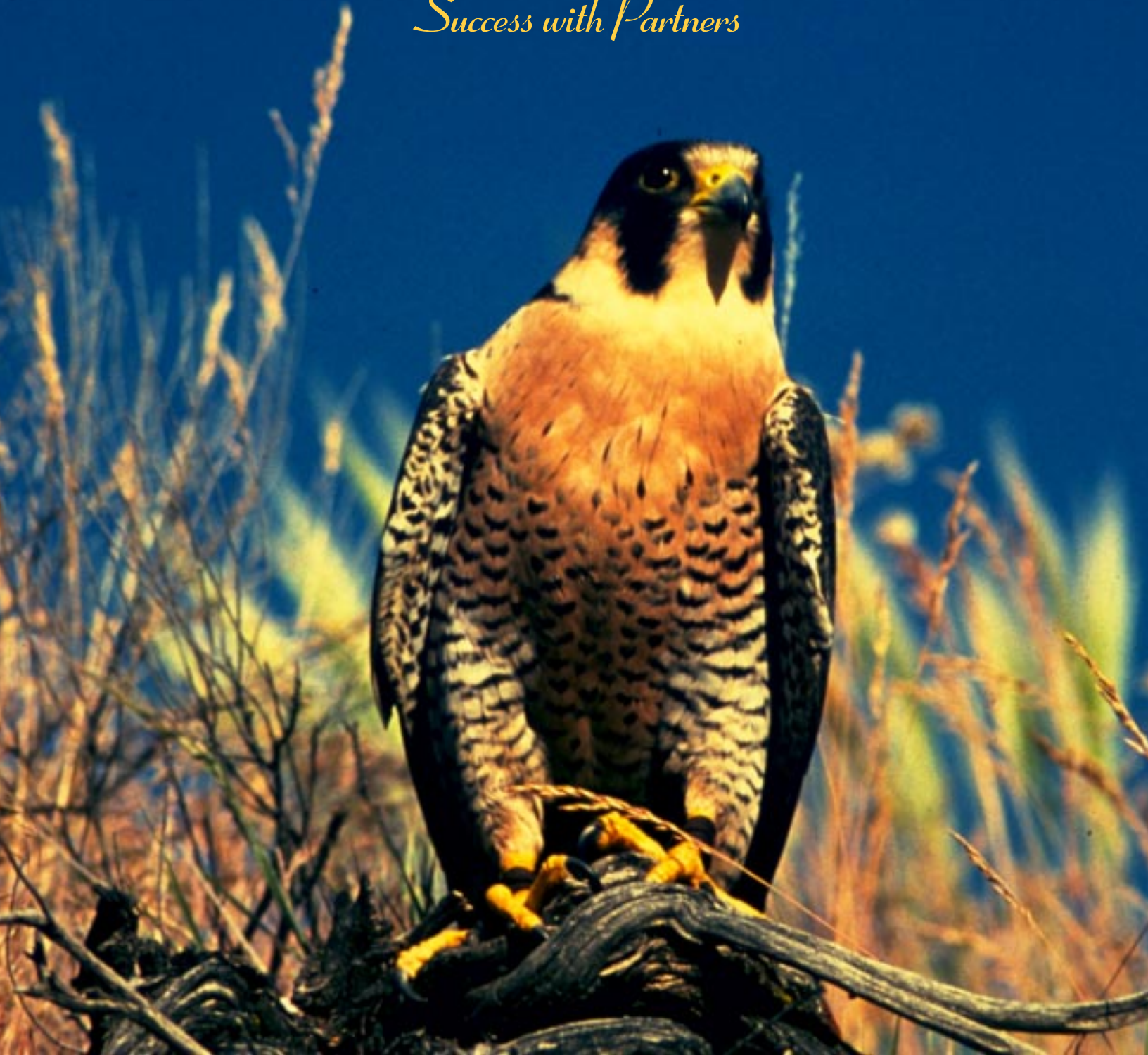


The Road Back

Endangered Species Recovery

Success with Partners



Dedication



Mollie H. Beattie
Walter Steiglitz

“Our fate and that of our economy are linked to natural systems. We cannot eliminate species and expect our own to survive.”

