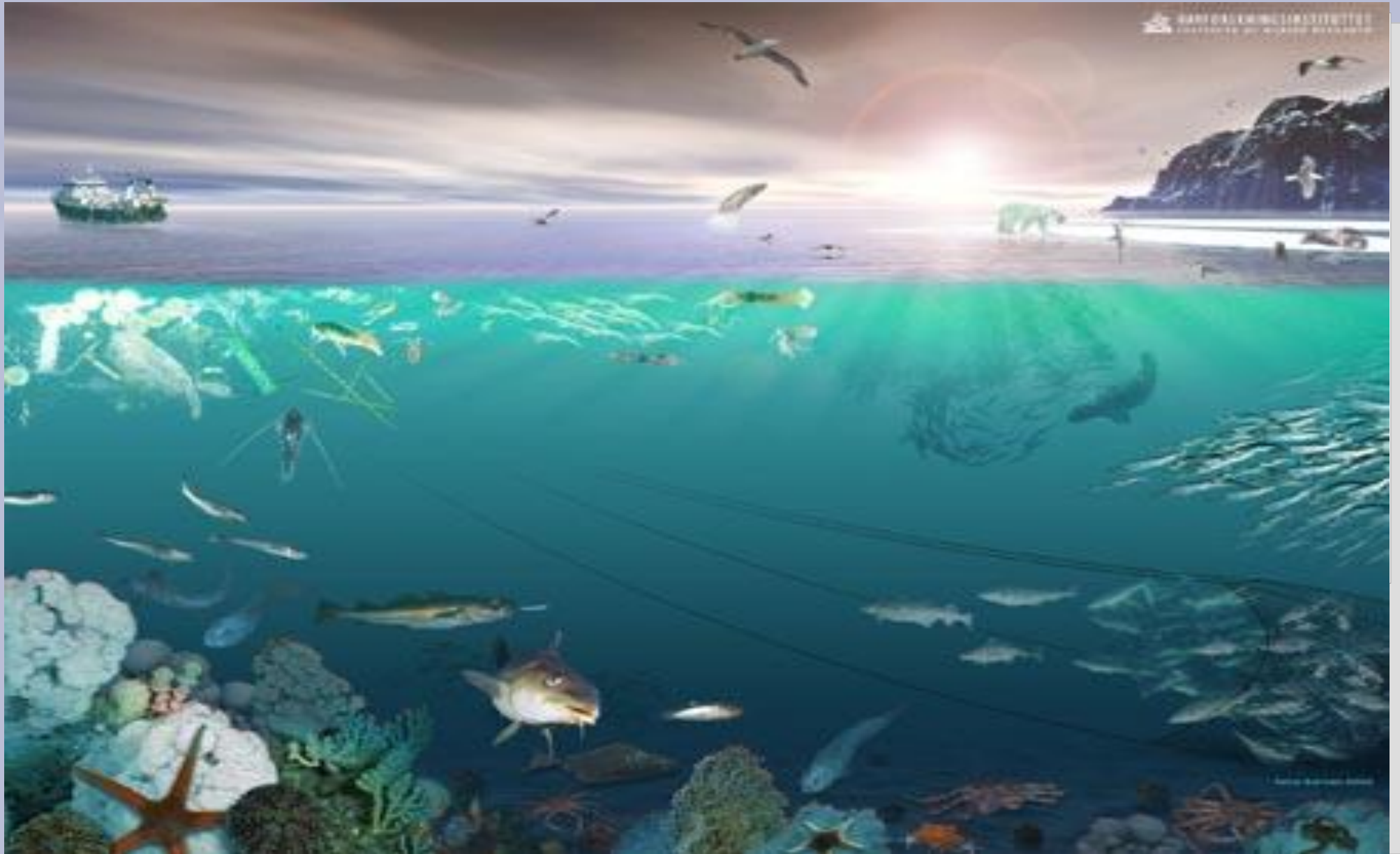


ECOSYSTEM



Notes

- An **ecosystem** is a community of living(biotic) and non-living(abiotic) things that work together.

Biotic Factors- All living organisms in an ecosystem
Examples: plants, animals, fungi

Abiotic Factors- All non-living things in an ecosystem

Examples:rain, wind, temperature, altitude, soil, pollution, nutrients, pH, types of soil, and sunlight.

