

Steller Sea Lion

The Steller (or northern) sea lion (*Eumetopias jubatus*) is the largest member of the family Otariidae, the “eared seals,” which includes all sea lions and fur seals. It is the only member of genus *Eumetopias*. Otariids differ from phocids, the “true seals,” in having external ear flaps, long forearms resembling flippers used for propulsion, and rotatable hind flippers that allow quadrupedal locomotion on land.

Steller sea lions are known to several languages: in Aleut, *qawax*; in Alutiiq, *wiinaq*; in Central Yup'ik, *uginaq* (sometimes *apakcuk*) and in Siberian Yup'ik, *ulgaq*. The Russian common name translates to “sea wolf.” *Eumetopias*, from the Greek, means “having a broad forehead”, and *jubatus*, from Latin, means “having a mane.”

Steller sea lions inhabit over 300 haulouts and rookeries along the North Pacific rim from Hokkaido, Japan, north along the Kuril Islands into Kamchatka and the Sea of Okhotsk, east along the Aleutian chain and into the central Bering Sea, through the Gulf of Alaska, south through southeastern Alaska, the Canadian Pacific coast and to the Channel Islands off California.

General Description: At birth, pups have dense, coarse, nearly black fur with a frosty appearance because the tips of the hair are colorless. Color lightens after their first molt in late summer. Most adult females are buff colored on the back. Nearly all males stay darker on the front of the neck and chest; some are even a reddish color. Adult males have prominent, broad foreheads and muscular necks.

Males and females have a marked size difference. Weight at birth is 51 pounds (23 kg), and body length is 45 inches (112 cm). Females grow rapidly during the first four years but slow by the fifth year, with little growth after age 6. Males continue to grow until the eleventh year. Although there are variations, most females reach maximum size by the seventh year, and males reach adult size by the twelfth year. The average weight of an adult male is 1,245 pounds (566 kg), and the body length averages 10 2/3 feet (282 cm). Adult females average 579 pounds (263 kg) in weight and 8 2/3 feet (228 cm) in length. Although only 20 percent longer, the average adult male weighs over twice as much as the average adult female.

Food Habits: Scientists use kitchen spoons to scrape sea lion scat off rocky haulouts throughout Alaska and Canada. This scat is examined for the presence of “hard parts,” such as fish bones or squid beaks, that can be keyed to prey species eaten by sea lions. Recently, scientists are also attempting to identify the chemical signatures of prey items in the blood and blubber of sea lions.

From this work we know that Steller sea lions are generalist marine predators with a diet of fishes and cephalopods that tends to be predictable by season and region, with the occasional meal of bird or true seal for variety. Some prey are generally available year-round, such as walleye Pollock, Atka mackerel, arrowtooth founder and cephalopods, while others are targeted by sea lions when they become seasonally abundant, such as Pacific herring, Pacific salmon, Pacific cod, eulachon and capelin. Western Alaska diets are dominated by Atka mackerel and walleye pollock and eastern diets feature walleye pollock, Pacific cod, flatfish, rockfish and forage fish. Sea lions can consume prey whole while underwater.

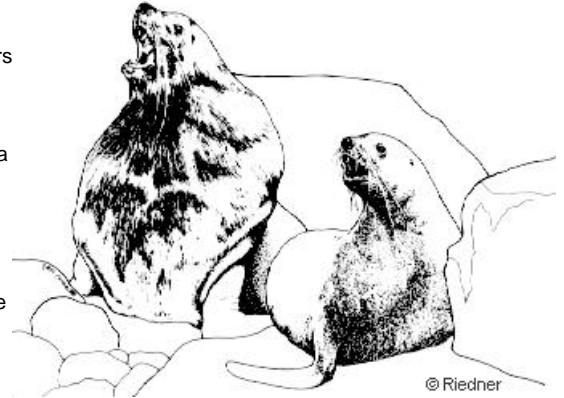
Life History: Males may live up to 20 years and females to 30 years. Males reach sexual maturity at 3-7 years but do not hold territories on breeding rookeries until 9-13 years. Females start breeding at 3-7 years and spend the next two decades either pregnant or lactating. Females are bred in June, but the fertilized egg does not implant until October. Single pups are born the following June, with birthdates at southern rookeries earlier than births at northern rookeries. Twins are rare. Pups suckle from 1 to 3 years, with most apparently weaning after their first winter.

