1. Evaluate the reintroduction of the gray wolf as a keystone predator species in the Yellowstone ecosystem.

2. List factors that increase and decrease the earth's biodiversity? Describe ways in which human activities have reduced the biodiversity of (a) the world and (b) the United States.

3. What is **conservation biology**? What is bioinformatics and why is it important?

4. What percentage of the land in the United States does the federal government own and manage as public lands? Describe the five major types of public lands in the United States and list the major uses allowed on each type.

■ National parks and preserves   ■ National forests   ■ National wildlife refuges

5. List four principles that most biologists and some economists believe should govern the use of public land in the United States.

6. List (a) three important ecological services provided by forests and (b) three important economic benefits of forests.

7. Distinguish among **old-growth forests, second-growth forests, and tree plantations.**

8. Describe the *rotation cycle* for harvesting and managing a forest. Distinguish between *even-aged* and *uneven-aged management* of a forest.

9. Describe five major ways for harvesting trees.

10. What is the estimated economic value of the ecological services provided by the world's forests? Why are these values not reflected in most economic decisions about how to use the world's forests?

11. List three ways to use forests more sustainably. Describe the benefits of certifying that timber has been produced sustainably.

12. List three insect pests that cause major damage to U.S. forests. List four ways to reduce the harmful impacts of tree diseases and of insects on forests.
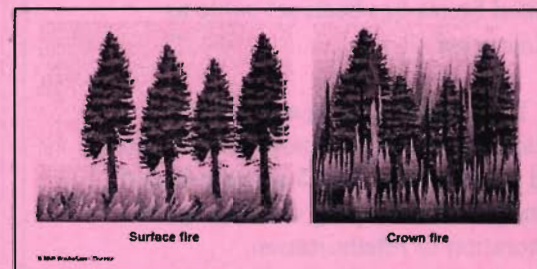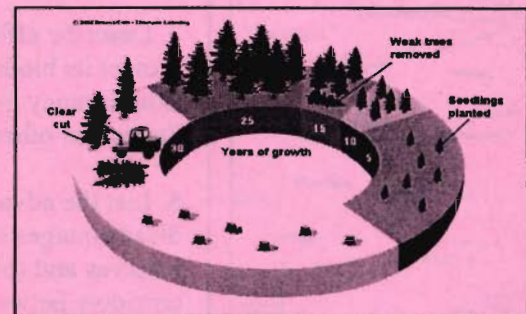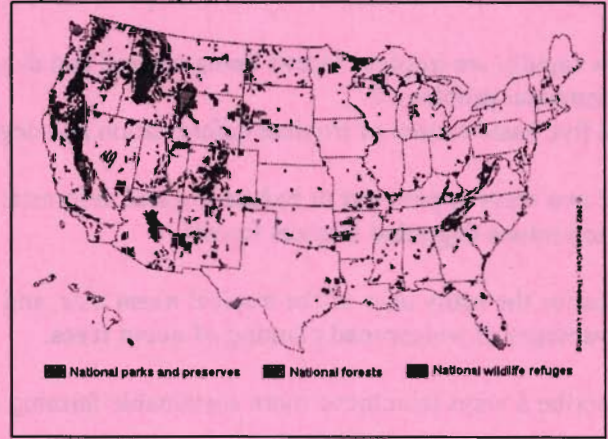
13. Distinguish among *surface and crown* forest fires. List two approaches used to protect forest resources from fire.

Surface fire   Crown fire

14. How do some plants and animals benefit from forest fires?

15. What are the advantages of the *Healthy Forests Initiative* law passed to help reduce the threat of fire damages in U.S. national forests?

16. List 3 factors that promote timber harvesting from U.S. national Forests. Explain why timber harvesting in national forests usually loses money for the U.S. citizens who own these forests.

17. List a few advantages and disadvantages of clear-cutting timber in U.S. national forests.
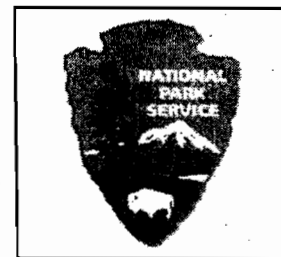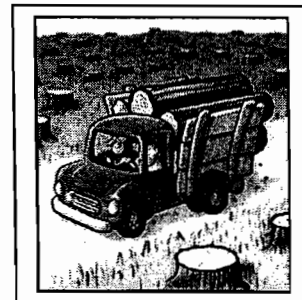
1. How rapidly are tropical forests being cleared and degraded and why is such cutting viewed as a serious global environmental problem??
2. List five basic causes of tropical deforestation and degradation.

3. List two ways to **prevent** or reduce tropical deforestation and degradation and two ways to **restore** degraded tropical forests.

4. Describe the many uses of the tropical *neem tree*, and list the advantages and disadvantages of widespread planting of **neem trees**.
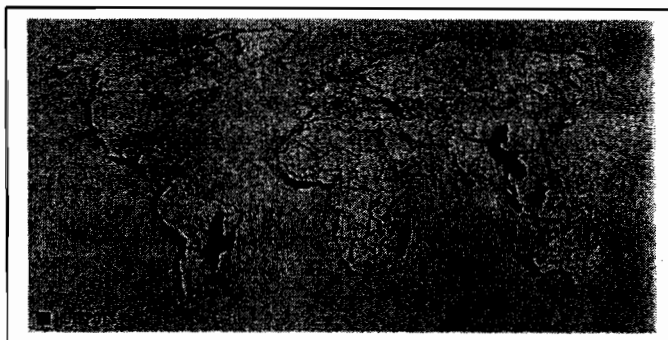
5. Describe **3** ways to achieve more sustainable farming and logging in tropical forests.

6. What are the major threats to national parks in the United States and in other countries? List **5** ways to improve national park management in the United States.

7. Describe efforts by Costa Rica to establish reserves to protect its biodiversity and (b) the role of the Nature Conservancy in establishing nature reserves in the United States and other parts of the world.

8. List the advantages and disadvantages of (a) large reserves and (b) establishing corridors between reserves.

9. List two goals of *adaptive ecosystem management*.

10. Explain the importance of protecting biodiversity in the world's biodiversity **hot spots**.

11. What is *wilderness*, and why is it important? List the advantages and disadvantages of protecting more wilderness. What percentage of the land area of the United States has been set aside as wilderness?

12. Distinguish among ecosystem *restoration, rehabilitation, remediation,* and *replacement*. List 5 science-based principles for carrying out ecological restoration or rehabilitation.

13. What is *biocultural restoration*?

14. List **3** ways suggested by biodiversity expert Edward O. Wilson for protecting most of the world's remaining ecosystems and species.