

Ecological Succession Readings and Practice

Name _____ Date _____ Period _____

Part 1: Ecological Succession

Ecosystems constantly change. A tree falling in a forest affects the forest ecosystem. A fire might alter the forest habitat so much that some species cannot survive and others can thrive. The process of one community replacing another as a result of changing abiotic and biotic factors is called ecological succession.

How does soil form in primary succession?

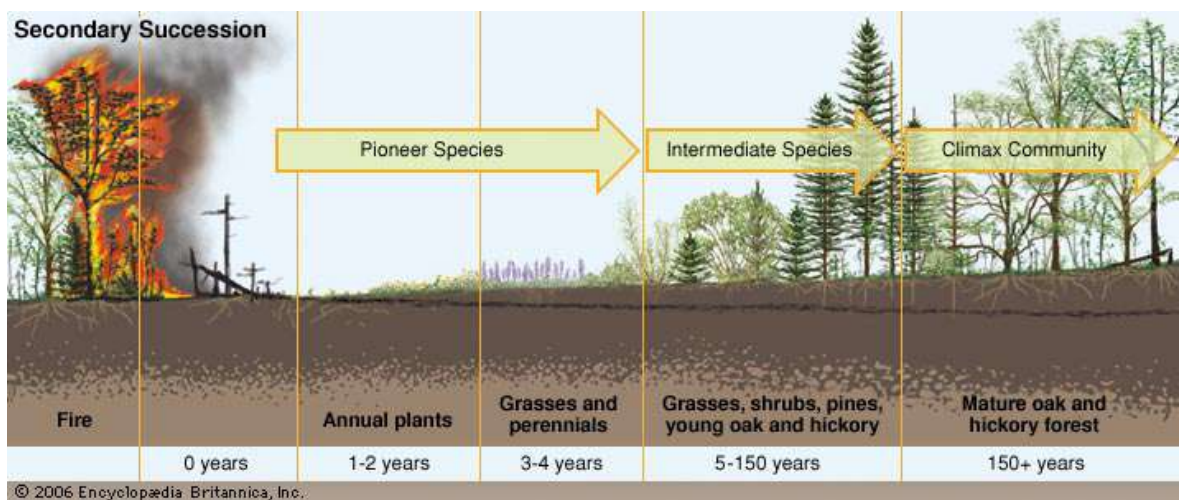
There are two types of ecological succession – primary and secondary succession. **Primary succession** is the establishment of a community in an area of bare rock that does not have topsoil. For example, suppose a lava flow alters an ecosystem. The lava hardens to form bare rock. Usually, lichens begin to grow on the rock first. Because lichens and some mosses are among the first organisms to appear, they are called **pioneer species**.

Pioneer species secrete acids that help break down rocks. As pioneer species die, their decaying organic materials mix with small pieces of rock. This is the first stage of soil development. Small weedy plants begin to grow in the soil. These organisms die, adding to the soil. Seeds brought by animals, water, and wind begin to grow. Eventually, enough soil forms to support trees and shrubs.

It might take hundreds of years for the ecosystem to become balanced and achieve equilibrium. When an ecosystem is in equilibrium, there is no net change in the number of species. New species come into the community at about the same rate that others leave the community. This is a **climax community** – a stable, mature community in which there is little change in the number of species.

How does secondary succession occur?

Disturbances such as fire or flood can disrupt a community. After a disturbance, new species of plants and animals might occupy the habitat. Over time, the species belonging to the climax community are likely to return. Secondary succession is the orderly and predictable change that takes place after a community of organisms has been removed but the soil remains. Pioneer species begin the process of restoring a habitat after a disruption. The figure below shows how the community changes after a forest fire, leading again to a mature climax community.



Part 1: Comprehension Questions

1. What are two things mentioned in the reading that can happen that might affect an ecosystem?
2. Define ecological succession.
3. What is primary succession?
4. Describe an example of primary succession.
5. What is a pioneer species?
6. How long might it take for an ecosystem to become balanced?
7. What happens when an ecosystem is in equilibrium?
8. Define climax community.
9. Name two things that can disrupt a community.
10. What is secondary succession?