

TEACHING KATE

TEACHING KIDS ABOUT THE ENVIRONMENT

**THE ENDANGERED SPECIES ACT AND ITS EFFECT ON
THREATENED AND ENDANGERED SPECIES
WITH**

SPECIAL EMPHASIS ON THE RED-COCKADED WOODPECKER

Grade Level: 7 and 8

Time Required: 3 class periods

SC Science Standards

This lesson plan was correlated with only the grade level specified unless otherwise noted.

Grade 7:

- I. A. 2. c
- I. A. 7. a
- II. B. 1. a

Grade 8:

- I. A. 2. c
- I. A. 7. a
- II. A. 3. a, b, c

Purpose

Students will learn about the Endangered Species Act of 1973. They will also be familiarized with the extensive efforts in the state of South Carolina to protect the red-cockaded woodpecker. They will through individual research develop a greater appreciation towards threatened and endangered species.

Skills

Decision making, inferring, observing, researching, summarizing cause and effect.

Concepts

Endangered and threatened species; conserving of ecosystems upon which endangered and threatened species depend; conservation of endangered and threatened species; compliance with relevant international treaties; the commitment pledged by United States to conserve the various species of wildlife and plants facing extinction.

Materials Needed

Paper	Pencils
Worksheets 1 and 2	Transparencies/Markers
Summary of the Endangered Species Act of 1973	
Guidelines for Research, Worksheet 3	
Lists of Endangered and Threatened Species of North America and Nearby Oceans	

Definition of Terms

<u>Conserve,</u> <u>Conserving,</u> <u>Conservation</u>	To use and the use of all methods and procedures which are necessary to bring any endangered or threatened species to the point of recovery. The wise use of a resource.
<u>Critical Habitat</u>	Specific areas within the geographical area occupied by the endangered or threatened species, on which are found those physical or biological features essential to the conservation of the species that may require special management considerations or protection.
<u>Delisted</u>	The formal removal or change in status of an endangered or threatened species after a review, carried out at least once every five years, of all species included on the list is completed.
<u>Endangered Species</u>	Any species which is in danger of extinction throughout all or a significant portion of its range. An exception is made for any insect determined to constitute a pest whose protection under the provisions of the Act would present an overwhelming and overriding risk to man.
<u>Extinction</u>	The irrevocable elimination of species.
<u>Indigenous</u>	A native or naturally occurring species.
<u>Rare Species</u>	A species that has a small number of individuals and/or has alimited distribution.
<u>Threatened Species</u>	A specific plant or animal species whose population level in some sections of its natural range is very low; however, the breeding stocks are not sufficiently low throughout the entire range to place the continued existence of the species in jeopardy.

Before the Session

Prepare transparencies of the Endangered Species Act for the class discussion. Contact the representatives of the U. S. Forest Service and Heritage Trust (Non Game Section) of the Department of Natural Resources for a speaker. Check with the school's media specialist and the county librarian about resource material available for use by cooperative groups in their research assignments.

Background Information

Passage of the Endangered Species Act of 1973 represented a sweeping advance over previous wildlife protection efforts in the United States. Earlier legislation had focused primarily on "game" mammals, birds and fish. Laws were mostly restrictive, telling hunters and harvesters what they could not do in terms of specific animals that could be taken and bag limits, and regulating trade in such items as pets, skins, feathers and ivory.

The Act of 1973 offers protection to any member of the plant or animal kingdom, including subspecies, races and local populations, that is threatened by extinction. The law provides protection for endangered and threatened species in the United States and abroad. It prohibits hunting, killing, capturing, selling and importing or exporting flowers, hides, pelts, feathers, or other products from any endangered species. It also protects habitat critical for the survival of threatened species and requires plans to restore endangered species. It forbids units of government from undertaking any project that would harm endangered species. The Act also requires the government to prepare a list of all species that are endangered or threatened.

Between 1970 and 1989, the number of species found only in the United States that have been placed on the official endangered and threatened list increased from 92 to 563. Another 508 species found in other parts of the world are also on the list. Recovery plans have been developed and approved for only about 51% of the endangered or threatened species native to the United States, and half of these plans exist only on paper due to lack of funding. Only a handful of species have recovered sufficiently to be removed from protection.

