

CORNELL NOTES

Directions: You must create a minimum of 5 questions in this column per page (average). Use these to study your notes and prepare for tests and quizzes. Notes will be stamped after each assigned sections (if completed) and turned in to your teacher at the end of the Unit for scoring.

UNIT 5: ECOLOGY

Chapter 15: The Biosphere

I. Life in the Earth System (15.1)

A. The biosphere is the portion of the Earth that is inhabited by life

1. **Biosphere**- part of Earth where _____ exists

a. Includes all _____ and _____-living parts

b. Biota- collection of just living things in biosphere

2. Earth has _____ major connected systems

a. **Biosphere**

b. _____ - all of Earth's water, ice, water vapor

c. _____ - the air blanketing Earth's solid and liquid surface

d. _____ - features of Earth's surface (continents, rocks, sea floor, and everything below Earth's surface)

B. Biotic and Abiotic factors _____ in the biosphere

1. All four of Earth's systems are _____ to another

2. _____ **hypothesis**- Earth itself is kind of a "living organism"

II. Climate (15.2)

A. **Climate** is the prevailing weather of a _____

1. _____ - day to day conditions

2. **Climate**- _____ term pattern of weather conditions

B. Key factors that shape an area's climate

1. _____ - key factor

2. _____

3. _____ (moisture)- key factor

4. _____

C. _____ - climate of a small specific place within larger area.

1. Can be very _____ to living things

2. Can be very _____ or _____ area

D. Earth has three main _____ **zones**

1. Use average _____ and _____ to categorize

a. **Polar zone** -in far northern and southern regions

b. **Tropical zone**- surrounds the _____

c. **Temperate zone**- wide area between _____ and _____ zones

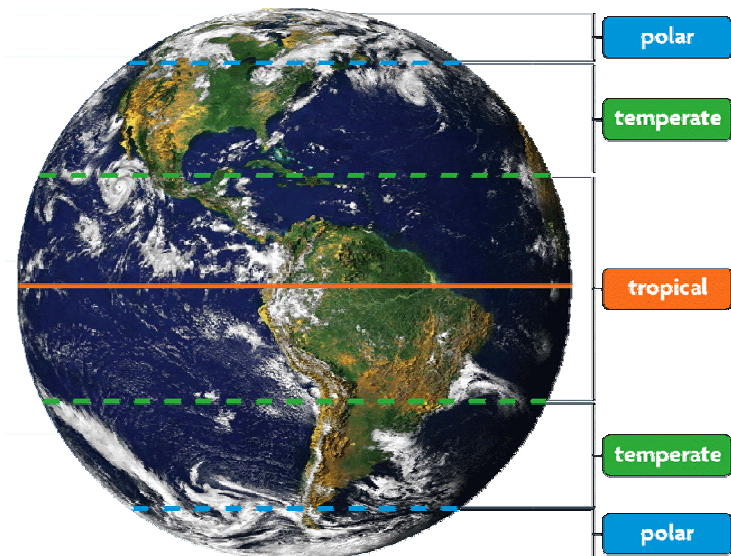
2. Influence of sunlight

a. Earth's surface _____ unevenly

1). Hottest portion where ____ strikes directly

2). **Curved** shape causes _____ heating

3). Earth _____ on its axis and this also plays a role in seasonal changes



3. Air and Water Movement

a. Sun also warms _____ and _____

b. **Uneven heating** causes _____ and water _____

c. **Warm air** (and water) _____ and **cold air** (and water) _____

d. Also affects amount of _____
(warm air holds more water than cold air)

