

## Ecological Succession

Ecosystems constantly change. 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?

**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. (0 years)

**Pioneer species** are the first organisms to appear in a community. Primary succession starts with bare rock so **Lichen** and mosses are common pioneer species. Lichen secrete acids that help break down rocks and as they die, their decaying organic materials mix with small pieces of rock and help form soil. (5-10 years)

**Intermediate species**, such as, 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. (150 years)

A **Climax community** is a stable, mature community in which there is little change in the number of species. 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. This community has the highest level of **biodiversity** (variety of life). (200+ years)

### How does Secondary Succession occur?

**Secondary Succession** occurs in an area where a community already exists, with pre-existing soil. A disturbance, such as fire, flood, deforestation, farming, or hurricane can disrupt a community. (0 years)

There is already soil present, so after a disturbance, **pioneer species** such as grasses and small shrubs might occupy the habitat. Pioneer species begin the process of restoring a habitat after a disruption (5 years)

**Intermediate species**, such as small trees, insects, and small animals may return to the area (150 years)

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.

### Create a Foldable.

Fold 3 pieces of computer paper and draw a line dividing the foldable in half. Label the tabs as seen below. On each tab, explain what occurs during the time period in your own words and draw a picture of an ecosystem in that stage of succession.

PRIMARY SUCCESSION	SECONDARY SUCCESSION
0 years	0 years
5-25 years	5-25 years
150 years	150 years

250+ years

250+ years