Seasonal movements: Sea lions do not migrate, but do move their “central-place haulout,” the center of their foraging activity, to track seasonal concentrations of their many types of prey. They breed on exposed, offshore rookeries during summer and generally move to more protected haulouts in winter, especially in southeastern Alaska. Very young sea lions can swim 75 miles (120 km) non-stop between haulouts. Some sea lions make long-distance movements over long periods of time. The longest recorded movements are Forrester Island to Cape Newenham (1,600 miles / 2,500 km), Kozlof Cape, Russia to Round Island (1,400 miles / 2,300 km) and Medny Island, Russia to Round Island (1,200 miles / 2,000 km).

Behavior: Steller sea lions use rookeries and haulouts on land to rest and suckle their young. Adult females must continue foraging while nursing their pups, and the pups' bodies are well-adapted to fast while females are hunting prey during 1-2 day trips. By their first spring, pups are able to reach similar diving depths as adults but do not do so as frequently. As pups grow older, their swimming and diving patterns grow to resemble that of older sea lions. The behavior of older juveniles and adults appears to track the behavior of their prey; for example, deep diving as prey move deeper during daylight, a focus on night-time behavior while prey are shallow and the gathering of many sea lions at places with seasonal runs of forage fish. Foraging trips are usually within a few tens of miles off haulouts, but the longest recorded continuous foraging trip was 550 miles (900 km) into the Bering Sea. Older juvenile sea lions can dive to at least 1500 feet (500 meters) and stay underwater for over 16 minutes.

Population size: During the late 20th century, the western Alaska Steller sea lion population (the Gulf of Alaska and Aleutian Islands) suffered a substantial decline, but there are signs of stabilization in recent years. The first population trend counts made in 1956-1960 estimated at least 140,000 sea lions in this area. A major population decrease was first detected in the eastern Aleutians during the mid-1970s and the estimated population dropped to 110,000 by the late 1970s. The decline spread eastward into the Kodiak Archipelago during the late 1970s and early 1980s, then spread westward through the Aleutian Islands during the early to mid-1980s, with the steepest declines of 15% per year occurring during the late 1980s. By 1990 the population was 30,525, and decline continued through the 1990s at 5.4% per year. Between 2000 and 2004, surveys found increasing or stable numbers throughout the Western Stock. Meanwhile, the Eastern Stock has increased by over 3% per year since the 1970s, and likely exceeded 50,000 animals in 2007. Indeed, new breeding rookeries have become established in southeastern Alaska in the early 21st century.

In 1990, Steller sea lions were listed as “threatened” range-wide under the Endangered Species Act of 1973 due to the dramatic population decline in the western portion of their range. Meanwhile, scientists identified substantial genetic differences, regional differences in population trend and a low exchange rate of breeding animals between rookeries, indicating that Steller sea lions existed in “distinct population segments.” Thus, in 1997, the population was split immediately east of Cape Suckling on the Gulf of Alaska coast (near 144° W longitude) into an “endangered” Western Stock and “threatened” Eastern Stock. Recent work suggests a third subdivision between Asian and North American populations within the Western Stock may be appropriate.



Predators, hunting, and other mortality: At the turn of the 21st century, there is substantial effort being made to identify causes for and remedies to the Western stock population decline, and these are the subject of considerable debate. The possible sources of the decline being examined are grouped into “top-down” processes, such as predation, disturbance, intentional killing and entanglements, and “bottom-up” processes, such as reduced prey quality or abundance and long-term shifts in their environment. Assessment of these threats and planning for the recovery of Steller sea lions is a long-term collaborative process involving numerous stakeholder groups. One-fifth of one percent of Steller sea lions sighted during surveys in southeastern Alaska are entangled by marine debris including packing straps and fishing gear, but the extent of mortality due to this is unknown.

Historically, Steller sea lions were used as a food source, clothing, boat coverings, meat for fox farms and craftwork. The commercial pup harvest in 1964-1972 provided fur for clothing manufacture. Contemporary use includes food, some clothing and craftwork. While the Steller sea lion population is listed as “depleted” under the Marine Mammal Protection Act of 1972, and thus subsistence takes are subject to Federal management, subsistence harvest continues because it has not been shown to contribute to the decline. Between 2000-2004, 191 were taken per year in the Western stock, and 6 per year in the East.

Revised by Michael J. Rehberg (2008)

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