The red-cockaded woodpecker was once a common bird in the mature pine forests of the Southeast. Its range extended from east Texas to Florida and north to Missouri, Kentucky and Maryland. Today, its range and population have been reduced through loss of habitat.

Unlike other woodpeckers, the red-cockaded roosts in cavities in live southern pines. It needs older pine trees for its cavities and extensive pine and pine-hardwood forests to meet its foraging requirements. Much of the South has been cleared for agriculture or other incompatible uses. Much of the remaining pine forests are not suitable for the red-cockaded woodpecker. Each year, more areas become unsuitable. Because of the drastic loss and continued decline of habitat, the bird is considered in danger of extinction.

In 1970, the red-cockaded woodpecker was declared an endangered species. It now has the same protection given the better known bald eagle and whooping crane. But protection alone is not enough. On federal and state lands, forestry practices are giving the bird a better chance for survival by creating a favorable habitat. Other landowners can take positive steps to enhance its survival, especially if the red-cockaded woodpecker already lives on their land.

The state of South Carolina has developed a program for protection of the red-cockaded woodpecker which has proved to be successful.

Suggested Lesson Plan

DAY 1

1. When all students are settled, begin the discussion by asking, "Should plants and animals be protected?" After listening to a few responses, show the students the summary of the Endangered Species Act of 1973. Discuss and explain the significance of each section.
2. Pass out worksheet 1, "Protected by Law". Students will read the sheet and answer questions 1-5 on worksheet 2, Skills Check. (This activity could be done orally or transparencies could be made for a quick class check.)
3. Divide the class into groups of 4 or 5 students. Write the names of the following endangered species on the board; Gopher Tortoise, Loggerhead Turtle, Eastern Cougar, Red-cockaded Woodpecker, Southern Bald Eagle, American Peregrine Falcon, Bunched Arrowhead, Persistent Trillium.
4. Pass out worksheet 3, "Guidelines for Research". Each cooperative group will complete the research within the teacher designated period of time. (Recommendation 2-3 days. They will report their findings to the class on Day 3.)

Day 2

1. Resource speaker - Invite a representative of the U. S. Forest Service or the Heritage Trust (Non Game Section) of the Department of Natural Resources to give expert information on the red-cockaded woodpecker. Students will be given an opportunity to ask questions.

Day 3

Cooperative research groups will report their findings to the class. (Oral presentation.) At the end of the oral presentations, the teacher will close the unit by asking thought provoking questions such as:

1. Which do you think it is more important to save: endangered plants or endangered animals? Why?
2. Which of the following do you think is most important to save?
 - a. Animals that are very beautiful.
 - b. Large animals such as whales, elephants, pandas and black bears.
 - c. All types of animals.
 - d. Animals that provide us with food and clothing.
 - e. Animals that live in South Carolina.
3. What role will you play in protecting endangered and threatened species?

Application

The significance of a lost species may not be fully comprehended until it is too late. Sadly, many forms of wildlife have already become extinct. Without our help, other species may perish. It is our challenge to come to their aid. Through knowledge, cooperation and genuine concern for all wildlife, we may be better able to preserve species that share the earth with us.

Resources Available

Cely, John. Heritage Trust, Department of Natural Resources, Columbia, S. C.

Environmental Science, A Global Concern. Cunningham and Saigo. 1990. Wm. C. Brown Publishers.

Environmental Science, Sustaining the Earth. G. T. Miller, Jr. 1991. Wadsworth Publishing Co., Belmont, C. A.

Endangered and Threatened Wildlife of Kentucky, North Carolina, South Carolina and Tennessee. W. Parker and L. Dixon. February 1980. U. S. Fish and Wildlife Service and Clemson University Cooperative Extension Service, Clemson, S. C. 29634.

Ferral, Pat. Heritage Trust, Department of Natural Resources, Columbia, S. C.

Mammals of the Carolinas, Virginia and Maryland. W. D. Webster, J. F. Parnell and W. C. Biggs, Jr. The University of North Carolina Press, P. O. Box 2288, Chapel Hill, N. C. 27515-2288.

