



# Polar Bear

## *Ursus maritimus*

The polar bear, or “Nanuuq,” as the Eskimos call it, lives only in the Northern Hemisphere, on the arctic ice cap, and spends most of its time in coastal areas. Polar bears are widely dispersed in Canada, extending from the northern arctic islands south to the Hudson Bay area. They are also found in Greenland, on islands off the coast of Norway, on the northern coast of the former Soviet Union, and on the northern and northwestern coasts of Alaska in the United States.

Some polar bears may make extensive north-south migrations as the pack ice recedes northward in the spring and advances southward in the fall. They also may travel long distances during the breeding season to find mates, or in search of food.

### Appearance

The polar bear is the largest member of the bear family, with the exception of Alaska’s Kodiak brown bears, which equal polar bears in size. Males stand from 8 to 11 feet tall and generally weigh from 500 to 1,000 pounds, but may weigh as much as 1,400 pounds. Females usually stand 8 feet tall and weigh 400 to 700 pounds, but may reach 700 pounds. Part of the reason the polar bear weighs so much is that it stores about a 4-inch layer of fat to keep it warm. The polar bear has a longer, narrower head and nose, and smaller ears, than other bears.

Although the polar bear’s coat appears white, each individual hair is actually a clear, hollow tube. Some of the sun’s rays bounce off the fur, making the polar bear’s coat appear white. During the summer months, adult bears molt, or gradually shed their coats and grow new ones, which look pure white. By the following spring, the sunshine has caused their coats to turn a yellowish shade. Polar bears sometimes have a yellowish shade to their coats due to staining from seal oils.

The polar bear’s coat helps it blend in with its snow-covered environment, which is a useful hunting adaptation. The polar bear’s front legs appear slightly bow-legged and pigeon-toed, and fur covers the bottoms of its paws.



Steve Anstrup/USGS

*Female polar bears prepare small dens on the mainland or on sea ice where they will give birth and spend winter. Usually two cubs are born in December or January. While the cubs are born blind, hairless, and no bigger than squirrels, they grow very rapidly. Polar bear cubs remain with their mother for 2-1/4 years.*

These adaptations help the polar bear from slipping on ice.

### Feeding Habits

Because the polar bear rarely eats vegetation, it is considered a carnivore, or meat-eater. The ringed seal is the polar bear’s primary prey. A polar bear may stalk a seal by waiting quietly for it to emerge from its blow hole or “atluk,” an opening seals make in the ice allowing them to breathe or climb out of the water to rest. The polar bear will often have to wait for hours for a seal to emerge. Because the polar bear’s coat is camouflaged against the whiteness of the ice and snow, the seal may not see the bear. Polar bears typically eat only the seal’s skin and blubber, or fat, and the remaining meat is an important food source for other animals of the Arctic. For example, Arctic foxes feed almost entirely on the remains of polar bear kills during the winter.

Polar bears also prey on walrus, but, because of the walrus’s ferocity and size, bears are usually only successful preying on the young. The carcasses of whales, seals, and walrus are also

important food sources for polar bears. In fact, because of their acute sense of smell, polar bears can sense carcasses from many miles away.

Polar bears can cover significant distances on land, but are most agile in the sea. They are excellent swimmers, and can reach speeds of up to 6 mph in the water. They are good divers, too. When being pursued by hunters in open water, polar bears have been known to escape by plunging 10 to 15 feet below the surface and resurfacing a good distance away. They also have been seen swimming 100 miles or more from ice or land.

### Reproduction

Polar bears reach breeding maturity at 3 to 5 years of age. Males may travel great distances in search of female mates. While breeding usually takes place in April and May, the embryos may not implant (develop) until the following year, depending on whether the mother has had a stable enough supply of food to sustain herself while allowing her to feed the developing cubs through the winter.

In October and November, pregnant females seek sites on the mainland or on sea ice to dig small dens in snow where they will give birth and spend the winter. The temperature inside the polar bear's den can be as much as 40 degrees warmer than outside. Usually two cubs are born in December or January. When the cubs first arrive, they are blind, hairless, and no bigger than squirrels. However, the cubs grow rapidly from their mother's rich milk.

As soon as spring comes, the mother bear leads her cubs to the coast along the open sea, where seals and walrus are abundant. The mother will fiercely protect her cubs from any perceived danger. The cubs remain with their mother for 2-1/4 years. Because of this, most adult female polar bears breed only every third year.

### Special Adaptations

The blubber and fat of ringed seals provides polar bears with the nutrients they need to stay warm in their harsh environment. They can eat other sources of food, but their bodies demand the high caloric intake from ringed seals. Terrestrial sources cannot meet the high caloric needs of polar bears, and consequently terrestrial foods cannot substitute for the loss of access to seals. Polar bears store energy in the form of fat, most of which they acquire from consuming these seals.

The most productive seal-hunting periods are during the spring and early summer (before the ice retreats) and following the open-water period in the fall. Because changes in sea ice are most dramatic during the summer/fall, this is the time when it can be hardest for bears to hunt seals. A reduction in sea ice can extend the time period during which bears do not have access to their primary prey. The effects of a longer ice-free season can cause a decline in polar bear health, reproduction, survival, and population size. Polar bear survival depends on large and accessible seal populations and vast areas of ice from which to hunt.

### Protection

Polar bears have traditionally played an important role in the culture and livelihood of Eskimos and other Native people of the North. They depend on the animals for food and clothing.

In the United States, polar bears are a federally protected species under the Marine Mammal Protection Act of 1972. This protection prohibits hunting of polar bears by non-Natives and establishes special conditions for the



Susanne Miller/USFWS

importation of polar bears or their parts and products into the United States. Eskimos and other Alaska Natives are allowed to harvest some polar bears for subsistence and handicraft purposes. The Fish and Wildlife Service is the federal agency responsible for managing polar bears under the Marine Mammal Protection Act.

An international conservation agreement for polar bears signed in 1976 by the United States, the former Soviet Union, Norway, Canada, and Denmark (Greenland) also provides for cooperative management of polar bears.

The Fish and Wildlife Service and the U.S. Geological Survey's Alaska Science Center work together to monitor polar bears in Alaska, where they number approximately 3,500, and study their behavior. Cooperative efforts with Canada involve monitoring polar bears in the Beaufort Sea, and the agencies work with the Russian government to monitor the animals in the Chukchi Sea.

Another treaty, the "Agreement between the Government of the United States of America and the Government of the Russian Federation on the Conservation and Management of the Alaska-Chukotka Polar Bear Population," unifies the American and Russian management programs that affect this shared population of bears. Notably, the treaty calls for the active involvement of Native people and their organizations in future management programs. It also enhances long-term joint efforts such as conservation of ecosystems and

important habitats, harvest allocations based on sustainability, collection of biological information, and increased consultation and cooperation with state, local, and private interests. The Fish and Wildlife Service also undertakes education and outreach efforts to inform the public about how polar bears can be protected from over-harvest.

A number of protective measures have been taken to reduce human activities along the coast in polar bear denning areas. This is when the animals are most sensitive to outside disturbances. For example, oil and gas pipelines and roads have been routed to avoid these areas. The Fish and Wildlife Service also provides expertise to industries on how to minimize conflicts with bears while conducting their operations.

Today, it is estimated that there are 20,000 to 25,000 polar bears worldwide. With continued cooperative management, these great marine mammals, and the unique arctic environment on which they depend, can be protected for generations to come.

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