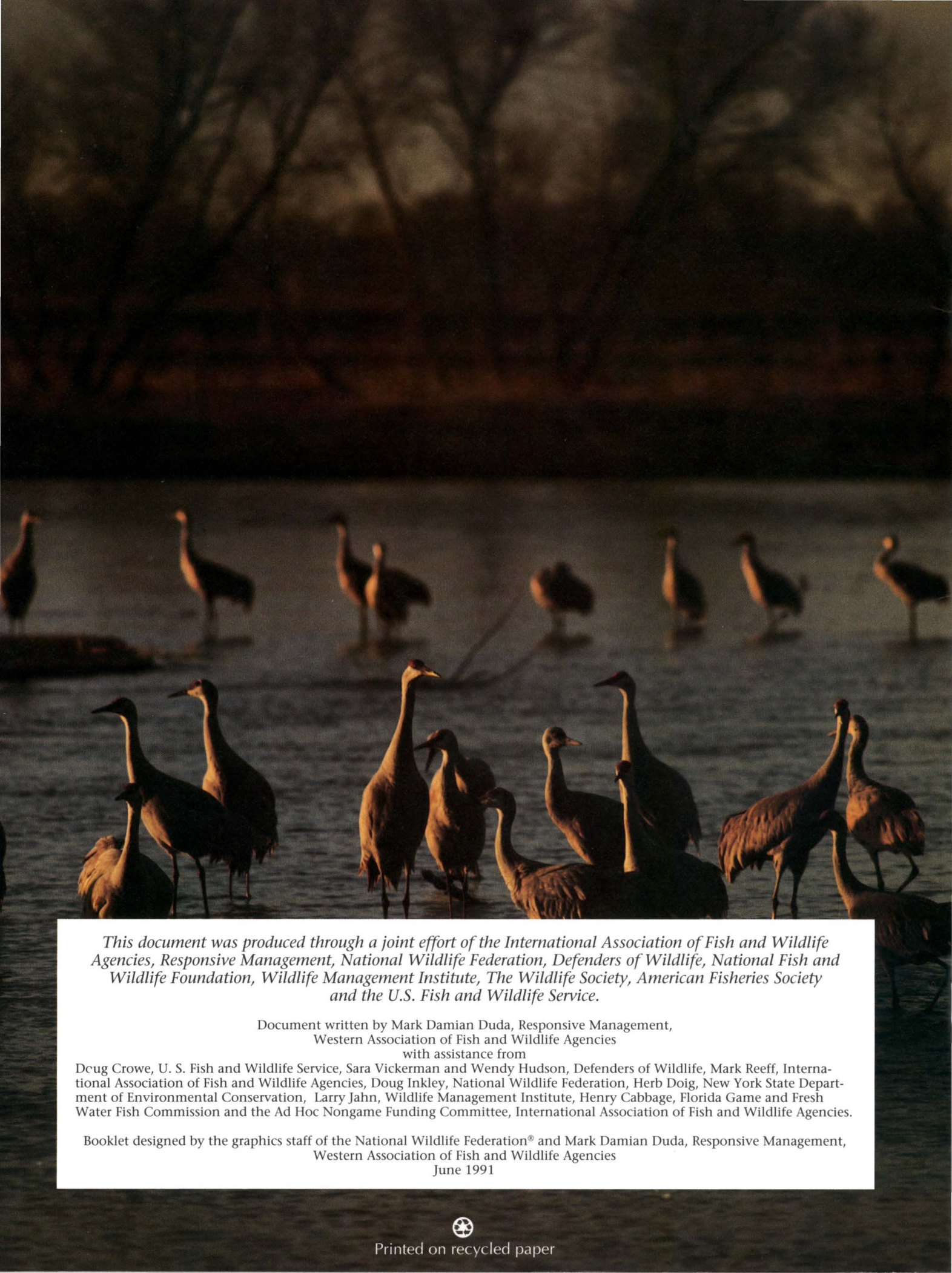




**A BRIDGE
TO THE
FUTURE:**

**The Wildlife Diversity
Funding Initiative**

**A NEEDS ASSESSMENT FOR THE
FISH AND WILDLIFE CONSERVATION ACT**



This document was produced through a joint effort of the International Association of Fish and Wildlife Agencies, Responsive Management, National Wildlife Federation, Defenders of Wildlife, National Fish and Wildlife Foundation, Wildlife Management Institute, The Wildlife Society, American Fisheries Society and the U.S. Fish and Wildlife Service.

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June 1991



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EXECUTIVE SUMMARY

FISH AND WILDLIFE MANAGEMENT IN THE U.S. HAS BEEN enhanced by funds available through Federal Aid to Sport Fish and Wildlife Restoration Programs. Derived primarily from excise taxes on hunting and fishing equipment, these funds are principally used in research and restoration of game species and their habitats. However, a pressing need exists for the management and enhancement of species other than game. Unfortunately, there has never been an adequate source of federal monies to fund such activities.

Over a decade ago, Congress recognized the lack of reliable funding for comprehensive wildlife management, and in 1980 passed the Fish and Wildlife Conservation Act. Reauthorized by Congress in 1986 and again in 1990, the Act provides for an annual funding ceiling of \$5 million. However, since its original passage in 1980, and the recent reauthorizations, no funds have been requested by the Executive Branch, nor appropriated by Congress for implementing the statute. It also has become evident that the \$5 million ceiling is woefully inadequate to meet the needs of the resource and its users.

Interest on the part of state fish and wildlife agencies for such funding has been keen. Many states, recognizing the need for funding the distinct and unique research and management needs of all wildlife, established programs specific to the conservation and management of nongame species, while others integrated these programs into traditional, existing wildlife programs. More than 30 states rely principally on voluntary income tax contributions to generate funding. Other states raise revenues through automobile registration surtaxes, stamp sales, personalized license plates and endowments. However, many of these sources are experiencing serious declines and many agencies are seeking new sources of funding that would be adequate and continuing.

The goal of the Wildlife Diversity Funding Initiative is to secure reliable and adequate funding for state and federal programs designed to enhance fish and wildlife resources, maintain and foster wildlife diversity, and ensure public enjoyment of the broad spectrum of values inherent in these resources. Surveys of state fish and wildlife agencies' wildlife diversity funding needs indicate that at least \$100 million annually is needed from new sources if those objectives are to be met.

This booklet outlines the need for and benefits of a nationwide Wildlife Diversity Program. The booklet also highlights some of the projects that would be completed if adequate funding was available. The projects illustrate the various orientations of state fish and wildlife agencies toward wildlife diversity and the range of program needs; some with ambitious expanded programs that will provide the basic data necessary for sound decision-making and comprehensive program development. The one aspect unifying all programs is the critical lack of biological information on most wildlife and their habitats and an effective system for making that information available to managers and users.

Support from Congress is essential to the success of the Wildlife Diversity Funding Initiative. Without such support, the initiative will flounder and the pressing needs of wildlife will remain unmet.

INTRODUCTION

IN 1937, CONGRESS AND SPORTSMEN, WITH THE SUPPORT of the American people, set out to restore America's vanishing game resources. Numerous species, including white-tailed deer, turkey, and wood duck were declining dramatically, and many thought these animals were headed for extinction. The Federal Aid in Wildlife Restoration Act (Pittman-Robertson) provided the mechanisms — reliable, adequate funding and professional expertise — to bring these species, and others, back from critical scarcity to relative abundance.

Through the years, the program was replicated for fisheries restoration through the Federal Aid in Sport Fisheries Restoration Act (Dingell-Johnson), later augmented by the Wallop-Breaux Act and Breaux amendments. Once again, reliable, adequate funding and professional expertise translated into many astounding conservation success stories.

In 1973, the Endangered Species Act was passed to provide assistance for wildlife on the brink of extinction. Although a landmark wildlife law, implementation results in costly, last-ditch, eleventh-hour attempts to restore species.

Between those animals classified as game and those identified as endangered lies a vast array of over 1,800 different types of mammals, birds, reptiles, and amphibians — such diverse creatures as red-tailed hawks, burrowing owls, cardinals, river otters, flying squirrels, box turtles and leopard frogs. Recognizing the lack of reliable funding for these species and comprehensive wildlife management, Congress passed the Fish and Wildlife Conservation Act in 1980. Reauthorized by Congress in 1986 and again in 1990, the Act provided for an annual funding ceiling of \$5 million. Unfortunately, since its original passage in 1980, and the recent reauthorizations, no funds have been requested by the Executive Branch, nor appropriated by Congress for implementing the statute. It also has

Glossary

Through the years, several terms have been used relative to wildlife diversity programs. The following glossary explains those terms:

Nongame: Term for wild animals not commonly taken for recreation, fur, or subsistence.

Nonconsumptive: Term for forms of wildlife-oriented uses that do not involve the intentional capture or removal of wild animals from their habitats.

Watchable Wildlife Program: A wildlife-oriented program that integrates conservation, education and recreation components. Also, a mechanism to help maintain viable populations of all native fish and wildlife species by building an effective, well-informed constituency for conservation.

Wildlife Diversity Program: A program designed to maintain viable, self-sustaining populations of all native species in optimum occurrence and abundance with an emphasis on those whose numbers or habitats are in decline. Its primary purpose is to prevent species from becoming threatened, endangered or extirpated where conditions are present to continue their existence.

Tom Gibson



River otter.

Dave Siddon



Kestrel.

