

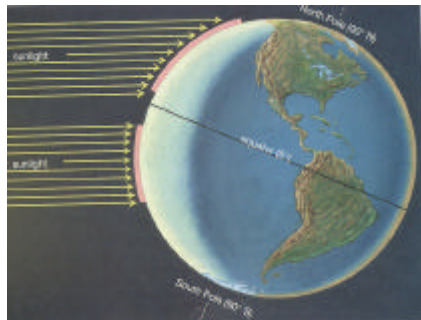
Biomes

What is a Biome?

- Large land areas
- Similar environmental conditions
- Similar plant communities
- Influenced by Rainfall and temperature

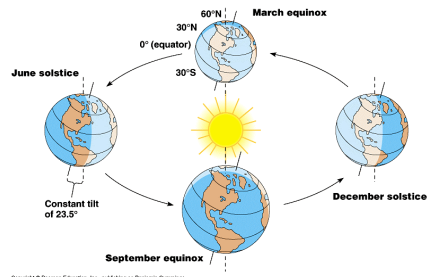
Seasons

Earth's Curvature



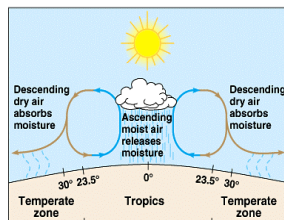
Amount of sunlight per area decreases as you move away from the equator.

Cause of Seasons

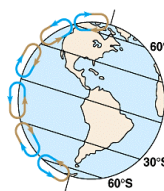


Orbit of the earth around the sun and the tilt of the earth give rise to seasons

Air

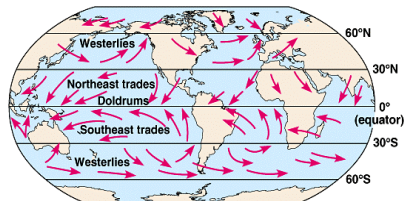


(a) Air circulation and precipitation near the equator



(b) Global air circulation

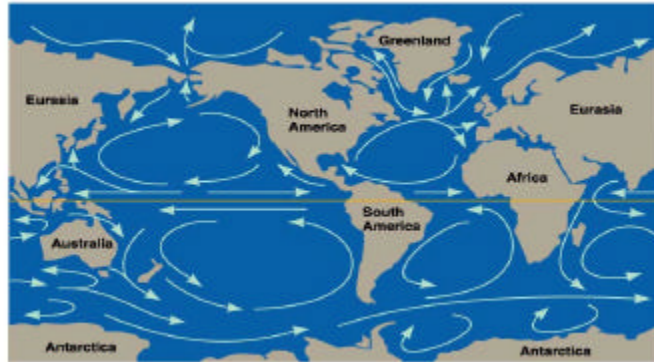
- Warm air rises at the equator
- Cool air descends
- Moves water around the Earth
- Rotation of earth changes Wind patterns



(c) Global wind patterns

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Ocean Currents



- Water moves heat
- Moderates climate

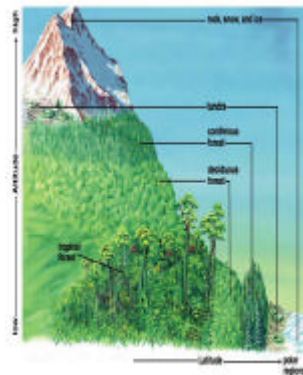
Examples:

The well-known Gulf Stream in the Atlantic and its counterpart in the Pacific, the Kuroshio Current, are strong currents that carry heat northward from the tropics.

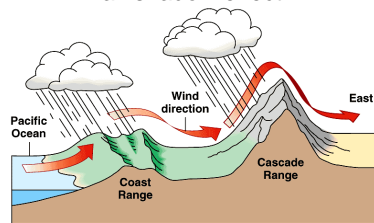
- California current along Oregon Coast (cool water)

