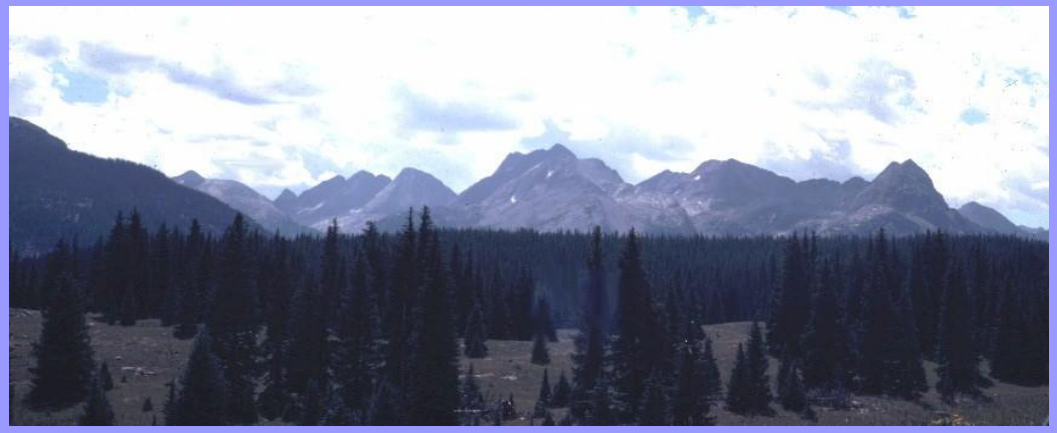
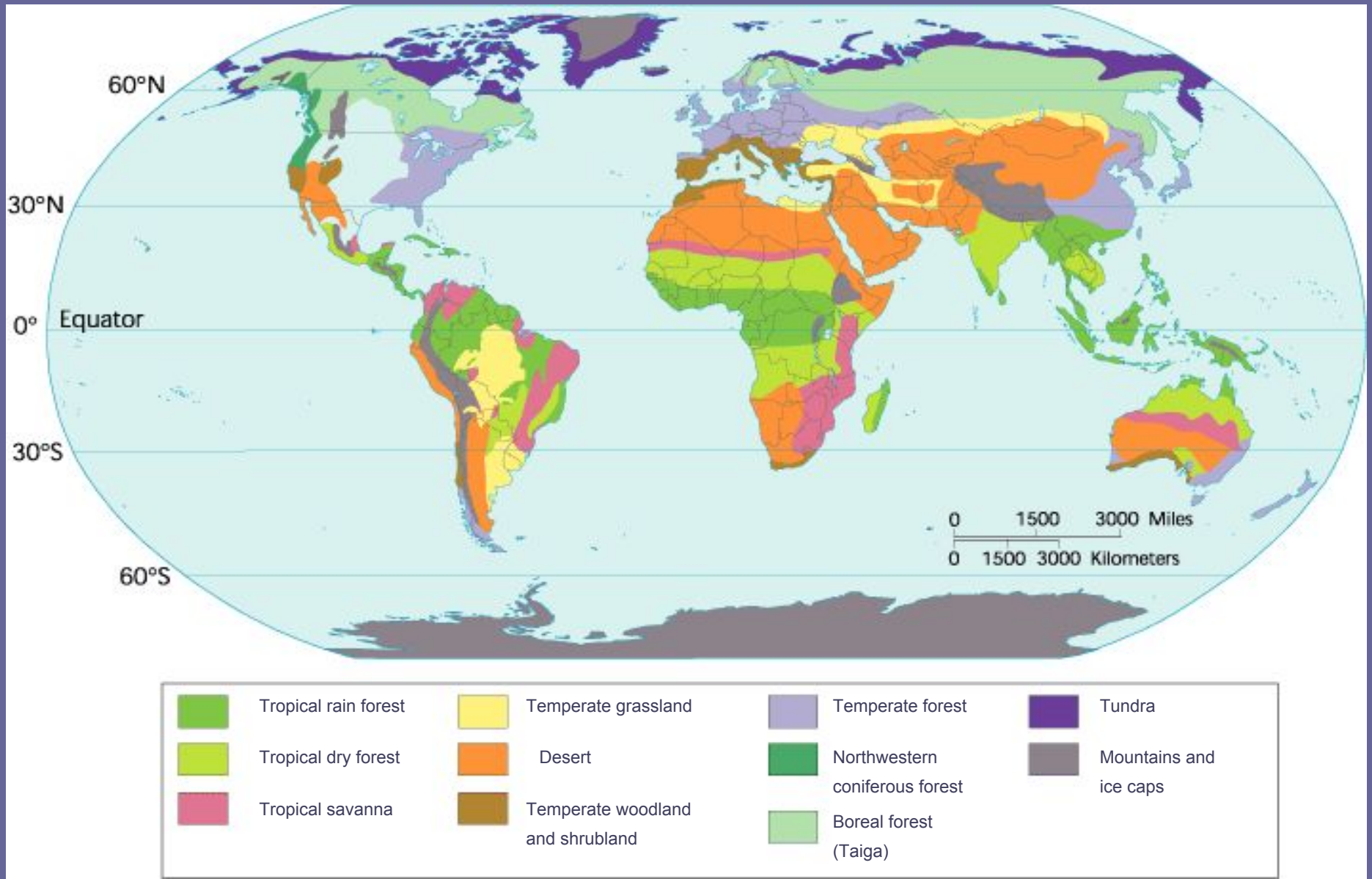
Biomes



