

## The Tundra

- Low average temperature.
- Average yearly precipitation of 10-12 cm. Due to low evaporation, the region is wet with ponds and bogs during the short, warm summer (poor drainage).
- The bogs consisting of peat soaked within melt water form because melting snow cannot drain into the permafrost.
- Poor soil due to cold temperatures and lack of decomposition. Cycling of matter is very slow.
- Growing season of 2 months, harsh cold winters.

### **Plants:**

- Mosses
- Lichens (reindeer moss)
- Grasses
- Sedges
- Shrubs.
- The word tundra means “marshy plain”.

### **Animals:**

- **Largest animals:** Caribou, musk oxen, reindeer.
- **Top predators:** include wolves, grizzly bears, white fox and snowy owl.
- **Herbivores:** Arctic hares, grouse and lemmings (shrew type animal).
- **Insects** include black flies and mosquitoes.
- Summer sees migrations of birds to feed on large groups of insects.

### **Conifer (boreal) Forests or Taiga:**

- 45° \_ 60° north latitude, along the low-latitude borders of Tundra.
- Long winters and short summers.
- Short growing season.
- Low diversity of life due to harsh climate.

### **Vegetation:**

- Evergreen trees, small compact, wax coated leaves.
- Can't compete with deciduous trees in temperate zones.
- The Pacific coast forests have adapted to dry summers and can store water and nutrients due to massive size. Thick bark protects from fires.

**Animals:** Elk, moose, deer, black bears, grizzly, porcupines, hares, lynxes, grouse, wolf, fox.

Ground layer has less invertebrates and leaf litter is slower to decompose.

### Temperate Deciduous Forest:

- Plenty of rain fall, temperate climate, broad leaf trees (deciduous & evergreen), cool winters. Growing season of at least 4 months.
- Cover most of eastern America.

#### **Vegetation:**

- 4 layers of plant growth, tree layer, shrub layer, field layer and ground layer.
- Main trees in the north are oak, birch, beech, and maple.
- Further south oak and hickory.

#### **Animals:**

- Chipmunks, squirrels, raccoons, opossums and mice feed on nuts, fruits and insects.
- Deer feed on shrubs and seedlings
- Wolves, bobcats, foxes, and mountain lions feed on the other mammals.
- Rich top soil supports a large population of decomposers.

### Temperate Grassland: (Prairie)

- **Continental interiors**, seasonal variations in rainfall.
- Transition zones between temperate forests and deserts.
- Rolling to flat terrain, hot-cold seasons, periodic droughts and fires.
- **Vegetation:**
- Mainly grasses mixed with legumes and some annuals.
- Water and fire are the main factors in vegetation type
- **Animals:**
- Seed eating rodents, large herbivores like bison, gazelles, zebra, horses etc.
- Large predators like Lions, Wolves, dogs etc.

### Temperate (Mediterranean) Shrub lands or chaparral:

- Coastal regions bordering deserts

- Low rainfall like a desert, but fog and longer rainy season
- Mild moist winters, long, dry summers: **Mediterranean climate**

#### **Vegetation:**

- Dense stands of shrubs and small trees with waxy or fuzzy evergreen leaves to conserve water.
- Can withstand frequent fires.

#### **Animals:**

- Mule deer, lizards, rabbits, rodents are often small and dull colored to match environment.
- **California** is considered to have a Mediterranean scrub biome.

#### **Deserts:**

- Subtropics , low levels of rainfall(10 -20 inches). Less than 25 cm of rainfall a year.
- Nights are cold
- Brief growing seasons

#### **Vegetation:**

- Succulents (eg sedum) adapted to store water. Perennials with large shallow root systems to quickly soak up desert storms.
- Coating of plant is water proof . Water stored in thick stems of succulents.
- Specialized annual wild flowers that flower after storms for only a month or less.

#### **Animals:**

- Reptiles, insects are common. Snakes, lizards, owls, kangaroo rat.
- Many animals are small and are active at night to hunt for food.

#### **Tropical Rain Forests:**

- Humid equatorial regions, uniform temperature, lots of rain.
- Seasonal rainfall
- Tropical rain forests get 200-400 cm of rainfall per year.
- Complex ecosystem. Has more plant and animal species than all the other land biomes put together.