Mollie H. Beattie
Director, U.S. Fish and
Wildlife Service
1993-1996

This report is dedicated to Mollie Beattie, the former Director of the Fish and Wildlife Service, who lost her personal struggle with brain cancer on June 27, 1996. During her three-year tenure as Director, Mollie challenged the Service to adopt an ecosystem approach to fulfill its conservation mission. She believed that this approach, supported by the development of new partnerships and the strengthening of old ones, would assure success. Mollie dedicated her life to conserving wildlife and the ecosystems that support them. She worked tirelessly to make the Endangered Species Act work better, because she believed that Aldo Leopold was correct: “The first rule of intelligent tinkering is to save all the parts.”

Restoring a threatened or endangered species to a secure status is seldom an easy process. It requires the cooperation and involvement of a wide array of interests, including Federal, State, and local agencies; Tribal governments; scientists from a variety of disciplines; conservation organizations; the business community; landowners, and other concerned individuals. Without their help, the successes described in this report could not have been achieved. This report was made possible by the many people who shared their ideas, species accounts, and beautiful photographs, and by Mollie Beattie.

The Road Back



These Peregrine falcon chicks, shown nesting in the wild, are examples of successful recovery efforts.
Karen Bollinger/USFWS

Endangered Species Recovery

Success with Partners



Recovery of the Shasta crayfish depends on healthy river habitats.
USFWS



Aquatic ecosystems are home to approximately 40 percent of listed species, highlighting the need for clean water.

Contents

<i>Introduction</i>	1
<i>What is the Endangered Species Act?</i>	3
<i>What Types of Activities Threaten Listed Species?</i>	5
<i>Why Save Threatened and Endangered Species?</i>	9
<i>Recovery: What Does it Mean?</i>	13
<i>What Kind of Recovery Activities Can Help a Listed Species?</i>	15
<i>Why is Recovery a Complex and Challenging Endeavor?</i>	17
<i>How do Cooperative Partnerships Assist with Recovery?</i>	19
<i>How Can Landowners Become Involved?</i>	21
<i>What Successes have been Achieved?</i>	23
<i>American Peregrine Falcon</i>	23
<i>Black-footed Ferret</i>	24
<i>Greenback Cutthroat Trout</i>	24
<i>Louisiana Black Bear</i>	25
<i>Alutian Canada Goose</i>	26
<i>Cheat Mountain Salamander</i>	26
<i>Northeastern Beach Tiger Beetle</i>	28
<i>Haleakala Silversword</i>	29
<i>Peter's Mountain Mallow</i>	31
<i>Gray Wolf</i>	33
<i>Abrams Creek Threatened and Endangered Fish</i>	35
<i>Ash Meadows National Wildlife Refuge</i>	37
<i>Karner Blue Butterfly</i>	39
<i>Can Private Individuals Become Involved in Recovering Species?</i>	41
<i>How Can I get More Information About Endangered Species?</i>	45
<i>Summary</i>	47
<i>Regional Offices</i>	48



Introduction

America's landscape has undergone dramatic changes over the past 300 years. The towering forests and vast prairies that once characterized the landscape now are crisscrossed by highways and fragmented by cities and towns. The environment has changed rapidly because of the increasing demands of the growing human population for water, land, and energy to support agriculture, industry, transportation, and other interests. These changes are stressing many of our natural communities and the native plant and animal species they sustain. As a result, many species have gone extinct, while others are threatened with a similar fate.

Recognizing these alarming trends, Congress took action in 1973, by passing the Endangered Species Act (Act). This significant legislation reflects the deep respect and appreciation that Americans have for our natural resources, as well as an understanding that all life is linked to a healthy environment. The Act has been credited with saving hundreds of species from extinction, including the California

condor and the black-footed ferret, and for improving the quality of habitat for many more common species.

Our national symbol, the bald eagle, is a good example of the progress achieved under the Act. This magnificent bird once nested throughout the United States. By 1967, however, the species was eliminated from much of its range, and the number of bald eagles in the lower 48 States had dropped to only 417 nesting pairs. Declines in the population were attributed to habitat loss, illegal shooting, and the effects of DDT (a widely-used pesticide) on its reproduction. Efforts that have led to the species' successful recovery include protecting nesting sites, reestablishing young eagles into former habitat, rehabilitating injured eagles, banning DDT, and other actions involving the public and private sectors. These recovery efforts helped to boost the current eagle population in the lower 48 States to more than 4,000 nesting pairs. The success of these efforts allowed the Service to upgrade the status of the eagle from endangered to threatened in 1995.

