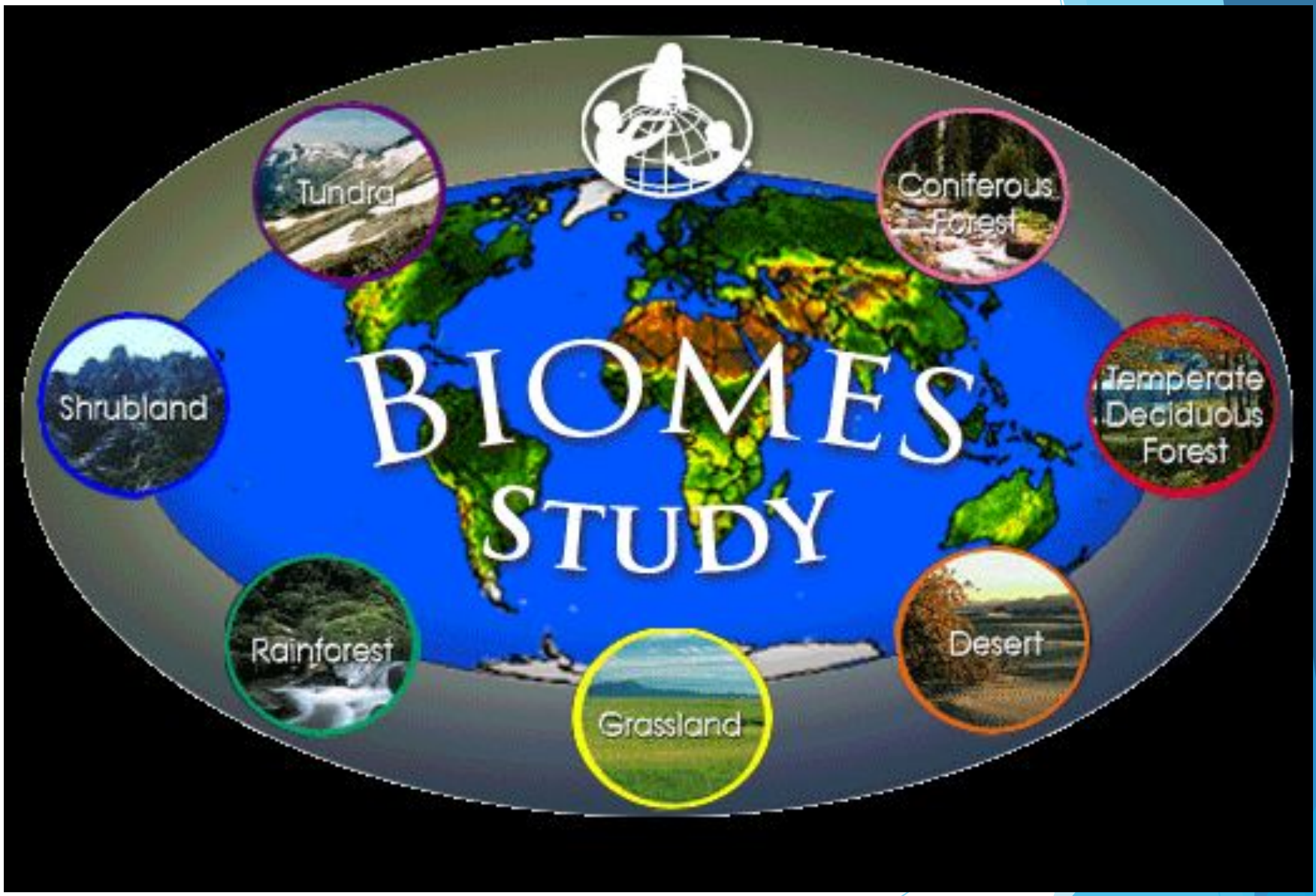
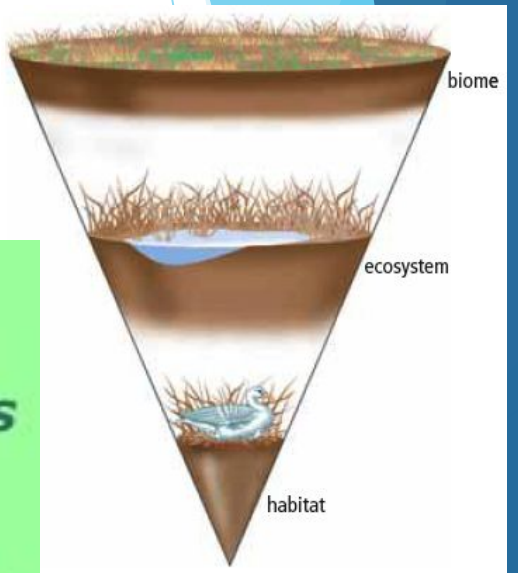

