

Efforts Under NOAA Permit To Remove, Euthanize Salmon-Eating Sea Lions In Columbia, Willamette Rivers Showing Promising Results

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A recent report on pinniped predation shows that the presence of California sea lions at Bonneville Dam has declined significantly since 2015 when 195 of the marine mammals were observed by the U.S. Army Corps of Engineers in the dam's tailraces. The number in 2021 was just 24.

Although numbers of the larger steller sea lions (SSL) at the dam are higher than the number of California sea lions (CSL) – averaging around 60 since 2014 – their presence has remained fairly steady. Overall, the combined number of pinnipeds observed at the dam (both California and steller sea lions) has dropped over the past three years. The average number observed per year from 2019 to 2021 was about 80, while in 2015 some 264 of the animals were observed, 2016 recorded 203 and 156 in 2017.

Even with a lower number of pinnipeds in the dam's tailrace, the sea lions still take a big bite out of salmon and steelhead runs and some of those fish are listed under the federal Endangered Species Act. Sea lions take the biggest bites out of spring-arriving fish: 3.3 percent of the run of spring Chinook in 2021 and 7.2 percent of the steelhead run, according to the 2021 Corps report.

"Evaluation of Pinniped Predation on Adult Salmonids and Other Fish in The Bonneville Dam Tailrace, 2021," can be found [here](#). Authors are Kyle S. Tidwell and Bjorn K. van der Leeuw of the Corps' Fisheries Field Unit, Portland District.

As a result of congressional action in 2018, the National Marine Fisheries Service (NOAA) granted the states and several Columbia River tribes on August 19, 2020 co-manager status on a new and expanded authorization to lethally remove both California and steller sea lions in the Columbia River, between river mile 112 (I-205 bridge) and river mile 292 (McNary Dam), or in any tributary to the Columbia River that includes spawning habitat of threatened or endangered salmon or steelhead. The permit also includes the Willamette River.

Known as the Endangered Salmon Predation Prevention Act, the legislation amended the Marine

[See CBB, August 14, 2020, "NOAA FISHERIES AUTHORIZES EXPANDED LETHAL REMOVAL OF SALMON-EATING SEA LIONS IN COLUMBIA RIVER FROM PORTLAND TO MCNARY DAM, TRIBUTARIES,"](#)

Also declining is the number of sea lions captured and euthanized in the now two-year old combined state and tribal effort to reduce the carnage by the animals on salmon and steelhead at Bonneville Dam and at Willamette Falls in Portland, OR.

Twenty-three sea lions were euthanized at Bonneville Dam during the spring of 2022 (9 steller and 14 California), whereas 33 were euthanized in 2021 (20 California and 13 steller). Nine sea lions were captured and euthanized in 2021 at Willamette Falls (8 California and one steller) and just 3 California sea lions and no steller sea lions have been euthanized so far this year at Willamette Falls.

"My sense is that pinniped numbers were similar in 2022 to 2021," said Doug Hatch, interim manager of the Fishery Science Department at the Columbia River Inter-Tribal Fish Commission. "I think the story is we've made big strides in reducing CSL numbers and we're starting to have an impact on SSL."

The recent lethal removals from June 2020 to this spring are in addition to the 76 California sea lions cited in a five-year report by the states of Oregon, Washington and Idaho, which ended August, 2020.

[See CBB, January 6, 2022, REPORT: 76 SALMON-EATING CALIFORNIA SEA LIONS LETHALLY REMOVED AT BONNEVILLE DAM OVER FIVE-YEAR PERIOD, NON-LETHAL HAZING INEFFECTIVE,](#)

Capture of the larger and more aggressive steller sea lions is much more difficult than capturing California sea lions. Tribes and states removed the first steller in the fall of 2020 after the 120(f) permit from NOAA that allows removal and euthanization of steller sea lions was issued, Hatch said.

"There has been a learning curve to remove stellers due to their size and staff safety concerns," he said. "We are making an impact on the habituated animals, those are the ones returning year after year. This is important because only about 7 percent of CSL observed at Astoria are again re-sighted at Bonneville. But a high percent of sea lions seen in one year at Bonneville are seen in subsequent years. So removing habituated animals reduces recruitment of new animals. I assume that similar patterns would be seen in SSL but we don't have enough of them branded to verify."

Michael Brown, Marine Mammal (acting) Program leader at the Oregon Department of Fish and Wildlife, said that in general, California sea lions numbers at Willamette Falls have been declining since the new removal program was authorized in 2020 and so there are fewer to catch and euthanize. And, the few that do remain at the Falls have been harder to catch the past two years since they don't use the traps as much as when there were more animals around.

"Steller sea lion numbers, however, have been relatively stable and also have been harder to catch since they mostly forage further downriver and do not use the traps very much, if at all," Brown said.

The good news is that the impact to the winter steelhead run in the Willamette, which is listed as threatened, "is expected to be minimal since the cohort of California sea lions that overlapped most with that run have been removed. The California sea lions that are still present mostly overlap in timing with the spring Chinook run, also listed as threatened, but their impact too is quite small since there are so few sea lions left."

