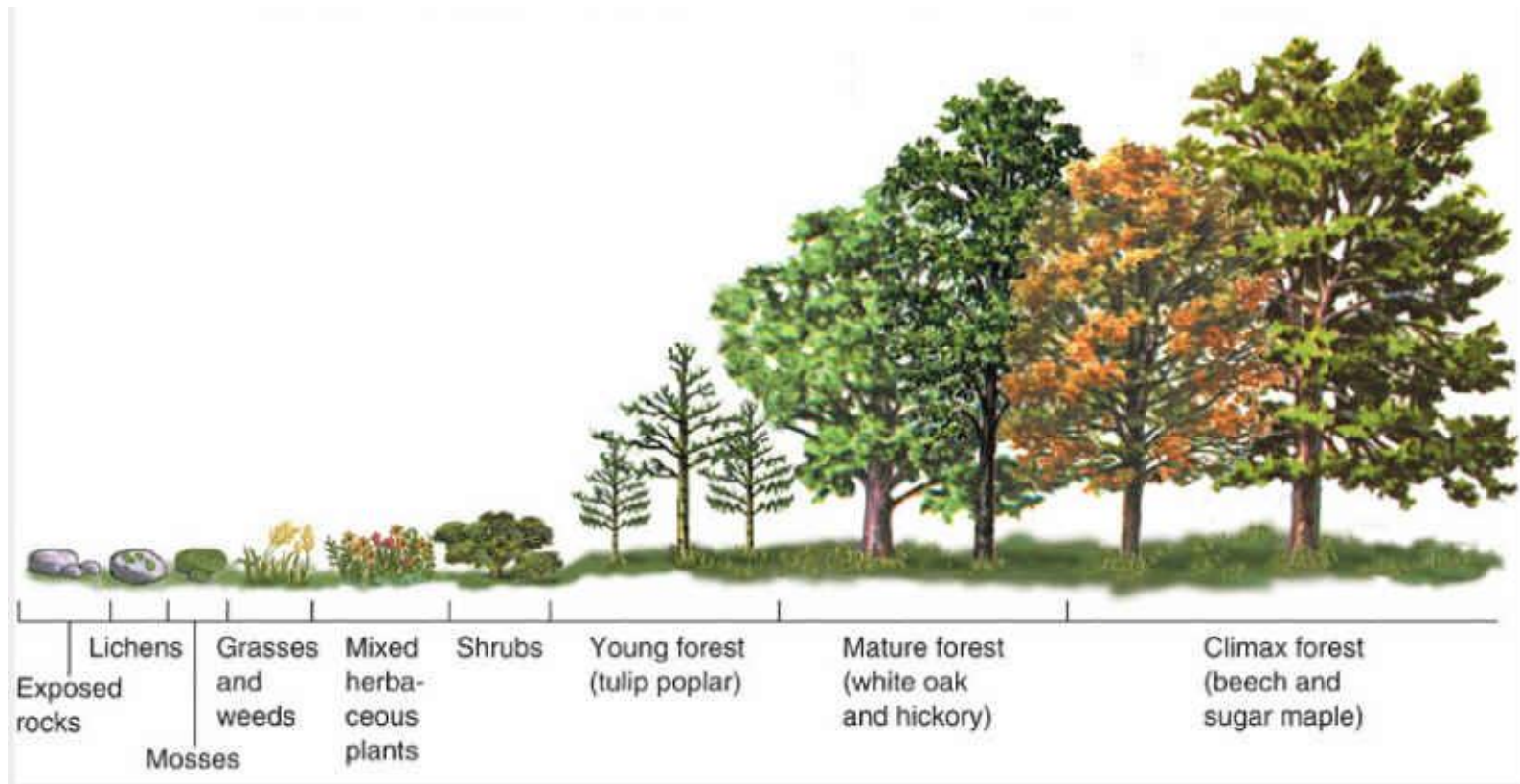


The Super Great Succession Slide Show!



The Dynamics of Ecosystems

- ▶ Ecosystems are always changing
 - ▶ Change can be *abrupt* (after a storm) or *gradual* (natural fluctuations)
 - ▶ Change can also be a result of human actions
 - ▶ Overgrazing of animals
 - ▶ Deforestation
 - ▶ Fires caused by carelessness

- ▶ Change is not necessarily bad!



