

Spotted Seal

Spotted seals (*Phoca largha*) are found in the Bering Sea year round but they are also found in the Chukchi and Beaufort Seas in summer. Spotted seals are closely related and often confused with harbor seals (*Phoca vitulina*). These two species overlap in their summer range but are recognized as separate species based on their ecological, behavioral, and morphological differences. For example, spotted seal preferred habitat is the edge of the pack ice in areas of loose floes while harbor seals avoid sea ice. Spotted seal pups are born in white lanugo on sea ice while harbor seal pups shed their lanugo before they are born and their pups are born on land. There are also some differences in skull morphology. Alaskan Eskimo names for the spotted seal include *qasigiaq* in Inupiaq, *gazigyayq* in St. Lawrence Island Yupik, *issuriq* in Yup'ik and *issuri* in Nunivak Island Cup'ig.



General Description: Spotted seals are medium-sized ice seals, smaller than bearded, but larger than ribbon and ringed seals and they belong to a group called pinnipeds, which include seals, sea lions and walruses. Seals cannot walk on their hind legs and they do not have external ears. Spotted seals are also one of four northern seal species that rely on ice for feeding, resting, and pupping, these four species are collectively called "ice seals." There is a variety of possible colors and patterns, but spotted seals generally have a silvery background that is darker on the back and is broken up by various blotches and spots. Adult spotted seals weigh about 200 pounds (90 kg) and measure about 5 feet (1.5m) long.

All of the Alaskan seals have 34 teeth composed of six upper incisors, four lower incisors, two upper canines, two lower canines, eight upper postcanines, eight lower postcanines, two upper molars, and two lower molars.

Food Habits: Adult spotted seals eat a variety of fish, crustaceans, and cephalopods and their diet varies with age, season, and location. Near Shishmaref the top five prey species are cod, herring, smelt, shrimp, and amphipods. In the northern Bering Sea, arctic cod are an important prey species but farther south, pollock and capelin are more important.

Life History: Female spotted seals become sexually mature at 3–4 years of age and males about a year later. Male and female pairs form prior to pupping and they appear to be monogamous throughout the mating season; a unique breeding system among ice seal species. The females give birth annually to a single pup in April or May when the ice is the most stable. The pup, mother, and her mate remain in close proximity until the pup is weaned around 4 to 6 weeks. The female is ready to mate after the pup is weaned. Copulation has been reported to occur under water, another uncommon behavior when compared to other ice seals. Newborn pups are about 35 inches (89 cm) long and weigh about 20 pounds (9 kg). Pups are born with a soft white coat called lanugo. The white color may provide camouflage to hide from predators; however the most important advantage of lanugo is its insulative properties in air. Lanugo keeps pups warm until they develop a blubber layer for warmth. The lanugo is shed at the time of weaning when pups are about four weeks old. During the suckling period, pups triple their body weight by adding to their blubber layer. After weaning, the pup uses the energy and nutrients stored in the blubber while it learns to dive and forage. When the lanugo is shed the new coat is similar to that of an adult spotted seal. The gestation period for spotted seals is about 10.5 months with a delayed implantation of the embryo of about 2 months. Delayed implantation is important to allow pupping and mating to occur when the ice is most developed each year. Spotted seals live for approximately 35 years.

Seasonal movements: The winter distribution of spotted seals occurs along the southern edge of the broken pack ice. In Alaskan waters this includes the Bering Sea and into Bristol Bay. As the ice breaks up in the late summer spotted seals travel great distances and are found throughout the Bering, Chukchi, and Beaufort Seas. One spotted seal traveled from Kasegaluk Lagoon in Alaska to the Chukchi Peninsula in Russia and back covering over 1000 miles in one month.

Behavior: During the spring, spotted seals are usually found in groups of three consisting of a pup, mother, and her mate. The mother will rarely leave the pup when danger approaches but the male will often go in the water and surface nearby. Spotted seals are much more wary after the mating season is over. Large land haulouts where several thousand seals may congregate occur in Kasegaluk Lagoon, Cape Espenburg, and sand bars around Kuskokwim Bay. Large concentrations may haulout on ice as well. Spotted seals are known to make a variety of sounds when they are molting in large groups. The sounds include growls, barks, moans, and roars. When spotted seals move across ice or land it is in a fashion that resembles an inchworm movement that is typical of true seals.

Population size: In the late 1970s, an aerial survey of the Bering Sea resulted in a population estimate of 200,000– 250,000; however such surveys contain significant unknown factors such as the number of seals in the water at the time of the survey. No current population assessments are available for spotted seals. Spotted seals are not currently listed as 'threatened' or 'endangered' under the Endangered Species Act, nor are they listed as 'depleted' under the Marine Mammal Protection Act.

Predators, hunting, and other mortality: Predators of spotted seals include sleeper sharks, killer whales, walruses, sea lions, polar bears, brown bears, wolves, arctic foxes, eagles, ravens, gulls, and humans. Of this list humans are probably the most significant predator. In some areas brown bears and wolves may also be significant predators. Birds probably kill pups, but the rate of occurrence and significance is unknown. Subsistence hunting of spotted seals by Alaskan Natives occurs throughout their range especially in the Bering Strait region south to northern Bristol Bay. The number taken each year by subsistence hunters is unknown. Spotted seals are also targeted by a Russian commercial fishing fleet and Russian subsistence hunters.

Spotted seals are hunted by Alaska coastal residents from Togiak to Kaktovik for human and dog food and the skins are used for clothing, equipment, and crafts. It is currently unknown how many seals are harvested, but the Ice Seal Committee and the Alaska Department of Fish and Game are attempting to survey a sample of villages in Alaska to monitor the harvest of spotted seals. The Ice Seal Committee and the National Marine Fisheries Service entered into a co-management agreement in 2006 to work together on management and research issues related to all ice seals, including spotted seals.

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