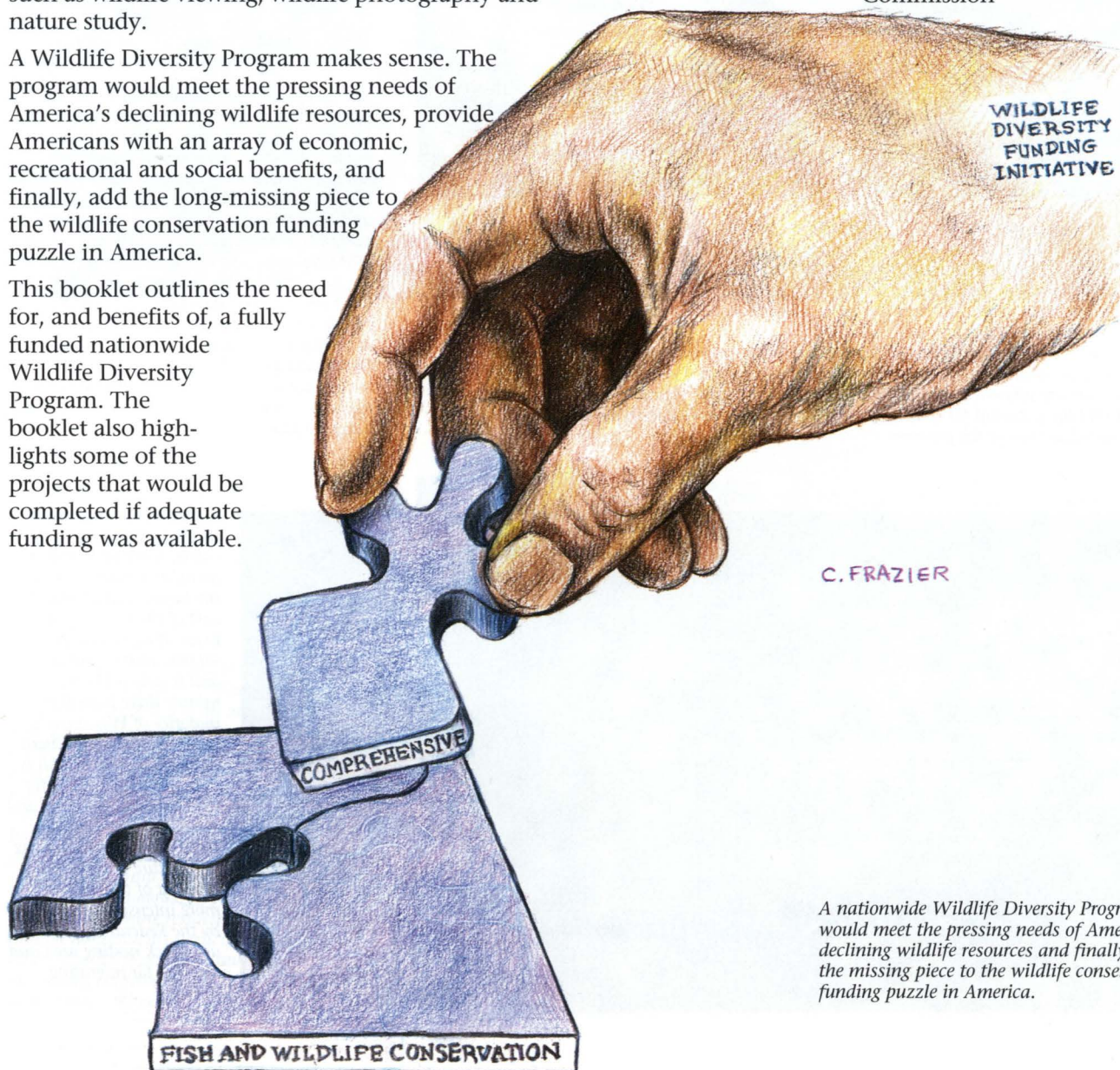
Wildlife management in America has a long list of successes. Modern wildlife management restored once-depleted populations of white-tailed deer, wild turkey, beaver, wood duck, pronghorn antelope and giant Canada goose. The Wildlife Diversity Program would allow fish and wildlife agencies to maintain and restore other species like river otters and kestrels.

become evident that the \$5 million ceiling is inadequate to meet the pressing needs of America's wildlife and the skyrocketing demand for wildlife-associated recreation. In fact, recent surveys of fish and wildlife agencies indicate that at least \$100 million annually is needed.²

A nationwide Wildlife Diversity Program would consist of projects focusing on conservation, education and recreation. The conservation element would be designed to maintain viable, self-sustaining populations of all native species with an emphasis on those whose numbers or habitats are declining. Conservation projects would be chiefly habitat-based and community-oriented, with their purpose to prevent species from becoming threatened, endangered or extirpated. The goals of the education element are to promote public awareness of and knowledge and appreciation for the broad spectrum of wildlife, habitat and wildlife-associated activities. The purpose of the recreation element is to meet the demand for wildlife-associated recreational activities such as wildlife viewing, wildlife photography and nature study.

A Wildlife Diversity Program makes sense. The program would meet the pressing needs of America's declining wildlife resources, provide Americans with an array of economic, recreational and social benefits, and finally, add the long-missing piece to the wildlife conservation funding puzzle in America.

This booklet outlines the need for, and benefits of, a fully funded nationwide Wildlife Diversity Program. The booklet also highlights some of the projects that would be completed if adequate funding was available.



"For many years the Pittman-Robertson and Dingell-Johnson Acts have provided 3-1 cost sharing funds to assist states in maintaining conservation programs for species with consumptive value. These have been highly successful and accepted Acts and it seems extremely inconsistent not to provide a comparable source of funds to benefit so called nongame species of fish and wildlife."¹

— Peter S. Duncan III
Executive Director
Pennsylvania Game
Commission

C. FRAZIER

A nationwide Wildlife Diversity Program would meet the pressing needs of America's declining wildlife resources and finally add the missing piece to the wildlife conservation funding puzzle in America.

FRAMEWORK FOR A NATIONWIDE WILDLIFE DIVERSITY PROGRAM

Examples of Existing Programs

Though lacking reliable and adequate funding, many wildlife diversity projects have been initiated across the nation. Unfortunately, declining and insufficient fiscal resources threaten the great strides made through the years. Nevertheless, the framework for a nationwide Wildlife Diversity Program is in place.

Ellen Campbell



Alaska Department of Fish and Game, McNeil River Game Sanctuary, Alaska. Situated by Cook Inlet, the McNeil River Game Sanctuary was established in 1967 as a permanent protection facility for brown bear, other wildlife populations, and their vital habitat. The 83,000-acre site is world famous for its summer concentrations of brown bears that come to feed on various species of migrating salmon at the McNeil River Falls. More than 125 species of birds have been documented in the sanctuary as well.

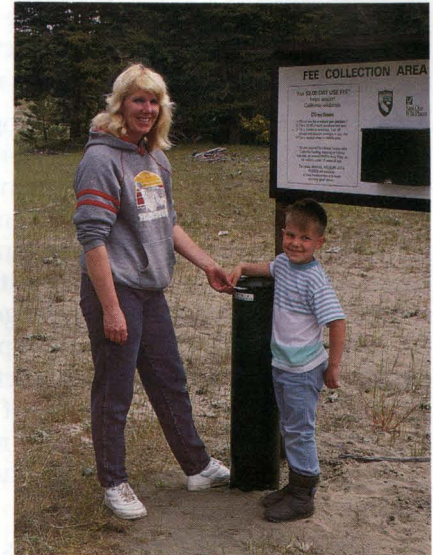
Except for nearshore waters, access to the sanctuary is by permit only. This rule was instituted in 1973 to regulate visitor activities and prevent conflicts between visitors and bears. Up to 10 people per day are allowed to visit the falls through the permit system. Because of limited facilities and the potential for conflict with bears, maximum visitation never has been a goal for measuring the success of the program.

George H. Harrison



A spectacular migration staging ground for Canada Geese, Horicon Marsh is an extinct glacial lake and the largest cattail marsh east of the Mississippi River. It attracts over 40,000 visitors annually and is only a 60-90 minute drive from the majority of Wisconsin's population. The southern third of Horicon Marsh is managed by the state for wildlife and recreation and is open to the public for fishing, hunting, canoeing and nature appreciation. The rest of the area is more intensely managed by the Federal Government as a duck nesting area and a refuge for migrating geese.

California Department of Fish and Game



The California Willlands Program was launched in January 1989 by the California Department of Fish and Game to provide public education about wildlife and their habitats and provide opportunities for wildlife viewing. The California Department of Fish and Game owns and manages more than 500,000 acres of critical wildlife habitat on 120 sites. Nine of these sites were selected for the program. During the first year of the program, the nine sites have attracted 93,000 people who have participated in such activities as guided nature walks and tours, birdwatching, wildlife photography workshops, salmon spawning programs, education classes for children and numerous community outreach programs.



For the past several years, Florida Game and Fresh Water Fish Commission nongame wildlife biologists have been locating and documenting important wading bird colonies. The information is used to safeguard colonies by providing their locations to regional and local planning commissions.

Wyoming Game and Fish Department



The Wyoming Game and Fish Department's "Wyoming's Wildlife — Worth the Watching®" Program is an auto route loop tour of the state. The program offers two visitor centers with three more planned, and interpretive exhibits at 18 highway rest areas, with 30 more planned. Other projects being completed are two viewing areas, six nature trails, and two nature areas. Also, a loop tour guide is in preparation. A mountain wildlife conservation camp has been established for teachers and students. Approximately 190,000 Wyoming residents and 3.2 to 5 million nonresidents participate in these kinds of wildlife activities annually in Wyoming, contributing about \$600 million to the state's economy.

ELEMENTS OF A WILDLIFE DIVERSITY PROGRAM: CONSERVATION, EDUCATION, AND RECREATION

IN HIS 1933 OPUS, *GAME MANAGEMENT*, ALDO LEOPOLD wrote that the objective of wildlife conservation programs should be:

*"...To retain for the average citizen the opportunity to see, admire and enjoy, and the challenge to understand, the varied forms of birds and mammals indigenous to his state. It implies not only that these forms be kept in existence, but that the greatest possible variety of them exist in each community."*³

In short, the elements of a nationwide Wildlife Diversity Program will consist of conservation, education and recreation projects. The conservation element will be designed to maintain viable, self-sustaining populations of all native species with an emphasis on those whose numbers or habitats are in decline. Conservation projects would be primarily habitat-based and community-oriented, with their purpose to prevent species from becoming threatened, endangered or extirpated. The goals of the education element are to promote public awareness for and knowledge and appreciation of the broad spectrum of wildlife, habitat, and wildlife-associated activities. The aim of the recreation element is to meet the increasing demand for wildlife-associated recreational activities such as wildlife viewing, wildlife photography and nature study.

Programs will be based on comprehensive plans developed by each state. Program planning and development will be based on each state's unique wildlife, habitat and human resources. Following are just a few of the projects that would be completed with Wildlife Diversity Program funds.



CONSERVATION PROJECTS

The Following Conservation Projects Would be Completed Under the Wildlife Diversity Program...

Tom Gibson



The North Dakota State Game and Fish Department will increase river otter populations through reintroduction efforts.

Glenn D. Chambers



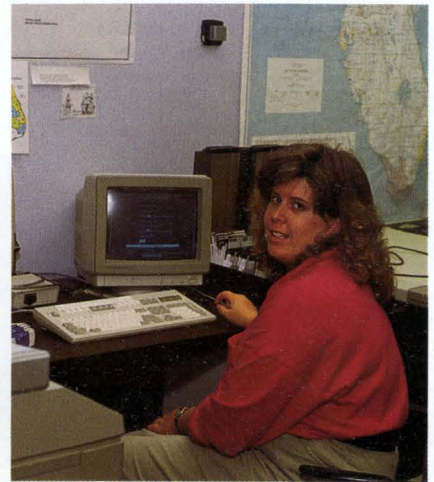
Swift foxes have declined in eastern Montana due to alteration of the prairie biome through human settlement and agricultural development. The Montana Department of Fish, Wildlife and Parks will restore swift fox populations by reintroducing them to their former range.

Jeff Hughes



The Alaska Department of Fish and Game will learn more about the natural history and breeding biology of the marbled murrelet; information necessary for sound management decisions.

Florida Game and Fresh Water Fish Commission



A Geographic Information System has been successfully used to identify important wildlife habitat by the Florida Game and Fresh Water Fish Commission. The New York Division of Fish and Wildlife will enhance their wildlife conservation decision-making through the development of a similar system. Several other states would develop these systems, including the Indiana Division of Fish and Wildlife and the Nevada Department of Wildlife.



