

Environment & Ecology Series

Threatened, Endangered & Extinct

PENNSTATE



COLLEGE OF AGRICULTURAL SCIENCES • COOPERATIVE EXTENSION

An Educational Series for Grades 3 & 4

Earth is home to millions of living things. Many of these living things are plants and animals. Each type of plant and animal has its own shape, size, and color. Some even have their own smell and sound. We call these different things *traits*.

Traits help plants and animals survive where they live. For example, the spotted fur on a newborn fawn helps it hide on the forest floor. Hiding can help a fawn survive. Another example is the thorns on a black locust tree. They protect the branches from browsing animals.

Plants and animals get their traits from their parents. Each plant or animal has a combination of their parents' traits. Take YOU, for example: Your hair color, smile, and voice are just a few of the traits passed onto you by your parents. However, you do not look or sound exactly like your parents or anyone else. You are the only you!

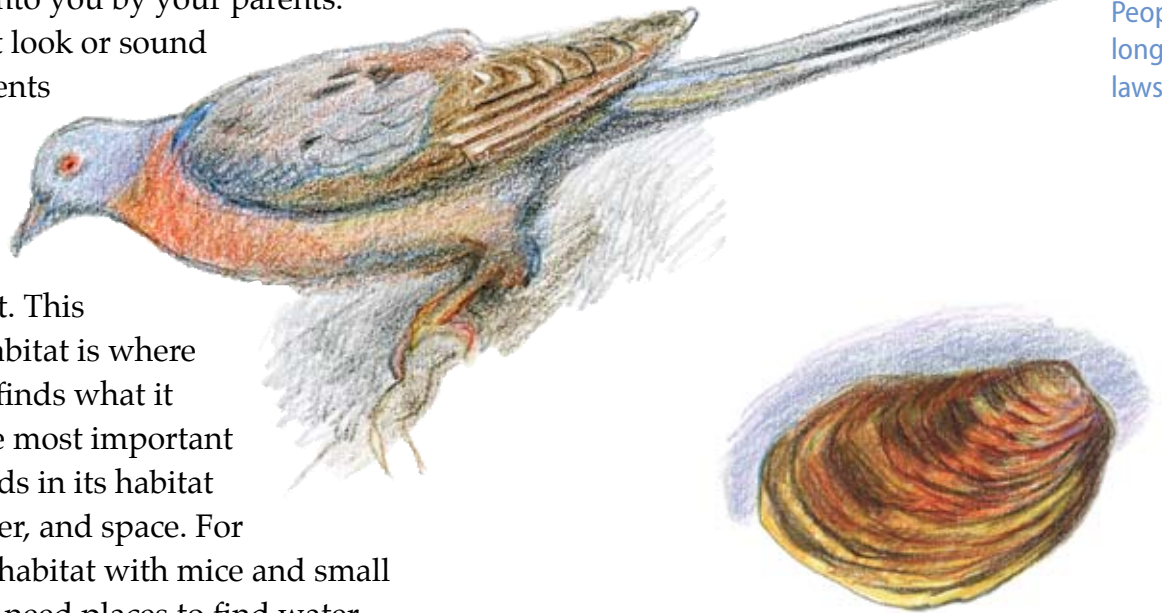
Each plant and animal lives in a place that suits it best. This place is its *habitat*. Habitat is where a plant or an animal finds what it needs to survive. The most important things an animal needs in its habitat are food, water, shelter, and space. For example, foxes need habitat with mice and small animals to eat. Foxes need places to find water, such as streams and ponds. They also need places for shelter. Foxes like dens in the ground. Foxes need a habitat big enough to hold all these things. The best fox habitat is often near a farm. Farms have woods and fields with plenty of fox food, water, shelter, and space.

Plants need different things from their habitat. They need water and nutrients from the soil.



Lion Tracks painting by Dan Christ

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Allegheny wood rats (above) and
American pigeons (left) are
endangered in Pennsylvania.
Humans overhunted them both
when there were few
laws to protect wildlife.

