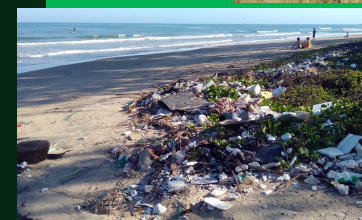


Biodiversity and the Interrelationships in Nature

- Types of Ecological Interrelationships
- Interrelationships Within Species and How They Help Biodiversity
- Interrelationships Between Species
- Predator-Prey Relationships
- Competition Between Species
- Symbiosis – Mutualism, Parasitism, and Commensalism
- How Between-Species Relationships Help Biodiversity
- Species and Their Environment Interrelationships
- Case Study: Coral Reef Ecosystems
- Threats to and Protecting Biodiversity Relationships



Preview File

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- Student versions have portions of the text removed which is given in the teacher version and appear as _____ which the students are to fill in
- Other slides may have on them, this represents writing that has been removed on this sample

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Google Classroom Ready**



Learning Goals

By the end of this lesson, students will be able to:

1. Describe interrelationships within species.
2. Explain interrelationships between different species.
3. Understand how species interact with their environment.
4. Explain how these interrelationships sustain biodiversity.

Types of Ecological Interrelationships

1. Within species
2. Between species
3. Species and their environment



Interrelationships Within Species

Definition: _____

- Examples:
 - Reproduction
 - Competition for resources
 - Social behaviors (herding, schooling)



How does Within-Species Relationships Help Biodiversity?

- _____
- Population control through competition
- Protection from predators through group behavior
- Knowledge sharing (e.g., migratory routes)



Group of Meerkats looking out for predators.

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Predator – Prey Relationships

Definition: _____

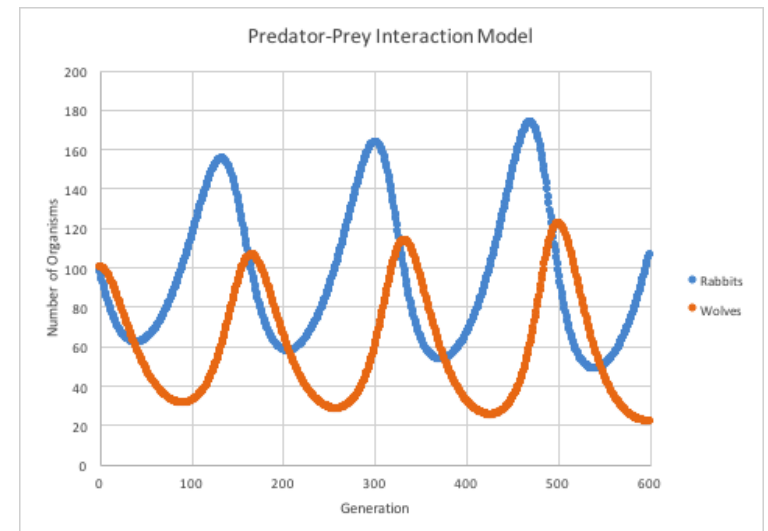
Examples – owls and mice; lions & antelopes



Predator – Prey Relationship

How it sustains biodiversity:

- Drives adaptations in both species to survive
- Controls population sizes
 - Example: If there are more predators, the population of prey will decrease. _____



Competition Between Species

Definition: _____

Example:

- Different bird species competing for nesting sites or food
- Different predator species competing for the same food source



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Symbiosis

Definition: How organisms live together in an ecosystem is called symbiosis.

There are 3 types of symbiosis:

1. _____

2. _____

3. _____

Mutualism

Definition: _____

Example:

- Bees and flowers
- Clownfish and sea anemones
 - Clownfish are protected from predators by the stinging tentacles of the sea anemones and in return, the clownfish scares away predators that would otherwise prey upon the anemone



Parasitism

Definition: _____

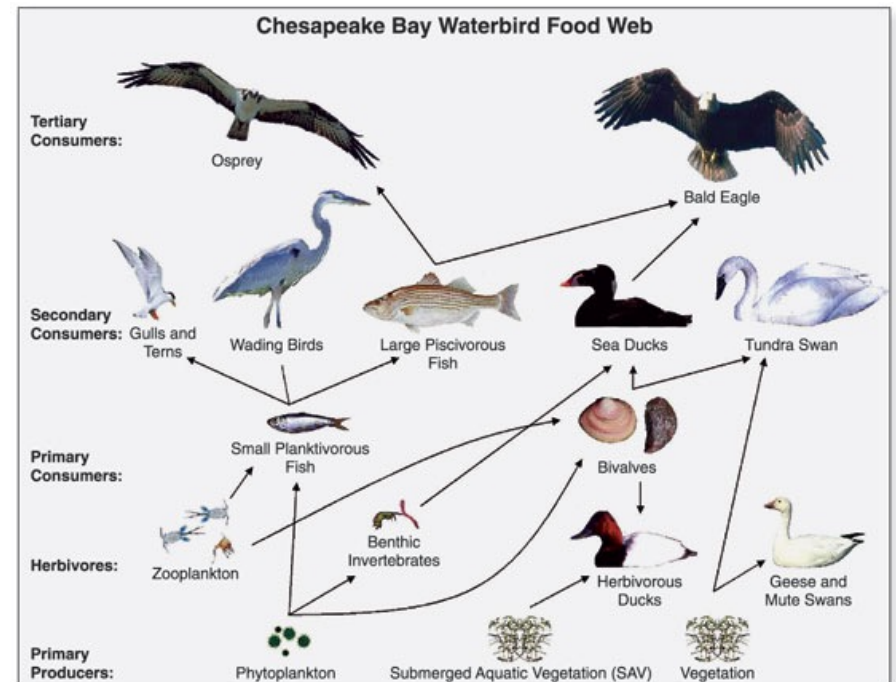
- Parasites usually don't kill their host (the animal they live on). It doesn't benefit them to harm the thing that benefits them
- Example – ticks on a dog
 - A tick is a parasite that feeds off the nutrients in the dog's blood. The dog doesn't get the nutrients, so it is harmed.



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How Does Between-Species Relationships Help Biodiversity?

- Create complex food webs which improves an ecosystem's resilience



- ---

Keep populations at healthy levels

Species and Their Environment

Definition: _____

- Example:
 - Climate (temperature, rainfall)
 - Soil and physical conditions



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Case Study: Coral Reef Ecosystem

Diverse species interactions:

- Clownfish and sea anemones (mutualism)
- Cleaner fish and larger fish (mutualism)
- Predator-prey relationships

Environmental interactions:

- Fish use coral structures for shelter and to catch prey
- _____



There are many predator-prey relationships in a coral reef.



Threats to Ecological Relationships

- Habitat destruction
- Climate change
- Pollution

- _____
- _____



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Discussion Questions

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Review

1. Biodiversity depends on complex relationships within and between species.
2. Species-environment interactions create and maintain diverse ecosystems.
3. These relationships drive adaptation and evolution.
4. _____