Tundra
Coniferous Forest
Shrubland
Temperate Deciduous Forest
BIOMES STUDY
Rainforest
Desert
Grassland

Biomes, Biotic, Abiotic

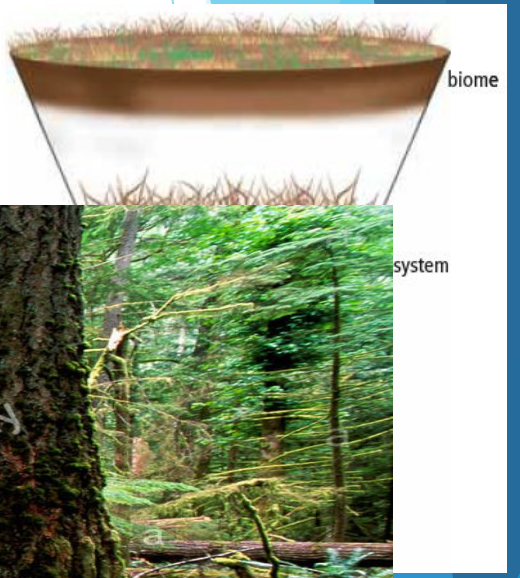
- ***BIOMES*** are large regions with similar biotic and abiotic components.
  - ***BIOTIC*** = living things (ex. Plants)
  - ***ABIOTIC*** = non-living things
    - (ex. Soil))



Biomes

- If the ***BIOTIC*** and ***ABIOTIC*** conditions are the similar – The same biomes can exist even if they are far apart.

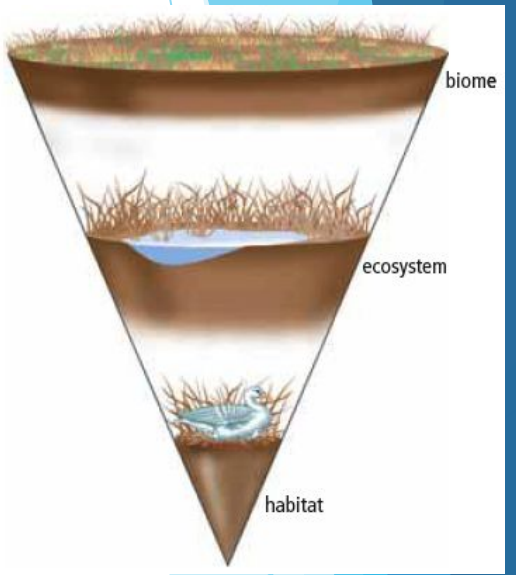
e.g. the Temperate Rainforest Biome can be found in Vancouver and in