Stephen Dalton/
National Audubon Society
Collection/Photo Researchers

By acquiring 1300 acres of critical habitat along the gulf coast and in the Rio Grande Valley, the Texas Parks and Wildlife Department will protect many species of birds, such as these American white pelicans, black skimmers and gulls. These are some of the many species of birds that depend on the gulf coast habitat for their existence.

By determining and understanding the reasons for its dramatic decline, the Kentucky Department of Fish and Wildlife Resources will protect the northern leopard frog in the state.



Richard G. Biggins



Through captive propagation studies, the North Carolina Wildlife Resources Commission will safeguard Cape Fear shiner populations.

EDUCATION PROJECTS

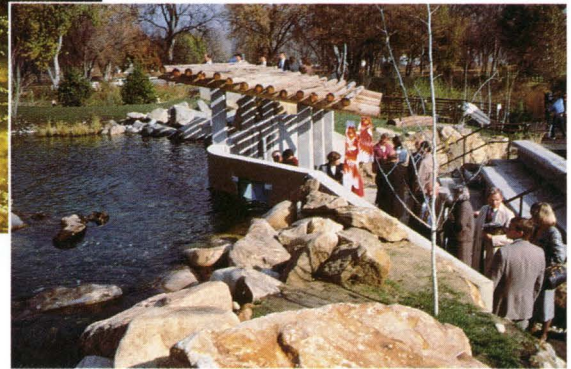
The Following Education and Interpretation Projects Would be Completed Under the Wildlife Diversity Program...

National Wildlife Federation



Through nature center and conservation camp expansion and enhancement, the Pennsylvania Game Commission will educate children about wildlife.

Idaho Fish and Game Department



The Idaho Fish and Game Department will enhance wildlife education efforts in urban areas by expanding nature center services and conservation information distribution in cities. The Morrison Knudsen Nature Center pictured here was constructed by the Department in Boise.

National Wildlife Federation



The Oklahoma Department of Wildlife Conservation will establish urban wildlife education centers to demonstrate techniques for wildlife landscaping and wildlife management.

Barry Mansell



Through public education activities, the Rhode Island Division of Fish and Wildlife will protect beach-nesting birds, like this least tern. The Division will develop programs to inform beach visitors about beach-nesting terns.



The Georgia Department of Natural Resources, New York Division of Fish and Wildlife, South Carolina Wildlife and Marine Resources Department and the South Dakota Game, Fish and Parks Department will develop educational materials for landowners and land managers on how to provide for wildlife on private lands.

Tom Warren

By developing wildlife and natural history boat tours, the Montana Department of Fish, Wildlife and Parks will enhance wildlife education opportunities at Flathead Lake.



After evaluating the effectiveness of Alaska's wildlife education curricula, the Alaska Department of Fish and Game will enhance wildlife education efforts.

National Wildlife Federation



RECREATION PROJECTS

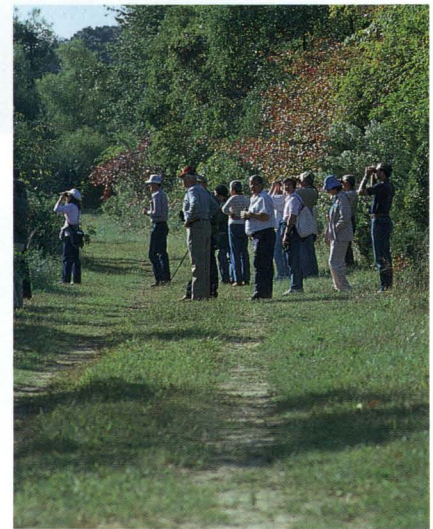
The Following Recreation Projects Would be Completed Under the Wildlife Diversity Program...

Florida Game and Fresh Water Fish Commission



By constructing interpretive trails and wildlife observation platforms, the Florida Game and Fresh Water Fish Commission will enhance wildlife viewing opportunities on the Guana River Wildlife Management Area.

New Jersey Department of Environmental Protection



The New Jersey Department of Environmental Protection will enhance wildlife viewing opportunities on Higbee Beach Wildlife Management Area, an 800-acre tract purchased and managed for wildlife viewing and compatible recreation.

Hawaii Department of Land and Natural Resources



The Hawaii Department of Land and Natural Resources will provide snorkeling and SCUBA marine viewing opportunities within Marine Life Conservation Districts. Wildlife Diversity funds would also be used to protect important coral areas from repeated anchoring damage by installing mooring facilities.

West Virginia Division of Natural Resources

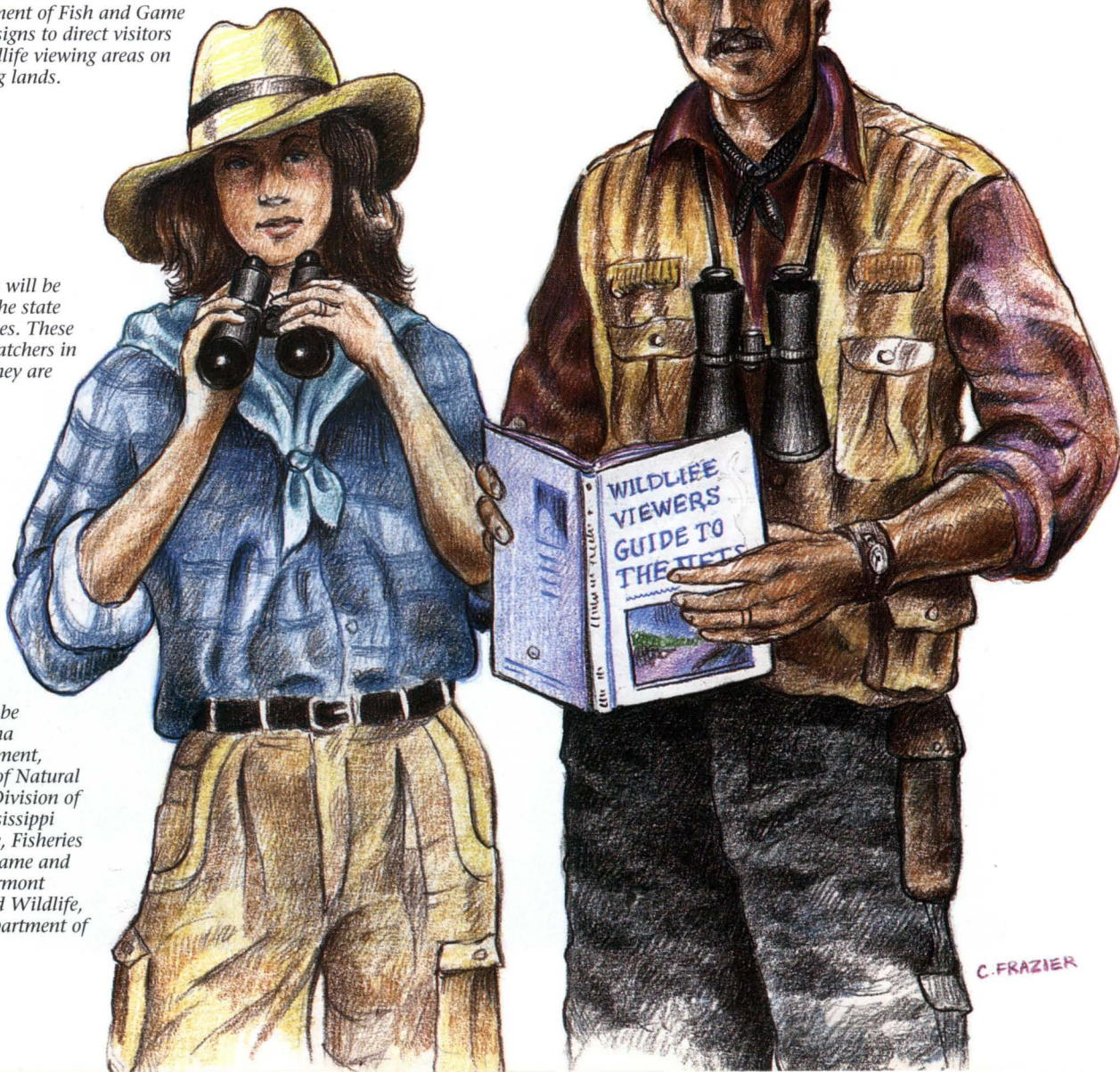


Wildlife viewing opportunities will be developed by the West Virginia Division of Natural Resources on the Greenbottom and Shannandale Springs State Wildlife Management Areas.



The California Department of Fish and Game will develop trails and signs to direct visitors to safe and quality wildlife viewing areas on existing wildlife viewing lands.

Wildlife viewing guides will be developed by many of the state fish and wildlife agencies. These guides assist wildlife watchers in locating places where they are most likely to observe wildlife and also in identifying different species. The guides teach viewers how to view wildlife without disturbing the animals or their habitat. Wildlife viewing guides like this have been developed for Alaska, Oregon, Montana and Utah. Under the Wildlife Diversity Program, guides would be developed by the Arizona Game and Fish Department, Michigan Department of Natural Resources, Minnesota Division of Fish and Wildlife, Mississippi Department of Wildlife, Fisheries and Parks, Nebraska Game and Parks Commission, Vermont Department of Fish and Wildlife, and the Wisconsin Department of Natural Resources.



The Michigan Department of Natural Resources will develop wildlife viewing areas and protect wildlife habitat in Whitefish Point Migratory Bird Sanctuary by constructing interpretive trails, foot trails, boardwalks, and wildlife observation towers to limit and focus foot traffic, and develop interpretive displays along the trails; essential habitat in private ownership would be acquired.

ECONOMIC BENEFITS

Detecting and Preventing Wildlife Declines Before They Reach the Critical Stage

AN OUNCE OF PREVENTION IS WORTH A POUND OF CURE. The primary purpose of a nationwide Wildlife Diversity Program is to maintain healthy and diverse wildlife populations and habitats and to detect declines well before a species reaches the endangered level. Clearly, by detecting problems well in advance, costly, last-ditch efforts can be avoided, saving millions of dollars on programs that may or may not work.

