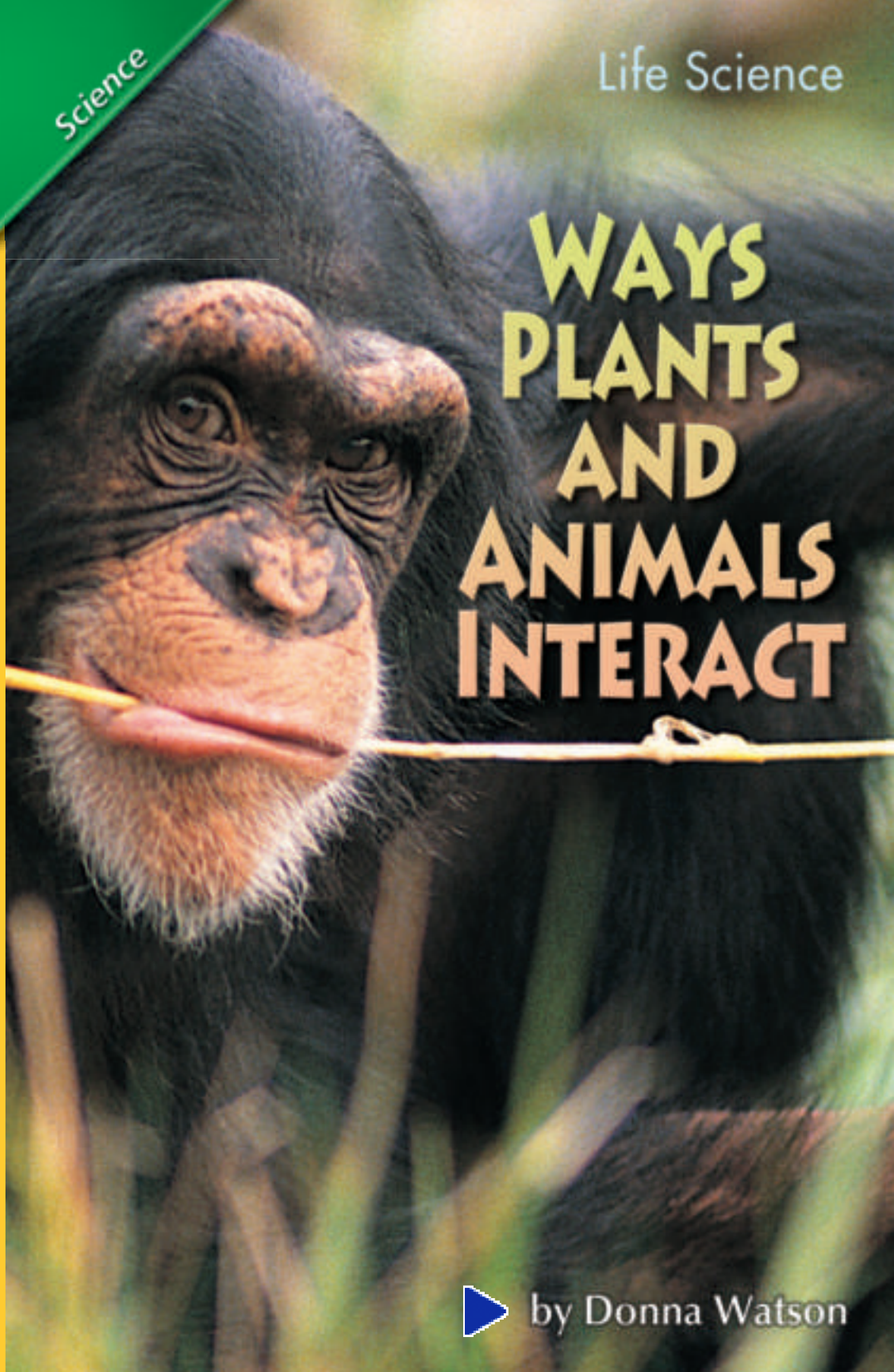
Science

Science

Life Science

WAYS PLANTS AND ANIMALS INTERACT



by Donna Watson

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Nonfiction	Draw Conclusions	• Labels • Diagrams • Glossary	Plants and Animals

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Vocabulary

carnivore
competition
consumer
decay
decomposer
disease
germs
herbivore
omnivore
predator
prey
producer

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Ways Plants and Animals Interact

by Donna Wilson

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Earth is a very special place. One of the things that makes it special is the way plants and animals live together, or interact. Sometimes they live together in a way that helps one another. Other times, they live together in a way that hurts one another.