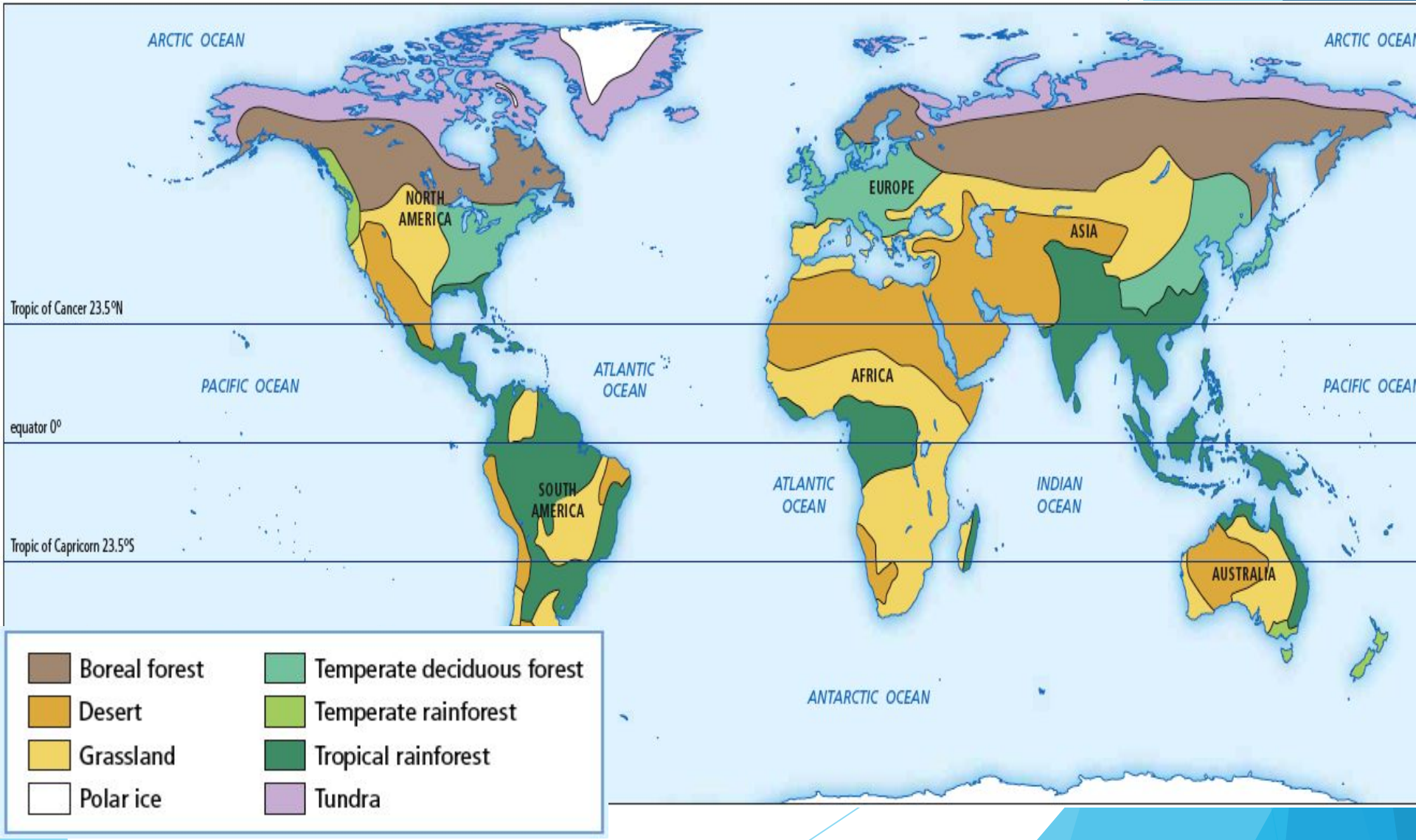
- Quick check 1

Terrestrial Biomes

- There are 8 major terrestrial biomes
  1. boreal forest
  2. desert
  3. grassland
  4. permanent ice
  5. temperate deciduous forest
  6. temperate rainforest
  7. tropical rainforest
  8. tundra



(p. 11) Observing Patterns in World Biomes



Virtual biomes

- https://askabiologist.asu.edu/explore/Virtual-360-Biomes

Adaptations and Biomes

- Biomes are often identified with characteristic ***BIOTIC FACTORS*** (e.g. *plants and animals)*
  - For example:
    - a cactus in the desert
    - a caribou on the tundra
  - Many of these plants or animals special ***ADAPTATIONS***

    for that biome.

Adaptations and Biomes

1. ***STRUCTURAL*** adaptation - a physical feature that helps an organism survive.
   - *A wolf has large paws to help it run in snow.*

