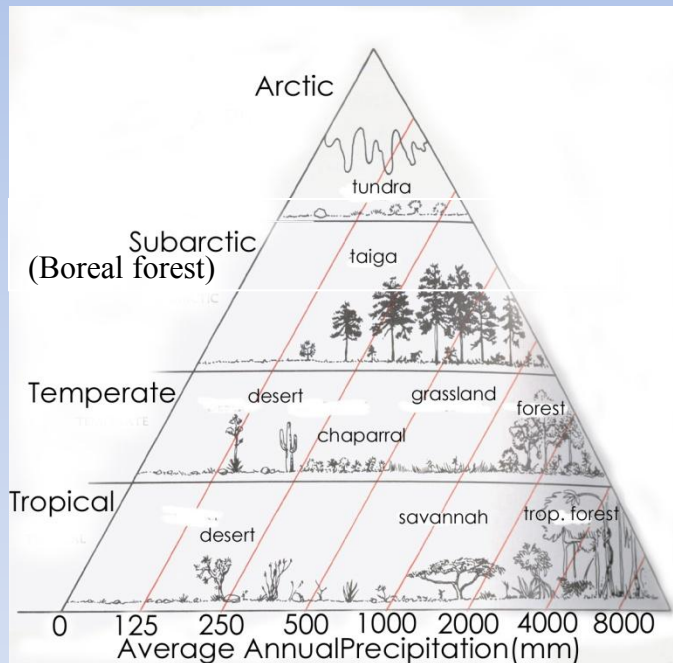


Biomes

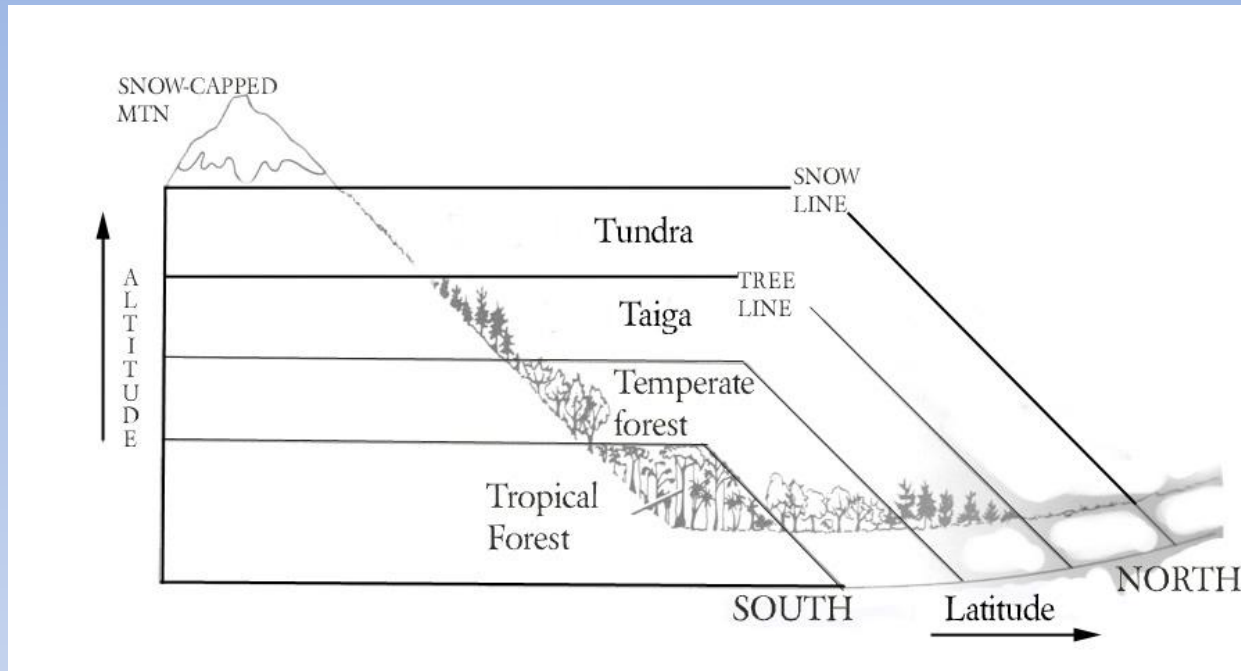
A-Terrestrial Biomes

•**Definition:** categories of characteristic plant life found in different regions on earth.



