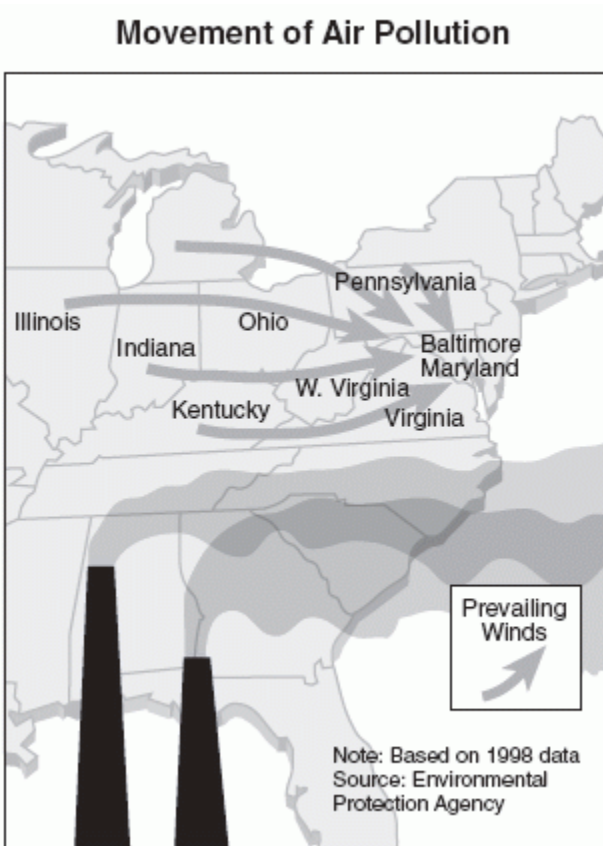


Human Impact: Practice Questions #1

1. Communities have attempted to control the size of mosquito populations to prevent the spread of certain diseases such as malaria and encephalitis. Which control method is most likely to cause the *least* ecological damage?
 - A. draining the swamps where mosquitoes breed
 - B. spraying swamps with chemical pesticides to kill mosquitoes
 - C. spraying oil over swamps to suffocate mosquito larvae
 - D. increasing populations of native fish that feed on mosquito larvae in the swamps
2. Which animal has modified ecosystems more than any other animal and has had the greatest negative impact on world ecosystems?
 - A. gypsy moth
 - B. zebra mussel
 - C. human
 - D. shark
3. The map below shows the movement of some air pollution across part of the United States.



Which statement is a correct inference that can be drawn from this information?

- A. Illinois produces more air pollution than the other states shown.
- B. The air pollution problem in Baltimore is increased by the addition of pollution from other areas.
- C. There are no air pollution problems in southern states.
- D. The air pollution problems in Virginia clear up quickly as the air moves toward the sea.

4. Continued depletion of the ozone layer will most likely result in

- A. an increase in skin cancer among humans
- B. a decrease in atmospheric pollutants
- C. an increase in marine ecosystem stability
- D. a decrease in climatic changes

5. A change in the acidity of mountain lakes would most likely be a result of

- A. ecological succession of the area at the top of the mountain
- B. the introduction of new species into the lakes
- C. air pollution from smoke stacks miles away
- D. planting grasses and shrubs around the lakes

6. One advantage of biodiversity in an ecosystem is that it

- A. guarantees that the largest organisms will dominate the area
- B. ensures a large amount of identical genetic material
- C. develops relationships between organisms that are always positive over long periods of time
- D. increases the chance that some organisms will survive a major change in the environment

7. In 1960, an invasive species of fish was introduced into the stable ecosystem of a river. Since then, the population of a native fish species has declined. This situation is an example of an

- A. ecosystem that has recovered
- B. ecosystem altered through the activities of an organism
- C. environmental impact caused by physical factors
- D. ecological niche without competition

8. Which human activity would most likely deplete finite resources?

- A. use of natural enemies to eliminate insect pests
- B. development of wildlife refuges
- C. governmental restriction of industrial pollution
- D. uncontrolled population growth

