Name _____ Class _____ Date _____

SECTION 23-1 REVIEW

HUMANS AND THE ENVIRONMENT

VOCABULARY REVIEW Define the following terms.

1. convection cell _____

2. upwelling _____

3. El Niño _____

4. chlorofluorocarbon _____

MULTIPLE CHOICE Write the correct letter in the blank.

_____ 1. One of the effects of El Niño is

a. decreased grain production in northeastern Australia.
b. decreased grain production in the southeastern United States.
c. reduced rainfall in the southeastern United States.
d. larger fish populations along the west coast of South America.

_____ 2. The ozone hole is a

a. clearing in the smoggy air over a large city.
b. zone of very low ozone concentration in the upper atmosphere over Antarctica.
c. zone of very high ozone concentration in the lower atmosphere over Antarctica.
d. circular patch of ozone in the upper atmosphere over the Arctic Ocean.

_____ 3. One of the likely effects of damage to the ozone layer is a(n)

a. decrease in global temperatures.
b. shift in wind patterns over the southern Pacific Ocean.
c. decrease in the amount of ultraviolet radiation that reaches Earth's surface.
d. increase in the incidence of skin cancer in humans.

_____ 4. Oceanic upwelling will

a. help support plankton.
b. suppress cold oceans.
c. cause El Niño.
d. decrease the ozone.

_____ 5. Doubling the human population could

a. hasten global warming.
b. decrease the amount of undeveloped land.
c. All of the above
d. None of the above

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SHORT ANSWER Answer the questions in the space provided.

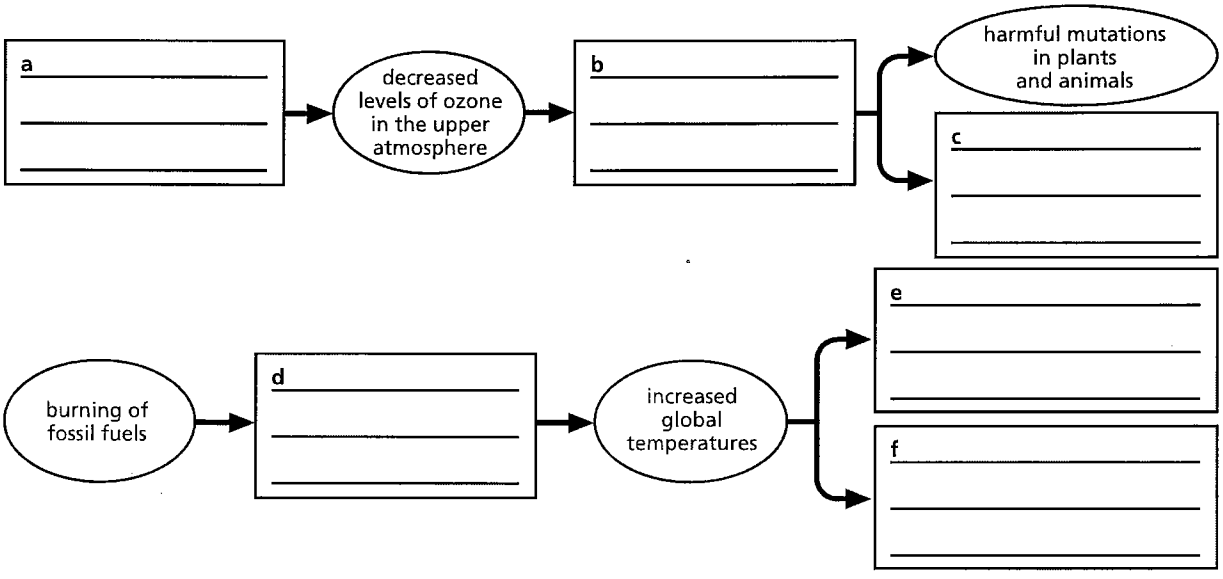
1. Explain the relationship between wind patterns in the southern Pacific Ocean and fish populations along the coast of Peru. _____

2. Identify three possible consequences of doubling Earth's human population. _____

3. What is the greenhouse effect? _____

4. **Critical Thinking** Increased CO_2 levels in the atmosphere are correlated with rising global temperatures, leading many scientists to believe that the first phenomenon has caused the second. What would it take to be certain that this correlation represents a cause-and-effect relationship?

STRUCTURES AND FUNCTIONS The flowcharts below represent some of the effects of human activity on the environment. Each arrow indicates a known or suspected cause-and-effect relationship. Complete the flowcharts by writing an appropriate response in the space corresponding to each box.



Name _____ Class _____ Date _____

SECTION 23-2 REVIEW

THE BIODIVERSITY CRISIS

VOCABULARY REVIEW Define the following terms.

1. biodiversity _____

2. evenness _____

3. genetic diversity _____

MULTIPLE CHOICE Write the correct letter in the blank.