What is succession?

- ▶ **ECOLOGICAL SUCCESSION** = series of predictable changes that occurs in a community over time. Starts with simple organisms and moves to more complex organisms
- ▶ 2 types: **primary** & **secondary**



PRIMARY SUCCESSION

- ▶ Happens on surfaces where **no soil** has previously existed

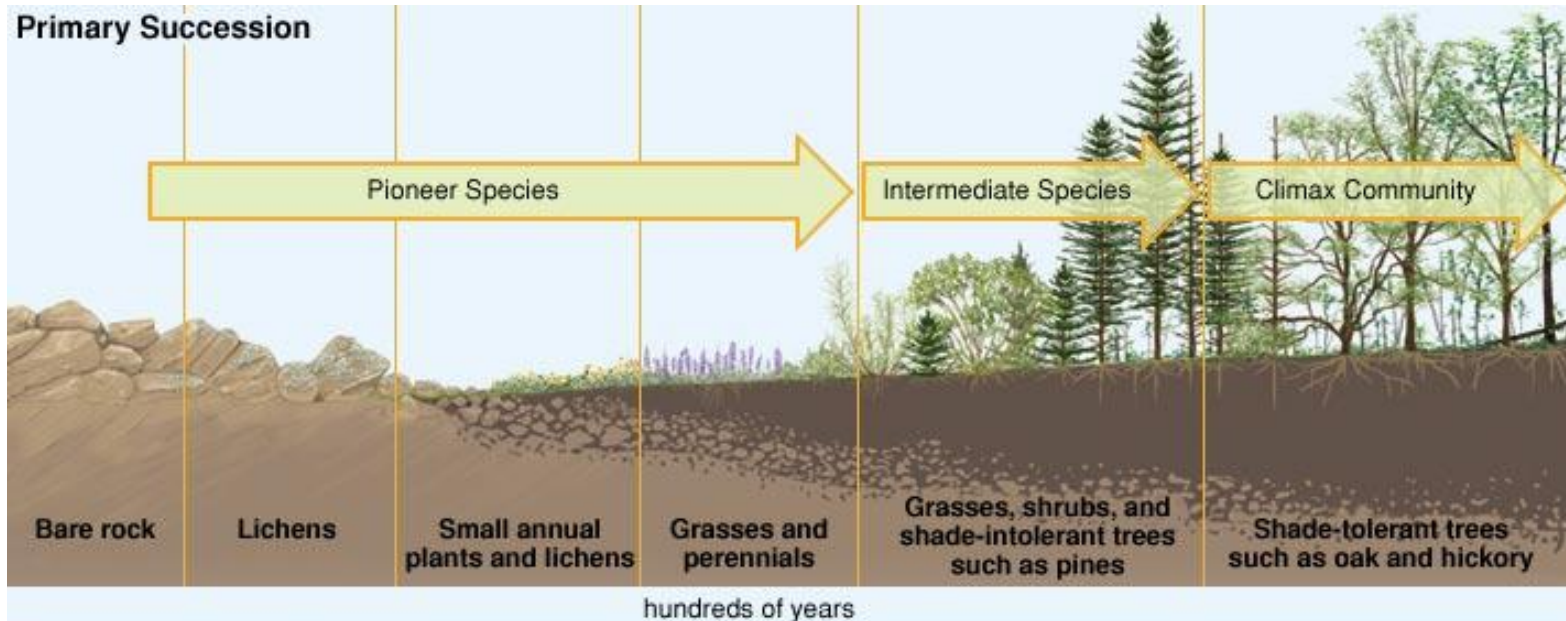
Animation:

