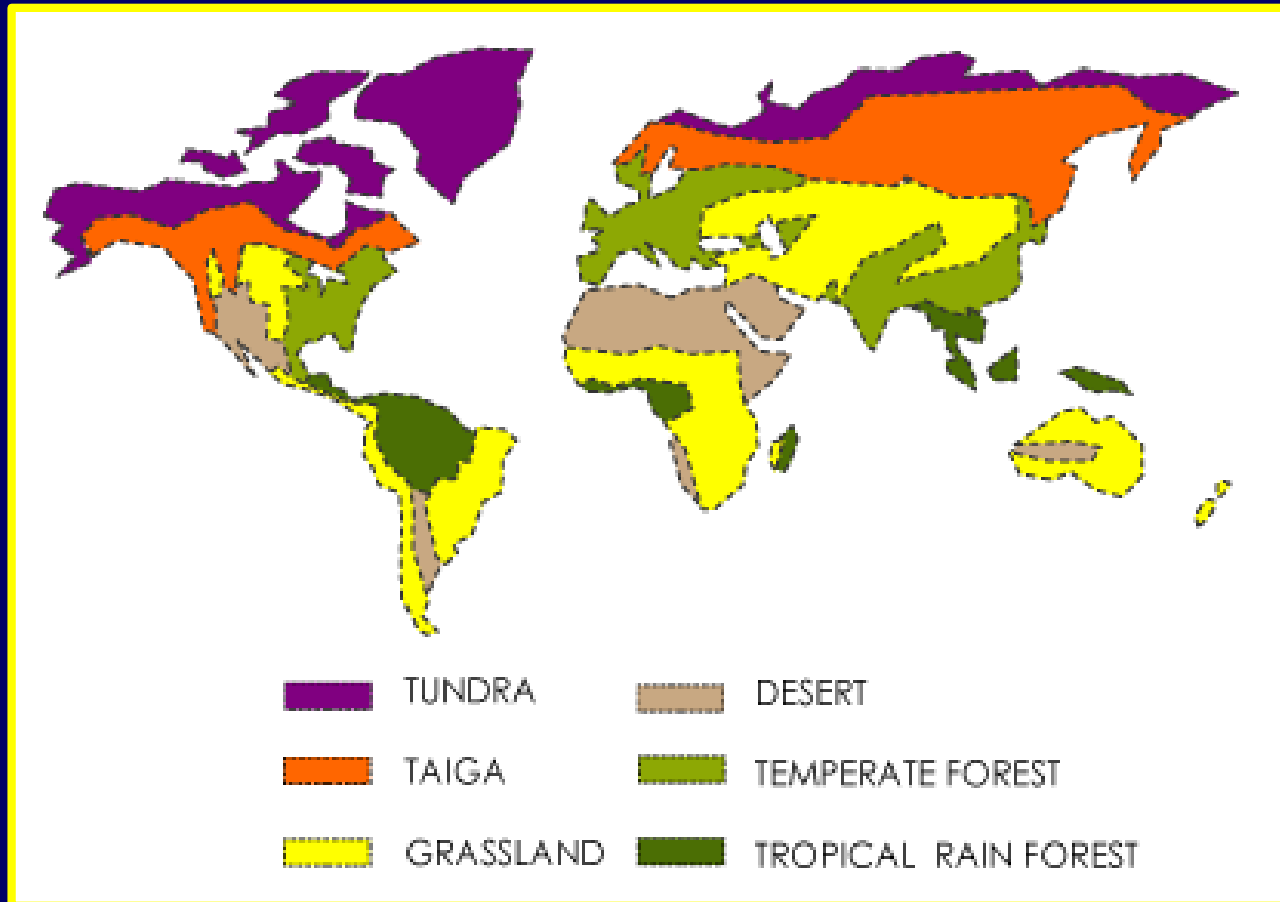


Biomes



Essential Standard 2.7

Explain how the lithosphere, hydrosphere, and atmosphere individually and collectively affect the biosphere.

Learning Objective 2.7.1

Explain how abiotic and biotic factors interact to create the various biomes in North Carolina.

