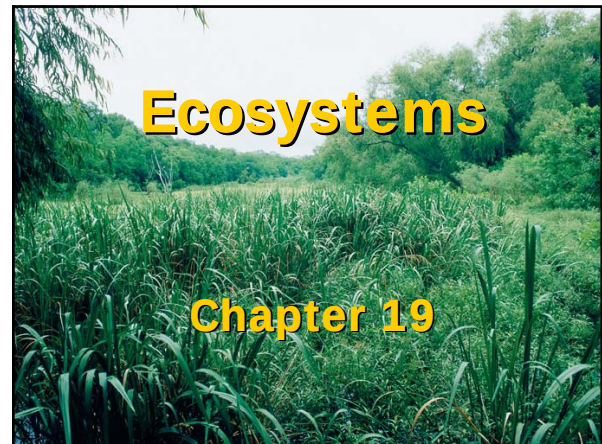
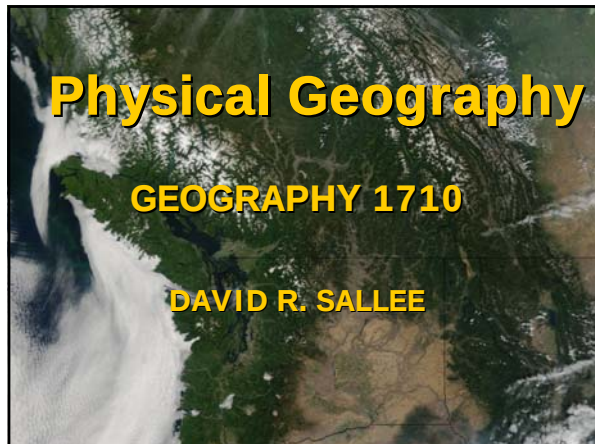
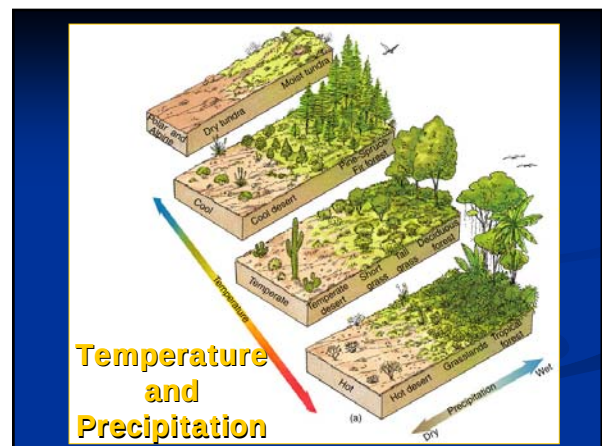
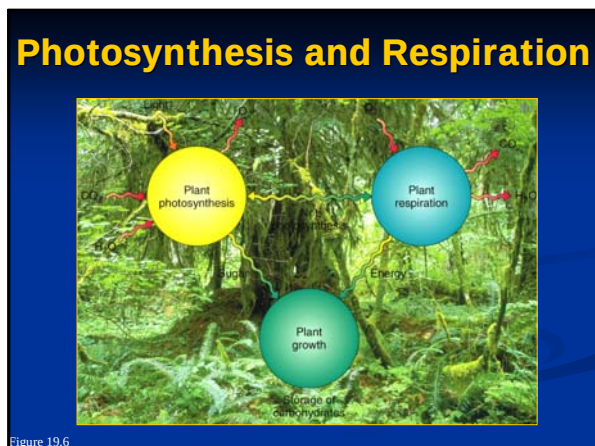
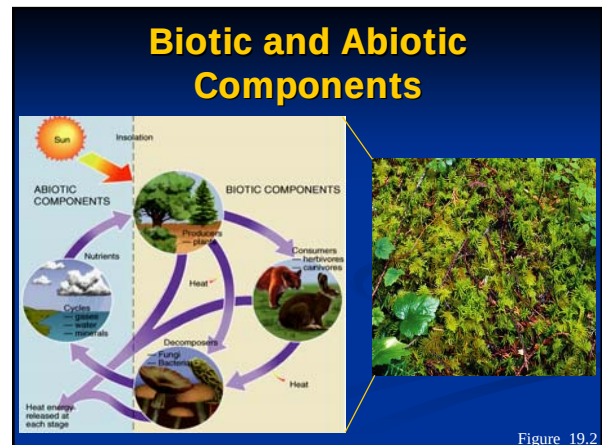




Ecosystem Components and Cycles

- Communities
- Plants: The Essential Biotic Component
- Photosynthesis and Respiration
- Abiotic Ecosystem Components
- Elemental Cycles
- Limiting Factors



