

Ecosystems Review Pg. 48 #1-6, 8-12, 14-18, 20, 21

1. habitat, ecosystem, biome, biosphere

2. **(a)** Many different types of species are present including ducks and trees.

(b) population of ducks; a population of a particular species of tree.

(c) a description of the community that includes the populations of trees, ducks, and other organisms in and on the water.

(d) It is the interaction of the community and the local abiotic factors that makes up this ecosystem. The ecosystem includes the ducks swimming in the water of the wetland, plants in the water, and trees on the bank, shading the ground below them and providing a habitat for other organisms.

3. **(a)** Photosynthesis converts carbon dioxide into sugars.

(b) Cellular respiration transforms sugars into carbon dioxide.

4. The biosphere is where all life is found.

5. Carbon, hydrogen, oxygen, and nitrogen are elements found in most organisms.

6. Students' answers may vary but could include oceans and forests.

8. A habitat is where organisms live, but a niche represents all the interactions of a given species within its ecosystem.

9. To reduce competition between similar species, the species will tend to occupy different niches. Examples may could include using different locations of a tree or hunting for food at different times of day.

10. Deciduous forests, boreal forests, tundra, grasslands, and temperate coniferous forests are the five main biomes found in Canada.

11. The amount of salt in the water makes the biomes of the open ocean and a lake different.

12. Plants in a deciduous forest require specific biotic and abiotic factors to thrive. The biotic and abiotic factors in the tundra are completely different from those in the deciduous forest, so it is unlikely that a transplanted plant would survive.

14. The bird would make such a lengthy journey twice a year to find large amounts of food. During the spring and summer, the wetlands of Ontario have lots of food resources for the warblers and provide a safe haven for nesting. During the fall and winter, there is little food as temperatures cool and the warblers fly south to ensure an adequate food supply.

15. No. A scavenger is an animal that feeds on dead organic matter. However, all of a crow's interactions with its ecosystem are what form its niche. The term "scavenger" does not describe what the crow is eaten by or its habitat.

16. Students' answers may vary. If they choose a squirrel, they could include adaptations such as hoarding food during the summer and spring, growing longer hair to keep warm, coats lightening to allow them to blend in with the background.

17. Photosynthesis is the process where plants convert light energy into chemical energy. Other organisms that cannot produce their own energy can then use this chemical energy to grow new tissue, reproduce, and run cellular processes. Without photosynthesis, no new energy would be able to enter the ecosystem.

18. (a) Students may draw an arrow to indicate the one-way path that energy takes.

(b) Students may draw a circle to indicate the cyclical path that nutrients take.

20. Some prey species taste repulsive. Once a predator catches one and discovers this, the predator may no longer chase any more prey of that species. Predators often catch the least healthy prey, which makes the prey population healthier as a whole.

21. Abiotic and biotic limiting factors limit the population of bacteria. The bacteria may run out of space or food.