Plants and animals can also live together in ways that neither help nor hurt one another.

Living things interact in many different ways. However, all living things need other living things in order to live.

How Living Things Interact

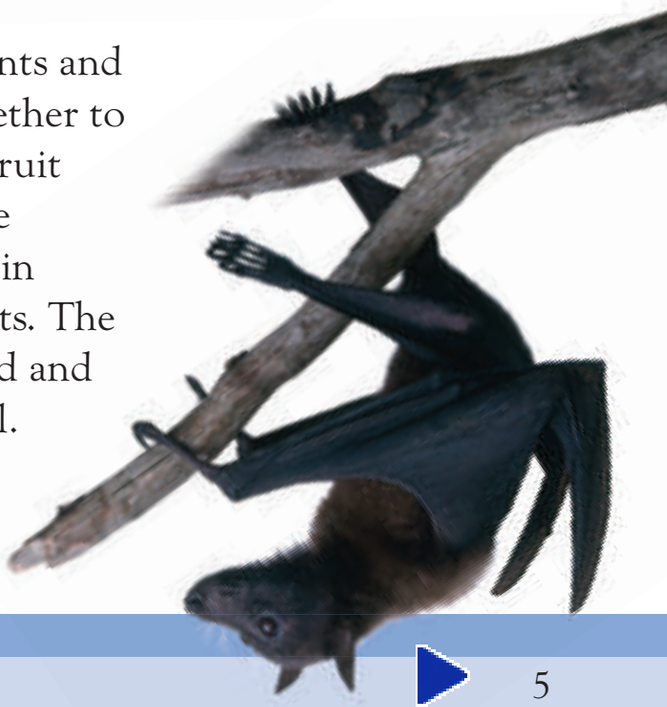
Some animals live together in groups and help each other out. When an ant finds some food, it tells other ants where the food is. Together, the ants carry the food back to their home.

Canada geese with goslings often gather with other mother geese and their goslings. One or two of the mothers will watch over the goslings, while the rest of the mother geese go hunting for food.

Animals who live in herds may form a tight circle for protection against bad weather or an enemy. Horses caught in a snowstorm will put their heads together in a circle for warmth. Often, older horses will push the younger horses into the center of the circle for added protection.

Sometimes when two animals interact, only one animal will be helped. This happens when a barnacle attaches to a whale. The adult barnacle does not swim on its own. Instead it eats the bits of food that flow past as the whale swims. The whale is neither hurt nor helped by having the barnacle on its body.

Sometimes plants and animals work together to help each other. Fruit bats help pollinate certain fruit trees in tropical rain forests. The trees get pollinated and the bats get a meal.



Living Things Get Energy

For plants to be able to grow, bloom, or make seeds, they must have energy. In order for animals to be able to build homes and search for food, they must have energy.

Green plants are the only living things that can make their own food. They do this by taking energy from the Sun.

Green plants are able to make their own food. This makes them **producers.** All other living things get energy from the foods they eat. This makes them consumers. **Consumers** get their energy by eating green plants, or by eating animals that have eaten plants.

Carnivores, Herbivores, And Omnivores

It can take a long time for the energy in a plant to get to an animal. This is because not all animals eat plants. Animals that eat only meat are called **carnivores.** You already know about many kinds of carnivores. Tigers, eagles, and mountain lions are carnivores.

