

Thank you for choosing the Oregon Zoo for your field trip destination and helping us make a better future for wildlife. We look forward to seeing you and hope you enjoy your visit.

The activities in this guide explore the role animals play in their ecosystem. They are designed to help you maximize your students' education experience during and following their zoo field trip. All activities are aligned to core academic standards and address the following Essential and Guiding questions:

- Why do healthy communities need diversity in order to thrive?
 - What is a community?
 - What happens to the health of a community when there isn't diversity?
 - What actions can you take to protect healthy communities?

The Oregon Zoo hopes that as a result of this program, students will be able to:

- Define community as a group of organisms that depend on one another for survival.
- Explain why healthy communities depend on a diversity of plant and animal life.
- Describe what happens to the health of a community when diversity is lost.
- Name two things they can do to protect healthy communities.

The program is correlated to the following academic standards:

Next Generation Science Standards:

2-LS4-1. Make observations of plants and animals to compare the diversity of life in different habitats

Oregon Social Science Standards:

2.21. Evaluate information relating to an issue or problem.

Background for Teachers:

An ecosystem is a community of plants and animals that depend on one another for survival. Healthy ecosystems require diversity because each member plays an important role. Plants provide homes and food for animals. The plants need healthy soil to grow. Decomposers like fungi help break down dead plants and animals to fertilize the soil. Bees and other pollinators carry pollen from one plant to another, allowing plants to reproduce.

The health of ecosystem decreases when diversity is lost. For example, imagine what would happen if all of the decomposers were removed from a forest. There would be rotting fruit and decaying leaves everywhere. There also would be a shortage of nutrients for plants to grow because they would be locked in the rotting fruit and decaying leaves. Without plants, other animals would lack the food and shelter they need to survive.

Habitat loss is one of the biggest threats facing healthy ecosystems. Habitat loss is the change in the environment that results in it being unsuitable for the survival of plants or animals. Although habitat loss

is a big problem, your actions can make a difference. Consider planting a wildlife garden on your school grounds; encourage students to reduce, reuse and recycle; or implement a school-wide litter patrol.

At the Zoo Activity:

Download and print the student version of *Eco Explorers: Biodiversity at*

<https://www.oregonzoo.org/discover/field-trips-and-school-programs/teacher-resources>

In this activity, chaperones help students use the numbered map and clues provided to explore the roles various plants and animals play in their ecosystem.

Activity

Chaperones: As you walk around the zoo, use the map and clues below to help students explore the various roles plants and animals play in their environment.

Animal 1

I am an insect that lives in Madagascar. Like the custodian at your school, my role is to keep my ecosystem clean. I like to eat rotting leaves and fruit. Without me, the forest would be very smelly.

I am a **Madagascar hissing cockroach**.

Animal 2

I am a flying insect you can find in your backyard. My job is to spread pollen, making me responsible for many of the pretty flowers you have in your garden. I am a **honey bee**.

Animal 3

Although I look like a plant, I am not. I am a very important algae that lives in shallow water along the Pacific Coast shoreline. I provide food and shelter for thousands of fish, invertebrates and mammals.

The sea otter often drapes me over its body to keep from drifting away. I am **kelp**.

Animal 4

I am a mammal that flies. The African rain forest depends on me to spread the seeds of the fruit I eat. I am a **fruit bat**.

Animal 5

I am a bird that lives in the African savannah. I have a special partnership with the dwarf mongoose. You will often find us feeding together. My job is to make loud calls to alert mongooses of approaching predators. In return, I pounce on the insects disturbed by mongooses as they forage for food. I am a **hornbill**.

Animal 6

I am a plant that you can find lying on its side in the forest. Although I am no longer alive, I provide important habitat for small insects and slugs. As I decay, the nutrients inside of me are returned to the soil so new plants can grow. I am a **nurse log**.

Animal 7

I am a small rodent that lives in the Pacific Northwest. Some people think I am a nuisance but I really do help my ecosystem. The holes I dig capture snow melt and rain water that might otherwise cause erosion. My abandoned tunnels provide homes for many other animals and my waste provides valuable nutrients to forest plants. I am a **pocket gopher**.

What role do you play in your community? _____

Post-Field Trip Activity

- Review with students the information they collected during their field trip. Use their zoo experience to introduce a unit on ecosystems.
- Assign students to work in groups to explore different ecosystems – grasslands, tundra, rainforest, desert, etc. Make sure at least five students are assigned to each ecosystem. For each ecosystem, students should be able to:
 - Identify where it is located in the world
 - Describe the environment including climate
- Have each student choose an animal from their ecosystem to research (i.e. polar bears in the tundra). For each animal, students should be able to:
 - Describe how it is adapted to its habitat;
 - Explain the role it plays in the ecosystem (link to other animals if possible);
 - Explain how the animal is doing in its environment and why (e.g. polar bears are threatened due to habitat loss);
 - List one thing they can do to help protect the animal (e.g. save energy by turning off lights)
- Have students share their reports with the class.