

## ECOSYSTEMS

- A **population** is a group of individuals that belong to the same species and live in the same area.
- All of the populations in an area make up a **community**.
- An **ecosystem** consists of all living and nonliving things within a certain location. Ecosystems are made up of the interactions that occur among the living organisms of a particular place, and between those organisms and their surroundings. (The living parts of an ecosystem are called **biotic factors**; trees and animals are biotic factors. The nonliving parts of an ecosystem are called **abiotic factors**; soil, water, temperature, and light are abiotic factors.)
- A **biome** is a large area characterized by its climate and the organisms that live there.

**Biodiversity** refers to the variety of organisms in a given area. The more diverse an ecosystem is, the more likely it will be to adjust to changing conditions. For example, if an ecosystem is disrupted and a species is lost, an ecosystem rich in biodiversity will likely have other species available to fill in for the loss.

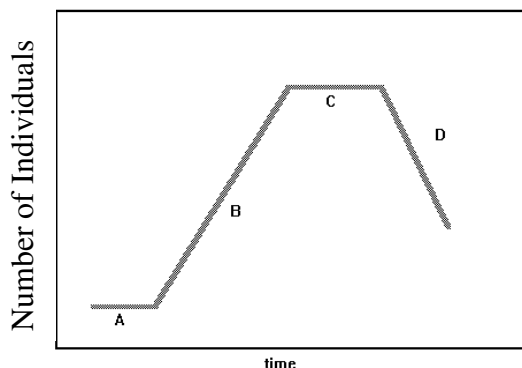
Regardless of which biome a population lives in, all organisms depend on the environment for resources. Due to limited resources, each ecosystem has a maximum number of individuals that it can support, called its **carrying capacity**.

**Succession** is a natural process of replacement of one community by another community in the same location over time. A **pioneer community** is made up of the first living things to move into a new environment. Pioneer species are usually small, fast-growing plants.

- **Primary succession** is the development of a community in an area where no living things previously existed. Primary succession follows volcanic eruptions or retreating glaciers.
- **Secondary succession** is the replacement of one type of community where an existing community was destroyed or removed. Secondary succession follows a forest fire or deforestation.

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### PRACTICE



1. What is happening at point B in the graph above? Why?
2. What is happening at point C in the graph above? Why?
3. What is happening at point D in the graph above? Why?

4. Ecosystems include both biotic and abiotic factors. Which of the following is an abiotic factor?
- A. a population
  - B. soil
  - C. a community
  - D. organisms
5. The long-term survival of a species is dependent on resources. The survival of the species is less likely if these resources are
- A. limited
  - B. not used by other species
  - C. plentiful
  - D. renewable as a result of natural processes
6. The environment can be arranged into different levels of organization. Which of the following shows a correct sequence that proceeds from a smaller level of organization to a larger level?
- A. biome... habitat
  - B. species... population
  - C. community... population
  - D. ecosystem... biome
7. Light is an important abiotic factor in all ecosystems. Which cellular process depends on light? \_\_\_\_\_
8. All organisms within any ecosystem have something in common. All organisms share
- A. the components that make up their genetic code
  - B. the same organelles
  - C. the same method of obtaining nutrients
  - D. the ability to reproduce asexually
9. Succession involves one community replacing another. What must be true of each community that appears?
- A. the populations are adapted to their environment
  - B. the populations get larger as the next community is established
  - C. the populations contain very simple life forms
  - D. the populations move to a different area to reestablish themselves