

On Thin Ice

**After five years on the endangered species list,
polar bears still face a troubling future.**



Center for Biological Diversity • May 2013

Five Years After Endangered Species Act Listing, Polar Bears Face Grim Future

INTRODUCTION

Five years after polar bears (*Ursus maritimus*) were protected under the Endangered Species Act, their prospects for long-term survival remain troubling. Without help, scientists predict, more than two-thirds of the world’s polar bears, including all the bears in Alaska, will be gone by 2050. The rest could disappear by the end of the century.

The Endangered Species Act is one of the world’s most effective environmental laws. Indeed, about 99 percent of species under its care have been saved from extinction, and hundreds are on the road to recovery. But that is not the case for polar bears, and the primary reason is that global warming — the single-largest threat to the bear’s survival and the reason it was placed on the endangered species list — has gone unaddressed.

For this analysis, we examined five critical factors that will ultimately determine whether polar bears, as a species, survive on Earth. In each case we found troubling news for the bears.

We conclude that, despite listing under the Endangered Species Act, polar bears face an uphill battle for survival. If polar bears are going to persist for future generations, we must move quickly and aggressively to address the threats they face.

ANALYSIS

We examined five key indicators of polar bears’ survival:

1. Arctic sea ice: Polar bears depend on sea ice for hunting, raising their cubs and other essential behaviors, but the ice is rapidly disappearing. Researchers are already finding that bears in the Southern Beaufort and Chukchi seas are forced to swim increasingly great distances to find stable ice or reach land.

Arctic sea-ice extent during the summer of 2008 hit the second-lowest level on record, but the melt has actually accelerated since then. In September 2012 sea ice covering the Arctic Ocean reached a record low minimum extent — almost 300,000 square miles (an area about the size of Texas) smaller than the previous record low in 2007. Sea-ice thickness is also declining dramatically.

In April 2013 the National Oceanic and Atmospheric Administration reported results from three forecasting approaches showing that the Arctic Ocean will be nearly completely free of summer sea ice by the middle of the century. One of the models showed that the Arctic could be nearly ice-free in the summer by 2020 — far sooner than most scientists had predicted in 2008. For polar bears, that would be a disaster.

2. Arctic temperatures: Temperature increases in the Arctic are disrupting the ecosystem upon which the polar bear depends. The Arctic has warmed at twice the rate of the rest of the globe on average, and some areas have warmed even faster. Annual mean surface air temperature over Arctic land areas has increased about 3.6 degrees Fahrenheit since the mid-1960s, according to NOAA’s 2012 Arctic Report Card. Rising temperatures are contributing to record lows in both sea-ice extent and terrestrial snow extent.

Survival Indicator	Key Fact
1. Arctic Sea Ice	In September 2012, Arctic sea-ice extent hit a record low.
2. Arctic Temperatures	The Arctic has warmed at twice the rate of the rest of the globe on average.
3. Carbon Emissions	Since 2008 global carbon emissions have increased more than 13 percent.
4. Population Status	At least eight of the 19 polar bear populations are declining.
5. Policies	The Obama administration refuses to protect polar bears from greenhouse gas pollution.



By the end of this century, scientists expect the Arctic to warm by an additional 5.4 to 9 degrees Fahrenheit over land and up to 12.6 degrees Fahrenheit over the oceans under a mid-level emissions scenario.

Rising temperatures in the Arctic have the potential to dramatically increase global warming by releasing natural sinks of carbon dioxide and methane. As the permafrost melts and releases carbon, the Arctic will likely become a net source of carbon in the next few decades. Organic matter currently trapped in shallow Arctic sea sediment may be released as ocean temperatures rise. And warmer waters may also eventually release methane currently trapped in ice hydrates in the Arctic sea shelf.

3. Carbon emissions: CO₂ is the most important heat-trapping gas in the atmosphere, and growing carbon concentrations in the atmosphere threaten polar bears by driving up Arctic temperatures and leading to record levels of sea-ice melt. Since 2008 global carbon emissions have increased more than 13 percent, rising from 31.5 billion tons to an estimated 35.6 billion tons in 2012.

Global CO₂ emissions rose by the second-highest amount on record in 2012, according to the U.S. National

Oceanic and Atmospheric Administration. Atmospheric carbon dioxide concentrations — one of the most important indicators of global warming — are on the verge of hitting 400 parts per million, or ppm. That is far above the 350 ppm level that scientists say is needed to avert the worst effects of climate change, including rapid melting of Arctic sea ice and disruptive changes to the Arctic ecosystem.

4. Population: Polar bear numbers increased following the establishment of hunting regulations in the 1970s and today stand at 20,000 to 25,000 worldwide. But the rapid decline of Arctic sea ice caused by global warming has profoundly challenged the species, and currently at least eight of the 19 polar bear populations, including both U.S. populations, are declining. The number of declining populations may actually be higher because seven are listed as “data deficient,” and a number of these are in areas experiencing some of the most pronounced ice loss.

In February 2013, 12 leading polar bear experts released a report calling on governments to plan for rapid ecosystem shifts that could send some polar bear populations into abrupt decline. Scientists estimate that if the Arctic continues its melting trend, the worldwide polar

bear population will decline by more than two-thirds by 2050 and will be near extinction by the end of the century.

5. Policies: When polar bears were listed as “threatened” under the Endangered Species Act in 2008, the Bush administration took the unusual step of enacting a special rule limiting the listing from triggering reductions in greenhouse gases — the very pollution driving global warming, which is the primary factor prompting the polar bears’ need for protection. Rather than reject that special rule, the Obama administration has fully endorsed it and defended it vigorously in court, preventing the polar bears’ Endangered Species Act protection from providing additional measures to deal with global warming.