Scientific Encounters of the Endangered Kind. L. Embry. 1986. Good Apple, Inc.

Stapleton, Glen. District Ranger. U. S. Forest Service, McClellanville, S. C.

Summary of the Endangered Species Act of 1973. K. D. Coder. Extension Forest Resources, University of Georgia, Athens, G. A.

The Audubon Society Field Guide to North American Birds (Eastern Region). J. Bull and J. Farrand, Jr. 1977. Alfred Knopf, Inc. New York, N. Y.

The Audubon Society Field Guide to North American Mammals. J. O. Whitaker, Jr. 1980, 8th Prtng. 1992. Alfred Knopf, Inc. New York, N. Y.

The Audubon Society Field Guide to North American Reptiles. Alfred Knopf, Inc. New York, NY.

Watson, Craig. U. S. Forest Service, McClellanville, S. C.

Prepared by: Hallie Caldwell Colter

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**Endangered and Threatened Species
of North America and Nearby Oceans***

MAMMALS

Common name	Range	Status
Bat, gray	Central and Southeastern USA	Endangered
Bat, Indiana	Eastern and Midwestern USA	Endangered
Bat, Ozark big-eared	USA (MO, OK, AR)	Endangered
Bat, Virginia big-eared	USA (KY, WV, VA)	Endangered
Bear, brown or grizzly	Canada, Western USA	Threatened
Bear, Mexican grizzly	Mexico	Endangered
Bison, wood	Canada, Northwestern USA	Endangered
Bobcat	Central Mexico	Endangered
Caribou, woodland MT, NH, VT, WA, WI)	Canada, USA, (AK, ID, ME, MI, MN,	Endangered
Cougar, Eastern	Eastern North America	Endangered
Deer, Cedros Island mule	Mexico (Cedros Island)	Endangered
Deer, Columbian white-tailed	USA (WA, OR)	Endangered
Deer, key	USA (Southern Florida)	Endangered
Dugong	USA (Trust Territories)	Endangered
Ferret, black-footed	Western USA, Western Canada	Endangered
Fox, Northern swift	USA (Northern Plains), Canada	Endangered
Fox, San Joaquin kit	USA (California)	Endangered
Jaguar	USA (TX, NM, AZ)	Endangered
Jaguarundi	USA (Texas, Arizona), Mexico	Endangered
Manatee, Florida	USA (Southeastern)	Endangered
Margay	USA (Texax)	Endangered
Mouse, Key Largo cotton	USA (Florida)	Endangered
Mouse, salt marsh harvest	USA (California)	Endangered
Ocelot	USA (TX, AZ)	Endangered
Otter, southern sea	West Coast USA (WA, OR, CA)	Threatened
Panther, Florida	USA (LA and AR east to SC and FL)	Endangered
Prairie dog, Utah	USA (Utah)	Threatened
Pronghorn, peninsular	Mexico (Baja California)	Endangered
Pronghorn, Sonoran	USA (Arizona), Mexico	Endangered
Rat, Morro Bay kangaroo	USA (California)	Endangered

Squirrel, Delmarva Peninsula fox	USA (DelMarva Peninsula to southeast Pennsylvania)	Endangered
Whale, blue	Oceanic	Endangered
Whale, bowhead	Oceanic (north latitudes)	Endangered
Whale, finback	Oceanic	Endangered
Whale, gray	North Pacific, Bering Sea	Endangered
Whale, humpback	Oceanic	Endangered
Wolf, gray	USA (48 states except MN), Mexico	Endangered
Wolf, red	Southeastern USA west to Central Texas	Endangered
Wood rat, Key Largo	USA (Florida)	Endangered