Facing Page: Much of the California gnatcatcher's habitat has been changed through economic development near cities.
Claire Dobert/USFWS

Right: Bald eagles can now be seen throughout much of their former range because of collaborative recovery efforts.
Jeff Foottz/USFWS





Large areas of desert tortoise habitat have been protected through cooperative efforts.
Ross Haley/USFWS

Desert Tortoise

The Service is cooperating with the Bureau of Land Management to conduct numerous recovery actions for the desert tortoise. These include monitoring permanent study plots to learn about long-term population trends of the tortoise and sponsoring conferences to develop desert management practices. In addition, the Bureau of Land Management is managing its desert tortoise habitat to ensure the species' long-term protection. Research on nutrition and foraging ecology, being conducted by the Bureau of Land Management, has already been used by the Service to develop the Desert Tortoise Recovery Plan.



Desert tortoise
Luther Goldman/USFWS

What is the Endangered Species Act?

The Act, regarded as one of the world's most important wildlife conservation laws, calls for conserving threatened and endangered plants and animals and the ecosystems (or habitats) on which they depend. The Act defines "conserve" as restoring species to a point where their populations are stable and no longer in need of special protection. Congress envisioned a network of international, national, State and local governments, as well as industry, conservation groups, and private individuals, working together toward the common goal of conserving and recovering species. The Act establishes a leadership role for the Federal Government in conserving and recovering species at risk. The U.S. Fish and Wildlife Service and the National Marine Fisheries Service (NMFS) are responsible for the administration of the Act and for the coordination of recovery efforts for species. The Service is responsible for terrestrial and most freshwater species, while NMFS is responsible for marine species and anadromous fish, such as salmon and the Hawaiian monk seal.

The Service, through its recovery program and with cooperators, works to stabilize, conserve, and recover listed species by securing their populations, reversing declining numbers, and stabilizing species so that they are no longer in danger of extinction. The participation of Federal, State, and local agencies, Tribal governments, conservation organizations, the business community, landowners, and other concerned citizens has been critical to the stabilization and recovery of these plants and animals.



Red-cockaded woodpecker poises at the entrance to one of the nest cavities developed as part of a recovery effort.
USFWS

Red-Cockaded Woodpecker

The focus of conserving red-cockaded woodpeckers on non-federal lands is to build incentives for conservation by providing a simple mechanism for small woodlot owners to effectively work with small groups of birds. The Service must demonstrate to private landowners the importance of their role in recovery, which is to help increase the population on unoccupied habitat on federal lands in areas where there are designated recovery populations.



Sixty-seven percent of the freshwater mussels are rare or imperiled, and one out of every 10 mussel species may have become extinct during this century alone.

Ozark Cavefish

Partnership efforts between government agencies and private organizations have protected several populations of Ozark cavefish in Benton County, Arkansas, since this species was listed as threatened in 1984. This blind, translucent fish is found in caves within the central portions of the Ozark Highlands in Arkansas, Missouri, and Oklahoma. Several private landowners, working with this alliance of agencies, have agreed voluntarily to protect caves and to help improve the groundwater on their land to assist the species. Through these efforts, several populations of Ozark cavefish have been protected in Benton County, Arkansas.



Ozark cavefish habitat has been protected through voluntary agreements with landowners.
USFWS

What Types of Activities Threaten Listed Species?

Although people have been altering the natural environment for thousands of years, technological advances and accelerated development of the past few centuries have drastically changed many natural habitats. Many human activities have had serious detrimental effects on species, including:

- ♦ land-clearing activities for agricultural production, homes, shopping malls, and reservoirs;
- ♦ the pollution of our air, water, and land;

- ♦ collection of species for commercial, recreational, or educational purposes; and
- ♦ introduction of nonnative species and diseases into our environment.

In almost every case, these human activities were not meant to harm wildlife and plants, but nonetheless, the resulting effects have pushed some species to the brink of extinction.

Knowlton Cactus

A second reintroduced population of the Knowlton cactus is being established, and there currently are 69 seedlings produced from seeds from the first site. The Service, State of New Mexico, and Bureau of Land Management all have participated in this project.



A new Knowlton cactus seedling now can be seen because of the recovery efforts that involved the Service, the State of New Mexico, and the Bureau of Land Management.
USFWS



Coastal marsh restoration is just one type of recovery activity implemented to restore habitat to benefit a variety of species, like the Yuma clapper rail.
USFWS



USFWS

One of the Service's Partners for Wildlife projects, shown in the two photos taken one year apart, has been completed along the Clinch River in southwestern Virginia. Under a voluntary agreement, private land adjacent to the river was fenced to protect the riparian zone from livestock grazing, which subsequently reduced the amount of runoff from surrounding agricultural uses. Protection of this habitat benefited several species of endangered freshwater mussels and fish species at risk.



