Name _____ Class _____ Date _____

Reviewing Key Concepts

Short Answer *On the lines provided, describe some of the environmental costs and benefits associated with each of the four human activities that have changed the biosphere.*

Human Activity	Benefits and Costs
Hunting and gathering	1. _____
Agriculture	2. _____
Industry	3. _____
Urban development	4. _____

Reviewing Key Skills

5. **Comparing and Contrasting** How does modern subsistence hunting differ from the poaching of animals for tusks, horns, or hides?

6. **Applying Concepts** How did the domestication of animals help to provide humans with a dependable food supply?

7. **Comparing and Contrasting** What are some differences between traditional and modern agriculture?

8. **Comparing and Contrasting** How would the number of plant species found in a monocultured area differ from the number found to grow in a wilderness area?

9. **Applying Concepts** What is meant by the phrase the green revolution? How has it affected food production?

10. **Applying Concepts** What effect might a shortage of fossil fuels or mineral resources have on industry?

Name _____ Class _____ Date _____

Reviewing Key Concepts

Short Answer *On the lines provided, answer the following questions.*

1. What is the difference between renewable and nonrenewable resources?

2. How do human activities lead to desertification?

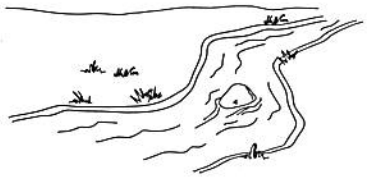
3. What effect does deforestation have on forest resources?

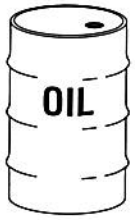
4. What is the atmospheric result of the burning of fossil fuels?

5. What human actions have affected our water and ocean resources?

Reviewing Key Skills

Classifying *On the lines provided, classify each as either a* renewable resource *or a* nonrenewable resource.





6. _____ 7. _____ 8. _____

9. **Applying Concepts** What is the "tragedy of the commons"?

10. **Applying Concepts** Give one example each of sustainable practices for land, air, and water resources.

Name _____ Class _____ Date _____

Reviewing Key Concepts

Short Answer *On the lines provided, list four human activities that are current threats to biodiversity.*

1. _____
2. _____
3. _____
4. _____
5. Why is biodiversity one of Earth's greatest natural resources? _____

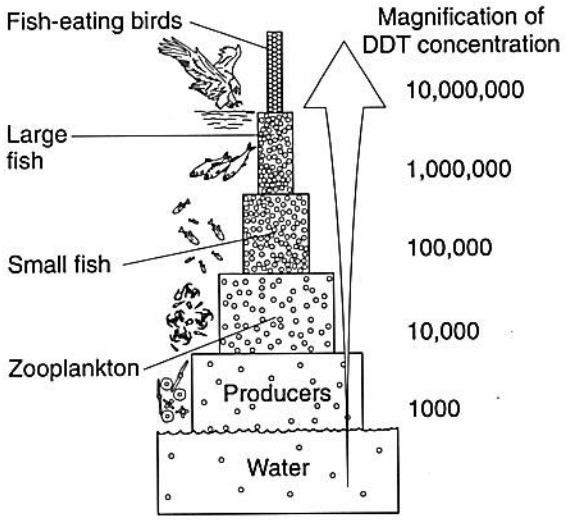
_____

6. Why do conservation efforts currently focus on protecting entire ecosystems as well as single species? _____

_____

Reviewing Key Skills

Interpreting Graphics *Use the following diagram to answer questions 7 through 9.*



7. Identify the process shown in this diagram.

_____

8. What do the small dots represent?

_____

9. What are the effects of bioaccumulation in the process shown?

_____

_____

10. **Applying Concepts** Explain the term biological "hot spot."

_____

_____

Name _____ Class _____ Date _____

Reviewing Key Concepts

Short Answer *On the lines provided, answer the following questions.*

1. What important factor does the ozone layer serve in Earth's atmosphere?

2. Why are scientists concerned about the depletion, or thinning, of the ozone layer?

3. What is global warming?

4. Why are scientists concerned about the effect of global warming on the atmosphere?

Reviewing Key Skills

5. **Applying Concepts** Why is it important to phase out the use of chlorofluorocarbons (CFCs)?

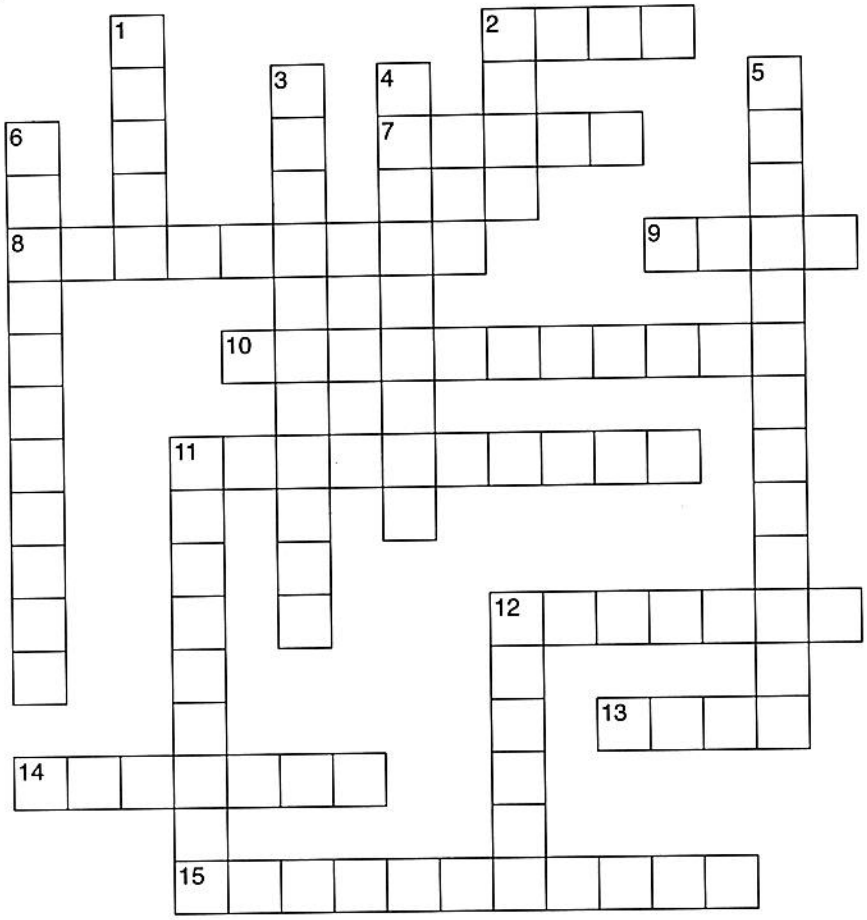
6. **Applying Concepts** Describe three possible effects of global warming.

