8.L.3 Ecosystems Habitats 1 of 4 28 questions

**1.** Many animals that live in mountainous areas take shelter in caves or rocky overhangs. Foxes and lynxes each tend to use such places for shelter.

|  |  |
| --- | --- |
|  |  |

Which word best describes the relationship between foxes and lynxes when it comes to shelter?

|  |  |  |
| --- | --- | --- |
|  | **A.** | cohabitation |

|  |  |  |
| --- | --- | --- |
|  | **B.** | cooperation |

|  |  |  |
| --- | --- | --- |
|  | **C.** | parasitism |

|  |  |  |
| --- | --- | --- |
|  | **D.** | competition |

**2.** Lake trout are found in the Great Lakes, because they can only live in cold environments.

This example shows how the number of populations an ecosystem can support is limited by \_\_\_\_\_\_\_.

|  |  |  |
| --- | --- | --- |
|  | **A.** | food |

|  |  |  |
| --- | --- | --- |
|  | **B.** | temperature |

|  |  |  |
| --- | --- | --- |
|  | **C.** | air |

|  |  |  |
| --- | --- | --- |
|  | **D.** | water |

**3.** Beavers, like the one shown below, prefer to live near rivers and streams, where they can easily find food and building materials for their homes and where they can better protect themselves from predators.

Although beavers are social creatures in the sense that they tend to mate for life and live with their families, they are also very territorial. In fact, in order to prevent other beavers from intruding, they create scent mounds around the perimeter of their territories. Because of this behavior pattern

|  |  |  |
| --- | --- | --- |
|  | **A.** | food and other resources are often shared between different families living in an ecosystem. |

|  |  |  |
| --- | --- | --- |
|  | **B.** | there can be an unlimited number of beavers living in an ecosystem, as long as intruders can become part of a family. |

|  |  |  |
| --- | --- | --- |
|  | **C.** | intruders are forced to adapt and create nests in trees, like birds, rather than live on the water. |

|  |  |  |
| --- | --- | --- |
|  | **D.** | the number of beaver populations that an ecosystem can support is limited by the amount of space available to make habitats. |

**4.** On a particular island, each organism occupies a different ecological niche. Many kinds of fruit grow on the island, but one fruit is rarely eaten because it grows deep under the soil and has a tough outer shell. What kind of animal would be best suited to occupy a new niche on the island?

|  |  |  |
| --- | --- | --- |
|  | **A.** | an animal with good hearing, a smooth body, and fins |

|  |  |  |
| --- | --- | --- |
|  | **B.** | an animal with a keen sense of smell, long claws, and sharp teeth |

|  |  |  |
| --- | --- | --- |
|  | **C.** | an animal with sensitive whiskers, fast reflexes, and a long tail |

|  |  |  |
| --- | --- | --- |
|  | **D.** | an animal with excellent eyesight, large wings, and a beak |

**5.** Within any ecosystem, there is a fixed amount of energy available for organisms to use. Since organisms usually produce more offspring than a given ecosystem can support, this causes \_\_\_\_\_\_\_.

|  |  |  |
| --- | --- | --- |
|  | **A.** | bottlenecking |

|  |  |  |
| --- | --- | --- |
|  | **B.** | competition |

|  |  |  |
| --- | --- | --- |
|  | **C.** | parasites |

|  |  |  |
| --- | --- | --- |
|  | **D.** | genetic drift |

**6.** Individual members of a population interact with each other in several different ways. Examine the picture of the male moose below.

In which of the following ways are these moose interacting?

|  |  |  |
| --- | --- | --- |
|  | **A.** | They are competing for territory. |

|  |  |  |
| --- | --- | --- |
|  | **B.** | They are cooperating in order to find food. |

|  |  |  |
| --- | --- | --- |
|  | **C.** | They are practicing their hunting skills. |

|  |  |  |
| --- | --- | --- |
|  | **D.** | They are cooperating in order to build a shelter. |

**7.** Plants need sunlight, water, and minerals from the soil in order to grow and thrive. These factors

|  |  |  |
| --- | --- | --- |
|  | **A.** | require human intervention to be replenished. |

|  |  |  |
| --- | --- | --- |
|  | **B.** | prevent new plant populations from entering the ecosystem. |

|  |  |  |
| --- | --- | --- |
|  | **C.** | are always abundant, allowing unlimited growth. |

|  |  |  |
| --- | --- | --- |
|  | **D.** | limit the number of plant populations that can grown in an ecosystem. |

**8.** Plants in the desert, such as the yucca tree below, tend to have very wide root structures. Some yucca tree roots have been known to stretch more than 10 meters away from the trunk. The plant does this so that it can have access to as much of the water that falls in that area as possible.

