

Basics of Ecosystems



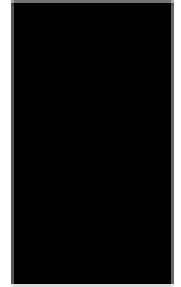
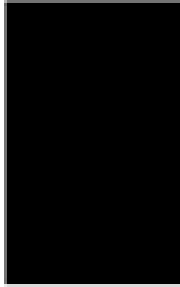
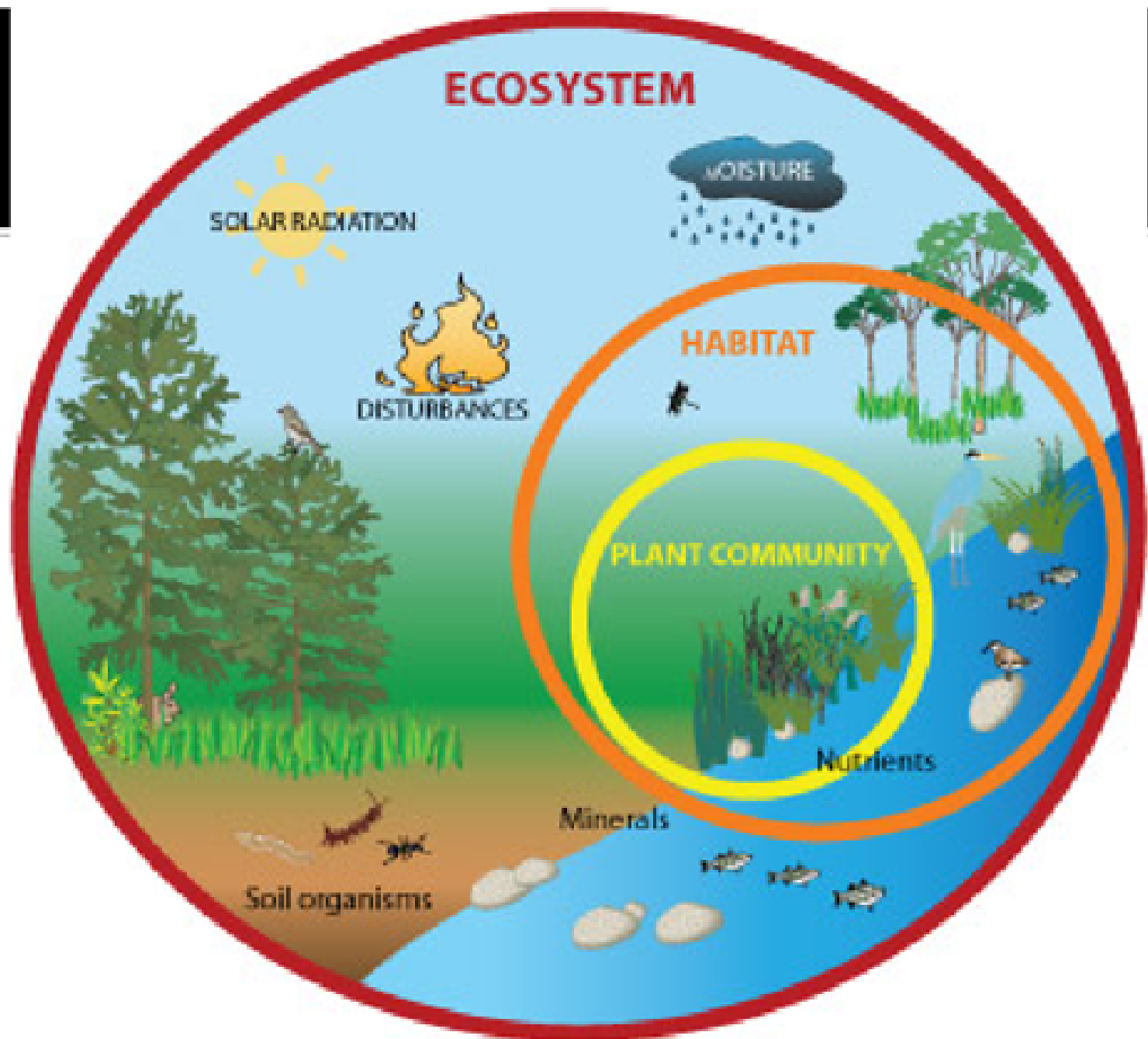
- Animation – *What is Ecology?*
- Video – Introduction to Ecology

Ecosystems

- An **ecosystem** includes all of the interacting parts of a biological community and its environment. This includes the organisms living in that area and their interactions with each other and their interactions with the environment.