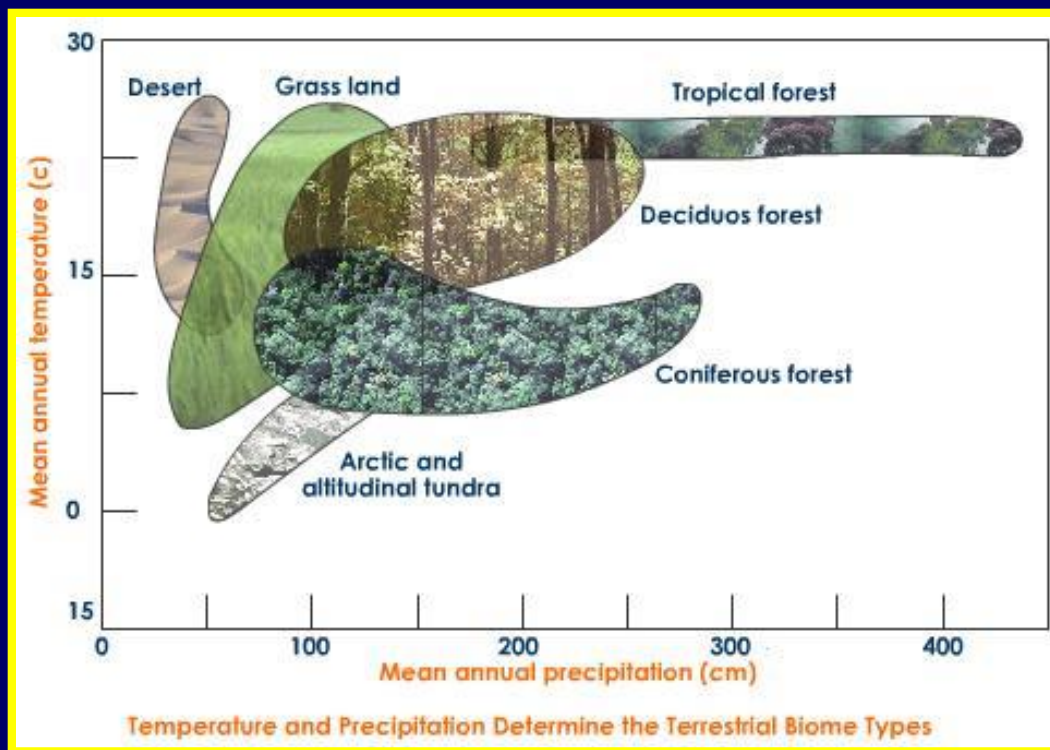
I Can Statements

At the end of this lesson, you should be able to say, with confidence:

- I can list the main types of biomes.
- I can describe each of the major biomes in relation to the amount of precipitation they receive and their associated temperatures.
- I can explain how plants and animals in each biome are well adapted to the abiotic conditions associated with each biome.

Biomes

Groups of similar climax communities with similar amounts of precipitation and similar temperatures, or ecosystems, are called Biomes.



There are six main biomes: Tundra, Taiga, Temperate Forests, Grasslands, Tropical Forests, and Deserts.

Tundra

The Tundra is a cold and mainly treeless biome that forms across northern North America, Europe, and Asia.



Lichen on Rock



Orange Lichen



Reindeer Lichen

The dominant photosynthetic organisms are lichen, also called reindeer moss, in the Tundra.

Tundra

Animals that live in the tundra are adapted for cold weather with thick fur, pads on their feet, and insulating fat layers.



Caribou or Reindeer



Musk Oxen



Wolverine



Arctic Fox



Ermine



Lemmings

Adaptations are traits that help an organism survive better.

Taiga



The Taiga are found south of the tundra and are forested biomes dominated by evergreen trees.