Which of the following best explains why yucca trees rarely grow close to other large plants in the desert?

|  |  |  |
| --- | --- | --- |
|  | **A.** | They compete with other large plants for land. |

|  |  |  |
| --- | --- | --- |
|  | **B.** | Staying far away from other large plants keeps them cool. |

|  |  |  |
| --- | --- | --- |
|  | **C.** | They are able to share water with nearby plants. |

|  |  |  |
| --- | --- | --- |
|  | **D.** | They compete with other large plants for sunlight. |

**9.** A population of sagebrush lives in a grassland ecosystem. Over several years, erosion causes the soil of the grassland to have an increasing amount of sand in it. The data below was collected by scientists studying the ecosystem.

|  |  |  |  |
| --- | --- | --- | --- |
| **Year** | **Percentage of Sand in Soil** | **Average Height of Sagebrush (meters)** | **Number of Sagebrush Plants** |
| 1 | 38 | 1.15 | 120 |
| 2 | 42 | 1.16 | 129 |
| 3 | 45 | 1.14 | 137 |
| 4 | 51 | 1.15 | 145 |

If the soil is 53% sand next year, which of the following statements is the most likely prediction?

|  |  |  |
| --- | --- | --- |
|  | **A.** | The size of the sagebrush population will decline. |

|  |  |  |
| --- | --- | --- |
|  | **B.** | The average height of the sagebrush will increase. |

|  |  |  |
| --- | --- | --- |
|  | **C.** | The size of the sagebrush population will increase. |

|  |  |  |
| --- | --- | --- |
|  | **D.** | The average height of the sagebrush will decrease. |

**10.** Coral reefs are common habitats for many types of tropical fish. In the last few decades, rising ocean temperatures and increased levels of acidity have killed many of the corals that fish use to hide from predators.

*Images courtesy of NASA*

The picture above shows a healthy coral reef in 2000 (left) and the same reef in 2006 (right). Which statement about this coral reef is true?

|  |  |  |
| --- | --- | --- |
|  | **A.** | The reef is no longer a habitat for tropical fish. |

|  |  |  |
| --- | --- | --- |
|  | **B.** | The fish outgrew the need for a reef habitat. |

|  |  |  |
| --- | --- | --- |
|  | **C.** | The reef is healthier now that the fish are gone. |

|  |  |  |
| --- | --- | --- |
|  | **D.** | The reef will adapt to the different environment. |

**11.** Animals need food, air, and water. Which of the following is another need of animals?

|  |  |  |
| --- | --- | --- |
|  | **A.** | light |

|  |  |  |
| --- | --- | --- |
|  | **B.** | ammonia |

|  |  |  |
| --- | --- | --- |
|  | **C.** | soil |

|  |  |  |
| --- | --- | --- |
|  | **D.** | shelter |

**12.** Which of the following are basic needs for plants?

|  |  |  |
| --- | --- | --- |
|  | **A.** | food, water, carbon dioxide, space, shelter and the ability to maintain a constant body temperature |

|  |  |  |
| --- | --- | --- |
|  | **B.** | shelter, soil, water and sunlight |

|  |  |  |
| --- | --- | --- |
|  | **C.** | carbon dioxide, water, sunlight, and nutrients |

|  |  |  |
| --- | --- | --- |
|  | **D.** | oxygen, water, sunlight and shelter |

**13.** In animal ecology, a niche is defined as

|  |  |  |
| --- | --- | --- |
|  | **A.** | the range of organisms that an animal freely interbreeds with, producing fertile offspring. |

|  |  |  |
| --- | --- | --- |
|  | **B.** | the amount of food available to a species. |

|  |  |  |
| --- | --- | --- |
|  | **C.** | how a species responds to, and affects, the entire range of competitors and resources available to it. |

|  |  |  |
| --- | --- | --- |
|  | **D.** | the number of organisms within a species that can survive at a stable rate in a particular environment. |

