**APES Study Guide**

**Unit 5: BIODIVERSITY – THE SPECIES & ECOSYSTEM APPROACH**

*The fifth unit of APES will continue our study of ecology. It will focus on biodiversity for species and ecosystems.*

**Textbook Reference:**

Chapter 9 – Sustaining Biodiversity: The Species Approach

Chapter 10 – Sustaining Terrestrial Biodiversity: The Ecosystem Approach

**Vocabulary:**

*Directions: Review key vocabulary, words may appear in quizzes and/or tests. You are not required to write the definitions but are encouraged to review them online*

Chapter 9

background extinction rate

biological extinction

endangered species

extinction rate

habitat fragmentation

HIPPCO

precautionary principle

threatened (vulnerable) species

Chapter 10

biodiversity hotspots

commercial forest

ecological restoration

old-growth forests

overgrazing

pastures

rangelands

reconciliation ecology

second-growth forests

tree plantation (farm)

undergrazing

wilderness

**Study Guide Questions (SGQ):**

*Directions:**Answer in complete sentences in your composition books. (must be handwritten)*

Chapter 9

1. How can the extinction of a species affect other species and ecosystem services?
2. Give three reasons why many extinction experts believe that human activities are now causing a sixth mass extinction.
3. Distinguish between endangered species and threatened species and give an example of each.
4. List four characteristics that make some species especially vulnerable to extinction.
5. Describe two economic and two ecological benefits of having the current variety of species.
6. In order, what are the six largest causes of premature extinction of species resulting from human activities?
7. Describe the major effects of habitat loss and fragmentation.
8. Why are island species especially vulnerable to extinction?
9. Give two examples of the benefits of introducing some nonnative species.
10. Give two examples of the harmful effects of nonnative species that have been introduced (a) deliberately and (b) accidentally.
11. List four ways to limit the harmful impacts of nonnative species.
12. Explain how pesticides such as DDT can be biomagnified in food chains and webs.
13. Describe the poaching of wild species and give three examples of species that are threatened by this illegal activity.
14. Describe two international treaties that are used to help protect species and summarize the history of the U.S. Endangered Species Act.
15. Describe the roles and limitations of wildlife refuges, gene banks, botanical gardens, wildlife farms, zoos, and aquariums in protecting some species.

Chapter 10

1. What major ecological and economic benefits do forests provide?
2. Describe the harm caused by building roads into previously inaccessible forests.
3. Distinguish among selective cutting, clear-cutting, and strip cutting in the harvesting of trees.
4. What are the major advantages and disadvantages of clear- cutting forests?
5. What are two types of forest fires?
6. What are some ecological benefits of occasional surface fires?
7. What are four ways to reduce the harmful impacts of diseases and insects on forests?
8. What effects might projected climate change have on forests?
9. What is deforestation and what parts of the world are experiencing the greatest forest losses?
10. List some major harmful environmental effects of deforestation.
11. Describe four ways to manage forests more sustainably.
12. What are four ways to reduce the harms to forests and to people from forest fires?
13. What is prescribed fire?
14. What are three ways to reduce the need to harvest trees?
15. Describe the fuel wood crisis and list three ways to reduce its severity.
16. What are five ways to protect tropical forests and use them more sustainably?
17. What is overgrazing and what are its harmful effects?
18. What major environmental threats affect national parks in the world and in the United States?
19. How could national parks in the United States be used more sustainably?
20. How should nature reserves be designed and connected?
21. Describe the controversy over protecting wilderness in the United States.
22. What is a biodiversity hotspot and why is it important to protect such areas?
23. Describe a science-based, four-point strategy for carrying out ecological restoration and rehabilitation?
24. What are four ways in which we can all help sustain the earth’s terrestrial biodiversity?

**Case Studies:**

*Directions: For each of the following summarize the case study in three sentences; include the author’s main idea.*

Chapter 9

1. Polar Bears and Climate Change – page 190
2. The Passenger Pigeon: Gone Forever – page 194
3. The Kudzu Vine – page 201
4. Where Have All Honeybees Gone? – page 204
5. Accomplishments of Endangered Species Act – pages 211

Chapter 10

1. Wangari Maathai and the Green Belt Movement – page 217
2. Deforestation and the Fuelwood Crisis – page 232
3. Stresses on U.S. Public Parks – page 236
4. Controversy over Wilderness Protection in the United States – page 242