

## Ecology: Roles in Ecosystems

### 06 - 07\_ Lesson 8

Text Book Reference: Section 1.12, page 40 - 44

Niche refers to the role of a species in relation to other species and its physical environment, i.e., the term niche refers to the role or place occupied by each species in the food web.

A niche refers to how an organism interacts with its biotic and abiotic environments, this includes not only its feeding level but everything the organism does in order to survive and to reproduce.

A habitat is defined as the environmental spaces in which an organism lives. A niche therefore includes both a habitat and an organism's role in its habitat.

In some instances, more than one consumer might use the same species as food, this situation may or may not lead to competition:

Example:     hawks and owls have the same prey but do not compete directly.  
                  Owls and hawks eat the same food but they have adapted in order to reduce competition.  
                  For food: hawks feed during the day but owls hunt at night, hawks hunt over fields but owls hunt in forests.

Adaptation- can be a structure, or a behaviour that an organism has that helps it survive in its environment, i.e., structure like a hooked, sharp beak in birds of prey and claws to grasp prey; or behavioral adaptations, e.g., geese flying south or the hibernation of bears.

#### **Competition for niches:**

When a new species enters an ecosystem, it causes a disturbance because it will compete for a niche with one or more of the species already present in the ecosystem e.g., niche and rabbits, pike and bass, eagles and hawks.

Sometimes the competition comes from a species that is not native, but an “**exotic species**”, this happens naturally due to animal mobility, spread of plant seeds by the wind or other animals.

Exotic species often have no natural predators when they enter a new habitat, allowing them to multiply so quickly that they crowd out native species. They are often hardy and aggressive and will literally force competitors to flee.

#### **Homework**

1. Read pages 40 - 44
2. Answer: Understanding Concepts, page 44, # 1 - 3
3. Worksheet: Predators and Prey