Animals that eat only plants are called **herbivores.** Goats, horses, and rabbits are herbivores. Some animals eat both plants and other animals. These animals are known as **omnivores.** Chimpanzees are omnivores. They eat insects, fruits, seeds, and many other things.

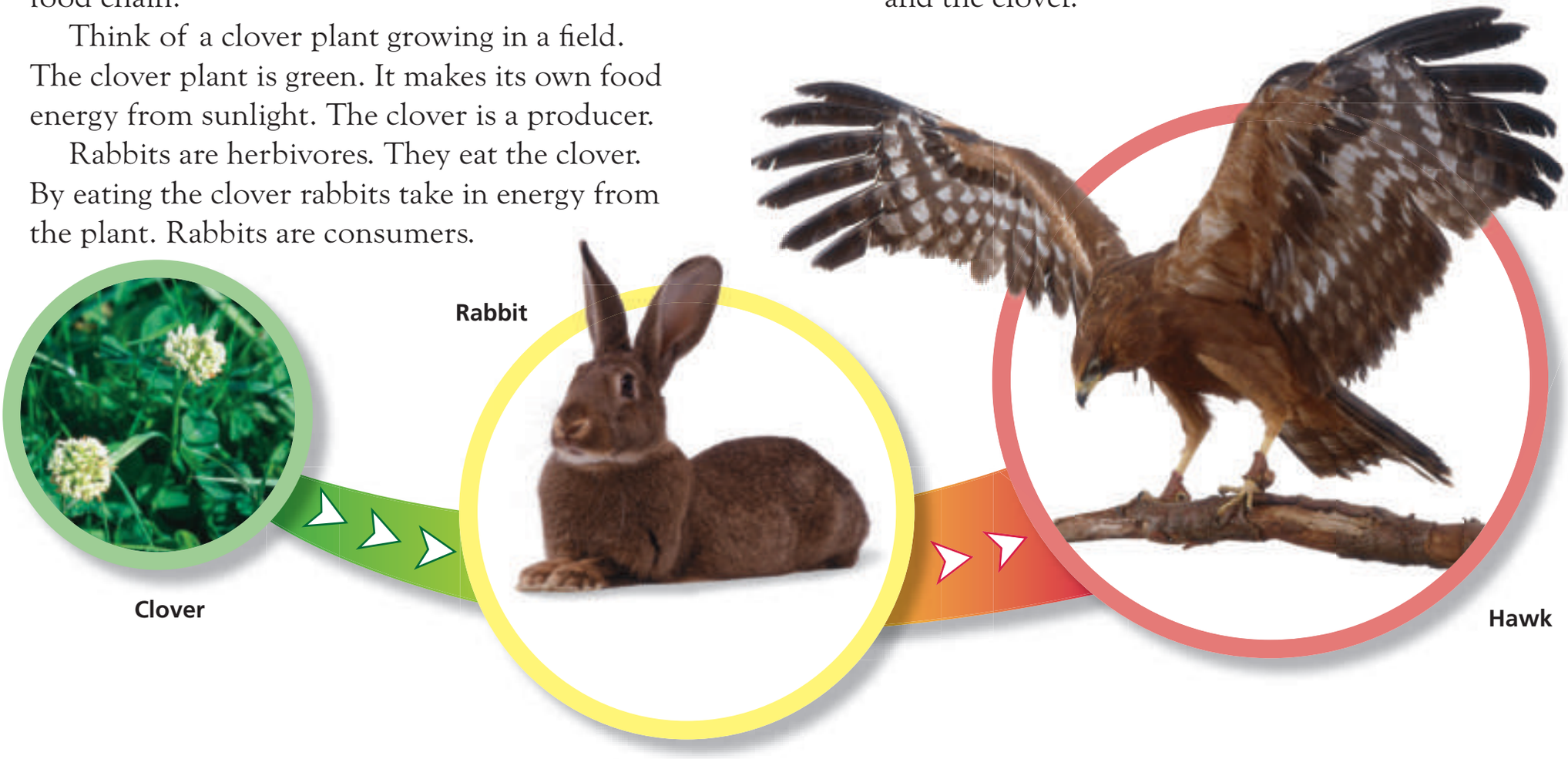
Follow the Energy

You might have questions about how carnivores get their energy from green plants. The answers are found by looking at a food chain. Energy moves from producers to consumers in a food chain.

