



Updated June 5, 2026

Sea Lion Predation on Columbia River Salmon and Steelhead

Since the 1990s, concerns have persisted about sea lion predation on salmonids (i.e., salmon and steelhead trout [steelhead; *Oncorhynchus mykiss*]) and certain other fishes, including in the Columbia River and Puget Sound. Management of these species has been complicated by requirements to protect sea lion populations under the Marine Mammal Protection Act (MMPA) while maintaining efforts to recover salmonid populations under the Endangered Species Act (ESA). Sea lion populations have increased since the 1972 enactment of the MMPA. In the Columbia River Basin, 13 salmonid runs are listed as threatened or endangered under the ESA. In 1994, Congress authorized the Secretary of Commerce to issue permits to states for lethal removals of sea lions negatively affecting salmonid population recovery (P.L. 103-238, §23; Section 120 of the MMPA). In 2018, Congress amended these provisions through the Endangered Salmon Predation Prevention Act (P.L. 115-329; Section 120(f) of the MMPA) to provide additional flexibilities to eligible state and tribal entities for lethal removal of sea lions in specific segments of the Columbia River and its tributaries. Since enactment, state agencies (Washington, Oregon, and/or Idaho) and Tribes have carried out lethal removals of sea lions primarily near Bonneville Dam and Willamette Falls.

Sea Lion and Salmonid Populations

In recent decades, California sea lions (CSLs; *Zalophus californianus*) and the eastern population of Stellar sea lions (SSLs; *Eumetopias jubatus*) that inhabit the U.S. West Coast have increased. The CSL population has never been listed under the ESA and is estimated by the National Oceanic and Atmospheric Administration’s National Marine Fisheries Service (NMFS) to be within the range of its *optimum sustainable population* (OSP). The SSL eastern population was delisted from the ESA in 2013 and likely is in the range of its OSP, according to NMFS assessments.

Salmonids are *anadromous* fishes, meaning they hatch and begin life in freshwater rivers and lakes; migrate to the ocean, where they mature; and return to their river of origin to spawn. The current run sizes of wild salmonids in the Columbia Basin are a small fraction of historic levels. From January through May of each year, the bulk of salmonids consumed by sea lions in the vicinity of Bonneville Dam are spring Chinook salmon (*O. tshawytscha*) and winter steelhead. Sea lions also prey on other Columbia River salmon runs and other ESA-listed fishes (e.g., sturgeon).

In the 1990s, increasing numbers of CSLs were observed in the lower Columbia River. By 2000, CSLs were observed at Bonneville Dam and at the base of Willamette Falls (Oregon). Since 2004, SSLs also have consumed salmonids near Bonneville Dam and more recently at Willamette Falls. Both prey on salmonids, especially in places where returning fish gather to pass through areas where river flows are constricted, such as near fish ladders or at the

base of rapids. Estimated predation of salmon and steelhead immediately below Bonneville Dam (146 miles above the mouth of the Columbia River; during January-May) increased from 2002 to 2010 (1,010 to 6,321 salmonids consumed; ranging from 0.4% to 4.7% of salmonid runs during that time). Consumption values from 2011 to 2014 ranged from 2,360 to 4,621 salmonids (1.4 to 2.4% of salmonid runs) and increased in 2015 (10,859 salmonids estimated total consumption). Estimated salmonid consumption has decreased from the 2015 high (Table 1). Sampling since 2020 has occurred for shorter periods (typically April-May); earlier data may not be comparable.

Table 1. Consumption Estimates on Salmonids by California and Steller Sea Lions (into May)

Year	Bonneville Salmonid Passage	Total Salmonids Consumed	Percentage Salmonid Run
2015	239,326	10,859	4.5%
2016	154,074	9,525	6.2%
2017	109,040	5,384	5.0%
2018	100,887	3,112	3.1%
2019	63,591	2,201	3.5%
2020	47,074	1,182	2.5%
2021	64,089	2,141	3.3%
2022	145,198	4,530	3.1%
2023	101,339	2,201	2.2%
2024	80,255	2,253	2.8%

Sources: CRS, using Braun et al., 2024 *Evaluation of Pinniped Predation on Adult Salmonids and Other Fish in the Bonneville Dam Tailrace*, U.S. Army Corps of Engineers (USACE), March 2025, p. 34.