- Examples of ecosystems:

Marine, Aquatic, Desert, Rainforest, Tundra
and many more

Ecosystem

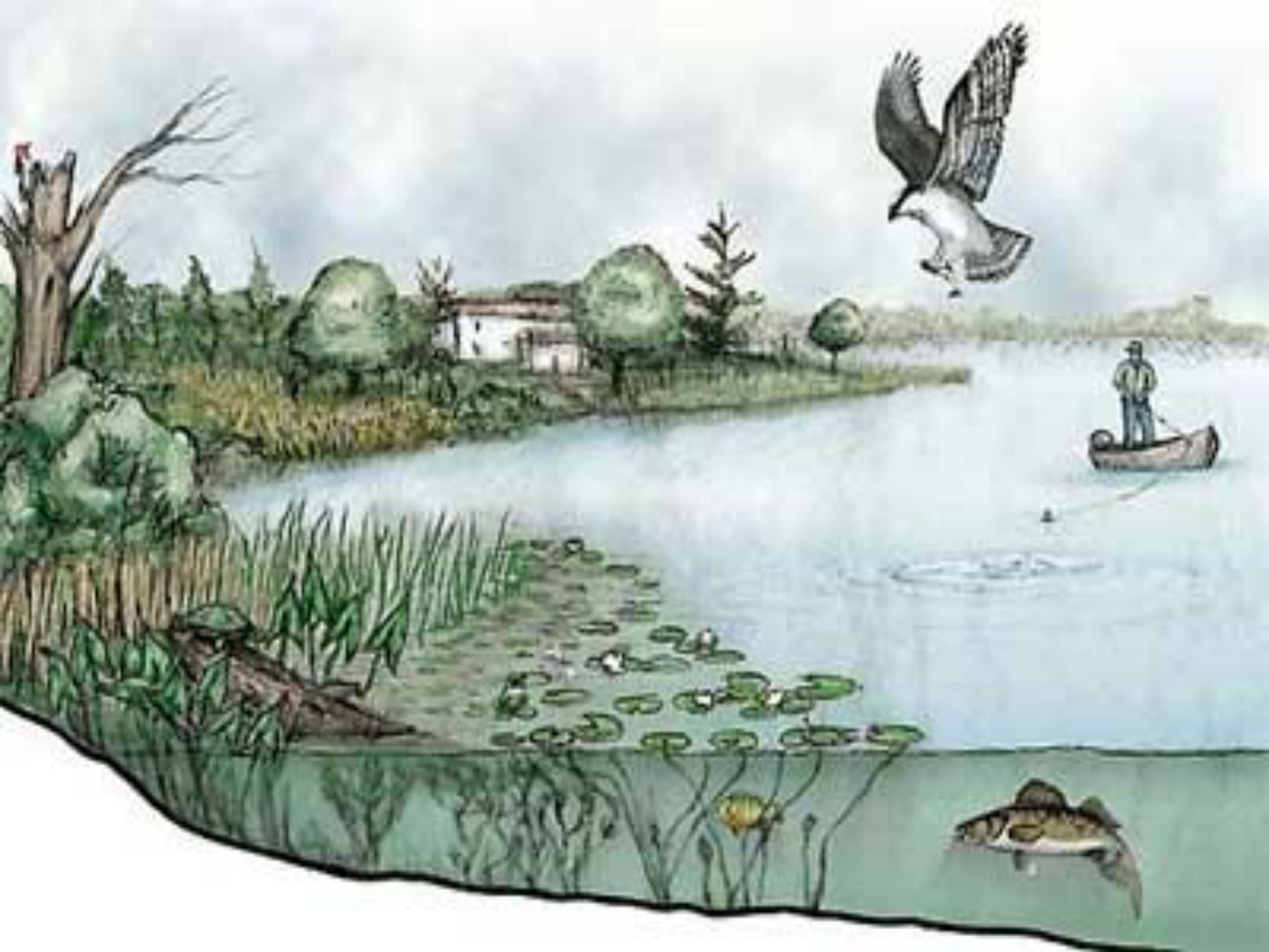
- 3 levels that make up an ecosystem
 - Individual
 - Population
 - Community

Population:

-A group of organisms of the same species who live in the same area at the same time

Community:

-A group of different populations living and interacting with each other in an area



Trophic Relations

- Trophic- from the Greek word FOOD
- Trophic relations: the natural connections of food between living organisms

ie. The food chain

The Food Chain

- A food chain shows the linear feeding relationships between species in a community
- The arrows represent the transfer of energy and matter as one organism is eaten by another (arrows point in the direction of energy flow)
- The first organism in the sequence is the producer, followed by consumers (1^o , 2^o , 3^o , etc.)