**14.** What might happen in an ecosystem if the population of one species grows unusually fast?

|  |  |  |
| --- | --- | --- |
|  | **A.** | Another species that eats the same food might decrease in population. |

|  |  |  |
| --- | --- | --- |
|  | **B.** | The predators that prey upon the growing species might begin to starve. |

|  |  |  |
| --- | --- | --- |
|  | **C.** | The food that the species eats might start growing more quickly. |

|  |  |  |
| --- | --- | --- |
|  | **D.** | Another species that eats the same food might also increase in population. |

**15.** Many organisms in an ecosystem compete with each other for resources. What might different species of trees in a forest ecosystem compete for?

|  |  |  |
| --- | --- | --- |
|  | **A.** | predators |

|  |  |  |
| --- | --- | --- |
|  | **B.** | producers |

|  |  |  |
| --- | --- | --- |
|  | **C.** | water |

|  |  |  |
| --- | --- | --- |
|  | **D.** | all of these |

**16.** Which of the following are basic needs for animals?

|  |  |  |
| --- | --- | --- |
|  | **A.** | water, oxygen, space, shelter and relaxation |

|  |  |  |
| --- | --- | --- |
|  | **B.** | food, water, sunlight, space, and shelter |

|  |  |  |
| --- | --- | --- |
|  | **C.** | food, water, oxygen, space, and shelter |

|  |  |  |
| --- | --- | --- |
|  | **D.** | shelter, water, food and protection |

**17.** A species of finch lives in a forest ecosystem. This species nests in the low branches of trees, builds its nest out of grasses, and feeds on small seeds.   
  
Which of the following species of bird would compete the least with these finches?

|  |  |  |
| --- | --- | --- |
|  | **A.** | a species that nests in the high branches of trees, builds its nest out of grasses, and eats large seeds |

|  |  |  |
| --- | --- | --- |
|  | **B.** | a species that nests in the low branches of trees, builds its nest out of grasses, and eats small seeds |

|  |  |  |
| --- | --- | --- |
|  | **C.** | a species that nests in the low branches of trees, builds its nest out of sticks, and eats small seeds |

|  |  |  |
| --- | --- | --- |
|  | **D.** | a species that nests in the high branches of trees, builds its nest out of sticks, and eats large seeds |

**18.** Hermit crabs use old seashells for shelter and protection. Some species of fish also use abandoned seashells as a place to hide from predators.

|  |  |
| --- | --- |
|  |  |

Which of the following statements is true?

|  |  |  |
| --- | --- | --- |
|  | **A.** | Hermit crabs and fish that hide in shells cooperate with each other for shelter. |

|  |  |  |
| --- | --- | --- |
|  | **B.** | Hermit crabs and fish that hide in shells compete with each other for shelter. |

|  |  |  |
| --- | --- | --- |
|  | **C.** | Hermit crabs and fish that hide in shells compete with each other for food. |

|  |  |  |
| --- | --- | --- |
|  | **D.** | Hermit crabs and fish that hide in shells cooperate with each other for food. |

**19.** A certain population of bluebirds eats spiders as a major food source.

Which of the following ecosystem changes would impact this population of bluebirds the most?

|  |  |  |
| --- | --- | --- |
|  | **A.** | a decrease in the number of daylight hours |

|  |  |  |
| --- | --- | --- |
|  | **B.** | an increase in the spider and insect population |

|  |  |  |
| --- | --- | --- |
|  | **C.** | a decrease in the rabbit population |

|  |  |  |
| --- | --- | --- |
|  | **D.** | an increase in the fish population |

**20.** Which of the following relationships exists when the available resources within an environment are limited?

|  |  |  |
| --- | --- | --- |
|  | **A.** | competition |

|  |  |  |
| --- | --- | --- |
|  | **B.** | mutualism |

|  |  |  |
| --- | --- | --- |
|  | **C.** | cooperation |

|  |  |  |
| --- | --- | --- |
|  | **D.** | parasitism |

**21.** Which relationship below is an example of competition in an ecosystem?

|  |  |  |
| --- | --- | --- |
|  | **A.** | Bald eagles and black bears fish from the same mountain lake. |

|  |  |  |
| --- | --- | --- |
|  | **B.** | Rabbits eat the grasses and shrubs in a meadow, and wolves eat the rabbits in the meadow. |

|  |  |  |
| --- | --- | --- |
|  | **C.** | Birds eat the insects that cattle disturb while grazing, and they occasionally ride on the cows' backs. |

|  |  |  |
| --- | --- | --- |
|  | **D.** | Squirrels nest in an oak tree, and insects live under the ground near the tree. |

**22.** In the Siberian wilderness, tigers are mainly solitary predators with large ranges. They have no natural predators, and they feed mainly on the largest herbivore animals in the region, which are wild boars and deer.