- Quick check 4

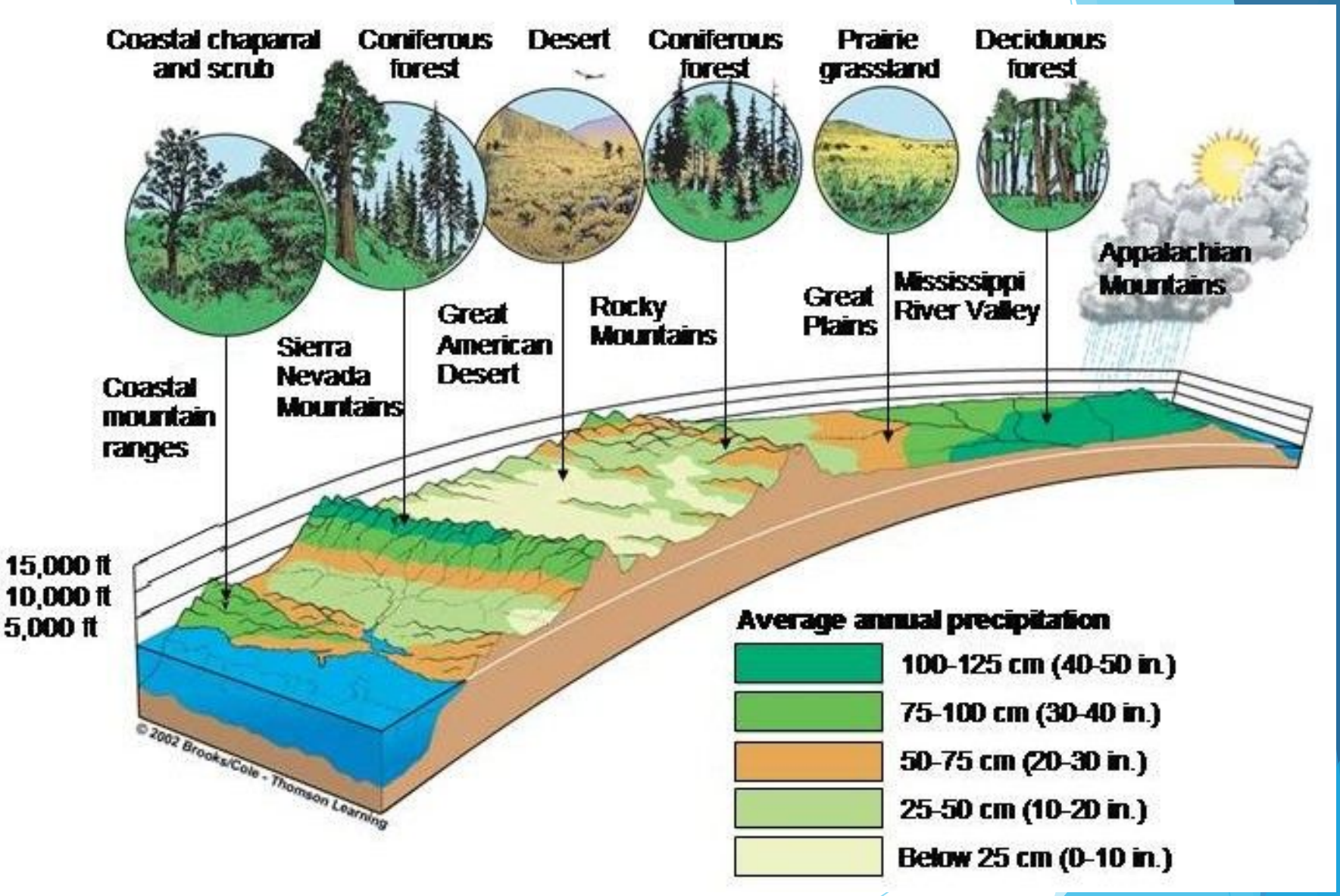
Adaptations and Biomes

- 2. **PHYSIOLOGICAL** adaptation - a physical or chemical event inside the body of an organism that allows it to survive.
  - *A wolf maintains a constant body temperature.*

