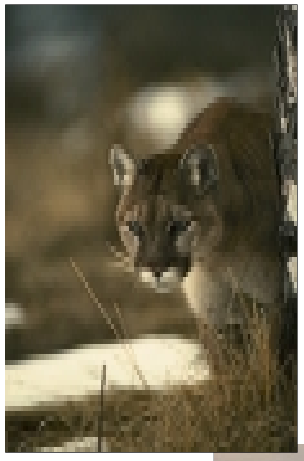
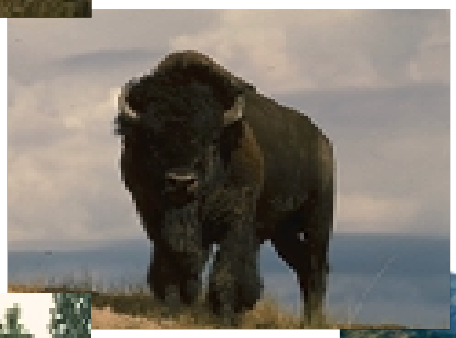
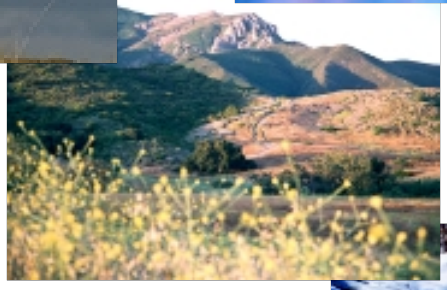
Natural Resource Challenge
Funding The National Park Service's Action Plan for Preserving Natural Resources

A Report to the United States Congress

Fiscal Year 2000



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Natural Resource Challenge Program

The National Park Service's Action Plan for Preserving Natural Resources

This report to the Congress details actions undertaken in Fiscal Year 2000 as part of the Natural Resource Challenge. As a five-year program, the Challenge strategically aims to improve management of natural resources under the care of the National Park Service by building upon existing resource programs. It builds on and expands key existing programs and adds important new capabilities. In the first year of the Challenge, an increased base funding of $14,329,000 was used to accelerate completion of natural resource inventories, target efforts to eradicate non-native species, and improve current management and expertise of biological and geological resources. Certain actions were also mobilized through existing personnel, resources, and funding redirected toward the commitment of the Natural Resource Challenge.

The National Park Service cares for the special places saved by the American people so that all may experience our heritage.

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Mesa Verde NP, Colorado and Mount Rainier NP, Washington

1. Introduction

The Natural Resource Challenge is a five-year action plan focused on the natural resources of the national parks. The National Park Service (NPS) believes this topic is of the utmost importance to the future well-being of national parks. While many understand the importance of visitor facilities, infrastructure, and maintenance, there has been little understanding of the need to invest in information about our natural resources. The working assumption has always been that they will take care of themselves, if we leave them alone. The NPS now knows that if this was ever true, it certainly isn't anymore, and we must be engaged in natural resource management.

The National Parks will fulfill an increasing number of roles for our society in the future. Not only will they continue to be loved by American and international visitors for their recreational opportunities, parks will become future libraries, laboratories, and classrooms of rare importance because they will still contain the extraordinary plant and animal heritage that this nation treasures. The National Park Service can position itself, with Congress' help, to provide this outcome for the nation. Biologist E. O. Wilson has predicted that the day will come when "the flora and fauna of a country will be thought part of the national heritage as important as its art, its language . . . ." The NPS will play a primary role in preserving that heritage.

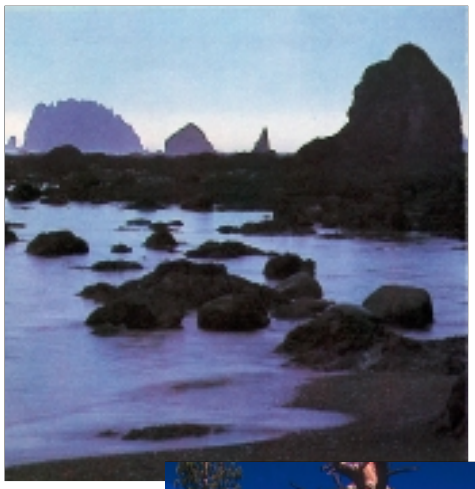
The National Park Service cannot meet this vision for the nation without a full commitment to natural resource management. Our past lack of emphasis and investment in natural resource management is documented in *Preserving Nature in our National Parks* by Richard Sellars, as well as by the General Accounting Office and other reviewers. The Challenge strives to rectify our management goals with our management practices by basing decisions upon sound scientific information. Currently, our decision-making is already documented for a public that is taking an increased interest in how our parks are being managed. The public has access to scrutinize all of the documentation we are required to develop on environmental and other impacts. This includes our decision-making concerning facilities, access, visitor activities, and any other significant actions and decisions. However, this documentation and decision-making often requires information we don't have. Now more than ever, we must demonstrate a rationale based in fact, not intuition, about our resources.

The continued effort to maintain roads, buildings, and visitor centers are important for the increasing levels of park visitation. However, they alone are not sufficient to manage visitors, parks, or the reasons visitors come to parks. If we are to preserve the 83 million acres of parks for present and future generations to enjoy, the National Park Service must understand and actively manage these resources. Some units of the National

Blue Ridge Parkway

Park System include resources that are impaired, and these require restoration. But it is now also clear that all must be actively managed, even pristine resources that are unable to escape enormous economic, social, and environmental pressures.

For example, even pristine areas are being overwhelmed by invasive plants and animals. There are over 2.6 million acres in the National Park system now impacted by invasive weeds. In addition, there are 4,000 abandoned mineral land sites in 140 NPS units, and 220,000 acres of disturbed lands. Such areas invite invasive plant colonization. Invasive plants change habitats such that they drive out native plants and animals, change fire regimes, encourage erosion, and interfere with the scenic qualities that parks were meant to preserve. Invasive plants have been called a "biological wildfire." The Service must take action. The Natural Resource Challenge positions the Service to do this.



The Natural Resource Challenge is a multi-year program that builds on key existing programs and adds important, previsouly missing components. Moreover, for the first time, it provides a coordinated, system-wide approach to natural resource management. Natural Resource Challenge actions will not remedy all issues concerning natural resource conditions within its five-year timeframe. It will make a strong start and provide the capability and foundation for resource preservation in the future. The Natural Resource Challenge positions the Service to meet the expectation of the American public that their national parks will be in good condition—the natural resources as well as the facilities—both now and in the future.

"the flora and fauna of a country will be thought part of the national heritage as important as its art, its language. . ."

E. O. Wilson

Bristlecone pine in Great Basin NP, Nevada and Olympic NP, Washington

2. The Natural Resources Challenge and NPS Strategic Planning

Concurrent with the National Park Service's recognition of the need to improve the management of park natural resources, the Government Performance and Results Act (GPRA) propelled the agency towards performance management. The GPRA required the Park Service to prioritize and focus its actions on programs and projects of the highest potential to furthering the mission of the NPS and to measure its progress in meeting its goals. As a result, the National Park Service's Strategic Plan developed under GPRA reflects the Challenge goals and objectives and likewise, the Challenge supports GPRA goals. Additionally, the Challenge actions are rooted in performance management; that is, they have been structured to produce measurable results.

As a result of the strong interrelationship of GPRA, the resulting NPS Strategic Plan, and the Challenge action plan, the Challenge assists parks to realize the mission and long-term goals of the NPS Strategic Plan. Most relevant mission goals of the NPS Strategic Plan are:

National and cultural and associated values are protected, restored and maintained in good condition and managed within their broader ecosystem context. (Mission Goal Ia)

The National Park Service contributes to knowledge about natural and cultural resources and their associated values; management decisions about resources and visitors are based on adequate scholarly and scientific information.(Mission Goal Ib)

Visitors understand and appreciate the preservation of parks and their resources for this and future generations. (Mission Goal IIb)

Following are the principal Strategic Plan long-term goals, targeted to be met by September 30, 2005, that are directly supported by actions included in the Challenge. A list of the Natural Resource Challenge elements and their relationship to Strategic Plan goals is included in Appendix A. The FY 2000/ 2001 appropriation and proposed FY 2002 Challenge-related budget actions will allow some of them to be exceeded, since the goals were predicated on available funds without increases.

Inventory and Monitoring

- Acquire or develop 87% of the outstanding data sets identified in 1999 of basic natural resource inventories for all parks.
- 80% of parks with significant natural resources have identified their vital signs for natural resource monitoring.

Washita Battlefield NHS, Oklahoma Inventory & Monitoring vegetation survey

Restoration

§ 10.1% of targeted parklands, disturbed by development or agriculture as of 1999, are restored.

§ Exotic vegetation on 6.3% of targeted acres of parkland is contained.

Threatened and Endangered Species

§ 19% of the 1999 identified park populations of federally listed threatened and endangered species with critical habitat on park lands or requiring NPS recovery actions have improved status, and another 18.1% have stable populations.

Geologic Resources

§ Geological processes in 53 parks are inventories and human influences that affect those processes are identified.

§ 20% of known paleontological localities in parks are in good condition.

§ 72,500 square feet of cave floors in parks are restored.

Resource Interpretation and Education

§ 86% of visitors understand and appreciate the significance of parks they are visiting.

Air and Water Quality

§ Air quality in 70% of reporting park areas has remained stable or improved.

§ 85% of Park units have unimpaired water quality.

Federally-threatened California red-legged frog in Point Reyes NS, California, bald eagle in Denali NP & Pr, Alaska, and water quality monitoring in Catoctin Mountain Park, Maryland

3. Fiscal Year 2000 Challenge Focus

Congress demonstrated its commitment to the natural resources of our nation by authorizing and appropriating funding to meet the needs of the Natural Resource Challenge in Fiscal Year 2000. Funding priorities for the first year of the five-plan were directed at accelerating the collection of the data through resources inventories. In areas where data already exists on exotic vegetation, removal of the vegetation was begun. This conservative approach ensured overall success of the Natural Resource Challenge plan when it was finally completed and approved by the Director of the National Park Service August of 2000.

Funding was increased for two existing programs, the Inventory and Monitoring Program and the Natural Resource Preservation Program. This ensured a quicker collection of park natural resource inventories and also addressed various resource management needs such as restoration. Biological and geologic resources management activities were improved by establishing a program to address native and exotic species and by expanding geologic resources protection capabilities. A high priority was placed on multiple, focused efforts to eradicate exotic species and was especially evident through the creation of Exotic Plant Management Teams.

Many other Challenge actions were undertaken that required no additional funding. For example, locations and partnerships for future Learning Centers were identified, a "Sabbatical in the Parks" program was established to attract scientists to use and assist parks, and a career development program was implemented to attract resource specialists with an academic background and to train them in NPS resource methods. These actions mobilized existing personnel and resources to refocus on the National Park Service's highest priority.

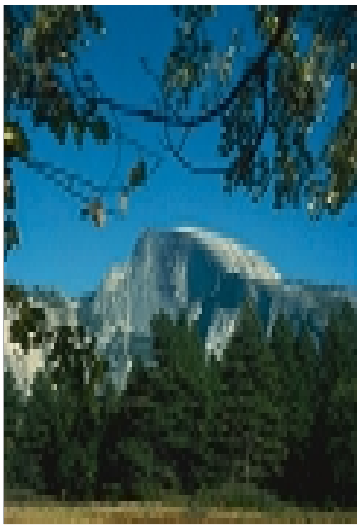
A table illustrating FY 2000 Natural Resource Challenge funding, as well as FY 2001 and proposed FY 2002 funding, in relationship to all FY 1999 natural resource funding is included in Appendix B.

Natural Resource Challenge Funding Increases in FY 2000

Natural Resource Inventories	$ 7,309,000
Natural Resource Preservation Program Project Funding	$ 2,875,000
Exotic Plant Control and Strategic Biological Support to Parks	$ 3,449,000
Geologic Resource Protection	$ 696,000
TOTAL	$ 14,329,000

4. Resource Inventories: Discovering America's Natural Heritage

FY 2000 Increase: $7,309,000



To fulfill the National Park Service's mission of preserving the nation's heritage, it is essential that park managers know the nature and condition of the resources placed under their stewardship. Because of the importance of information on resources, the National Park Service commenced an Inventory and Monitoring Program in 1992. However, although periodic small increases for this program were received, there was not enough funding to complete basic inventories in a reasonable timeframe or to monitor the condition of resources in even the selected prototype monitoring parks. Therefore, the Natural Resource Challenge made the acceleration and expansion of these efforts a keystone.

In FY 2000, the first year of the Natural Resource Challenge, $7,309,000 in increased funding for inventories was received. Using funding received through the Natural Resource Challenge in FY 2000, the National Park Service is completing inventories of the basic natural resources placed under its stewardship.

The table below shows the relationship of the Inventory and Monitoring Program as it existed in FY 1999 and in FY 2000 with the funding increase. The program encompasses 287 parks (270 administrative units for the purposes of the program) that have a significant amount of natural resources. Inventory and monitoring data are needed for park management in these areas.

Inventory and Monitoring Funding	
Available in FY 1999	$ 5,787,000
Pay Adjustment	$ 8,000
Transferred permanently to prototype park	$ (305,000)
Natural Resource Challenge Increase	$ 7,309,000
FY 2000 TOTAL	$12,799,000
Inventory and Monitoring Funding Categories	
Resource Inventory Projects	$10,862,640
Monitoring and Other Projects	$ 1,474,300
Database Development and Management	$ 422,560
T OTAL	$12,799,000

*Total reflects uncontrollable base changes in FY 2000

Half Dome at Yosemite NP, California

The inventories are being closely coordinated to ensure that they satisfy several important criteria:

- Collectively, the inventory data represent the "core" set of information park managers need to deal effectively with park planning, management, and protection—not all the information needed, but a common core set.

