



INSPIRING AMERICANS TO PROTECT WILDLIFE FOR OUR CHILDREN'S FUTURE.

Fact Sheet

GLOBAL WARMING

CONFRONTING



Polar Bear Basics

As suggested by its specific scientific name (*Ursus maritimus*), the polar bear is actually a marine mammal that spends far more time at sea than it does on land. It is on the Arctic ice that the polar bear makes its living, which is why global warming is such a serious threat to its well-being.

Life History

The polar bear (*Ursus maritimus*) is superbly adapted to its icy habitats. Its dense fur consists of air-filled hollow hairs which helps insulate it against cold water and frigid Arctic weather. They are outstanding swimmers with large partially-webbed paws.

Ringed seals are the main species hunted, although they also hunt other seals and occasionally walrus. Their main hunting technique is to capture the seals when they surface at a breathing hole in the ice. Because seals have many breathing holes, a bear may wait hours for a seal to appear. Polar bears also capture seals by sniffing out their snow covered dens on the ice before seal pups are mature enough to swim. Seals, however, are much better swimmers and polar bears can not catch them in open water.

In marked contrast to other bears, polar bears do not hibernate in the winter and in most areas spend almost all of their lives on the sea ice. Pregnant females however, use dens so they can give birth to their tiny cubs in a protected environment where they can be safe until emerging in the spring. Most pregnant females give birth in dens on land, but some dig dens in drifted snow on the floating ice cap.

In southern portions of their range, such as in Hudson Bay, there is no sea ice during the summer and the polar bears there must live on land until the Bay freezes in the fall, whereupon they can again hunt on the ice. While on land during the summer these bears eat little or nothing. In just 20 years the ice-free period in Hudson Bay has increased by an average 20 days, leaving nearly three weeks less time each year for the bears to hunt for seals on the ice. The ice is freezing later in the fall, but it is the earlier spring ice melt that is especially difficult for the bears. They have less time to hunt during the critically important spring hunting time when seal pups are born. As a result, the bears are skinnier and have lower reproductive rates than when the ice persisted throughout the seals' birthing period. As average bear weight has dropped by 15%, reproduction has declined, and the population is down more than 20%.

Population

The world population of polar bears worldwide is estimated at 20,000 to 25,000. Although circumpolar in their distribution, meaning they occupy areas in all directions around the North Pole, biologists have identified 19 relatively discrete populations.



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Population levels and bear densities are determined by a variety of factors. There are many different types of sea ice with different suitability for bears and their prey. The best habitat for polar bears is ice that can be reached with a short swim from land and ice that is over relatively shallow water near land where productivity for the food seals eat is higher.

In 2005, of the 13 polar bear populations along Canada and Greenland, one was reported to be increasing, five were declining, two were severely depleted from over-harvesting but being managed to increase the population, and the remaining five were reported as stable. Although not all polar bear populations are currently known to be declining, the pattern of shrinking sea ice, which is the critical polar bear habitat, is indisputable and unless halted will lead to more populations declining.

Sea Ice Decline

The U.S. Fish and Wildlife Service was petitioned to list the polar bear as a threatened species pursuant to the Endangered Species Act primarily because of the decline of its primary habitat: sea ice.

Rapid Arctic ice melting in 2007 resulted in a record low for the extent of summer sea ice in the Arctic Ocean, which was nearly 23% below the previous record low in 2005. The increase in summer ice melt for 2007, compared to average sea ice conditions, was equivalent in area to the size of Alaska and Texas, combined. The 2007 sea ice decline is well-beyond the projections of most climate-ice models. Based on this year's rapid melt, one NASA scientist projected summer ice could be essentially gone by as early as 2012.

Sea Ice Loss and Polar Bears

The loss of Arctic sea ice has huge implications for polar bears. U.S. Geological Survey studies and models indicate that two thirds of polar bears will disappear by 2050, due to ice loss.

The retreat of ice has implications beyond the obvious outright loss of their habitat. Remaining ice may not be as suitable for polar bears because of its much greater distance from shore, making it less accessible. The larger gap of open water between the ice and land also contributes to rougher wave conditions. In 2004, biologists discovered four drowned polar bears in the Beaufort Sea, and suspect the actual number of drowned bears may have been considerably greater. Never before observed, biologists attributed the drowning to a combination of retreating ice and rougher seas, which made swimming from shore to sea ice more hazardous.



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Because of the retreating ice polar bears are going hungry for longer periods of time. As result, in the past several years biologists have observed acts of cannibalism among polar bears. Although it has long been known that polar bears will occasionally kill other polar bears for dominance or kill cubs so they can breed with the female, outright predation for food was previously unknown.

Exacerbating the problems of the loss of an icy platform from which to hunt seals, it is expected that the shrinking polar ice cap will also adversely affect their primary prey—seals. Because of the reduction in ice platforms near productive areas for the fish that the seals eat, their nutritional status and productivity are declining.

The deterioration of condition in the bears of Hudson Bay reported in the 1990s are now being found farther north. In the Beaufort Sea off of Alaska's northern coast, fewer cubs are now surviving beyond their first year due to rapidly changing ice conditions and corresponding loss of access to food for their mothers. We can expect that the Hudson Bay populations of polar bears will be among the first populations to disappear, and that other more northern populations will follow shortly thereafter. In the long run, by reducing global warming pollution we can give polar bears a greater chance to survive.

Sources

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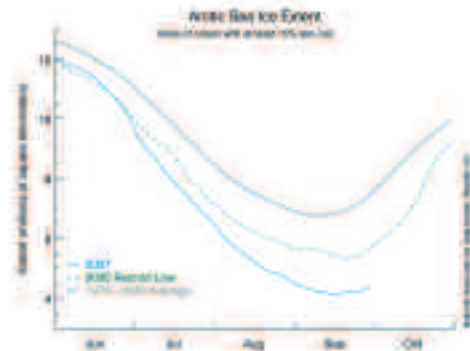
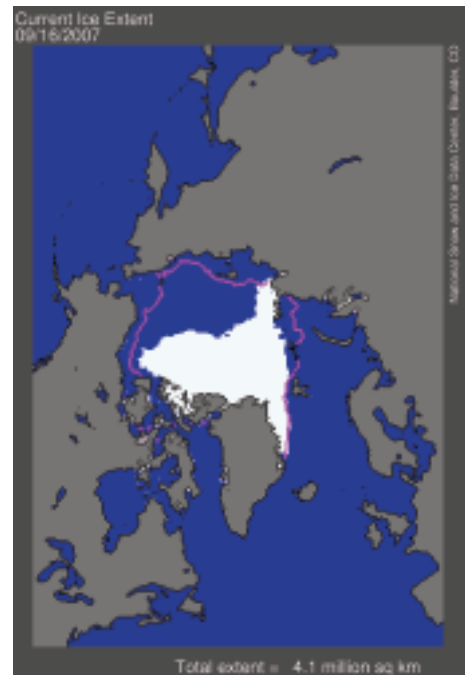


Polar bear distribution around the North Pole.

The polygons identify 19 separate population management units.

Arctic sea ice coverage.

September, 2007's ice coverage, shown here in white, was the lowest on record, and far below the median ice coverage from 1979 through 2000, as shown by the magenta colored line.



Arctic sea ice extent.

Arctic sea ice coverage in 2007 was much less than the previous record low in 2005.