

Summary Sheet

Meeting dates: February 7, 2019

Agenda item: Fish Committee: Pinniped Update

Presenter(s): Nate Pamplin, Policy Director, WDFW
Dr. Scott Pearson, Senior Wildlife Program Scientist, WDFW
Dr. Joe Anderson, Senior Fish Program Scientist, WDFW

Background summary

Given separate policy discussions over the past year regarding the Puget Sound Chinook Harvest Management Plan and the Governor's Southern Resident Killer Whale Task Force, there has been increasing interest in understanding the role of pinniped predation on salmon. The Fish and Wildlife Commission adopted a position statement regarding pinniped predation on salmon at the August 2018 meeting [[link](#)].

Department staff briefed the Fish and Wildlife Commission on pinniped management at the following meetings:

- August, 2018: Staff provided an overview of pinniped life history, recent publications on salmon consumption, management options under the Marine Mammal Protection Act (MMPA).
- November, 2018: WDFW/ODFW provided a joint presentation of pinniped management, with an emphasis on pinniped management in the Columbia River.
- December, 2018: Staff provided an overview of pinniped consumption on salmon, with an emphasis on recent analyses of harbor seal predation on Chinook smolts and a detailed overview of management options under the MMPA.

At the Commission meeting de-brief in December 2018, there was interest expressed in having more time to discuss and interact with staff about the analyses presented at December and to understand next steps for management consideration—both topics will be the focus of the February 7, 2019 Fish Committee agenda. Staff will have the December 2018 powerpoint presented, along with a couple additional slides, to further discuss the consumption and smolt-to-adult survival modeling analyses with the Committee.

There has been a number of pinniped management developments since the December 2018 Commission briefing, summarized below.

MMPA amendment and status of new MMPA Section 120(f) application

In December 2018, President Trump signed into law S. 3119 – the Endangered Salmon Predation Prevention Act – which gives state and tribal resource managers more flexibility to manage sea lion predation in the Columbia River.

S. 3119 allows NMFS to approve permits for Washington, Oregon, Idaho, and several area tribes that will streamline the removal process of a designated number of sea lions from a portion of the Columbia River and adjacent tributaries each year.

The new law gives fish and wildlife managers more flexibility to remove sea lions by:

- Expanding the sea lion removal area both above and below Bonneville Dam. Under S. 3119, sea lions can be removed in the Columbia River's mainstem between River Mile 112 - near the I-205 bridge - and McNary Dam. Removal can also occur in tributaries in Washington and Oregon.
- Eliminates criteria for removal previously required (e.g. individually identified by marking, previously hazed, and documented feeding on salmon and steelhead).
- Allows the removal of Steller sea lions as well as California sea lions (current permit is just for California sea lions).

The states and eligible treaty tribes have initiated the process to obtain a joint permit for removal of California and Steller sea lions in the Columbia River's mainstem between River Mile 112 and the McNary Dam, and Washington tributaries. Staff are currently writing the application and have set a March deadline for submission. Once submitted and if determined sufficient by NMFS, then NMFS will review via NEPA and convene a pinniped task force to review the co-managers' application. It is anticipated that a new permit under Section 120(f) will not be issued for at least a year while the NEPA and other reviews are under way.

Because of the way the legislation is written, Oregon and specific treaty and non-treaty tribes will need to coordinate and apply for a separate permit for pinniped management in the Oregon tributaries, if the parties elect to pursue management in those tributaries.

Governor's budget

The Governor's budget proposed funding for both of the Southern Resident Killer Whale Task Force recommendations that addressed pinniped management. About \$1.2 million was proposed to implement recommendation 1-12 for pinniped management in Puget Sound and the Outer Coast and \$1.2 million was proposed for implementing pinniped management outlined in recommendation 1-13 for the Columbia River. Budget summaries are attached.

NPCC Funding Request

Last month, representatives from WDFW, ODFW, IDFG, and CRITFC presented a funding request to the Northwest Power and Conservation Council's Fish & Wildlife Committee for equipment to assist with the handling of Steller sea lions.