- ▶ <http://bcs.whfreeman.com/thelifewire/content/chp55/55020.html>



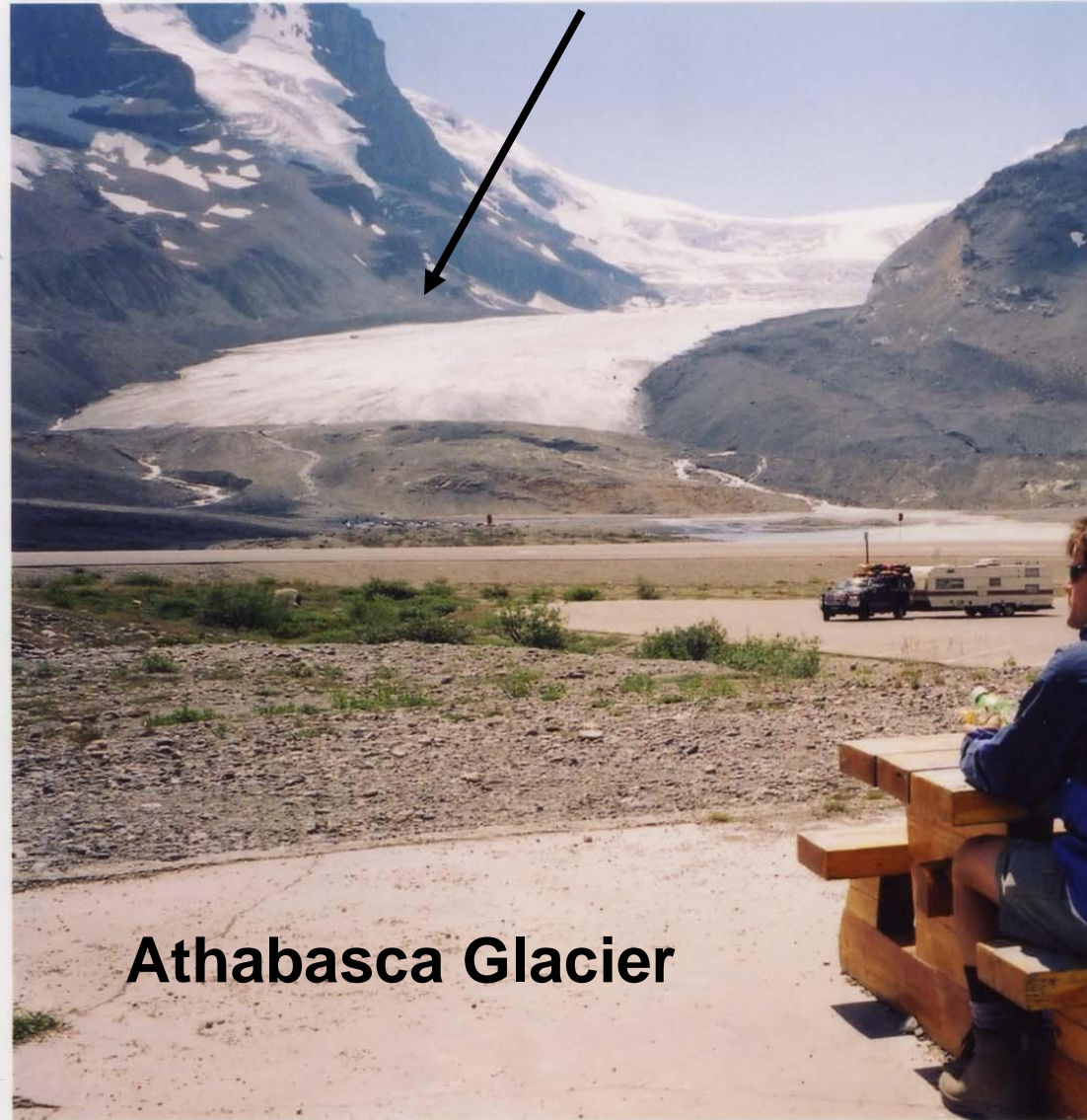
Additional Vocabulary

- ▶ **PIONEER SPECIES** = first species to populate an area where nothing has grown before
 - ▶ Typically smaller, simpler species
 - ▶ Example: lichens (fungi + algae) forming on volcanic rock