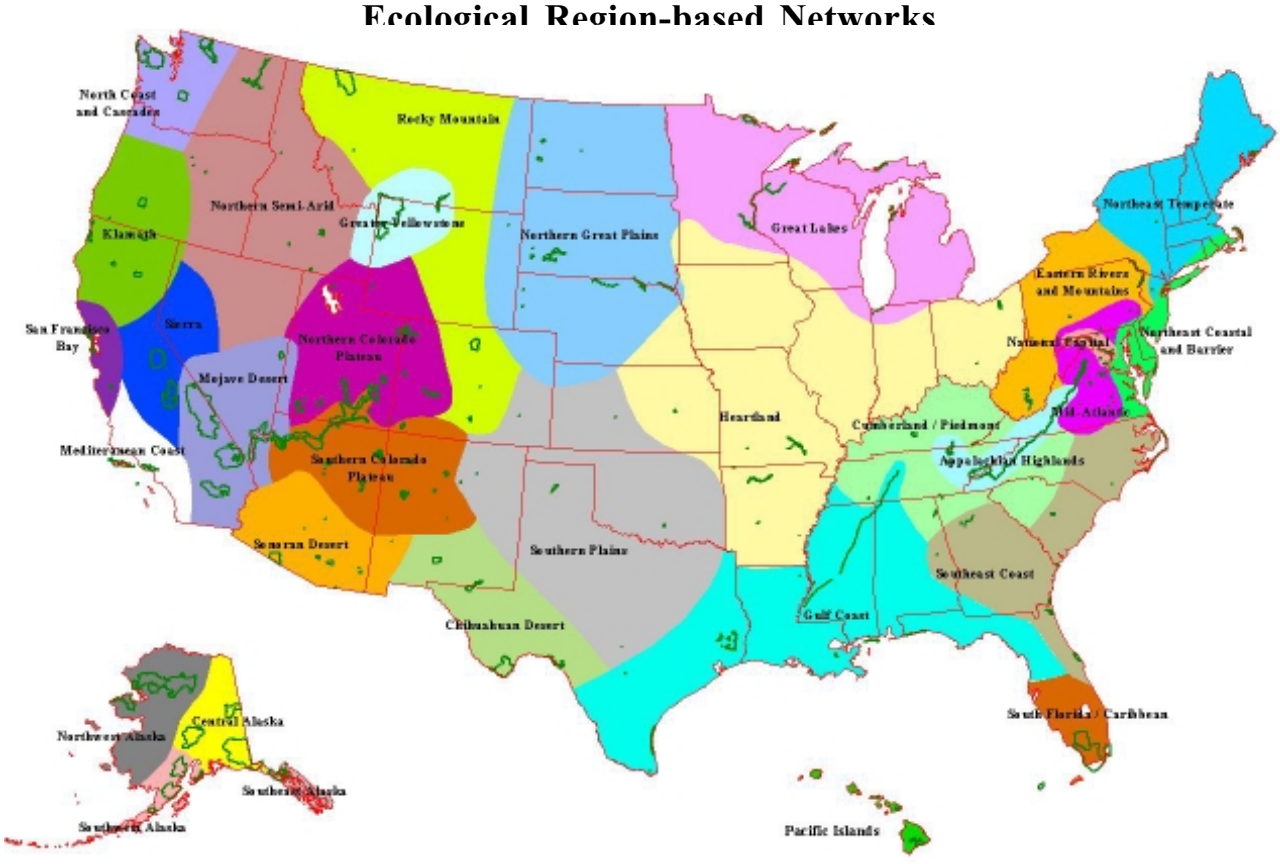
- The inventories are being conducted on a system-wide basis in accordance with clearly defined protocols and quality-assurance standards.

- Data obtained through the inventories will be compatible to allow for synthesis and analysis at ecosystem and other broad levels.

One strategic response to gathering both inventory and monitoring information lies in the creation of networks across the United States. For FY 2000, regionally based networks were organized, joining parks sharing similar geographical and ecological characteristics. Each network concentrates expertise and experience common to an ecological region containing a number of parks.

Inventories of plants and animals are being conducted cooperatively using these networks in partnership with academic institutions and other agencies with expertise in local flora and fauna.

Ecological Region-based Networks



Inventory Completion Summary

June 2001

Basic Data Sets	1999 1/		2000 2/		Total Parks To Complete 3/	Expected Completion Date
	Underway	Completed	Underway	Completed		
Automated Bibliographies	0	256	2	257	13	FY 2003
Base Cartographic Data	235	30	24	248	0	FY 2002
Higher Plant and Animal Occurrence (species lists)	103	86	186	86	0	FY 2002
Distribution of Species of Special Concern	0	0	271	0	1	FY 2004
Vegetation Maps	20	10	29	18	225	FY 2010
Soils Maps	134	15	136	18	118	FY 2008
Geology Inventories	239	0	239	0	33	FY 2008
Water Resource Locations (digital)	265	0	271	0	1	FY 2003
Water Chemistry	143	122	56	213	3	FY 2001
Air Quality	0	0	266	0	6	FY 2002
Air Quality-Related Values	0	0	0	0	272	FY 2007
Meteorological Data	0	0	0	0	272	FY 2003

1/ Based on 11/24/99 data.

2/ Based on 2/27/01 and 6/21/01 data.

3/ The Servicewide program acquires basic inventory data sets for about 272 parks with significant natural resources. New park units and reporting parks as administered for inventories, rather than by statutorily authorized units, has resulted in some slight changes in park numbers. Some parks have acquired some of these data sets and a few parks may not need all 12 sets. The number of parks to complete the data set reflects the number of parks Servicewide with outstanding needs.

A. Resource Inventory Projects
Funding Allocation: $10,862,640

Resource Inventories must focus efforts to gather the most relevant scientific information in order to make sound decisions regarding their access or protection. These inventories will be based upon a network approach to ensure cost efficient sharing of researchers and methods. Parks must make a decision about their most vital inventory needs based on the context of resources and their larger ecosystem.

Highlights of projects undertaken in FY 2000 are described below. Detailed information on the status of inventories by park, as well as a description of the inventories is included in Appendix C.

Base Cartographic Data
All parks urgently need the assembly of basic spatial information such as elevation and roads. This information, in digital form, is provided for geographic information systems (GIS) to support decision-making and resource protection activities. The Service is acquiring these products through a 50:50 cost sharing arrangement with the USGS. In FY 2000, this was accelerated with $1,250,000 to acquire more than 6,000 base cartography data products for 230 parks, increasing the number of parks for which this inventory has been completed to 96 percent.

Higher Plant and Animal Species Occurrence and Distribution of Species of Special Concern

Prior to FY 2000, very little inventorying of plants and animals had been initiated. With the FY 2000 funding, thirty-two networks overseeing 270 parks with significant natural resources were organized for inventory and monitoring. Each network is based upon existing ecosystem maps illustrating similar species, habitats, and physical properties. In FY 2000, the Service began to undertake efforts to conduct inventories of plants and animals, organized on a network-by-network basis. A total of $4.4 million was allocated to networks for this purpose. The efforts in FY 2000 have yielded some exciting results. For example:

- Initial efforts to inventory Pacific Island plants and animals focused on identifying and cataloging data available from other sources. A scientist who worked in American Samoa several decades ago loaned approximately 300 slides to NPS. As a result, some 650 entries of existing data and the private slide collection are now available for use in identifying and documenting near shore fish in all the Pacific Island parks. Other records located through the inventory suggest several possible additions to the bird list for Haleakala National Park, including a federally listed threatened seabird, the Newell's Shearwater.

Badger

- An extensive search of the Montana State University Herbarium was conducted as part of the initial inventory work for the Greater Yellowstone network. This searching resulted in 1,951 specimens of 1,059 species reported to have been collected in Yellowstone NP, Grand Teton NP, or Bighorn Canyon NRA. Of the specimens discovered, approximately 20 identified as having been collected in Yellowstone NP are of species previously unknown to the park. Four of these have been verified as new records for the park; the remaining 16 are being reviewed for accuracy to assure that they were properly identified. Additionally, a significant number of specimens collected from Glacier National Park were noted, and even a few from Yosemite National Park; information will be provided to those parks as well.

See Appendix D for detailed information on Network Biotic Inventory Allocations. In addition to initiating network plant and animal inventory efforts, other traditional plant and animal inventories previously initiated were completed, and special amphibian inventories were undertaken.

In recent years, the scientific community has gathered compelling evidence to support the conclusion that populations of amphibians are declining throughout many sections of the world, including the United States. However, the underlying causes of these declines, and an apparent associated increase in the percentage of amphibian deformations, are largely unknown. In response to these findings, in FY 2000 the USGS Biological Resources Division began its Amphibian Research and Monitoring Initiative (ARMI), which is designed to document amphibian population declines on Department of the Interior lands and also conduct research into the mechanisms causing those declines. In support of the USGS amphibian initiative, the Service allocated nearly $1,000,000 of the FY 2000 increase to conducting special inventories of amphibian populations in 13 parks. These amphibian inventories will provide important information park managers can use to address a variety of resource management and protection issues and also acquire much of the baseline information needed to support USGS research efforts in these parks in the future.

Water Chemistry, Soils Maps, and Geology Inventories

Geologic inventory activities were funded in 23 parks, most of them in Utah and Colorado. State geologists in these states are working closely with the National Park Service on these projects. The USGS is helping with geologic mapping as well. Soils mapping was underway in eight parks, conducted by the Natural Resource Conservation Service. Water quality inventories in 19 parks are focusing on information gaps identified by evaluating the EPA databases and other sources. See Appendix E for complete listing of projects.

USGS biologist surveying water quality at Washita Battlefield NHS, Oklahoma

B. Monitoring and Other Projects
Funding Allocation: $1,474,300

Prior to the Natural Resource Challenge, the National Park Service was engaged in testing different monitoring strategies through a prototype monitoring program. These prototype monitoring programs began in 1992 with 11 programs involving 22 parks selected for prototype monitoring. In FY 2000, prototype monitoring efforts in Denali National Park & Preserve, the Prairie Cluster of small Midwestern parks, Cape Cod National Seashore, and Channel Islands National Park continued to be supported through the Inventory and Monitoring Program.

The current funding of the prototypes initiated in 1992 focuses largely on those parks which are still in the design and testing phase (assisted by USGS). The funding covers project costs other than monitoring personnel for other early prototype monitoring parks.

Because the entire prototype park monitoring efforts had not been funded when the Challenge was developed, the Park Service determined that a new, less intensive (and less expensive) approach to monitoring was needed. While the prototype program tested sharing monitoring for clusters of small parks, the Challenge developed the concept of all parks sharing monitoring across networks. Each network must identify the most critical park vital signs to monitor. In FY 2000, in addition to organizing the networks, workshops and other efforts to help parks begin to identify the most important resources to monitor for future Challenge-related monitoring efforts took place. Finally, protocol development for soundscape monitoring to implement new legislation was also funded.

C. Database Development and Management
Funding Allocation: $422,560

A key component of the Challenge is to make data more easily stored, accessed, and used for management purposes. Two major efforts funded in FY 2000 are the NPSpecies database and the Dataset Catalog. These two databases will standardize the efficient foundation of substantial inventory and monitoring data necessary to make the best decisions about park resources. The NPSpecies database will provide one web-based database to capture all data about species in parks and will link to related information, such as where specimens are housed and articles published about a species in a park.

Two Medicine Lake in Glacier NP, Montana

The Dataset Catalog will allow parks to maintain an organized list of their data collections. Both of these databases will allow data sharing with other researchers, agencies, and academia as well as interface with other park data.

5. Natural Resource Preservation Program (NRPP)

FY 2000 Increase: $2,875,000

Most resource management activities are undertaken at the park level, where resource management funding provides salary and support costs for personnel in parks. However, parks usually have little or no flexible, dedicated funding for cyclic and one-time project needs. To undertake large projects, most parks require special project funding.

The Natural Resource Challenge resulted in an increase of $2.875 million in FY 2000, a nearly 50% increase over the previous $5.432 million available. As part of the Challenge, two special portions of NRPP were established to fund disturbed lands and threatened and endangered species restoration projects. A complete list of FY 2000 NRPP- Funded projects is available in Appendix F.

In FY 2000, the Natural Resource Preservation Program (NRPP) provided funding to approximately 135 parks. It provides the only reliable and dedicated source of large NPS project funding (project costs greater than $50,000) available for natural resource management projects. The most recent analysis showed a backlog of $478 million in natural resource project needs. This includes $173 million for mitigation projects such as site restoration.

The NRPP supports activities in a diversity of areas, such as wildlife, fisheries, and vegetation management, including specialized inventories, planning, mitigation actions and restoration activities. In recent years, due to funding, typically less than one dozen new projects have been initiated each year. About sixty percent of the funds ($5.1 million) are available for unspecified park-specific natural resource management projects. The balance strategically targets specific needs and is distributed as follows: $1 million for Small Park Projects, $850,000 for Disturbed Lands Restoration, $500,000 for Threatened and Endangered Species Projects, $255,000 for USGS/BRD Technical Assistance Projects, and $600,000 for Servicewide projects.

Cougar

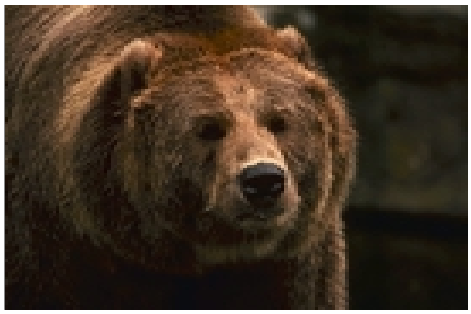
Natural Resource Preservation Program (NRPP) Project Funding	
Available in FY 1999	$5,432,000
Natural Resource Challenge Increase	$2,875,000
FY 2000 TOTAL	$8,307,000

Natural Resource Preservation Program Project Funding Categories	
Park-Specific Natural Resource Management Projects	$4,612,062
Small Parks Projects	$ 987,000
Threatened and Endangered Species Projects	$ 482,000
Disturbed Lands Restoration Projects	$1,073,000
Servicewide Projects	$ 597,938
USGS-BRD Projects	$ 555,000
TOTAL	$8,307,000

A. Park-Specific Natural Resource Management Projects

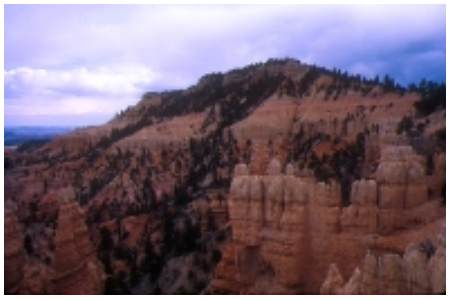
Funding Allocation: $4,612,062

This is the largest segment of the Natural Resource Preservation Program. Priority park projects are submitted by regions and reviewed and ranked by a panel of NPS and other subject matter experts, which recommends projects for funding based on project quality, resource threats and other factors. Typically, more projects are approved than can be funded in any one year and approved projects are carried over for initial funding in the following year. Projects must cost at least $50,000 and no more than $900,000 and may last no more than three years. Most projects require at least two years to complete and others three years. Projects receive their funding annually. Approximately 140 projects received park specific funding for fiscal year 2000. Eight of these were completed this year. Following are examples and highlights of projects completed in FY 2000.



Sequoia at Sequoia NP, California and grizzly bear in Denali NP, Alaska

Exotic Plant Control Team: Lake Mead National Recreation Area and Multiple Parks (17)
$104,000 FY 2000/ $594,000 total
This team implemented multiple projects in six states totaling more than 1,000 acres of exotic plants. The team from Lake Mead also provided exotic plant control training to partner parks, instructing them to carry out long term weed maintenance and follow up with monitoring. Multiple partnerships followed up initial work of these teams by dedicating $150,000 to restoration and $140,000 to revegetation following Plant Team intervention.



Paleontological Inventory: Mammoth Cave National Park, KY
$138,000 FY 2000/ $411,000 total
Inventories were undertaken and completed to discover the significance of over 450 individual fossil sites within park caves. Especially important fossils were found and identified including a water rat, an extinct giant armadillo, and a peccary. In addition, bone-rich deposits were sampled, washed, and proved to be a rich, extremely important find.