Biomes have similar latitude!



Desert

W US, Africa, India, Asia, S America

Temperature and Precipitation

- **Variable** temperatures depending on elevation and latitude
- Extreme temperature changes from day to night – Hot to Cold
- Driest of all biomes – Annual precipitation of less than 25 cm rainfall per year **(Low)**

Common Plants

- Sparse vegetation and poor soil
- Examples: Cacti and other succulents
- Plants with short growth cycles

Creosote Bush

Hoodia gordonii

Plant Adaptations for Survival

- shallow root systems– absorb little rainfall quickly
- stems can photosynthesize
- leaves modified to needles
- waxy cuticle-waxy covering on leaves to reduce water loss.

Common Animals

- Small animals
- Examples: kangaroo rat, snakes, owls, coyotes, hawks, scorpions, lizards

Animal Adaptations

- Rodents are present, but these small herbivores stay hidden in day, come out at night – Noctural animals

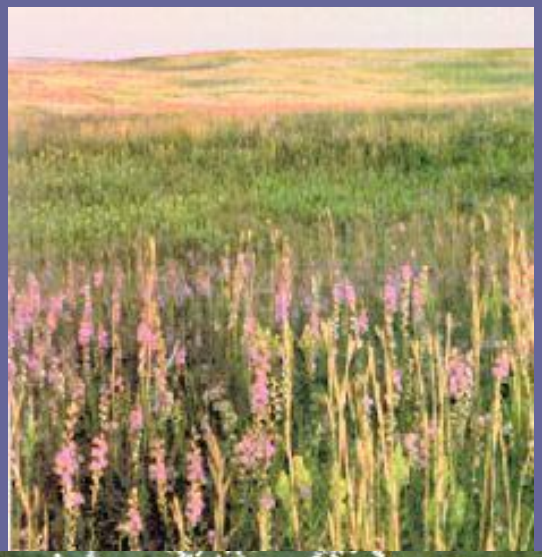
Kangaroo Rat

Interesting Facts

- Organisms in this area can tolerate extreme conditions – Temperature and Precipitation
- Deserts cover about one fifth of the Earth's surface
- Disturbances are common in the form of occasional fires or cold weather, and sudden, infrequent, but intense rains that cause flooding.

Grasslands

- Abiotic Factors: warm to hot summers; cold winters; moderate, seasonal precipitation; fertile soils; occasional fires.
- Dominant Plants: lush, perennial grasses and herbs; most are resistant to drought, fire and cold.



