

Tropical Rainforest

Temperature: No temperature variation - warm around 27.2C

Precipitation: Above temp line - tons of water, no drought

Growing season: All months

Species: Most species of any terrestrial biome

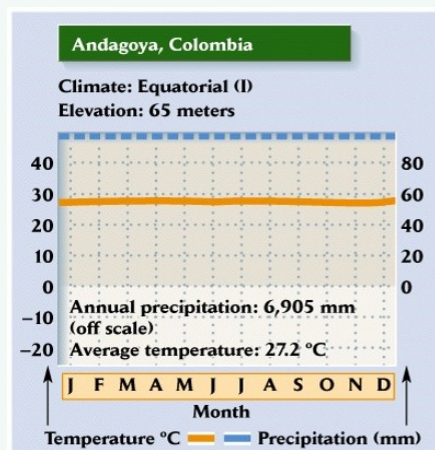
Plants:

- Warm, wet conditions speed the decomposition of detritus and the reabsorption of released nutrients by plants, so soils cannot support long-term agriculture
- C3 Photosynthesis: Present in most plants, not good at CO2 or H2O conservation but not needed because of plenty moisture in biome
- Plants with drip tips to avoid fungal infection and rotting
- Large, thin leaves

Animals:

- Black and White Colobus Monkey
- Dung Beetle
- Jaguar
- Agouti

Tropical Rainforest



Boreal Forest (Taiga)

Temperature: Cold until growing season, avg 3.6C

Precipitation: Rain in growing season. Most precipitation falls as snow (severe winters) in other months.

Growing season: AMJJASO

Plants:

- **Poor and acidic** soil
- Cold temperatures limit the decomposition of litter, so soils contain a great deal of organic matter
- Abundance of **conifer trees** like spruces, firs, and pines because they are shared like cones so can **slough off heavy loads of snow** to prevent damage
- Conifers have **needles with thick waxy coatings** and **small surface area** to resist cold conditions and minimize water loss
- Trees are **evergreen** because of a short growing season where there is not enough time to drop leaves and rebuild them every year
- Droughts trigger widespread canopy and soil fires that consume the abundant accumulated organic matter.

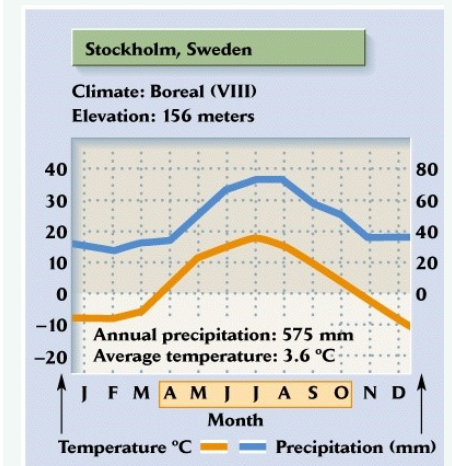
Boreal Forest (Taiga) (cont)

Animals:

- Lynx
- Beaver
- Haire
- Elk

Special: World's largest terrestrial biome. Most in Russia and Canada

Boreal Forest



Tropical Savanna/Seasonal Forest

Temperature: Temperature varies little

Precipitation: Wet/dry seasons. Dry season between May and October. Outside of May and October is wet

Growing season: All year

Plants:

- Tree/grass codominance, often require disturbance to maintain - Dry season makes a "thorn forest" because of many succulents.

Tropical Savanna/Seasonal Forest (cont)

Animals	- Elephant
	- Giraffe
	- Gasselle
	- Eland

Desert

Temperature: Line above precip, avg of 21.9C

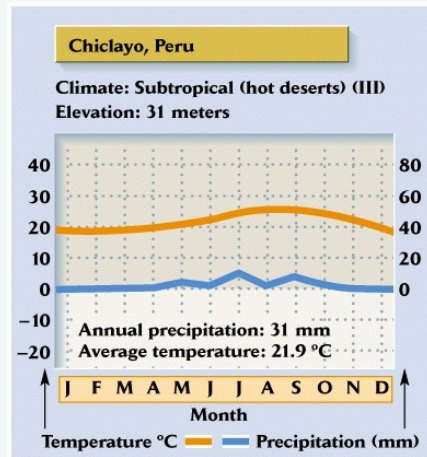
Precipitation: Barely or none

Growing season: All months

Plants: - Plants can leave without water by metabolizing fat to obtain it
 - Plants are thorny and adapted to conserve water (fleshy stems and leaves)
 - Thick cuticles
 - C4 (spatial separation of photosynthesis) and CAM Photosynthesis (temporal separation of photosynthesis)

Animals: - No big mammal because of no shade or water.
 - Dominant mammals are burrowers - Anochetus ant
 - Texas horned lizard - squirts blood from eyes to defend itself because blood taste foul to predators
 - Fat sand rat
 - Greater roadrunner