Primary Succession Examples - Natural

- ▶ Glaciers Retreating



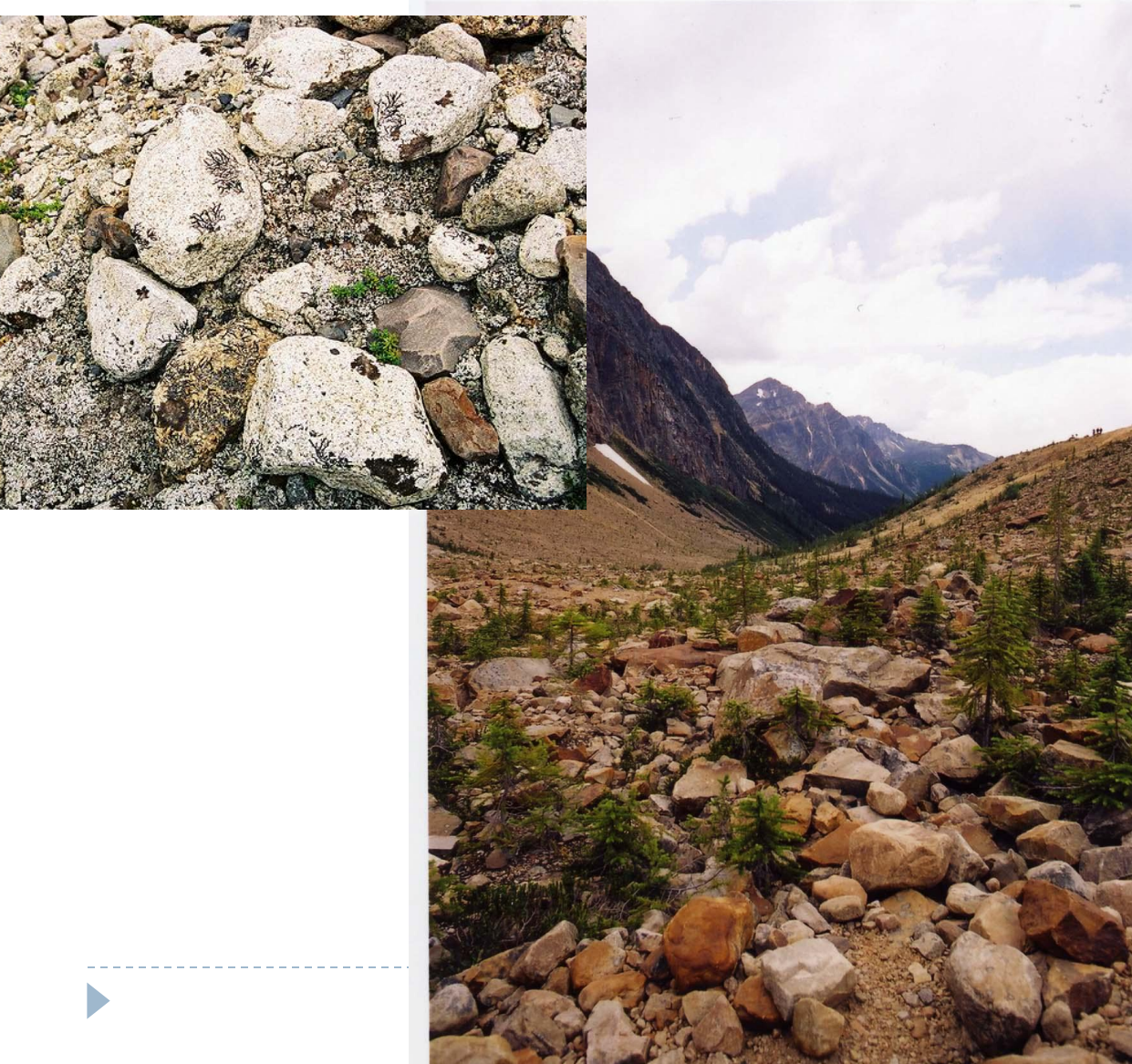
Athabasca Glacier



As the glacier retreats...



When the glacier is gone...



... we see

Pioneer
Species

The start of
**PRIMARY
SUCCESSION!**

Glaciers rock!



Even
sideways,
in the
cracks of
rocks...

From one little autotroph comes...

