Polar Bears at Risk

The icy waters of the Arctic are home to some 21,000 to 25,000 polar bears. Most live in Canada, but some polar bears also are found in Alaska, Greenland, Russia, and Norway.

Polar bears are perfectly designed for life in the Arctic. White fur keeps them camouflaged against the ice and snow. Thick winter coats and a thick layer of fat keep them warm. Bumps and crevices on the soles of their feet act like suction cups, preventing them from slipping on the ice.

Polar bears are clever hunters, roaming the ice and snow looking for their favorite food—seals. They also have been known to eat seaweed, grass, berries, birds, fish, walrus pups, reindeer, and even whales.

Polar bears are not land animals. Their habitat is sea ice—slabs of ice that drift in the ocean. The bears are utterly dependent on sea ice. They travel, hunt, and sometimes give birth on ice.

**Melting Habitat** Today polar bears are in trouble. The Arctic’s ice is vanishing, and the bears are in danger of vanishing with it.

Ice in the Arctic is melting rapidly. The cause is global warming. As the planet warms, the Arctic is heating up even faster. The Arctic is 4–7°F (3–4°C) warmer today than it was just 50 years ago. Year after year, the polar bears’ habitat is shrinking.

Each summer, the ice-free period grows longer. Shorter ice seasons are bad for polar bears, because it means the animals have less time to hunt seals.

**Warning Signs** More polar bears are being spotted on land. Bears do not come ashore at all if the sea ice is solid and strong. But...
Environmental Case Study continued

with melting ice and, thus, a limited hunting season, the bears are swimming to shore, desperate to find food.

As the ice shrinks, the distance between ice and land grows. Some bears are drowning as they try to swim the longer distances to land.

If the bears make it to land, they face scarce food supplies. Scientists see signs that polar bears are not getting enough to eat. The bears are noticeably thinner than they were 20 years ago.

Pregnant females in particular are at risk. They must gain 200 pounds (91 kg) just to survive winter. When a pregnant bear is deprived of food, the cubs are less likely to live. Scientists say that in some areas, the number of surviving cubs is falling.

Future of the Species What might happen to polar bears? The answer largely depends on the ice. More than 386,000 square miles (1 million sq. km) of Arctic ice is expected to melt each year. Some scientists say that all of the summertime sea ice could be gone in the next 50 to 100 years. If that happens, the bears could face extinction.

The good news is that conservationists and scientists are working to alert people to the problem. Today people are more aware of the polar bears' plight.

As the Arctic thaws, scientists are racing to learn more about the polar bear. Using radio collars linked to remote satellites, scientists study bears in their habitat. They hope to learn how bears are adapting to less sea ice, and whether this adaptation will help prevent their extinction.

Under pressure from scientists and environmental groups, the U.S. government is considering whether the polar bear should be listed as an endangered species. If polar bears make the list, they will be the first mammal in the United States to be put on the list because of global warming. If that happens, government and industries would be required to consider how their actions affect the animals.

It's a Fact

1. Polar bear cubs start life weighing just over 2 pounds (1 kg). Male polar bears eventually grow to between 900 and 1,600 pounds (410 to 720 kg). Females are about half that size.

2. Polar bears can smell food 100 miles (161 km) away. Because food can be scarce in the Arctic, polar bears are able to go for a long time without eating. After 7 to 10 days with no food, a polar bear's metabolism slows down, conserving energy until they find food again. Black bears and brown bears, however, do not have this ability to slow down their metabolism. They will starve to death if no food is available in spring or summer.

3. Polar bears can swim 100 miles (161 km) or more between land and ice.
Environmental Case Study continued

Review the Facts

Directions: Read the information about polar bears. Then answer the following questions.

1. Describing What is the habitat of the polar bear?

2. Explaining How does global warming affect the polar bears?

3. Identifying What warning signs have alerted scientists to the possibility of extinction for polar bears?

A. 

B. 

4. Analyzing What was unusual about a bear killed in Canada in 2006?
Environmental Case Study
continued

Experimental Arctic Meltdown

✔ For Investigation

Will melting ice cause sea levels to rise? To understand the issue, you need to know that there are two kinds of ice—ice that rests on land and ice that floats in the sea. When land ice melts, the water runs off into the ocean, and sea levels rise. Sea ice is a different story. Sea ice is already floating in water, so when it melts, sea levels do not change. So the answer is yes... and no.

This activity shows what happens when both kinds of ice—sea ice and land ice—melt. Blocks of wood surrounded by water simulate land surrounded by ocean.

What to Do

1. Place one block of wood in each container. Fill each container halfway with water.

2. In one container, place 5 to 10 large ice cubes on top of the wood. In the other container, place the same number of ice cubes directly in the water.

3. Using a pencil, carefully mark the depth of the water on each piece of wood. Write a hypothesis, or what you think will happen in each container of water as the ice melts.

4. After the ice has melted, mark the depth of the water on the wood. Did the depth of water in each container change? Explain your results.

Assessment Checklist
Assess your experiment using the checklist below:

☐ Followed directions
☐ Marked initial water depth
☐ Marked subsequent water depth
☐ Explained lab results in complete sentences
☐ Results of the experiment were consistent with the hypothesis
☐ Wrote a thoughtful explanation
☐ Cleaned up the work area

Materials
- two large shallow containers
- two large blocks of wood
- water
- ice cubes
- pencil
- paper