

Biology

Notes Chapter 2-1 Organisms and Their Relationships

- I. Ecology is the study of interactions between organisms and their environment
 - i. Ecologists understand that all living things are dependent on each other and can effect each other positively and/or negatively.
 1. Interconnectedness
- II. The Biosphere
 - i. The portion of the earth that supports life.
 - ii. Organisms are not spread evenly throughout the planet
- III. Environmental Factors that affect organisms
 - i. Abiotic
 1. Air temperature, climate, weather, nutrients, habitats, shelters, etc
 - ii. Biotic
 1. Other living things, the availability of prey, availability of potential mates
 - iii. Organisms have a very specific set of factors they can tolerate and still maintain homeostasis.
 1. If an organism is displaced from a habitat, or loses a resource it must adapt quickly or it will die.
- IV. The Biosphere is far too large to study all at one time, so ecologists organize their research into smaller parts
 - i. Biosphere-→ made up of many different biomes

- ii. Biome → made up of many ecosystems that share climate and other abiotic factors
- iii. Ecosystem → made up of many different communities
- iv. Community → made up of many different populations
- v. Population → made of many members of one species that can interbreed
- vi. Organism → an individual living thing.

V. Habitat vs Niche

- i. A habitat is simply where an organism lives
- ii. Niche is not only where an organism lives but its role in every day interactions.

Example: Mrs. Nickel lives in a house in a city in the metro Detroit area----

Mrs. Nickel's is a married female middle aged high school teacher.---

VI. Interactions amongst organisms

- i. Symbiosis- a connection between two species
 - 1. Mutualism-both parties benefit
 - 2. Commensalism-one party benefits, the other is not affected
 - 3. Parasitism- one party benefits at the expense of the other
 - 4. Predation-one organism hunts another
 - 5. Competition-when two organisms use the same resource, either biotic or abiotic.