Life Zones

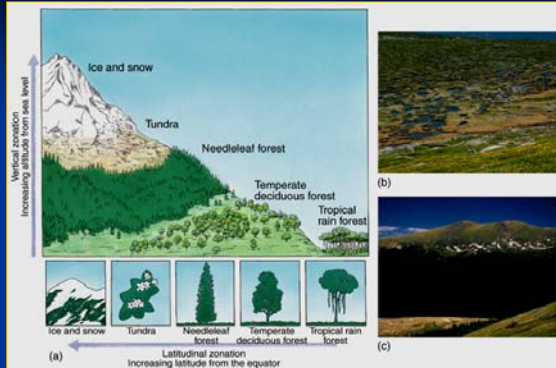


Figure 19.10

Carbon and Oxygen Cycles

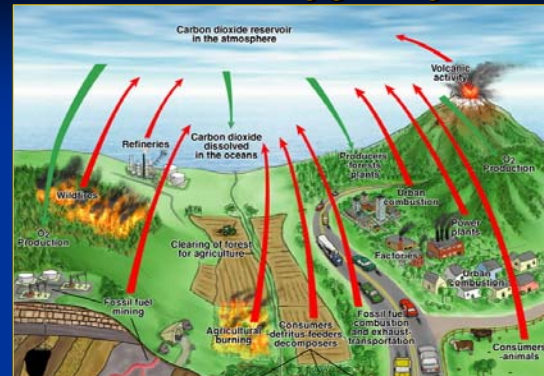


Figure 19.11

The Nitrogen Cycle

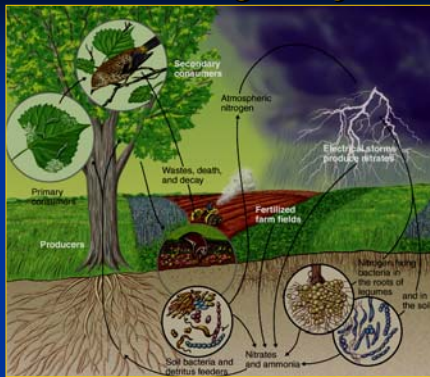


Figure 19.12

Energy, Nutrient, and Food Pathways

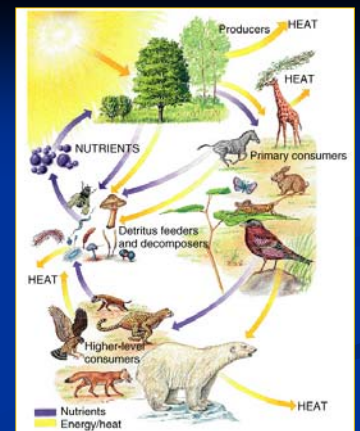


Figure 19.14

Food Chains



Figure 19.15

Population Controlling Factors

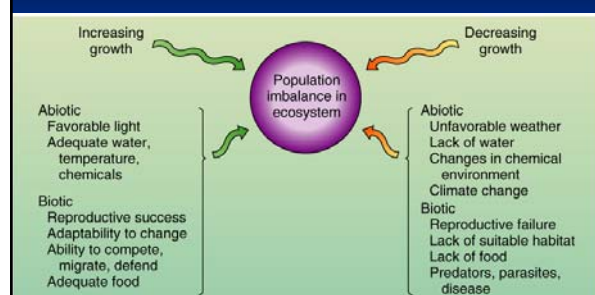


Figure 19.21

Agricultural Ecosystems



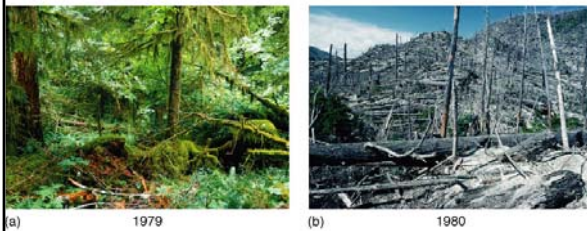
Figure 19.23

Ecological Succession



Figure 19.26

Mount St. Helens



(a)

1979

(b)

1980

Mount St. Helens



(d)

1983

1999

Aquatic Succession

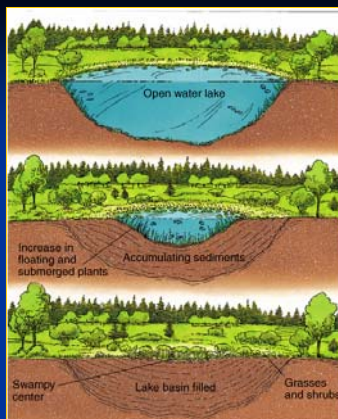
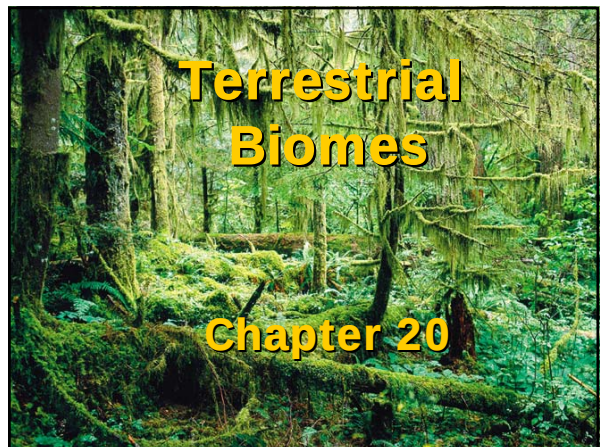


