2.2 Interactions Among Species

(Flamingos feed on small molluscs, crustaceans, and vegetable matter strained from mud pumped through their bills by their powerful tongues.)

(Dabbling ducks feed by tipping, tail up, to reach aquatic plants, seeds, snails, and insects.)

(Oystercatchers pry open bivalve shells with their knifelike bills and probe sand for worms and crabs.)

(Plovers dart around on beaches and grasslands hunting for insects and small invertebrates.)
Learning Goals

• I can explain the meaning of the term, ecological niche, and describe how organisms occupy ecological niches.

• I can explain the meaning of the term, symbiosis and describe how species interact with each other in nature.
Key Concepts

• Each species occupies an ecological niche, which has biotic and abiotic components.
• Many species, such as bog plants, occupy narrow niches for which they are well adapted.
Ecological Niche

- **Ecological niche**: the way that an organism occupies a position in an ecosystem, including all the necessary biotic and abiotic factors.
Symbiosis: Relationships Between Species

• Predation, competition, mutualism, and parasitism are four major kinds of relationships between species.
• These relationships help to define a species’ niche and influence the distribution and abundance of the species.
Predation and Population Size

- **Predator**: an organism that kills and consumes other organisms
- **Prey**: an organism that is eaten as food by a predator
- **Bottom-Up Population Regulation** → Changes in resources at the base of the food chain influences species at higher trophic levels
- **Top-Down Population Regulation** → Changes in resources at the top of the food chain influences species at lower trophic levels
Predation and Population Size

Figure 2.12 The number of moose influences the number of wolves, the top predator. The extent or significance of this influence remains uncertain, however.
Competition

• Competition: two or more individuals vie for the same resource
Mutualism

• Mutualism: a symbiotic relationship between two species in which both species benefit from the relationship
Parasitism

- Parasite: an organism whose niche is dependent on a close association with a larger host organism.
Q: Describe the symbiotic relationship between corals and algae. What causes the color loss associated with bleaching?

Algae gives off oxygen and other nutrients to the coral and the coral polyp provides shelter and carbon dioxide to the algae. This is a mutualistic relationship. Algae cause the colour in coral reefs. When they die out, bleaching or whitening occurs. Scientist currently believe that viruses and warmer waters are causing the algae to die out.
Video: Trials of Life

• Video: The Trials of Life Episode 7 Living together
https://www.youtube.com/watch?v=R8g1BU29WVg

List and describe 5 examples of symbiosis seen in the video.
Practice

• Page 64 # 3-8
• Socrative Quiz
• Group Work (package)