The equipment used for current trapping equipment was designed and built for the handling of California sea lions. While this equipment can also be used to handle small Steller sea lions, it would not be adequate for the safe handling of large adults, which can weigh over a ton.

The agencies requested \$52,000 in funding from the Council's cost-savings account for the fabrication of a barge, transfer cages, and associated equipment. The request was unanimously approved by the Fish & Wildlife Committee on January 15, and by the Council on January 16, 2019.

WDFW is the lead agency working with BPA to secure final approval and work through the contract process.

2019 Legislative Session Pinniped Bills

At the time of writing this summary sheet, there are two bills introduced in the 2019 legislative session that relate to pinniped management.

- HB 1824 sponsored by Representative Young would require WDFW to submit an MMPA application under Section 4 or Section 120 to request maximum removal of California sea lions to enhance survival of salmon and southern resident orcas.
- SB 5824 sponsored by Senator Ericksen, includes a section 3 that would require WDFW to establish a bounty system to take pinnipeds that are interfering with the state's goals for salmon recovery.

Preparations for 2019 Columbia River Field Season

WDFW is staffing up and getting prepared for the 2019 field season to capture, mark, and remove California sea lions per our current MMPA Section 120 letter of authorization.

WDFW, ODFW, IDFG, and CRITFC are submitting a letter to NOAA to revise the current conditions of our lethal removal permit at Bonneville for operations this April. This is an interim step to make the removal program more efficient while we obtain a permit under the new authority of Section 120(f). Further, the request reflects the recommendations of the Bonneville Fishery-Pinniped Interaction Taskforce.

February 8 is the target date for submission to NMFS. We anticipate hearing if NMFS will approve the request by early April. However, approval could be delayed if there is another partial federal government shutdown due to lapse in federal appropriations.

Science Update

The staff presentation in December 2018 to the Commission included information on harbor seal diet from a single year, 2016. We have two additional years of samples that are currently being analyzed. The hard part (bones and beaks) analysis of these new samples was completed this week and we expect the DNA results in March. At that point, an analyst will need to convert the raw DNA information into diet percents, a task that we expect to take another couple of weeks. At the same time, we will also be analyzing DNA from California sea lion scat collected primarily in central Puget Sound. This new DNA information will help us better understand the year-to-year and month-to-month variability in harbor seal diet and provide new insights in to sea lion diet.

We have not conducted a formal sensitivity analysis to help us understand the relative influence of the variables included in our model on our estimate of Chinook consumption by seals. However, it is clear when we manipulate model inputs (e.g., fish weight, percent of salmon in seal diet, seal population), that the model is particularly sensitive to estimated juvenile Chinook weight and the percent of juvenile Chinook in seal diet. To address the issue of uncertainty in fish weight, we are currently locating good condition fish bones (vertebrae and otoliths) from seal scat to provide a better estimate of fish mass. We expect to have new fish mass information in the next couple of weeks and we also plan to conduct a formal sensitivity analysis of the model when it is complete.

In the summer of 2019, Canadian researchers will be counting harbor seals north of the border. Depending on the new biennium State budget scenario, we also hope to conduct new harbor seal surveys in 2019, or at the latest in 2020. These new counts, when combined with previous estimates, will help us gain a better understanding of the current Salish Sea seal

population size. We are currently relying on a single Sound-wide estimate from 2014. The last estimate before this 2014 estimate was from 1999. This large separation in time between these estimates results in considerable uncertainty in the current seal population size.

The take of marine mammals under the marine mammal protection act requires an understanding of a given species' population size by stock. Our new population estimates for harbor seals will be critical to this calculation. It is our understanding that the National Marine Fisheries Service scientists intend to proceed with estimating the important population variables (e.g., optimal sustainable population) this spring/summer and updating these estimates as the new counts become available.

Models are another tool that can be used to predict food web impacts associated with changes in a given species' population. NOAA scientists are currently developing a new ecosystem model for Puget Sound. This new Atlantis model, will allow researchers to make predictions about the food web changes resulting from changing the population of a given component of the model, such as harbor seals. It is our understanding that the model will take at least another year before it is complete.