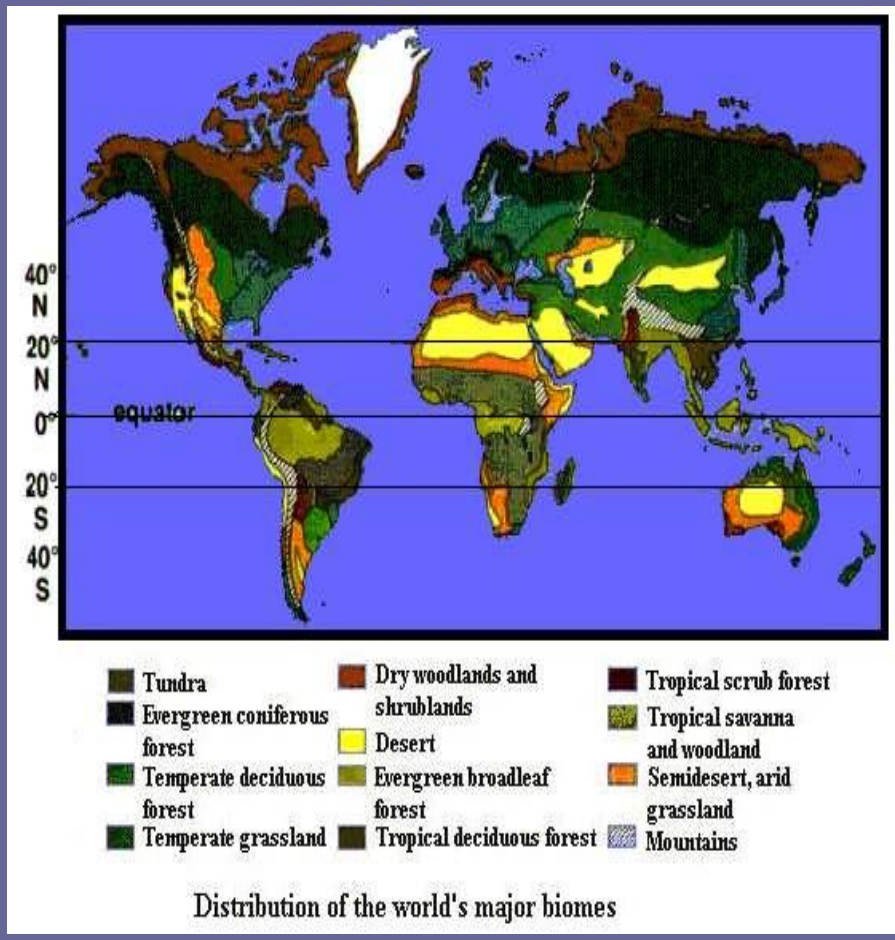
Grasslands

- Dominant Wild life: Predators such as coyotes, and badgers. Herbivores; mule deer, prong horn antelope, rabbits, prairie dogs. Birds; hawks owls, bobwhite, prairie chicken. Reptiles; snakes. Insects; ants and grasshoppers.

Grasslands

Grasslands

- Geographic Distribution: Central Asia, North America, Australia, central Europe, and upland plateaus of South America.



Distribution of the world's major biomes

Figure 50.25b Savanna

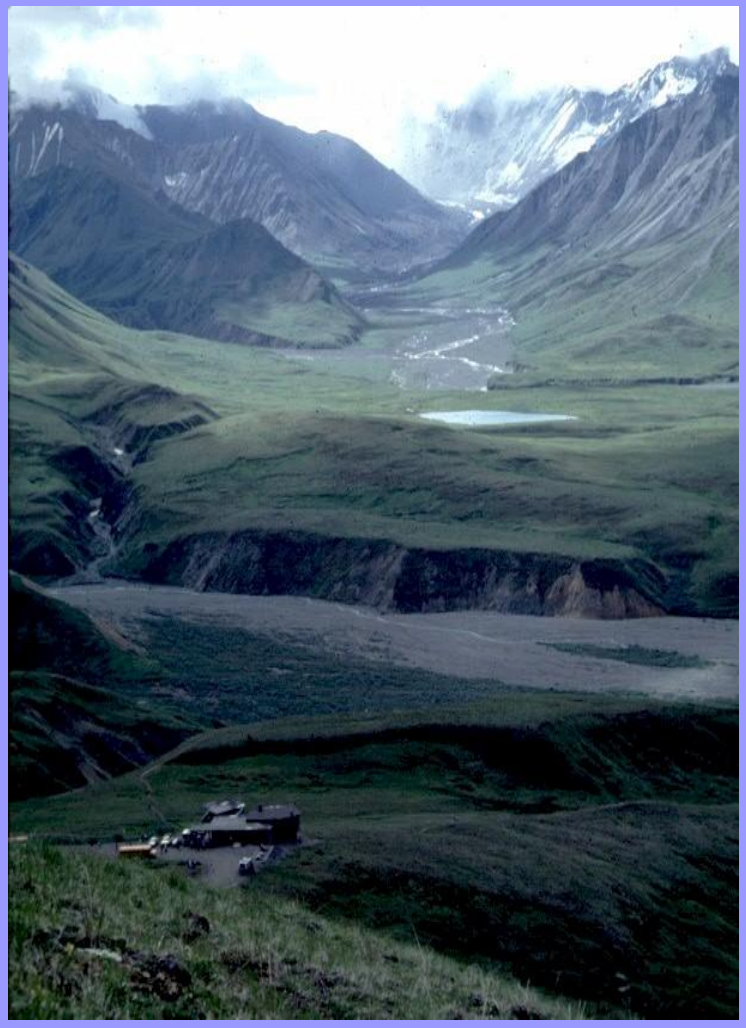
Figure 50.25bx Savanna

Savanna

- **Abiotic factors:** warm temps, seasonal rainfall, compact soil, frequent fires due to lightning
- **Dominant plants:** tall, perennial grasses, drought- and fire-resistant shrubs and trees
- **Dominant wildlife:** predators (lions, leopards, cheetahs, hyenas, jackals), herbivores (elephants, giraffes, antelopes, zebras), birds (eagles, ostriches, weaver birds, storks), insects (termites)
- **Geographic distribution:** large parts of eastern Africa, southern Brazil, northern Australia

Tundra

- Known as the barren or treeless land.