Think of a clover plant growing in a field. The clover plant is green. It makes its own food energy from sunlight. The clover is a producer.

Rabbits are herbivores. They eat the clover. By eating the clover rabbits take in energy from the plant. Rabbits are consumers.

Marsh hawks are carnivores. They eat rabbits. If a marsh hawk catches and eats a rabbit, it will get energy from the rabbit. Now think back to where the rabbit got its energy. Do you remember? It was in the clover that the rabbit ate. The marsh hawk gets energy from both the rabbit and the clover.



Food Chains

All living things belong to a food chain. Food chains start with a producer, such as clover. At the end of each food chain is a consumer, such as the marsh hawk.

Most food chains have predators and prey. A **predator** is an animal that hunts for its food. **Prey** is the animal that is hunted. The marsh hawk is a predator, and the rabbit is its prey.

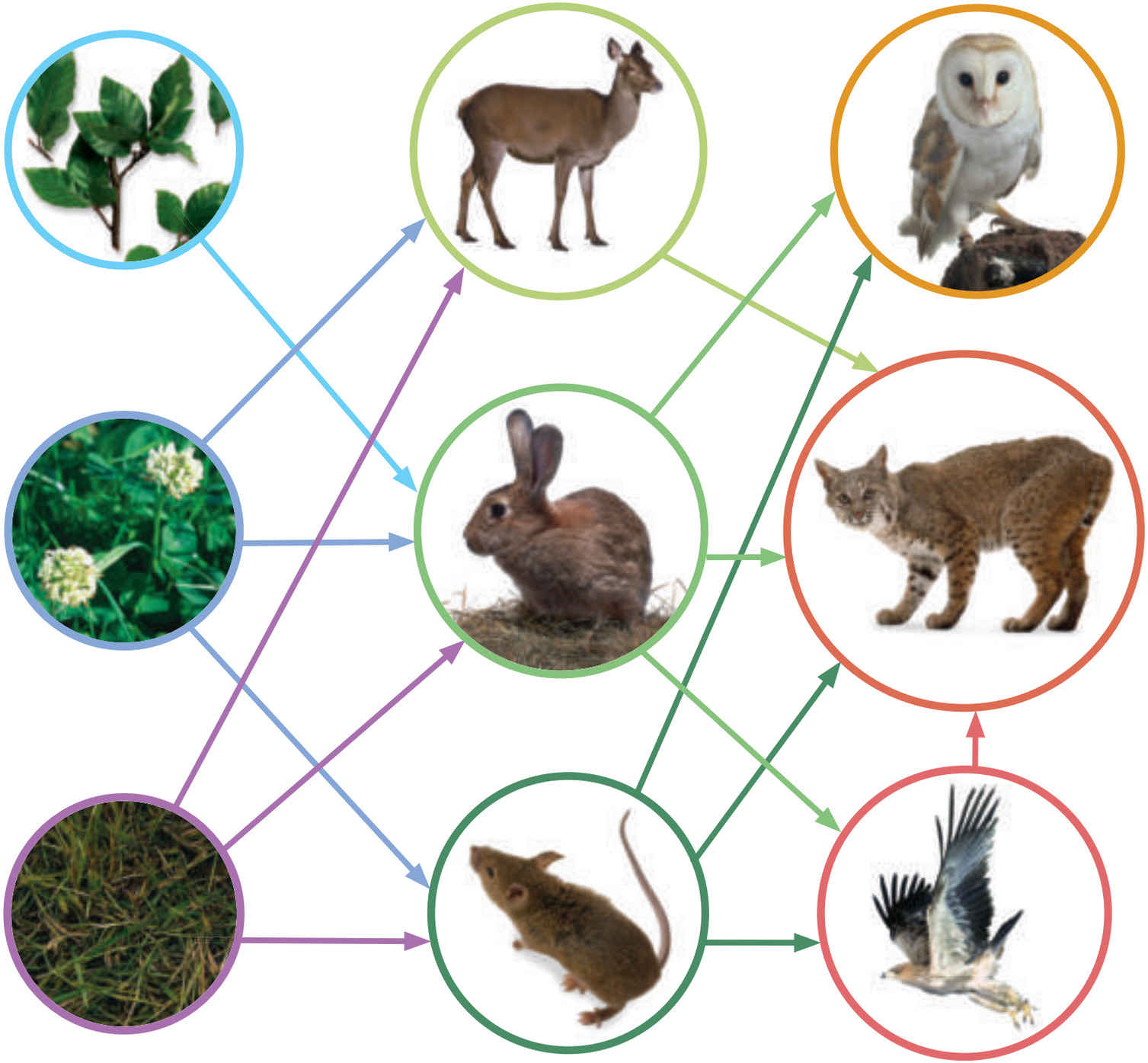
There can be more than one food chain in one place. In a field where clover grows, grass might also grow. Mice eat the grass. Owls eat the mice. In this food chain, grass is the producer. The mice and the owls are consumers. Owls are predators. They hunt the mice, which are the prey.