BIRDS

Common Name	Range	Status
Akepa, Hawaii	USA (Hawaii)	Endangered
Albatross, short-tailed	USA (AK, CA, HI, OR, WA), North Pacific, USSR, Japan	Endangered
Blackbird, yellow-shouldered	USA (Puerto Rico)	Endangered
Bobwhite, masked	USA (Arizona), Mexico (Sonora)	Endangered
Cahow	North Atlantic Ocean, Bermuda	Endangered
Condor, California	USA, (OR, CA), Mexico (Baja California)	Endangered
Coot, Hawaiian	USA (Hawaii)	Endangered
Crane, Mississippi sandhill	USA (Mississippi)	Endangered
Crane, whooping	Canada, USA, Mexico	Endangered
Creeper, Hawaii	USA (Hawaii)	Endangered
Curlew, Eskimo	Alaska and northern Canada to Argentina	Endangered
Dove, Palau ground	West Pacific Ocean, Palau Islands	Endangered
Duck, Hawaiian	USA (Hawaii)	Endangered
Eagle, Greenland white-tailed	Greenland and nearby islands	Endangered
Eagle, harpy	Mexico south to Argentina	Endangered
Eagle, bald	North America south to Mexico	Endangered
Eagle, bald	USA (WA, OR, MN, WI, MI)	Threatened
Falcon, American peregrine	Central Alaska across north central Canada to central Mexico; winters in South America	Endangered
Falcon, Arctic peregrine	Northern Alaska to Greenland; winters in Central and South America	Threatened
Falcon, peregrine	Worldwide, except Antarctica and most Pacific Islands	Endangered
Finch, Laysan	USA (Hawaii)	Endangered
Flycatcher, Palau fantail	West Pacific Ocean (Palau Islands)	Endangered
Goose, Aleutian Canada	USA (AK, CA, OR, WA), Japan	Endangered
Goose, Hawaiian	USA (Hawaii)	Endangered

Hawk, Hawaiian	USA (Hawaii)	Endangered
Honeycreeper, crested	USA (Hawaii)	Endangered
Kite, Everglade	USA (Florida)	Endangered
Mallard, Mariana	West Pacific, Guam, Mariana Islands	Endangered
Millerbird, Nihoa	USA (Hawaii)	Endangered
Parrot, Puerto Rican	USA (Puerto Rico)	Endangered
Pelican, brown	USA (Carolinas to TX, CA)	Endangered
Rail, California Clapper	USA (California)	Endangered
Shearwater, Newell's	USA (Hawaii)	Endangered
Shrike, San Clemente loggerhead	USA (California)	Endangered
Sparrow, Cape Sable seaside	USA (Florida)	Endangered
Sparrow, San Clemente sage	USA (California)	Threatened
Stilt, Hawaiian	USA (Hawaii)	Endangered
Stork, wood	USA (CA, AZ, TX to Carolinas)	Endangered
Tern, California least	Mexico, USA (California)	Endangered
Thrush, large Kauai	USA (Hawaii)	Endangered
Warbler (wood), Bachman's	Southeastern USA, Cuba	Endangered
Woodpecker, ivory-billed	USA (south central and southeastern), Cuba	Endangered
Woodpecker, red-cockaded	USA (south central and southeastern)	Endangered

REPTILES

Common Name	Range	Status
Alligator, American	Southeastern USA	Endangered
Boa, Mona	USA (Puerto Rico)	Threatened
Crocodile, American	USA (Florida), Mexico	Endangered
Gecko, Monito	USA (Puerto Rico)	Endangered
Iguana, Mona ground	USA (Puerto Rico: Mona Island)	Threatened
Lizard, blunt-nosed leopard	USA (California)	Endangered
Lizard, Island night	USA (California)	Threatened
Rattlesnake, New Mexican ridge-nosed	USA (New Mexico), Mexico	Threatened
Snake, Atlantic salt marsh	USA (Florida)	Threatened
Snake, eastern indigo	USA (AL, FL, GA, MS, SC)	Threatened
Snake, San Francisco garter	USA (California)	Endangered
Tortoise, desert	USA (UT, AZ, CA, NV), Mexico	Threatened
Turtle, green sea and Pacific Coast of Mexico)	Tropical and temperate seas; USA (FL)	Endangered
Turtle, loggerhead sea	Tropical and temperate seas and oceans	Threatened
Turtle, Plymouth red-bellied	USA (Massachusetts)	Endangered

*Partial listing from *Endangered and Threatened Wildlife and Plants*, July 20, 1984, 50 CFR 17.11 and 17.12. U.S. Department of the Interior, U.S. Fish and Wildlife Service.