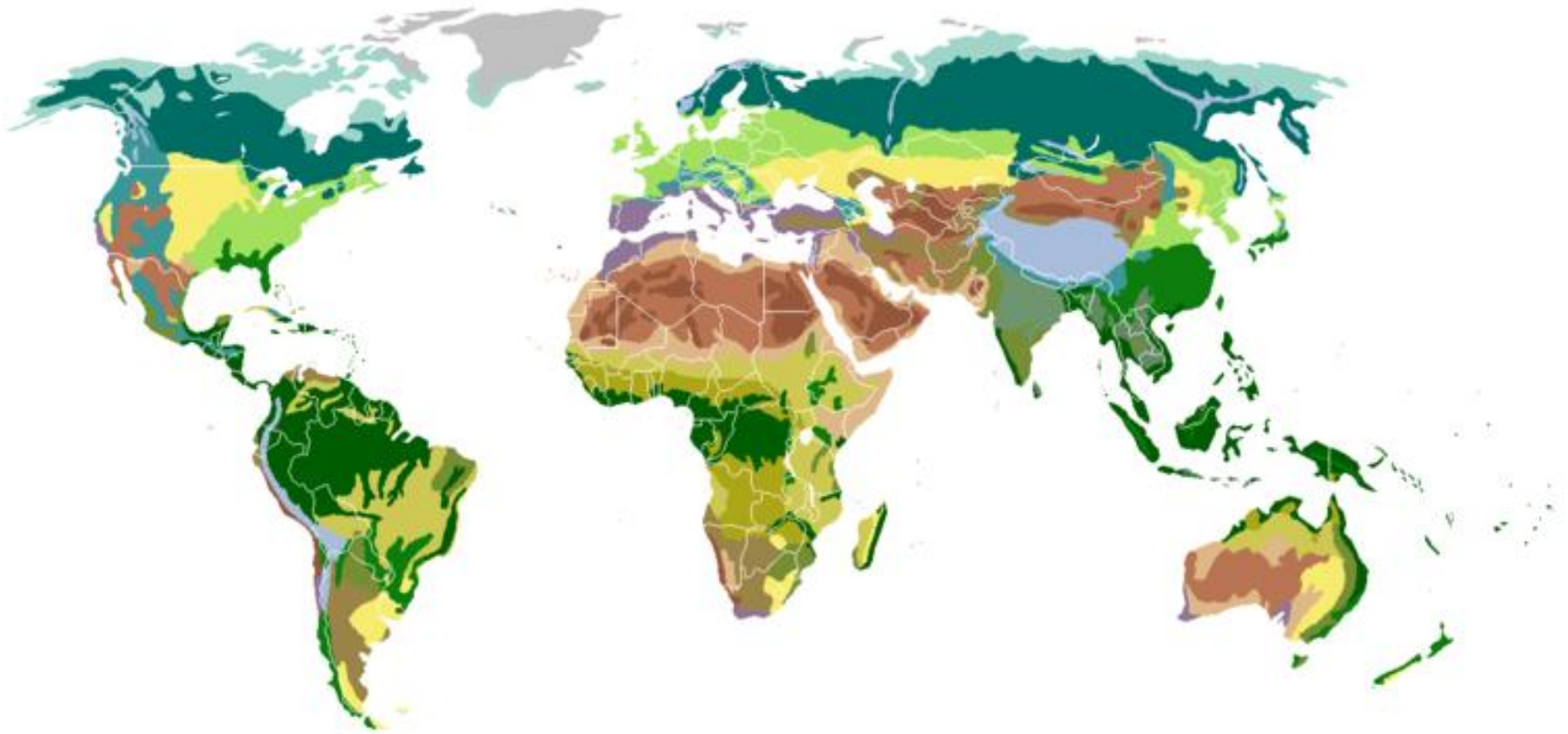
List Earth's 8 terrestrial biomes

1. Tundra
2. Boreal forest
3. Desert
4. Chaparral
5. Grassland
6. Temperate forest
7. Savannah
8. Tropical forest



2. From examining the above 2 diagrams, what **factors** are responsible for creating biomes?

Temperature and precipitation



Example:

What kind of biome probably predominates at 5° latitude and at an altitude of 25 m if precipitation is very high?

Tropical forest

Characteristics of Terrestrial Biomes p57

Tundra



From the Finnish word—*tunturi* = treeless land

Deeper layer of soil = permafrost; permanently frozen

Grasses, stunted shrubs, no trees, moss and lichen--- due to low temperature

Boreal forest



Characteristics: evergreens (lots of black spruce), acidic soils ,lakes, marshes; temperature and moisture are too low for temperate forests. Evergreens are better at conserving water and resisting cold.

Desert



Plant life—examples cacti and stonecrops—
adapted to extreme temperatures and low precipitation.



© Bruce G. Marcot



Grassland



Consist of mostly grass; biomes receive more precipitation than deserts but not enough to sustain forests. Temperature >than boreal forest area.

Chaparral



Plants are adapted to mild, wet winters and hot dry summers

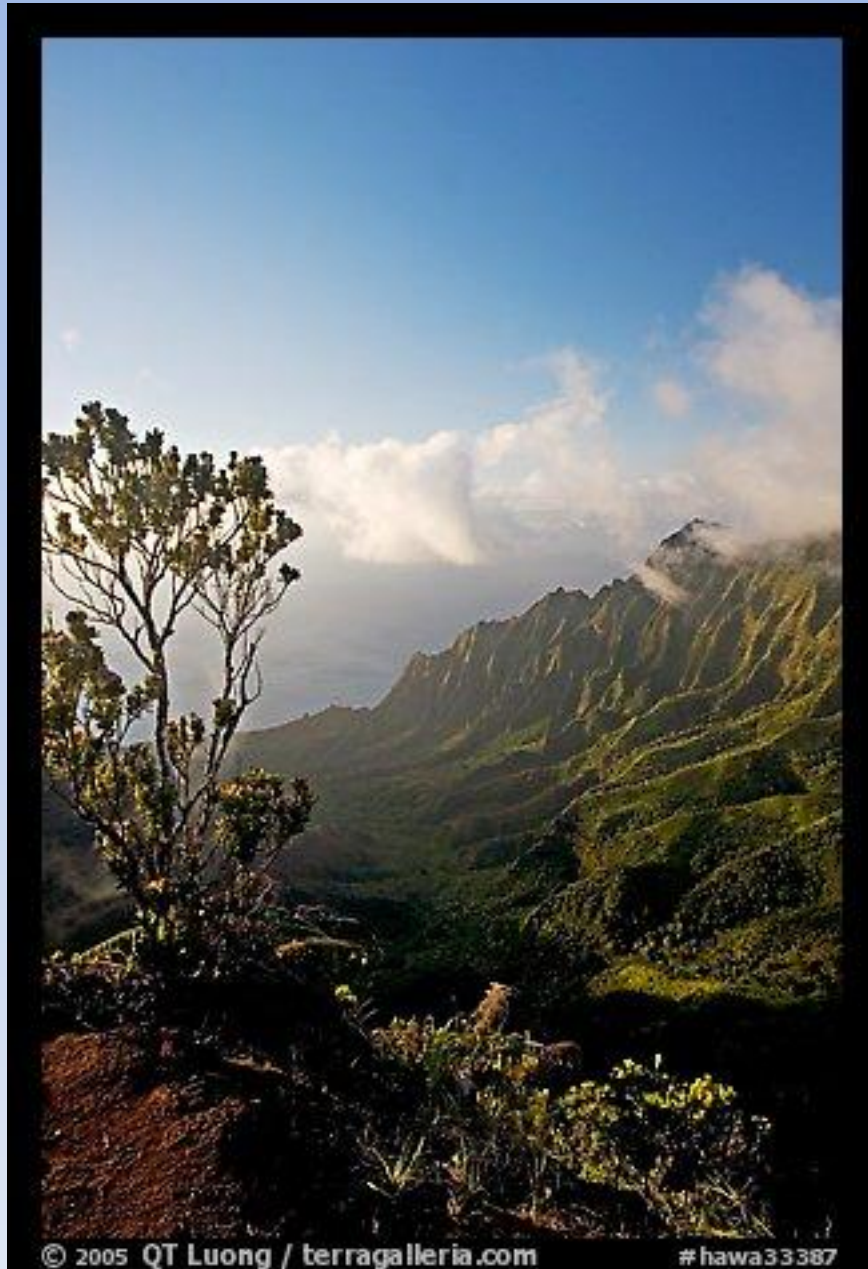


Temperate Forest



Dominated by deciduous trees: grow in summer, shed in fall, dormant in winter and flower in spring

Tropical Forest



Rainforests are characterized by high rainfall. This results in poor soils due to loss of soluble nutrients

Foliage on plants is often lush.

B-Marine Biomes p58

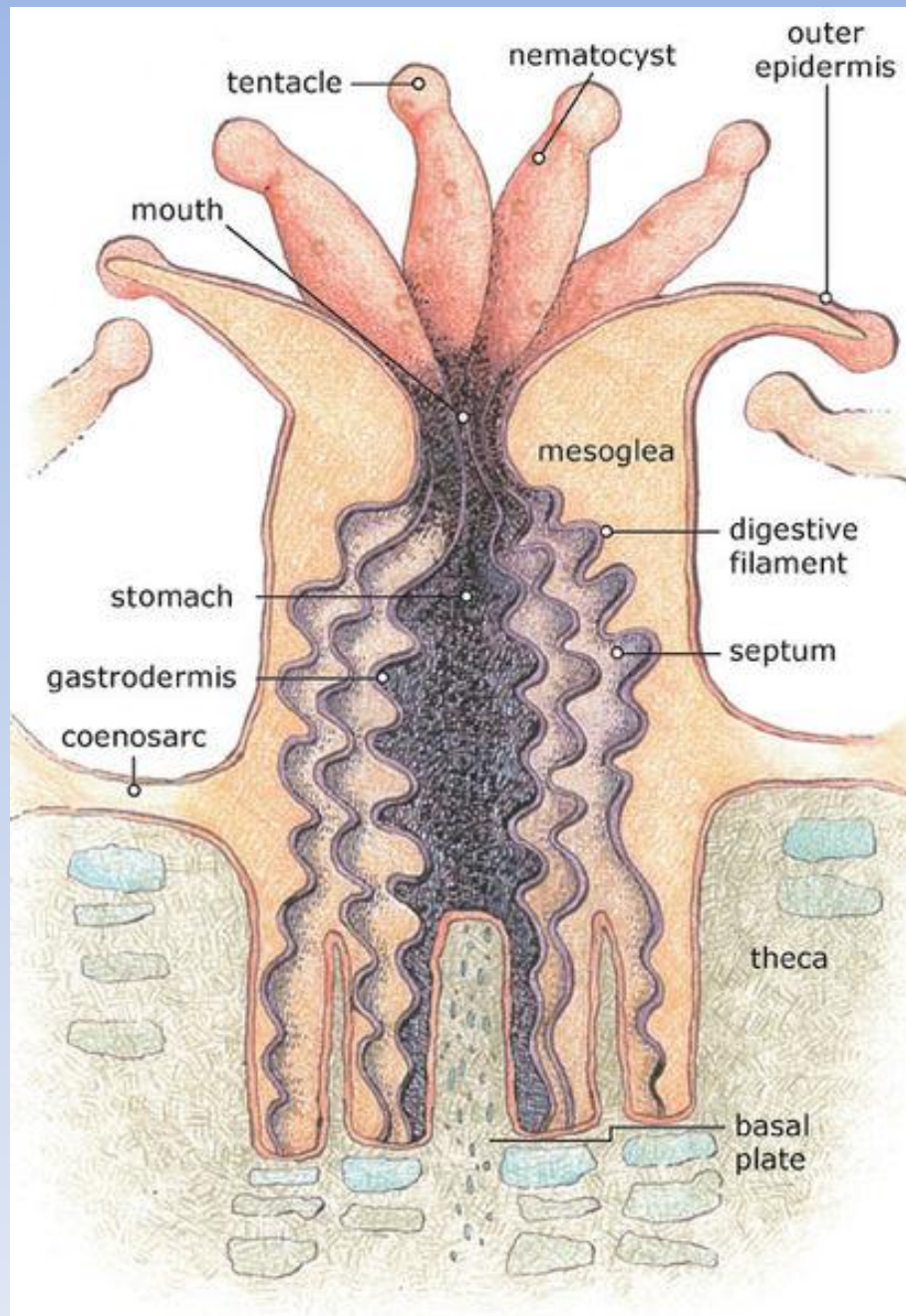
Nutrients and water clarity (turbidity) are two factors that influence the type of aquatic biome.