Applying Concepts *List three services that ecosystems provide.*

7. _____
8. _____
9. _____
10. **Problem Solving** Identify one change humans can make to help solve ecological problems.

Name _____ Class _____ Date _____

Crossword Puzzle *Use the clues below and on the following page to complete the puzzle.*



Across

2. wearing away of surface soil by wind and water: _____ erosion
7. layer of atmosphere that absorbs ultraviolet light
8. resource that can regenerate and is therefore replaceable
9. mixture of chemicals that occurs as a haze in the atmosphere
10. way of using resources at a rate that does not deplete them: _____ use
11. disappearance of a species from all or part of its geographical range
12. type of diversity that includes all forms of genetic information carried by all organisms
13. precipitation that contains drops of nitric and sulfuric acid: acid _____
14. type of subsistence foraging
15. method of farming in which large fields are cleared and planted with a single crop year after year

Name _____ Class _____ Date _____

Down

1. practice that uses new intensive farming practices to increase food production: _____ revolution
2. mixture of either smoke and fog or chemicals and sunlight
3. fish farming
4. harmful material that can enter the biosphere through the air, land, or water
5. loss of forests
6. the practice of farming
11. variety of different habitats, communities, and ecological processes: _____ diversity
12. type of warming that shows the trend in increasing temperature of Earth

Multiple Choice *On the lines provided, write the letter of the answer that best completes the sentence or answers the question.*

_____ **16.** A resource that cannot be replenished by natural processes is called
a. nonrenewable. c. renewable.
b. a stockpile. d. scarce.

_____ **17.** The sum total of the variety of organisms in the biosphere is called
a. diversity. c. genetic diversity.
b. biodiversity. d. species diversity.

_____ **18.** Development can split a habitat into smaller parts, in an effect known as
a. biological magnification. c. ecosystem diversity.
b. habitat conservation. d. habitat fragmentation.

_____ **19.** Populations that are introduced into a new habitat and reproduce rapidly are known as
a. diverse species. c. parasites.
b. invasive species. d. predators.

_____ **20.** The increasing concentration of a harmful substance in organisms at higher trophic levels in a food chain or food web is called
a. biological magnification. c. biodiversity.
b. desertification. d. genetic diversity.

_____ **21.** What term is used to describe a species whose population is rapidly shrinking and might disappear completely?
a. endangered c. extinct
b. threatened d. invasive

_____ **22.** In ecology, what term is used to describe the wise management of natural resources?
a. renewable c. conservation
b. equilibrium d. diverse

Water Desalination

Human settlements rely on water, so most human settlements originally developed close to sources of fresh water, such as lakes or rivers. However, as the human population grew, people settled in other places, including arid and semi-arid areas. Although water can be transported to areas that lack water sources, if the population grows too large, demand will exceed supply.

Because reliable supplies of fresh water have not always been able to meet demand, new processes have been developed to make fresh water available. Desalination is a process that removes dissolved salt from water to produce water for human consumption, agriculture, and industry. Desalination is widely used in the Middle East, and more recently in Florida and California. There are two main processes used for water desalination: the distillation technique and the membrane technique.

Distillation is a relatively simple process. Salt water is boiled, and the steam is collected and allowed to condense in a separate container. The water that results from the condensation is fresh; the salt remains in the heating container. The most widely used distillation process is multistage flash distillation, or MSF. MSF is based on the principle that water will boil at a lower temperature when it is at a lower pressure. In MSF, heated water is transferred into a low-pressure chamber. Some of the water evaporates, and the rest is transferred to a lower-pressure chamber. The process is repeated until the maximum amount of water has evaporated. A large MSF plant may have as many as 60 different chambers.

Membranes also can be used to separate dissolved substances from fluids. There are two membrane processes used for water desalination: electrodialysis and reverse osmosis. Electrodialysis (ED) takes advantage of the fact that salt dissolved in water is in the form of positive and negative ions. ED uses electricity to separate the ions from the water. The water is then passed through two membranes, leaving the salt behind. Reverse osmosis (RO) uses pressure to force water through a membrane that allows water molecules, but not dissolved salt, to pass through.

Evaluation *On the lines provided, answer the following questions.*

1. What is desalination? Why is it used?

_____

_____

_____

2. What are the two techniques of desalination? What property of water or dissolved salts is each based on?

_____

_____

_____

_____

Name _____ Class _____ Date _____

Concept Map

Using information from the chapter, complete the concept map below. If there is not enough room in the concept map to write your answers, write them on a separate sheet of paper.