During the December 2018 presentation, we indicated that we had little understanding of the effects of predatory fish, such as hake, on salmon. We mentioned hake because it represents a considerable biomass in our mid-water trawls in some years and because it is known to consume salmon. NOAA and WDFW researchers recently met and discussed the possibility of investigating predatory fish diet. This is just the beginning of what we hope will be a new investigation into the diet of predatory fish.

If the Governor's budget proposal is funded by the Legislature, WDFW will have resources to convene the science panel and further evaluate impacts of pinniped predation and be able to provide recommendations on whether intervention is warranted within the management caps of the MMPA. Also, we'll be able to increase annual surveys of pinnipeds in Washington waters, which is critical for a variety of management needs.

Staff recommendation: N/A

Policy issue(s) and expected outcome: N/A

Fiscal impacts of agency implementation: N/A

Public involvement process used and what you learned: N/A

Action requested and/or proposed next steps: N/A

Draft motion language: N/A

Post decision communications plan: N/A

Orca Recommendation 1-12 – Pinnipeds in Puget Sound and Coast

Fiscal detail:

Operating Expenditures	FY 2020	FY 2021	FY 2022	FY 2023
Fund 001-1	\$602,000	\$638,000	\$280,000	\$280,000
Total Expenditures	\$602,000	\$638,000	\$280,000	\$280,000
Biennial Totals	\$1,240,000		\$560,000	
Staffing	FY 2020	FY 2021	FY 2022	FY 2023
FTEs	2.4	2.4	1.6	1.6
Average Annual	2.4		1.6	
Object of Expenditure	FY 2020	FY 2021	FY 2022	FY 2023
Obj. A	\$84,000	\$84,000	\$84,000	\$84,000
Obj. B	\$30,000	\$30,000	\$30,000	\$30,000
Obj. E	\$353,000	\$382,000	\$104,000	\$104,000
Obj. T	\$135,000	\$142,000	\$62,000	\$62,000

What is the problem, opportunity or priority you are addressing with the request?

- Increase Chinook abundance for Southern Resident orcas by reducing pinniped predation on Chinook.
- Better understand and determine if the number of adult and juvenile Chinook lost to harbor seal and sea lion predation can be decreased in Puget Sound and the outer coast.

What is your proposed solution?

- Work with tribes and National Oceanic and Atmospheric Administration to determine if pinniped (harbor seal and sea lion) predation is a limiting factor for Chinook in Puget Sound and along Washington’s outer coast and evaluate proposed management actions.
- Conduct a pilot project for the removal or alteration of artificial haul-out sites where sites are associated with significant outmigration and predation of Chinook smolt. Fund a study to determine if pilot removal accomplishes the goal of significantly reducing Chinook smolt predation.
- Complete ongoing regional research and coordinate an independent science panel (Washington Academy of Sciences or National Academy of Sciences) to review and evaluate research needed to determine the extent of pinniped predation on Chinook salmon in Puget Sound and Washington’s outer coast. The ongoing and new work should include an assessment of factors that may exacerbate or ameliorate predation such as infrastructure haul-outs, hatchery strategies, the increased presence and impact of transient killer whales, and the presence/absence of forage fish or other fish that are staple food for pinnipeds.
- Engage NOAA to determine the optimal sustainable populations of harbor seal stocks in Puget Sound.

- Convene a management panel of state, tribal, and federal agencies to communicate with the independent science panel; review the results of the ongoing regional research and independent scientific review; and assess appropriate management actions. Citizen stakeholders should also be engaged in the process. If pinniped removal is identified as a management option, secure authorization through the Marine Mammal Protection Act. (One-time)
- Provide funding for the science, research, coordination, decision-making and, if deemed necessary, removal.

What are you purchasing and how does it solve the problem?

- Funding is for ongoing coordination with NOAA, tribes, other state agencies, and stakeholders to evaluate and monitor the extent of pinniped predation of Chinook in the Puget Sound and outer coast in order to determine appropriate action(s) to reduce Chinook smolt predation. This includes developing models to estimate total adult and juvenile Chinook consumption by pinnipeds.
- One-time science review and study to determine the extent of pinniped predation of Chinook.
- Aerial survey time and equipment to monitor harbor seals and other pinnipeds in the Puget Sound and along Washington’s coast. Updated estimates of pinniped populations by region and stock. Coordinated surveys with Canadian collaborators to produce Salish Sea estimates of pinniped populations.
- Coordination with a management panel of state, tribal, and federal agencies to assess appropriate management actions to reduce pinniped predation of Chinook and to assess the likely benefits to Chinook from these actions.