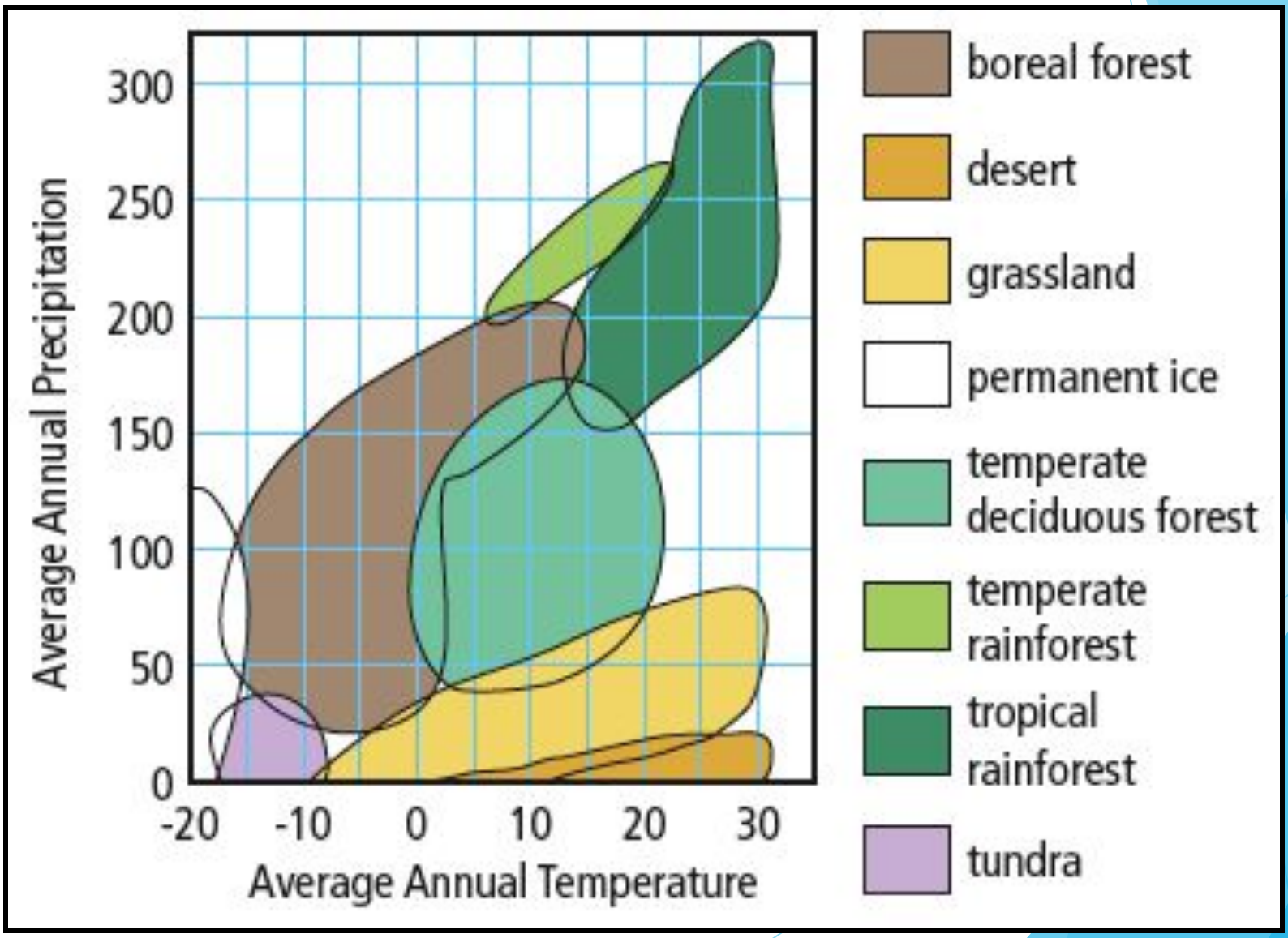
Adaptations and Biomes

3. **BEHAVIOURAL** adaptation - a behaviour that helps an organism to survive in its environment.
   - *A wolf hunts in packs to capture large prey.*

- Biomes are classified based on many qualities, such as:
- - ***TEMPERATURE***
- - precipitation
- - the organisms that live there


Coastal chaparral and scrub
Coniferous forest
Desert
Coniferous forest
Prairie grassland
Deciduous forest
Appalachian Mountains
Mississippi River Valley
Great Plains
Rocky Mountains
Great American Desert
Sierra Nevada Mountains
Coastal mountain ranges
15,000 ft
10,000 ft
5,000 ft
© 2002 Brooks/Cole - Thomson Learning
Average annual precipitation
100-125 cm (40-50 in.)
75-100 cm (30-40 in.)
50-75 cm (20-30 in.)
25-50 cm (10-20 in.)
Below 25 cm (0-10 in.)