Trophic Levels

Second-level Carnivores: Eat First-Level Carnivores



First Level Carnivores: Eat Herbivores



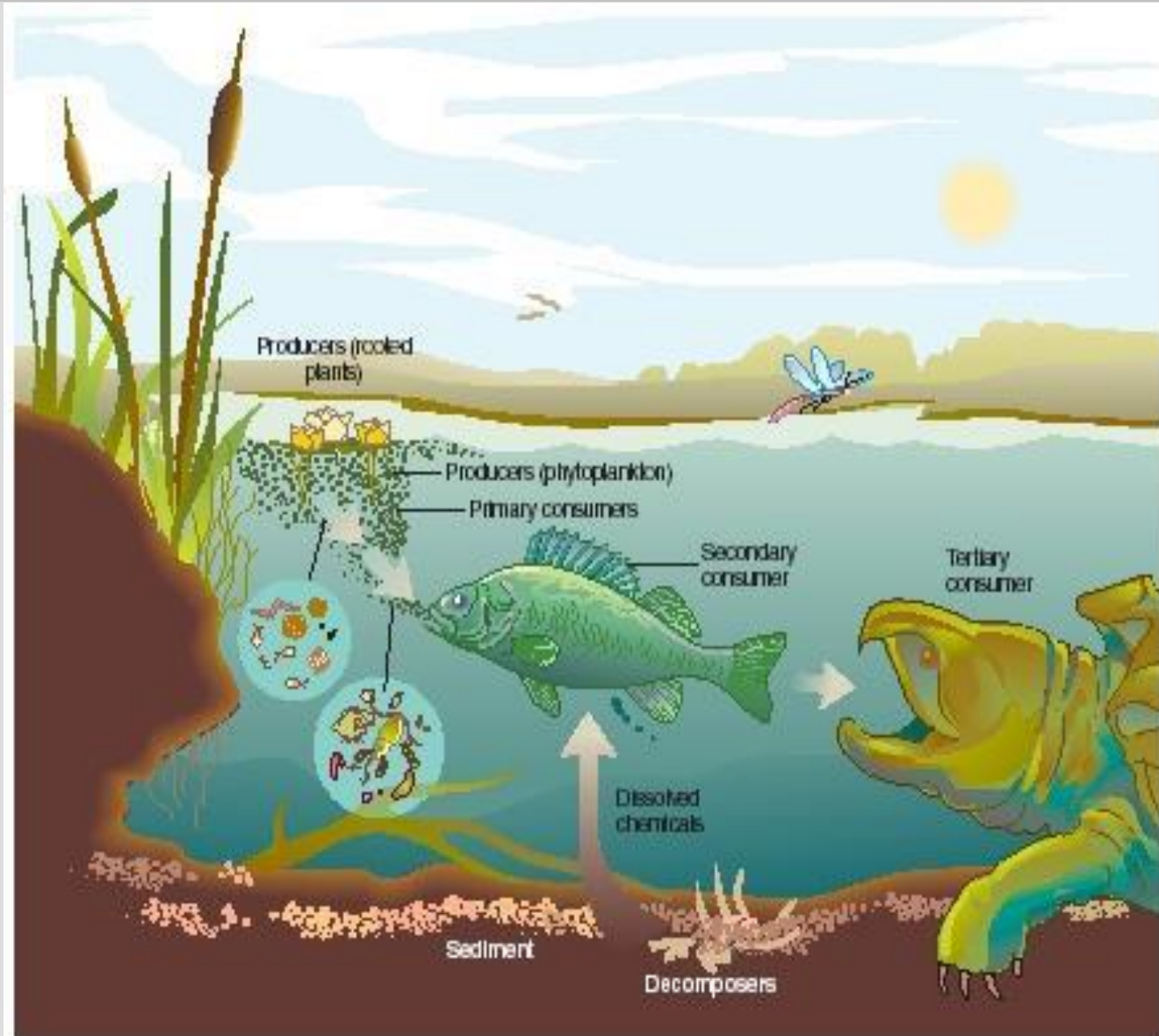
Herbivores: Eat Plants

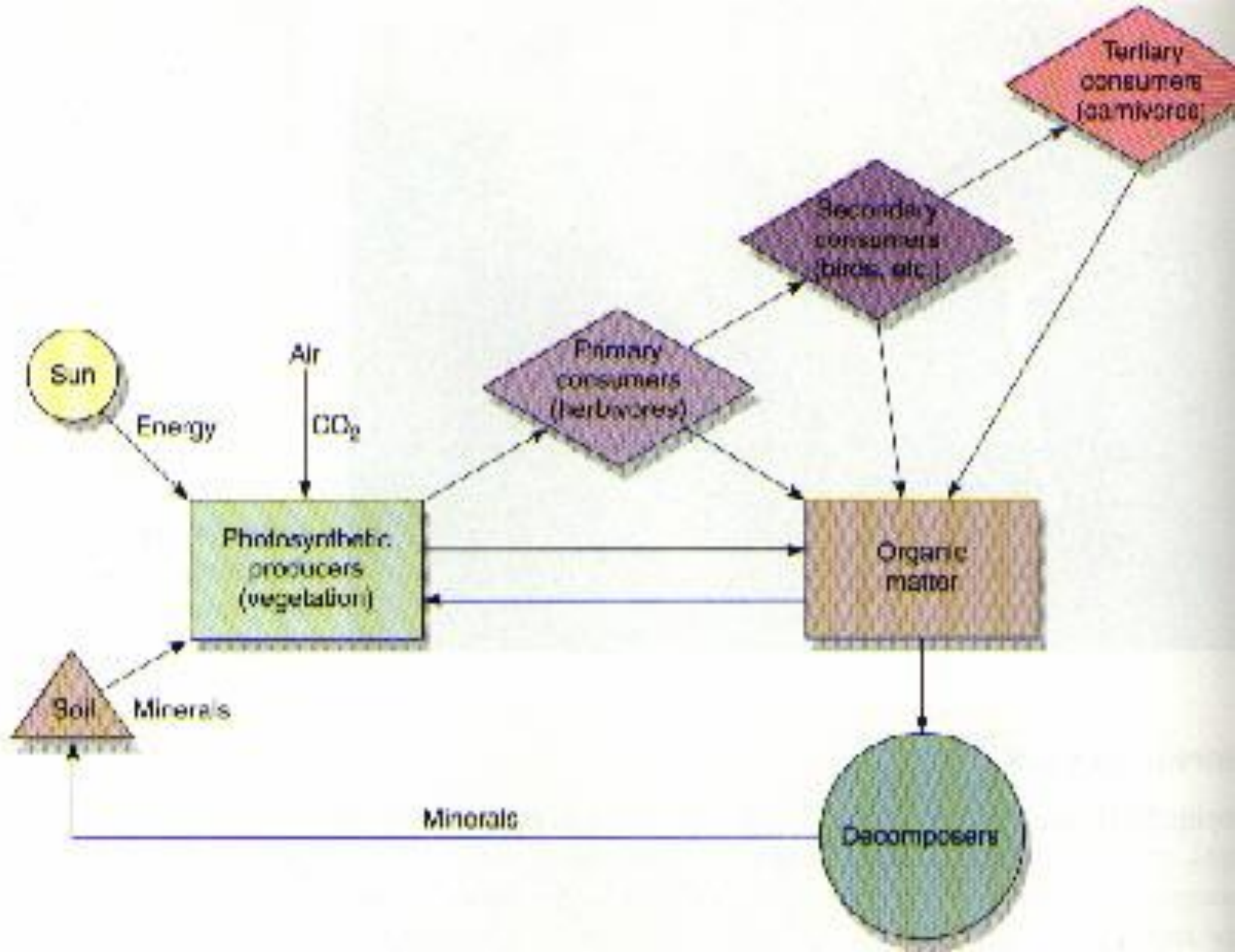


Plants: Produce energy from the sun and nutrients

Food Chain

- Producers
- Consumers
- Decomposers





Producers

- Producers are autotrophs-organisms, (photosynthetic) like green plants, that produce organic compounds from inorganic compounds.
- -They are the lowest level in the food chain
- They use sun light, carbon dioxide, and nutrients to produce organic material
- Inorganic: water, salts, minerals
- Organic: proteins, fats