Can you think of two other and more obvious factors?

Salt concentration and temperature

1. Coral Reefs Coral reefs are found around the globe in warm waters. Corals cannot stand temperatures that drop much below an average temperature of 18°C. This limits their habitat to waters between 23°N and 23°S latitude. But, while latitude is important, so too is the current.
- The essence of what makes the coral reef work is the presence of a unique symbiosis with unicellular algae called zooxanthellae. These zooxanthellae help the coral by giving the coral the by-products(sugars) of their photosynthetic activity. Corals help the zooxanthellae by providing them with an environment to live.





2. Estuaries An estuary is a partially enclosed body of water formed where freshwater from rivers and streams flows into the ocean, mixing with the salty sea water.

Estuaries and the lands surrounding them are places of transition from land to sea, and from fresh to salt water.



Add to notes: turbidity leads to recycling of nutrients → promotes growth of plankton(floating organisms)

3. Oceans represent the largest and most diverse of the ecosystems; salt water evaporates and turns to rain which falls on the land regions, while most of the oxygen in our atmosphere is generated by algae. Algae are also responsible for the absorption of large amounts of carbon dioxide from our atmosphere.



Examples: p59

a) Why can't a coral grow in an estuary?

low salt concentration; too cold

b) Can there be coral off the coast of Newfoundland?

Too cold

c) Algae growing several miles from the coastline may not be able to survive in an estuary? Why not?

There is more turbidity in the estuary; different salt concentration; temperature is usually higher in estuary

d) Coral reef bleaching, the whitening of corals, results from the loss of symbiotic zooxanthellae and/or a reduction in photosynthetic pigment concentrations in zooxanthellae. What human activities can possibly cause this?

Increased concentration of CO₂ leads to slight acidification of ocean water

C- Freshwater Biomes p60

1. Lakes

Example 1

What are the characteristics of a lake?

Surrounded by land and fed by springs, rivers and precipitation



Example 2

Why are shorelines so important to lakes?



Plant life filters runoff; provides shelter for animals

2. Wetlands

Example 1

What are the characteristics of wetlands?



Land almost permanently covered with water.

Example 2

What are the three types of wetlands?

1. Marsh---no trees
2. Swamp—has trees and shrubs
3. Peat bogs---covered with moss





3. Rivers



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Example 1 What are the characteristics of a river?

- Has a source at a higher altitude, so gravity causes the water to flow
- Plants have to adapt themselves to the current
- Moss and grasses can grow

Example 2 Common pollutants?

Phosphates and nitrates from farming and sewage can lead to eutrophication when the river flows into a lake or estuary.

