

Ecology



Chapter 3

Chapter 3.1: What is Ecology?

Ecology: the scientific study of interactions among organisms and between organisms and their environment.

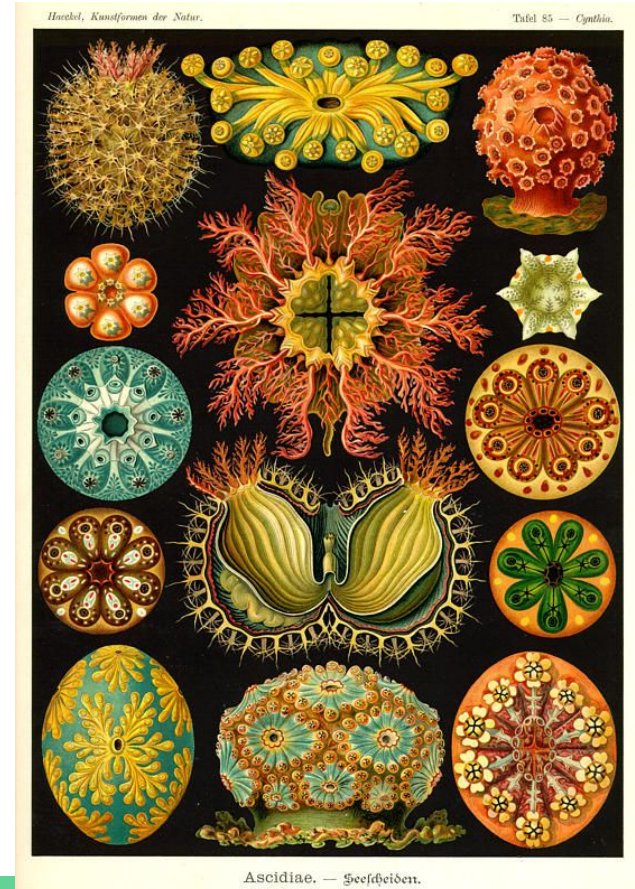
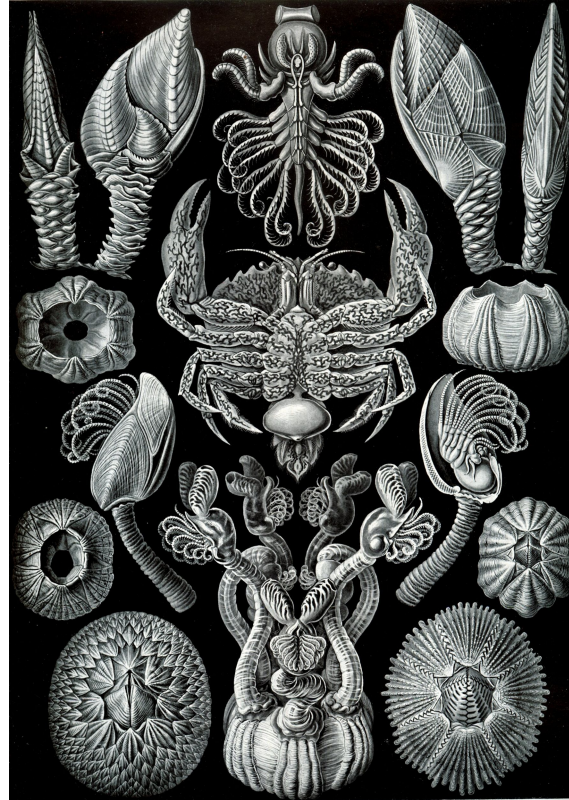
- **Biotic**: all living organisms
- **Abiotic**: all non-living aspects of the environment