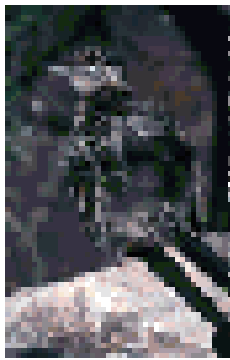


Consumers

- Heterotroph is an organism that cannot synthesize their own food and must obtain it from other organisms.
- Heterotrophs include herbivores (feed only on plants), carnivores (feed on other animals), omnivores (feed on both) and saprobes (breaking down the remains of dead plants and animals).

Consumers

- Many types of consumers
- First order – usually herbivores
- Second order-carnivores
- Third order
- Fourth order



Quarternary consumers



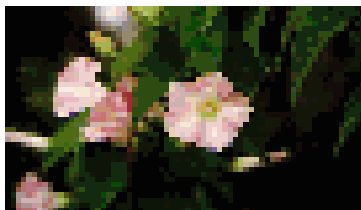
Tertiary consumers



Secondary consumers



Primary consumers

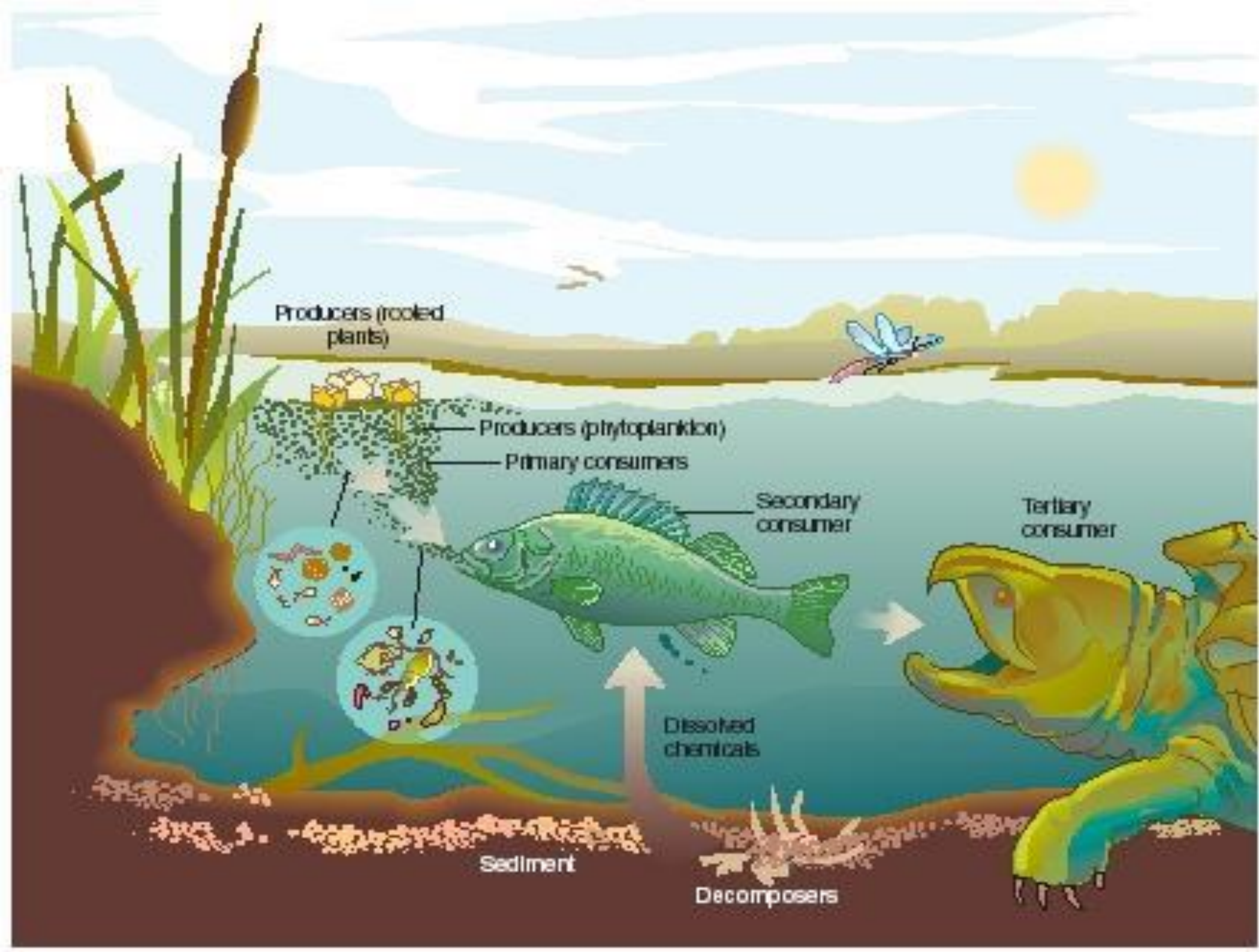


Producers

Carnivores

Herbivores

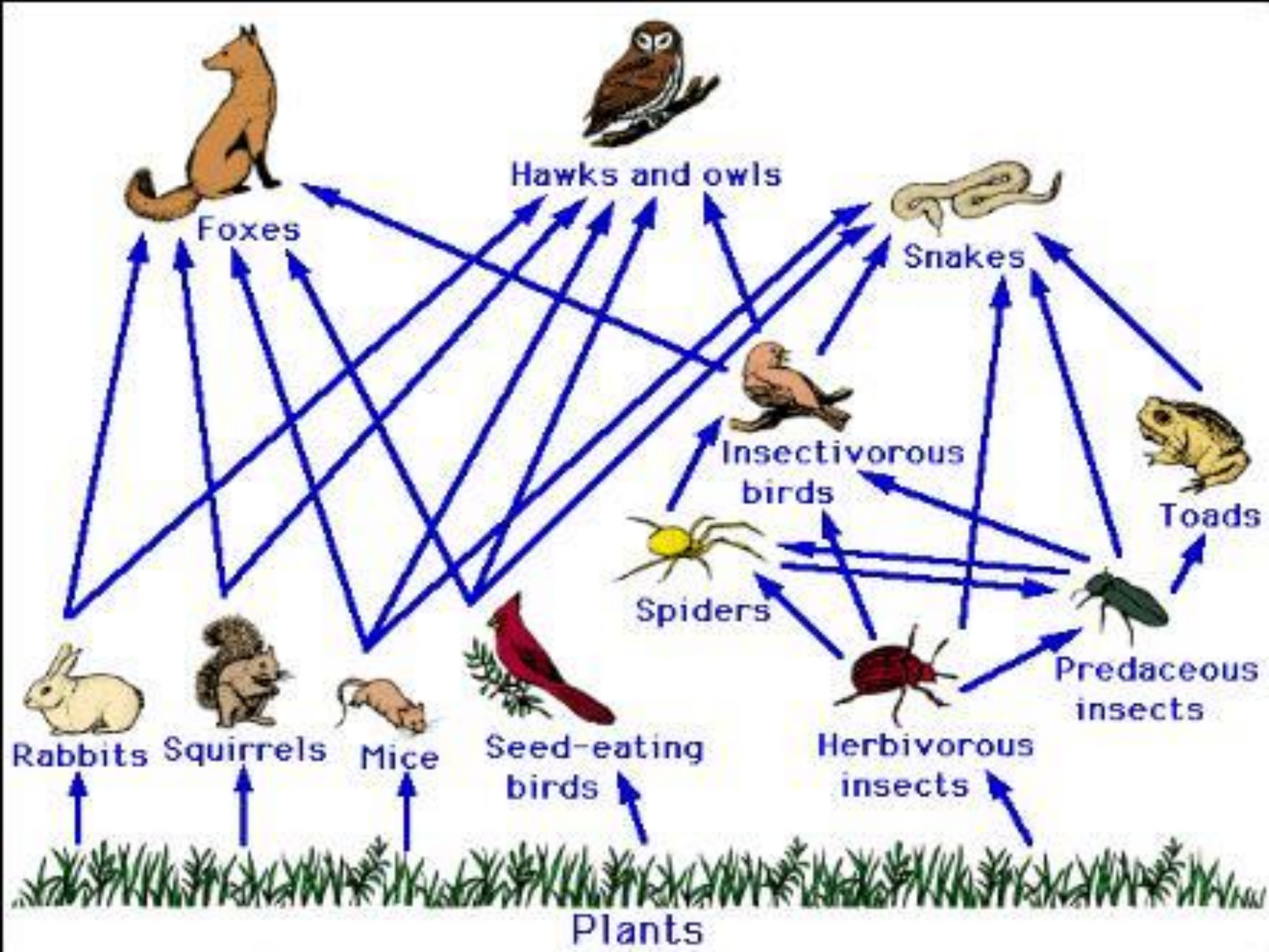
Plants



FOOD WEB

A food web is a diagram that shows how food chains are linked together into more complex feeding relationships within a community

There can be more than one producer in a food web, and consumers can occupy multiple positions (trophic levels)



Decomposers

- An organism that primarily feeds on dead organisms or the waste from living organisms
- Decomposers are the garbage men of the animal kingdom



Diagram of a simple ecosystem



Sun's energy enters the ecosystem