Effect of Mountains

Effect of Altitude on biomes

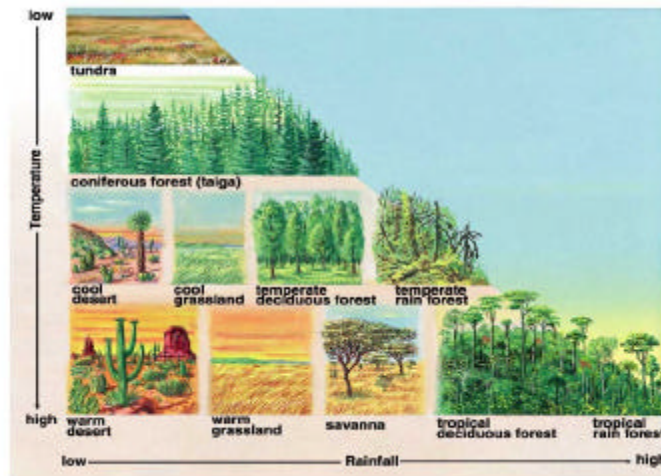


Rainshadow effect

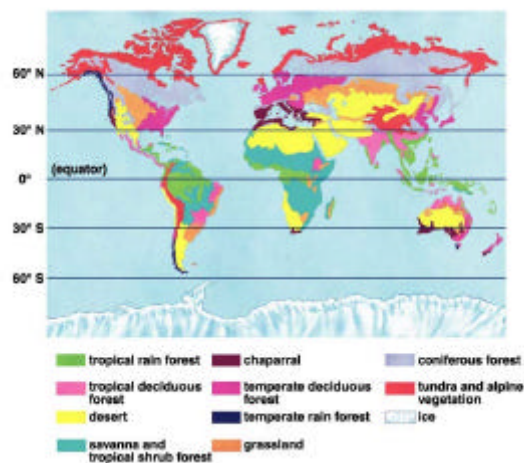


Kamloops, British Columbia

Rainfall & Temperature



Location of Biomes



Terrestrial Biomes

Tundra

Alaska



- Arctic tundra
- Layer of Permafrost (~1.5 ft below surface)
- Can have 24 h of daylight
- Avg below freezing temperatures

Beartooth Mtns, Montana



- Alpine tundra
- On top of Mountains
- Shorter daylengths
- Warmer summer temperatures

Taiga

- Scattered trees
- Short growing season
- Northern Coniferous Forest



Temperate Rain Forest



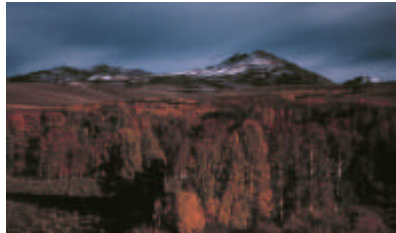
- Hoh Rainforest, Olympic peninsula
- Receives on Avg 125 inches/yr rainfall

Temperate Deciduous Forest

Great Smokey Mtns



- Summer rain
- Freezing temp during winter
- Lose leaves due to freezing damage



Rocky Mtns

Grassland



- Low Rainfall
- Fire and herbivores play a role in maintaining grassland
- Short and Long grass prairie

Chaparral

(Mediterranean Climate)



- Found on west coast of continents
- Hot summers
- Cool wet winters
- Usually above freezing temperatures
- Shrubs

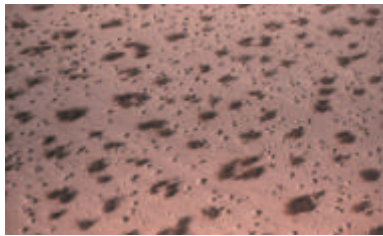
Desert

- Less than 10 inches of rainfall/yr
- Low productivity
- Cold vs warm desert

Mojave Desert-Cold Desert



Warm Desert



Desert

Gila monster



Kangaroo rat



Elf owl



Sidewinder-Rattlesnake



Redwood Forest



- Along California coast
- Summer fog



Tropical Rain Forests



Tropical Rain Forests

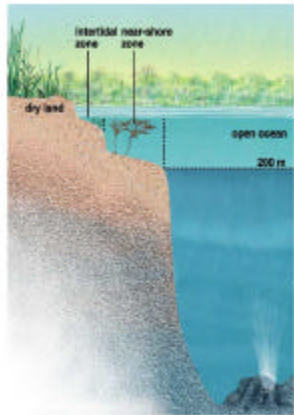


Understory



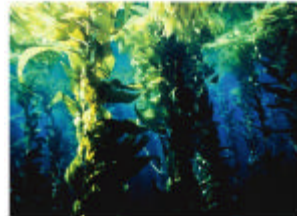
Aquatic Biomes

Ocean



Upwelling on continental shelf

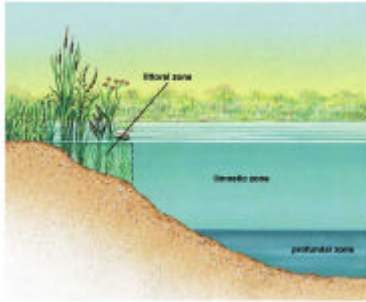
Kelp beds



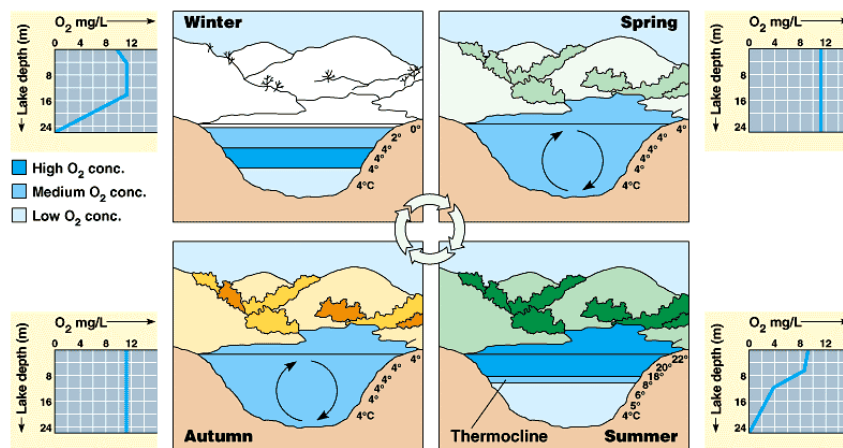
Great Barrier Reef



Freshwater



Seasonal Change in Oxygen Concentration



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