
Changes in Ecosystems:
Ecological Succession
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Definition:

- Natural, gradual changes in the types of species that live in an area; can be primary or secondary
- The gradual replacement of one plant community by another through natural processes over time

Primary Succession

- Begins in a place without any soil
  - Sides of volcanoes
  - Landslides
  - Flooding
- Starts with the arrival of living things such as lichens that do not need soil to survive
- Called **PIONEER SPECIES**


http://botit.botany.wisc.edu


http://www.saguaro-juniper.com/

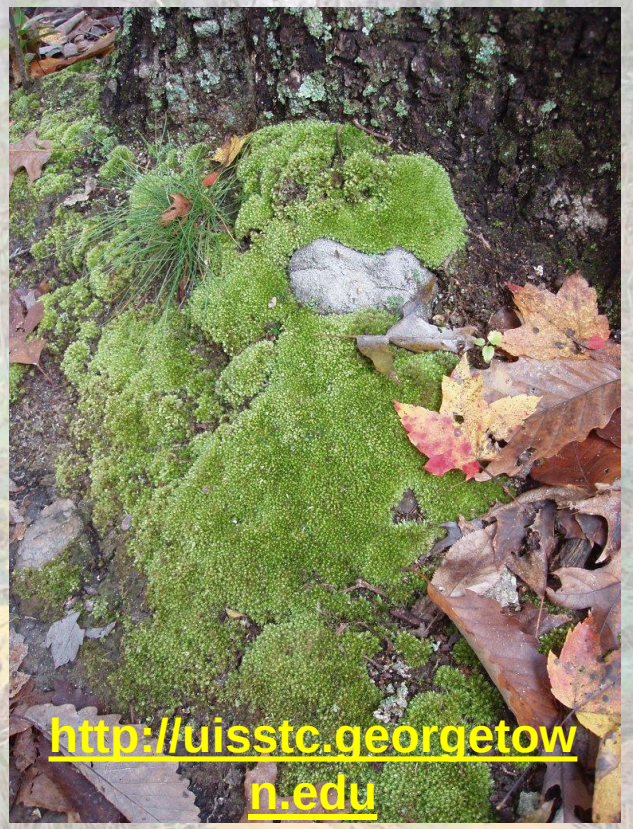
Primary Succession

- Soil starts to form as lichens and the forces of weather and erosion help break down rocks into smaller pieces
- When lichens die, they decompose, adding small amounts of organic matter to the rock to make soil


http://www.life.uiuc.edu

Primary Succession

- Simple plants like mosses and ferns can grow in the new soil



Primary Succession

- The simple plants die, adding more organic material
- The soil layer thickens, and grasses, wildflowers, and other plants begin to take over

Primary Succession

- These plants die, and they add more nutrients to the soil
- Shrubs and trees can survive now

Primary Succession

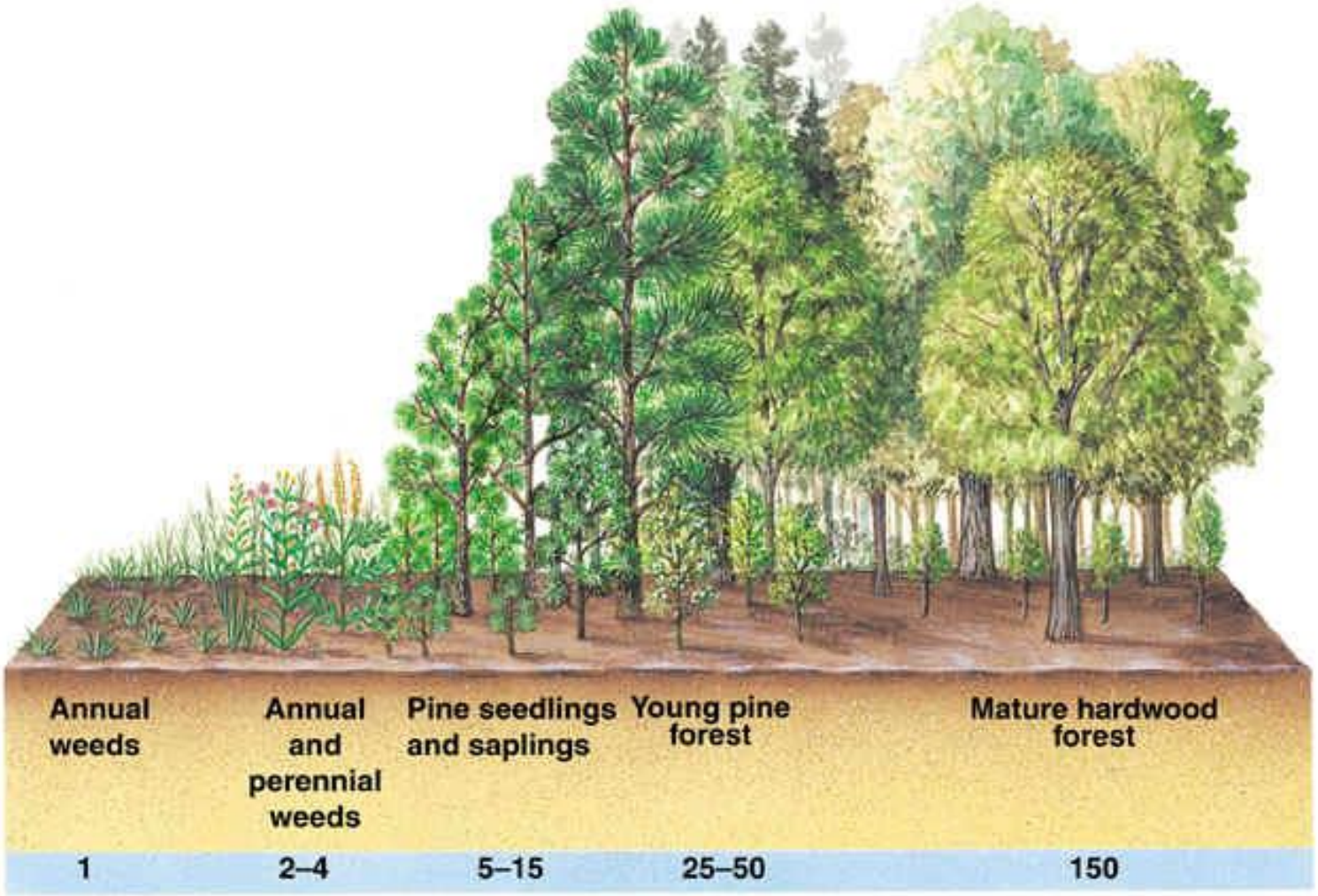
- Insects, small birds, and mammals have begun to move in
- What was once bare rock now supports a variety of life

Secondary Succession

- Begins in a place that already has soil and was once the home of living organisms
- Occurs faster and has different pioneer species than primary succession
- Example: after forest fires

http://www.geo.arizona.edu

Raven/Berg, Environment, 3/e
Figure 5.17



http://www.ux1.eiu.edu

Climax Community

- A stable group of plants and animals that is the end result of the succession process
- Does not always mean big trees
  - Grasses in prairies
  - Cacti in deserts