4. **Landmasses**- also _____ climate

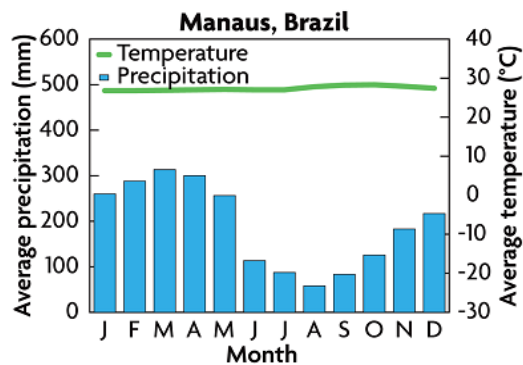
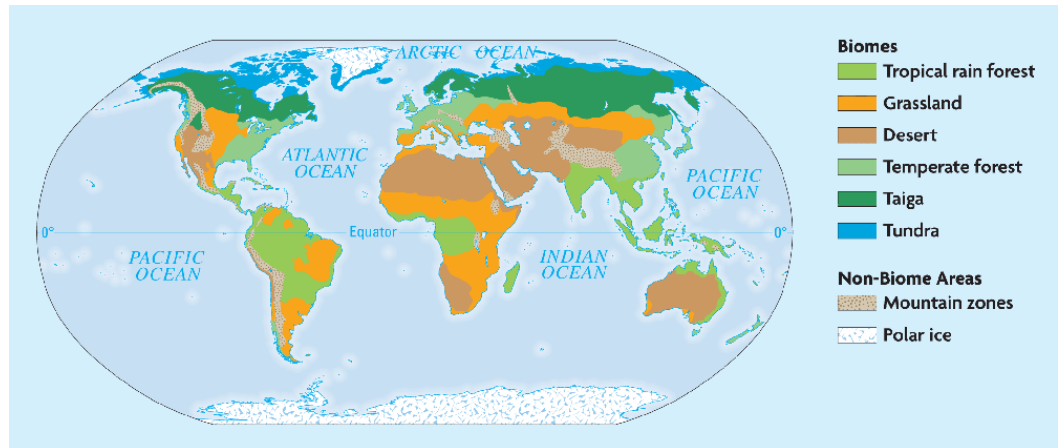
a. **Coastal** areas tend to have smaller changes in _____ (moderated by _____)

b. **Mountains** have large effect on climate- causes _____

5. Adaptation to Climate- Many organisms **adapted** to _____ in specific climate

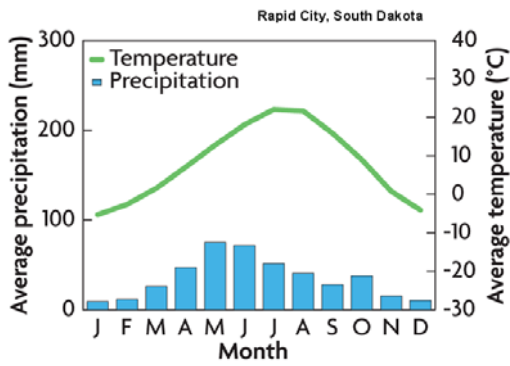
III. Biomes (15.3)

A. Earth has 6 major biomes- Each biome characterized by certain set of _____ **factors**, _____



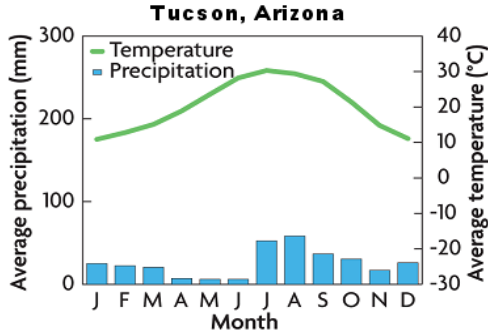
Source: World Meteorological Organization

1. **Tropical Rain Forest Biome**-
_____ temperatures, abundant
_____ all year, lush
forests



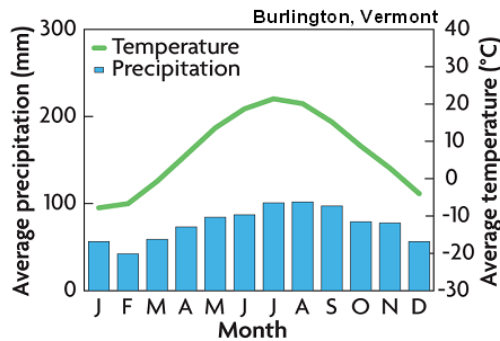
Source: National Oceanic Atmospheric Administration

2. **Grassland Biome**- primary plant life is _____. Occurs in variety of _____



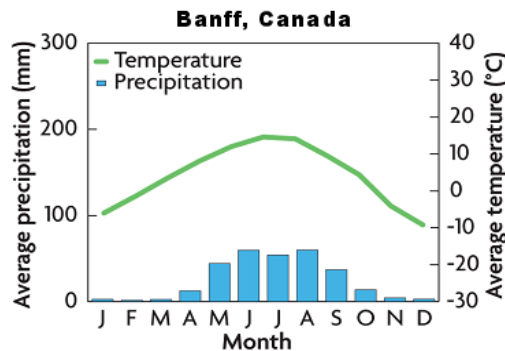
Source: National Oceanic Atmospheric Administration