_____ **1.** Which of the following is not a measure of biodiversity?

a. evenness
b. genetic recombination
c. genetic diversity
d. species richness

_____ **2.** Of the following groups, which contains the greatest number of species?

a. crustaceans **b.** mammals **c.** plants **d.** insects

_____ **3.** The mass extinction currently under way is different from previous mass extinctions because it

a. is being caused largely by humans.
b. involves the loss of more species.
c. is occurring at a time when biodiversity is already low.
d. is actually causing an increase in biodiversity.

_____ **4.** In a debt-for-nature swap,

a. developing countries destroy their natural ecosystems to build their economies.
b. countries go into debt to pay for the conservation of their natural resources.
c. richer countries pay off some of the debts of developing countries that take steps to preserve biodiversity.
d. richer countries pay developing countries to convert their rain forests into farms.

_____ **5.** One nonutilitarian reason for preserving biodiversity would be that

a. some undiscovered species might provide sources of medicines.
b. ecosystem functions that are vital to humans depend on biodiversity.
c. biodiversity provides a wide range of food and building materials for humans.
d. organisms have value simply because they exist.

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SHORT ANSWER Answer the questions in the space provided.

1. What effect do human activities, such as farming, have on biodiversity? _____

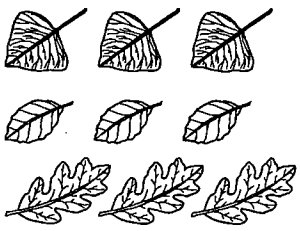
2. Why is the destruction of tropical rain forests especially damaging to biodiversity? _____

3. What is ecotourism, and how can it be used to preserve biodiversity? _____

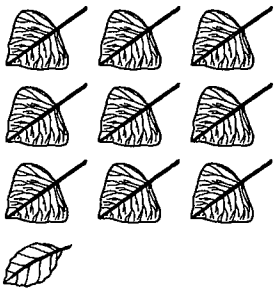
4. **Critical Thinking** Why do some botanists store the seeds of newly discovered plant species or varieties in dry, refrigerated seed banks? _____

STRUCTURES AND FUNCTIONS Use the drawings below to answer the following questions. The drawings show the number of individuals of four plant species found at three sites. Each leaf represents one plant.

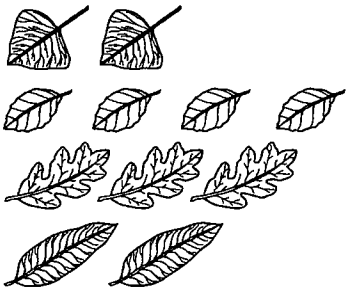
Site A



Site B



Site C



1. Which site has the greatest species richness? _____

2. Which site has the lowest species richness? _____

3. Which site has the greatest species evenness? _____

4. Which site has the lowest species evenness? _____

5. Which site has the greatest species diversity? _____

6. Which site has the lowest species diversity? _____

Name _____ Class _____ Date _____

SECTION 23-3 REVIEW

TAKING ACTION

VOCABULARY REVIEW Define the following terms.

1. conservation biology _____

_____

2. restoration biology _____

_____

MULTIPLE CHOICE Write the correct letter in the blank.

_____ **1.** Efforts to conserve species of migratory birds focus on

a. establishing wildlife refuges along flyways and at the birds' destinations.
b. confining birds at their summer destinations.
c. confining birds at their winter destinations.
d. removing birds from the list of endangered species.

_____ **2.** One of the consequences of the reduction in gray wolf populations in the contiguous 48 states has been a

a. large increase in livestock populations due to reduced predation by wolves.
b. decrease in the number of humans killed by healthy wild wolves.
c. rise in the population of elk in some areas.
d. decrease in the populations of deer and moose in some areas.

_____ **3.** The Wolf Reintroduction Plan for Yellowstone National Park involves

a. paying people to kill reintroduced wolves that stray outside the park.
b. relocating ranchers that are opposed to the reintroduction program.
c. permanently keeping the wolves inside fenced enclosures within the park.
d. reimbursing ranchers for economic losses caused by wolves.

_____ **4.** Negative consequences of ecosystem alteration in southern Florida include

a. the extinction of the melaleuca tree.
b. water shortages.
c. overgrowth of sea grass in Florida Bay.
d. an increase in the populations of wading birds.

_____ **5.** The plan for restoring the Everglades ecosystem involves

a. building new drainage canals.
b. planting more melaleuca trees.
c. restoring the Kissimmee River to its original channel.
d. adding fertilizer to the Everglades to increase its productivity.

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SHORT ANSWER Answer the questions in the space provided.

1. Identify two factors that may be involved in the decline of migratory bird populations. _____

2. Why must efforts to protect migratory bird populations be international? _____

3. Describe two preparatory steps that were taken before wolves were actually released in Yellowstone National Park. _____

4. **Critical Thinking** Why would a few large wildlife refuges be more effective for preserving biodiversity than many small refuges? _____

5. **Critical Thinking** What might be the utilitarian value of the wolf reintroduction plan? _____

STRUCTURES AND FUNCTIONS The flowcharts below represent some aspects of conservation and restoration biology. Complete the flowcharts by writing an appropriate response in each box.