For example, the Colorado Division of Wildlife would study wolverines, lynx, and their habitat needs. "There might be some simple things we could do to keep those species off that list," notes Colorado Division of Wildlife biologist Judy Sheppard.⁴ Florida Game and Fresh Water Fish Commission Nongame Wildlife Program Supervisor Brian Millsap agrees. "If we knew enough about the short-tailed hawk — where they are and what their habitat requirements are — we could implement some relatively simple management programs and keep population levels stable."⁵

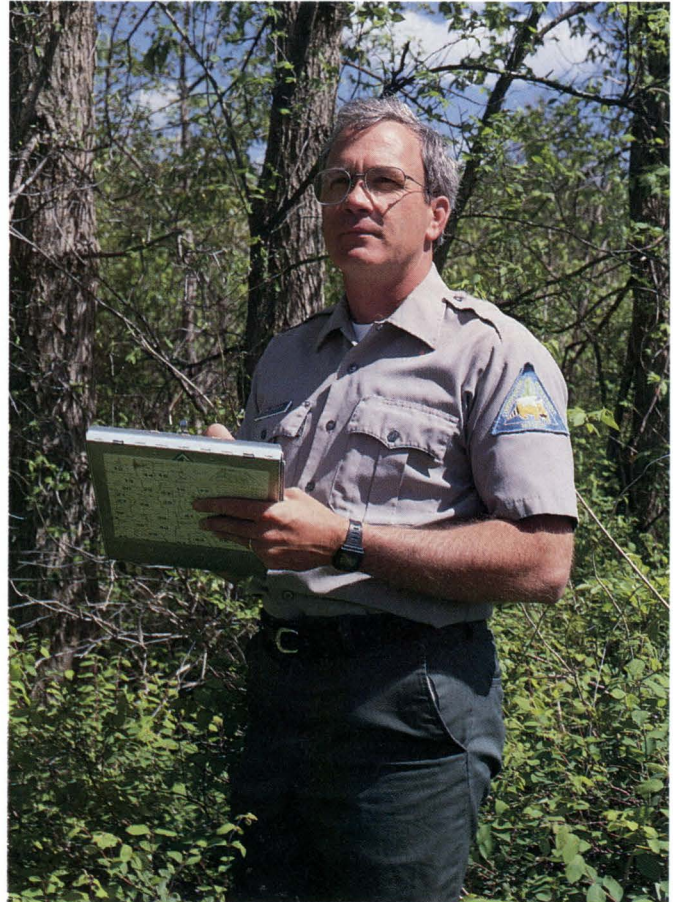
The ounce of prevention is a nationwide Wildlife Diversity Program. The pound of cure is costly, last-ditch, endangered species programs.

B. K. Wheeler/VIREO



Short-tailed hawk.

Missouri Department of Conservation



Missouri Department of Conservation biologist conducting research.

*"We know that we can reduce, on some occasions even minimize, the adverse impacts continued growth and development have on fish and wildlife and their habitats, if we have people with the right expertise, armed with credible knowledge and with practical ideas in place...Those who may doubt that this is possible need only look at the successes of state fish and wildlife agencies with game species. All it takes is a little focus and predictable, adequate funding."*⁶

— Allan Egbert, Ph.D.
Assistant Executive Director
Florida Game and Fresh Water Fish Commission

Leonard Lee Rue III/Tom Stack & Assoc.



Lynx.

ECONOMIC BENEFITS

Wildlife Viewing Contributes \$14.3 Billion Annually to the U. S. Economy

MORE THAN 160 MILLION AMERICANS OBSERVE, PHOTOGRAPH or feed wildlife. Many of these people purchase binoculars, spotting scopes, wildlife identification books and specialized clothing for the purpose of enjoying wildlife.

Many take trips miles away from their homes to photograph wildlife, spending hundreds of dollars during each trip on food, hotels and gasoline. Millions of Americans spend hundreds of dollars a year on bird feeders, seed, and landscaping to attract songbirds and butterflies.

Expenditures by these wildlife enthusiasts total \$14.3 billion a year.⁹ Trip-related expenditures for equipment rental, food, lodging and transportation by Americans who take trips for the primary purpose of viewing, photographing and enjoying wildlife total \$4.4 billion annually.¹⁰ Equipment expenditures alone, including binoculars, bird watching field guides, spotting scopes, and bird seed total \$9.4 billion.¹¹ These are solid contributions to the U.S. economy.

A nationwide Wildlife Diversity Program would increase these economic contributions many fold by enhancing viewing opportunities and informing citizens about available opportunities.

The economic benefits to state and local economies of this type of wildlife appreciation are astounding. In Wyoming, tourists visiting the state to view wildlife spend \$654 million annually.¹² In Florida, wildlife watchers spend more than \$1.3 billion a year.¹³ In Montana, appreciative wildlife enthusiasts contribute \$43 million annually to the state's economy.¹⁴

Local economies also are the benefactors of wildlife appreciation enhancement efforts. Tourists travelling to Cape Perpetua Scenic Area and Visitor Center in Oregon to witness the annual migration of gray whales and brown pelicans, and to view owls, eagles and bears, bring an estimated \$1.8 million annually to local communities.¹⁵ Forty-three "Wildlife Observation Areas," developed by the Tennessee Wildlife Resources Agency in cooperation with other government agencies and private groups, contribute millions to local economies. On one Wildlife Observation Area, Reelfoot Lake, expenditures on eagle tours alone total \$2.2 million each year while other wildlife viewing activity expenditures total \$1.4 million each year.¹⁶

*"I've told the Utah Legislature 'You give us \$2 million, and we'll create \$41 million for you' through economic growth spurred by the wildlife [viewing] program."*⁷

— Tim Provan
Director, Utah Division of
Wildlife Resources

*"We have in those [wildlife] resources, a unique and valuable capital asset that should be protected and preserved, just like the capital assets of any other business."*⁸

— Colonel Robert Brantly
Executive Director
Florida Game and Fresh
Water Fish Commission

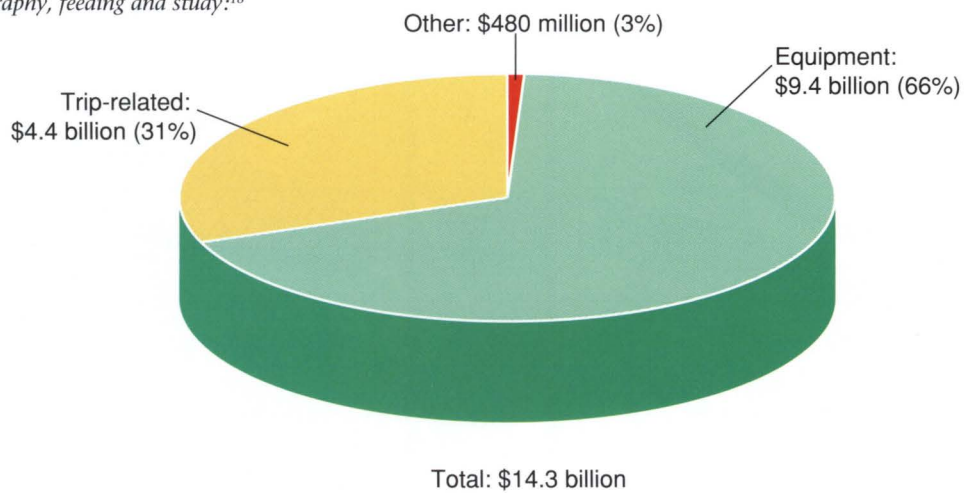


Cape Perpetua is one of the leading visitor attractions along the Oregon coast, mainly because of its abundant wildlife viewing opportunities.



Wildlife appreciation, such as wildlife watching, wildlife photography and nature study contribute \$14.3 billion annually to the U.S. economy.¹⁷

Expenditures in the United States on wildlife viewing, photography, feeding and study:¹⁸



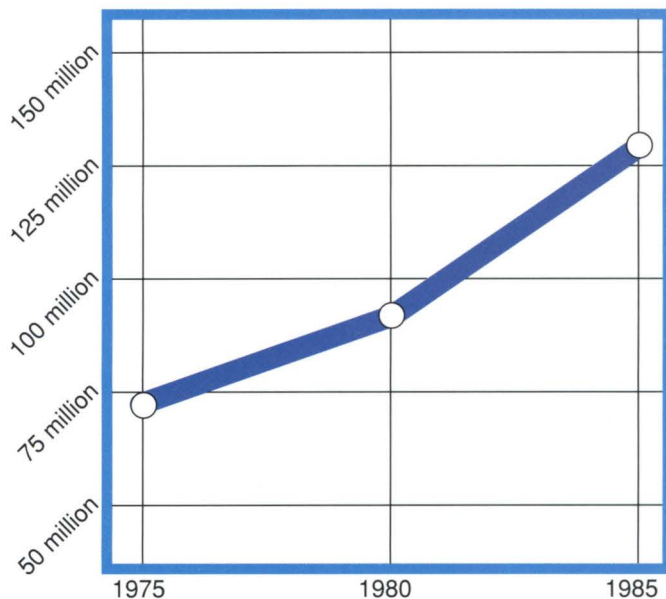
RECREATIONAL BENEFITS

More than 135 Million Americans View, Photograph, Feed and Enjoy America's Wildlife

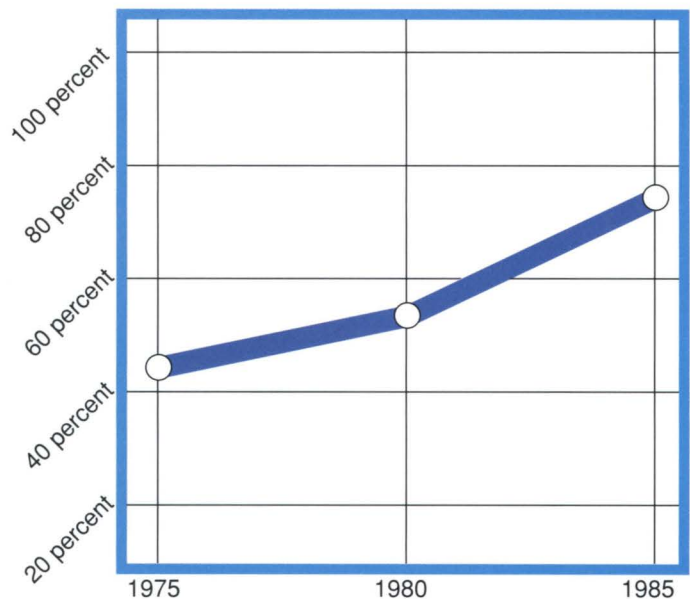
ONE OF THE MOST PROFOUND TRENDS IN OUTDOOR recreation during the past 20 years has been the skyrocketing number of Americans viewing and photographing wildlife, feeding birds, and enjoying wildlife around their homes. In just the five years between 1980 and 1985, wildlife-associated recreation grew by an astounding 43% — from 93 million to 135 million Americans.¹⁹

Much of this wildlife enjoyment takes place close to home. Fifty-eight percent of Americans watch or feed wildlife around their home. Sixteen percent of Americans — over 29 million — take trips for the primary purpose of watching, photographing or feeding wildlife.²⁰ These people visit a variety of public and private lands to pursue their sport. Cape Perpetua on the Oregon Coast attracts over 500,000 visitors each year. In just the first year of the California Department of Fish and Game Wildlands Program, a program designed to enhance wildlife viewing opportunities, over 93,000 people participated in such activities as guided nature walks and tours, wildlife photography, birdwatching and education classes for children.²¹

A nationwide Wildlife Diversity Program will enhance wildlife enjoyment opportunities for Americans in a variety of ways. Urban wildlife programs will enhance viewing opportunities around peoples' homes by teaching them how to landscape for wildlife and how to attract birds to bird feeders. For Americans who take trips to view wildlife, a nationwide Wildlife Diversity Program would enhance such opportunities by constructing wildlife observation trails, boardwalks and viewing blinds, and preserving areas in their natural state for viewing.