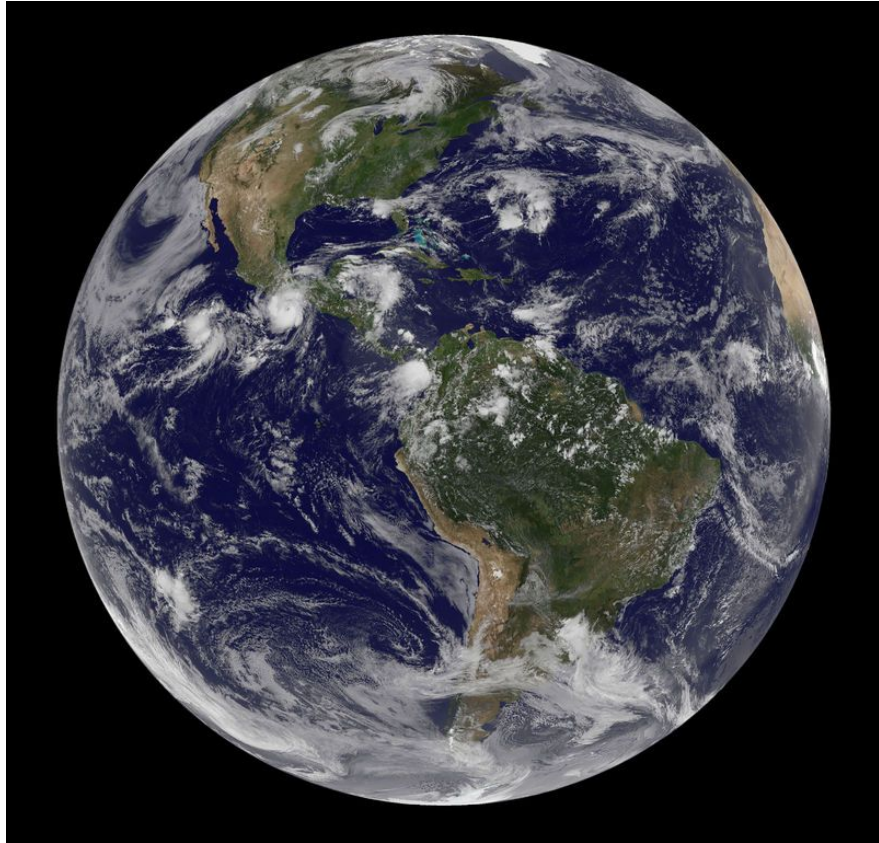
Ernst Haeckel
coined the term in
1866



Ecology “oikos”= house
All species are members of the “living house”



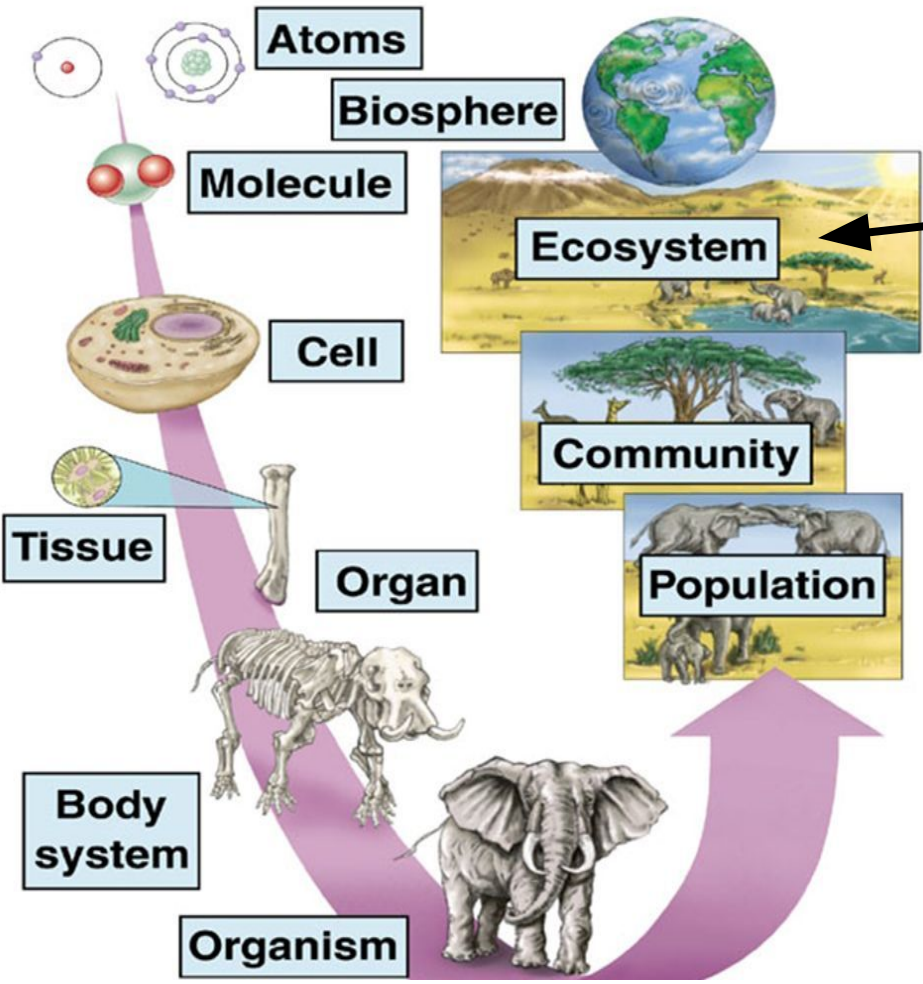
Biosphere: all the portions of the planet in which life exists



