

# What Shapes an Ecosystem?

Chapter 4-2

# Biotic and Abiotic Factors

**Biotic Factors:** Living factors such as oaks, squirrels, mushrooms, and bacteria.

**Abiotic Factors:** Non living factors such as climate, wind, nutrient availability, and sunlight.

# The Niche

If an organism's habitat is its address, its niche is its occupation (job).

**Niche:** The full range of physical and biological conditions in which an organism lives and the way the organism uses those conditions.

**Examples:** The type of food that it eats, how it obtains food, and the other that eats it.

# Community Interactions

- Competition
- Predation
- Symbiosis

# Competition

Definition: When individuals of the same or different species attempt to use an ecological resource in the same place and time.

# Competition

## Examples

- Plants compete for sun light, water, and nutrients.
- Salmon compete for shelter which is limited and for the best spawning gravels.

**Competitive Exclusion Principle:** No two species can occupy the same niche in the same habitat at the same time.

# Predation

- Capturing and feeding on other organisms.

# Symbiosis

**Definition:** Any relationship where two species live closely together.

**Examples:**

**Mutualism** – Both species benefit.

**Commensalism** - One species benefits and the other is not harmed or helped.

**Parasitism** – One species benefits and the other is harmed.

# Mutualism

- Pollination: Plants are pollinated and insect receives food (nectar and pollen).
- Acacia Ants: Protect acacias from herbivores and acacia provides shelter and food to ants.

# Commensalism

- Barnacles on whales: Barnacles get a free ride and whale is not affected.

# Parasitism

- Tapeworms and Roundworms
- Fleas and ticks