Workforce assumptions

- 1.0 Fish & Wildlife Research Scientist 2 (split between a Fish and a Wildlife researcher) to: (1) summarize pinniped diet and fish abundance data in-hand and not yet published, (2) produce estimates of Chinook consumption by pinnipeds, (3) conduct a one-time science review and studies on pinniped predation of Chinook in Puget Sound, and along Washington’s coast, (4) oversee new efforts to estimate pinniped populations; (5) oversee design and evaluation of pilot study of a haul-out removal; and (6) coordinate this work with Tribal co-managers and partners.
- 1.4 FTE for indirect costs.

Orca Recommendation 1-13 – Pinnipeds in the Columbia River

Fiscal detail:

Operating Expenditures	FY 2020	FY 2021	FY 2022	FY 2023
Fund 001-1 General Fund State	\$525,000	\$694,000	\$544,000	\$546,000
Total Expenditures	\$525,000	\$694,000	\$544,000	\$546,000
Biennial Totals	\$1,219,000		\$1,090,000	
Staffing	FY 2020	FY 2021	FY 2022	FY 2023
FTEs	5.2	5.2	5.2	5.2
Average Annual	5.2		5.2	
Object of Expenditure	FY 2020	FY 2021	FY 2022	FY 2023
Obj. A	\$251,000	\$251,000	\$251,000	\$251,000
Obj. B	\$101,000	\$101,000	\$101,000	\$101,000
Obj. C	\$0	\$129,000	\$0	\$0
Obj. E	\$51,000	\$53,000	\$61,000	\$62,000
Obj. G	\$4,000	\$5,000	\$10,000	\$10,000
Obj. T	\$118,000	\$155,000	\$121,000	\$122,000

What is the problem, opportunity or priority you are addressing with the request?

- Increase Chinook abundance for Southern Resident orcas by reducing pinniped predation on Chinook

What is your proposed solution?

- Work with co-managers and request a permit from the National Marine Fisheries Service (NMFS) to expand sea lion removal efforts in the Lower Columbia consistent with the 2018 amendments to the Marine Mammal Protection Act, Section 120(f) to reduce the predation of salmonids.
- Increase pinniped removals under existing permit and implement increased removals once new permit is approved by NMFS.
- Monitor pinniped distribution in the Columbia River estuary to guide management actions.
- WDFW will work with Oregon Department of Fish and Wildlife to pilot a project to remove artificial sea lion haul-out sites in the lower Columbia River and study the effectiveness of the action in reducing predation on Chinook.

What are you purchasing and how does it solve the problem?

- Ongoing funding to work with partners to implement the lethal removal of sea lions in the Columbia River’s tributaries and in the main stem upstream of river mile 112 and downstream of McNary Dam. Will allow expansion of removals into fall and covers Bonneville Dam and tributaries.

- Ongoing state funding for pinniped distribution surveys in the Columbia River estuary to Bonneville Dam.
- Smith-Root electrified dock system for pilot study to remove artificial sea lion haul-out sites in the lower Columbia River and the effectiveness of the action in reducing predation on Chinook.

Workforce assumptions

- 2.0 FTE Scientific Technician 3 to work with partners to carry out management program from MMPA amendment, support pinniped distribution surveys in the Columbia River estuary, and support haul-out pilot study.
- 1.0 FTE Fish & Wildlife Biologist 3 to work with partners to carry out management program from MMPA amendment, support pinniped distribution surveys in the Columbia River estuary, and support pinniped haul-out pilot study.
- 1.0 FTE Fish & Wildlife Research Scientist 2 to work with partners to carry out management program from MMPA amendment, support ongoing pinniped distribution surveys in the Columbia River estuary, and support pinniped haul-out pilot study.
- 1.2 FTE indirect costs