In the Amazon jungle, jaguars are also solitary predators with large ranges. They have no natural predators, and they feed on the largest herbivore animals in the region, which are deer and capybara.

From the information above, what can accurately be said about tigers and jaguars?

|  |  |  |
| --- | --- | --- |
|  | **A.** | They are both endangered species, threatened by human expansion. |

|  |  |  |
| --- | --- | --- |
|  | **B.** | They occupy similar niches in their respective habitats. |

|  |  |  |
| --- | --- | --- |
|  | **C.** | They have both the same feeding and reproductive habits. |

|  |  |  |
| --- | --- | --- |
|  | **D.** | They occupy the same niche. |

**23.** Deforestation is a growing problem for animals that live in forest habitats. As forests disappear, many animals are fleeing to surrounding urban areas.

In some regions of the United States, it is now common to see wild deer in a neighborhood. Why would deer be found so close to humans?

|  |  |  |
| --- | --- | --- |
|  | **A.** | Wild deer would rather live in neighborhoods than in the forest. |

|  |  |  |
| --- | --- | --- |
|  | **B.** | When in danger, the deer's instincts lead them toward people. |

|  |  |  |
| --- | --- | --- |
|  | **C.** | The deer have no choice but to search for a new habitat. |

|  |  |  |
| --- | --- | --- |
|  | **D.** | Forests are not a natural habitat for wild deer. |

**24.** Rabbits and sheep both graze on shrubs, grasses, and other plants. The sharp rise in the population of rabbits in a region may result in a shortage of plants for sheep to graze upon.   
  
This relationship between sheep and rabbits is an example of \_\_\_\_\_\_\_.

|  |  |  |
| --- | --- | --- |
|  | **A.** | commensalism |

|  |  |  |
| --- | --- | --- |
|  | **B.** | predation |

|  |  |  |
| --- | --- | --- |
|  | **C.** | competition |

|  |  |  |
| --- | --- | --- |
|  | **D.** | parasitism |

**25.** There are two types of factors that change environments. These are biotic factors and \_\_\_\_\_\_\_ factors.

|  |  |  |
| --- | --- | --- |
|  | **A.** | organic |

|  |  |  |
| --- | --- | --- |
|  | **B.** | abiotic |

|  |  |  |
| --- | --- | --- |
|  | **C.** | biological |

|  |  |  |
| --- | --- | --- |
|  | **D.** | genetic |

**26.** Many people want to live in urban areas. One of the main factors that limits the number of people that can live in an area is

|  |  |  |
| --- | --- | --- |
|  | **A.** | the number of people who don't want to live in an area. |

|  |  |  |
| --- | --- | --- |
|  | **B.** | the location of schools, churches, and libraries. |

|  |  |  |
| --- | --- | --- |
|  | **C.** | the amount of public transportation that is available. |

|  |  |  |
| --- | --- | --- |
|  | **D.** | the amount of space that is available to build shelter. |

**27.** How are changes in populations related to the availability of an ecosystem's resources?

|  |  |  |
| --- | --- | --- |
|  | **A.** | As populations grow, ecosystems produce more resources in order to support the larger population. |

|  |  |  |
| --- | --- | --- |
|  | **B.** | Population sizes are limited by the amount of resources that are available. |

|  |  |  |
| --- | --- | --- |
|  | **C.** | Changes in population are independent of the availability of an ecosystem's resources. |

|  |  |  |
| --- | --- | --- |
|  | **D.** | Large populations need the same amount of resources as small populations. |

**28.** A certain population of beavers builds dams across a stream to catch fish. Some years the stream carries more water than other years. The data below was collected by scientists studying the stream over four years.

|  |  |  |  |
| --- | --- | --- | --- |
| **Year** | **Stream Depth (meters)** | **Number of Beaver Dams** | **Number of Beavers** |
| 1 | 1.20 | 6 | 17 |
| 2 | 0.92 | 4 | 12 |
| 3 | 1.45 | 7 | 21 |
| 4 | 0.78 | 2 | 9 |