Another food chain could start when a plant's leaves are eaten by a deer. That deer could become prey for a bobcat.

Food Webs

One food chain cannot show all the plants and animals that pass on energy, even in a small place. Plants and animals might be eaten by more than one thing. Food webs show what happens when food chains cross.

Look at the food web on the right. You read that marsh hawks eat rabbits. They can also eat mice. Owls can eat rabbits. Bobcats can eat deer, rabbits, mice, and even hawks! Food webs show interactions between many living things in an environment.

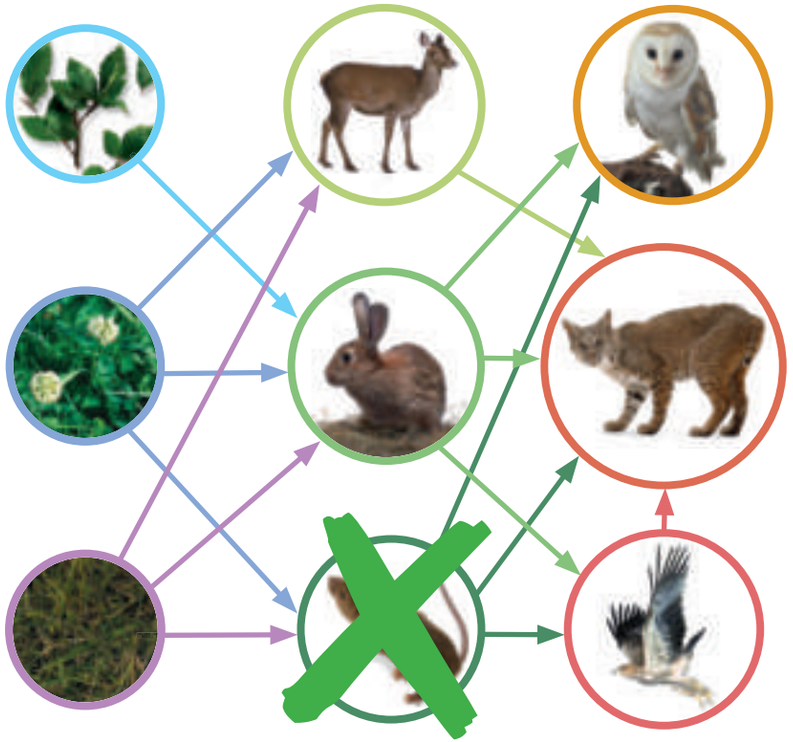


How Food Webs End and Change

It may seem like the food web that we just described ends with the bobcat. However, people sometimes hunt top predators such as bobcats. Other times, accidents, disease, or natural disasters may also kill animals such as bobcats. If that happens, scavengers such as bugs, crows, and coyotes will eat the bobcat. A scavenger is an animal that eats garbage or dead animals.