Interactions between organisms and their environment creates webs of interdependence between them

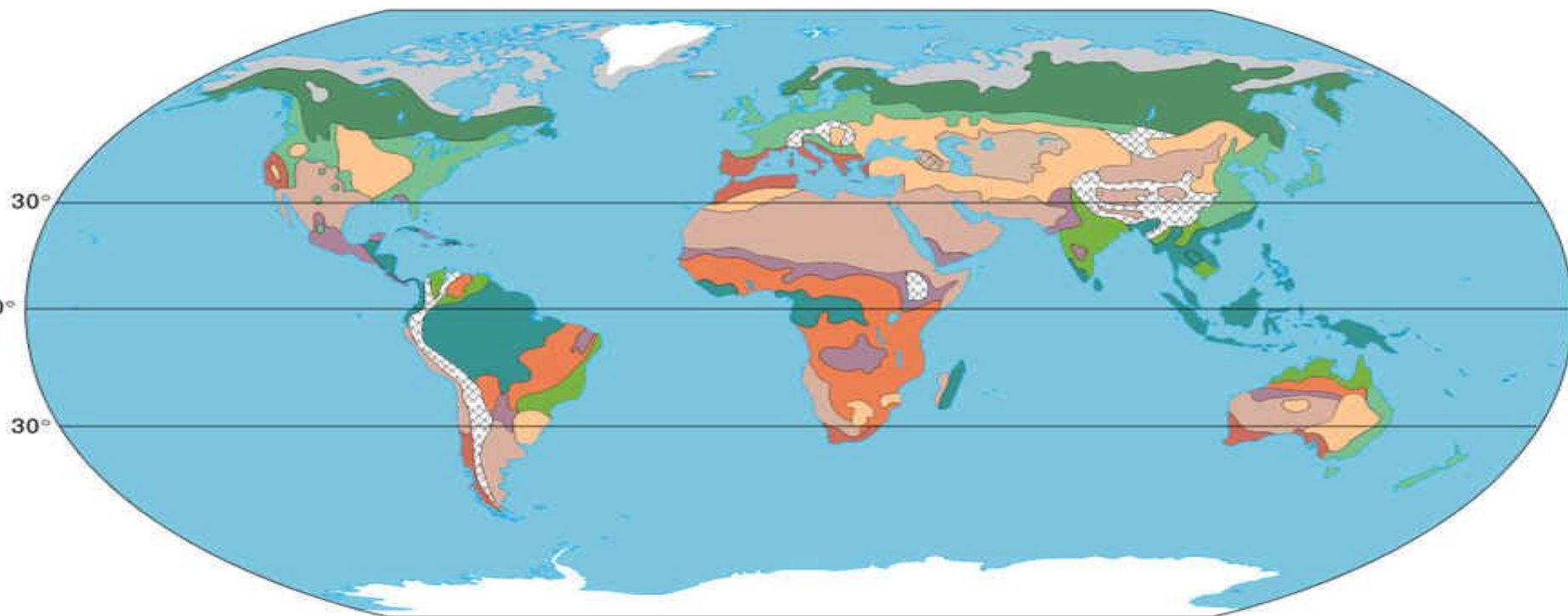
Interdependence: mutual reliance on each other













[How Wolves Change Rivers](#)



Ecosystem: collection of all the organisms that live in a particular place together with their physical environment

Biome: a group of ecosystems that have the same climate and similar dominant communities.