USFWS



The successes of these cooperative recovery efforts are demonstrated by the fact that approximately 60 percent of the species listed between 1968 and 1973 are known currently to be stable or improving in status.



Partners from around the world participate in green sea turtle recovery efforts.
Gary S. Harrison/USFWS

Why Save Threatened and Endangered Species?

E*conomics:* Economic benefits provided by a plant or animal species are lost if the species becomes extinct. For example, the chinook salmon population in the Pacific Northwest has supported valuable commercial and recreational fisheries, providing food and generating jobs and income for many people. Any decline in the salmon populations means a decline in the number of fish that can be harvested, resulting in an economic loss.

Medicine: Nature is a storehouse of potential medicines that can be used to treat a wide variety of diseases. Approximately 50 percent of prescribed medicines are derived from substances found in plants and animals. The Pacific yew tree, for example, provides an anti-cancer substance, the rosy periwinkle yields drugs to treat childhood leukemia, and the foxglove plant provides digitalis, an important heart medicine. Recently, a new cancer medication was developed from a compound isolated from the Asian mayapple, which is found only in India and Pakistan and is imperiled. If species become extinct before

they are studied, their chemical secrets will disappear with them.

Agriculture: Thomas Jefferson wrote that "the greatest service which can be rendered any country is to add a useful plant to its culture, especially a grain." Botanists estimate that, of the more than 30,000 species of edible plants, less than 20 produce 90 percent of the world's food. Plant collectors currently are seeking out remaining wild strains of crops, such as wheat and corn that can be used to develop hybrid species that are more resistant to crop diseases, pests, and marginal climatic conditions. Also, chemists recently found a compound derived from the endangered Archbold mint that is highly repellent to insects.

Aesthetic/Spiritual: Species and their ecosystems provide essential aesthetic, spiritual, and quality-of-life values to the citizens of our country and its visitors. Many religions teach stewardship of the Earth and respect for nature as God's creation.

Recreational: "Eco-tourism," a new industry developing throughout the world, is based on the fact that many people are willing to pay for the chance to experience nature, including native plants and animals. An increasing number of people are planning their vacations around the enjoyment of wildlife or wildlife activities, such as whale watching. In 1991, an estimated 76 million people in the United States participated in bird-related recreation.

Species of plants and animals are sometimes compared to books in a library. Conservation ensures that the libraries we leave our children will not be empty, but instead will be full

of secrets that can be unlocked, discovered, and enjoyed for years to come. Nobody knows which species may be essential in the future or what is lost when a species goes extinct. But one thing is certain: Extinction is Forever. Why should we save endangered and threatened plants and animals? **BECAUSE WE CAN.**

Tan Riffleshell

A coordinated recovery effort among the Service, other Federal, State, and local agencies, conservation organizations, and individual citizens has set the stage for implementing recovery activities for the tan riffleshell mussel. A recent mollusk survey discovered two populations of this endangered mussel. The populations were healthy and rebounding and were found to be reproducing. Additional research efforts on the species' life history is essential to its recovery. The Service is reaching out to other partners, especially local agencies, individuals, and organizations to enlist their support in protecting this species by restoring the stream habitat and water quality that it requires.



Florida scrub jay populations are being protected through the habitat conservation planning process currently being implemented in the Southeast.

USFWS

Florida Scrub Jay

Habitat protection through land acquisition has made a major contribution to the recovery of the threatened Florida scrub jay. A cooperative effort among the Service, National Aeronautics and Space Administration, National Park Service, and the State of Florida in conducting habitat surveys and managing habitats for scrub jays on public lands is helping to conserve the species. The National Aeronautics and Space Administration has banded nearly all scrub jays on Kennedy Space Center property, and research is being conducted on the biology of the species to help ensure its long-term survival. Private landowners, through the habitat conservation planning process, are critical partners in the conservation of this Florida species.



Seventy-two percent of the species listed as of September 30, 1996, have final recovery plans; an additional 12 percent have draft plans that outline recovery strategies.



The Service, along with numerous cooperators is developing a Multi-Species Recovery Plan to address the recovery of all federally-listed species in the South Florida Ecosystem.
Richard Frear/National Park Service