Prarie Dog Protection: Bryce Canyon National Park, UT
$12,000 FY 2000/ $92,000 total
To protect the threatened Utah prairie dog and stop impacts to vegetation and soils a multi-phase project was conducted. The first step was to construct a physical barrier to keep visitors from dispersing through occupied Utah prairie dogs colonies. The second step was to revegetate areas within the barrier impacted by heavy trampling of native vegetation. The barrier around the Utah prairie dog colony appears to be a success because visitors are staying near their cars as they stop to view the wildlife in this meadow. Mule deer also frequent the meadow and are not being disturbed by park visitors trying to venture out in to the meadow to get closer.

Bryce Canyon NP, Utah and Lake Mead NRA, Nevada with exotic plant management team

B. Small Park Resource Management Projects
Funding Allocation: $987,000

Funding is provided to regions to allocate for projects in small parks. Small parks are defined for purposes of this funding as those that fall in the lower third of funding for all parks, although there is discretion to vary this by region. The funds are allocated according to the natural resource management workload of these parks.

In FY 2000, approximately 90 projects were funded, for between $1,000 and $30,000 each, with most under $10,000.

Region	Funding	Number of Completed Projects
Alaska	$ 20,000	2 parks/2 projects
Intermountain	$ 195,000	22 parks/28 projects
Midwest	$ 150,000	18 parks and projects
National Capital	$ 82,000	7 parks and projects
Northeast	$ 104,500	5 parks and projects
Pacific West	$ 208,000	11 parks/20 projects
Southeast	$ 223,000	13 parks/13 projects
	$ 4,500	authorized, not expended
	TOTAL $ 987,000	78 parks/93 projects

Following are examples of some of the FY 2000 projects.

Prairie Restoration: Fort Scott National Historic Site, KS
$8,000

Fort Scott was established as part of a peace-keeping effort along what was then considered the "Permanent Indian Frontier." It also played a role in the Civil War and railroad expansion. Fort Scott National Historic Site interprets all three time periods. Use of the fort changed the area from the prairie that the first settlers viewed. The site maintains a small tallgrass prairie for interpretive purposes, which needed restoration work. A contractor removed undesirable trees and undergrowth. Two resource assistants, obtained through the Student Conservation Association, and a part-time seasonal employee removed the remaining vegetation and prepared the soil for seeding. Woody sprouts were cut and stumps treated with a herbicide throughout the prairie and Johnsongrass was removed manually. Six species of grasses and 17 species of forbs were broadcast into the area in December.

Tallgrass prairie restoration at Fort Scott NHS, Kansas

Assess Presence of Tick Borne Disease: Arkansas Post National Memorial, AR
$9,500
In FY 2000, 25,831 ticks were collected by flagging and through small mammal trapping. Of those collected, 1,698 ticks, or 289 pooled samples, were sent to the United States Army Center for Health Promotion and Preventive Medicine – North for testing. Ticks are being tested for presence of carriers for Ehrlichiosis and Lyme Disease. Frequencies of both diseases will be determined and the disease infestation rates will be used to determine management actions on pest population.

C. Threatened and Endangered Species Projects
Funding Allocation: $482,000

A special portion of the NRPP for projects related to threatened and endangered species was established in FY 2000 with a portion of the FY 2000 increase. Examples of projects completed in FY 2000 are described below.

Monitor Peregrine Falcons: Dinosaur National Monument, Glen Canyon National Recreation Area, and Zion National Park, UT/CO
$114,000
This multi-park project used NRPP funds to purchase equipment and field teams of seasonal employees to search for peregrine nests, photograph and characterize those nests, and monitor occupancy, breeding biology, and fledgling success. The results show that while it was not a very good year for peregrine breeding, on average 1.54 young fledged per occupied territory.

Park Ranger collecting ticks and disease testing in a laboratory setting at Arkansas Post NMem, Arkansas and Zion NP, Utah

Ute Ladies'-Tresses Orchid Protection: Dinosaur National Monument, CO/UT
$86,000
This rare orchid is a federally threatened species. Dinosaur National Monument contracted with Utah State University to analyze the effects of future Flaming Gorge Dam operations on the orchid's distribution and abundance. The University has completed geomorphic mapping of the Green River and an inventory of orchid populations. The University is now working with NPS staff to determine the likely impacts to orchid population that might result from changes to how the dam is operated and how much water is released.

Protect Kemp Ridley Sea Turtles: Padre Island National Seashore, TX
$138,500
This park used its NRPP funds to outfit and field patrols of turtle nesting beaches. Seven seasonal employees were hired to conduct daily and overnight patrols along with 30 volunteers and 8 USGS-BRD staff in order to protect the turtles and their nests. In total, over 97,400 miles of beach were patrolled. Twelve Kemp's Ridley, one green, and five loggerhead turtle nests were protected. A total of 1,000 Kemp's Ridley, 349 loggerhead, and 169 green turtle eggs were hatched and nestlings successfully released as a result of these efforts.

The federally-threatened Ute Ladies'-Tresses Orchid at Dinosaur NM, Colorado

D. Disturbed Lands Restoration Projects
Funding Allocation: $1,073,000

This funding category was established with a portion of the FY 2000 increase. Before the FY 2000 increase, there was no dedicated funding for disturbed land restoration projects. Disturbed lands are those parklands where the natural conditions and processes have been impacted or altered by development (e.g., facilities, roads, mines, and dams) or by agricultural practices (e.g. cropping, grazing, timber harvest). Restoration is the process of assisting the recovery of disturbed areas and reintegrating the site into the surrounding natural system.

Projects funded are those that are submitted by regions and reviewed and ranked by a panel of subject matter experts. The panel recommends projects for funding based on project quality, resource threats, and other factors. Projects must cost at least $50,000 and no more than $250,000 and may last no more than three years. Examples of projects completed in FY 2000 follow.

Lawn Lake Dam Removal: Rocky Mountain National Park, CO
$250,000
The failure of Lawn Lake Dam on July 15, 1982 achieved national attention. Three people were killed and over $30 million in damage occurred. The remains of the disaster—the alluvial fan, the scoured and deeply incised channel and the remains of the dam—are among the most heavily visited sites in the park. Yet, even after eighteen years, the failed dam and debris remained in essentially the same condition as they did shortly after the catastrophic flood. This project removed the remainder of the dam and restored the area to its original condition.

Rainbow Wells Site Restoration: Mojave National Preserve, CA
$100,000
The Rainbow Wells area is within designated critical habitat for the federally threatened desert tortoise. The site includes over 10 acres of disturbed soil and vegetation with an abandoned mine, shafts, residential buildings, and large open wells. This project completed site cleanup by removing automobiles, trailers, equipment, and exotic vegetation. Soils were decompacted and numerous drainage alterations were corrected to support erosion control. In addition, backfilling open shafts with on-site waste rock eliminated safety hazards to park visitors and staff.

Lawn Lake Dam removal at Rocky Mountain NP, Colorado

E. Servicewide Projects
Funding Allocation: $597,938

In addition to park-specific projects, there are often broader project needs to address Service-wide goals, some of which do not fall within other funding sources. Projects to meet these needs are proposed and recommended by Service-wide program managers—often in response to recommendations of the Natural Resource Advisory Group—to the Associate Director, Natural Resource Stewardship and Science. FY 2000 projects are listed below, along with the appropriate Challenge goal and accomplishments for each.

Haskell Indian College Agreement and Student Hires
$27,000
Under a Cooperative Agreement with Haskell Indian Nations University, the National Park Service works in partnership with the school to fund students working in the Midwest Region National Parks. This internship serves as a work-study experience complete with college credit for the students. Two Native American students assisted two separate parks in natural resource monitoring programs, restoration plans, fire management, and a biological control program.

During the summers of 1998-2000, a former Haskell Indian Nations University student assisted Apostle Islands National Lakeshore with a variety of natural resource monitoring projects, including: breeding bird survey; eagle banding; piping plover monitoring; water quality monitoring; sandscape monitoring; frog and toad monitoring; and purple loosestrife control. She also assisted with the development of a restoration plan for several previous use and occupancy sites.

At Theodore Roosevelt National Park, a Native American student assisted the Resource Management staff with the biological and chemical control program for the management of leafy spurge, a non-native plant. The student also monitored biological control release sites and collected leafy spurge flea beetles for redistribution to establish new sites, as well as assisting with fire management. Having completed fire suppression training, her third summer was devoted to fire management and its relationship to controlled burns.

Night Sky Monitoring
$30,000
This funding was successful in initiating the NPS Night Sky Team, which evaluated and selected methods to measure light pollution at four parks in the Western Region. The team also provided technical assistance to three other parks in internal lighting issues. A portion of this funding was used to produce 60 comprehensive handbooks for parks. The Night Sky Team will continue inventories at 8 additional parks and provide technical assistance to others with the recently established 20% Fee Demo funding proposal.

Field Guide to NEPA
$25,000
A contract has been entered into to develop a web-based tool that will provide a variety of resources to those working within NEPA. This up-to-date public web-based site will include guidance to the field, NEPA documents, decision documents, and project summaries. Users will be able to search for NPS projects and documents with similar focus and generate summary reports for Congressional and other inquiries.

F. USGS-BRD Projects
Funding Allocation: $555,000

This is a two-part allocation. The first portion, $300,000, funded the US Geological Survey-Biological Resources Division (USGS-BRD) research related to brucellosis. Three ongoing projects were funded. First was the final year of a 5-year study of brucellosis in Yellowstone National Park bison. The second project was the fourth year of a study assessing the effect of brucellosis on Grand Teton National Park bison. The third project funded was surveillance of the southern portion of the Greater Yellowstone Area. Other projects addressed vaccine biosafety and efficiency, and deliverability of brucella vaccines for elk and bison.

As part of the second FY 2000 USGS-BRD allocation, the NPS jointly funded and helped select BRD projects to support short-term park needs for tactical research and technical assistance. BRD announced project awards in mid-March, with 21 projects scheduled to start in FY 2000 and 4 additional projects scheduled to start in FY 2001.

All except one of the 20 projects that started in FY 2000 will continue into FY 2001. These 20 diverse projects will benefit 21 parks in 18 states. The 20 projects include 15 that are mostly exploratory research and 5 that are mostly technical assistance. Project topics range widely. Examples include studying the effect of an exotic plant species on pollination and seed set of native plant species, conducting a post-fire burn assessment by remote sensing, developing indicators of freshwater emergent wetland ecosystem integrity, synthesizing over 60 years of existing surface and ground water data, and assessing the ecological reaction of red-throated loons to present and future perils.

Bison at Yellowstone NP, Wyoming

6. Exotic Plant Control and Strategic Biological Support to Parks

FY 2000 Increase: $3,449,000

The Service has not had a national program to develop and implement strategic management approaches to issues such as exotic species control, species restoration, and wildlife disease and population management. To ensure a systematic and nation-wide approach the Biological Resource Management Division (BRMD) was established in FY 2000. In less than a year the BRMD has consolidated and initiated activities to provide the NPS with state of the art, science-based support programs addressing exotic species management, ecosystem restoration, threatened and endangered species protection and wildlife management.

Exotic Plant Control and Strategic Biological Support Funding	
Available in FY 1999	$ 0
Natural Resources Challenge Increases:	
Exotic Plant Management Teams & Ecological Restoration	$1,987,000
Endangered Species Program	$ 393,000
Integrated Pest Management	$ 232,000
Wildlife Program	$ 385,000
Biological Resource Projects	$ 452,000
FY 2000 TOTAL	$3,449,000

Highlights of these efforts on behalf of park resources and funded through the Natural Resource Challenge include:

A. Exotic Species Management Teams and Ecological Restoration

Funding Allocation: $1,987,000

Following habitat loss, invasive or exotic plant and animal species are considered the greatest threat to our natural heritage. They are implicated in the listing of 42 percent of all plant and animal species protected by the Endangered Species Act. Additionally, approximately 2.6 million acres of national parklands are infested by invasive plant species. The threat of invasive species has grave implications for the preservation of natural and cultural resources throughout the national park system.

A new weapon to combat exotic plant species was launched by the National Park Service in 2000 as part of the Natural Resource Challenge. Called the Exotic Plant Management Team or EPMT, the new capability was modeled after the coordinated rapid response approach used in wildland fire fighting because it is also effective in controlling exotic plants. The first test EPMT concept was made in 1997 at Lake Mead National Recreation Area (Nevada and Arizona) and served national park units throughout Southwest. Its success led to the establishment of four EPMTs through the Natural Resource Challenge in 2000. The long-term goal is to EPMTs deployed wherever serious threats to resources are identified.

National Park Service
THE NATURAL RESOURCE CHALLENGE
Exotic Plant Management Teams:
A Mobile Strike Force

Each EPMT provides a highly trained, mobile *strike force* of invasive plant management specialists to assist parks with limited capabilities and expertise in the control of exotic plants.The success of the EPMT derives from its ability to adapt to local conditions and needs. Each team employs the expertise of local citizens and the capabilities of local agencies. Each sets its own work priorities based on the following factors: severity of threat to high quality natural areas and rare species; extent of targeted infestation; probability of successful control and potential for restoration and opportunities for local public partnerships.

The EPMTs of Florida and the National Capitol Region provide excellent yet contrasting illustrations of regional adaptability. The Florida EPMT formed a partnership with the Upland Invasive Plant Management Program of the Florida Department of Environmental Protection and approximately 136 other groups in the program to control invasive plants. Together they fund removal of exotics in 11 units of the national park system in Florida. The EPMT of the National Capital Region takes another approach. This team serves 10 regional parks directly by assisting in the control and monitoring of exotic plants.

The Chihahuan Desert/Southern Shortgrass Prairie Exotic Plant Management Team

Four Exotic Plant Management Teams Funded in FY 2000
38 Parks Represented in Teams

Pacific Islands Exotic Plant Management Team

Host: Haleakala National Park

Benefiting Parks

Haleakala National Park
Hawaii Volcanoes National Park
Kalaupapa National Historical Park
Kaloka-Honokohau National Historical Park
Pu'uhonua O Honaunau National Historic Site
Puukohola Heiau National Historic Site

Florida Partnership

Host: Southeast Environmental Research Program at Florida International University

Benefiting Parks

Big Cypress National Preserve
Biscayne National Park
Canaveral National Seashore
Carl Sandburg Home National Historical Site
De Soto National Memorial
Dry Tortugas National Park
Everglades National Park
Fort Caroline National Memorial
Fort Moultrie National Historic Monument
Gulf Islands National Seashore
Timucuan Ecological and Historic Preserve

Chihahuan Desert/Southern Shortgrass Prairie Exotic Plant Management Team

Host: Carlsbad Caverns National Park

Benefiting Parks

Alibates Flint Quarries National Monument
Amistad National Recreation Area
Bent's Old Fort National Historic Site
Big Bend National Park
Capulin Volcano National Monument
Carlsbad Caverns National Park
Fort Davis National Historic Site
Guadalupe Mountains National Park
Lake Merideth National Recreation Area
Washita National Battlefield
White Sands National Monument

The Chihahuan Desert/Southern Shortgrass Prairie Exotic Plant Management Team removing Tamarisk in White Sands NM, New Mexico

National Capitol Region Exotic Plant Management Team
Host: Rock Creek Park

Benefiting Parks
Antietam National Battlefield
Catoctin Mountain Park
Chesapeake and Ohio Canal National Park
George Washington Memorial Highway
Harpers Ferry National Historical Park
Manassas National Battlefield Park
Monocacy National Battlefield
National Capital Parks East
Prince William Forest Park
Rock Creek Park

Locations of the Four Exotic Plant Management Teams

In light of the needs demonstrated in unfunded EPMT proposals submitted for competition in FY 2000 and the associated extent of exotic species represented, the NPS Biological Resource Management Division also distributed funds to four regions to support park based efforts in forming working relationships and strengthening their ability to formulate responses to exotic species threats.