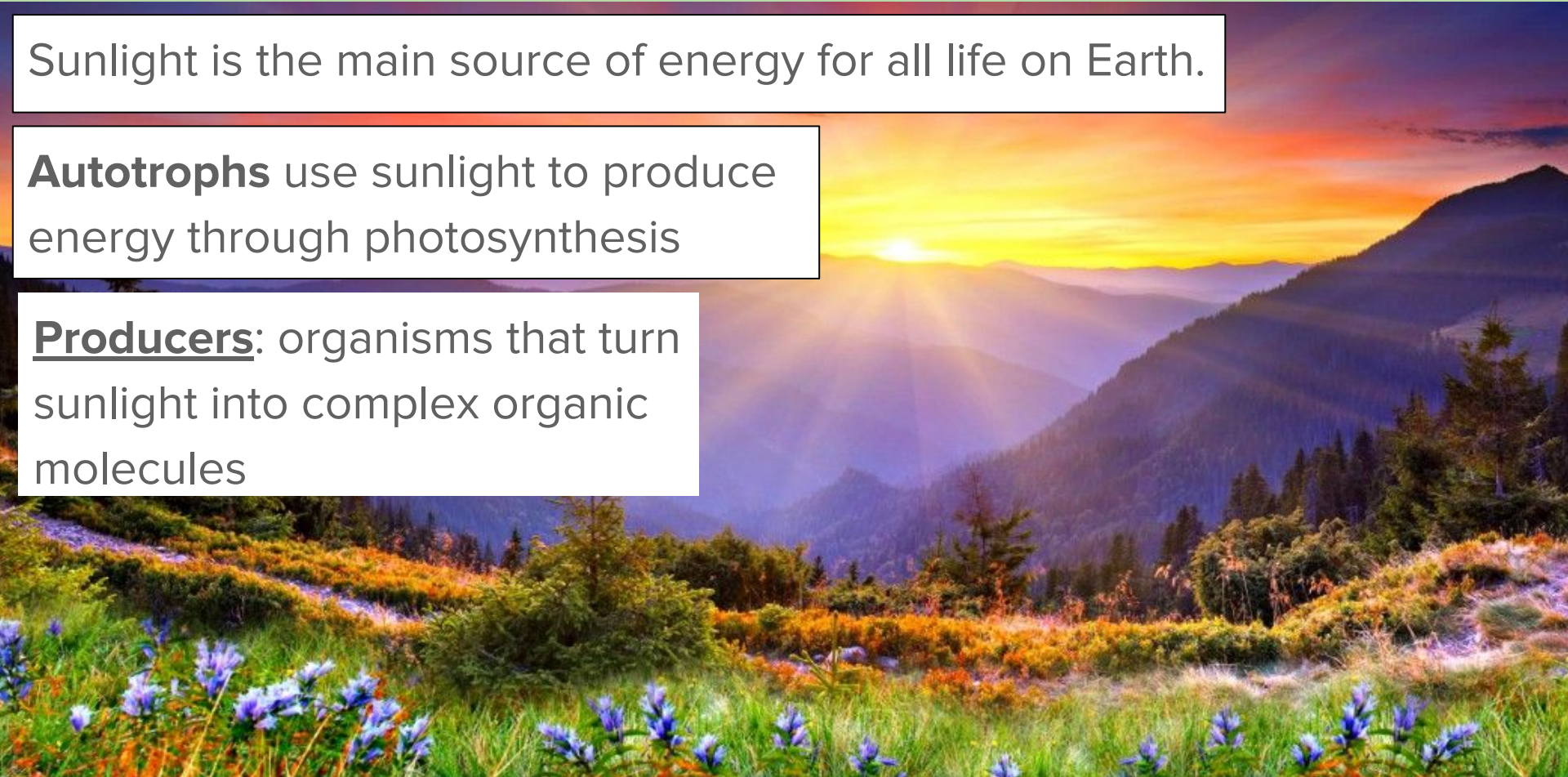
- | | | |
|--------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------|
|  Polar ice cap |  Mediterranean scrub and woodland |  Tropical seasonal forest |
|  Tundra |  Grassland |  Savanna |
|  Boreal forest (taiga) |  Desert |  Tropical thorn scrub and woodland |
|  Temperate forest |  Tropical rainforest |  Mountain |