Number of Americans 16 years-old and older who participated in wildlife viewing, photographing wildlife, bird feeding and enjoying wildlife around their home.²²



Percent of the American population 16-years old and older who participated in photographing wildlife, wildlife photography, bird feeding and enjoying wildlife around their home.²³

135 million Americans 16-years old and older observed, photographed, or fed birds, fish and other wildlife in 1985.²⁴

George H. Harrison



Twenty-nine million Americans took trips primarily to observe, photograph or feed wildlife in 1985.²⁵

Faun Hosey



EDUCATIONAL BENEFITS

Wildlife Viewing is One of the Most Effective Forms of Environmental Education

THE OVERRIDING EDUCATION AND INTERPRETATION GOALS of a nationwide Wildlife Diversity Program are to promote public awareness of and appreciation for the broad spectrum of wildlife, habitat, and wildlife-associated activities. Wildlife nature center construction, enhancement of wildlife viewing opportunities on public lands, and the development of informational literature are some of the ways Americans would learn about wildlife diversity through the program.

Enhancing opportunities for citizens to experience wildlife first-hand is a remarkably effective educational tool. Research indicates that people who have direct contact with wildlife through viewing and photography have much higher wildlife knowledge levels than people who attempt to learn about wildlife in a classroom, by watching wildlife television shows or by visiting zoos.²⁷

The educational value of direct experiences with wildlife is especially true for children. In a recent study on youths and their attitudes about wildlife, researchers from the U. S. Fish and Wildlife Service found that children who actively identified birds and observed wildlife knew much more about wildlife and the environment than children who did not participate in these activities.²⁸ A National Wildlife Federation study found important links between positive wildlife attitudes and wildlife-oriented activities in children. Of all the variables studied, children who bird watched and photographed wildlife displayed the highest knowledge levels. "Experience with the resource counts," noted the study's author, Dr. David LaHart.²⁹ Children seem to know innately the value of participatory activities: "Learning about animals in the wild is *way* better than learning from movies or in the classroom," notes 11 year-old Molly Rich of Fort Lauderdale, Florida.³⁰

A nationwide Wildlife Diversity Program will offer Americans numerous educational benefits. Wildlife viewing areas will give citizens the opportunity to directly experience America's diverse wildlife. Literature, such as wildlife viewing guides and checklists of birds and mammals, will help viewers learn more about wildlife and the best places to enjoy it. Wildlife nature centers will give Americans an in-depth look at wildlife, habitats, and ecology. From school groups to vacationers to senior citizens, a Wildlife Diversity Program will offer Americans myriad educational opportunities.

George H. Harrison



Wildlife watching has direct educational benefits. In the most comprehensive study on public opinion and attitudes toward wildlife ever conducted, Dr. Steve Kellert of Yale University found bird watchers knew more about wildlife and the environment than any other outdoor recreation or demographic group studied.³¹

"Reverence and respect are hard to teach. They must follow from seeing, doing and understanding by becoming involved."²⁶

— Cheryl Riley
 Director, Information and Education
 Pennsylvania Fish Commission

How much do direct wildlife experiences influence children? Consider this statement by Aldo Leopold, the "father" of modern wildlife management in America: "My earliest impressions of wildlife and its pursuit retain a vivid sharpness of form, color and atmosphere that half a century of professional wildlife experience has failed to obliterate or to improve upon."³²



PUBLIC OPINION AND WILDLIFE CONSERVATION

Americans Strongly Support Wildlife Conservation Efforts

THE 1990S HAVE BEEN LABELED THE "ENVIRONMENTAL decade," and for good reason. Public awareness and positive opinions on environmental and wildlife conservation issues increased steadily during the 1980s, reaching all-time highs at the beginning of this decade.

Pollsters documented this increase. In his comprehensive national public opinion survey on wildlife, Dr. Steve Kellert of Yale University concluded, "The majority of Americans appeared to value wildlife strongly and have expressed willingness to make substantial social and economic sacrifices to protect this resource and associated habitat."³⁵

Internationally acclaimed pollster Lou Harris brought a similar message to wildlife professionals at the Golden Anniversary of the North American Wildlife and Natural Resources Conference, where he stated "[T]he dynamic of change in recent years has always been in one direction: the American people get tougher and tougher and more adamant and more shocked about the state of environmental cleanup...Thus, the majorities in any sound poll conducted on the subject are simply huge and staggering."³⁶

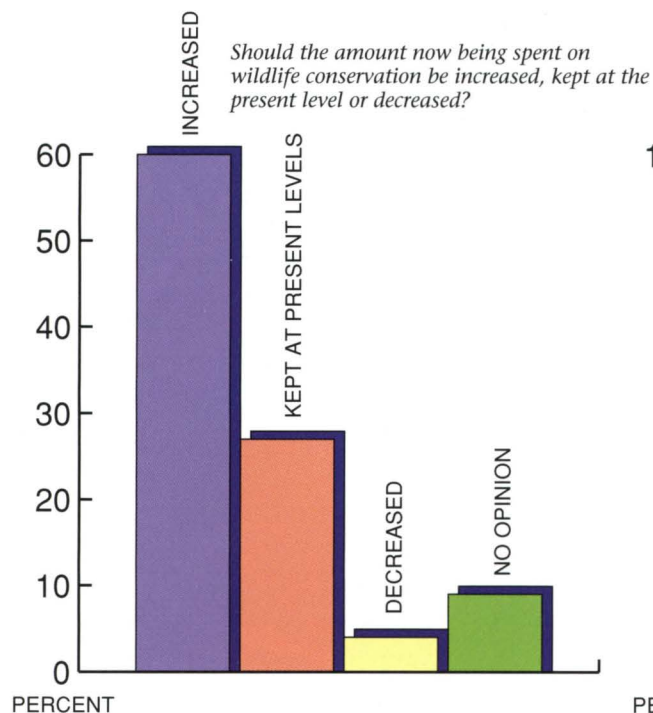
Concern for wildlife is so strong the issue crosses political boundaries. Democrats and Republicans alike support wildlife and environmental conservation efforts, according to Republican pollster V. Lance Tarrance, Jr., Democratic pollster Celinda Lake³⁷, and Florida State University's Survey Research Center Director Dr. Suzanne Parker.³⁸

"Various findings consistently indicated wildlife was not just the concern of an esoteric and elitist minority, but instead, had broad appeal to many, if not most Americans. The impression was that an abundant, diverse and healthy wildlife population contributes, in the minds of many, to a high standard and quality of life."³³

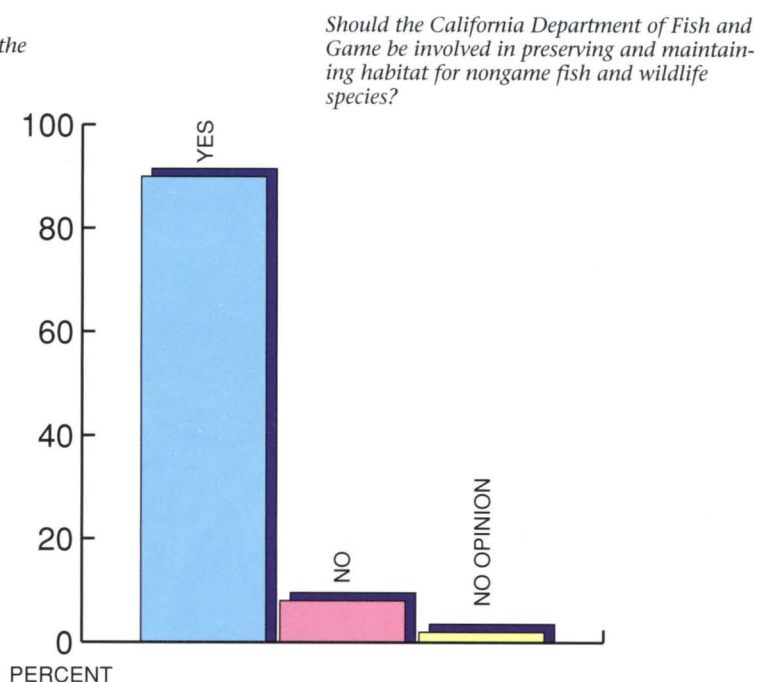
— Stephen Kellert, Ph.D.
School of Forestry and
Environmental Studies
Yale University

"Seventy-six percent of the general public feels that active management of nonendangered wildlife populations is necessary."³⁴

— Mary Beth Moss
and James Fraser, Ph. D.
Virginia Polytechnic
Institute and State University



Source: Florida Game and Fresh Water Fish Commission³⁹



Source: California Department of Fish and Game⁴⁰



WHAT WOULD A NATIONWIDE WILDLIFE DIVERSITY PROGRAM LOOK LIKE?

A nationwide Wildlife Diversity Program would consist of projects focusing on conservation, education and recreation.

FOLLOWING ARE SOME WAYS STATE FISH AND WILDLIFE agencies would conserve America's wildlife diversity, meet the demand for wildlife viewing and other recreational activities, and educate Americans about wildlife and environmental issues, if adequate funding was available.

The projects illustrate the various orientations of state fish and wildlife agencies toward wildlife diversity and the range of program needs; some with ambitious expanded programs that will provide the basic data necessary for sound decision-making and comprehensive program development. The one aspect unifying all programs is the critical lack of biological information on most species of wildlife and their habitats and an effective system for making that information available to managers and users.

State of Alabama Division of Game and Fish will..

Enhance wildlife education efforts by producing wildlife films and pamphlets on the importance of wildlife and their habitats.

Provide wildlife viewing opportunities throughout Alabama.

Protect important wildlife habitat by acquiring and enhancing wetlands along the Tombigbee River system, including the Mobile-Tensaw Delta. Wildlife viewing opportunities will be enhanced through the construction of walkways, towers and access points.

Protect migratory songbirds by providing nesting structures and conducting workshops on songbird management.

Enhance wildlife viewing opportunities in the rapidly urbanizing Tennessee Valley.

Enhance wildlife management capabilities by developing an extensive volunteer program.

State of Alaska Department of Fish and Game will...

Increase wildlife habitat and ecosystem management effectiveness guided by a thorough analysis of existing state laws and regulations.

Enhance and increase Federal Wildlife Diversity Program dollars by developing additional state funding sources.

Enhance wildlife conservation effectiveness by developing a statewide wildlife and habitat database.

Provide responsive and quality service to Alaskans by assessing what they want from their wildlife resources and the state wildlife agency through public opinion surveys.

Enhance wildlife education efforts by evaluating the effectiveness of current Alaska-specific wildlife education curricula and addressing indicated needs.

Develop effective wildlife conservation strategies made evident by analyzing the ecological role of nongame species in areas exposed to major habitat alterations due to development.

State of Arizona Game and Fish Department will...

Protect habitat for wildlife through enforcement and land acquisition efforts.

Increase population levels of declining wildlife by implementing species recovery plans.