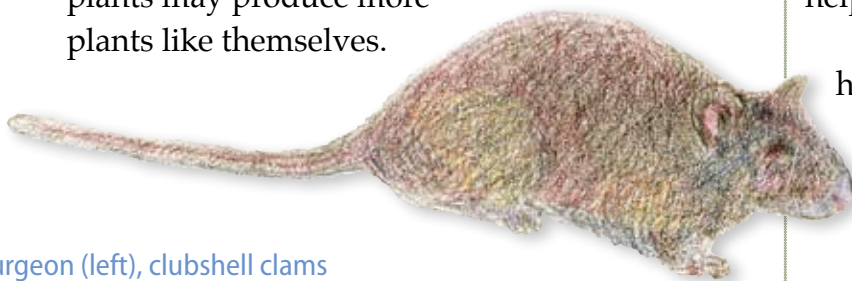
Plant roots take these up to help the plant grow. Plants need gases from the air, like carbon dioxide, to make food in their leaves. Plants also need energy from sunlight to make this food. When they have what they need, plants can live and grow in their habitat. Each type of plant has a habitat that suits it best. Cattail plants need lots of water and sun. They grow on the edges of ponds and wetlands where their roots are always wet. Prickly pear is a cactus plant that prefers dry, rocky habitat on hillsides or in deserts. It does not need much water.

Sometimes habitats change. If this happens, plants and animals may die or move to another place

to find what they need. Weather and insects often cause big habitat changes. Can you think of any other things that could cause a habitat to change?

When habitats change, plants and animals can sometimes change or *adapt* to survive right where they are. This can take a long time!

For example, if one kind of plant does not get enough water where it grows, it will die. But, a few of its kind might survive a dry spell if they have extra wax on their leaves. This wax helps a plant hold water in its leaves. The surviving plants may produce more plants like themselves.



Allegheny wood rat (left), clubshell clams
and American pigeons (right) are
species that are now *endangered* in the
region. Things such as dam building, water
pollution and diseases changed their habitat.



Many kinds of forest trees are adapted to growing in the shade when they are young. Why might their leaves be bigger when growing in the shade?

Many of these new plants may have their parents' trait of extra wax. They will be better able to survive dry times in the future. Over long periods, sometimes thousands of years, plants and animals slowly adapt to their habitat. This helps them survive a changing habitat.

Turtles are animals that adapted to their habitat. They do not have teeth, but they need to eat their food. Many types of turtles adapted to have a hard, sharp beak that lets them tear their food. Snapping turtles have a hooked beak and strong jaw. When snapping turtles bite down, their food does not get away! Can you think of other animals that have adapted to their habitat?

Sometimes all the plants or animals of one kind cannot adapt or change with their habitat. Sometimes they cannot move to another place. When this happens, this kind of plant or animal becomes *extinct*. Extinct means that there are none left living. This can be part of the natural process. At other times, plants and animals become extinct because something kills them all. Diseases, other animals, pollution, or people can cause this to happen. Two animals that are extinct in Pennsylvania because of people are passenger pigeons and mountain lions. Two hundred years ago, both were common in the state.



Diseases also kill plants. The American chestnut tree once grew everywhere in the Pennsylvania woods. Today, there are not many left. A disease from Asia spread to the state

and killed most of the chestnut trees. Plants and animals are called *endangered* when there are very few left. Atlantic sturgeon is an endangered fish in Pennsylvania. Dams and water pollution changed their river habitat. Bald eagles were endangered once too. Many people worked hard to protect them. When a type of plant or animal is



Showy lady's slipper is a *threatened* plant in Pennsylvania. Never dig them up or pick them.



More bald eagles are nesting in Pennsylvania. They are making a comeback in the state.

Photo: Pennsylvania Game Commission

at risk but not quite endangered, we say it is *threatened*. Showy lady's slipper is a threatened plant in Pennsylvania. Can you guess why?

Laws help protect endangered and threatened plants and animals. There are also laws that protect habitat. Wildlife refuges,

gamelands, state forests, and parks are places where habitat is protected. Hunting laws also protect certain kinds of animals to keep their numbers at healthy levels. Every different kind of plant and animal is important to our world. The best thing we can do for plants and animals is to protect and care for their habitat. All living things need a good place to live.

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