Desert



Temperate Forest

Temperature: Avg temp 10.8C

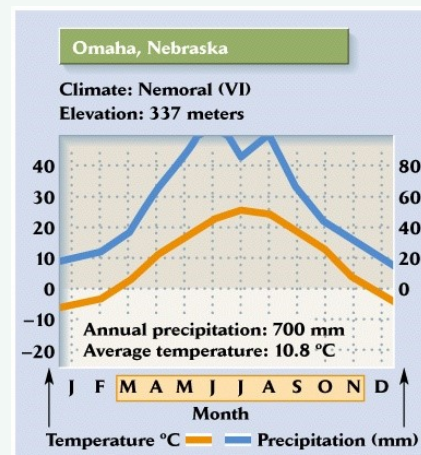
Precipitation: - Summers are moist - Distinct winter season with frost and snow

Growing season: MAMJJASON

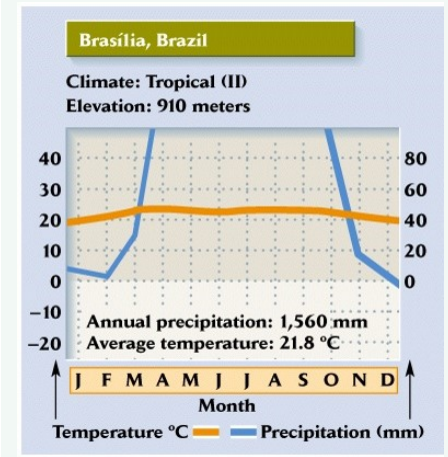
Plants: - Soils are fertile and low acidity

Animals: - Bobcat
 - Grizzly Bear
 - Squirrel
 - Deer

Temperate Forest



Tropical Savanna/Seasonal



Tundra

3 Types: Artic, Antartica, Alpine Tundra

Temperature: Cold, severe winters, avg - 11.9C

Precipitation: Some rain but not much, similar to a desert. Cold air holds little moisture so most moisture is locked up as snow.

Growing season: JJAS - short growing season due to very severe winters

Tundra (cont)

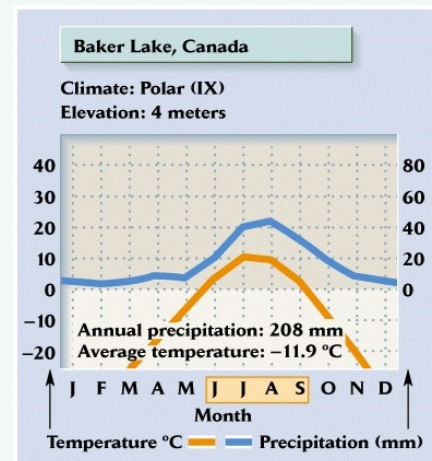
Plants

- Almost no trees due to permafrost
- Permafrost is a massive carbon storage area: with global warming, tundra (which used to be a sink) is now a source of carbon and methane (greenhouse gases)
- Most plants low to ground
- Plants produce anti-freeze protein
- Lichens, moss, heath - Slow decomposition of organic matter, so soil is infertile and low in oxygen

Animals

- Migration of animals out in cold months and in during growing season
- species-poor
- Peary caribou
- Lemming (don't run off cliffs)
- Wolf
- Polar bear

Tundra



Temperate Grassland/Shrubland

Temperature Temp line crosses precipitation line. Hot summers and cold winters

Precipitation Some precipitation

Growing season MAMJJASON

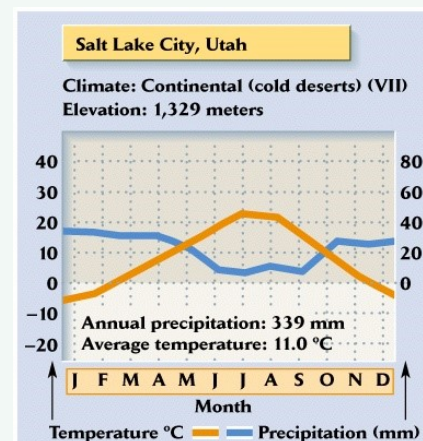
Plants

- Few trees, dominated by grasses - May become forest without disturbances when precipitation is high

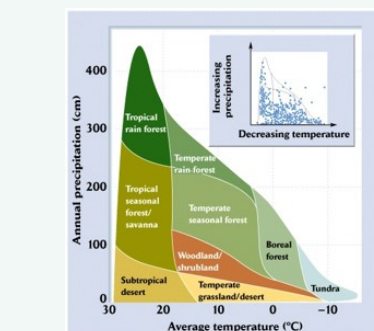
Animals

- Bison
- Kangaroo
- Cheetah
- Prairie dogs

Temperate Grassland/Shrubland



Graph



Patterns