9. The Audubon Society recently released a study that showed that the populations of some bird species have decreased in number by as much as 50% since 1966. The study eliminated food and water shortages and natural cycles as causes for the decrease. Which factor might have contributed to this decline?
- A. overproduction of bird offspring
 - B. destruction of natural habitats
 - C. fewer predators
 - D. an energy-rich diet
10. The increasing demands for fossil fuels has led government and businesses to consider several possibilities to solve the energy crisis. Which solution will reduce the impact of this crisis on the environment and future generations?
- A. increase the number of drilling sites for crude oil in North America
 - B. build more power plants away from population centers
 - C. limit the number of people in each vehicle
 - D. develop alternative fuel sources that can be produced from renewable resources
11. Which negative human environmental influence is matched to the positive influence that has helped to correct it?
- A. overhunting – pollution controls
 - B. disposal problems – species preservation
 - C. importation of organisms – energy conservation
 - D. pesticide use – biological control of insects
12. African elephant tusks consist of high-quality ivory. In recent years, the elephant population in certain African wildlife preserves has decreased. This decrease is most likely due to
- A. air pollution
 - B. human exploitation
 - C. biocide use
 - D. importation of Japanese beetles
13. Human impact on the environment is often more dramatic than the impact of most other living things because humans have a greater
- A. need for water
 - B. need for food
 - C. ability to adapt to change
 - D. ability to alter the environment

14. "Natural ecosystems provide an array of basic processes that affect humans."

Which statement does *not* support this quotation?

- A. Bacteria of decay help recycle materials.
- B. Trees add to the amount of atmospheric oxygen.
- C. Treated sewage is less damaging to the environment than untreated sewage.
- D. Lichens and mosses living on rocks help to break the rocks down, forming soil.

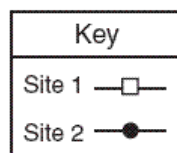
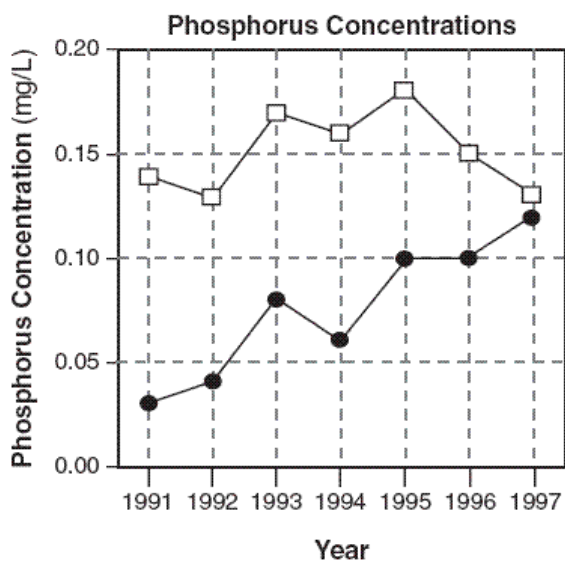
15. Which situation has had the most *negative* effect on the ecosystems of Earth?

- A. use of air pollution controls
- B. use of natural predators to control insect pests
- C. recycling glass, plastic, and metals
- D. increasing human population

16. Water from nearby rivers or lakes is usually used to cool down the reactors in nuclear power plants. The release of this heated water back into the river or lake would most likely result in

- A. an increase in the sewage content in the water
- B. a change in the biodiversity in the water
- C. a change in the number of mutations in plants growing near the water
- D. a decrease in the amount of sunlight necessary for photosynthesis in the water

17. Compounds containing phosphorus that are dumped into the environment can upset ecosystems because phosphorus acts as a fertilizer. The graph below shows measurements of phosphorus concentrations taken during the month of June at two sites from 1991 to 1997.



Which statement represents a valid inference based on information in the graph?

- A. There was no decrease in the amount of compounds containing phosphorus dumped at site 2 during the period from 1991 to 1997.
- B. Pollution controls may have been put into operation at site 1 in 1995.
- C. There was most likely no vegetation present near site 2 from 1993 to 1994.
- D. There was a greater variation in phosphorous concentration at site 1 than there was at site 2.

18. Farming reduces the natural biodiversity of an area, yet farms are necessary to feed the world's human population. This situation is an example of

- A. poor land use
- B. a trade-off
- C. conservation
- D. a technological fix

19. Which situation is a result of human activities?

- A. decay of leaves in a forest adds to soil fertility
- B. acid rain in an area kills fish in a lake
- C. ecological succession following volcanic activity reestablishes an ecosystem
- D. natural selection on an island changes gene frequencies

20. The Susquehanna River, which runs through the states of New York, Pennsylvania, and Maryland, received the designation "America's Most Endangered River" in 2005. One of the river's problems results from the large number of sewage overflow sites that are found along the course of the river. These sewage overflow sites are a direct result of an increase in

- A. global warming
- B. human population
- C. recycling programs
- D. atmospheric changes

21. One reason why people should be aware of the impact of their actions on the environment is that

- A. ecosystems are never able to recover once they have been adversely affected
- B. the depletion of finite resources cannot be reversed
- C. there is a decreased need for new technology
- D. there is a decreased need for substances produced by natural processes

