the current authorization:

1) Enhance the Lethal Procedures Program in the following ways:

- Encourage use of firearms from land and boat
 - i. Utilize boats to retrieve carcasses in the water and to dispatch wounded animals
 - ii. For carcasses: recover (if possible), with downstream monitoring if unable to locate
- Increase haul out areas that are suitable for shooting and/or make current haul out sites more accessible for shooters
- To enhance efforts to lethally remove CSLs, a majority of the Task Force endorses and encourage the States to develop with the Corps a safety plan (where needed) for the use of firearms from boats and then use firearms from boats in accordance with the safety plan.

2) Eligibility List for Lethal Removal:

In order to increase the number of marked animals the Task Force recommends using alternative methods (e.g. shooting a streamer into the skin of the CSLs so they are easier to identify categorically as a salmon predator at the dam) in addition to brands to identify animals more quickly.

NOTE: Strength of support for the above 'lethal procedures' changes, on a scale of '1' (strong support) to '5' (no support): Level '1' = 8; '2' = 7; '5' = 1

The majority of the Task Force members find that the criteria for identifying predatory CSLs should be modified in the following ways:

Lethal Option A: The following criteria modification is intended to increase effectiveness by enhancing the States' ability to identify animals for inclusion in the removal program and the ability to increase the rate of removal:

- 1) Has been documented eating salmon in the Columbia River above Tanner Creek from January 1-May 31 of any year OR

- 2) Has been observed above Tanner Creek any five days within a season OR
- 3) Has been observed above Tanner Creek in multiple years.

NOTE: Strength of support for ‘Lethal Option A’, on a scale of ‘1’ (strong support) to ‘5’ (no support): Level ‘1’ = 6; ‘2’ = 5; ‘3’ = 3; ‘4’ = 1; ‘5’ = 1

Lethal Option B: The following criteria modification is intended to increase effectiveness by enhancing the States’ ability to identify animals for inclusion in the removal program and the ability to increase the rate of removal, especially during the migration period of ESA-listed adult salmon:

Eligibility criteria for lethal removal:

- 1) If seen during the leading edge of the listed salmonids migration (February 1-April 30), any CSL above Tanner Creek is eligible for removal.
- 2) If seen during January and after 4/30, use the following to determine eligibility:
 - Has been documented eating salmon in the Columbia River above Tanner Creek from January 1-May 31 of any year; OR
 - Has been observed above Tanner Creek any five days within a season; OR
 - Has been observed above Tanner Creek in multiple years.

NOTE: Strength of support for ‘Lethal Option B’, on a scale of ‘1’ (strong support) to ‘5’ (no support): Level ‘1’ = 5; ‘2’ = 6; ‘3’ = 2; ‘4’ = 1; ‘5’ = 2

Lethal Option C: The following modification is intended to increase effectiveness by enhancing the States’ ability to increase the rate of predatory CSL removal:

Eligibility criteria for lethal removal:

- 1) Zero tolerance in the area above Tanner Creek January 1-May 31 up to the limit of the current LOA. An ‘identifiable animal’ is an animal present at Bonneville in the CSL Exclusion Zone.
- 2) After May 31, use the following:
 - Has been documented eating salmon in the Columbia River above Tanner Creek from January 1-May 31 of any year; OR
 - Has been observed above Tanner Creek any five days within a season; OR
 - Has been observed above Tanner Creek in multiple years.

NOTE: Strength of support for ‘Lethal Option C’, on a scale of ‘1’ (strong support) to ‘5’ (no support): Level ‘1’ = 7; ‘2’ = 4; ‘3’ = 3; ‘4’ = 1; ‘5’ = 2

Criteria Modification Option D

One perspective is that there is likely no easy way to increase effectiveness of the current program and no effective long-term solution to the problem of sea lion predation on salmonids. While including exclusionary devices on fish ladders has been successful at keeping CSLs out of these areas, such an action is not possible for inclusion across the river. Small scale removal of predators from open population settings where other predators can fill in where an animal has been removed has been shown to be ineffective in a number of other situations (e.g. bears, wolves, etc). In order to be effective, activities would need to be on a much larger scale than is appropriate for Section 120 actions. Because of this, lethal take should not continue.