Notes: Data are for wild and hatchery salmonids (adults and jacks; most recently reported 10 years). USACE also estimates values for other fishes and their seasonal runs. Post-2019 values are from shorter sampling periods and may not be comparable to earlier data.

Deterrence and Removal of Sea Lions

The MMPA prohibits any person subject to U.S. jurisdiction from *taking* marine mammals (as defined in 16 U.S.C. §1362(13)), including sea lions. The law provides an exception for nonlethal efforts to deter nuisance animals (e.g., some sea lions) if conducted by authorized personnel. Nonlethal taking must be done humanely; all practical steps must be taken to avoid death to or injury of the animal.

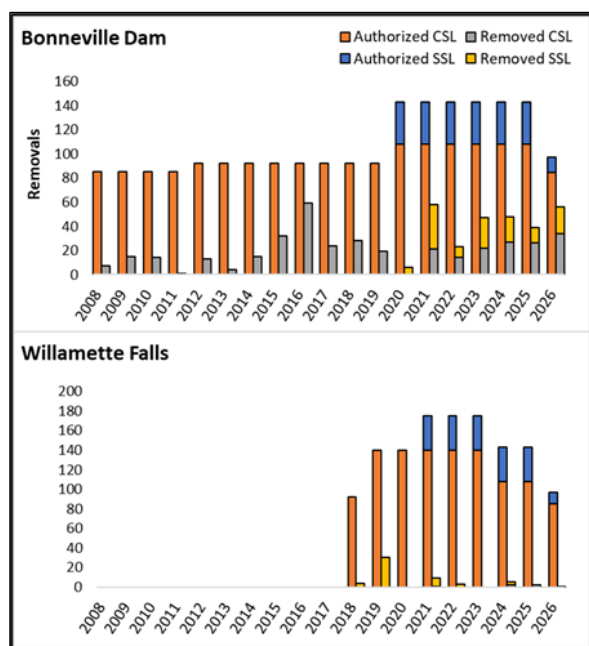
Section 120 of the MMPA provides an exception for lethal removal when nonlethal actions are not successful. Under Section 120, a state may apply to the Secretary of Commerce to intentionally euthanize *pinnipeds* when individually identifiable sea lions or seals are negatively affecting ESA-listed salmonids (or those approaching threatened or endangered status). Before allowing lethal removals, the Secretary decides whether sufficient evidence exists to establish a Pinniped-Fishery Interaction Task

Force to review public comments, population and biological trends, past efforts, and harm to salmonid populations. The Secretary is to consider the task force's recommendations, public comments, and if the applicant has carried out all reasonable, nonlethal measures. Nonlethal and lethal taking are prohibited if the pinniped population is a *depleted* or *strategic stock* under the MMPA. In accordance with Section 120(f) of the MMPA, the Secretary also may issue a five-year permit (subject to renewal) allowing eligible state and tribal entities to intentionally euthanize pinnipeds in portions of the Columbia River and its tributaries.

Efforts in the Columbia River Basin

Federal, state, and Columbia River Inter-Tribal Commission representatives have cooperated in developing nonlethal efforts to deter sea lions, such as above-water and below-water pyrotechnics, barriers to fish passage entrances, high-pressure water spray, boat chases, rubber bullets, and capture and transfer to other areas. Scientific reviews find deterrence can be ineffective in the long-term as sea lions adapt to or ignore many of these measures, or return after transport and release to other areas. Historically, the number of sea lions removed and euthanized has been lower than the number authorized for removal (**Figure 1**); removal limits have changed over time.

