

ES9 Unit 8: Biomes & Ecology

Name _____ DUE: Monday June 1st

Unit Reading Material: Digital Textbook: Ch. 5.6, Ch. 8.1-8.8; Class notes and handouts

· The Habitable Planet (<http://www.learner.org/courses/envsci/unit/index.php>)

Vocabulary—Define, know, and be able to apply the following terms:

1. Biome
2. Ecosystem
3. Habitat
4. Symbiotic Relationship
5. Biodiversity
6. Genetic Variation
7. Invasive Species
8. Carrying Capacity
9. Limiting Factor

Study Guide—Answer, know, and understand the following concepts:

1. Identify which biome(s) fit the following descriptions:

- a. Hottest year-round:
- b. Coldest year-round:
- c. Poorest soil quality:
- d. Best soil quality for plants:
- e. Mid-west United States:
- f. Highest biodiversity:
- g. Mainly coniferous trees:
- h. Highest annual precipitation:
- i. Lowest annual precipitation:
- j. Distinct wet and dry seasons:
- k. Plants w/water-storage adaptations:
- l. Animals w/heating adaptations:

2. Give 3 examples of abiotic factors AND describe how each one can affect biotic factors in an ecosystem.

3. Differentiate between species, population, and community.

4. Explain the following processes including the roles of sugar, water, oxygen, and carbon dioxide:

- 1. Photosynthesis
- 2. Cellular Respiration

5. Create a food chain of at least 4 organisms:
- a. Identify each organism's trophic level
 - b. Identify the amount of energy transferred between levels

6. Differentiate between food webs and food chains, including the advantage(s) of each compared to the other.

7. Differentiate between biomagnification and bioaccumulation of pollutants.

8. Habitat vs. Niche

- a. Differentiate between habitat and niche.
- b. Identify the habitat and niche of a tree.
- c. Identify the habitat and niche of a bear.

9. Describe each of the following niches:

- a. Commensalist
- b. Mutualist
- c. Parasite
- d. Producer
- e. Consumer
- f. Decomposer
- g. Autotroph
- h. Heterotroph

10. Explain the importance of genetic diversity within a population.

11. List 3 invasive species and . . .

- a. Identify each species' method of introduction
- b. Describe the impact of each species on the environment

13. Explain why invasive species pose a threat to their non-native ecosystem.

14. Explain why a population's size cannot stay above carrying capacity for long.

15. List 4 factors that can impact the size of a population AND list if each is density-dependent or density-independent.

Unit 8—Ecology—Calendar

Sunday	Monday May 11	Tuesday May 12	Wednesday May 13	Thursday May 14	Friday May 15	Saturday
			Unit 7 TEST	Ecosystem Structures Energy Transfer	Invasive Species Biodiversity	
Sunday	Monday May 18	Tuesday May 19	Wednesday May 20	Thursday May 21	Friday May 22	Saturday
	Population Density	Habitat and Niche	Review	Test U8		

Essential Standards: Students Will Be Able To:

- Explain how solar energy is transformed into chemical energy through photosynthesis.
- Explain how biotic and abiotic factors determine biome classification.
- Explain biodiversity and compare impacts of biotic and abiotic factors on biodiversity.
- Match soils to biomes & infer relationships between the environment and organisms living in the biome.
- Explain the impact of a loss of biodiversity.
- Explain the effects of human population growth on the plant and animal species of North Carolina.
- Explain the effects of invasive species on terrestrial and aquatic ecosystems.
- Summarize ways to mitigate human impact on the biosphere.
- Explain carrying capacity and infer limiting factors to human population growth (globally and NC specific).