Some 36,934 spring Chinook (the 10-year average is 31,123) and 8,170 winter steelhead passed the Falls this year (the 10-year average is higher at 14,054). During the 2017-18 Willamette winter steelhead run, ODFW estimated that sea lions at the Falls took as much as 18 percent of the wild winter run, and in 2016-18 about 25 percent of the run. At that time ODFW declared the fish at risk of extinction. They were listed in March 1999.

[See CBB, August 11, 2017, "ODFW Analysis: With Continued Sea Lion Predation Willamette Winter Steelhead At Risk Of Extinction,"](#)

"The California sea lion problem at Willamette Falls is almost fixed although there may always be a few new animals showing up each year (but not the 40+ that we had before management started)," Brown said. "The Steller sea lion problem is not yet fixed and will take additional years of effort although trapping at Bonneville Dam may eventually lead to fewer animals in the Willamette since it's the same pool of problem animals. Exact numbers on impact will be reported this fall once all the monitoring data are analyzed."

Both Oregon and CRITFC are exploring other areas where sea lions have been a problem. Hatch said they are looking at sea lion removals in tributaries and upstream of Bonneville Dam.

"We are somewhat gear limited at the moment," he said. "We are hoping to get a landing craft type boat that will allow us to recover a darted sea lion in a tributary area but that takes money. So we are also navigating federal and state avenues to find more funding."

Brown said that Oregon is looking at other areas for trapping besides the Falls, but it would still be in a different location in the Willamette River. In the past, sea lions had been seen in the Clackamas River, a tributary of the Willamette downstream of the Falls.

"Any animals that use the Clackamas typically haul out somewhere on the Willamette and not up the Clackamas," Brown said. "All the California sea lions that were foraging up the Clackamas in the past have been permanently removed and I have not heard of any there in the last year or so."

Trapping and euthanizing sea lions ended in May and will continue this fall, but funding for the work is becoming an issue.

"We plan to continue to trap and remove animals this fall and next spring," Hatch said. "There is some concern about future funding for removals since NOAA fisheries informed us they likely will discontinue program funding due to other priorities. The states and tribes are searching for alternative funding sources."

For background, see:

— CBB, June 3, 2021, "SEA LION REMOVAL OVER UNTIL FALL CHINOOK RETURN; UNDER NEW RULES BIOLOGISTS REMOVED 33 PINNIPEDS AT BONNEVILLE DAM, 9 AT WILLAMETTE FALLS,"
<https://cbbulletin.com/sea-lion-removal-over-until-fall-chinook-return-under-new-rules-biologists-removed-33-pinnipeds-at-bonneville-dam-9-at-willamette-falls/>

— CBB, April 15, 2021, “WDFW TAKING COMMENT ON RECOMMENDATION TO KEEP UNLISTED STATUS FOR STELLER SEA LIONS; 18,000 ANIMALS IN 1979 TO 71,000,” <https://cbbulletin.com/wdfw-taking-comment-on-recommendation-to-keep-unlisted-status-for-steller-sea-lions-18000-animals-in-1979-to-71000/>

— CBB, April 2, 2021, “2020 Draft Pinniped Predation Report: Steller Sea Lions At Bonneville Dam Taking Big Whack Out Of Steelhead, Sturgeon,” <https://cbbulletin.com/2020-draft-pinniped-predation-report-steller-sea-lions-at-bonneville-dam-taking-big-whack-out-of-steelhead-sturgeon/>

— CBB, October 16, 2020, “Trapping, Removing Larger Salmon-Eating Steller Sea Lions (2500 LBS) For First Time Requires Larger Barge, Cages; BPA Says Funding Approved, Still Need Building,” <https://cbbulletin.com/trapping-removing-larger-salmon-eating-steller-sea-lions-2500-lbs-for-first-time-requires-larger-barge-cages-bpa-says-funding-approved-still-need-building/>

— CBB, May 8, 2020, “2019 Pinniped Predation Report: Sea Lions Take 3.3 Percent of Salmon/Steelhead Run January Through May, Big Hit On Winter Steelhead,” <https://cbbulletin.com/2019-pinniped-predation-report-sea-lions-take-3-3-percent-of-salmon-steelhead-run-january-through-may-big-hit-on-winter-steelhead/>

— CBB, April 23, 2020, “23-Member Task Force Set To Meet To Consider Recommendations For Expanding Lethal Removal Of Sea Lions In Columbia River, Tributaries,” <https://cbbulletin.com/23-member-task-force-set-to-meet-to-consider-recommendations-for-expanding-lethal-removal-of-sea-lions-in-columbia-river-tributaries/>

— CBB, January 11, 2019, “With New Permit, Oregon Begins Lethally Removing Sea Lions At Willamette Falls To Protect Steelhead,” <https://cbbulletin.com/441999.aspx>

— CBB, December 14, 2018, “Legislation Awaiting President’s Signature Would Allow Significant Increase in Killing of Salmon-Eat,” <https://cbbulletin.com/441918.aspx>

—CBB, January 19, 2018, “West Coast California Sea Lion Population Has Rebounded; Meets Marine Mammal Protection Act Goal,” <https://cbbulletin.com/440111.aspx>

—CBB, December 1, 2017, “Recovery of West Coast Marine Mammals Dramatically Increasing Consumption of Chinook Salmon,” <https://cbbulletin.com/439896.aspx>