If the depth of the stream next year is 1.60 meters, which of the following statements is the most likely prediction?

|  |  |  |
| --- | --- | --- |
|  | **A.** | The average size of a beaver dam will increase. |

|  |  |  |
| --- | --- | --- |
|  | **B.** | The size of the beaver population will grow. |

|  |  |  |
| --- | --- | --- |
|  | **C.** | The average size of a beaver dam will decrease. |

|  |  |  |
| --- | --- | --- |
|  | **D.** | The size of the beaver population will decline. |

# Answers

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

# Explanations

1. Within any environment, organisms with similar needs compete with one another for resources.  
  
Foxes and lynxes are in **competition** with each other for shelter when they live in the same habitat. In any given mountainous region, there are only a certain number of caves or rocky overhangs that are suitable for medium-sized animals, such as foxes and lynxes. So these two species must compete with each other for the best places to take cover from the weather or to raise their young.

2. The **temperature** in an ecosystem is an important limiting factor for many organisms. Lake trout, for example, can only function in cold environments, while many snakes can only function in warm environments.

3. Although populations have the ability to grow indefinitely, they are limited by the living and non-living factors in their ecosystems. These factors include basic needs, such as water, food, sunlight, and shelter.  
  
In addition to being limited by the available amount of food and water, **the number of beaver populations that an ecosystem can support is limited by the amount of space available to make habitats**, since beavers are such territorial creatures.

4. A *niche* is the position of an animal or plant within a particular environment. This position includes factors such as what the organism uses for food and how it obtains it, where it lives, how it affects its habitat, and if it serves as food for other organisms. No two species can occupy the exact same niche.  
  
**An animal with a keen sense of smell, long claws, and sharp teeth** would be well suited to occupy a new niche on the island. This species would be able to find, obtain, and eat the fruit that no other animal on the island eats. Such an animal would have little competition for food.

5. In any ecosystem—including the entire planet Earth—there is a finite, or limited, amount of energy, matter, and resources available to the organisms that live there. These finite quantities determine the ecosystem's *carrying capacity*.   
  
Since organisms usually produce more offspring than this limited amount of energy can support, there is **competition** for access to the energy that is there. Competition results in natural population fluctuations.

6. Members of a population often cooperate to meet basic needs. However, they may also end up competing with each other over limited resources. The moose in the picture are fighting or **competing for territory**.

7. All living organisms have basic needs, such as food, minerals, water, shelter, and sunlight. If there were an unlimited supply of these items, populations could continue to grow indefinitely. This, however, is not the case.  
  
Living factors, such as animals and plants, and nonliving factors, such as water, minerals, and sunlight, are often called *limiting factors*, because there is a finite supply and they **limit the number of populations that can grow and thrive in an ecosystem**.

8. Yucca trees extend their roots far so that they can have access to as much land as possible. The more land a yucca tree takes up with its roots, the more water it can bring in.   
  
**Yucca trees compete with other large plants for this land**. Another tree's roots can't take up land already occupied by a yucca tree's roots. The result is that large plants tend to be spaced far apart in deserts.

9. The data shows that as the percentage of sand in the soil increases, the number of sagebrush plants in the ecosystem also increases. The data does not show a strong correlation between the percentage of sand and the average height of the plants. So a reasonable prediction is that if the sand content in the soil is increased to 53%, then **the size of the sagebrush population will increase**.

10. A habitat is the environment where an organism normally lives. The availability of food and shelter, as well as the presence of predators, determines how well a habitat supports the organisms that live in it.  
  
Sometimes a habitat can change or even disappear. Coral reefs provide shelter for tropical fish. If all the corals in a reef die, **the reef will no longer be a habitat for tropical fish**, and the fish will be forced to find shelter somewhere else.

11. Animals have many needs, including space, water, **shelter**, food, and gases (e.g, oxygen).  
  
If an animal is unable to meet its basic needs and/or there is a reduction in the available amount of food, water, space, shelter, or gases, there will also be a reduction in the overall size of the animal population.

12. Plants do not require shelter from the environment; they have adapted in different ways to handle extreme temperatures. The basic needs of plants are carbon dioxide, water, sunlight, and nutrients.  
  