NOTE: Strength of support for Option D, on a scale of ‘1’ (strong support) to ‘5’ (no support): ‘1’ = 0; ‘2’ = 1; ‘3’ = 2; ‘4’ = 3; ‘5’ = 10

BASIS OF RECOMMENDATIONS ON QUESTION THREE:

The Task Force heard that the total number of CSLs removed over the three-year authorization period was 40 (as opposed to the up to 85 per year discussed in 2007). The Task Force considered whether the criteria for identifying and capturing predatory sea lions were adequate to allow the States full implementation of their management program. The majority of the Task Force acknowledged its original intent in 2007 was to establish criteria that would avoid targeting animals that are not significant predators of salmon at the dam. This year the Task Force continued deliberations about whether *any* of the animals observed in the area could be considered ‘naïve’, i.e. not major predators, although there was no agreement on this matter. In addition, many questioned whether the identification procedures required of the States and Federal agencies to list the animals for removal might actually hinder the trap and removal process, while others felt the law is very clear on this requirement.

The management agencies clarified for the group that even if the ‘Table 3.3’ list of identifiable/eligible CSLs grew, they would still face challenges because of low trap and removal rates currently occurring. Task Force members questioned whether CSLs may exhibit trap shyness resulting from an initial experience of being trapped and branded. Management agencies reported that while good capture rates seem to occur early in the season, overall nearly 70% of those captured are not re-captured; the majority of the Task Force concluded that the management program would be improved by allowing the States to capture and remove more CSLs on the first capture, but this would require a method by which they can be identified as such. Task Force members acknowledged that this did not necessarily reflect how ‘shy’ the animals are to a trap.

After the October Task Force sessions, NMFS analyzed trap and release data from 2010 compared to the draft revised criteria developed by the Task Force at their October meeting. Of 20 animals captured and released, one was on the list and released; 13 were later added to the list subsequent to the release; 8 were recaptured and removed; and 12 remain extant – 6 eligible for removal and 6 not meeting the criteria. Overlaying the Task Force ‘Option A’ (from October 26) criteria, NMFS looked at the 20 eligible animals and assumed the CSL was listed and identifiable at the time of trapping and removed on the

first eligible encounter: 8 would have been removed when first captured; one would be recaptured and removed; and 11 would remain extant – 8 eligible for removal and 3 not meeting the new criteria. In sum, overall the data indicated little difference in resulting trap/removal using the two different sets of criteria.

The Task Force considered and deliberated on whether Bonneville Dam was an ‘open population system’ and whether, how and to what extent CSLs removed are replaced by new CSL predators at Bonneville dam. The Task force agreed that the group of animals at Bonneville Dam did not operate as an open population or as a completely closed population. There was not enough information available relative to CSLs at Bonneville to make a definitive conclusion about this effect, and the task force also recognized that the issue is complex. For some Task Force members, the fact that 30-60% of the animals sighted at the Dam each year were previously unidentified, and in light of evidence about ineffectiveness of lethal removal in open populations settings in other species, influenced their recommendations for whether to recommend continuing the lethal take program.

The majority of the Task Force also determined that the agencies need additional tools for accessibility to and removal of animals during early (first or second occurrence) identification and/or capture. Suggestions included more staff resources available to trap a CSL when it hauls out on a trap (doors can be dropped, trapping animals in the traps, only at certain times and days when necessary biologists, equipment operators, and other staff are available), setting additional traps, modifying the States’ authority to shoot an animal that has met the eligibility criteria, and/or requesting tribal participation for removal and utilization of CSLs for subsistence and ceremonial purposes. One member noted that courts have ruled that tribal subsistence and ceremonial takes of marine mammals would require obtaining a waiver under the MMPA. The States were currently in the process of requesting funding from BPA and the Northwest Power and Conservation Council for three additional traps for the coming year. The States and Corps also noted that use of firearms would continue to be limited by the safety policies in place at the project.

The Task Force discussed information indicating that the early part of the salmon run makes up a genetically important portion of the fish and therefore should be protected. Data from the last three years showed that half the run tends to pass Bonneville Dam by the first week of May – though this data and future projections are not precise. The Task Force desire to protect this critical part of the salmon run was balanced with some Task Force members suggesting of targeting CSLs with the highest levels of predation.

Finally, the Task Force reviewed information about the status of other CSL sources of prey that might supplant CSL salmon – smelt and Pacific lamprey. The States reported that smelt have been recently listed as threatened under the federal ESA and that the numbers of Pacific lamprey in the Columbia River have been declining to the level that they are considered to be at high risk.