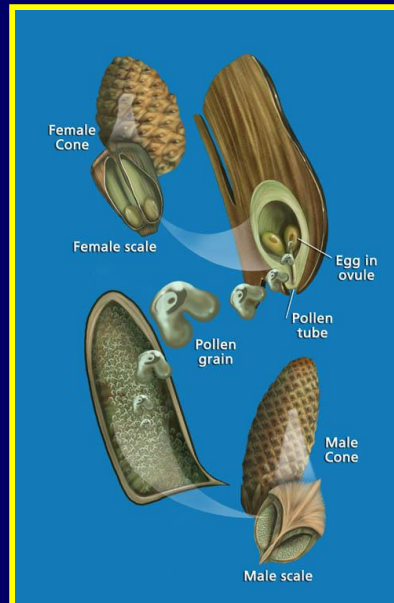
(Taiga is pronounced TIE-guh)

Evergreen trees are adapted for long winters and short summers by having needle shaped leaves that can stay on all year long and so can begin photosynthesis as soon as light intensity increases in the shortened spring season.



Taiga

Because the winters are so cold, there are not a lot of pollinating insects in the taiga. So the trees use cones to reproduce, instead of flowers. Pollen from cones is carried by the wind.



Clouds of pollen

Trees that use cones for reproduction are called conifers.

Taiga

Some animals in the taiga stay active all year round but others hibernate during the cold winters or migrate to warmer climates.



Wolves



Moose



Brown Bear



Marmots



Lynx



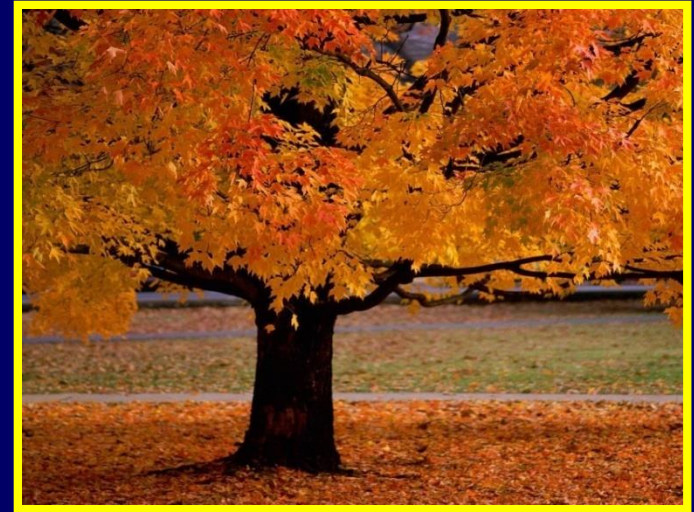
Snowy Owl

Temperate Deciduous Forest



Temperate deciduous forests have pronounced seasons with long summers and warmer winters than the taiga.

Deciduous trees have broad, thin leaves with large surface areas for maximum light absorption. When light intensity decreases and ground water freezes, deciduous trees lose their leaves and go dormant.



Temperate Deciduous Forest

Typical animals in the deciduous temperate forests are well adapted for both warm and cold weather.



Black Bear



Raccoons



White Tailed Deer



Grey Squirrel



Red and Black Squirrels



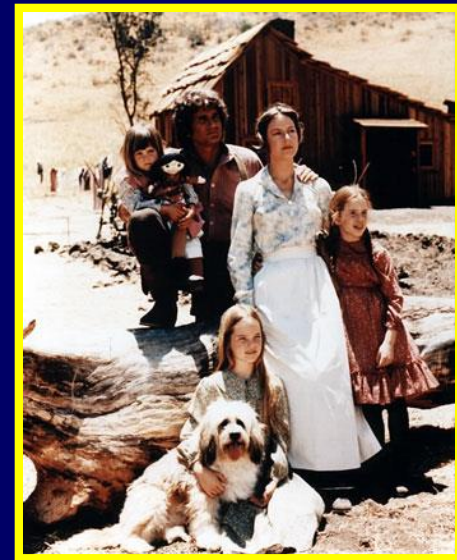
White Squirrel

Temperate Grasslands



Temperate grasslands usually form in the middle of continents, at the same latitude as temperate forests, but the reduced rainfall prevents tree growth.

Temperate grasslands, also known as the prairie, have rich, fertile soil that supports grasses that can survive grazing and occasional wildfires.



Temperate Grasslands

Temperate grasslands support many grazers and predators of grazers.



