



What do you think of when you hear, "forest"?

2

What do you think of when you hear, "forest"?

A place with trees

3

What do you think of when you hear, "forest"?

A place with trees

Where animals like bears and raccoons live

4

What do you think of when you hear, "forest"?

A place with trees



Where animals like bears and raccoons live

A place where I hunt

5

### Defining a Forest

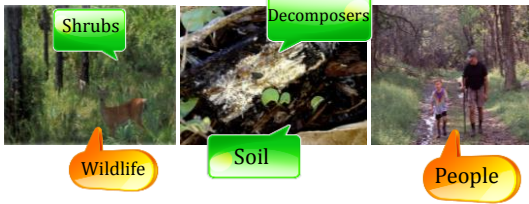
- An ecosystem in which the dominant plants are trees
- 2 main types:
 

Deciduous trees:	Coniferous trees:
 <ul style="list-style-type: none"> <li>have broad, flat leaves.</li> <li>drop the leaves seasonally.</li> </ul>	 <ul style="list-style-type: none"> <li>have small, needle-like leaves.</li> <li>retain the needles year-round.</li> </ul>

## Defining a Forest

7

□ But forests also include:



## Defining a Forest

8

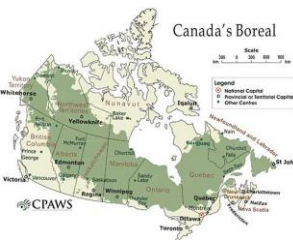
□ Forests vary in size, composition, and function.



## Example: Boreal Forest

9

### The Boreal Forest



**75%** of forests in Canada are boreal forests

## Example: Boreal Forest

10

□ Dominant tree species are conifers which are well-adapted to the harsh climate, and thin, acidic soils. (e.g. Spruce, Jack Pine and Balsam Fir)



## Example: Boreal Forest

11

□ Deciduous species include Birch and Poplar



## Example: Boreal Forest

12

□ Home to a wide range of animals:

- 150 species of birds
- Large populations of wolves, caribou, and brown bears



## Example: Boreal Forest

- 13
- Many people live and work in the boreal forest zone.
- 70% of First Nations communities in Canada are located in forested regions. The boreal forest is culturally and economically significant to Canada's Aboriginal peoples.

## Example: Boreal Forest



Forest fires help the boreal forest!

- remove aged trees
- release seeds and allow the next group of trees to germinate
- release nutrients from the trees

## Ecological Benefits of Forests

- 15
- Plant roots hold soil in place, reducing erosion
- Provide habitats, increasing biodiversity
- Absorb and slow flow of water, helping to limit effects of floods and droughts
- Absorb carbon dioxide from atmosphere via photosynthesis, which helps to regulate the climate

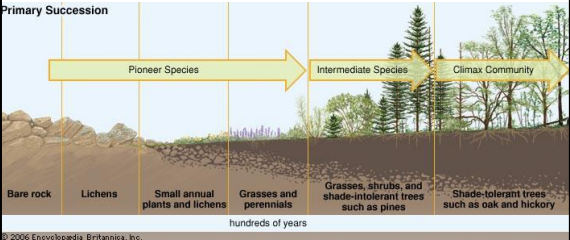
## Ecological Benefits of Forests

- 16
- Responsible for ecological succession – the gradual replacement of one community of plants by another, usually as a result of differences in shade tolerance.