Increase wildlife conservation efforts and enhance wildlife recreation opportunities in urban areas.

Identify management and conservation problems and identify solutions through population and habitat surveys.

Provide responsive and quality service to Arizonans and build effective education programs by assessing public awareness, opinions, perceptions and attitudes toward wildlife, and encouraging participation in wildlife-related activities.

Increase public knowledge of wildlife, habitat and wildlife-oriented activities through seminars, workshops, development of wildlife booklets, and lecture series.

State of Arkansas Game and Fish Commission will...

Enhance wildlife diversity by protecting and conserving critical habitats such as wetlands, prairie remnants, forested acid seeps and cave recharge areas.

Develop conservation strategies to protect cave dwelling species such as Rattlesnake big-eared bats and endemic salamanders.

Enhance wildlife viewing opportunities on the Bayou Meto Wildlife Management Area and the Blackwell Bottom Wildlife Management Area by constructing wildlife viewing towers, hiking trails and photography blinds.

Safeguard coopers and sharp-shinned hawks by initiating projects guided by a better understanding of their status and distribution.

Teach citizens how to attract and manage wildlife around their homes.

Develop wildlife conservation strategies for scarlet tanagers and cerulean warblers.

Develop non-lethal methods of controlling depredating shorebirds and wading birds on commercial minnow ponds and catfish ponds.

State of California Department of Fish and Game will...

Construct informational signs, wildlife displays, fee stations, welcome signs and other educational and informational amenities on ten existing wildlife viewing areas.

Develop trails and signs to direct visitors to safe and quality wildlife viewing areas on existing wildlife viewing lands.

Protect sensitive wildlife habitat and provide wildlife watchers with enhanced viewing opportunities by constructing viewing blinds, platforms and boardwalks on state lands.

Provide responsive and quality service to Californians and tourists by analyzing visitors and visitor use of wildlife management areas and selected hatcheries.

Protect wildlife and sensitive habitat with actions guided by a study of human impacts on wildlife.

Provide facilities that meet visitors' needs following an assessment of their attitudes on facility development.

State of Colorado Division of Wildlife will...

Enhance wildlife management effectiveness by generating information on Colorado's amphibians, reptiles, mollusc and macro-crustaceans.

Increase public knowledge, awareness and concern about wildlife diversity by increasing regional staff to act as local sources of expertise.

Provide additional educational and recreational opportunities for the public by developing wildlife information brochures.

Cut wildlife management costs by developing a process to monitor one or a few species within a wildlife community that would assess the well-being of entire communities or ecosystems.

Provide responsive and quality service by assessing public participation in and preference for wildlife watching activities and developing strategies to address the identified issues.

Enhance wildlife management effectiveness by understanding the distribution and population trends of lynx and wolverine.

State of Connecticut Wildlife Division will...

Protect wildlife through additional enforcement and management activities.

Enhance wildlife viewing opportunities through viewing area and wildlife trail development.

Provide wildlife recreation opportunities and wildlife management activities in urban areas.

Increase knowledge of the state's wildlife through survey, monitoring and assessment efforts.

Enhance wildlife diversity decision-making capabilities by assessing essential wildlife habitat.

State of Delaware Division of Fish and Wildlife will...

Promote an awareness and appreciation of wildlife diversity in the citizens of Delaware through the development of a wildlife education program.

Protect threatened wildlife habitat through easements and fee simple acquisition.

Protect wildlife habitat by developing a land stewardship program through implementation of partnerships among landowners, and federal, state and private organizations.

Enhance wildlife management capabilities by conducting inventories of wildlife diversity statewide.

State of Florida Game and Fresh Water Fish Commission will...

Enhance wildlife viewing opportunities on the Corbett Wildlife Management Area by constructing interpretive trails and facilities.

Enhance wildlife viewing opportunities on the Guana River Wildlife Management Area by constructing an interpretive trail and wildlife observation platforms.

Provide motorists wildlife viewing opportunities on the Bull Creek Wildlife Management Area by developing a wildlife observation drive.

Protect important wildlife areas following identification of significant habitat for estuarine, tidal swamp and coastal strand wildlife in peninsular Florida.

Develop important conservation actions and identify significant habitat for interior ridge scrub and sandhill wildlife in peninsular Florida.

Protect significant habitat and develop vital conservation actions for interior dry prairie wildlife in peninsular Florida.

**State of Georgia
Game and Fish Division
will...**

Enhance wildlife populations and develop wildlife viewing opportunities through information distribution using audio, video, workshops, technical bulletins and landowner consultations on how wildlife populations can be encouraged in backyard and urban habitats.

Provide wildlife viewing opportunities on select city parks, state parks, and wildlife management areas through wildlife and habitat management and public education.

Enhance wildlife education programs by developing and implementing a comprehensive conservation education program designed to enhance the public's understanding of the role of wildlife in the quality of life.

Protect wildlife diversity following completion of survey projects designed to determine the health and distribution of wildlife populations.

Safeguard wading birds such as herons and egrets through nesting surveys and through the development of colony protection techniques.

Enhance wildlife populations by developing new procedures and adapting current game management practices to other species of wildlife.

**State of Hawaii
Department of Land and
Natural Resources will...**

Restore the Hawaiian crow to its native habitat.

Restore the Hawaiian goose to its native habitat.

Preserve Kawainui Marsh, the state's largest wetland, for waterbirds such as stilts, gallinules and coots.

Determine limiting factors of Hawaiian goose populations.

Safeguard shoreline and marine wildlife and habitat by establishing and enhancing shoreline protection areas known as Marine Life Conservation Districts.

Provide snorkeling and SCUBA viewing opportunities within Marine Life Conservation Districts.

Protect important coral areas from repeated anchoring damage by installing mooring facilities.

Maintain the health of marine habitat aided by a better understanding of the consequences of mooring facility construction.

Provide quality wildlife viewing opportunities while protecting the resource guided by an understanding of public participation in the activity.

Develop strategies to protect marine wildlife made possible by better understanding the impacts of fish feeding.

**State of Idaho
Fish and Game Department
will...**

Enhance wildlife education efforts in urban areas by expanding nature center services and conservation information distribution in cities.

Safeguard rare plant species by expanding the focus of conservation efforts.

Protect key plant communities and wildlife habitats through land acquisition, conservation easements, and other mechanisms.

Monitor key species or groups of birds, mammals, reptiles and amphibians and maintain an up-to-date database to ensure population integrity and species diversity.

Monitor neotropical migratory bird species on their breeding grounds in the state.

Conduct a 3-year, in-depth study of the wolverine in the Sawtooth Mountains in an effort to identify factors affecting the welfare of the population.

Identify the habitat requirements necessary to ensure the continued nesting of harlequin ducks in Idaho through an in-depth, 3-year research project.

Provide increased wildlife viewing opportunities and increase wildlife education efforts through the construction of wildlife interpretive displays and observation towers on state-owned management areas, hatcheries and other facilities.

**State of Illinois
Department of Conservation
will...**

Protect vital forest habitats through the control of garlic mustard which is rapidly destroying the ground layer of deciduous forests in Illinois.

Enhance the quality of forest, wetland and grassland habitats through the restoration of damaged ecosystems.

Develop conservation strategies for declining species.

Safeguard native reptiles and amphibians through actions guided by a better understanding of their distribution in Illinois.

Conserve bats and other cave animals following studies to better understand their distribution and relative abundance.

Protect species that may become endangered following research leading to a better understanding of their life history requirements.

**State of Indiana
Division of Fish and Wildlife
will...**

Enhance wildlife conservation efforts by developing a statewide computerized fish, wildlife and habitat database.

Safeguard shores of streams — important wildlife habitat — through acquisition and management.

Enhance wildlife education programs in urban areas by developing wildlife demonstration projects.

Streamline wildlife information searches by developing a statewide computerized database of wildlife diversity.

Streamline habitat information searches by developing a computerized database of habitats.

**State of Iowa
Fish and Wildlife Division
will...**

Enhance wildlife diversity on public lands by developing methods for incorporating wildlife diversity management techniques into current area management practices.

Expand wildlife education efforts by providing citizens with educational materials on wildlife resources to build public awareness, appreciation and understanding of wildlife diversity.

Increase wildlife diversity in urban areas by working with cities on regional plans and evaluating impacts of proposed projects on wildlife.

Develop strategies to ensure wildlife diversity guided by an understanding of the distribution and relative abundance of mammals and other wildlife.

Enhance effectiveness of wildlife management efforts by understanding the use of uplands and wetlands by birds, mammals, reptiles and amphibians.

Protect forest wildlife through actions developed through a better understanding of the effects of forest management practices on these animals.

**State of Kansas
Department of Wildlife and Parks will...**

Protect shorebird populations by renovating Cheyenne Bottoms Wildlife Area.

Protect wildlife diversity through habitat acquisition.

Protect important aquatic habitats in important watersheds by purchasing water rights.

Enhance wildlife management efforts by better understanding the exact distribution of stream fishes, amphibians, reptiles, mussels and other aquatic invertebrates.

Maintain populations of stream and river wildlife through the effective use of information on the impact of pesticides on these species.

Develop strategies to enhance wildlife diversity following an analysis of the factors that influence the distribution and scarcity of wildlife.

**Commonwealth of Kentucky
Department of Fish and Wildlife Resources will...**

Develop wildlife viewing facilities and interpretive materials in conjunction with Metropolitan Parks Departments in Louisville, Lexington, Paducah, Owensboro, Henderson, Bowling Green and Ashland.

Cooperatively develop wildlife viewing facilities and interpretive materials at each of the thirty state parks.

Increase knowledge of wildlife by expanding the Small Grants Program.

Streamline conservation information searches by compiling natural history studies conducted in Kentucky.

Protect the northern leopard frog in Kentucky through actions guided by an understanding of the reasons for its dramatic decline.

**State of Louisiana
Department of Wildlife and Fisheries will...**

Enhance wildlife viewing opportunities by erecting viewing platforms, trails and towers, and by developing wildlife viewing guides and posters.

Develop strategies to enhance wildlife management efforts by conducting inventories of plants and animals across the state.

Protect migratory and nesting shorebirds with programs that integrate a better understanding of their use of rice fields.

Improve wildlife conservation effectiveness by learning more about the impacts of bottomland hardwood forest fragmentation on the distribution of wildlife.

Maintain natural communities through actions based upon an understanding of the effects of prescribed fire.

**State of Maine
Department of Inland Fisheries and Wildlife will...**

Enhance and maintain wildlife diversity using documentation of species' status, habitat requirements, and management needs to guide specific actions.

Safeguard wildlife populations by developing and implementing habitat and species management programs.

**State of Maryland
Department of Natural Resources will...**

Secure habitat protection for wildlife on private lands.

Enhance wildlife conservation and education efforts in urban areas through expanded urban wildlife programs.

Improve public awareness of wildlife diversity through expanded lecture programs, development of brochures and audio-visual materials.

Protect bald eagles by assessing important habitat, both occupied and potential, and determining changes and threats over time.

Protect forest interior breeding birds by determining habitat availability.