B. Endangered Species Program
Funding Allocation: $393,000

During FY 2000, the Natural Resource Challenge provided numerous opportunities for the Biological Resource Management Division to contribute to the recovery of endangered plants and animals. A key project for the Division was an effort to integrate and update several outdated NPS endangered species databases. This new database will provide parks and others with current data on listed species in each park unit, indicate the presence of Critical Habitat, identify responsibility for implementing recovery plan tasks, and provide a means of verifying the Service's performance management goals.

The Biological Resource Management Division also worked closely with the Cooperative Ecosystem Studies Units system to provide parks with academic-based expertise on endangered species. In addition, the Division drafted a Conservation Agreement for the Canada Lynx that is currently under review by the U.S. Fish and Wildlife Service (FWS) and assisted FWS with reviews of recovery plans and Critical Habitat. Specialists in the division also helped parks with design reviews and other technical assistance on eleven endangered and threatened species projects.

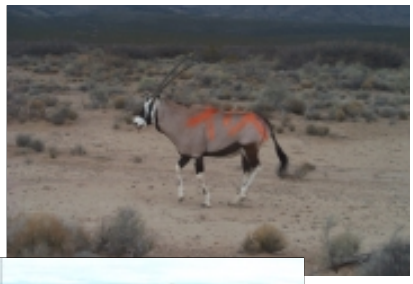
C. Integrated Pest Management
Funding Allocation: $232,000

Integrated pest management (IPM) techniques require managers to clearly understand the biology and ecology of the pest and its environment before developing management strategies. Armed with this scientifically sound information, resource managers can choose the most effective, economical, environmentally safe, and socially acceptable method of management. The NPS IPM program, viewed as a model by other resource agencies in managing pest species, has provided a broad range of services to parklands in FY 2000. For example, the first interagency West Nile Encephalitis Workshop was convened by the NPS-BRMD in December 2000. A broad range of participants who strove to enhance efficient response to this disease attended this workshop. Participants identified roles and responsibilities, communicated new research and drafted management actions.

Seedhead removal of pampas grass prior to mechanical removal of plant at Washita Battlefield NHS, Oklahoma

D. Wildlife Management Program
Funding Allocation: $385,000

The BRMD's Wildlife Management Program provides policy guidance, technical assistance, and training tailored to enhance the ability of park staff to meet the increasing demands for professional wildlife management. This includes the areas of wildlife health and disease, wildlife restoration, exotic species management, wildlife population management, and the identification of wildlife research needs. During the past year assistance was provided for the following:



Non-lethal removal of Exotic African Oryx: White Sands National Monument
Approximately 130 animals were removed from the park and relocated to the White Sands Missile Range. This exotic species removal was a cooperative effort involving the National Park Service, New Mexico Game and Fish Department, and the Department of the Army-White Sands Missile Range. Efforts will continue in 2001 to remove the last of the African oryx from White Sands National Monument.

Non-lethal removal of Exotic Burros: Mojave National Preserve
Assistance included aerial census, defining and addressing methods to prevent ingress of burros from surrounding Bureau of Land Management lands, and evaluating capture methods. Since 1997, approximately 2400 burro have been non-lethally removed from the Preserve with 569 removed in FY2000. The park's ultimate goal is a population of zero.

Multi-region White-tailed Deer Management Team
This team assists parks with management issues specific to white-tailed deer management. In addition, training is provided in various monitoring techniques that enhance the parks' ability to conduct sound professional management. The multi-region white-tailed deer management team is available to provide assistance to any park, parks, or region upon request. During the past year the white-tailed deer management team has provided services to five parks in the NPS.

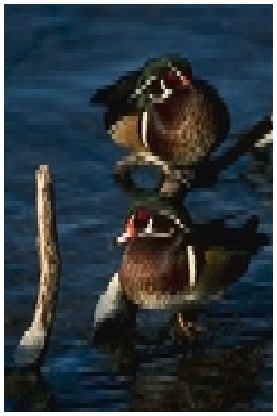
Veterinary Diagnostics for Wildlife Species
A collaboration between Biological Resource Management Division and Colorado State University has created a team specially suited to assist parks by providing pathology and other diagnostic services, technical assistance, and biological sample storage. Additionally, this collaboration facilitates two-way training opportunities and information exchange.

African oryx removal in White Sands NM, New Mexico and white-tailed deer

E. Biological Resource Projects – National Level Support

Funding Allocation: $452,000

These funds were for biological resource projects that address national issues facing various park units and benefiting multiple partners. Projects this year included an assessment of Golden Eagle activity surrounding Wupatki National Monument, surveying threatened and endangered Shilo Bats at Shilo National Military Park, and a national data management workshop. Other projects from this fiscal year include those listed below.



Bird Conservation and Education Projects - Park Flight Partnership
This project is a partnership between four organizations and American Airlines to support the parks in their migratory bird conservation efforts. The project focus is to provide support to park-based efforts at migratory species monitoring, protection, management, and education.

The Pulling Together Initiative and the Plant Conservation Alliance
The National Fish and Wildlife Foundation coordinated with BRMD to develop two cost share programs that provide federal funds for park based partnership efforts. In both the Initiative and the Alliance, all federal funds must be matched at a minimum dollar for dollar. These partnerships focus on invasive plant management efforts and restoring native species.

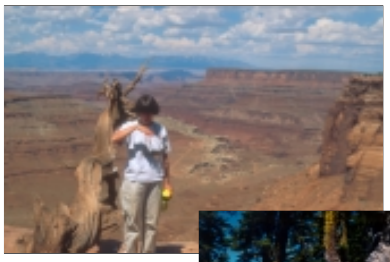
West Nile River Virus Assessment
The North East Cooperative Ecosystem Studies Unit and BRMD are working together to identify parks along the eastern seaboard that have habitat for mosquitoes known to be vectors or reservoirs for this disease. This information will then be used by the NPS to more effectively target disease surveillance, mosquito population monitoring efforts, establish action thresholds/protocols, and determine management efforts should they become necessary.

Wood ducks and red-winged blackbird

7. Geologic Resource Protection
FY 2000 Increase: $696,000

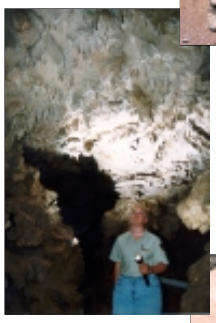
Challenge funding enabled expansion of professional geologic expertise in the Geologic Resources Division of the Natural Resource Program Center. Previously this division focused only on addressing mining and mineral issues specific to the NPS. Its role was expanded to include expertise outside of mining specific issues based on assessment of Resource Management Plans and consultation with field managers. Now all parks seeking to plan and implement protection programs for geologic resources can base their strategies on current expertise through the Geologic Resources Division. FY 2000 highlights are described below.

Geologists in the Parks offers education and technical positions to geologists who wish to work in National Parks for 2-6 months. Over 45 volunteers assisted parks in education and resource management issues. Natural Resource Challenge funding facilitated this program's ability to partner with others and leveraged additional outside funding.



Fossil Resource Protection Training was provided for over 100 law enforcement rangers on the rising trend in fossil theft on NPS lands and what they need to be aware of to respond and protect park fossil resources.

Volcanism in the National Parks Workshop was sponsored by the NPS to improve cooperation and collaboration between the parks and USGS on volcanic hazard management and public education.



Mapping and Education Project was conducted at Lassen Volcanic National Park in a partnership between USGS scientists and NPS staff to address gaps of information in geologic maps and develop public education materials

National Cave and Karst Management Symposium was held with the NPS as the primary sponsor of a multi-agency and private sector forum for addressing interrelated research and management issues

Fossil Surveys were initiated in five National Parks in California, Wyoming, and Utah.

Technical assistance was provided to several national parks to include geologic expertise within management plans and assist with the protection of geologic resources.

Appendix A
The Natural Resource Challenge Elements and Their Relationship to Strategic Plan Goals

- **Native and Endangered Species** — Protect native and endangered species and their habitats (Ia2A. Threatened and Endangered Species)

- **Non-Native Species** — Aggressively control non-native species (IA1b. Exotic Species)

- **Environmental Stewardship** — Enhance environmental stewardship (Mission Goal Ia. and IVa9. Environmental Leadership)

- **Air Quality** — Expand efforts to monitor and understand air quality and related values in parks to prevent damage to air quality and related values. (Ia3. Air Quality)

- **Water Resources** — Measure and protect water quality, natural flows, and the health of aquatic systems. (Ia4. Water Quality and Ib5. Aquatic Resources)

- **Inventory** — Accelerate natural resource inventories (Ib1. Natural Resource Inventories)

- **Monitoring** — Acquire accurate information about the condition of natural resources, monitoring how that condition changes over time, and evaluate changes in condition and management actions. (Ib3. Vital Signs)

- **Collaboration** — Work with others to achieve mutual natural resource goals, expanding collaborative relationships with universities, other Federal agencies, and others. (Mission Goal IVb. and IVbX. Park Partnerships)

- **Resource Planning** — Ensure that all park plans are based on a thorough understanding of natural resources and protect resources. (Mission Goals Ia. and Ib.)

- **Parks for Science** — Enhance the use of parks as centers for broad scientific research and inquiry (Mission Goal Ib. and IVbX. Park Partnerships)

- **Parks for Learning** — Use parks for learning (Mission Goal IIb. and IIb1. Visitor Understanding and Appreciation)

- **Fully Professional Staff** — Assure a fully professional staff (IVa3. Workforce Development and Performance)

Appendix B

Natural Resource Challenge Funding History

Funding Elements	FY 1999 Base 11/	FY 2000 Change	FY 2001 Change	FY 2002 Requested Change	FY 2000-FY 2002 Increases	Total Request FY 2002
Natural Resource Challenge Categories						
Complete basic natural resource inventories, except vegetation mapping 1/	$5,787	$7,309			$7,309	$13,096
Vegetation mapping cost-share with USGS	0		1,746		1,746	1,746
Monitor vital signs in networks of parks	0		4,191	4,200	8,391	8,391
Expand water resource protection and restoration 2/	4,754		823	1,000	1,823	6,577
Monitor water quality in parks and asses watershed conditions	0		1,272		1,272	1,272
Expand air quality monitoring and related activities	6,285			2,600	2,600	8,885
Inventory air emissions in parks 3/	0		200		200	200
Make natural resource data useable for management decisions and public 4/	455		1,098		1,098	1,553
Expand NRPP project fund	5,432	2,875		4,000	6,875	12,307
Create native/nonnative program/field teams for nonnative species management	0	3,449		2,400	5,849	5,849
Protect geologic resources 5/	1,918	696			696	2,614
Increase park bases for nonnative and threatened and endangered species recovery 6/	25,693		3,395	3,200	6,595	32,288
Establish Learning Centers	0		898	1,800	2,698	2,698
Establish CESUs	0		1,596		1,596	1,596
Establish resource protection fund	0			300	300	300
Implement Resource Protection Act to restore resources	0			500	500	500
Natural Resource Challenge Plus Affected Programs	$50,324	$14,329	$15,219	$20,000	$49,548	$99,872
Natural Resource Categories Not Affected 7/						
Park Base	$31,402	$5,046	$6,014	$2,235	$13,295	$44,697
Regional Project Programs	2,093	0	0	0	0	2,093
Servicewide Project Programs 8/	2,216	-23	8	12	-3	2,213
Central Office Support 9/	8,196	1,731	1,498	156	3,385	11,581
Total Natural Resources Categories Not Affected	$43,907	$6,754	$7,520	$2,403	$16,677	$60,584
Everglades Restoration and Research	$12,800	-$4,092	$1,299	$862	-$1,931	$10,869
Total Natural Resources Appropriation by Year 10/	**$107,031**	**$124,022**	**$148,060**	**$171,325**		**$171,325**

1/ FY 1999 figure includes program support and $895,000 for monitoring projects; in addition, $2.2 million appropriated for this program was previously transferred to parks for their prototype monitoring activities.
2/ Part of larger Water Resource Program; Water Quality Monitoring will be included in this total in the Budget Justification as well.
3/ Included in Budget Justification as Air Quality Program, with air quality monitoring, shown separately here.
4/ In FY 1999, these funds were not shown separately in the Park and Program Summary.
5/ Part of a larger Geologic Resources Program that also includes Abandoned Mine Land Restoration and other mining and minerals-related activities.
6/ Estimated amount in park bases, prior to the initiation of the Natural Resource Challenge, devoted to activities related to invasive and threatened and endangered species management. Estimated amount is derived from park base amounts contained in official NPS accounting system, adjusted to reflect portions of amounts identified against GPRA Goals (Ia1and Ia2).
7/ Primarily consists of "uncontrollable changes" (i.e., pay cost) and park specific increases (outside the Challenge) affecting natural resources. Small amounts of uncontrollable changes affecting base amounts in Natural Resource Challenge categories are included here. Uncontrollable changes to base have not been tracked in the Natural Resource Challenge numbers.
8/ Oil Pollution Program and Geographic Information Program.
9/ Includes Headquarters and Regional Office support
10/Comprised of the following three Program Components included as part of the Resource Stewardship Budget Subactivity in ONPS: Natural Resource Research Support; Natural Resources Management, and Everglades Restoration and Research.
11/ Enacted amount shown in FY 2000 Budget Justification.

Appendix C
Description and Status of Natural Resource Inventories

There are 12 basic natural resource data sets identified by the National Park Service as being required for parks with natural resources. In most cases, there will be additional inventory needs, but these are the 12 sets identified as common needs of all natural resource parks. Below is a brief description of each data set, followed by a table showing the status of inventories for each park. In parentheses below are the abbreviated titles used for each data set in the table.