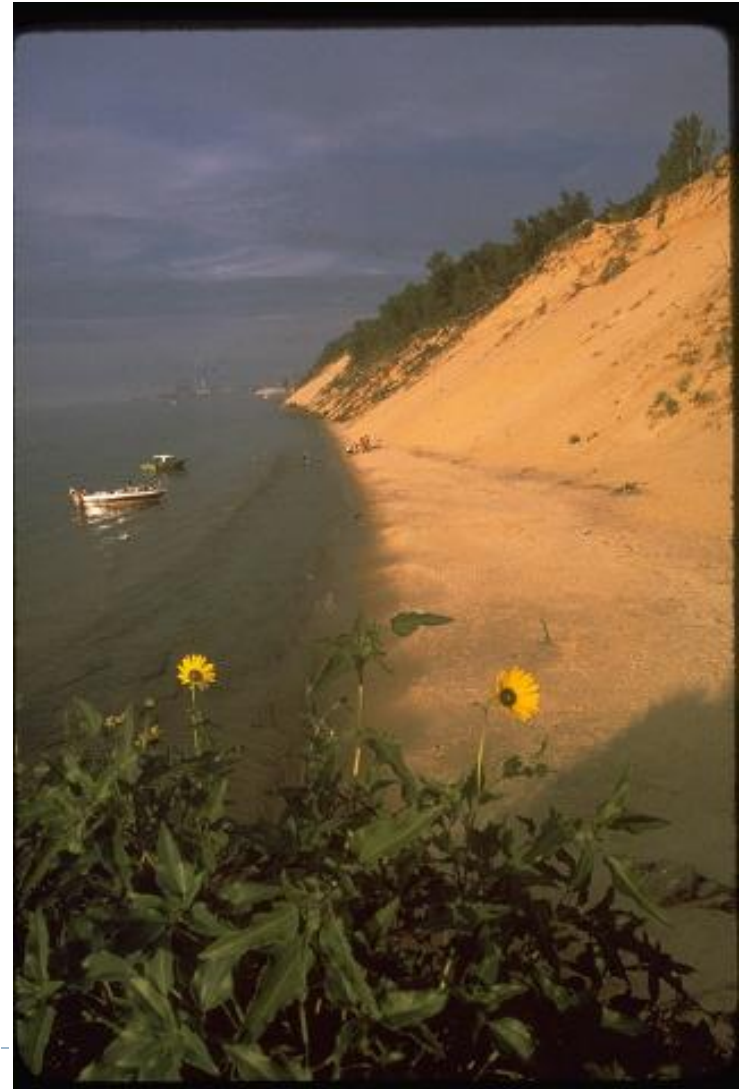


- ▶ A new community
- ▶ The nitrogen has been replaced in the soil so larger organisms are able to grow.



