

SECTION
16.1

HUMAN POPULATION GROWTH AND NATURAL
RESOURCES

Study Guide

KEY CONCEPT

As the human population grows, the demand for Earth's resources increases.

VOCABULARY

nonrenewable resource
renewable resource
ecological footprint

MAIN IDEA: Earth's human population continues to grow.

1. Approximately how big is Earth's population now?

2. Name and give examples of two technologies that have influenced human population growth since 1700.

MAIN IDEA: The growing human population exerts pressure on Earth's natural resources.

Determine whether the following resources are renewable or nonrenewable. Explain your answer.

3. sun _____

4. oil _____

5. trees _____

6. water _____

7. wind _____

8. corn _____

9. beef _____

10. coal _____

Section 16.1 STUDY GUIDE CONTINUED

MAIN IDEA: Effective management of Earth's resources will help meet the needs of the future.

- 11.** The inhabitants of Easter Island made many mistakes in their resource use. Name one resource that was misused and describe two ways that they could have used the resource more effectively.

- 12.** What is an ecological footprint?

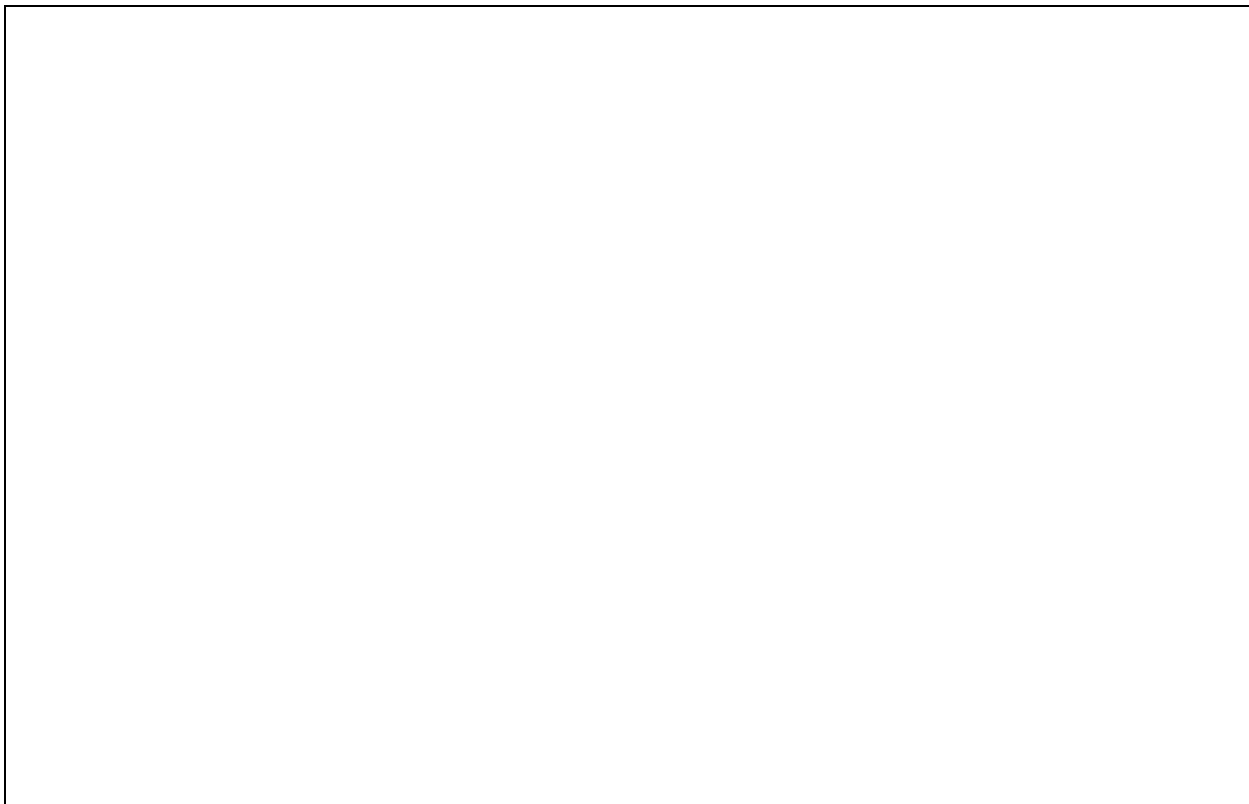
- 13.** List the four factors that determine your ecological footprint.

Vocabulary Check

- 14.** What is the difference between a renewable and a nonrenewable resource?

Be Creative

Create a poster that illustrates why it is important to conserve natural resources.



