

## Ecological Succession Chapter 5, Section 3



## Ecological Succession

- Ecological Succession is the gradual process of change a replacement of the types of species in a community
- Primary Succession:
  - Occurs on a surface where no ecosystem existed before (Example: rocks, cliff, sand).Pic



## Secondary Succession

- Occurs where an ecosystem previously existed
- Occurs in ecosystems that have been disturbed or disrupted by humans, animals or natural processes.

## Secondary Succession

- Pioneer Species:
  - The first organisms to colonize newly available areas and begin the process of ecological succession
  - Pioneer species make the area habitable for other species.



## Climax Community:

- A final and stable community that will remain the same (with minor changes) if undisturbed.



## Fire and Secondary Succession

- Natural fires are a necessary part of secondary succession because
  - Some plants need heat to release seeds
  - Minor fires remove dead brush that would cause major fires.
  - Some animals feed on the vegetation that sprouts after a fire.
- Some foresters allow fires to burn to aid secondary success (unless there is a threat to human life).

## Old-field Succession

- Old-field Succession occurs when farmland is abandoned.
  1. Pioneer grasses and weeds quickly grow and cover the abandoned land. They grow rapidly and produce many seeds to cover a large area.
  2. Over time taller plants grow in the area shading the lower ground. This keeps light from the pioneer plants. These plants also use a lot of the water and so the pioneer plants die off.
  3. This process continues with trees blocking the light of the taller plants.
  4. Eventually the slow growing trees (beech, maple, oak) take over the area and block light for the small trees.
  5. In about a century the land can return to the climax community that existed before the farm.



## Primary Succession

- Occurs in areas that have not previously supported life like
  - Ex: Areas where a volcano erupted, glacier retreats
- Primary succession is slower because it occurs where there is no soil.
  - It can take hundreds of years for soil to form naturally.

## Primary Succession

- Bacteria and lichens are often pioneer species in primary succession because they can live without soil.
- Lichens:
  - Producers that consist of fungus and alga.
  - Begin to grow on rock.
  - Alga does photosynthesis while fungus absorbs nutrients from rocks and hold water
  - Together they break down rock.
  - As the rock break down soil is eventually formed.