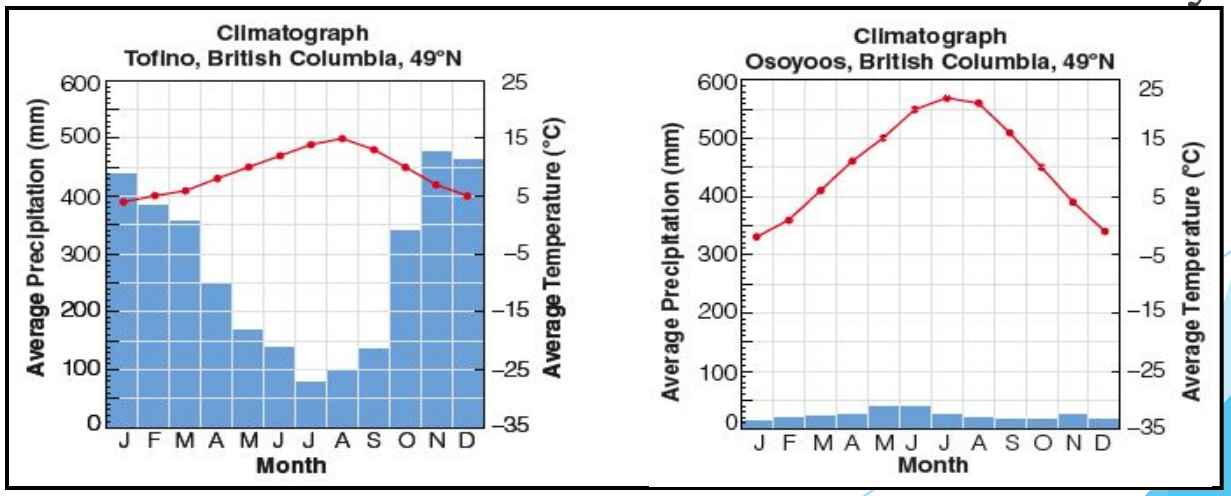
Annual Average Temp. & Precipitation Graph



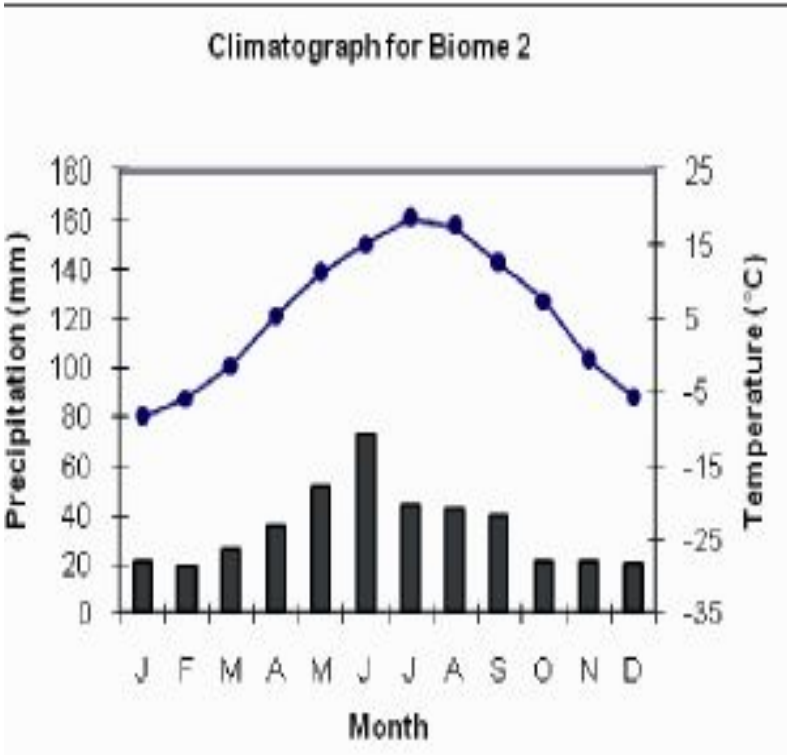
- Quick check 2

Climatographs

- ***CLIMATE*** refers to the average pattern of weather conditions in a region over a period of several years.
  - A ***CLIMATOGRAPH*** shows the *average monthly temperature* and *precipitation* for a location over a period of 30 years or more.
- Biomes are often defined using information in climatographs.
  - Examine the differences between Tofino and Osoyoos



Reading a Climatograph



Find the:

1. warmest avg. monthly temp.
2. month with the warmest avg. temp.
3. coldest avg. monthly temp.
4. month with the coldest avg. temp.
5. driest month & total amount of precipitation for this month
6. wettest month & total amount of precipitation for this month
7. start & end of growing season *(months where temps. first rise above / fall below 5˚C)*

Infer the biome that is represented by this climatograph.