Primary Succession Examples – Natural

- ▶ Sand Dunes



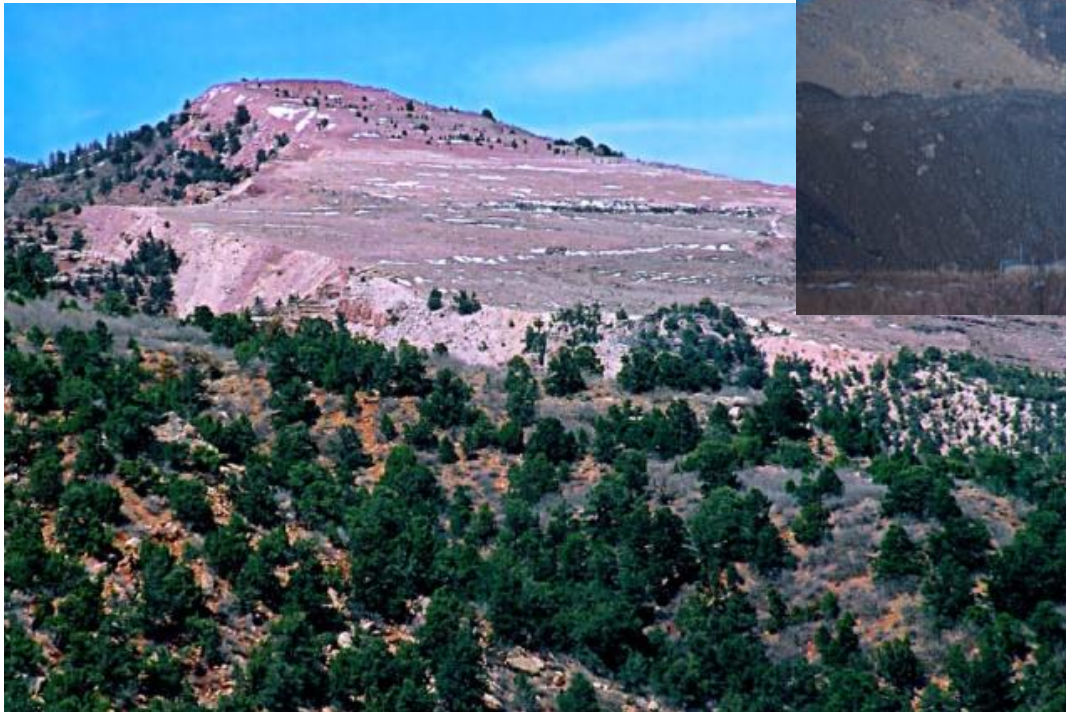
Primary Succession Examples- Natural

- ▶ Volcanic Eruptions with
Lava covering the area



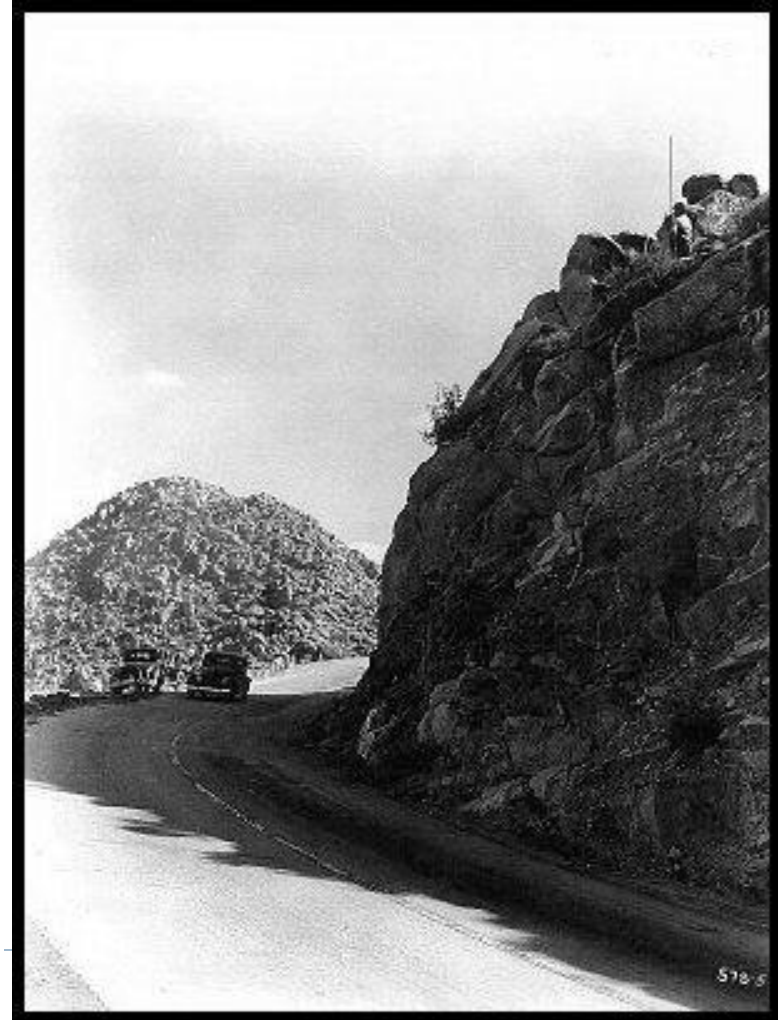
Primary succession Examples – Human Cause