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WORKSHEET 1

Protected by Law

Many animal and plant species throughout the world are on the brink of extinction. A species is considered “endangered” when its population is so low as to risk becoming extinct. A species nearing the endangered classification is considered a “threatened” species.

In the United States a species listed as threatened or endangered receives protection under Federal law. The Endangered Species Act of 1973 is a measure passed by Congress to help restore endangered populations. The federal government, the states, conservation groups, and many other groups are working together to help save our wildlife. Conservation and recovery programs have been initiated to help restore populations of endangered and threatened species.

In August 1984, more than three hundred American plants and animals and five hundred foreign species were officially listed as endangered or threatene. Many of these species were cited because their habitats were invaded by man, diseases, pollution, pesticides, and predators. Under legal protection endangered species have a better chance for survival. The federal government is responsible for making sure that any action it authorizes does not pose a threat to a listed species or its habitat. Research, wildlife management, and public information aimed at restoring wildlife so its existence is no longer threatened is the main objective of the U.S. Fish and Wildlife Service’s Endangered Species Program.

Programs to save endangered species seem to be helping. The bald eagle, Key deer, American alligator, California condor, and other species are increasing in number. Other seriously threatened species are being helped in recovery programs by raising the young in captivity, cleaning the environment, protecting natural habitats, and introducing species to other suitable habitats. It is a difficult job, but as long as a species is threatened or endangered, there is hope. It is only when a species becomes extinct that it is too late to be concerned.

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**WORKSHEET 2
Skills Check**

Directions: Circle the letters of the correct responses in items 1-4.

1. The article suggests
 - a. there is hope for endangered species
 - b. endangered species will become extinct
 - c. threatened species will become endangered

2. Programs to help conserve endangered species
 - a. are not working well
 - b. seem to be helpful for some species
 - c. were discontinued in 1973

3. A word that means “the place where an animal naturally lives” is
 - a. environment
 - b. habitat
 - c. population

4. The word “measure” in the article means
 - a. a degree
 - b. a way of determining an amount
 - c. an action taken as a means to an end

5. Circle the suffix in each word below and write the root word in the blank.

<ol style="list-style-type: none"> a. extinction _____ b. population _____ c. considered _____ d. protection _____ e. national _____ f. increasing _____ g. captivity _____ h. introducing _____ i. concerned _____ 	<ol style="list-style-type: none"> j. recovery _____ k. raising _____ l. listed _____ m. helping _____ n. cited _____ o. seriously _____ p. nearing _____ q. becoming _____ r. suitable _____
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WORKSHEET 2-TEACHER'S GUIDE

Skills Check

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- | | | | |
|-----------------------|------------------|---------------------|----------------|
| a. <u>extinction</u> | <u>extinct</u> | j. <u>recovery</u> | <u>recover</u> |
| b. <u>population</u> | <u>populate</u> | k. <u>raising</u> | <u>raise</u> |
| c. <u>considered</u> | <u>consider</u> | l. <u>listed</u> | <u>list</u> |
| d. <u>protection</u> | <u>protect</u> | m. <u>helping</u> | <u>help</u> |
| e. <u>national</u> | <u>nation</u> | n. <u>cited</u> | <u>cite</u> |
| f. <u>increasing</u> | <u>increase</u> | o. <u>seriously</u> | <u>serious</u> |
| g. <u>captivity</u> | <u>captive</u> | p. <u>nearing</u> | <u>near</u> |
| h. <u>introducing</u> | <u>introduce</u> | q. <u>becoming</u> | <u>become</u> |
| i. <u>concerned</u> | <u>concern</u> | r. <u>suitable</u> | <u>suit</u> |

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**WORKSHEET 3
GUIDELINES FOR RESEARCH**

- I. Name of endangered species.
- II. Natural history and life cycle.
- III. Why is it in danger of extinction?
- IV. What, if any programs are underway to save or protect it?
- V. Include a picture or drawing of your endangered species.