Enhance wildlife diversity by documenting wildlife population levels and implementing strategies that will foster favorable abundance and distribution.

**Commonwealth of Massachusetts
Department of Fisheries, Wildlife and Environmental Law Enforcement will...**

Protect river herring by providing and maintaining vital fish passages.

Protect important anadromous fish populations through actions fostered by a better understanding and definition of their habitat requirements.

**State of Michigan
Department of Natural Resources will...**

Provide quality wildlife viewing opportunities by assessing what amenities and facilities are important to Michigan citizens when viewing wildlife and designing projects to meet identified needs.

Provide numerous wildlife viewing opportunities by developing a statewide wildlife viewing program, including the selection of 100 priority sites, development of facilities, signing of sites and the production of a guide book.

Protect migratory shorebirds, wading birds, waterfowl and nesting islands for common terns and herons by developing shallow water areas and mudflats through contouring of bottomlands, construction of cross dikes, and pumping facilities on large permanent pools at the Point Mouille State Game Area.

Develop wildlife viewing areas and protect wildlife habitat in Whitefish Point Migratory Bird Sanctuary by constructing interpretive trails, foot trails, boardwalks, and wildlife observation towers to limit and focus foot traffic, and develop interpretive displays along the trails; essential habitat in private ownership would be acquired.

**State of Minnesota
Division of Fish and Wildlife
will...**

Enhance wildlife viewing opportunities by producing a guide to wildlife viewing in Minnesota.

Develop wildlife viewing sites along the Minnesota highway system.

Enhance relationships between and work closely with industry to augment Federal Wildlife Diversity Program funds.

Document the economic value of wildlife recreation other than hunting and fishing.

**State of Mississippi
Department of Wildlife,
Fisheries and Parks will...**

Enhance wildlife viewing opportunities by providing a public guide to the location and characteristics of existing wildlife viewing sites on public or other accessible lands.

Plan and complete a stream inventory/classification system that will protect aquatic wildlife and resources.

Protect wildlife by identifying outstanding habitat and natural communities through regional inventories and by providing cooperative management assistance.

Protect significant natural areas and wildlife habitat through land acquisition and habitat management.

Restore bottomland hardwood natural communities on the Pascagoula Wildlife Management Area by developing survey methods and criteria to define natural conditions, and by formulating and implementing programs that will meet identified needs.

Enhance public knowledge of wildlife ecology and resource issues through educational outreach, wildlife publications and teacher training programs at the Mississippi Department of Wildlife, Fisheries and Parks Museum of Natural Science.

Develop wildlife interpretation areas and trails at state parks and wildlife management areas.

Determine population trends and management problems for declining species.

**State of Missouri
Department of Conservation
will...**

Protect and restore declining natural communities and their resident wildlife populations, such as forests of the Mississippi lowlands, native prairies and wetlands.

Establish an ecosystem-based management program to protect natural habitat associations and plant and animal species found there through biological, social and political strategies including acquisition, leases, partnerships and zoning.

Establish a system of wildlife viewing areas near major population centers and along interstates and other transportation corridors with public facilities and sustainable populations of watchable wildlife.

Determine critical area needs and habitat manipulation effects on wildlife diversity.

Determine the effects of the Conservation Reserve Program on wildlife diversity.

Enhance wildlife conservation in urban areas by determining critical area size of natural habitats necessary to support wildlife.

**State of Montana
Department of Fish, Wildlife
and Parks will...**

Enhance wildlife education opportunities at Flathead Lake by conducting natural history boat tours.

Develop wildlife education opportunities at Gates of the Mountain on the Missouri River through the establishment of a wildlife nature center.

Enhance wildlife viewing opportunities on 31 sites throughout the state by constructing interpretive and informational signs.

Restore swift fox populations in Montana.

Maintain bat populations by better understanding the impacts of abandoned mine reclamation on their populations and implementing projects that will mitigate those impacts.

**State of Nebraska
Game and Parks Commission
will...**

Enhance wildlife viewing opportunities on the Platte River-Rainwater Basin by producing a wildlife viewing guide and interpretive and directional signs.

Provide wildlife viewing opportunities on the Niobrara River by producing a wildlife and plant viewing guide, interpretive and directional signs, and site enhancement.

Increase wildlife viewing opportunities in Sandhills by producing a wildlife viewing guide, interpretive and directional signs, vicarious viewing, and site enhancement.

Safeguard wildlife habitat on the Platte River-Rainwater Basin, Niobrara River and Sandhills by delineating viewing sites, determining accessibility and sensitivity to recreational use, and reliability of viewing opportunities.

**State of Nevada
Department of Wildlife
will...**

Enhance wildlife management efforts by inventorying important wildlife habitat along streams in order to identify effective management practices.

Enhance wildlife conservation efforts by obtaining information on the distribution and health of Nevada's wildlife.

Protect wetlands by purchasing property and water rights, and provide wildlife viewing opportunities near these wetlands and streams by developing observation towers, informational signs, pamphlets and trails.

Enhance wildlife conservation decision-making effectiveness by developing a Geographic Information System.

Safeguard waterbird and shorebird populations by understanding the impacts of heavy metal contaminants on these birds and implementing strategies to mitigate these impacts.

Protect wildlife from potentially dangerous pesticides by understanding the impacts they are having on Nevada's wildlife and taking action that will reduce or eliminate damaging exposure.

State of New Hampshire Fish and Game Department will...

Enhance fish and wildlife conservation decision-making effectiveness by developing a computerized fish and wildlife information system.

Safeguard wildlife diversity by inventorying the state's fish and wildlife, particularly amphibians and small mammals and developing strategies that meet diversity objectives.

Develop wildlife management and conservation strategies using field investigations of the state's wildlife diversity; investigations would emphasize locations, threats and management needs.

State of New Jersey Division of Fish, Game, and Wildlife will...

Enhance wildlife management and education in urban areas by providing technical assistance on the creation and management of urban open space for wildlife.

Create wildlife-associated recreational opportunities statewide by producing informational materials promoting wildlife viewing.

Enhance wildlife viewing opportunities on Higbee Beach Wildlife Management Area, an 800-acre tract purchased and managed for wildlife viewing and compatible recreation.

Develop effective wildlife management strategies by compiling information on habitat requirements and identifying wildlife that can be used as indicators of the health of other wildlife.

Coordinate and cooperate with state foresters to develop forestry practices that enhance wildlife diversity.

State of New Mexico Game and Fish Department will...

Develop a computerized database, featuring information on the status, distribution, abundance, habitat and biology of the native wildlife of New Mexico.

Provide wildlife viewing opportunities on lands owned or controlled by the New Mexico Department of Game and Fish through the construction of wildlife informational displays, brochures, exhibits and observation areas.

Determine the status of wildlife diversity in New Mexico, with an emphasis on declining species.

Enhance the understanding of New Mexico's wildlife and what it needs to survive by understanding species distribution and habitat requirements.

Develop effective management techniques for wildlife in danger of population decline.

State of New York Division of Fish and Wildlife will...

Maintain wildlife diversity through habitat protection, taking full advantage of state and federal environmental regulatory programs.

Enhance wildlife conservation decision-making through the development of a Geographic Information System, a program that assists in understanding the important relationships between species and habitats.

Enhance wildlife education programs through publications and technical assistance to landholders.

Protect wildlife by developing and maintaining databases on the status and trends of wildlife.

Investigate causes of wildlife declines and explore potential management actions.

Safeguard wildlife diversity by better understanding contaminants in habitats and their effects on wildlife.

State of North Carolina Wildlife Resources Commission will...

Safeguard critical habitat through land acquisition.

Provide urban wildlife management guidance to planners, developers, landscape architects, engineers and governmental parks.

Provide wildlife viewing opportunities through site enhancement and tour guides.

Safeguard salamanders in North Carolina by learning more about their population levels and habitat requirements.

Manage aquatic wildlife through use of acquired information on species' habitat requirements.

Maintain Cape Fear shiner populations through actions made possible by captive breeding research.

State of North Dakota Game and Fish Department will...

Increase river otter populations through reintroduction.

Develop a wildlife viewing tour guide for North Dakota.

Enhance wildlife education efforts by producing slide shows, motion pictures and live educational programs.

Enhance wildlife management decision-making by developing a statewide rare species information database.

Maintain present levels of wildlife diversity by identifying current population trends and implementing programs that will enable achievement of diversity objectives.

State of Ohio Division of Wildlife will...

Protect wetlands and important wildlife habitat through regulation, enforcement, and informational and educational programs.

Protect wetlands through acquisition.

Develop incentives for landowners to protect and enhance aquatic systems.

Document the economic benefits of wildlife to the state's economy.

Safeguard common tern populations by developing procedures to attract them to artificial nesting areas.

Protect the state's butterfly populations by determining possible harmful effects from gypsy moth control.

**State of Oklahoma
Department of Wildlife
Conservation will...**

Enhance wildlife viewing opportunities by developing interpretive centers, wildlife displays, trails and informational signs.

Provide wildlife viewing opportunities on state wildlife management areas through the construction of wildlife trails, observation towers and interpretive signs.

Develop urban wildlife education centers to demonstrate techniques for wildlife landscaping and wildlife management.

Enhance wildlife management decision-making through the computerization of historical records of wildlife species' distribution, status and habitat needs.

Investigate, develop and implement strategies to protect wildlife and their habitats.

Identify critical habitat and unique communities where wildlife might be protected, yet with viewing areas available to the public.

Identify, acquire and manage habitats critical to the survival of declining wildlife.

**State of Oregon
Department of Fish and
Wildlife will...**

Enhance wildlife conservation decision-making effectiveness and move toward an ecosystem-based management program for protecting wildlife habitat diversity by developing a Geographic Information System.

Enhance wildlife conservation efforts by surveying, inventorying and monitoring wildlife populations, and by determining the status, life history, and habitat needs of little known populations.

Enhance wildlife viewing opportunities by developing interpretive displays, viewing blinds, trails and signs.

Preserve and enhance wildlife diversity and critical habitat, such as wetlands, through land acquisition.

Enhance wildlife conservation and education efforts in urban areas through expanded urban wildlife programs.

Develop recovery plans and conservation strategies for declining and sensitive species.

**Commonwealth of
Pennsylvania
Game Commission will...**

Educate children about wildlife through nature center and conservation camp expansion and enhancement.

Preserve wildlife diversity through habitat acquisition.

Enhance wildlife management effectiveness by coordinating and assessing resource management on public lands.

Enhance wildlife viewing opportunities by constructing wildlife nature trails, roadside viewing areas, parking facilities, and accompanying interpretive signs and brochures.

**Commonwealth of Puerto
Rico
Department of Natural
Resources will...**

Protect native wildlife by controlling and monitoring exotic wildlife.

Continuously monitor wildlife populations and seek early solutions to potential wildlife declines.

Protect native wildlife through actions guided by habitat evaluation.

Develop effective management techniques for birds by understanding their seasonal movements and reproductive patterns.

Protect wading birds through a thorough understanding of their ecology and implementing actions that diminish the impacts of limiting factors.

