



WHERE WILL THE POLAR BEARS GO?

Courtesy Kaathy Crane, NOAA Arctic Research Office

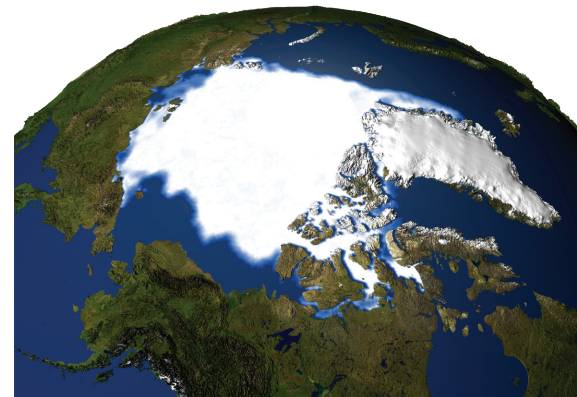
“Climate change may have its most pronounced effects in the Arctic.”

US Arctic Research Commission,
quoted by Nick Bond, Jim Overland and Nancy Soreide,
NOAA/Pacific Marine Environmental Laboratory, in
“Why is the Arctic important?” (http://www.arctic.noaa.gov/essay_bond.html)

What You Will Do

Make a poster to explain how climate change is affecting polar bears, how it may affect humans, and what we can do about it.

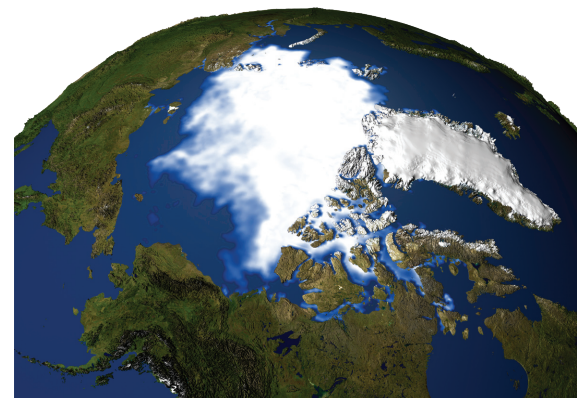
The Arctic is one of the least explored places on earth, and is changing fast. One of the most dramatic changes involves sea ice. Satellites have been recording Arctic perennial sea ice (sea ice that remains during the entire year) since 1979, and these records show that the amount of sea ice has been getting smaller and smaller. This image shows the perennial sea ice concentration for the year 1979:



1979

Data collected by the Defense Meteorological Satellite Program Special Sensor Microwave Imager. Courtesy NASA

and this image shows the perennial sea ice concentration in 2003:



2003

Data collected by the Defense Meteorological Satellite Program Special Sensor Microwave Imager. Courtesy NASA

Since 2003, sea ice concentration has continued to decline. The lowest concentration of perennial sea ice ever measured was recorded in 2005.

These changes spell big trouble for animals that depend on sea ice for their survival. Polar bears, for example, live on sea ice all year. They rear their young on the ice, and hunt along the edges where seals make holes in the ice to breathe. An adult polar bear usually eats one seal every four or five days. When the sea ice melts during the summer, polar bears have to swim between floating chunks of ice (called "floes") to continue their hunt. Until recently, the floes were usually less than 15 miles apart. But as more and more of the perennial ice melts, the floes have become much farther apart, and the bears have had to swim over much longer distances. In September, 2005, wildlife biologists spotted polar bears swimming as much as 60 miles from shore. These long distance swims are much more dangerous for the bears. After one severe storm, the biologists found four dead bears floating in the water, and reported that they probably drowned as a result of rough seas caused by high winds.

Polar bears face other problems, too. Ocean currents can carry chemical pollution thousands of miles, and some of it reaches the Arctic. Chemicals called PCBs, for example, have been found in polar bears. These chemicals cause



Courtesy Kelly Elliott, NOAA

problems with polar bears' immune systems, so the bears are more likely to get sick.

Polar bears have been hunted by Inuits and other indigenous Arctic people (which means people who have lived in the Arctic for hundreds of years) for centuries. Today, most nations only allow indigenous people to hunt polar bears, but Canada also allows "sportsmen" to hunt polar bears for trophies. Legal hunting kills about 700 polar bears each year.

