Sea Lion Predation at Bonneville Dam

U.S. ARMY CORPS OF ENGINEERS

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Background

Pinnipeds are a widely distributed and diverse group of marine mammals comprised of sea lions, walruses and seals. Historically, harbor seals (Phoca vitulina) hunted salmon in the Columbia River as far up as The Dalles and Celilo Falls, 200 river miles from the sea.*

Increased Numbers

Until 2001, sea lions—male California (Zalophus californianus) and Steller (Eumetopias jubatus)—were only seen at the dam occasionally. Beginning that year, Corps observers noticed an increasing number of sea lions appearing below the dam. Since then, sea lions have continuously entered the Columbia River primarily in the winter and spring, swimming upstream to Bonneville Dam—146 river miles from the Pacific Ocean—to feed on hatchery and wild salmon and steelhead. The annual population of sea lions has fluctuated between 100 and 200 animals. Observers at the dam counted 156 individual sea lions in 2017.

Increased Impact of Predation

Sea lions feed on several species of salmon and steelhead, they also effectively target white sturgeon and Pacific lamprey. The Corps’ observers estimated that sea lions ate more than 5,384 salmon in the vicinity of Bonneville Dam in 2017. Predation on white sturgeon by sea lions was first documented in 2005, increased until 2011, but since has dropped considerably. An estimated 191 Pacific lamprey were consumed by California and Steller sea lions in 2017.

The Corps’ Role

The role of the Corps is to track the number of individual pinnipeds and their predation on salmon, steelhead, lamprey and sturgeon; evaluate the effectiveness of various predation deterrence activities; and keep sea lions out of the dam’s fish ladders. Science based management of the sea lions below Bonneville Lock and Dam is a contentious issue and requires collaboration of federal, state, tribal, and various special interest groups. Albeit not always in agreement, these groups function to protect native fish species. The USACE welcomes solutions to sea lion issues at Bonneville Dam that achieve the congressionally authorized navigation, hydropower and recreation missions while meeting the salmon survival criteria spelled out in NMFS’s biological opinion on the operation of the Federal Columbia River Power System.

* According to accounts from Sir George Simpson, Governor-in-Chief of the Hudson's Bay Company, in 1841: “… these animals (harbor seals) ascend the Columbia in great numbers in quest of the salmon.”

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