

Polar Bear Life Cycle

Female polar bears usually breed for the first time at five or six years of age. Mating takes place out on the pack ice during a rather long breeding season, extending from late March to mid-July. An eager throng of fiercely competitive male suitors often follows a female during her time of estrus, which lasts for about three weeks. After fertilization, the tiny embryo will divide several times and then free float in the uterus, not to resume development until September, when it finally implants in the uterine wall.

Just prior to denning, pregnant females become particularly fat. They enter their over-wintering maternity dens in October or November, and later give birth to between one and four cubs (twins are most common) sometime during December or January. The igloo-like den is an important barrier against the Arctic cold. Blind and helpless, the cubs at birth are not much bigger than guinea pigs, weighing only about 20 ounces each. The sex ratio of newborn cubs appears to be about equal. They remain in the den until late March or April, growing quickly on their mother's milk, which is very rich in fat. Female polar bears have four functional mammary glands.

By the time increasing daylight encourages the family to surface from the den, the cubs may weigh between 22 and 33 pounds. In only two months, the cubs have gained 25 times their birth weight. Initially, for up to two weeks, the cubs stay at the den entrance, playing and acclimating to the outside. At the slightest sign of danger, the entire family withdraws to the den. When they finally do leave, the cubs are large enough to travel with their mother across the frozen tundra and out onto the sea ice. Having lived only on her fat reserves, the mother is now extremely thin and hungry for seals. After a kill, she consumes the energy-rich blubber and skin first.

The cubs continue to nurse, suckling for about 15 minutes, six or seven times a day. Before taking a nursing position, the mother usually digs a shallow pit in which she lies down. She often nurses while lying on her back, with the cubs on her abdomen. Sometimes she will sit upright and lean forward while her cubs nurse.

Polar bear cubs begin receiving hunting lessons almost immediately. Although they are still nursing, cubs can participate in eating seal meat on their mother's first hunt out of the den. At this stage, they follow their mother everywhere, even riding piggyback when she goes swimming. By August, the cubs weigh over 100 pounds, but they are still dependent on their mother; they will continue to den with her for one or two more winters. When the family finally does break up, the cubs are usually between 24 and 28 months old. However, some families may remain denning together for a third or fourth winter.

When abandoned by their mother, the half-grown cubs wander about on their own. They may stay together for a short time, but eventually each goes on its own way. Now alone, the young bears face a high mortality rate during the next year or two; however, in the food-rich Hudson Bay area, cubs weaned at the age of two have a good chance of survival. Surviving females reach adult weight by their fifth year and males between ages eight and ten.

The usual time span between litters is three to four years, but in the ideal conditions found on Hudson Bay's west coast, about 40 percent of the bears breed every second year. Recent studies indicate that some mothers, living under the difficult conditions found in other Arctic areas, may produce only one or two litters in their lifetime.

The Wandering Bear's Arctic Realm

The polar bear's kingdom is vast and covers land and sea.

Polar bears roam the frozen seas of all the Arctic nations: Russia, Norway, Greenland (Territory of Denmark), Canada, and the United States. Until recently, scientists believed that polar bears traveled randomly around the northern part of the globe, so that an individual bear seen near Russia would eventually appear in the Canadian North, later in Alaska, and so on around the globe.

Although they are circumpolar in distribution, most polar bears are now known to belong to geographically discrete populations that remain in the same general area year after year. The bears do travel far; in the course of a year's time, some may range over frozen seascapes exceeding 20,000 square miles in area.

The earth's north polar ice cap and the central core of the Arctic Ocean encircling the North Pole are permanently frozen. But around the fringes of the polar basin, where sea meets land, the ice breaks up each year. This is the polar bear's habitat. Although footprints of wandering polar bears have been seen within two degrees of the North Pole, this is uncommon, since few seals or other animals live this far north.

The distribution of polar bears and seals is influenced by the continuous patterns of ice freezing and breaking up. There are approximately six distinct population centers along the southern rim of the polar basin, each with its unique pattern of ice movement: Western Alaska and Wrangel Island, Northern Alaska, the Canadian Arctic archipelago, Greenland, Svalbard-Franz Josef Land, and Central Siberia. A separate subpopulation, far south of the main body of bears, lives near Canada's Hudson and James Bays. This is the most southerly group of polar bears in the world.

In the high Arctic, bears generally follow the expanding edge of the Arctic Sea ice as it spreads south in the winter. In the summer, when the ice retreats to the north, the bears move with it. However, this pattern is not clearly defined, and there are many exceptions. For example, many bears of the Canadian Arctic spend the summer along the coastline instead of retreating north with the shrinking ice cap. Along Hudson Bay, bears go inland and endure the warmer weather by lying in pits or caves dug down to permafrost.

Although landed polar bears generally stay close to the shore, they have been sighted up to 100 miles inland. The distribution of individual bears along the coast seems to be regulated by the dominance hierarchy. Adult males are often found in choice areas close to the beach. Females with cubs stay farther inland, and young males and single females will be found even farther from the ocean.

The Polar Bears of Churchill

Churchill's polar bears return year after year to await the freezing of the sea ice.

One area where polar bears are doing very well is along the western shore of the Hudson Bay. As a result, this is one of the best places to see them. Hudson Bay is a huge body of water, about 800 miles wide and 1,000 miles long, or about twice the size of Texas. During the winter, when it freezes over, the bears live some 40 to 150 miles out on the ice, hunting seal along the leads. When the spring comes, large pieces of ice called "floes" are blown south and ground the bears on the bay's southern shore. The bears ride the floating ice onto the beach, and by July, have dispersed inland along the coast.

As summer advances, they begin the long walk northward, back along the coast to the area inhabited by the seals. This trek may be 800 to 900 miles long. The bears continue along the western

shore until they return to the Hudson Bay's northwestern coast, where in late autumn, they wait for the ice to refreeze. By mid-October, some 600 to 1,000 bears are massed along a 100-mile-long stretch of coast between the Nelson and Churchill rivers, forming the largest concentration of polar bears in the world. Many of the bears, mostly males, cluster on headlands and capes, especially Cape Churchill. When the first hard freeze occurs, the bears disperse out once again over the frozen bay in search of seals.