- Automated Bibliographies
- Base Cartography Data
- Higher Plant and Animal Species Occurrence
- Distribution of Species of Special Concern
- Vegetation Maps
- Water Resource Locations
- Water Chemistry
- Soils Maps
- Geology Inventories
- Air Quality
- Air Quality-Related Values
- Meteorological Data

Automated bibliographies (BIBLIOG) are databases of past and present reports, books, and other documents of research and surveys on natural resources parks. *Base cartographic data* (CARTO) are those found on USGS "quad sheets," such as elevation and roads, and are provided in digital form for use in geographical information systems. For *higher plant and animal species occurrence* (SP_OCCUR) inventories, existing information about the occurrence of a species in parks is collected from park, museum, and other records; evaluated and supplemented with additional surveys where needed. For species of special concern, such as threatened and endangered species, or those unique to a park or mentioned in park legislation, *distribution information* (SP_DIST)is also developed about the location and range of the species within the park, as well as other population information. *Vegetation maps* (VEG) are digital maps with associated data on plants and plant communities and are developed from a combination of ground surveys and aerial photographs. *Water resource location* (W_LOC) inventories are digital data on the location of streams, lakes and other water bodies. *Water chemistry* (W_CHEM) is water quality information gathered from existing sources, such as the Environmental Protection Agency's STORET database, supplemented by gathering new data where there are gaps. A *soils map* (SOILS) is another digital product conforming to NRCS standards which characterizes soils by type, along with reports interpreting any management implications, such as erosion susceptibility. In *geologic inventories* (GEOL), existing geologic information from USGS, states and other sources is compiled and assessed to determine what other data are required for basic management purposes, and these are acquired. *Air quality inventories* (A_QUAL) consist of identifying nearby monitoring stations that may provide information about gaseous pollutants and visibility in the vicinity of the park and analyzing that information to provide estimated air quality. Inventorying *air quality-related values* involves identifying park resources that may be affected by gaseous pollutants or visibility. In most cases, a *meteorological inventory* consists of locating available basic information such as temperature and precipitation data having special significance for resource management.

Status of Natural Resource Inventories

PARK NAME	ST	BIBLIOG	CARTO	SP_OCCUR	SP_DIST	VEG	SOILS	GEOL	W_LOC	W_CHEM	A_QUAL
Abraham Lincoln Birthplace National Historic Site	KY	Complete	Complete	Underway	Underway		Underway	Underway	Underway	Complete	Underway
Acadia National Park	ME	Complete	Complete	Complete	Underway	Underway	Complete	Underway	Underway	Complete	Underway
Agate Fossil Beds National Monument	NE	Complete	Complete	Underway	Underway	Complete	Underway	Underway	Underway	Complete	Underway
Alagnak Wild River	AK		Underway	Underway	Underway				Underway	Complete	Underway
Alibates Flint Quarries National Monument	TX	Complete	Complete	Underway	Underway			Underway	Underway	Complete	Underway
Allegheny Portage Railroad National Historic Site	PA	Complete	Complete	Complete	Underway		Underway	Underway	Underway	Complete	Underway
Amistad National Recreational Area	TX	Complete	Complete	Complete	Underway		Complete	Underway	Underway	Complete	Underway
American Memorial Park	CM	Complete	Complete	Underway	Underway		Underway	Underway	Underway	Underway	Underway
Aniakchak National Monument and Preserve	AK		Underway	Underway	Underway			Underway	Underway	Underway	Underway
Antietam National Battlefield	MD	Complete	Complete	Underway	Underway		Underway	Underway	Underway	Complete	Underway
Appomattox Court House National Historical Park	VA	Complete	Complete	Complete	Underway		Complete	Underway	Underway	Complete	Underway
Apostle Islands National Lakeshore	WI	Complete	Complete	Complete	Underway		Underway	Underway	Underway	Complete	Underway
Appalachian National Scenic Trail			Underway	Underway							
Arches National Park	UT	Complete	Complete	Underway	Underway	Underway	Complete	Underway	Underway	Underway	Underway
Arkansas Post National Memorial	AR	Complete	Complete	Complete	Underway			Underway	Underway	Complete	Underway
Assateague Island National Seashore	MD	Complete	Complete	Underway	Underway	Complete	Complete	Underway	Underway	Complete	Underway
Aztec Ruins National Monument	NM	Complete	Complete	Complete	Underway			Underway	Underway	Complete	Underway
Badlands National Park	SD	Complete	Complete	Underway	Underway	Complete		Underway	Underway	Complete	Underway
Bandelier National Monument	NM	Complete	Complete	Complete	Underway		Underway	Underway	Underway	Complete	Underway
Bering Land Bridge National Preserve	AK	Complete	Underway	Underway	Underway			Underway	Underway	Underway	Underway
Bent's Old Fort National Historic Site	CO	Complete	Complete	Underway	Underway	Underway		Underway	Underway	Complete	Underway
Big Bend National Park	TX	Complete	Complete	Complete	Underway		Underway	Underway	Underway	Complete	Underway
Bighorn Canyon National Recreation Area	MT	Complete	Complete	Underway	Underway		Underway	Underway	Underway	Complete	Underway
Big Cypress National Preserve	FL	Complete	Complete	Underway	Underway			Underway	Underway	Complete	Underway
Big Hole National Battlefield	MT	Complete	Complete	Underway	Underway		Underway		Underway	Complete	Underway
Biscayne National Park	FL	Complete	Complete	Underway	Underway			Underway	Underway	Underway	Underway
Big South Fork Nat. River & Rec. Area	TN	Complete	Complete	Underway	Underway			Underway	Underway	Complete	Underway
Big Thicket National Preserve	TX	Complete	Complete	Complete	Underway			Underway	Underway	Complete	Underway
Black Canyon of the Gunnison National Park	CO	Complete	Complete	Complete	Underway	Underway		Underway	Underway	Complete	Underway
Blue Ridge Parkway	NC	Complete	Complete	Underway	Underway			Underway	Underway	Complete	Underway
Bluestone National Scenic River	WV	Complete	Complete	Underway	Underway			Underway	Underway	Complete	Underway
Boston Harbor Islands National Recreation Area	MA	Complete	Complete	Underway	Underway		Underway		Underway		Underway
Booker T. Washington National Monument	VA	Complete	Complete	Complete	Underway		Underway	Underway	Underway	Complete	Underway
Bryce Canyon National Park	UT	Complete	Complete	Complete	Underway	Underway	Underway	Underway	Underway	Complete	Underway
Buffalo National River	AR	Complete	Complete	Complete	Underway			Underway	Underway	Complete	Underway
Buck Island Reef National Monument	VI	Complete	Complete	Underway	Underway		Underway		Underway	Complete	Underway
Cabrillo National Monument	CA	Complete	Complete	Underway	Underway		Underway		Underway	Underway	Underway
Canyon de Chelly National Monument	AZ	Complete	Complete	Underway	Underway			Underway	Underway	Complete	Underway
Cape Cod National Seashore	MA	Complete	Complete	Complete	Underway	Underway	Underway	Underway	Underway	Complete	Underway

Casa Grande National Monument	AZ	Complete	Complete	Underway	Underway		Complete	Underway	Underway	Complete	Underway
Cape Hatteras National Seashore	NC	Complete	Complete	Underway	Underway		Complete	Underway	Underway	Complete	Underway
Cape Krusenstern National Monument	AK	Complete	Underway	Underway	Underway				Underway	Underway	Underway
Cape Lookout National Seashore	NC	Complete	Complete	Underway	Underway		Underway	Underway	Underway	Complete	Underway
Canaveral National Seashore	FL	Complete	Complete	Underway	Underway				Underway	Complete	Underway
Canyonlands National Park	UT	Complete	Complete	Underway	Underway	Underway	Underway	Underway	Underway	Underway	Underway
Capitol Reef National Park	UT	Complete	Complete	Complete	Underway	Underway	Underway	Underway	Underway	Complete	Underway
Carl Sandburg Home National Historical Site	NC	Complete	Complete	Underway	Underway			Underway	Underway	Complete	Underway
Castillo de San Marcos National Monument	FL	Complete	Complete	Underway	Underway			Underway	Underway	Complete	Underway
Catoctin Mountain Park	MD	Complete	Complete	Underway	Underway		Underway	Underway	Underway	Complete	Underway
Carlsbad Caverns National Park	NM	Complete	Complete	Complete	Underway	Underway		Underway	Underway	Underway	Underway
Capulin Volcano Natoinal Monument	NM	Complete	Complete	Complete	Underway		Complete	Underway	Underway	Complete	Underway
Cedar Breaks National Monument	UT	Complete	Complete	Underway	Underway		Underway	Underway	Underway	Complete	Underway
Chattahoochee River National Recreation Area	GA	Complete	Complete	Underway	Underway		Underway	Underway	Underway	Underway	Underway
Chickamauga/Chatanooga National Military Park	GA	Complete	Complete	Underway	Underway		Underway	Underway	Underway	Underway	Underway
Chaco Culture National Historic Park	NM	Complete	Complete	Complete	Underway		Underway	Underway	Underway	Complete	Underway
Chickasaw National Recreation Area	OK	Complete	Complete	Complete	Underway		Underway	Underway	Underway	Complete	Underway
Chiricahua National Monument	AZ	Complete	Complete	Underway	Underway		Underway	Underway	Underway	Complete	Underway
Channel Islands National Park	CA	Complete	Complete	Underway	Underway		Underway	Underway	Underway	Complete	Underway
Chesapeake & Ohio Canal National Historical Park	MD	Complete	Complete	Underway	Underway		Underway	Underway	Underway	Complete	Underway
City of Rocks National Reserve	ID	Complete	Complete	Underway	Underway			Underway	Underway	Complete	Underway
Colorado National Monument	CO	Complete	Complete	Complete	Underway		Underway	Underway	Underway	Complete	Underway
Colonial National Historical Park	VA	Complete	Complete	Complete	Underway	Underway	Underway	Underway	Underway	Complete	Underway
Coronado National Memorial	AZ	Complete	Complete	Underway	Underway		Underway	Underway	Underway	Complete	Underway
Congaree Swamp National Monument	SC	Complete	Complete	Underway	Underway	Complete	Underway	Underway	Underway	Complete	Underway
Cowpens National Battlefield	SC	Complete	Complete	Underway	Underway		Underway	Underway	Underway	Complete	Underway
Crater Lake National Park	OR	Complete	Complete	Underway	Underway		Underway	Underway	Underway	Underway	Underway
Craters of the Moon National Monument	ID	Complete	Underway	Underway	Underway		Underway	Underway	Underway	Complete	Underway
Cumberland Gap National Historic Park	KY	Complete	Complete	Underway	Underway		Underway	Underway	Underway	Complete	Underway
Cumberland Island National Seashore	GA	Complete	Complete	Underway	Underway			Underway	Underway	Complete	Underway
Curecanti National Recreation Area	CO	Complete	Complete	Complete	Underway	Underway		Underway	Underway	Complete	Underway
Cuyahoga Valley National Park	OH	Complete	Complete	Complete	Underway			Underway	Underway	Complete	Underway
Denali National Park and Preserve	AK	Complete	Underway	Underway	Underway		Underway	Underway	Underway	Complete	Underway
Devil's Postpile National Monument	CA	Complete	Complete	Underway	Underway				Underway	Complete	Underway
Devils Tower National Monument	WY	Complete	Complete	Underway	Underway	Complete		Underway	Underway	Complete	Underway
Death Valley National Monument	CA	Complete	Complete	Underway	Underway		Underway	Underway	Underway	Complete	Underway
Delaware Water Gap Nat'l Recreation Area & Upper	PA	Complete	Complete	Underway	Underway		Underway	Underway	Underway	Complete	Underway
Dinosaur National Monument	CO	Complete	Complete	Complete	Underway		Underway	Underway	Underway	Underway	Underway
Dry Tortugas National Park	FL	Complete	Complete	Underway	Underway				Underway	Underway	Underway
Ebey's Landing National Historical Reserve	WA	Complete	Complete	Underway	Underway			Underway	Underway	Complete	Underway

Effigy Mounds National Monument	IA	Complete	Complete	Complete	Underway		Underway	Underway	Underway	Underway	Underway
Eisenhower National Historical Site	PA	Underway	Complete	Underway	Underway		Complete		Underway	Complete	Underway
El Malpais National Monument	NM	Complete	Complete	Complete	Underway			Underway	Underway	Underway	Underway
El Morro National Monument	NM	Complete	Complete	Complete	Underway		Complete	Underway	Underway	Complete	Underway
Everglades National Park	FL	Complete	Complete	Underway	Underway			Underway	Underway	Complete	Underway
Fire Island National Seashore	NY	Complete	Complete	Complete	Underway	Underway	Underway	Underway	Underway	Underway	Underway
Florissant Fossil Beds National Monument	CO	Complete	Complete	Underway	Underway	Underway	Underway	Underway	Underway	Complete	Underway
Fort Bowie Natoinal Historic Site	AZ	Complete	Complete	Underway	Underway		Underway	Underway	Underway	Complete	Underway
Fossil Butte National Monument	WY	Complete	Complete	Underway	Underway			Underway	Underway	Complete	Underway
Fort Caroline National Monument	FL	Complete	Complete	Underway	Underway			Underway	Underway	Underway	Underway
Fort Clatsop National Memorial	OR	Complete	Complete	Underway	Underway		Underway		Underway	Complete	Underway
Fort Davis National Historic Site	TX	Complete	Complete	Complete	Underway			Underway	Underway	Complete	Underway
Fort Donelson National Battlefield	TN	Complete	Complete	Underway	Underway			Underway	Underway	Complete	Underway
Fort Frederica National Monument	GA	Complete	Complete	Underway	Underway			Underway	Underway	Complete	Underway
Fort Laramie National Historic Site	WY	Complete	Complete	Underway	Underway	Complete		Underway	Underway	Complete	Underway
Fort Larned National Historic Site	KS	Complete	Complete	Complete	Underway			Underway	Underway	Complete	Underway
Fort Matanzas National Monument	FL	Complete	Complete	Underway	Underway			Underway	Underway	Complete	Underway
Fort Necessity National Battlefield	PA	Complete	Complete	Complete	Underway			Underway	Underway	Complete	Underway
Fort Point National Historic Site	CA		Complete	Underway	Underway				Underway	Underway	
Fort Pulaski National Monument	GA	Complete	Complete	Underway	Underway		Underway	Underway	Underway	Complete	Underway
Fort Scott National Historic Site	KS	Complete	Complete	Complete	Underway		Complete	Underway	Underway	Complete	Underway
Fort Sumter/Fort Moultrie National Monument	SC	Complete	Complete	Underway	Underway		Underway		Underway	Underway	Underway
Fort Union National Monument	NM	Complete	Complete	Complete	Underway			Underway	Underway	Complete	Underway
Fort Union Trading Post National Historical Site	ND	Complete	Complete	Underway	Underway		Underway	Underway	Underway	Complete	Underway
Fort Vancouver National Historic Site	WA	Complete	Complete	Underway	Underway			Underway	Underway	Complete	Underway
Friendship Hill National Historic Site	PA	Complete	Complete	Complete	Underway		Underway	Underway	Underway	Complete	Underway
Fredericksburg Bt'l Fd/Spotsylvania Nat'l Mil Park	VA	Complete	Complete	Complete	Underway		Underway	Underway	Underway	Complete	Underway
Gates of the Arctic Nat'l Park/Preserve	AK	Complete	Underway	Underway	Underway			Underway	Underway	Underway	Underway
Gauley River National Recreation Area	WV	Complete	Complete	Underway	Underway			Underway	Underway	Complete	Underway
Gateway National Recreation Area	NY	Complete	Complete	Complete	Underway		Underway	Underway	Underway	Complete	Underway
Gettysburg National Military Park	PA	Complete	Complete	Complete	Underway		Complete	Underway	Underway	Complete	Underway
George Washington Birthplace National Monument	VA	Complete	Complete	Complete	Underway		Underway	Underway	Underway	Complete	Underway
Gila Cliff Dwellings National Monument	NM	Complete	Complete	Complete	Underway			Underway	Underway	Complete	Underway
Glacier National Park	MT	Complete	Complete	Underway	Underway	Underway	Underway	Underway	Underway	Underway	Underway
Glacier Bay National Park and Preserve	AK	Complete	Underway	Underway	Underway			Underway	Underway	Complete	Underway
Glen Canyon National Recreation Area	UT	Complete	Complete	Complete	Underway	Underway		Underway	Underway	Complete	Underway
Golden Gate National Recreation Area	CA	Complete	Complete	Underway	Underway	Complete	Underway	Underway	Underway	Underway	Underway
Golden Spike National Historic Site	UT	Complete	Complete	Underway	Underway		Underway	Underway	Underway	Complete	Underway
Great Basin National Park	NV	Complete	Complete	Underway	Underway		Underway	Underway	Underway	Complete	Underway
Grand Canyon National Park	AZ	Complete	Underway	Underway	Underway		Underway	Underway	Underway	Complete	Underway