Chapter 3.2 Energy Flow

Sunlight is the main source of energy for all life on Earth.

Autotrophs use sunlight to produce energy through photosynthesis

Producers: organisms that turn sunlight into complex organic molecules



Consumers: (heterotrophs) organisms that consume other organisms

- **Herbivores-** plant eaters
- **Carnivores-** meat eaters
- **Omnivores-** both plant and meat eaters



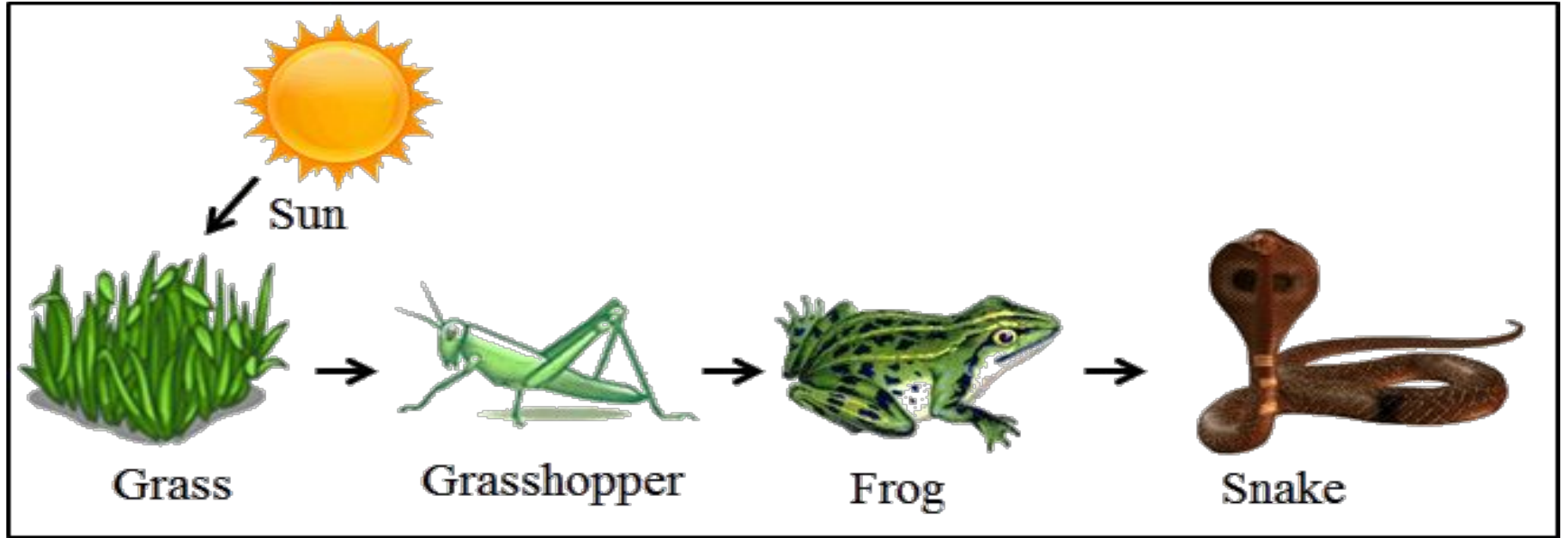
- **Detritivores**: consume the remains of dead organisms (*detritus*= *dead stuff*)