Figure 1. California (CSL) and Steller Sea Lions (SSL) Authorized for Lethal Removal and Actual Removals



Sources: Oregon Department of Fish and Wildlife (ODFW), "Sea Lion Management," accessed May 28, 2026; and NMFS, "[MMPA] Section 120 Pinniped Removal Program."

Notes: During 2020-2026, some CSL and SSL authorized values are annual averages based on total permitted takes over a five-year period.

In 2008, NMFS authorized lethal removal of 1% of the CSL *potential biological removal level* (PBRL), a total of 85 animals per year, which was increased to 92 animals in 2012. Before an animal could be considered for removal, the sea lion was to be individually distinguishable, either by unique natural markings or by applied features such as

brands, and have been observed consuming salmonids below Bonneville Dam during particular time periods after attempted active nonlethal removal. In 2016, the states requested and were granted renewal of the authorization for lethal removal of sea lions in areas adjacent to Bonneville Dam through June 2021, under the same conditions as the 2012 authorization. Sea lions also consume ESA-listed salmonids that spawn in the upper Willamette River, a Columbia River tributary. In 2018, the state of Oregon requested and was granted an authorization for the lethal take of up to 92 CSLs per year at Willamette Falls through 2023. In 2020, NMFS issued a five-year permit to the states of Idaho, Oregon, and Washington, and tribal parties, to remove individually identifiable CSLs (up to 540) and SSLs (up to 176) in portions of the Columbia River and its tributaries. In accordance with Section 120(f) of the MMPA, these authorized values are limited to no more than 10% of the PBRL for these species. NMFS renewed this five-year permit in 2025, authorizing the take of up to 424 CSLs and up to 62 SSLs through August 2030.

Considerations for Congress

Lethal removals of sea lions have been carried out by authorized entities pursuant to Section 120 of the MMPA. Some, such as ODFW, have argued their effectiveness and stated that not addressing sea lion predation will lead to constraints on other economic activities (e.g., power generation) and potential loss of salmonid runs. Other agencies also note the role of lethal removals as one part of an integrated approach to address cumulative stressors affecting salmonids (e.g., predation, habitat fragmentation, fishing). Some of these views complement conclusions by the Marine Mammal Commission (MMC) that if the choice is between the conservation of ESA-listed salmonids and removal of individual sea lions from healthy stocks, the MMPA directs that conservation of salmonid stocks take precedence. Other stakeholders have objected to the use of lethal removals to address pinniped predation on salmonids given these other stressors and studies showing that climate, hydropower, and food web-related factors (e.g., availability of herring prey) may be influencing pinniped predation on salmonids. The MMC and other parties have supported further data collection to evaluate removal effectiveness, and investigations into other deterrents. Some experts note that pinnipeds are one of several main salmonid stressors; some suggest that combining lethal and nonlethal approaches may be most effective for managing certain pinnipeds.

Congress may consider these and other views in its oversight of sea lion lethal removals, including whether changes to the MMPA may be warranted. Congress may consider the utility of technologies to deter pinnipeds (such as proposed in H.R. 8158 [118th Congress]), or of ecosystem-based management approaches accounting for sea lions' and other species' ecological roles and interactions, when addressing sea lion predation. Congress may assess the effectiveness of other lethal and/or nonlethal methods for managing pinnipeds, including the capacity and resources available to carry out removals and/or other approaches.

Anthony R. Marshak, Analyst in Natural Resources Policy

Disclaimer

This document was prepared by the Congressional Research Service (CRS). CRS serves as nonpartisan shared staff to congressional committees and Members of Congress. It operates solely at the behest of and under the direction of Congress. Information in a CRS Report should not be relied upon for purposes other than public understanding of information that has been provided by CRS to Members of Congress in connection with CRS's institutional role. CRS Reports, as a work of the United States Government, are not subject to copyright protection in the United States. Any CRS Report may be reproduced and distributed in its entirety without permission from CRS. However, as a CRS Report may include copyrighted images or material from a third party, you may need to obtain the permission of the copyright holder if you wish to copy or otherwise use copyrighted material.