The Obama administration has also fought efforts to designate polar bears as “endangered” rather than “threatened” — a change that would nullify the Bush administration special rule and provide additional protections for polar bears. Additionally, President Obama’s administration has continued Bush-era policies of opening polar bear habitat to oil and gas development.

On a larger scale, the Obama administration has also failed to fully harness the Clean Air Act to reduce CO₂ in the atmosphere to 350 parts per million, the level scientists say is needed to avoid catastrophic climate change. The administration has failed to finalize greenhouse gas pollution rules for new power plants and has still not moved to control greenhouse pollution from existing power plants, ships, planes, offroad engines or coal mines.

Congress has not helped: Instead of moving forward on legislation to fight climate change, some lawmakers have tried to curtail the Clean Air Act’s authority to reduce carbon pollution.

In contrast, one area where the Obama administration has taken positive action is in proposing added protection for polar bears under the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES). Additional protection under CITES would address the destructive polar bear rug trade, which is driving increased hunting of polar bears, particularly in Canada. Unfortunately the international community rejected the U.S. proposal for greater CITES protection for polar bears this March in Bangkok.

RECOMMENDATIONS

Urgent action is needed to preserve the polar bear. Over the past 40 years, the Endangered Species Act has rescued more than 1,000 species from extinction. But the law, which has helped save bald eagles, Atlantic green sea turtles and peregrine falcons, only works when applied to the key threats facing a species.

The law could help rescue the polar bear — but only if the Obama administration changes course and confronts the climate crisis now delivering record heat and sea ice loss.

To save the polar bear from extinction, the administration should pursue these steps:

- Launch a status review as required and uplist the polar bear from “threatened” to “endangered” status.
- Lay out a complete recovery plan, setting greenhouse gas limits necessary to recover sea ice.
- Use existing laws like the Clean Air Act, Clean Water Act and Endangered Species Act to reduce greenhouse gas pollution as quickly as necessary to save the bear. While CO₂ reductions are essential to address the Arctic meltdown, reductions in the short-lived pollutants methane, ozone and black carbon are also critical to slow warming in the short term.
- Permanently protect polar bear habitat from oil and gas development in the Beaufort and Chukchi seas.
- Continue to push for CITES Appendix I status for the polar bear.

ABOUT POLAR BEARS

Description: The largest of all bear species, polar bears sport luxurious white fur with water-repellent guard hairs and dense underfur. They also have a layer of blubber up to 5 inches thick, black skin, a short-furred snout, small ears and a streamlined body with large, oar-like feet. Males measure 8 to 11 feet from nose to tail and generally weigh about 1,300 pounds but can reach more than 1,700. Females measure about 6 to 8 feet and are usually about half the weight of males.

Habitat: Polar bears live throughout the ice-covered waters of the circumpolar Arctic, with distribution dependent on food availability and sea-ice conditions; they are most often found at the convergence of sea ice and open water, and where seals congregate. These bears are totally reliant on the sea ice as their primary habitat, using it for a number of essential activities including hunting and feeding on seals, seeking mates and breeding, making long-distance movements, accessing terrestrial maternity denning areas, and sometimes even maternity denning itself. Polynyas — areas of open water surrounded by ice and caused by fluctuations in wind, tide or current — are sites of increased marine mammal and bird concentrations and are extremely important to polar bears.

Range: This circumpolar species is found in and around the Arctic Ocean, with its southern range limited by pack-

ice availability and its southernmost occurrence at James Bay in Canada. The world's currently recognized 19 polar bear populations occur within the jurisdictions of the United States (Alaska), Canada, Denmark (Greenland), Norway and Russia.

Migration: Some polar bears make extensive north-south migrations in response to ice packs receding northward in the spring and advancing southward in the fall. In addition, individuals may travel vast distances to find mates or food and have been seen 100 miles from the nearest land or icefall. In October and November, males head out onto the pack ice where they spend the winter, while pregnant females seek sites on land or nearshore sea ice to dig dens in the snow, where they spend the winter and give birth.

Breeding: Like other members of the bear family, female polar bears have small litters, reach breeding age late in life, and produce few young in their lifetime. They mate on the sea ice in either April or May, after which a female must accumulate sufficient fat reserves to live and to support her cubs from the time she enters the maternity den, between late October and mid-November, until the time the family emerges in the spring and she again begins to feed. Cubs are born in snow dens between late November and early January, with timing varying by region and population. Because of their vulnerability at birth, cubs must remain in the maternity den, where the temperature

warms to near freezing. They nurse inside the den until sometime between late February and the middle of April, depending on the latitude. The age at which mothers wean their cubs also varies by region, though in most areas cubs are weaned at approximately 2.5 years of age, resulting in a three-year reproductive cycle. After a period of several weeks' acclimatization, the mother and cubs begin their trek to the sea ice to feed on seals.

Life Cycle: Polar bears can live up to 25 or 30 years in the wild.

Feeding: The top Arctic predators, polar bears primarily eat ringed seals but also hunt bearded seals, walrus and beluga whales, and will scavenge on beached carrion such as whale, walrus and seal carcasses found along the coast. These bears often eat only seals' skin and blubber, leaving the carcass for other animals to scavenge and thus playing a critical role in the Arctic food chain.

Other threats: Beyond global warming, other grave threats to polar bears include oil and gas development, environmental contaminants such as PCBs, industrial noise and harassment from increased Arctic shipping and other activities. About 800 polar bears are also killed each year by hunters, mostly in the Canadian Arctic.

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