## Ecological Benefits of Forests

17

**1. Primary Succession** – establishment of a community in an area of exposed rock with no soil (e.g. after lava flow)



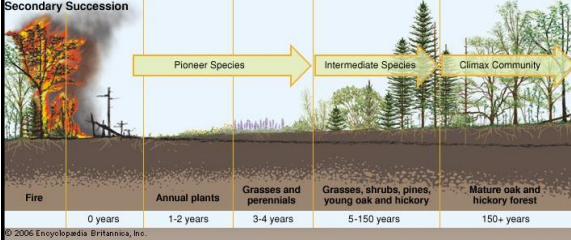
Primary Succession

hundreds of years

## Ecological Benefits of Forests

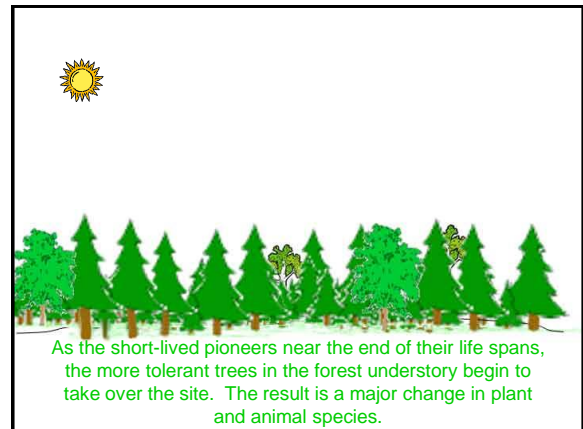
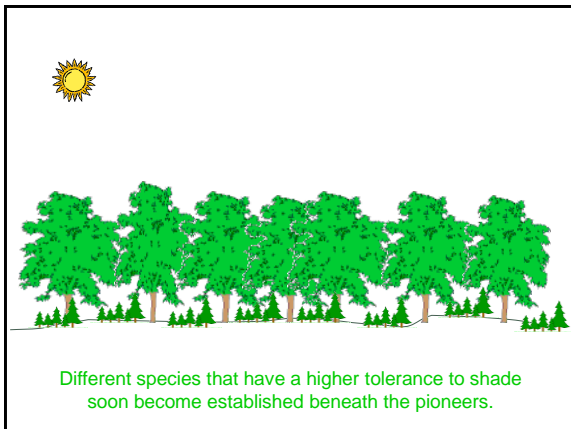
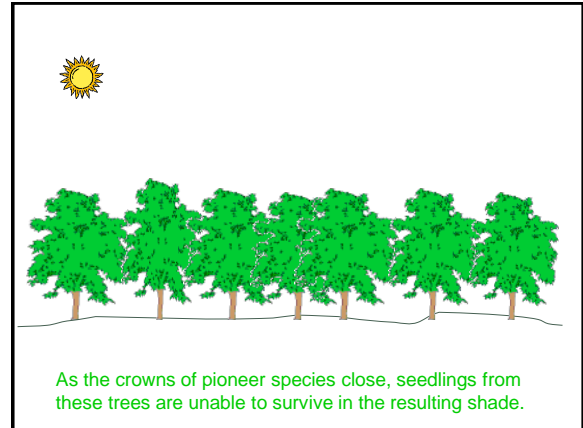
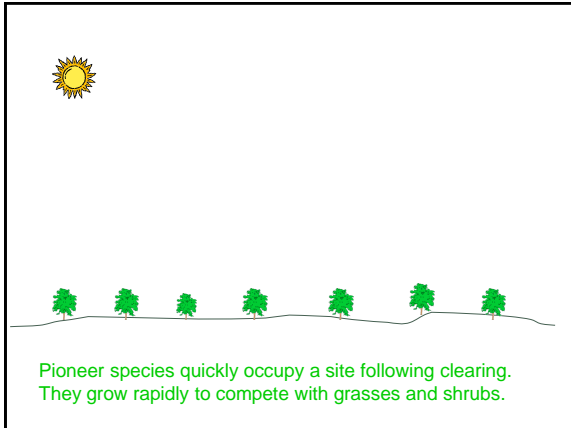
18

**2. Secondary Succession** – change in communities following a disturbance such as a fire; soil remains intact



Secondary Succession

0 years, 1-2 years, 3-4 years, 5-150 years, 150+ years



## Societal Benefits of Forests

23

- Provides nuts, mushrooms, fruits, and medicines
- Timber is used for fuel, construction materials, and paper products.
- Provides employment, recreation, and cultural sustenance

## Forest Management

24

- Sustainable forest management ensures that Canada's forests are healthy and thriving.
- Silviculture: the science of establishing and growing a forest to achieve desired outcomes.
- Common silviculture methods include clearcutting, selective cutting, and shelterwood systems.

## Clearcutting

25

- Removes most or all of the trees from a chosen area
- Best for even-aged forest
- Stumps and branches left behind as habitat and to conserve soil nutrients
- Mimics natural disturbances, such as fire, insect or disease outbreak, or a large windstorm



## Clearcutting

26

- Fastest and most economical harvest method
- Looks bad and results in habitat loss
- Can result in severe erosion on hillslopes



## Selective Cutting

27

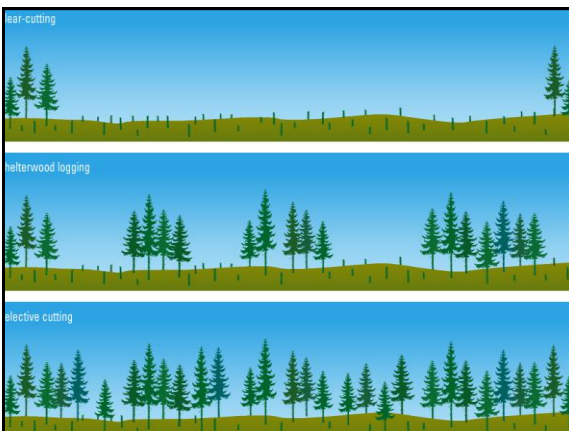
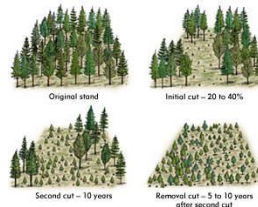
- Involves removing only certain trees
- Best used for uneven-aged forests, species that thrive in shady conditions, or on steep slopes



## Shelterwood System

28

- Removes trees in a series of cuts over a 10-30 year period
- Remaining trees provide habitat, seeds, and encourages regrowth



## Sustainable Practices

30

- Leaving organic material (stumps, branches) in place
- Regenerate the stand after harvesting – either by planting or by scarifying the soil to encourage seeds to germinate
- Protect sensitive habitats and aquatic ecosystems – leave intact stands and buffer strips