Greenbelt Park	MD	Complete	Complete	Underway	Underway		Underway	Underway	Underway	Complete	Underway
Grant-Kohrs Ranch National Historical Site	MT	Complete	Complete	Underway	Underway		Complete	Underway	Underway	Underway	Underway
Grand Portage National Monument	MN	Complete	Complete	Complete	Underway			Underway	Underway	Complete	Underway
Great Sand Dunes National Park	CO	Complete	Complete	Underway	Underway	Underway	Underway	Underway	Underway	Complete	Underway
Great Smoky Mountains National Park	TN	Complete	Underway	Underway	Underway	Underway	Underway	Underway	Underway	Complete	Underway
Grand Teton National Park	WY	Complete	Complete	Complete	Underway		Underway	Underway	Underway	Underway	Underway
Guilford CourtHouse National Military Park	NC	Complete	Complete	Underway	Underway		Underway	Underway	Underway	Complete	Underway
Gulf Islands National Seashore	MS	Complete	Underway	Underway	Underway				Underway	Underway	Underway
Guadalupe Mountains National Park	TX	Complete	Complete	Complete	Underway			Underway	Underway	Complete	Underway
George Washington Carver National Monument	MO	Complete	Complete	Complete	Underway		Underway		Underway	Underway	Underway
George Washington Memorial Parkway	VA	Complete	Complete	Underway	Underway			Underway	Underway	Complete	Underway
Harpers Ferry National Historical Park	WV	Complete	Complete	Underway	Underway			Underway	Underway	Complete	Underway
Hagerman Fossil Beds National Monument	ID	Complete	Complete	Underway	Underway		Complete	Underway	Underway	Complete	Underway
Haleakala National Park	HI	Complete	Complete	Underway	Underway		Underway		Underway	Complete	Underway
Hawaii Volcanoes National Park	HI	Complete	Complete	Underway	Underway		Underway	Underway	Underway	Complete	Underway
Herbert Hoover National Historic Site	IA		Complete	Underway	Underway				Underway	Complete	
Horseshoe Bend National Military Park	AL	Complete	Complete	Underway	Underway			Underway	Underway	Complete	Underway
Hopewell Culture National Historic Park	OH	Complete	Complete	Underway	Underway		Underway	Underway	Underway	Underway	Underway
Hopewell Furnace National Historic Site	PA	Complete	Complete	Complete	Underway		Underway	Underway	Underway	Complete	Underway
Homestead National Monument of America	NE	Complete	Complete	Complete	Underway		Underway	Underway	Underway	Complete	Underway
Hot Springs National Park	AR	Complete	Complete	Complete	Underway			Underway	Underway	Complete	Underway
Hovenweep National Monument	CO	Complete	Complete	Complete	Underway		Underway	Underway	Underway	Complete	Underway
Hubbell Trading Post National Historic Site	AZ	Complete	Complete	Complete	Underway			Underway	Underway	Complete	Underway
Indiana Dunes National Lakeshore	IN	Complete	Complete	Complete	Underway		Underway	Underway	Underway	Complete	Underway
Isle Royale National Park	MI	Complete	Complete	Complete	Underway	Complete	Underway	Underway	Underway	Complete	Underway
Jewel Cave National Monument	SD	Complete	Complete	Underway	Underway	Complete	Underway	Underway	Underway	Complete	Underway
Jean LaFitte Nat. Hist. Park & Preserve	LA	Complete	Complete	Complete	Underway		Underway	Underway	Underway	Complete	Underway
John Day Fossil Beds National Monument	OR	Complete	Complete	Underway	Underway		Underway	Underway	Underway	Complete	Underway
Johnstown Flood National Memorial	PA	Complete	Complete	Complete	Underway		Underway	Underway	Underway	Complete	Underway
John Muir National Historic Site	CA	Complete	Complete	Underway	Underway		Underway	Underway	Underway	Complete	Underway
Joshua Tree National Park	CA	Complete	Complete	Underway	Underway	Underway	Underway	Underway	Underway	Underway	Underway
Kaloko Honokohau National Historic Park	HI	Complete	Complete	Underway	Underway		Underway	Underway	Underway	Complete	Underway
Kalaupapa National Historic Park	HI	Complete	Complete	Underway	Underway		Underway	Underway	Underway	Complete	Underway
Katmai National Park and Preserve	AK	Complete	Underway	Underway	Underway			Underway	Underway	Complete	Underway
Kenai Fjords National Park	AK	Complete	Underway	Underway	Underway			Underway	Underway	Underway	Underway
Kennesaw Mountain National Battlefield	GA	Complete	Complete	Underway	Underway		Underway	Underway	Underway	Complete	Underway
Kings Mountain National Military Park	SC	Complete	Complete	Underway	Underway		Underway	Underway	Underway	Complete	Underway
Klondike Gold Rush National Historical Park	AK		Underway	Underway	Underway			Underway	Underway	Complete	Underway
Knife River Indian Villages National Historical Site	ND	Complete	Complete	Underway	Underway			Underway	Underway	Complete	Underway
Kobuk Valley National Park	AK	Complete	Underway	Underway	Underway				Underway	Underway	Underway

Lava Beds National Monument	CA	Complete	Complete	Underway	Underway			Underway	Underway	Complete	Underway
Lake Clark National Park and Preserve	AK	Complete	Underway	Underway	Underway			Underway	Underway	Complete	Underway
Lake Mead National Recreation Area	NV	Complete	Complete	Underway	Underway		Underway	Underway	Underway	Complete	Underway
Lake Meredith NRA	TX	Complete	Complete	Complete	Underway			Underway	Underway	Complete	Underway
Lake Roosevelt National Recreation Area	WA	Complete	Complete	Underway	Underway			Underway	Underway	Complete	Underway
Lassen Volcanic National Park	CA	Complete	Complete	Underway	Underway			Underway	Underway	Complete	Underway
Little Bighorn National Monument	MT	Complete	Complete	Underway	Underway			Underway	Underway	Complete	Underway
Lincoln Boyhood National Monument	IN	Complete	Complete	Complete	Underway		Underway		Underway	Complete	Underway
Little River Canyon National Preserve	AL	Complete	Complete	Underway	Underway			Underway	Underway	Complete	Underway
Lyndon B. Johnson National Historical Park	TX	Complete	Complete	Underway	Underway			Underway	Underway	Underway	Underway
Marsh-Billings-Rockefeller National Historical Park	VT	Complete	Complete	Complete	Underway		Underway	Underway	Underway	Complete	Underway
Mammoth Cave National Park	KY	Complete	Complete	Underway	Underway		Underway	Underway	Underway	Underway	Underway
Manassas National Battlefield Park	VA	Complete	Complete	Underway	Underway		Underway	Underway	Underway	Complete	Underway
Manzanar NHS	CA	Complete	Complete	Underway	Underway				Underway	Underway	Underway
Mesa Verde National Park	CO	Complete	Complete	Complete	Underway		Complete	Underway	Underway	Complete	Underway
Minute Man National Historic Park	MA	Complete	Complete	Complete	Underway		Underway	Underway	Underway	Complete	Underway
Mississippi National l River and Recreation Area	MN	Complete	Complete	Underway	Underway			Underway	Underway	Complete	Underway
Missouri National Recreation River	NE	Complete	Complete	Underway	Underway			Underway	Underway	Complete	Underway
Montezuma Castle National Monument	AZ	Complete	Complete	Complete	Underway		Underway	Underway	Underway	Complete	Underway
Moores Creek National Battlefield	NC	Complete	Complete	Underway	Underway		Underway	Underway	Underway	Complete	Underway
Mojave National Preserve	CA	Complete	Complete	Underway	Underway				Underway	Underway	Underway
Monocacy National Battlefield	MD		Complete	Underway	Underway		Underway	Underway	Underway	Complete	Underway
Mount Ranier National Park	WA	Complete	Complete	Underway	Underway			Underway	Underway	Complete	Underway
Morristown National Historical Park	NJ	Complete	Complete	Complete	Underway		Underway	Underway	Underway	Complete	Underway
Mount Rushmore National Memorial	SD	Complete	Complete	Underway	Underway	Complete	Underway	Underway	Underway	Complete	Underway
Muir Woods National Monument	CA	Complete	Complete	Underway	Underway	Complete	Underway	Underway	Underway	Underway	Underway
Natural Bridges National Monument	UT	Complete	Complete	Underway	Underway	Underway	Underway	Underway	Underway	Underway	Underway
National Capital Parks East	DC	Complete	Complete	Underway	Underway		Underway	Underway	Underway	Complete	Underway
Natchez Trace Parkway	MS	Complete	Complete	Underway	Underway			Underway	Underway	Underway	Underway
Navajo National Monument	AZ	Complete	Complete	Complete	Underway			Underway	Underway	Complete	Underway
Nez Perce National Historic Park	ID	Complete	Complete	Underway	Underway		Underway	Underway	Underway	Complete	Underway
New River Gorge National River	WV	Complete	Complete	Underway	Underway		Underway	Underway	Underway	Complete	Underway
Niobrara National Scenic River	NE	Complete	Complete	Underway	Underway			Underway	Underway	Complete	Underway
Ninety Six National Historic Site	SC	Complete	Complete	Underway	Underway		Underway	Underway	Underway	Complete	Underway
Noatak National Preserve	AK	Complete	Underway	Underway	Underway				Underway	Underway	Underway
North Cascades National Park	WA	Complete	Complete	Underway	Underway			Underway	Underway	Complete	Underway
National Park of American Samoa	HI	Complete	Complete	Underway	Underway		Underway		Underway	Underway	Underway
Obed Wild and Scenic River	TN	Complete	Complete	Underway	Underway			Underway	Underway	Complete	Underway

Ocmulgee National Monument	GA	Complete	Complete	Underway	Underway				Underway	Underway	Underway	
Olympic National Park	WA	Complete	Underway	Underway	Underway			Underway	Underway	Complete	Underway	
Oregon Caves National Monument	OR	Complete	Complete	Underway	Underway		Underway	Underway	Underway	Complete	Underway	
Organ Pipe Catcus National Monument	AZ	Complete	Complete	Underway	Underway			Underway	Underway	Complete	Underway	
Ozark National Scenic Riverways	MO	Complete	Complete	Complete	Underway			Underway	Underway	Complete	Underway	
Palo Alto Battlefield National Historical Park	TX	Complete	Complete	Underway	Underway			Underway	Underway	Complete	Underway	
Padre Island National Seashore	TX	Complete	Complete	Underway	Underway		Underway	Underway	Underway	Underway	Underway	
Pecos National Historic Park	NM	Complete	Complete	Complete	Underway		Underway	Underway	Underway	Complete	Underway	
Petrified Forest National Park	AZ	Complete	Complete	Complete	Underway		Underway	Underway	Underway	Complete	Underway	
Pea Ridge National Military Park	AR	Complete	Complete	Underway	Underway			Underway	Underway	Complete	Underway	
Petersburg National Battlefield	VA	Complete	Complete	Complete	Underway		Complete	Underway	Underway	Complete	Underway	
Petroglyph National Monument	NM	Complete	Complete	Underway	Underway			Underway	Underway	Complete	Underway	
Pinnacles National Monument	CA	Complete	Complete	Underway	Underway		Underway	Underway	Underway	Underway	Underway	
Pipestone National Monument	MN	Complete	Complete	Complete	Underway				Underway	Complete	Underway	
Pictured Rocks National Lakeshore	MI	Complete	Complete	Complete	Underway		Underway	Underway	Underway	Complete	Underway	
Pipe Spring National Monument	AZ	Complete	Complete	Underway	Underway			Underway	Underway	Complete	Underway	
Point Reyes National Seashore	CA	Complete	Complete	Underway	Underway	Complete	Underway	Underway	Underway	Underway	Underway	
Prince William Forest Park	VA	Complete	Complete	Underway	Underway		Underway	Underway	Underway	Complete	Underway	
Puukohola Heiau National Historic Site	HI	Complete	Complete	Underway	Underway		Underway	Underway	Underway	Underway	Underway	
Pu'uhonua o Honaunau National Historical Park	HI	Complete	Complete	Underway	Underway		Underway	Underway	Underway	Complete	Underway	
Rainbow Bridge National Monument	UT	Complete	Complete	Complete	Underway	Underway		Underway	Underway	Complete	Underway	
Redwood National Park	CA	Complete	Complete	Underway	Underway		Underway	Underway	Underway	Underway	Underway	
Richmond National Battlefield Park	VA	Complete	Complete	Complete	Underway		Underway	Underway	Underway	Complete	Underway	
Rock Creek Park	DC	Complete	Complete	Underway	Underway	Complete	Underway	Underway	Underway	Complete	Underway	
Rocky Mountain National Park	CO	Complete	Complete	Underway	Underway	Underway		Underway	Underway	Underway	Underway	
Roosevelt-Vanderbilt National Historical Sites	NY	Complete	Complete	Complete	Underway		Underway	Underway	Underway	Complete	Underway	
Russell Cave National Monument	AL	Complete	Complete	Underway	Underway			Underway	Underway	Complete	Underway	
San Antonio Missions National Historical Site	TX	Complete	Complete	Complete	Underway			Underway	Underway	Complete	Underway	
Saint Croix National Scenic Riverway	WI	Complete	Underway	Complete	Underway		Underway	Underway	Underway	Complete	Underway	
Saint-Gaudens National Historic Site	NH	Complete	Complete	Complete	Underway		Underway	Underway	Underway	Complete	Underway	
Saguaro Natonal Monument	AZ	Complete	Complete	Underway	Underway		Underway	Underway	Underway	Complete	Underway	
Sagamore Hill National Historic Site	NY	Complete	Complete	Underway	Underway		Underway	Underway	Underway	Complete	Underway	
Saugus Iron Works National Historical Site	MA		Complete	Complete	Underway		Underway	Underway	Underway	Underway	Underway	
San Juan Island National Historic Park	WA	Complete	Complete	Underway	Underway			Underway	Underway	Complete	Underway	
Santa Monica Mountains National Recreation Area	CA	Complete	Complete	Underway	Underway		Underway	Underway	Underway	Complete	Underway	
Salinas Pueblo Missions National Monument	NM	Complete	Complete	Complete	Underway			Underway	Underway	Complete	Underway	
Saratoga National Historic Park	NY	Complete	Complete	Complete	Underway		Complete	Underway	Underway	Complete	Underway	
Scotts Bluff National Monument	NE	Complete	Complete	Complete	Underway	Complete	Complete	Underway	Underway	Complete	Underway	
Sequoia-Kings Canyon National Park	CA	Complete	Complete	Underway	Underway	Underway		Underway	Underway	Complete	Underway	
Shenandoah National Park	VA	Complete	Complete	Underway	Underway	Underway		Underway	Underway	Complete	Underway	

