

Ecological Succession

- The long term process of natural vegetation communities changing.
- Often follows a predictable pattern.
- There are two types of succession: Primary and Secondary

Pioneer Species

- The first type of organism to start growing after an ecological disturbance is called a **pioneer species**.
- They are often very hardy plants that can survive in full sun, poor soil, or even bare rock. Think “weeds.”



Primary vs. Secondary

- Starts out with bare rock; no soil
 - Pioneer species are usually **lichens**, followed by moss
 - Ex: bare rock on a mountainside; lava flow
- Starts when an existing ecosystem experiences a disturbance
 - Pioneer species are small annuals, followed by shrubs and trees
 - Ex: clear cutting a forest; wildfire

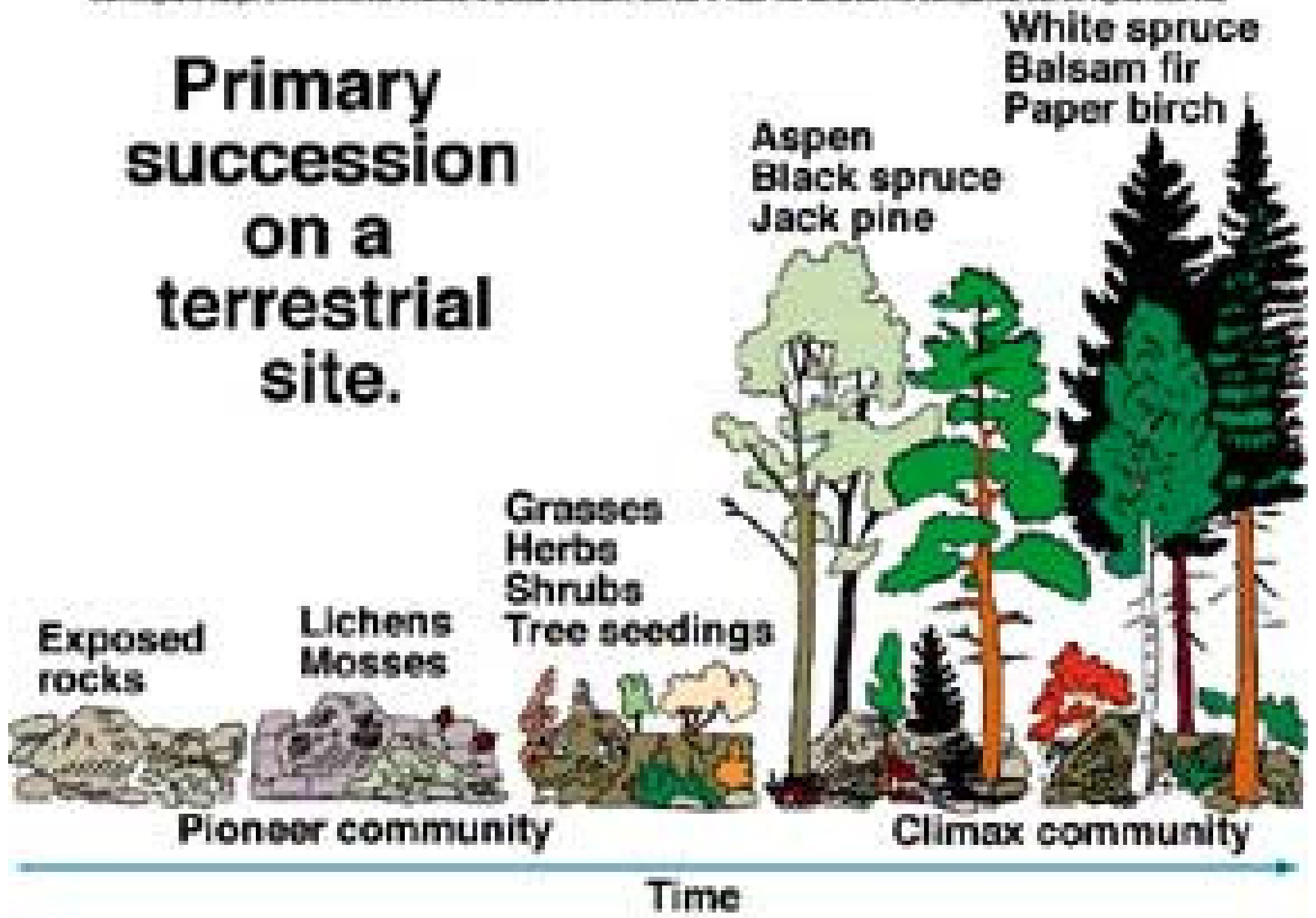
What is a lichen?

- An organism consisting of an outer fungal body enclosing photosynthetic algae.
- The fungus provides a structure for the algae to live in and the algae provide food for the lichen through photosynthesis.

Lichen



Primary succession on a terrestrial site.



Secondary Succession



Annual
Plants

Perennial
Plants and
Grasses

Shrubs

Softwood
Trees - Pines

Hardwood
Trees

Time 

Growing a Climax Community

- Pioneer species can tolerate sun, and provide some shade for shrubs to grow.
- The shrubs provide enough cover for pine seedlings to grow.
- Once the pine trees have matured, shade-tolerant tree species (like oaks) begin to grow and mature.
- The **climax community** is the final, stable community that continues to exist until the next disturbance.

**climax
forest**

disturbance

grasses

**small
trees**

shrubs