SECTION
16.2 | AIR QUALITY
Study Guide

KEY CONCEPT

Fossil fuel emissions affect the biosphere.

VOCABULARY

pollution	acid rain
smog	greenhouse effect
particulate	global warming

MAIN IDEA: Pollutants accumulate in the air.

1. What is pollution?

2. What is smog?

3. What are the major components of smog and how does it form?

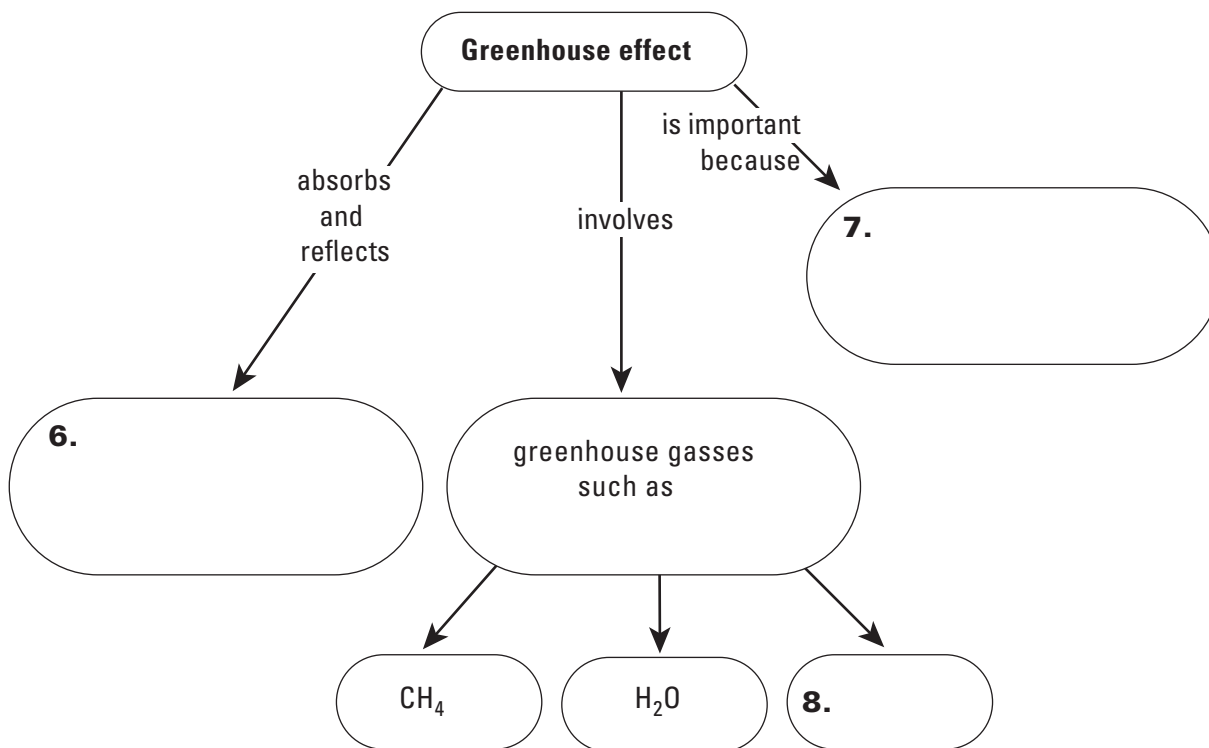
4. What is acid rain?

5. How does acid rain affect ecosystems?

Section 16.2 STUDY GUIDE CONTINUED

MAIN IDEA: Air pollution is changing Earth's biosphere.

Complete the concept map with information about the greenhouse effect.



9. What is the greenhouse effect?

10. What is the relationship between the greenhouse effect and global warming?

Vocabulary Check

11. How is a gardener's greenhouse a miniature version of the greenhouse effect?

12. The word *particulate* comes from the Latin word *particula*, which means "a small part." How is this word origin related to the definition of a particulate?

SECTION
16.3 | WATER QUALITY
Study Guide

KEY CONCEPT

Pollution of Earth's freshwater supply threatens habitat and health.

VOCABULARY

indicator species
biomagnification

MAIN IDEA: Water pollution affects ecosystems.

1. List three examples of water pollution.

2. Why are indicator species important to scientists?

MAIN IDEA: Biomagnification causes accumulation of toxins in the food chain.

3. What is biomagnification?

4. Illustrate an ecosystem's food chain and describe what will happen to the concentration of pollutants as they move up the food chain.