Ecosystems

- Aquatic Ecosystems *Water based*
 - Lakes, rivers, oceans, etc.
- Terrestrial Ecosystems *Land based*
 - Tropical rain forest, prairies, boreal forest, desert, etc.



Components of Ecosystems

ECOSYSTEMS ARE MADE UP OF BIOTIC AND ABIOTIC FACTORS

Biotic Factors

- Living parts of an ecosystem
- Includes all organisms (plants and animals) and their interactions
- Example: symbiosis, predation, competition

Abiotic Factors

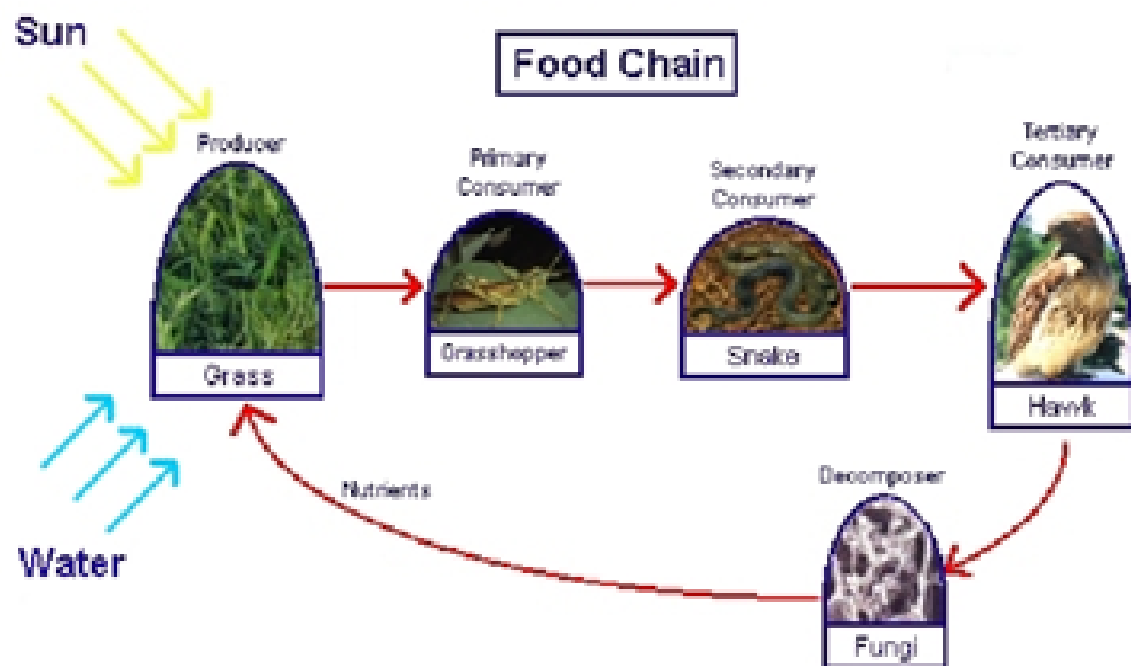
- Non-living parts of an ecosystem
- Includes water, oxygen, light, nutrients, soil, temperature

Energy and Nutrient Transfer

- Energy and nutrients transfer from organisms as they are consumed
- Transfer of energy is shown using a **food chain**
 - Sequence of living organisms tied together by feeding and energy transfer relationships

Food Chain

- Arrows show the transfer of energy from one organism to another
- The organism that eats the other organism gets the energy and has the arrow pointing toward it



