Seal & Sea Lion Facts of the Columbia River & Adjacent Nearshore Marine Areas

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Pacific harbor seals, California sea lions and Steller sea lions frequent the lower Columbia River and adjacent nearshore marine areas. Other pinnipeds, such as northern fur seals and elephant seals, are occasionally present in this area, but not in great numbers or for very long.

A 2003 census of California sea lions placed their population at about 250,000 animals. California sea lions are present in the lower Columbia during much of the year except in summer months (June-August) when most animals return to breeding rookeries in southern California.

There are two stocks of Steller sea lions in the North Pacific. The stock found off California, Oregon and Washington, British Columbia and Southeast Alaska – referred to as the Eastern stock – numbers about 31,000 animals. Steller sea lions are present year-round at the mouth of the Columbia River.

Several stocks of Pacific harbor seals make up the species in West Coast waters. The Oregon/ Washington coastal stock is estimated to be about 25,000 animals. They're present throughout the year at the mouth of the Columbia.

All seals and sea lions are protected by the Marine Mammal Protection Act (MMPA). The Eastern stock of Steller sea lions is also listed as a threatened species under the federal Endangered Species Act (ESA).

During a typical day in May, approximately 3,000 Pacific harbor seals, 1,000 Steller sea lions, and 800 California sea lions can be observed resting on haul-out sites (such as jetties) in the Columbia River estuary. These seals and sea lions feed in both the Columbia River and adjacent nearshore marine areas. They eat a variety of marine and estuarine prey, including squid, smelt, herring, flatfish, perch, pollock, hake, rockfish and salmon. Based on scat samples collected from several Pacific Northwest estuary and ocean sites (including the Columbia River estuary), salmon species generally make up 10-30 percent of these animals' diet.

During the spring migration of smelt, lamprey, salmon and steelhead, it's common for seals and sea lions to follow these prey species into fresh water upstream of Longview, Wash. (river mile 67), up to Willamette Falls (RM 129) and Bonneville Dam (RM 145). As many as 300 seals and sea lions are known to feed in these upriver areas. Some of these animals stay for a couple of days in fresh water, and others for longer. During these freshwater hunting trips, some of these animals feed heavily on salmon and steelhead. For example, one such animal – identified by brand #C404 – has been observed eating steelhead and spring Chinook salmon below Bonneville Dam for days to weeks during the spring of 2003 through 2006.

No estimate is available for the percentage of spring salmon or steelhead consumed by seals and sea lions in the Columbia or Willamette rivers. However, direct observation of winter steelhead killed in a small area below Willamette Falls 1996-2002, ranged from 0.3 percent to 5.5 percent of the adult return. In the tailrace of Bonneville Dam, the numbers ranged from 0.4 percent of the spring run of salmonids in 2002, and increased to 3.4 percent in 2005. These estimates pertain only to the Willamette and Bonneville study areas, and do not represent the total pinniped impacts on salmon and steelhead in a given year in the Columbia Basin.

In comparison, California sea lions at the Ballard Locks, in Seattle, Wash., were documented to consume as much as 60 percent of the annual run of winter steelhead.

The MMPA and ESA include provisions that allow federal, state and local governments (employees or officials in the course of their duties) to intentionally take marine mammals, if the taking is done in a humane manner and is for: (a) the protection or welfare of the mammal; (b) the protection of the public health and welfare; or (c) the **non-lethal removal** of nuisance animals.

Implementation of non-lethal deterrence methods on nuisance seal and sea lions is costly and results are variable. Federal and state biologists have found that nuisance seal and sea lion feeding patterns can be disrupted through the use of non-lethal deterrence, but no one technique (or combination of techniques) has been universally effective. For example, fish and wildlife agency personnel using various hazing techniques have been only modestly successful at reducing California sea lion predation on salmon and steelhead below Bonneville Dam. However, the same non-lethal hazing methods have been very successful in reducing Steller sea lion predation on Columbia River sturgeon in the same area.

Members of the public may take steps to deter problem seals and sea lions from damaging their property, fishing gear, and catch. There are methods *(PDF 30KB)* property owners and fishers may consider for use under the appropriate conditions. **Note:** Some of the methods listed (such as loud noise or pyrotechnics) may not be appropriate for use in some areas, or are subject to prohibition under federal, state or local ordinances. The presence of Endangered Species Act-listed species in some areas may advise against the use of certain methods. Please consult with appropriate authorities to determine if such prohibitions exist in your area, or if ESA-listed species may be encountered.

More information on West Coast pinnipeds, their impact on fish stocks, and the increasing interaction between pinnipeds and humans is available at http://www.nwr.noaa.gov/Marine-Mammals/index.cfm.