Figure 19.30

Terrestrial Biomes

Chapter 20



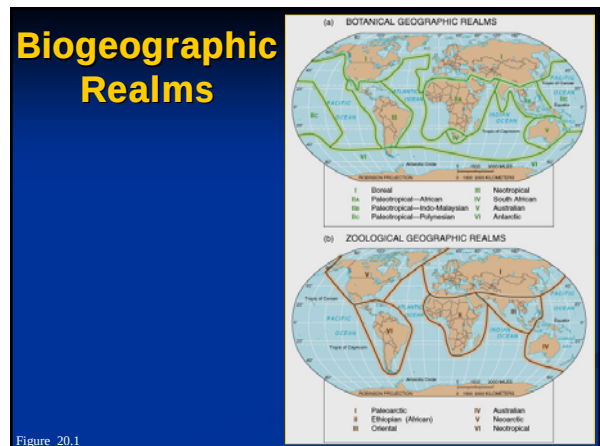


Figure 20.1

Earth's Major Terrestrial Biomes

- Equatorial and Tropical Rain Forest
- Tropical Seasonal Forest and Scrub
- Tropical Savanna
- Midlatitude Broadleaf and Mixed Forest
- Needleleaf Forest and Montane Forest
- Temperate Rain Forest
- Mediterranean Shrubland
- Midlatitude Grasslands
- Deserts
- Arctic and Alpine Tundra

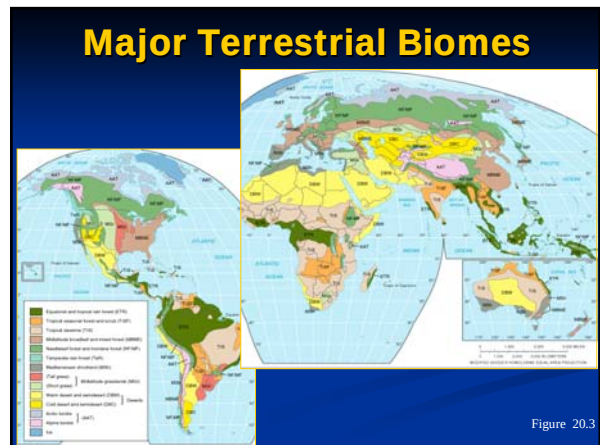


Figure 20.3

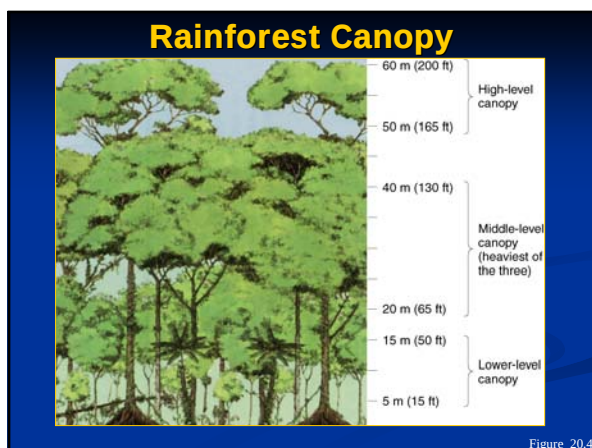


Figure 20.4



Figure 20.7

Figure 20.8

Broadleaf Mixed Forest



Figure 20.9

Temperate Rain Forest



Figure 20.13

Mediterranean Chaparral



Figure 20.14

Midlatitude Grasslands



Figure 20.15



Figure 20.16

Sonoran Desert



Figure 20.17

Siberian Tundra



Alpine Tundra



ANWR

WHAT IS ANWR?

- The 19 million acre Arctic National Wildlife Refuge (ANWR) lies in the northeast corner of Alaska. The entire refuge lies north of the Arctic Circle and 1,300 miles south of the North Pole.
- The Coastal Plain area, comprising 1.5 million acres on the northern edge of ANWR, is bordered on the north by the Beaufort Sea, on the east by the U.S. Canadian border, and on the west by the Canning River.
- Along the coastal area, the plain is an almost featureless expanse, barren and dotted with thousands of unconnected small ponds; the area to the south becomes gently rolling, treeless hills which merge into foothills and then into the northern edges of the Brooks Range.

ANWR Fact of the Day
"Goldman Sachs says oil may be in early stages of 'super spike'; prices could go as high as \$105 a barrel" as a result of strong demand and tight supplies. --Petroleum News (4/10/05)

At peak production, ANWR's 10.4 billion barrels (mean estimate) could yield America 1.5 million barrels per day for roughly 30 years and increase domestic production by 20% by 2025, according to the Energy Information Administration.

ANWR



Distribution of Selected Wildlife on the Arctic Refuge Coastal Plain