Food Web

- A food web shows the multiple connections within an ecosystem

Food Chain

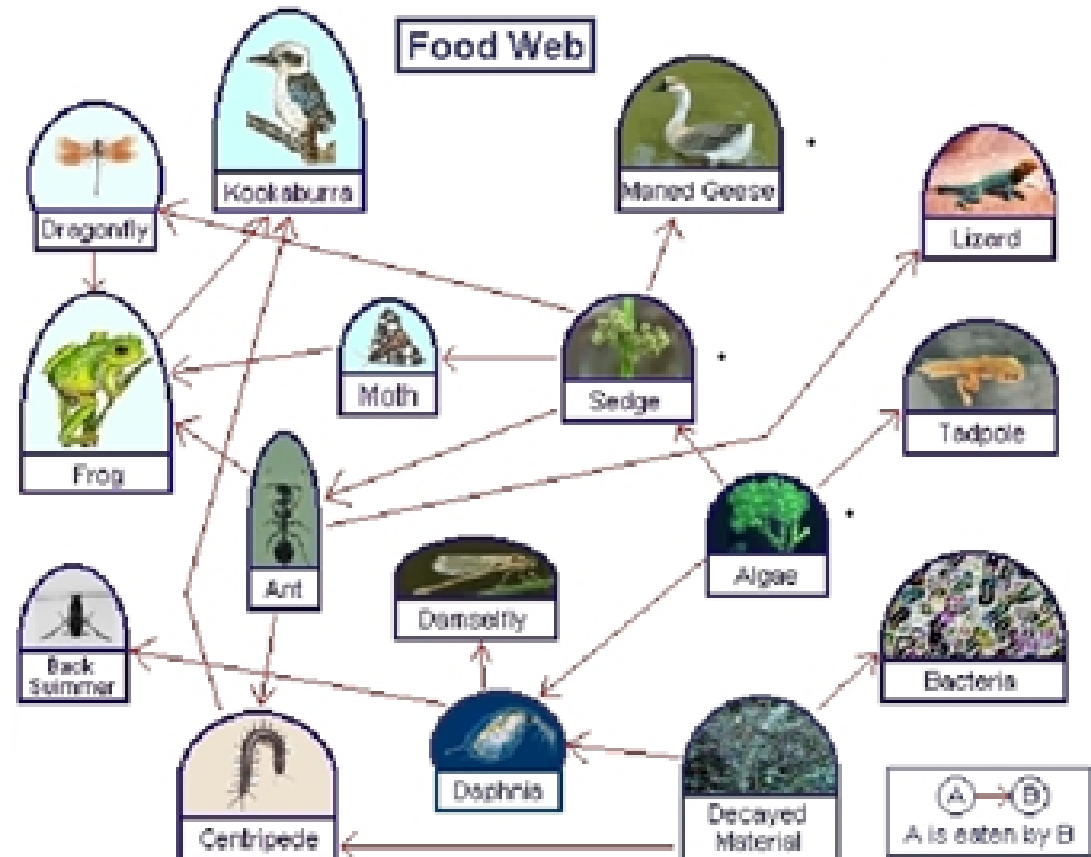
algae



Sedge



Maned geese



Producers: Green plants that are capable of “producing” their own energy – Usually through a process known as photosynthesis.



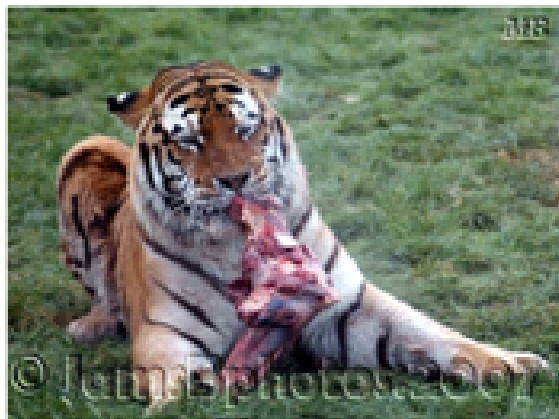
Consumers: animals who ingest other animals or plants to receive their energy.



Primary Consumers: Animals who eat producers (plants), such as rabbits and deer. They are also known as **herbivores**.



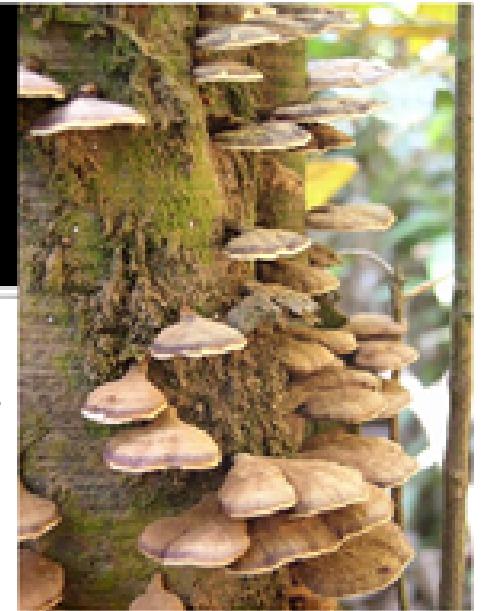
Secondary Consumers: Animals that eat herbivores such as foxes and wolves. They are also known as **carnivores** if they eat only meat and **omnivores** if they eat both plants and animals.



Tertiary Consumer – Top carnivore in the food chain.



- Many organisms do not get eaten until after they have died.



- When they (living things) die, energy still remains in the tissues of their bodies.
- *Decomposers* break down the cells and extract the last remaining energy.

- *Scavengers* feed on larger dead animals.
- *Detritivores* feed on smaller dead animals, dead plant matter, and dung.



To Do:

- Draw three food chains including one chain that you are a part of.
- Label your food chains using the following terms:
 - Herbivore
 - Top Carnivore
 - Producer
 - Primary Consumer
 - Secondary Consumer
 - Tertiary Consumer (if available)