



LESSON 4 • Endangered Species

Objectives:

Students will:

- identify and describe factors contributing to the endangering of species.
- recall why Wildernesses are important for threatened & endangered species recovery.

Background:

Why should we recover threatened and endangered species?

- **ECOSYSTEMS**
- **ETHICS**
- **AESTHETICS**
- **ECONOMIC BENEFITS**
- **LAWS**

Some habitat has been set aside in the form of parks, wildlife refuges, Wilderness, and other reserves. Since 1964 when The Wilderness Act was passed, approximately 104 million acres have been included in the National Wilderness Preservation System. Efforts to boost a species' numbers won't mean much in the future if the habitat of an animal or plant doesn't exist or if the area is too degraded to support the species. **Habitat protection** is ultimately the key to saving threatened and endangered species.

Few Wildernesses are big and diverse enough to meet the year-round needs of all the fish and wildlife populations that use a Wilderness. Some wildlife species such as grizzly bears require vast undisturbed areas to which Wilderness boundaries may not be related. Certainly most of the Wilderness areas in the East are too small to contain the entire ranges of many species. Can adjacent habitat be managed to develop natural boundaries that will contain and protect the animals?

The U.S. Fish and Wildlife Service's Grizzly Bear Recovery Plan recognizes that grizzly conservation cannot be accomplished on a Wilderness-by-Wilderness basis because a bear can cover 1,000 square miles in a lifetime of normal activity. The resulting plan tries to coordinate management efforts in the two remaining viable grizzly habitats in the lower 48 states—the Yellowstone ecosystem in Wyoming, Idaho, and Montana, and the Northern Continental Divide ecosystem in Montana, Idaho, and Washington. The plan requires coordinated management in the Wildernesses and adjacent wildlands. **No Wilderness exists in a vacuum.** It is always surrounded by and/or abuts something that can markedly affect Wilderness management for wildlife within the area (Hendee, Stankey, and Lucas, 1990). Conservation biologists estimate approximately 100 species are becoming extinct every day. Wildernesses may provide some of the critical habitat for threatened and endangered species.

Students will review the list of endangered species and conduct research on a species of their choice. With information gathered, students will prepare a written report or oral presentation and come up with solutions for species recovery.



Activity 1: Endangered Species

Materials:

- Use of the World Wide Web (WWW) is required.
-  National Wilderness Preservation System map.

Duration: 1 to 5 class periods

Location: classroom

Procedure:

1. Assign as background reading the WWW pages on "Threatened and Endangered Species Recovery."
2. Review the list of endangered wildlife and plant species from the WWW pages. If students want to write or call a U.S. Fish and Wildlife Office for their region, addresses and phone numbers can be found in this lesson, page 372. Ask students to select a species from the list and gather information about its problems. Students will be assigned to write a report. Reports might include this information about the species:
 - past and present range and population
 - length of time it has been endangered
 - reasons it is endangered
 - actions currently being taken to improve its chances of survival
 - a list of agencies, interest groups, or others who are working on the problem. Who is contributing money to the effort?
 - activities that the student alone or the entire class might undertake to aid the species
 - ways in which good land management could slow down or prevent such losses
 - why it is important that this species survive?
3. Once students have each presented their reports, create a chart listing each of the species; length of time endangered; past and present range; past and present population; and outlook for survival. Add any other categories of information and analysis you and the students might find interesting. Look for trends. Find practical actions private citizens might take to assist in recovery of species, if they choose. Make these suggestions available to others in your community who might be interested.
4. Using the National Wilderness Preservation System Map, students can locate a Wilderness or Wildlife Refuge near their community. Ask students to contact a natural resource professional from that area to speak to the class on concerns regarding local threatened & endangered species recovery efforts. Students can conduct further interviews and research on a species in their state or bio-region, including:
 - What areas have been set aside specifically for an endangered species?
 - What species are already extinct?

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Biology Connections



Procedure continued:

5. Addresses/contacts of regional U.S. Fish and Wildlife Service Offices:


	Contact Info	States in Region
Region One	Eastside Federal Complex 911 N.E. 11th Ave. Portland, OR 97232 (503) 231-6118	California, Hawaii, Idaho, Nevada, Oregon, Washington, American Samoa, Commonwealth of the Northern Mariana Islands, Guam and the Pacific Trust Territories
Region Two	P.O. Box 1306 Albuquerque, NM 87103 (505) 248-6282	Arizona, New Mexico, Oklahoma, and Texas
Region Three	Federal Bldg. Ft. Snelling Twin Cities, MN 55111 (612) 725-3500	Illinois, Indiana, Iowa, Michigan, Minnesota, Missouri, Ohio, and Wisconsin
Region Four	1875 Century Blvd., Suite 200 Atlanta, GA 30345 (404) 679-4000	Alabama, Arkansas, Louisiana, Georgia, Kentucky, Mississippi, North Carolina, South Carolina, Florida, Tennessee, Puerto Rico, and the U.S. Virgin Islands
Region Five	300 Westgate Center Dr. Hadley, MA 01035 (413) 253-8659	Connecticut, Delaware, District of Columbia, Maine, Maryland, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, Vermont, Virginia and West Virginia
Region Six	P.O. Box 25486 Denver Federal Center Denver, CO 80225 (303) 236-7920	Colorado, Kansas, Montana, Nebraska, North Dakota, South Dakota, Utah, and Wyoming
Region Seven	1011 E. Tudor Rd. Anchorage, AK 99503 (907) 786-3542	Alaska



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Biology Connections

Evaluation / Follow-up / Extension

- Evaluate research skills and written reports.
- Ask students to design a hypothetical animal or plant with characteristics that favor extinction. How do the traits of this species compare with those of any real animals or plants? Repeat, except design a species that could resist extinction.
- Students can generate a list of ways they can help recovery efforts for threatened and endangered species and select projects to pursue.
- For additional lessons and activities that compliment this lesson, see other Science lessons, and “Conservation Biology, A Curriculum for High School Students,” and  “Conserving Greater Yellowstone, A Teacher’s Guide.”

Career Options:

wildlife biologist, conservation biologist, natural resource land manager, research scientist

References:

- Lesson adapted from Project Learning Tree, “Endangered Species.”
- *Wilderness Management*, John C. Hendee, George H. Stankey, and Robert C. Lucas

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Biology Connections



The following resources can be accessed through the U.S. Fish and Wildlife Service, Endangered Species Home Page (<http://www.fws.gov/~r9endspp/endspp.html>).

1. An explanation of the endangered species recovery process, found by scrolling down the E.S. Home Page to:

SPECIES

Recovery

***Questions and Answers**

2. The current list of endangered species listed by animal types and plant types, found by scrolling down to:

SPECIES

Listed Species

*U.S. Species Indices

- o Vertebrate Animals
- o Invertebrate Animals
- o Flowering Plants
- o Non-flowering plants

3. Other material needed is the map of the National Wilderness Preservation System.