Photosynthesis



Producers (Plants)

Heat Energy lost



Primary consumer (herbivore)



Secondary consumer (carnivore)



Decomposers (insects, worms, bacteria etc.)



Heat energy leaves ecosystem

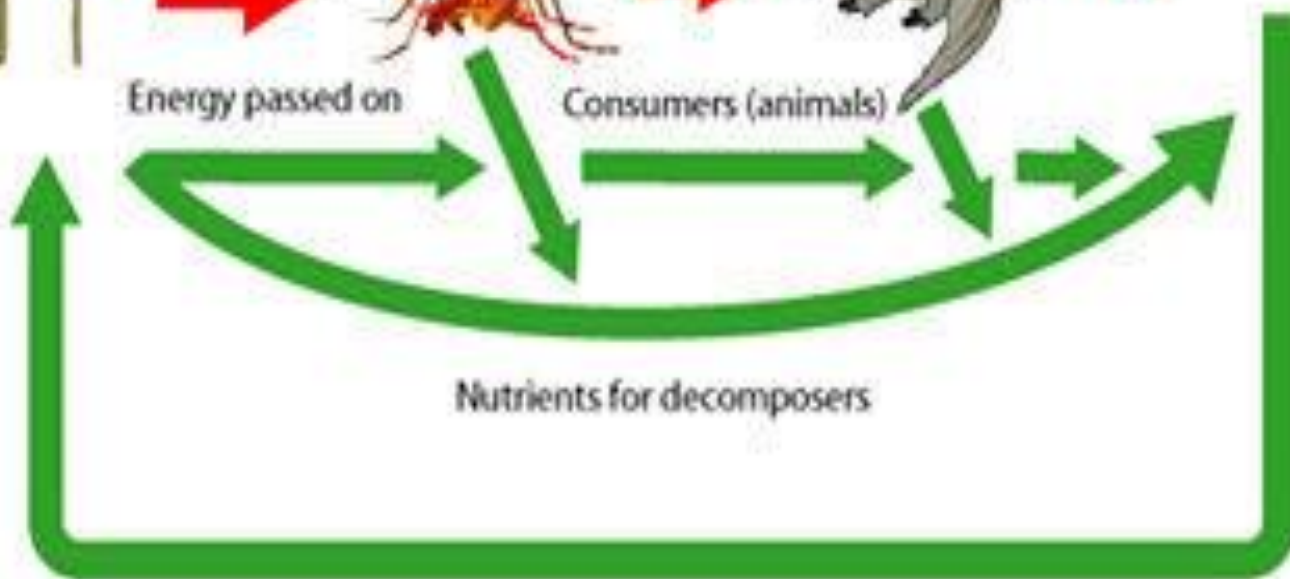


Energy passed on

Consumers (animals)



Nutrients for decomposers



Key



Energy



Nutrients



The ecology of the meat-eaters like *Allosaurus fragilis* were likely threatened by the decline of the plant-eating dinosaurs, making the "perfect storm" for a mass extinction (Eric Long, James Di Loreto, Donald E. Hurlbert, and Brittany M. Hance)