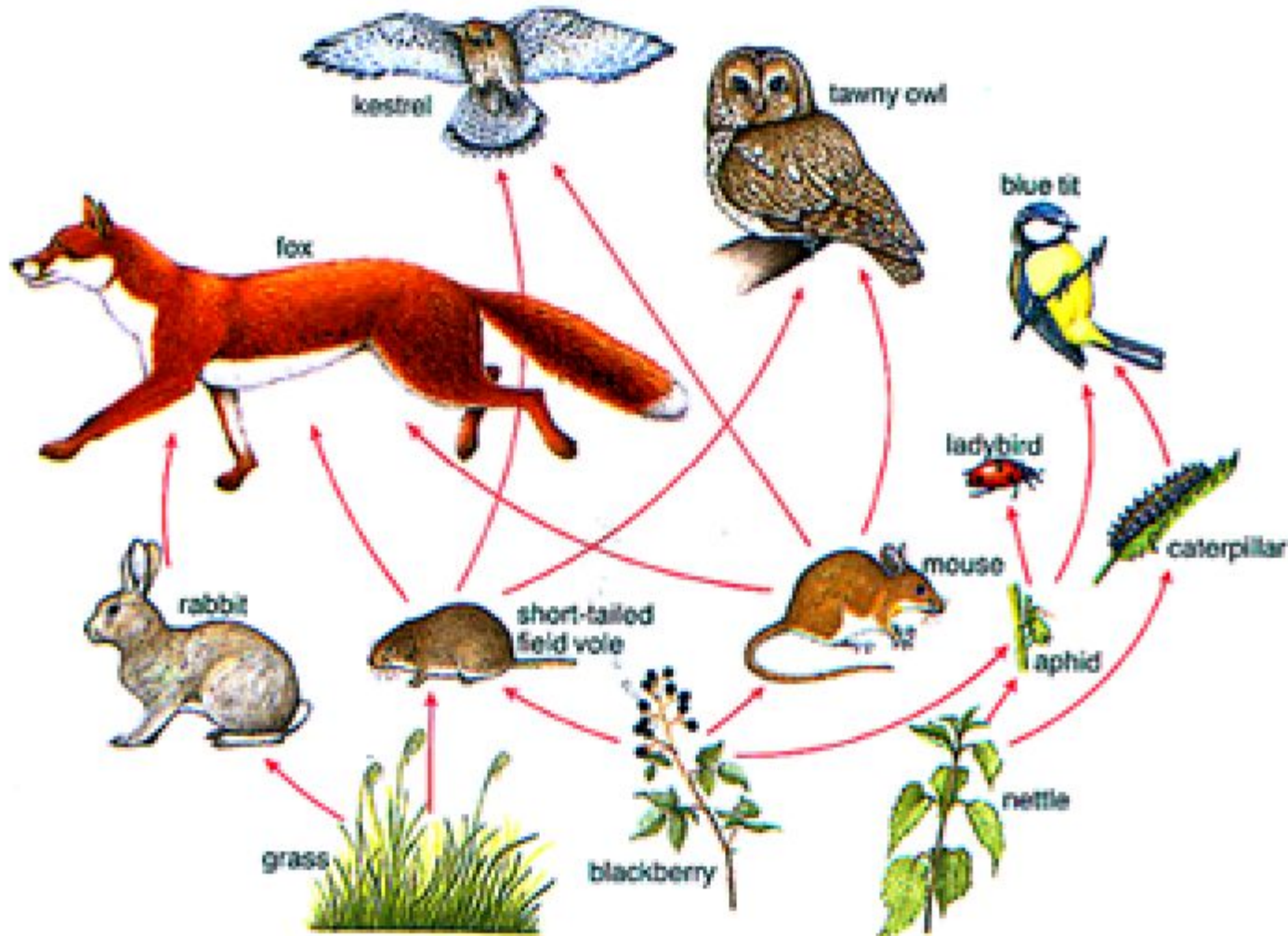


- **Decomposers**: break down organic matter into usable elements to be recycled in the ecosystem



Food chain: energy that is passed directly from the sun to autotrophs and then to various consumers by eating.





Food webs:
network of
complex
interactions
through feeding
relationships
among various
organisms within
an ecosystem.