UNIT 9 - ECOLOGY

Topic 1 – Ecology Basics

Topic 2 – Population Ecology

Topic 3 – Community Ecology

Topic 4 – Energy Transfer and Nutrient Cycles

TOPIC 3: COMMUNITY RELATIONSHIPS

By the end of this topic, you should be able to...

• Compare and contrast the different types of symbiotic relationships within communities

Symbiosis = close relationships between members of different species

Types of Symbioses

- 1) Predation
- 2) Parasitism
- 3) Competition
- 4) Mutualism
- 5) Commensalism



PREDATION

One organism kills another organism for food (the 2nd organism dies)

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Ex: Lizardfish and gobey



PREDATION

- Predators evolve adaptations to capture prey and vice versa
- Predator Adaptations: spider webs ; tiger stripes
- **Prey Adaptations**: mimicry, plant toxins





PREDATOR EXAMPLES

Lady Bugs

Preying Mantis

Venus Fly Trap



PARASITISM

One organism benefits and the other organism is harmed (the 2nd organism DOES NOT die!)

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Ex: tick (ectoparasite)

tapeworm (endoparasite)





PARASITISM: HEART WORM

If host dies:

The parasite must quickly find another host or it will die as well.



BROOD PARASITISM



Brown-headed cowbirds demonstrate brood parasitism because they rely on other bird species to:

- build their nests
- incubate their eggs
- Baby cowbirds push the host's eggs or young from the nest
- Lower population of songbirds

COMPETITION

Both organisms are harmed by the interaction when they try to use the same resources

- / -

Ex: Animals compete for water during a drought



MUTUALISM

Both organisms benefit from each other

+ / +

Ex: Insects and flowering plants

E Coli's NASTY Mutualism with Humans:



Example: Lichens = mutualism between fungi

and algae

- Algae provide food for the fungi
- Fungi provide a habitat for the algae

Cleaner Fish & Ocean Sunfish



COMMENSALISM

One organism benefits and the other is neutral (not helped or harmed)

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Ex: clownfish and sea anenome



COMMENSALISM

Barnacles