Section 16.3 STUDY GUIDE CONTINUED

Vocabulary Check

5. Use your knowledge of the prefix *bio-* and the term *magnification* to explain the meaning of biomagnification.
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Be Creative

6. Design a poster that explains the importance of keeping sources of fresh water free from pollution.



SECTION
16.4

THREATS TO BIODIVERSITY

Study Guide

KEY CONCEPT

The impact of a growing human population threatens biodiversity.

VOCABULARY

habitat fragmentation

introduced species

MAIN IDEA: Preserving biodiversity is important to the future of the biosphere.

1. What is biodiversity?

2. Why is it important to preserve biodiversity?

3. Where are the highest levels of biodiversity on our planet? Explain why this is so.

MAIN IDEA: Loss of habitat eliminates species.

4. List three ways in which humans cause habitat fragmentation.

MAIN IDEA: Introduced species can disrupt stable relationships in an ecosystem.

5. What is an introduced species?

Section 16.4 STUDY GUIDE CONTINUED

6. Complete the chart below with examples of introduced species and describe how they are disrupting the ecosystem in which they live.


Species	Impact on Ecosystem
Burmese python (Everglades)	
Kudzu (United States)	
Mice (Australia)	

Vocabulary Check

7. A fragment is defined as “a small part broken off or detached.” How does this definition relate to the meaning of habitat fragmentation?

Be Creative

8. Think of an area where you live that is an example of habitat fragmentation. Design a poster that both illustrates the problem and proposes a solution.



SECTION

16.5

CONSERVATION

Study Guide

KEY CONCEPT

Conservation methods can help protect and restore ecosystems.

VOCABULARY

sustainable development
umbrella species

MAIN IDEA: Sustainable development manages resources for present and future generations.

1. How can sustainable development help Earth’s human population?

2. Complete the following chart with two examples of sustainable development and explain how they benefit humans.

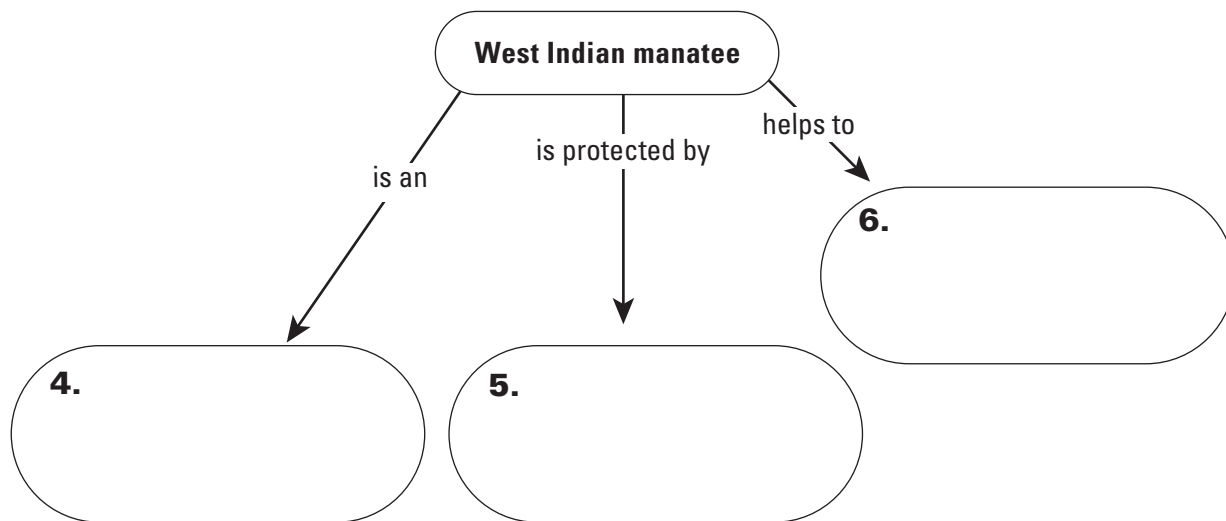
Resource	How Is It managed?	Benefits

MAIN IDEA: Conservation practices focus on a few species but benefit entire ecosystems.

3. What is an umbrella species?

Section 16.5 STUDY GUIDE CONTINUED

Complete the concept map with information about the manatee and its role as an umbrella species.



MAIN IDEA: Protecting Earth's resources helps to protect our future.

7. What are three laws that have been developed to help protect natural resources?

8. What can humans do to reduce their impact on Earth's ecosystems?

Vocabulary Check

9. The word *sustain* means "to keep in existence, maintain." How does this meaning relate to the idea of sustainable development?