Another problem is that warmer temperatures are likely to bring more people into the Arctic region, including commercial shipping as well as drilling and mining for minerals, oil, and gas. No one is exactly sure about how this

kind of increased human activity will affect polar bears.

NOAA's Arctic Research Office works in the Arctic, Bering Sea, North Pacific and North Atlantic regions to find out how warmer temperatures will affect the climate and cultures of the Arctic, as well as how such changes will affect the climate and cultures of other regions. NOAA will also be part of the fourth International Polar Year (2007 – 2008) during which many nations coordinate Polar expeditions, observations and research.

Why should we worry about polar bears?

Some people just like the idea of having them alive on Earth, even if they never see one. But there are other reasons, too: The fact is, polar bears and every other living thing are all part of Earth's living system. If that system changes so that it is no longer friendly to polar bears, then it may not be friendly to many other species, including humans. So we need to look at the polar bears' problems as a warning for ourselves.

Here's a way to use information about polar bears to help other people understand more about global climate change.

What You Will Need

- Color copies of images from “Images for Polar Bear Posters”
- Information from the introduction for this activity and “Is Our Climate Changing?” (page 137)
- Crayons, colored markers, or colored pencils
- Poster board
- Scissors

Warning

Be careful with sharp scissors!

How to Do It

1. Use the images and information to create a poster that explains what is happening to polar bears’ habitat, how this is related to climate change, why this is important to us, and what we can do about it. You may also want to include ideas and information from “Following the Ocean Unicorn” activity (page 145) since it also deals with climate change and Arctic animals.
2. Show your poster at school, to your parents, and to other groups. The more people know about climate change and how it affects life on Earth, the more they will take action to protect Earth’s ecosystems.



Courtesy Kelley Elliott, NOAA

Want to Do More?

<http://www.arctic.noaa.gov/> – NOAA’s Arctic Theme Page with information and data about the Arctic for scientists, students, teachers and the general public.