Characteristics of this biome include:

1. Extremely cold temperatures, high winds
2. Long, dark winters (6 to 10 months)
3. Low precipitation (less than 5 in/year)
4. Low biotic diversity
5. Simple vegetation
6. Short growth and reproduction seasons
7. Ground is covered in permafrost - layer of permanently frozen subsoil

Tundra

- Mosses, sedges, and lichens are common, while few trees grow in the tundra.
- Animals found in the tundra include: arctic fox, polar bears, reindeer, caribou, and the snowy owl.

- In the summer months, the sun shines all the time, even at midnight.
- During the winter months, it is continuously dark.
- Located around the North Pole in the Artic Circle.

Boreal/Taiga

Characteristics include:

1. Long, cold winters and short, mild summers (-50C to 30C)
2. Located across North America and Eurasia.
3. Moderate Precipitation
4. Fire is a crucial disturbance factor
5. Moderate biotic diversity
6. Has dense evergreen forests of coniferous trees-plant that has needle-like leaves and seeds in cones; stays green year-round.

Boreal/Taiga

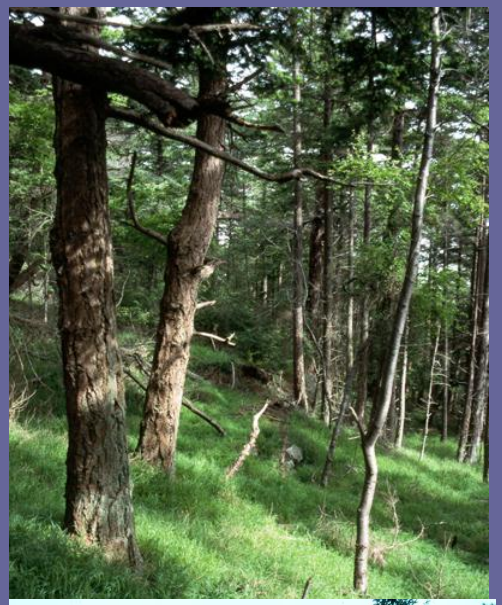
- Wildlife consists of Caribou, Lynx, Black Bear, Moose, Coyote, Timber Wolf and recovering populations of Wood Bison.
- Plant life includes coniferous trees (spruce and fir), deciduous trees, and small shrubs.
- Conservation issues are tree harvesting, mining, manufacturing, etc.


Benjamin
Cummings

Temperate/Deciduous Forest

- Abiotic Factors: Cold to moderate winters; warm summers; year round precipitation; fertile soils.

- Dominant Plants: Broadleaf deciduous trees-broadleaf trees that lose their leaves in the fall.
- some conifers; flowering shrubs; ground layer of mosses and ferns