Shiloh National Military Park	TN	Complete	Complete	Underway	Underway			Underway	Underway	Underway	Underway
Sitka National Historic Park	AK	Underway	Underway	Underway	Underway			Complete	Underway		
Sleeping Bear Dunes National Lakeshore	MI	Complete	Complete	Complete	Underway		Underway	Underway	Underway	Complete	Underway
Stones River National Battlefield	TN	Complete	Complete	Underway	Underway		Underway	Underway	Underway	Complete	Underway
Sunset Crater National Monument	AZ	Complete	Complete	Complete	Underway	Underway	Underway	Underway	Underway	Complete	Underway
Tallgrass Prairie National Preserve	KS		Complete	Underway	Underway		Underway		Underway	Complete	Underway
Theodore Roosevelt National Park	ND	Complete	Complete	Underway	Underway	Complete	Underway	Underway	Underway	Complete	Underway
Thomas Stone National Historic Site	MD	Underway	Complete	Underway	Underway		Underway	Underway	Underway	Complete	Underway
Timpanogas Cave National Monument	UT	Complete	Complete	Underway	Underway			Underway	Underway	Complete	Underway
Timucuan Ecological and Historic Reserve	FL	Complete	Complete	Underway	Underway			Underway	Underway	Underway	Underway
Tonto National Monument	AZ	Complete	Complete	Complete	Underway			Underway	Underway	Complete	Underway
Tumacacori National Historic Park	AZ		Complete	Underway	Underway				Underway		
Tuzigoot National Monument	AZ	Complete	Complete	Underway	Underway	Complete	Underway	Underway	Underway	Complete	Underway
Upper Delaware Scenic & Recreational River	PA	Complete	Complete	Underway	Underway			Underway	Underway	Complete	Underway
Valley Forge National Historic Park	PA	Complete	Complete	Underway	Underway	Underway	Underway	Underway	Underway	Underway	Underway
Vicksburg National Military Park	MS	Complete	Complete	Underway	Underway			Underway	Underway	Underway	Underway
Virgin Islands National Park	VI	Complete	Complete	Underway	Underway		Underway	Underway	Underway	Complete	Underway
Voyageurs National Park	MN	Complete	Complete	Complete	Underway	Complete		Underway	Underway	Complete	Underway
Washita Battlefield National Historic Site	OK		Complete	Underway	Underway				Underway	Underway	
Walnut Canyon National Monument	AZ	Complete	Complete	Underway	Underway	Underway	Underway	Underway	Underway	Complete	Underway
War in the Pacific National Historical Park	GU	Complete	Complete	Underway	Underway				Underway	Underway	Underway
Weir Farm National Historic Site	CT	Complete	Complete	Underway	Underway				Underway	Complete	Underway
Whiskeytown National Recreation Area	CA	Complete	Complete	Underway	Underway			Underway	Underway	Complete	Underway
Whitman Mission National Historic Site	WA	Complete	Complete	Underway	Underway			Underway	Underway	Complete	Underway
White Sands National Monument	NM	Complete	Complete	Complete	Underway			Underway	Underway	Complete	Underway
Wind Cave National Park	SD	Complete	Complete	Underway	Underway	Complete	Underway	Underway	Underway	Complete	Underway
Wilson's Creek National Battlefield	MO	Complete	Complete	Complete	Underway		Underway	Underway	Underway	Underway	Underway
Wolf Trap Farm	VA		Complete	Underway	Underway				Underway	Complete	
Wrangell St. Elias Nationall Park & Preserve	AK	Complete	Underway	Underway	Underway			Underway	Underway	Underway	Underway
Wupatki National Monument	AZ	Complete	Complete	Complete	Underway	Underway	Underway	Underway	Underway	Complete	Underway
Yellowstone National Park	WY	Complete	Underway	Underway	Underway		Underway	Underway	Underway	Complete	Underway
Yosemite National Park	CA	Complete	Complete	Underway	Underway	Underway	Underway	Underway	Underway	Complete	Underway
Yukon Charley Rivers National Park	AK	Complete	Underway	Underway	Underway			Underway	Underway	Complete	Underway
Yucca House National Monument	CO	Complete	Complete	Complete	Underway		Underway	Underway	Underway	Complete	Underway
Zion National Park	UT	Complete	Complete	Underway	Underway	Underway	Underway	Underway	Underway	Complete	Underway

Appendix D
Network Biotic Inventory Allocations
FY 2000 and 2001*

Network	FY 2000	Annual after 2000
1. Southwest Alaska	1/	302,222
2. Northwest Alaska	1/	326,195
3. Central Alaska	1/	213,969
4. Southeast Alaska	879,000	91,824
5. Great Lakes	65,000	268,191
6. Heartland	80,000	178,884
7. Northern Great Plains	61,000	177,624
8. Mid-Atlantic	65,000	96,360
9. Eastern Rivers and Mts.	112,000	136,733
10. Northern Coastal and Barrier	122,000	196,716
11. Northeast Temperate	121,000	131,588
12. Capitol Region	103,000	155,728
13. Appalachian & Gulf Coastal Plains	138,500	128,334
14. Southeast Coast	88,000	263,915
15. Gulf Coastal	72,000	193,538
16. Blue Ridge & Great Smoky Mts.	2/	153,322
17. Tropics	112,000	317,438
18. Northern Colorado Plateau	123,000	235,419
19. Rocky Mountain	84,000	131,782
20. Greater Yellowstone	62,000	151,072
21. Southern Colorado Plateau	70,000	268,961
22. Southern Plains Dry Steppe	53,000	63,607
23. Southern Desert West	67,000	139,676
24. Southern Desert East	141,000	161,075
25. North Coast and Cascades	95,000	178,733
26. Northern semi-Arid	60,000	109,324
27. San Francisco Bay Area	150,000	154,837
28. Mojave desert	135,000	177,152
29. Mediterranean Coast	146,000	165,888
30. Sierra	108,000	136,608
31. Pacific Islands	167,000	327,315
32. Klamath	165,500	165,970
33. American Samoa (part of Pacific Islands)	129,000	/3
34. Guam (part of Pacific Islands)	88,000	/3
35. Saipan (part of Pacific Islands)	60,000	/3
TOTALS	**$3,922,000**	**$5,900,000**

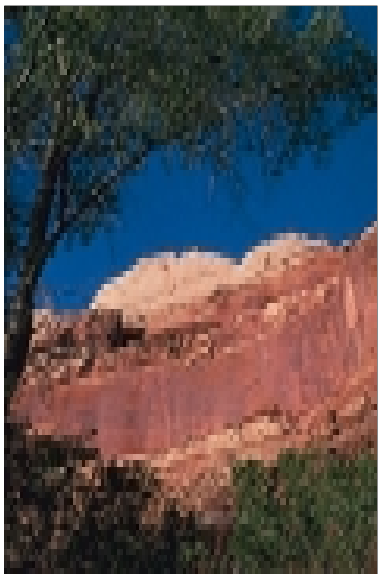
Total dollar allocations in FY 2000 for integrated biological inventory pre-proposals by network and projected future annual allocation for conducting field inventories. Future allocations are based on an assumed servicewide budget of $5.9 million. (i.e. no funding allocated to separate, specialized inventories for amphibians undertaken in FY 2000 to support USGS initiative, but may not be the most efficient way to accomplish inventories). In FY 2000, balance of increase going to abiotic inventories, while networks prepare for biotic inventories.

1/ Included in one pre-proposal shown under Southeast Alaska
2/ Included in one pre-proposal shown under Appalachian & Gulf Coastal Plains
3/Funded amount in FY 00 to cover initial basic biotic inventories; the need for future supplements will be assessed. These parks are handling inventories separately, rather than in a network fashion, due to their isolation.

Appendix E
Allocations for Inventories other than Network Biotic Inventories/1

Organization	Title	FY 2000 Funding
BIOTIC INVENTORIES		
NPS	Database Contract	$100,000
NPS	ITIS Development	$5,000
Grand Canyon NP	Bird Inventory (cont. FY99)	$86,888
Chaco Culture NHP	Bird Inventory (cont. FY99)	$51,000
Gettysburg NMP	Bird Inventory (cont. FY99)	$29,083
Hopewell Furnace NHS	Bird Inventory (cont. FY99)	$29,083
Valley Forge NHP	Bird Inventory (cont. FY99)	$29,083
Eisenhower NHS	Bird Inventory (cont. FY99)	$29,083
Allagheny Portage Rld NHS	Bird Inventory (cont. FY99)	$29,083
Johnstown Flood NM	Bird Inventory (cont. FY99)	$29,083
Antietam NB	Herp Inventory (cont. FY99)	$24,000
Fort Necessity NB	Herp Inventory (cont. FY99)	$23,550
Friendship Hill NHS	Herp Inventory (cont. FY99)	$23,550
Olympic NP	Herp Inventory (cont. FY99)	$104,000
Alaska NP's	Vegetation Maps/2	$500,000
Fire Island NS	Vegetation Maps	$80,000
Joshua Tree NP	Vegetation Maps	$60,000
Great Smoky Mts NP	Vegetation Maps	$90,000
All Intermountain Parks: Theodore Roosevelt NP/ Big Bend NP/ Glacier NP/ Rocky Mountain NP	Amphibian Inventories/3	$394,000
Acadia NP/ Shenandoah NP	Amphibian Inventories	$156,000
Olympic NP/ Sequoia/ Kings Canyon NP	Amphibian Inventories	$156,000
All Southeast Parks: Great Smoky Mts NP/ Everglades NP/ Virgin Islands NP	Amphibian Inventories	$234,000
ABIOTIC INVENTORIES		
NPS	Bibliographic Inventory Updates	$67,000
NPS-164 Parks	Base Cartographic Maps (digital)	$1,644,000
Arkansas Post NM	Water Resource Inventories	$8,500
Pea Ridge NMP	Water Resource Inventories	$4,200
White Sands NM	Water Resource Inventories	$14,810
Colorado NM	Water Resource Inventories	$25,000
Navajo NM	Water Resource Inventories	$25,000
Salinas Pueblo Miss. NM	Water Resource Inventories	$25,000
Walnut Canyon NM	Water Resource Inventories	$25,000
Grand Portage NM	Water Resource Inventories	$7,000
Scotts Bluff NM	Water Resource Inventories	$25,000

Sagamore Hill NHS	Water Resource Inventories	$23,300
San Juan Island NHP	Water Resource Inventories	$8,130
City of Rocks NR	Water Resource Inventories	$20,000
Nez Perce NHP	Water Resource Inventories	$2,100
Lava Beds NM	Water Resource Inventories	$25,000
John Muir NHS	Water Resource Inventories	$25,000
Cumberland Island NS	Water Resource Inventories	$10,000
Stones River NB	Water Resource Inventories	$25,000
Cowpens NB	Water Resource Inventories	$9,300
NPS	GIS for Water Inventories	$20,000
Wrangell-St. Elias NP & Pr	Geologic Inventories/4	$10,000
Big Bend NP	Geologic Inventories	$8,000
Capitol Reef NP	Geologic Inventories	$10,000
Cedar Breaks NM	Geologic Inventories	$20,000
Fossil Butte NM	Geologic Inventories	$6,000
Glen Canyon NRA	Geologic Inventories	$50,000
Golden Spike NHS	Geologic Inventories	$12,000
Natural Bridges NM	Geologic Inventories	$1,000
Petrified Forest NP	Geologic Inventories	$6,000
Yucca HouseNM/ Hovenweep NM	Geologic Inventories	$5,000
Mesa Verde NP	Geologic Inventories	$17,000
Dinosaur NM	Geologic Inventories	$45,000
Intermountain UT/CO	Geologic Inventories	$115,000
Voyageurs NP	Geologic Inventories	$15,000
Wind Cave NP/ Jewel Cave NM	Geologic Inventories	$15,000
Death Valley NP	Geologic Inventories	$25,000
Great Basin NP	Geologic Inventories	$15,000
NPS	Southeast Scoping	$6,000
NPS	Digitizing equipment and supplies	$23,000
Denali NP & Pr	Soils Maps	$50,000
Grand Canyon NP	Soils Maps	$181,000
St. Croix NSR	Soils Maps	$19,000
Apostle Islands NL	Soils Maps	$40,000
Crater Lake NP	Soils Maps	$93,000
Channel Islands NP	Soils Maps	$81,000
Redwood NP	Soils Maps	$24,000
Great Smoky Mts NP	Soils Maps	$17,000
NPS	Digitizing 15 park soils maps	$54,000



1/Total funding for these types of inventories will be less in future years, when more is allocated to regions for network biotic inventories.
2/These are generally funded by BRD, except for Alaska; some lower 48 were supplemented.
3/Total is $940,000. Figures are based on average per park.
4/Pilots were conducted with state geologists in Colorado and Utah.