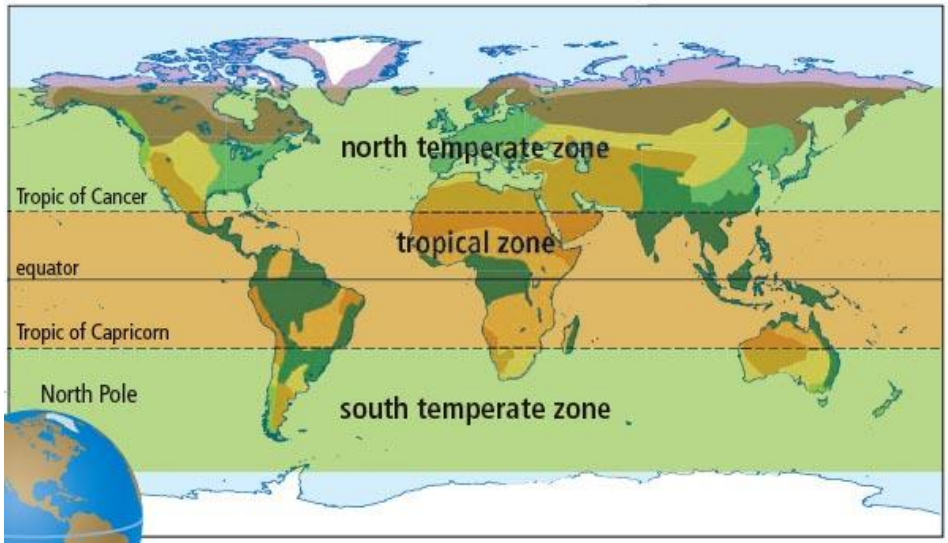
- Quick check 3

- Biomes are also impacted by:
  - latitude
  - ***ELEVATION***
  - ocean currents

Latitude

- Latitude is the distance from the equator.
- Latitude influences both *temperature* and *precipitation*.
- The ***TROPICAL ZONE,*** the sun is directly overhead, □ very warm temperatures and lots of precipitation.

- Sun's rays spread out over larger S.A. in the ***TEMPERATE ZONES***, so rays are less intense and temperatures are lower than at the equator



Elevation

- Higher elevations have less air *(thinner atmosphere)*, therefore less heat is retained.
- ***WINDWARD*** sides of mountains are wet
- ***LEEWARD*** sides of mountains are very dry *(air warms, so it absorbs water □ dry land)*

