Section 11.2
Human Activity and Climate Change
Check Your Understanding

Checking Concepts

1. What does the term "climate change" mean?

2. List three observations that indicate that climate change is occurring.

3. What is the effect of greenhouse gases on heat radiated from Earth's surface?

4. Define "enhanced greenhouse effect".

5. What is global warming?

6. What is the most abundant greenhouse gas?

7. (a) How are GCMs used to study climate change?

    (b) List three factors that GCMs take into account.

8. (a) What does the term "carbon source" mean?

    (b) What is the largest carbon source resulting from human activity?

9. Name a source of the greenhouse gas nitrous oxide (N_2O).

Understanding Key Ideas

10. A change in room temperature of only 1°C to 2.5°C would be barely noticeable. Explain why scientists are alarmed at the potential for the same increase in the average global temperature of Earth in the next 50 years.

11. The global warming potential (GWP) of sulphur hexafluoride (SF6) is 23 900. Compare the ability of SF6 to trap thermal energy with that of CO_2.

12. Ozone in the stratosphere protects life on Earth from the Sun's harmful ultraviolet radiation. Why is ozone in the troposphere considered harmful?

13. Describe at least one way that global warming could affect each of the following in British Columbia:
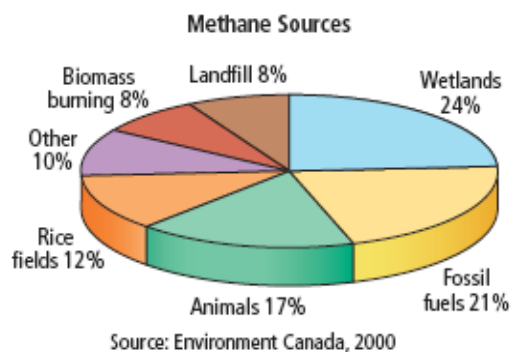
    (a) water supplies

    (b) fisheries

    (c) wildlife

    (d) forestry

    (e) coastal ecosystems

14. Study the graph below of methane sources.

Methane Sources

Landfill 8%
Biomass burning 8%
Wetlands 24%
Other 10%
Rice fields 12%
Fossil fuels 21%
Animals 17%
Source: Environment Canada, 2000

(a) If you were going to start a program to reduce methane emissions, which source would you target and why?

(b) Briefly explain how your program would help to reduce methane emissions.

15. Some people have calculated that everyone could produce about 2 tonnes of CO_2 per year without disrupting the natural greenhouse effect. The average car produces about 4.3 tonnes of CO_2 each per year.

   (a) As more people in developing countries start using cars, what might happen to global CO_2 emissions?

   (b) What other factors could change your answer to (a) above?

Pause and Reflect

The table below shows examples of industries in British Columbia, the problems related to climate change for one industry, and some strategies for solving the problems. Complete the other rows in the table.

Industry	Problem	Strategy for Solution
Manufacturing	• High Energy Use • Air Pollution • Waste Material	• Use energy-efficient equipment • Monitor air quality and emissions • Recycle material
Construction		
Forestry		