Capitol Reef NP, Utah

Appendix F
Complete List of FY 2000 NRPP-Funded Projects

Organization	Title	FY 2000
Servicewide Projects		
Natural Resource Program Coordination	Haskell Indian College agreement & student hires	$27,000
Natural Resource Program Coordination	Director's Natural Resource Awards	$28,800
Natural Systems Management Office	Professional Organization Partnerships	$40,000
Natural Resource Information Div	Year In Review Report	$29,000
Natural Resource Information Div	Park Science	$31,050
Natural Resource Information Div	Research Permit Automation/Integration with Investigator's Annual Reports	$68,088
Natural Resource Information Div	Data integration software enhancement & park implementation	$50,000
Air Resources Division	Night Sky Monitoring	$30,000
Environmental Quality Division	Field Guide to NEPA	$25,000
Geologic Resources Division	National Cave and Karst Institute initiation	$30,000
Environmental Quality Division	Emergency Response Guidance	$65,000
Environmental Quality Division	NEPA training	$25,000
Environmental Quality Division	Section 19jj guidance	$60,000
Environmental Quality Division	Revolving fund for Resource Protection Act mitigation of San Juan damage	$65,000
Associate Director NRSS	AS Ecosystem Report	$24,000
USGS/Biological Resources Div	Interagency Brucellosis Research	$300,000
USGS/Biological Resources Div	Park Technical Assistance Projects (See USGS-BRD projects in this appendix)	$255,000
Park-Specific Unspecified Natural Resource Management		
Big Cypress NM	Complete off road vehicle mapping analysis	$116,000
Hagerman Fossil Beds NM	Survey and map paleontology sites	$32,000
Channel Islands NP	Develop exotic species control strategy	$108,000
Buck Island Reef NM	Exotic pest control for tree rats	$64,000
Rocky Mountain NP	Restore Hidden Valley Ski Area	$165,000
Golden Gate NRA	Cape ivy management	$252,000
Shenandoah NP	Test backcountry plan	$244,000
Mulitple Intermountain Parks	Remove exotic tamarisk	$130,000
Multple Pacific West Parks	Remove exotic tamarisk	$70,000
Mojave NPr	Remove exotic burros	$297,000
White Sands NM	Non-lethal removal of exotic Oryx	$145,000
Shenandoah NP	Develop definitive Air Quality Related Values Report	$288,000
Multiple Southern Parks	Invasive exotic plant management in smaller parks	$77,000
Congaree Swamp NM	Species diversity and condition of fish community	$25,000
Badlands NP	Baseline mapping of fossil bone beds	$85,000
Great Smoky Mountains NP	Inventory and delineation of remnant Fraser Fir stands	$15,000
Denali NP & Pr	Managing human use and wildlife resources	$30,000
Katmai NP	Alagnak River Management Plan	$80,000
Kenai Fjords NP	Carrying capacity exit glacier	$118,000
Noatak N Pres	Population abundance & Demography of Dall's Sheep	$100,000
Grand Canyon NP	Himalaya Blackberry control	$27,000
Petrified Forest NP	Preservation of petrified wood	$56,000
Glacier NP	DNA bear hair survey	$129,000

El Malpais NM	Survey Boundary	$78,000
El Malpais NM	Fence Boundary	$55,000
Big Bend NP	Eradicate Salt Cedar at spring	$37,000
Lake Meredith NRA	Control non-native Salt Cedar	$44,000
Bryce Canyon NP	Protect vegetation/prairie dogs	$12,000
Arches NP	Refine and implement VERP	$40,000
Fossil Butte NM	Assessment/protection of new paleontological sites	$56,000
Grand Teton NP	Monitoring of wolves	$126,000
Yellowstone NP	Native Cutthroat Trout conservation in Yellowstone Lake	$175,000
Isle Royale NP	Impact to natural fire regime due to moose browsing	$50,000
Voyageurs NP & Pictured Rocks NL	Gray Wolf Management in the Lake Superior Region	$90,000
Cape Cod NS	Effects of off-road traffic on biotic communities	$67,000
Chesapeake & Ohio Canal NHP & George Washington Mem Parkway	Develop inventory/monitoring planning process	$67,000
Fire Island NS	Adaptive management of deer, people, plants	$120,000
Multiple Northeast Parks (8)	Control invasive exotic vegetation	$185,000
Channel Islands NP	Rescue Island fox population	$167,000
Multiple Hawaiian Parks (4)	Stabilize Endangered/Threatened Plant Species	$188,000
Olympic NP	Conduct demographic monitoring of N. Spotted Owl	$59,000
Buffalo NR	Macroinvertebrate community assessment	$25,000
Gulf Island NS	Post nesting satellite tracking of Loggerhead Turtles	$18,000
Jean Lafitte NHP & Pr	Modeling risk of Chinese Tallow invasion	$82,000
Cape Lookout NS	Immunocontraception and EIA testing feral horses	$41,000
Congaree Swamp NM	Develop Feral Hogs reduction plan and initiate reduction	$3,600
Great Smoky Mountains NP	Brook trout reclamation of Sam's Creek	$80,000
Great Smoky Mountains NP	Complete Natural Resources Inventory and Atlas	$80,000

Threatened & Endangered Species

Dinosaur NM	Ute Ladies' Tresses Orchid protection	$86,000
Dinosaur & Glen Canyon NMs & Zion NP	Monitor Peregrine Falcon Productivity	$114,000
Padre Island NS	Protect Kemp Ridley Sea Turtle	$138,500
Capitol Reef NP	Endangered Plant Inventory	$57,000
Mojave NPr	Baseline Survey Desert Tortoise	$32,000
North Cascades NP	Implement Human/Bear Management Plan	$54,500

Disturbed Land Restoration

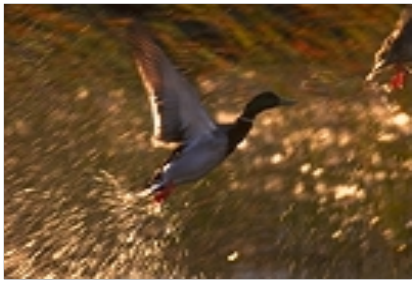
Wupatki NM	Borrow pit reclamation plan	$9,000
Mojave NPr	Rainbow Wells restoration	$100,000
Rocky Mountain NP	Willow restoration assessment	$11,900
Rocky Mountain NP	Rehabilitate Lawn Lake Dam	$250,000
Cape Cod NS	Wetlands restoration assessment	$50,000
Moores Creek NB	Savannah restoration plan	$2,800
Pecos NHP	Glorieta Creek restoration	$3,600
Fire Island NS	Plug and abandon flowing water wells	$14,700
Zion NP	Develop restoration plan for the Virgin R.	$24,000
Fredericksburg & Spotsylvania NMP	Remove Milstead Pond and restore wetlands	$25,800
Apostle Islands NL	Restore Oak Island sandscape	$7,000
New River Gorge NR	Inventory abandoned mine lands	$30,000
Denali NP & Pr	Caribou Creek Restoration	$51,000
Buffalo NR	Stream restoration, Boxley Valley	$88,000
Golden Gate NRA	Lower Easkoot Creek restoration	$73,000
Big Cypress NPr	Restoration of the Turner River headwaters	$50,000

Jean Lafitte NHP & Pr	Backfill dead-end oil & gas canals	$200,000
Great Basin NP	Restoration of the Bonita Mine	$82,200

Small Park

Klondike Gold Rush NHP	Georeferenced aerial photography, Sheep River	$10,000
Sitka NHP	Compile historical database for Indian River	$10,000
Alibates Flint Quarrie NM	Inventory/assess/control non-native fauna	$5,000
Aztec Ruins NM	Flora and fauna inventory	$3,300
Aztec Ruins NM	Revegetate picnic/archeological area with native plants	$9,000
Bent's Old Fort NHS	Boundary survey and fencing	$6,000
Bents Old Fort NHS	Tamarisk Control	$6,000
Casa Grande Ruins NM	Boundary Fence	$5,000
Chiricuaha NM	Evaluate rhyolite forms vibration risk	$5,400
Coronado NM	Install gates on abandoned mines for bat protection	$6,000
Devils Tower NM	Non-native plant control	$12,000
El Morro NM	Assess rockfall hazards and develop monitoring systems	$8,000
Flagstaff Group	Evaluate threats to bats	$5,000
Florissant Fossil Beds NM	Paleontological database & literature review for website	$20,000
Florissant Fossil Beds NM	Dam removal/restoration	$8,000
Fort Bowie NHS	Vegetation preservation treatment project	$3,800
Fort Laramie NHS	Develop Vegetation Management Plan	$12,000
Fort Union NM	Natural resources base inventory	$12,000
Fossil Butte NM	Exotic weed control	$7,500
Fossil Butte NM	Reclaim/revegetate 4 stock ponds	$6,300
Grant-Kohrs Ranch NHS	Develop Agricultural Use Plan	$7,800
Little Bighorn Battlefield NM	Complete baseline inventory of vascular plants	$3,000
Lyndon B. Johnson NHS	Re-establish native vegetation	$5,000
Palo Alto Battlefield NHS	Conduct inventory of sensitive amphibians	$3,400
Petroglyph NM	Develop Geographic Information System database	$12,000
Petroglyph NM	Develop long term biotic rescue prototype	$4,800
Tumacacori NM	Complete inventory of vertebrates and vegetation	$10,000
Washita Battlefield NHS	Initiate GIS database	$2,000
Yucca House NM	Geologic survey	$12,000
Agate Fossil Beds NM	Control Canada Thistle	$7,500
Arkansas Post NM	Assessment of tick borne diseases	$9,500
Dayton Aviation Heritage NHP	Inventory mammals	$8,000
Effigy Mounds NM	Control exotic plants	$7,000
Fort Scott NHS	Restore tallgrass prairie	$8,000
Fort Union Trading Post NHS	Native prairie restoration	$10,000
George Washington Carver NM	Develop Vegetation Management Plan	$10,000
Grand Portage NM	Caddis Fly baseline inventory	$2,500
Herbert Hoover NHS	Conduct prairie vegetation survey	$10,000
Hopewell Cultural NHP	Develop native plant demonstration projects	$10,000
Homestead NM of America	Prairie restoration improvement	$10,000
Knife River Indian Village NHS	Leafy spurge removal	$10,000
Lincoln Boyhood Home NM	Improve wildlife habitat	$1,000
Pea Ridge NB	Restore native prairie	$10,000
Pipestone NM	Restore disturbed lands to tallgrass prairie	$7,500
Scotts Bluff NM	Exotic weed control	$9,000
Tallgrass Prairie NPr	Conduct inventory of springs	$10,000
Wilson's Creek NB	Control exotic plants	$10,000
Catoctin Mountain Park	Deer Advisory Team	$11,000

Chesapeake & Ohio Canal NHS	Amphibian monitoring	$9,000
Geo Washington Mem Pkwy	Inventory	$12,000
Harpers Ferry NHP	Implement geologic hazard program	$14,000
Monocacy NB	Exotic vegetation mitigation	$13,000
Prince William Forest Park	Amphibian monitoring	$9,000
Rock Creek Park	At risk Kenk's Arthropod analysis & raptor survey	$14,000
Colonial NHP	USGS shallow aquifer study	$30,000
Eleanor Roosevelt NHS	Delineate wetlands boundary	$2,500
Morristown NHP	Develop plan to preserve critical vegetation	$25,000
Valley Forge NHP	Vegetation classification	$22,000
Weir Farm NHS	Conduct impact assessment	$25,000
Cabrillo NM	Performance analysis of rocky intertidal monitoring	$7,000
Devils Postpile NM	Install bearproof lockers	$15,000
Fort Clatsop NM	Night sky	$3,000
Fort Point NHS	Cape ivy removal	$20,000
Hagerman Fossil Beds NM	Control non-native vegetation	$15,000
Hagerman Fossil Beds NM	Develop Integrated Pest Management Plan	$3,000
Hagerman Fossil Beds NM	Agricultural chemicals	$10,000
Hagerman Fossil Beds NM	Natural resource bibliography	$5,000
Kaloko-Honokohau NHP	Provide waterbird nesting platforms	$17,000
Muir Woods NM	Hold workshop to evaluate redwood forest stands	$31,000
Oregon Caves NM	Research natural areas	$1,000
Oregon Caves NM	Fungi survey	$8,000
Oregon Caves NM	Integrated Pest Management Plan	$12,000
San Juan HP	Conduct vital signs monitoring scoping meeting	$3,000
San Juan HP	Thinning trees in woodland at American Camp	$10,000
San Juan HP	Boundary survey	$9,000
San Juan HP	Inventory of invertebrates	$15,000
War in the Pacific NHP	Assess rare plants and develop management strategy	$10,000
Whitman Mission NHS	Doan Creek restoration	$8,000
Whitman Mission NHS	Integrated Pest Management Plan	$6,000
Chattahoochee River NRA	Document damage of sewer leaks to resources	$19,000
Cowpens NB	Pine Beetle hazard tree removal	$24,000
Fort Donelson NB	Plant collection/herbarium	$21,000
Fort Pulaski NM	Develop long-term Water Quality Plan	$29,000
Fort Raleigh NHS	Assess and monitor shoreline	$15,000
Great Smoky Mountains NP	Coordinate small parks exotic plant team	$5,000
Kings Mountian NMP	Reptile and amphibian inventory	$12,000
Ninety Six NHS	Vascular plant baseline	$25,000
Obed Wild & Scenic River	Mussel monitoring	$15,000
Shiloh NMP	Aquatic monitoring	$8,000
Timucuan Ecological & HPr	Compile natural resources	$21,000
Vicksburg NMP	Exotic plant management	$16,000
Wright Brothers NM	Manage deer population	$13,000



Mallards in flight

USGS/BRD Assistance Projects Funded in FY 2000
(Combined USGS/NPS Funding)

Project	USGS/NPS $
Great Basin National Park freshwater mollusk inventory	$11,000
Determining causes and rates of adult elk mortality in Yellowstone National Park	$40,000
Effect of Euphorbia esula on pollination and seed set of native plants	$35,000
Effects of fire at Joshua Tree National Park	$32,000
Implications of 1998/1999 mortality pulse to genetic diversity and population of the grizzly bear population in Glacier National Park	$40,000
Expanded collection and collation of erosion data and landscape change information to protect pinyon-juniper woodland resources at Bandelier National Monument	$20,000
Population estimation and development of a land-based classification protocol for bighorn sheep in Grand Canyon National Park	$30,000
Predicting exotic plant species locations in Rocky Mountain National Park	$40,000
Red-throated loons of Bering Land Bridge National Preserve: Ecological predisposition to present and future perils	$28,000
Streamflow-vegetation relations to quantify Federal reserved water rights	$33,000
Post-fire burn assessment by remote sensing on National Park Service lands	$37,000
Exotic species invasion and structural damage along horse trails in sensitive natural areas at Ozark National Scenic Riverways	$28,000
Population monitoring and population dynamics of elk at Theodore Roosevelt National Park	$26,000
Assessing aerial survey methods to determine community composition and resource hotspots for waterbirds in coastal parks	$13,000
Developing indicators of freshwater emergent wetland ecosystem integrity for monitoring and management at Acadia National Park	$30,000
Historical salmon production in Lake Clark National Park and Preserve: Relevance to emerging subsistence use issues	$30,000
Evaluation of native freshwater mussel populations in the C&O Canal National Historical Park: Strategies for integrating management of biological with cultural resources	$36,000
Synthesis of over 60 years of surface and ground water data at Indiana Dunes National Lakeshore	$31,000
A clearinghouse for natural resources data at North Cascades National Park	$40,000
Inventory of cryptogams of Olympic National Park	$35,000

National Park Service

The National Park Service is a bureau within the Department of the Interior. We preserve unimpaired the natural and cultural resources and values of the national park system for the enjoyment, education, and inspiration of this and future generations. We also cooperate with partners to extend the benefits of natural and cultural resource conservation and outdoor education throughout the country and the world.

The Natural Resource Challenge is increasing NPS scientific understanding in parks all around the nation, from Maine to Florida to Alaska and the Pacific Islands. For more information about the Natural Resource Challenge, visit www.nature.nps.gov/challenge/nrc.htm.