Vultures feeding on a dead sheep

What would happen if one part of a food chain disappeared? For example, suppose a lot of mice were killed or died. The barn owls and marsh hawks might not have enough food. That might cause the hawks and owls to go hungry. If they became hungry enough, they might be forced to move to a different place.



How Living Things Compete

If the barn owls and the marsh hawks both wanted to find mice, they would be in **competition** for the mice. In this case, two different kinds of predators are in competition for food. Usually, the stronger and faster predator will succeed.

Sometimes the competition between living things is not for food but for space. New homes may be built where animals used to live. Because of this, people may find deer in their backyards eating garden plants and bushes.

Many years ago, a plant called kudzu was brought to the United States. After a few years the kudzu started growing all over trees and bushes. It began to cover and choke out other plants. The kudzu was too successful at competing with other plants for space to grow.

Raccoons eat garbage in the city.

Environments Change

Environments can be changed by more than just plants competing for space. Animals or natural events can also change an environment.

The gypsy moth is an animal that has changed the environment in many parts of the United States. This insect's larvae eat the leaves of many kinds of trees. When gypsy moth caterpillars eat too many leaves off too many trees, birds lose their homes. Gypsy moth larvae can eat enough leaves to cause some trees to die.

Tornadoes, hurricanes, floods, droughts, volcanic eruptions, and fires are all natural events that can change environments. These natural events sound bad, but they can also bring some good changes to the environments they affect.

Tornadoes and hurricanes blow down many trees. Many living things grow on these trees. If a tree gets blown over and dies, it will soon be covered with decomposers. A **decomposer** is a living thing that breaks down waste and things that have died. The decomposers help the dead tree to **decay,** or rot. After the tree decays, it becomes part of the soil again. Other trees need the fertile soil from the dead tree so they can grow.

A Healthy Environment for People

People are at the top of many food chains and food webs. We are consumers of both plants and animals. Most people in the United States do not grow or catch their own food. They go to a grocery store to buy it. It is important for people to eat lots of fruits, vegetables, dairy products, nuts, whole grains, and fish in order to get the vitamins and minerals needed for good health.

In addition to good food, people need clean air and water, shelter, and a clean environment. In order to stay healthy, people also need to exercise. You can get exercise by working, playing sports, or playing outside.

People must also keep themselves clean so they don't get sick. It is important to wash your hands before eating so diseases are not spread. A **disease** is a sickness. Germs can cause disease. A **germ** is a very small living thing or particle that can make you sick.

People should also take good care of the world around them. They can help keep the air and water clean to protect all living things.

Glossary

carnivore	a consumer that eats only animals and not plants
competition	when two or more living things need the same resource
consumer	a living thing that eats food
decay	rotting that returns certain materials to the soil
decomposer	a living thing that breaks down waste and things that have died
disease	something that causes a living thing to become ill or sick
germs	very small living things or particles that cause diseases
herbivore	a consumer that only eats plants and not animals
omnivore	a consumer that eats both plants and animals
predator	a consumer that hunts another animal for food
prey	an animal that is hunted by others as food
producer	a living thing that makes its own food

What did you learn?

1. How do animals get energy to hunt for food?

2. What scientific term describes what happens when grass grows, gets eaten by a mouse, and then that mouse gets eaten by an owl?

3. What kind of animal has caused harm to many trees in the United States by eating too many of their leaves?

4. **Writing** in Science In this book, you have read about producers and consumers. Describe how producers and consumers interact. Use examples from the book.

5. **Draw Conclusions** Suppose you have seen a lot of mice in your backyard. You have also seen hawks hunting them. Suppose that one day you saw far fewer mice and no hawks. What might you conclude?