Bison



Elk



Prairie Dogs



Wolf



Savannahs



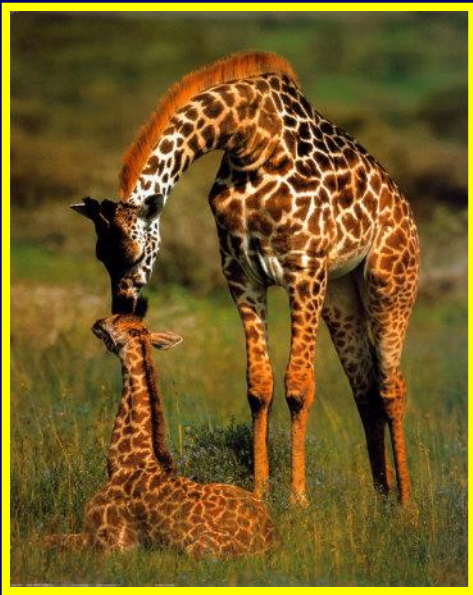
Savannas are tropical and sub-tropical grasslands with alternating wet and dry seasons.

Plants in savannas need to be able to deal with long periods of drought. Grasses allow the above ground part to die during the dry seasons.



Savannahs

Savanna grasses support many grazers which attract many predators.



Tropical Rainforests



Tropical rainforests are found near the equator and have year round growing seasons and abundant rainfall.

Competition for light has led to plant adaptations such as extremely tall trees that form a canopy high in the air.



Tropical Rainforests

Other plants, called epiphytes, grow on the trees in order to reach the light.



Broad leaves increase surface area for better light absorption.

Tropical Rainforests

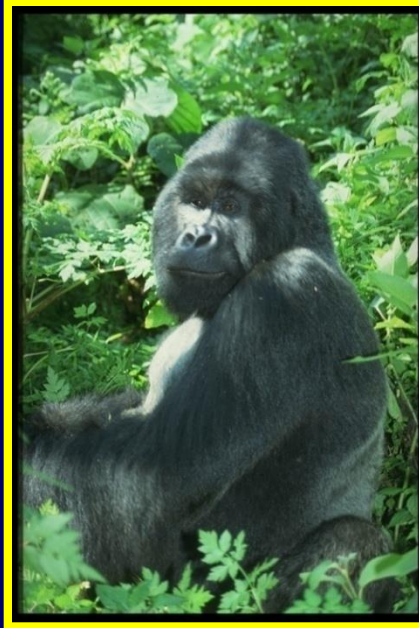
Due to large amounts of rain washing the minerals away, the soil in rainforests is very nutrient poor.



Decomposers such as termites, leaf cutters, fungi, and bacteria play a crucial role in the rainforest, quickly recycling any available nutrients.

Tropical Rainforests

Tropical rainforests have the most diversity of all the biomes.



Deserts

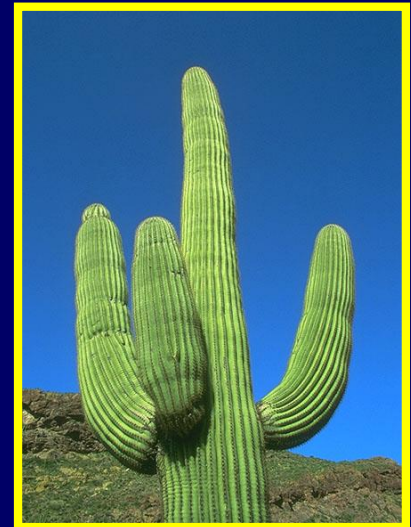


Deserts are dry areas that receive less than 25 cm of rainfall a year.

Deserts are not hot all the time and can very cold at night due to the dry air.



Desert plants are well adapted for the dry conditions by waxy coverings that prevent drying out or by their ability to store large quantities of water.



Deserts

Desert animals are well adapted to the heat by having large ears that keeps their blood cool or by being nocturnal. They obtain most of their water from the plants and animals they eat.



Fennec Fox



Camel



Hare



Lizard



Tortoise



Snake

The End