Both plants and animals interact with and depend upon each other and their environment to meet their basic needs.

13. A *niche* is, generally, how a species makes a living in its environment.   
  
More precisely, a niche is **how a species responds to, and affects, the entire range of competitors and resources available to it**.  
  
So a niche refers to exactly how an animal or species relates to its environment and the other organisms in it. It is a term that takes into account where the species lives, what it eats, what eats it, how many of it there are, and what its reproductive patterns are. And, generally, only one species can occupy any one niche.

14. If one species suddenly increases in population, **the population of another species which eats the same foods might decrease** because there will no longer be enough food to support the growth of both species.

15. In a forest environment, trees must compete for resources such as space, sunlight, water, and nutrients. Bigger trees will have an advantage over seedlings. Trees generally do not need predators or other producers to survive, so there is no need to compete for them.

16. Sunlight is among the basic needs for plants, but not for animals. Relaxation is not a basic need. Food, water, oxygen, space, shelter and the ability to maintain a constant body temperature are the basic needs for animals.  
  
Both plants and animals interact with and depend upon each other and their environment to meet their basic needs.

17. Competition in an ecosystem is reduced when organisms use different sets of resources.  
  
A bird species that does not compete directly with the finch species will nest in different places, use different materials, and eat different foods. So **a species that nests in the high branches of trees, builds its nest out of sticks, and eats large seeds** will compete the least with the finches.

18. Within any environment, organisms with similar needs compete with one another for resources.   
  
If all of the abandoned seashells in a coral reef were occupied by hermit crabs, it would make survival very difficult for the fish that also use those shells for shelter. So **hermit crabs and fish that hide in shells compete with each other for shelter**.

19. Bluebirds eat **spiders and insects** and food is a major factor affecting populations in an ecosystem. An increase in the food supply of these small birds will increase how many birds the ecosystem can support, or the ecosystem's *carrying capacity*.

20. **Competition** is a biological interaction between two species when both need a limited resource. Because all resources in nature are limited, competition will always exist. The theory of competitive exclusion states that organisms requiring the same resources will not be able to exist within the same environment indefinitely. This type of relationship can limit a species’ population size within an environment.

21. Competition exists when two or more different species need the same resource, whether it is food, shelter, water, or sunlight.  
  
In this case, the **black bears and the eagles compete for the same food source—fish from the mountain lake**.

22. A *niche* is, generally, how a species makes a living in its environment.   
  
More precisely, a niche is *how a species responds to, and affects, the entire range of competitors and resources available to it*.  
  
From the characteristics given, jaguars and tigers interact with their environments in very similar ways, so **they occupy similar niches in their respective habitats**.  
  
But it cannot be said that they occupy the same niche. This is because *only one species can occupy a niche*, and because *their habitats are not identical*.

23. A habitat is the environment where an organism normally lives. The availability of food and shelter, as well as the presence of predators, determines how well a habitat supports the organisms that live in it.  
  
Sometimes a habitat can change, or even disappear. If deforestation destroys a forest habitat, **the animals that live there will have no choice but to search for a new habitat**. This may be another forest nearby, or it could even be a suburban neighborhood.

24. Competition takes place when two or more organisms or species within an ecosystem seek the same resource. Food, water, sunlight, and habitat are all examples of resources that organisms compete for.  
  
In this case, the sheep and rabbits both seek the same food resource: small plants. Therefore, this is an example of **competition**.

25. Environments are affected by biotic factors and **abiotic** factors.   
  
Biotic factors are all the factors related to living organisms. Abiotic factors are all the factors that are not related to living organisms.

26. All living organisms have basic needs, such as food, water, and shelter. One of the main factors that limits the number of people that can live in an area is **the amount of space that is available to build shelter**. This is why urban areas tend to have a lot of tall apartment buildings. These buildings allow more people to find shelter in a small area.

27. Ecosystems have limited amounts of resources, such as energy and water, that organisms need in order to live and grow. Therefore, **population sizes are limited by the amount of resources that are available**. Without food and water, the organisms will begin to die, and the population will shrink until there are once again enough resources to support them.

28. The data shows that the size of the beaver population (the number of beavers) tends to increase as the stream's depth increases. So if the stream's depth is increased to 1.6 meters—which is higher than in any of the previous four years—then **the size of the beaver population will likely grow**.