3. **Desert Biome**- _____ environment, _____ precipitation, four types: hot, semi-arid, coastal, and cold



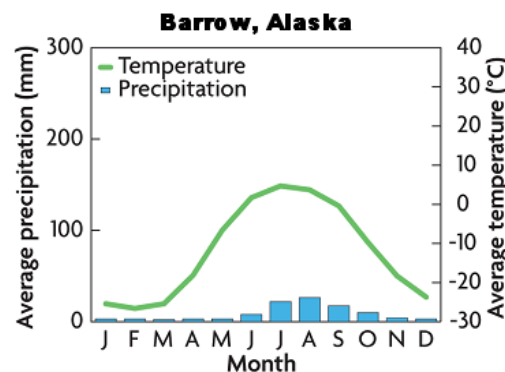
Source: National Oceanic Atmospheric Administration

4. **Temperate Forests**- Include deciduous forests and rain forests. Temperate deciduous forests have _____ summers and _____ winters. Deciduous trees are the dominant plant species



Source: Environment Canada

5. **Taiga**- Found in cool northern climates. _____ winters, short summers. Small amount of _____



Source: National Oceanic Atmospheric Administration

6. **Tundra**- Far northern latitudes with long winters (10 months) limited precipitation, _____

7. **Minor biomes**- example: _____ - hot, dry summers and cool, moist winters

B. Polar ice caps and mountains are _____ considered biomes

1. **Polar ice caps**- have no _____ and do not have specific _____ community

a. Found at _____ (north and south)

b. Most animals depend on _____ for food

IV. Marine Ecosystems (15.4)

A. The ocean can be divided into zones

1. Ocean Zones

a. Divided into open sea (_____) and ocean floor (_____ zone)

b. Divided between areas that receive light (_____ zone) and those that do not (_____ zone)

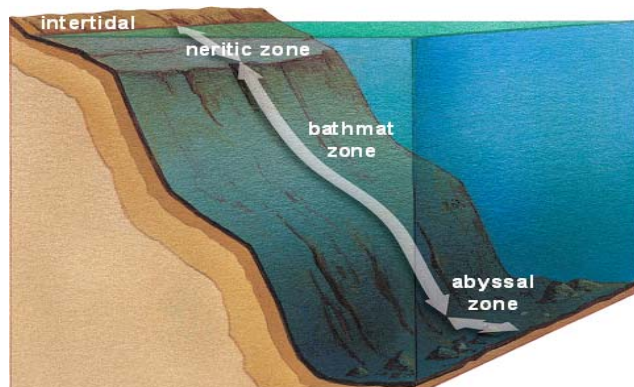
c. Ocean also separated into zones using _____ from shoreline and water depth

1). _____ **zone**- between high and low tide lines

2). _____ **zone**-extends from intertidal out to edge of continental shelf

3). _____ **zone**- extends from edge of neritic zone to base of continental shelf

4). _____ **zone**- lies below 2000 meters and is in complete darkness



d. Life in Neritic Zone- only 1/10th of ocean but contains majority of _____ (Most biomass consists of _____)

B. Coastal waters contain unique habitats

1. _____ **Reefs**- found within tropical zone and contains large diversity

2. **Kelp Forests**- found in _____, nutrient rich waters

V. Estuaries and Freshwater Ecosystems (15.5)

A. Estuaries are _____ environments where rivers flow into the _____

1. **Estuary**- partially enclosed body of water formed where a _____ flows into the _____

a. Mix of _____ and _____ water

b. River carries lots of _____

c. Large numbers of species thrive and are highly _____ ecosystems

d. Provide **refuge** for many species and _____ grounds

e. Over ____% of estuaries have been lost to land development

B. Freshwater ecosystems include moving and standing water

1. Freshwater ecosystems- rivers, streams, wetlands

2. among most _____ ecosystems on Earth

C. Ponds and lakes share common features

1. Smaller in size than oceans, but also divided into zones

a. _____ **zone**- between low and high water marks

b. _____ **zone**- open water farther out from shore

c. _____ **zone**- bottom of lake or pond where less _____ reaches