22. The tall wetland plant, purple loosestrife, was brought from Europe to the United States in the early 1800s as a garden plant. The plant's growth is now so widespread across the United States that it is crowding out a number of native plants. This situation is an example of
- A. the results of the use of pesticides
 - B. the recycling of nutrients
 - C. the flow of energy present in all ecosystems
 - D. an unintended effect of adding a species to an ecosystem

23. Which human activity would have the *least* negative impact on the quality of the environment?

- A. adding animal wastes to rivers
- B. cutting down tropical rain forests for plywood
- C. using species-specific sex attractants to trap and kill insect pests
- D. releasing chemicals into the groundwater

24. Which activities most directly control erosion?

- A. use of reforestation and covercropping
- B. establishment of game laws and fisheries
- C. use of phosphates and hydrocarbons
- D. establishment of wildlife refuges and national parks

25. Base your answer to the question on the information and on your knowledge of biology.

The dodo bird inhabited the island of Mauritius in the Indian Ocean, where it lived undisturbed for years. It lost its ability to fly and it lived and nested on the ground where it ate fruits that had fallen from trees. There were no mammals living on the island. In 1505, the first humans set foot on Mauritius. The island quickly became a stopover for ships engaged in the spice trade. The dodo was a welcome source of fresh meat for the sailors and large numbers of dodos were killed for food. In time, pigs, monkeys, and rats brought to the island ate the dodo eggs in the ground nests.

Which statement describes what most likely happened to the dodo bird within 100 years of the arrival of humans on Mauritius?

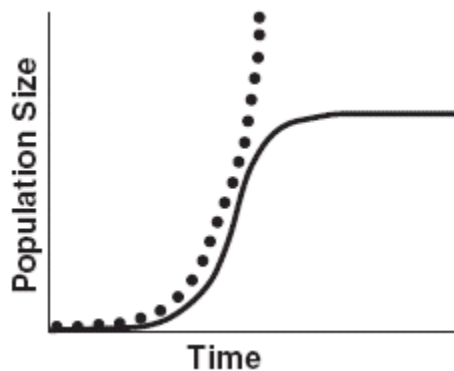
- A. Dodo birds developed the ability to fly in order to escape predation and their population increased.
- B. The dodo bird population increased after the birds learned to build their nests in trees.
- C. Human exploitation and introduced species significantly reduced dodo bird populations.
- D. The dodo bird population became smaller because they preyed upon the introduced species.

26. One irreversible effect of both deforestation and water pollution on the environment is the
- A. extinction of species
 - B. thinning of the ozone shield
 - C. depletion of atmospheric carbon dioxide levels
 - D. increase in renewable resources

27. In state forests and parks containing varieties of flowering trees and shrubs, there are signs that say, "Take nothing but pictures, leave nothing but footprints." These signs are necessary because

- A. humans can destroy habitats by removing flowering trees and shrubs
- B. all animals feed directly on flowering shrubs that may be removed by people
- C. removal of flowering trees and shrubs will increase biodiversity
- D. flowering shrubs grow best in state forests and parks

28. The dotted line on the graph represents the potential size of a population based on its reproductive capacity. The solid line on this graph represents the actual size of the population.



Which statement best explains why the actual population growth is less than the potential population growth?

- A. Resources in the environment are limited.
- B. More organisms migrated into the population than out of the population.
- C. The birthrate gradually became greater than the death rate.
- D. The final population size is greater than the carrying capacity.

29. Some people make compost piles consisting of weeds and other plant materials. When the compost has decomposed, it can be used as fertilizer. The production and use of compost is an example of

- A. the introduction of natural predators
- B. the use of fossil fuels
- C. the deforestation of an area
- D. the recycling of nutrients

30. Which human activity is correctly paired with its likely future consequence?

- A. overfishing in the Atlantic — increase in supply of flounder and salmon as food for people
- B. development of electric cars or hybrid vehicles — increased rate of global warming
- C. use of fossil fuels — depletion of underground coal, oil, and natural gas supplies
- D. genetically engineering animals — less food available to feed the world's population

Answer Key 1 Human Impact

- | | |
|-------|-------|
| 1. D | 16. B |
| 2. C | 17. B |
| 3. B | 18. B |
| 4. A | 19. B |
| 5. C | 20. B |
| 6. D | 21. B |
| 7. B | 22. D |
| 8. D | 23. C |
| 9. B | 24. A |
| 10. D | 25. C |
| 11. D | 26. A |
| 12. B | 27. A |
| 13. D | 28. A |
| 14. C | 29. D |
| 15. D | 30. C |