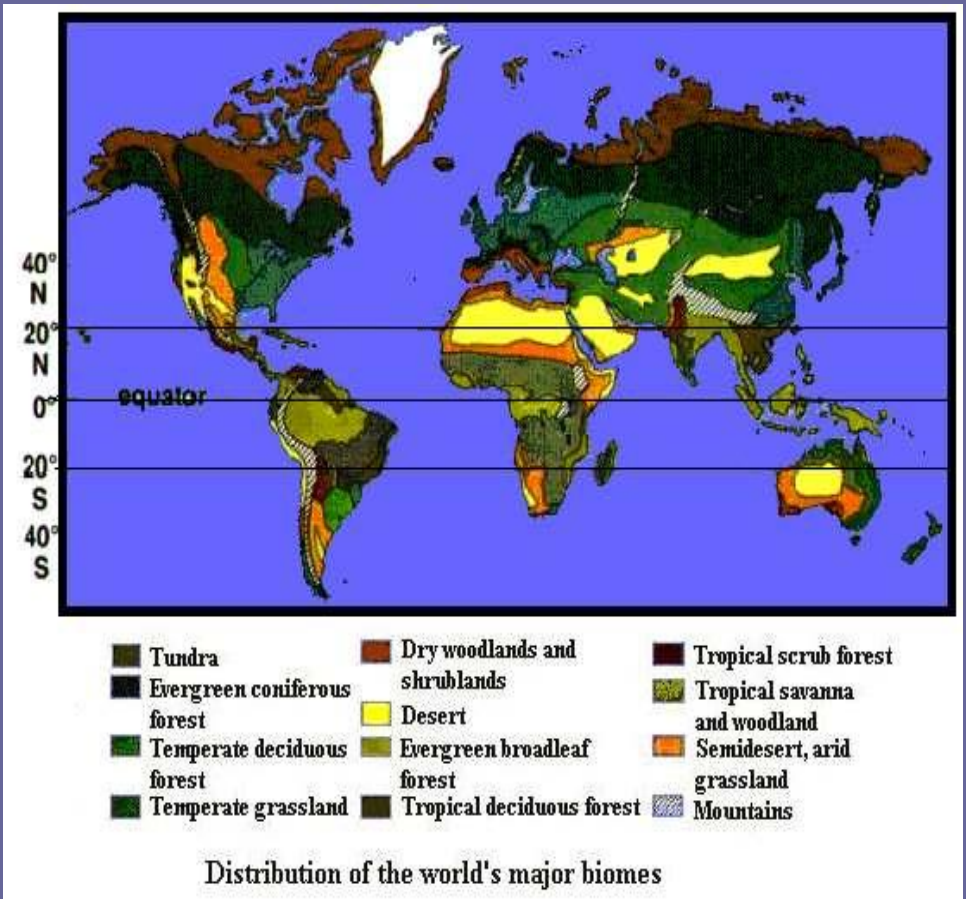


Temperate/Deciduous Forest

- Dominant Wildlife: Deer, black bears, bobcats, nut and acorn feeders, raccoons, skunks, turkey.

Temperate/Deciduous Forest

- Geographic Distribution: eastern United states, southeastern Canada; most of Europe, and parts of Japan, China, and Australia



Distribution of the world's major biomes

Tropical Rain Forest

Central and South America

Temperature and Precipitation

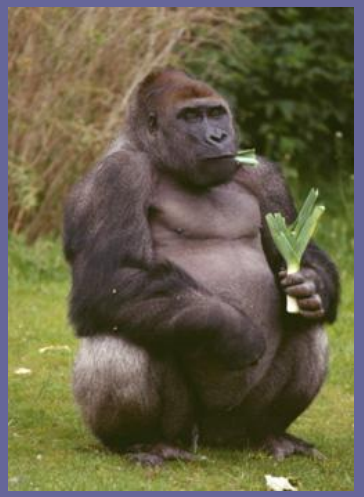
- Almost constant temp. of 25 ºC (77 ºF)
  Varies only slightly throughout the year
- The average temperatures of the three warmest and three coldest months do not differ by more than 5 degrees.
- More than 250 cm of rain fall each year
- Very humid

Common Plants

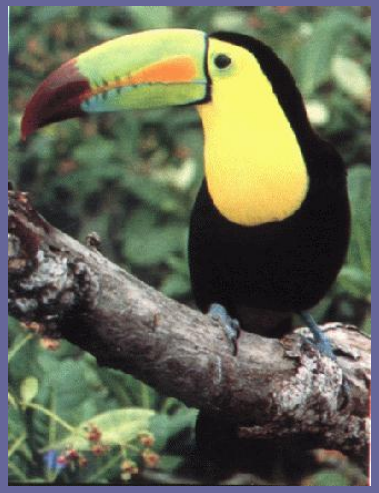
- Large variety of plants, high diversity
- Canopy -top covering of tree branches and leaves, allowing little light penetration
- Broad-leaved evergreen trees, ferns, large woody vines, climbing plants, orchids and bromeliads

Bromeliad on a tree

Common Animals



- High Diversity
- Toucans, monkeys, gorilla, tree frogs, snakes, lizards, parrots



Interesting Facts

- Home to more species than any other biome
- Nutrient poor- very few nutrients are held in the soil because so many organisms take it from soil.
- Decomposers

  break down dead stuff

  very quickly
- Found near the equator

Ocean – Marine Biome

Saltwater

Temperature & Precipitation

- Temperature ranges based on depth and location on Earth
- Precipitation - ?

Common Plants

- Kelp and Corals are often mistaken as plants….very few ocean plants

Common Animals

Interesting Facts

- Oceans cover about 70% of the Earth's surface. The oceans contain roughly 97% of the Earth's water supply.
- Photic Zone (Light penetrates)
- Aphotic Zone (Permanently dark)
- Oceans contain the largest amount of living material (biomass) of all of the biomes – but most of them are microscopic organisms!!!