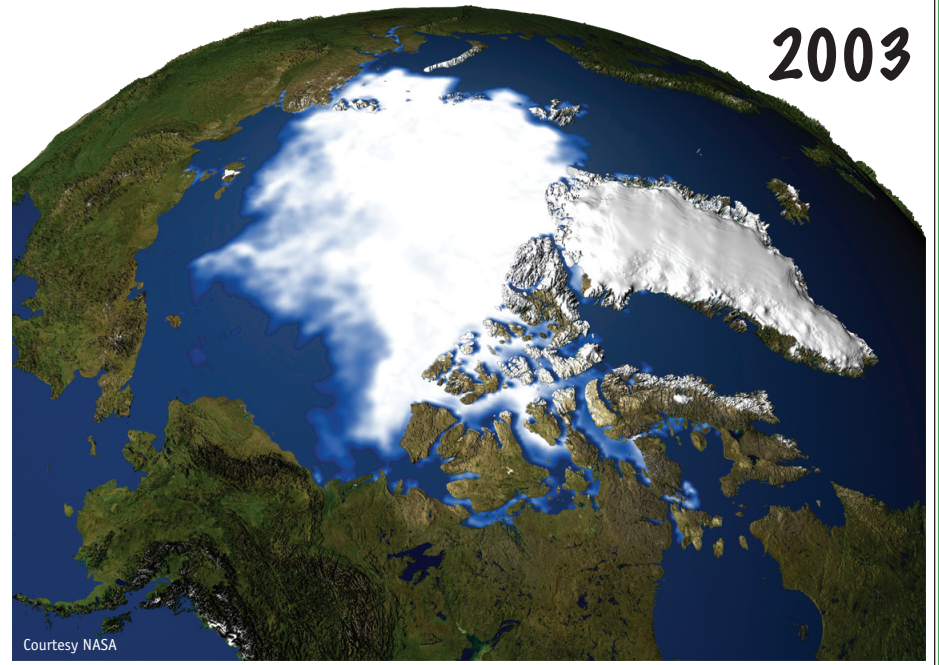
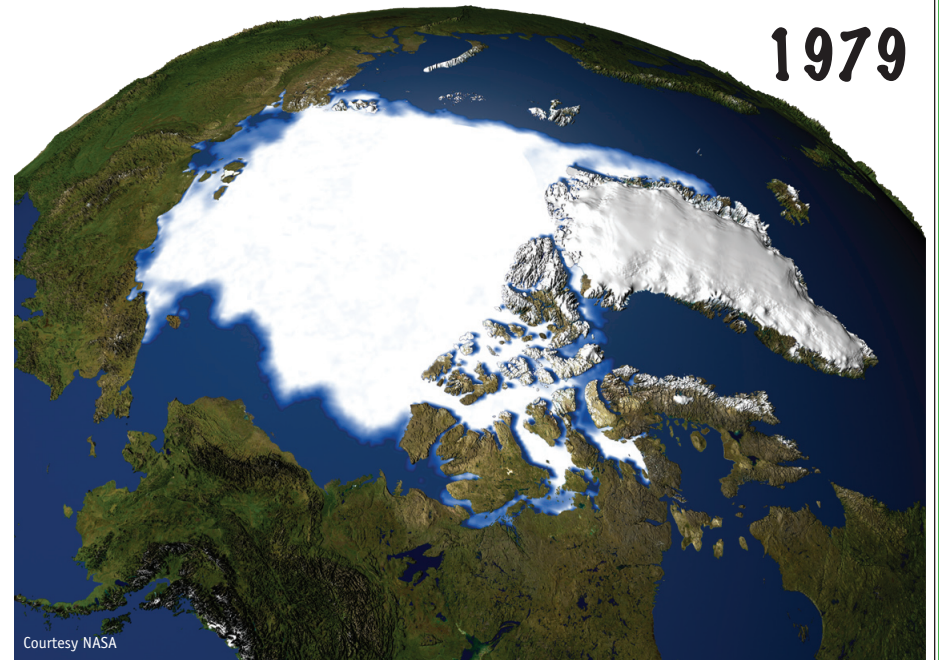
<http://www.arctic.noaa.gov/ipy.html> – For more information about the Fourth International Polar Year

http://www.arctic.noaa.gov/gallery_polarbear.html – Polar bear photograph gallery on NOAA’s Arctic Theme Page

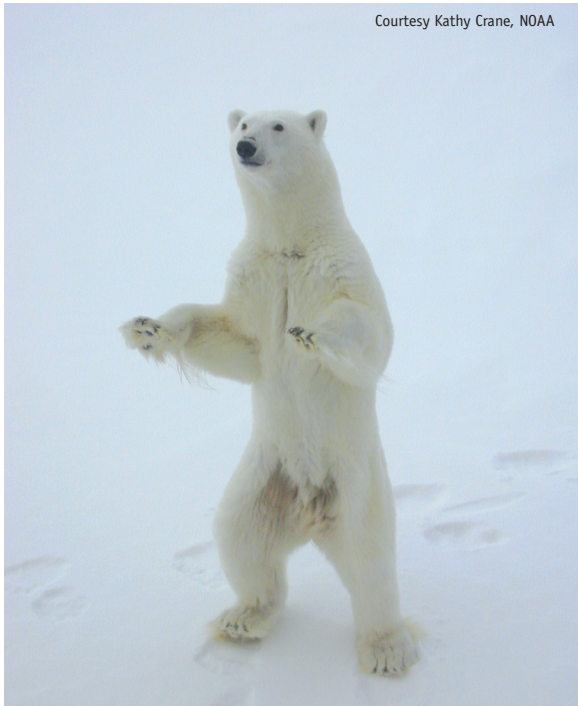
<http://www.polarbearsinternational.org/all-about-polar-bears/> – “All About Polar Bears” on the Polar Bears International Web site

Images for Polar Bear Posters

Courtesy Kathy Crane, NOAA



Courtesy Kathy Crane, NOAA



Courtesy Kelley Elliott, NOAA



Courtesy Kelley Elliott, NOAA



Courtesy Kathy Crane, NOAA





Courtesy Joel Garlich-Miller, USFWS



Courtesy Fernando Jorge, USCG



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