NMFS Question 4: *Does the available evidence suggest removal activities may be displacing sea lions to other sites along the Columbia River? If so, does this displacement present predation issues at other sites where salmonids are vulnerable?*

NMFS recommended the Task Force suspend discussion of this question and shared the following in writing with the Task Force during their deliberations on November 9:

Question 4 to the Task Force stems from the observation that individually identified California sea lions once observed at Bonneville occasionally fail to return to the dam following an absence. Although some individuals return following an absence of days, weeks, or a single season, return of an individual following two seasons absence is rare. Data indicates that some of the individuals observed at Bonneville have been re-sighted at Willamette Falls (C275, C257, C235, C917) where they are foraging for salmonids. Question 4 was intended to focus Task Force attention on the sighting data from elsewhere in drainage and seek your opinion on whether non-lethal hazing actions at Bonneville may be contributing to dispersal of animals from the dam to other locations. From the limited discussion of Question 4 by the Task Force and data on sea lion movements throughout the estuary, presented by Doug Hatch, we are now satisfied that insufficient data are available to establish a causal relationship between hazing and sea lion dispersal and that sea lions movements throughout the estuary is likely precipitated by a number of factors. We therefore withdraw Question 4 from further consideration.

The Task Force reached consensus to suspend discussion of the question with the caveat that it should be revisited during a future evaluation of the pinniped management program.

NMFS Question 5: *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?*

No additional changes were recommended to the terms and conditions of authorization or aspects of the States' implementation of the removal activities currently in place. However, some members of the Task Force signed a letter of support for the States' request for additional funding to supply three more traps at Bonneville. The letter was addressed to the Columbia Basin Fish and Wildlife Authority, Northwest Power and Conservation Council and Bonneville Power Administration.

The Task Force recognized that the Federal Columbia River Power System's spill program is very complex and acknowledged that changes to spill patterns would be a challenge requiring consideration of a multitude of other factors. Still, they suggested that the agencies consider how changes to the spill program might impact CSL predation on the endangered salmon they are working to protect in the Columbia River system.

BASIS OF RECOMMENDATION ON QUESTION FIVE:

The Task Force reviewed 2002-2010 data on adult fish passage from January through May. They heard that total flows (including spill at the dam) and water temperatures are moderately correlated with adult passage. The proportion of predation observed in the early portion of the run appears to range from 12-46%. These proportions show less predation occurring during early 'start of spill' operations and more predation when the start of spill operations is delayed.

The Corps explained that spill currently is initiated for increased juvenile salmon passage survival rates passing the dam and suggested that predation rates should not be linked to spill, but rather to fish passage numbers. Spill is not likely a primary factor in bringing higher numbers of adult salmonids up to the dam and therefore creating the predator prey swamping effect. Earlier spill may or may not influence adult fish passage and may or may not be possible given Bonneville's link to broader power system operations in the Columbia River. Other factors influencing fish passage are natural river flows and ocean conditions.

CONCLUDING REMARKS OF THE FACILITATOR

The Pinniped-Fishery Task Force met for four full-days between October 25 and November 10, 2010. During these meetings, the members heard information from a team of resource advisors and shared additional information that served as the foundation for their gaining a deeper understanding of the complexities underlying the Columbia River pinniped-fishery conflict. All of these deliberations have been summarized in the meeting notes attached to this report in Appendix C.

The Task Force reached consensus on four key areas of their evaluation of the current CSL management program:

- 1) The interim criterion for determining the effectiveness of the program (the average observed salmonid predation rate falling below one percent of the observed fish passage at Bonneville Dam) had not been tested and therefore should not be changed at this time;
- 2) The current hazing program does not appear to be effective at reducing predation in the area and therefore non-lethal hazing should be removed as a condition of the States' permit;
- 3) More animals must be trapped in order to be removed and a more effective trapping program must be in place to increase the effectiveness of meeting the 1% criteria; and
- 4) The current lethal removal program, as applied, has not been effective at reducing predation to 1% in the area at this time.

Where the Task Force did not reach consensus, a range of options were developed and included for NMFS and the Secretary of Commerce to consider in making a finding in

relation to whether and how to make changes to the States' authorization for lethal removal of California Sea Lions under Section 120 of the MMPA.

While the complexities of this issue continue and the problems have not been solved, the Task Force and other attendees gained valuable insight in to the on-going interactions between these species, the effectiveness of the removal program and the impacts to endangered salmon in the Columbia River system. Together with their resource advisors, the Task Force evaluated the different aspects of the program and shared their best thinking on the matter given the information available to them at this time.

The Task Force has had an opportunity to review this report and provide appropriate revisions, as they deemed necessary. All members agreed it was an acceptable representation of their views and recommendations. This report is respectfully submitted by Donna Silverberg and the facilitation team of DS Consulting on behalf of the Pinniped-Fishery Interaction Task Force on December 17, 2010.

Appendices:

A-Task Force Protocols/Membership (balanced taskforce)

B-Task Force Meeting Agendas and Notes (record of deliberations)

C-All Presentations and Documents Provided to Task Force (reference for supporting 'informed' recommendations)

D- Sign in Sheets for All Task Force Meetings (level of public participation)

E- List of all Federal Register & media notices of meetings (public notice requirements)