**Lesson 5 – I’m in Danger**

By Jody Einerson, from *Exploring Habitats of the Willamette Valley Oregon: An Educator’s Guide to the Ecology Field Cards of the Willamette Valley, Oregon*

**Learning Objectives:**

* Name one factor responsible for decline of species
* Understand the terms: endangered, threatened, and sensitive
* Basic understanding of the Federal Endangered Species Act
* Understand possible impact of listing a species
* Describe forest succession

**Activity Time:** one class period, additional time for extensions

**Space Required:** outdoor or indoor space for the group to comfortable stand around a tarp

**Materials:**

* Large tarp or old sheets for students to stand on
* Role playing cards at the end of the lesson – print on 4x6-inch cards
* Field ecology cards of the following organisms – have enough for each player to have one card. If you need additional cards for students, make additional role-playing cards
  + Northern Spotted Owl
  + Red-backed Vole
  + Douglas Squirrel
  + Honey Mushroom
  + Oregon White Truffle
  + Douglas-fir
  + Western Red Cedar
  + Western Hemlock
  + Fallen Log

**Preparation:** Print up 4x6-inch role-playing cards, and thread the cards with yarn for students to wear like necklaces.

**Vocabulary Words:**

* Endangered
* Threatened
* Generalist
* Specialist
* Extinction
* Sensitive

**Oregon Educational Benchmarks:**

* **Life Sciences** – organisms: understand structure, functions, and interactions of living organisms and the environment
* **Social Sciences** – civics and government: understand how individuals, groups, and international organizations influence government

**Overview:**

This role-playing game helps to illustrate the wide-ranging effects of listing a species under the Federal Endangered Species Act. Students will identify and discuss issues and potential conflicts that listing can cause.

**Background Information:**

Space is a key component for all species, including humans. As space on the earth becomes limited due to population increase or a shift in a species range, there is increased competition for space. In an effort to maintain a balance between species and needed space, the federal government created the Endangered Species Act.

The Endangered Species Act of 1973 requires the US Fish and Wildlife Service to develop a recovery plan to protect endangered or threatened species. An ***endangered*** species is one that is in danger of extinction in all or a specific part of its range. A ***threatened*** species is one that is likely to become endangered in the foreseeable future. The US Fish and Wildlife Service also maintains a list of ***sensitive*** species that are candidates for inclusion on the federal list.

One example of a threatened species is the Northern Spotted Owl, which was placed on the endangered species list in 1990. The process of listing and developing a recovery plan for the owl polarized the Pacific Northwest. The plan had far reaching impacts and touched the lives of almost all the humans living in the area.

**Activity Directions:**

1. Hand out Ecology Field Cards and role-playing cards, one to each student. Instruct students to stand on the “habitat” area (the tarp) with hands on their hips. Make sure that there is sufficient room for all the students to stand comfortably on the tarp. The Spotted Owl card receives extra space because of its Federal Protection. Have the owl stand with their arms extended and explain that no one else may stand in that space. Explain that students will assume the role of the plant or animal on their situation card. Have the students read their cards aloud so the whole group knows what their roles are. Have the students discuss the connections or relationships between the species on the field cards. Is their species able to move to a new location?
2. Explain that space is a necessary component of a habitat for all species and that sometimes there is not enough space for all species to survive. Have the students pretend that the tarp they are standing on is a forest habitat. The forest is near a growing town. There is not enough room in town for all the people, so they are going to take part of the forest to build new homes.
3. Fold under approximately ¼ of the tarp. Explain to the students that the section of folded tarp represents the section of the forest for the new homes. Is there enough room for the remaining species? If not, who can no longer fit on the tarp? Continue folding under sections of the tarp until the Northern Spotted Owl or its food sources can no longer fit on the tarp. What happened to the species that can no longer fit in a habitat? Did they move to another habitat?

**Activity Reflection:**

Species are either generalist (able to adapt to different habitats and a variety of food sources) or specialist (adapted to very specific habitats and food sources). Do the students think that the owl is a generalist or a specialist? Why? Have a student read aloud the habitat and food needs for the owl. How does being a generalist or specialist factor into a species’ survival? (Hint: discuss the black-tailed deer)

Introduce the concept of forest succession in your reflection on this activity. The Northern Spotted Owl is found in mature or climax forests because it has adapted to that specific habitat. It depends on mature snags for nesting, on ample space between trees to fly but a dense canopy for protection, and a specialized diet that is only found in the food web of the climax forest. The owl sometimes can be found in younger forests, but it does not thrive and other species will out compete it for available natural resources.

**Survivor Extension:**

1. Explain that decisions have to be made about how to allocate our habitat (tarp) and that all students get to vote to decide who stays and who goes.
2. Repeat the game with the following change: after explaining about building new houses, the students vote for the cards that have to leave (much like the television show *Survivor* where competitors vote to see who leaves the island). The educator reads the list of jobs then asks the students to vote for who goes. Remove one=fourth of the players. Continue until the Northern Spotted Owl or its food source is removed.
3. Discuss with students the Federal Endangered Species Act of 1973. How is the survivor game like enforcing this law? Was it difficult to decide who stays and who goes? What happens to those who are forced to leave? This leads to the discussion of what happens when an animal is removed from the habitat. What happens if there is not enough room for people to live? What happens to people who lose their jobs? What happens to the community when people lose their jobs? What happens to the animal community when it loses a species?

**Extension of Activity:**

The listings of the Northern Spotted Owl and other endangered species have had a tremendous impact on the economy of the Pacific Northwest. The impact is well documented in books, magazines, and on the web. Have students research the topic further. Have them choose an opinion that is not their own and write a paragraph explaining their side of the story.

**Role Playing Cards**

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| **Logger** – makes his living in the forest |
| **Barred Owl** – non-native species that is encroaching on Northern Spotted Owl habitat |
| **Rural Land Owner** – sells timber to make money |
| **Saw Mill Owner** – employs community members |
| **Parent** – lives and works in community, sends children to schools |
| **School** – dependent on community members and business for funds |
| **Forest Recreational User** – enjoys spending time in the forest hiking, camping, hunting, etc. |
| **Environmentalist** – enjoys the forest for the vast biodiversity it contains |
| **US Fish and Wildlife Biologist** – job is to study and protect wildlife |