- ▶ Strip Coal Mining



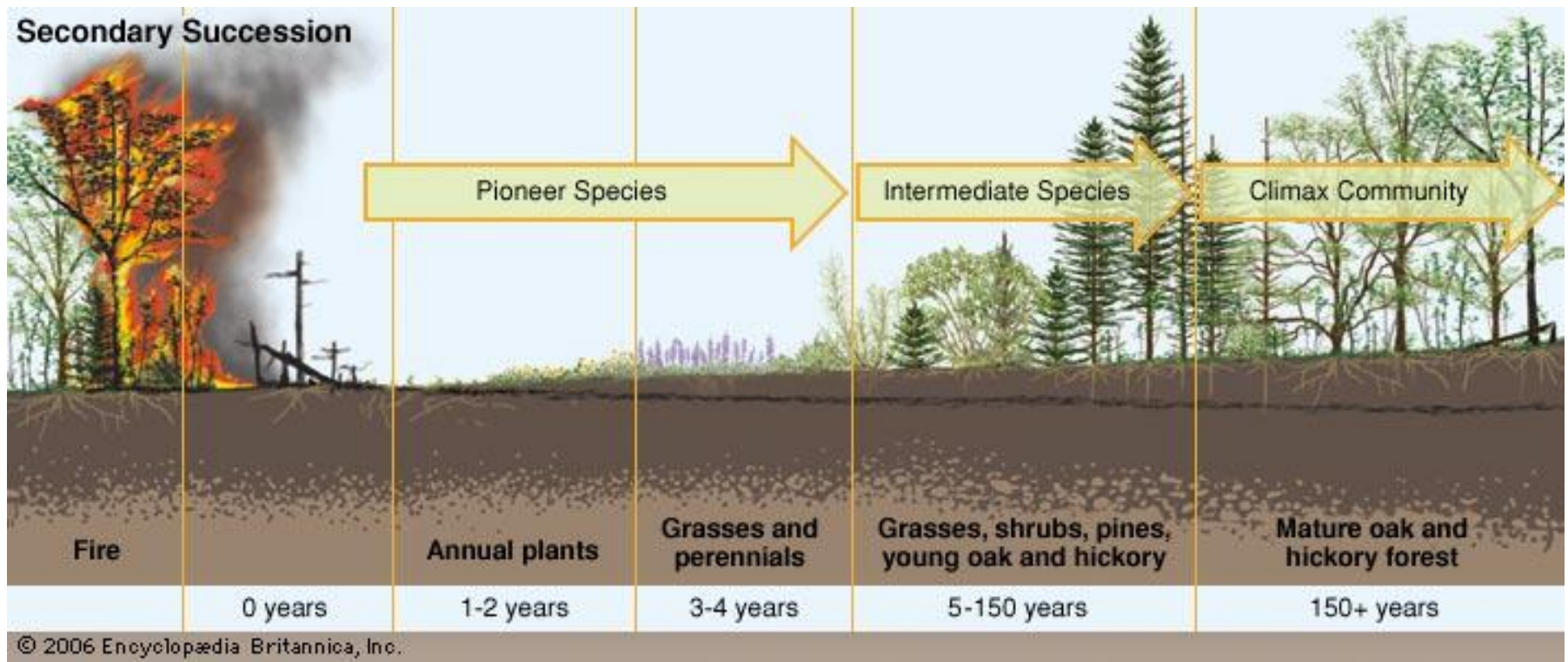
Primary succession Examples – Human Cause

- ▶ Mountain blasting for building roads



SECONDARY SUCCESSION

- ▶ Follows a disturbance that changes an existing community **without removing the soil**



Additional Vocabulary

- ▶ **CLIMAX COMMUNITY** = stable, mature community that doesn't demonstrate further succession
 - ▶ They do in fact continue to change!
 - ▶ Affected by climate change & introduction of nonnative species.



Secondary Succession Examples – Natural



▶ Forest Fires

**Yellowstone
National Park**



After the fire...Life starts to regrow



Fire can be a good thing!



Secondary Succession Examples – Natural

- ▶ **Avalanche**



Secondary Succession Examples – Natural

- ▶ Landslides



Secondary Succession Examples – Natural



- ▶ Volcanic eruption that kills surrounding life with ash and the blast

BLAST ZONE



- ▶ Example: Mt. St. Helen's
- ▶ 1980

Mt. St. Helens & Spirit Lake



Before the blast



After the blast



Trees just snapped in two...



... as if they were twigs.



In the blast zone, 23 years later



The land still bears scars of the eruption



Secondary Succession Examples – Human Causes

- ▶ Overgrazing livestock



Secondary Succession Examples – Human Causes



- ▶ Deforestation
- ▶ Clear Cutting

Deforestation in Brazil



Before



After



Secondary Succession Examples – Human Causes

▶ Controlled Burns

