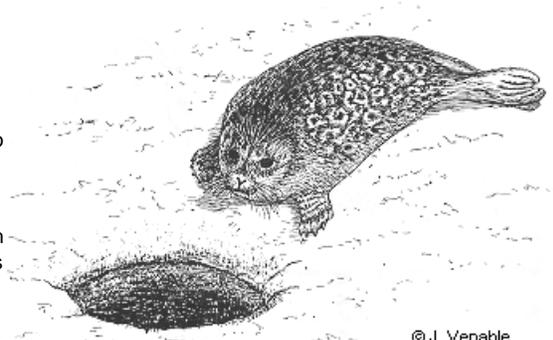


## Ringed Seal

**Ringed seals** (*Phoca hispida*) are the most common and most widespread seals in the Arctic. In Alaska, ringed seals inhabit the northern Bering, Chukchi, and Beaufort Seas. They are the most ice adapted of all seals and are distributed throughout the Arctic, wherever there is sea ice. In Alaskan waters, ringed seals occur as far south as Bristol Bay and the Alaska Peninsula in years with heavy ice. During winter, ringed seals are most abundant close to shore in the shorefast ice. As a result they have been important in the economy of the coastal Eskimos as a source of food and usable products. Inupiat Eskimos refer to the ringed seal as *natchiq*; to the Yup'ik-speaking Eskimos of the Bering Strait they are *niknik*; to the Cup'ig-speaking Eskimos of Nunivak Island they are *nayir*.

**General description:** Ringed seals are the smallest of all pinnipeds (seals, sea lions, and walruses) with adults in Alaska rarely exceeding 5 feet (1.5 m) in length and 150 pounds (68 kg) in weight. Ringed seals weigh the most in the winter and early spring when they have a thick layer of blubber under their skin. The blubber serves as insulation and as an energy source during the breeding and pupping season. The weight of ringed seals declines with the decrease in feeding during the reproductive and molting seasons. The coloration of ringed seals is quite variable, but the basic pattern is a gray back with black spots and a light belly. The seal gets its name from the black spots ringed with light marks.



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**Food habits:** Ringed seals are opportunistic and eat a variety of invertebrates, fish, and amphipods. The particular species eaten depends on availability, depth of water, and distance from shore. In Alaska waters, the important food species are arctic cod, saffron cod, shrimps, and other crustaceans.

**Life history:** Females give birth to a single pup within a subnivean (snow covered) birth lair. Pups are born covered in lanugo, a white woolly hair that insulates them until they can build fat reserves. Lanugo is shed at 2 to 3 weeks. Female seals build birth lairs under snowdrifts formed in the lee of pressure ridges. Lairs provide protection from predators and severe weather. There is some speculation that females lacking maternal experience give birth in marginal habitat (drifting pack ice) and may be more subject to polar bear predation. More experienced females may give birth in the better habitat (landfast ice) and may have higher reproductive success.

The average weight of pups at birth is 10 pounds (4.5 kg). Females nurse pups for about two months and during that time the pup doubles its birth weight. Increasing blubber thickness provides the pup with insulation to reduce heat loss and an energy reserve to use while it learns to find its own food. Weaning usually takes place at ice breakup.

Most females breed again within a month after the birth of the pup. Implantation of the embryo is delayed until mid-July or early August so that pregnancy lasts about 11 months. Most female ringed seals first ovulate at 5–6 years of age and first give birth at 6–8 years. Males become sexually mature at the same age.

Breeding takes place in April to May. During this period rutting males exhibit territorial behavior and emit a smelly scent from glands of their faces; due to their scent, hunters refer to them as “kerosene seals” and avoid harvesting them because they do not taste good. Polar bears also avoid male ringed seals this time of year.

**Seasonal movements:** Ringed seals occur in association with sea ice and it is believed that seals generally move south as sea ice advances in the winter and north as sea ice retreats in the spring. However, some ringed seals are seen during ice-free periods in the Bering and Chukchi Seas, and movements within seasons are not well understood. Researchers have found that adult seals return to the same breeding territories each year, but it is unknown if young seals return to their birth region when they are old enough to breed.

**Behavior:** Ringed seals use their claws to maintain breathing holes and are the only Arctic seal that maintains breathing holes in landfast ice. Females dig birth lairs in the snow above the breathing holes where they raise their pups. Males also make lairs for resting.

Ringed seals emit several types of vocalizations underwater which are not readily audible above water. The function of these calls is unknown. The behavior of ringed seals is poorly understood since both males and females spend the greater part of the year in lairs or in the water. Ringed seals molt in May and June. During this time they spend long periods hauled out on the ice “basking” in the sun. It is thought that warmer skin temperatures help the new hair to grow more quickly. When hauled out on the ice, ringed seals are very wary, raising their heads every 20 seconds or so to look around. They rapidly enter the water when they detect an approaching human or other predator.

**Population size:** There is no definitive genetic information for delineating different populations and there are no reliable population estimates available. Numerous surveys have counted seals in portions of their range, but none of these have been corrected for the number of seals that were under the ice during the survey. Based upon these data, there are at least 250,000 ringed seals in Alaskan waters; the true number of seals is probably much higher. Ringed 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. Worldwide, it is believed there are over 2 million ringed seals.

**Predators, hunting, and other mortality:** Ringed seals are most commonly preyed upon by polar bears; in fact, ringed seals make up the majority of a polar bear’s diet and a polar bear may kill a ringed seal every 2 to 6 days. However, ringed seals are also preyed upon by walruses and killer whales. Pups are eaten by arctic foxes, red foxes, and ravens. Arctic foxes and polar bears can locate seal lairs by their smell. During pupping, foxes will tunnel into the lairs in an effort to eat the pups. Polar bears will run to the lair and jump on the snow over the hole and try to collapse the lair and block the exit so it can catch the mother and the pup. There is concern that climate change may negatively affect populations of ringed seals. Warm temperatures and rain may collapse the roofs of birth lairs, exposing pups to predators and wet weather before they have enough blubber to insulate them.

Ringed seals are hunted by Alaska coastal residents from Mekoryuk 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 ringed 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 ringed seals.

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