Provide responsive and quality service to Puerto Ricans and develop effective education programs by understanding their attitudes toward wildlife.

**State of Rhode Island
Division of Fish and Wildlife
will...**

Protect beach-nesting birds through public education and law enforcement activities.

Identify and set aside important wildlife habitat such as forested coves of non-edge habitat.

Protect rare moth and butterfly populations by managing pitch pine habitat and gathering information on their abundance and distribution.

Protect land-nesting birds by obtaining information on their relative abundance and distribution and designing strategies to foster established resource objectives.

Protect small mammals, reptiles, amphibians and freshwater fish, using newly acquired information on their relative abundance and distribution to guide prescribed actions.

**State of South Carolina
Wildlife and Marine
Resources Department will...**

Acquire and manage three wildlife management demonstration areas each located within major urban regions.

Protect important wildlife habitat by providing technical guidance and consultation to landowners, developers, land management agencies and land use regulators.

Enhance wildlife conservation efforts by conducting a survey to discover all potentially declining species.

Preserve the state's wildlife diversity by determining species' habitat needs and taking action to preserve those under the greatest stress.

**State of South Dakota
Game, Fish and Parks
Department will...**

Provide wildlife viewing opportunities on public lands by constructing viewing areas, wildlife informational displays and educational literature.

Conduct training workshops and develop management guidelines on how to incorporate research findings on wildlife management into land management practices.

Develop educational materials for private landowners and land managers to provide guidance to meet wildlife management needs on private lands.

Enhance wildlife diversity by understanding species' abundance and management needs in South Dakota.

Restore extirpated wildlife to areas where they once existed.

Develop effective wildlife education programs and provide responsive and quality service by conducting a detailed public opinion/interest survey on attitudes, expectations, and level of understanding of wildlife in South Dakota.

**State of Tennessee
Wildlife Resources Agency
will...**

Improve wildlife diversity by acquiring and enhancing connecting lands between key habitat, as guided by "gap analysis."

Enhance wildlife viewing and public educational opportunities on Tennessee's Wildlife Observation Areas by providing: wildlife viewing platforms/blinds, boardwalks, trails and interpretive signs/programs.

Preserve and enhance sensitive wildlife populations by implementing species recovery plans.

Enhance wildlife populations by providing grants in support of: wildlife population surveys, habitat improvement, and watchable wildlife/educational projects.

Upgrade urban wildlife through: technical assistance, backyard wildlife rallies, cavity nest box placement/distribution, wildlife plant materials, educational materials, and bird feeding stations/seeds for retirement/nursing homes.

Protect and enhance wildlife populations by providing educational materials/programs and law enforcement.

**State of Texas
Parks and Wildlife
Department will...**

Protect migratory birds by acquiring 1300 acres of critical habitat along the gulf coast and in the Rio Grande Valley.

Enhance wildlife diversity in ten wildlife management areas through habitat management activities.

Provide enhanced wildlife diversity informational and educational programs by developing and distributing material on wildlife and suitable management practices for each major ecosystem in Texas.

Determine trends in occurrence and relative abundance of birds and mammals through population monitoring of five wildlife management areas.

Develop effective wildlife management strategies guided by an improved understanding of state-wide trends in bird populations.

Avoid potential wildlife management conflicts by determining the effects of waterfowl impoundment management practices on wildlife diversity in five wildlife management areas.

**State of Utah
Division of Wildlife
Resources will...**

Enhance and safeguard wildlife diversity through habitat acquisition and development.

Enhance wildlife policy decision-making by better understanding population and habitat loss.

Avoid costly, last-ditch recovery of animals on the brink of extinction by implementing preventative conservation programs.

Maintain the health of wildlife diversity by documenting animal distribution and status and implementing measures to protect established diversity objectives.

Develop effective conservation measures by understanding the life histories and life requirements of important species and species groups, with special emphasis on habitat associations.

Develop management techniques for wildlife diversity conservation.

**State of Vermont
Department of Fish and
Wildlife will...**

Develop statewide wildlife viewing areas, produce wildlife viewing booklets, and place informational displays and signs at important viewing areas.

Protect marsh-nesting birds by surveying and inventorying wetlands and implementing measures to preserve these habitats.

Act to safeguard moth and butterfly populations by surveying rare and critical plant communities and preserving their qualities that make them essential to species perpetuation.

Perpetuate lake sturgeon in Lake Champlain through research of hatchery techniques and rearing at hatcheries.

Develop management techniques for timber rattlesnakes by monitoring populations and developing relocation techniques.

Safeguard small mammal diversity in rare communities such as alpine areas by better understanding their habitat needs and integrating them in conservation strategies.

**Commonwealth of Virginia
Department of Game and
Inland Fisheries will...**

Avoid costly recovery of animals on the brink of extinction by implementing preventative wildlife recovery programs.

Protect wildlife diversity by acquiring critical habitat.

Enhance wildlife educational programs through publications informing the public on wildlife diversity.

Safeguard the loggerhead shrike by undertaking programs based upon a better understanding of its distribution and population levels.

**State of Washington
Department of Wildlife
will...**

Expand wildlife management efforts in urban areas and enhance wildlife enjoyment opportunities in cities.

Enhance wildlife policy decision-making capabilities by inventorying wildlife diversity throughout the state.

Protect critical wildlife habitat through identification of important areas, development of management techniques and land acquisition.

Safeguard the western pond turtle in Washington through the identification and acquisition of sites for experimental reintroduction of captive-reared turtles.

Protect the western snowy plover in Washington by analyzing limiting factors to the existing population and implementing measures to address them.

Foster protection of the pygmy rabbit by better understanding population trends, habitat requirements and food habits, and the feasibility of re-establishing populations in habitat not currently occupied.

**State of West Virginia
Division of Natural
Resources will...**

Develop wildlife viewing opportunities on the Greenbottom and Shannandale Springs State Wildlife Management Areas.

Increase wildlife diversity management in each of the state's six districts.

Enhance wildlife diversity conservation by acquiring information on the state's declining wildlife species.

Investigate the potentially harmful effects of gypsy moth spraying on wildlife.

Investigate the effects of forest management practices on wildlife.

**State of Wisconsin
Department of Natural
Resources will...**

Develop a statewide system of wildlife viewing sites, including the development of six wildlife interpretive centers, wayside exhibits, a Wisconsin wildlife viewing guide and directional highway signs.

Provide critical nesting habitat for shorebirds and terns (Green Bay, Lake Michigan, Lake Superior and Lake Winnebago) and provide safe public viewing facilities (parking lots, observation decks).

Maintain, enhance and restore the full complement of native plant and animal species normally associated with terrestrial and aquatic communities on representative department lands and waters.

Conduct an extensive 3-year socioeconomic study of Wisconsin wildlife recreationists and non-users to determine their use of wildlife, their needs and expectations, their willingness to pay for recreational opportunities, and their knowledge and attitudes regarding wildlife management.

Enhance the protection and management of mollusc and invertebrates by completing a statewide inventory and computerized database.

Develop a research program to investigate the impacts of foreign genetic contamination, and inbreeding and outbreeding depression in rare and endangered plants.

**State of Wyoming
Game and Fish Department
will...**

Enhance wildlife diversity through broad-scope monitoring of nongame mammals, birds, fish, reptiles, amphibians, mollusc and crustaceans.

Protect wetland and other high priority habitats through land acquisition.

Enhance wildlife viewing opportunities through site improvement and development of wildlife education services.

Enhance wildlife diversity decision-making by better understanding habitat needs of priority wildlife.

Strengthen management programs for rare species through reintroduction studies to guide restoration efforts.

Develop data collection techniques in order to better understand wildlife management issues.

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Numbers, Expenditures and Percent of Population Viewing, Photographing and Studying Wildlife*

State of Residence	Number of state residents viewing, photographing and studying wildlife	Expenditures on viewing, photographing and studying wildlife	Percent of state population viewing, photographing and studying wildlife
U.S.	140,078,000	\$14,267,213,000	77
ALABAMA	2,194,000	\$106,336,000	73
ALASKA	297,000	\$50,445,000	81
ARIZONA	1,978,000	\$329,328,000	81
ARKANSAS	1,505,000	\$78,491,000	86
CALIFORNIA	13,741,000	\$1,775,058,000	68
COLORADO	2,167,000	\$332,463,000	89
CONNECTICUT	2,002,000	\$155,553,000	80
DELAWARE	379,000	\$23,531,000	78
FLORIDA	6,484,000	\$530,195,000	71
GEORGIA	3,464,000	\$453,263,000	76
HAWAII	491,000	\$123,594,000	63
IDAHO	656,000	\$45,018,000	93
ILLINOIS	6,338,000	\$893,439,000	73
INDIANA	3,645,000	\$460,658,000	88
IOWA	2,007,000	\$127,701,000	93
KANSAS	1,573,000	\$68,827,000	86
KENTUCKY	2,184,000	\$81,163,000	79
LOUISIANA	2,444,000	\$76,873,000	75
MAINE	755,000	\$67,879,000	87
MARYLAND	2,796,000	\$259,816,000	81
MASSACHUSETTS	3,230,000	\$332,695,000	71
MICHIGAN	5,617,000	\$542,454,000	84
MINNESOTA	2,850,000	\$238,650,000	92
MISSISSIPPI	1,596,000	\$77,549,000	82
MISSOURI	3,319,000	\$237,591,000	86
MONTANA	556,000	\$69,449,000	92
NEBRASKA	1,000,000	\$78,463,000	85
NEVADA	548,000	\$139,800,000	75
NEW HAMPSHIRE	675,000	\$85,843,000	88
NEW JERSEY	4,237,000	\$535,407,000	71
NEW MEXICO	866,000	\$118,504,000	81
NEW YORK	8,630,000	\$492,751,000	63
NORTH CAROLINA	3,563,000	\$192,207,000	74
NORTH DAKOTA	462,000	\$26,973,000	94
OHIO	7,132,000	\$997,726,000	90
OKLAHOMA	2,141,000	\$124,131,000	96
OREGON	1,743,000	\$148,707,000	87
PENNSYLVANIA	7,287,000	\$451,263,000	78
RHODE ISLAND	574,000	\$41,197,000	76
SOUTH CAROLINA	1,668,000	\$113,138,000	69
SOUTH DAKOTA	472,000	\$100,464,000	93
TENNESSEE	2,873,000	\$274,374,000	79
TEXAS	8,753,000	\$1,403,511,000	73
UTAH	959,000	\$119,998,000	89
VERMONT	356,000	\$49,330,000	89
VIRGINIA	3,646,000	\$413,902,000	85
WASHINGTON	2,921,000	\$300,039,000	88
WEST VIRGINIA	1,221,000	\$78,308,000	82
WISCONSIN	3,142,000	\$337,996,000	88
WYOMING	360,000	\$85,507,000	97

* Figures based on the 1985 National Survey of Fishing, Hunting and Wildlife-Associated Recreation.
Some numbers in the text vary from these because studies were conducted in different years.



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