CHAPTER 12

Climate Change

Focussing Questions

- What evidence suggests our climate may be changing more rapidly than some species can adapt?
- Can human activities cause climate change?
- How can we reduce our impact on the biosphere and the global climate and still meet human needs?
The polar bear has adapted to possibly the harshest environment on Earth — the Arctic ice pack. These bears hunt for seals, mate, and even give birth on the ice. They are totally dependent on sea ice for their existence. The sea ice, however, is shrinking. It is taking longer for the ice packs to form in the winter. Thus the bears must wait longer before they can hunt for seals. The polar bears that pass through Churchill, Manitoba have been getting leaner and smaller over the past ten years. Due to the receding ice pack, the bears are having a harder time finding enough food to survive. Is global warming threatening the polar bear?

Globally, the 1990s was the warmest decade of the 20th century and the 20th century was the warmest century in the millennium. This trend appears to be continuing. The concentration of the greenhouse gases is at its highest level in over 100,000 years. A debate has arisen over whether humans might be influencing climate change at a rate never before recorded. You have probably heard about global warming and polar icecaps thinning. Are these phenomena caused by human activities?

Some people say if we have to change our activities to reduce greenhouse gases, the social and economic consequences could be worse than a changing climate. Others think that reducing these gases by improving the way we use energy will raise standards of living.

An important concern about climate change is its effect on the ability of organisms to adapt to the changes to biomes. How might life in biomes be affected if the average global temperature continues to increase? Which species might be able to adapt to change and which will not?

As techniques for evaluating climate change improve, new evidence will help individuals, companies, and governments make better-informed decisions.