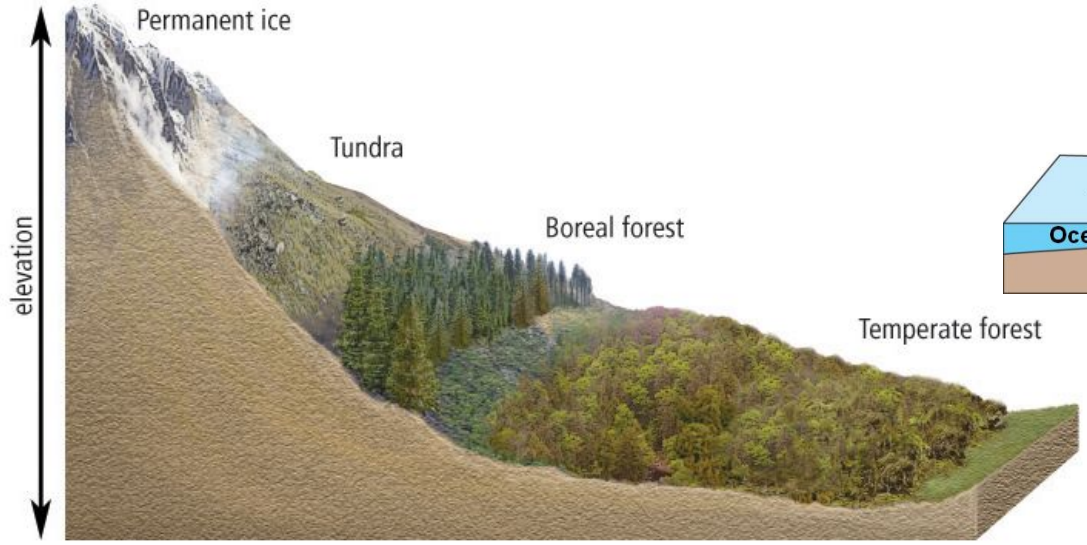
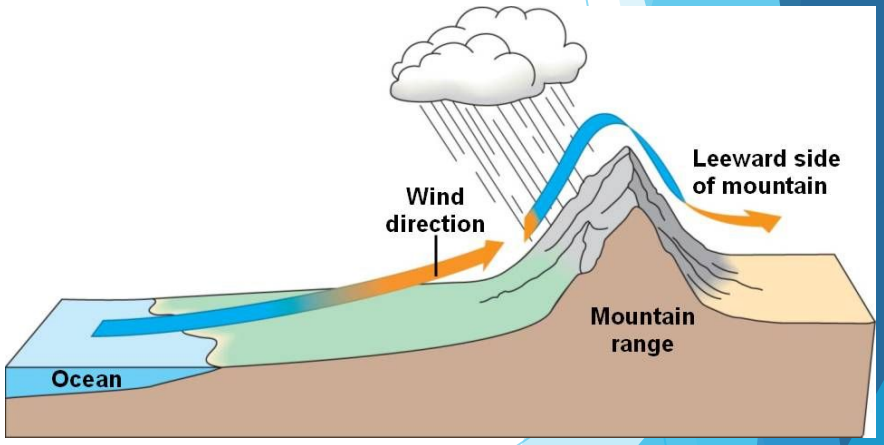
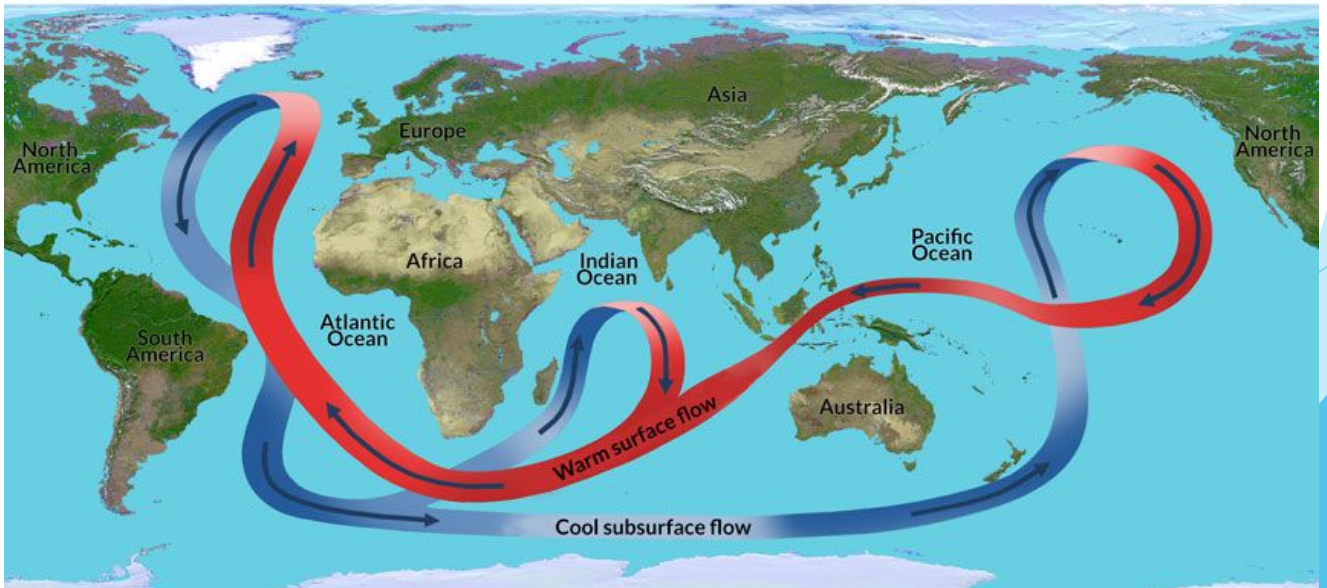


Figure 1.8 The effects of elevation



Factors That Influence the Characteristics and Distribution of Biomes (continued)

- ***OCEAN CURRENTS*** also affect temperature & precipitation.
  - carry ***WARMTH*** and ***MOISTURE*** to coastal areas
  - where warm currents meet land, temperate biomes are found