

National Park Service  
U.S. Department of the Interior

Natural Resource Stewardship and Science  
Washington, DC



# Funding the Natural Resource Challenge

Report to Congress, Fiscal Year 2003



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## *Mission Statement*

*The National Park Service preserves unimpaired the natural and cultural resources and intrinsic values of the National Park System for the enjoyment, education, and inspiration of this and future generations. The National Park Service cooperates with partners to extend the benefits of natural and cultural resource conservation, and outdoor recreation throughout this country and the world.*

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**Inside Front Cover: The NPS Biological Resources Management Division is developing biome-based resource protection for Great Smokies National Park, where nonnative forest pests such as hemlock woolly adelgid must be treated to avoid potential forest devastation.**

PHOTO © RUSS FINLEY/FINLEY-HOLIDAY FILMS

**Cover: An island fox on San Miguel Island at Channel Islands National Park must elude predators such as golden eagles to survive. Concern that predation, parasites, and disease could lead to extinction of the island fox population prompted establishment of a captive breeding program as one effort of the Island Fox Recovery Team.**

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Washington, DC

Produced by Harpers Ferry Center  
Harpers Ferry, West Virginia

U.S. Department of the Interior  
National Park Service  
Washington, DC



Hydrologic data collected by NPS studies for Death Valley National Park are shared with the Nevada State Engineer, southern Nevada water purveyors, and private developers, thereby contributing to the larger-scale investigation of water availability in southern Nevada.

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English ivy and other highly invasive, shade-tolerant exotic plants were hand-cleared from 101 acres of old-growth redwood forest at Redwood National Park by the California Conservation Corps (CCC) and the California Department of Corrections. English ivy had formed thick mats on the forest floor, altering wildlife habitat, suppressing native plants, and growing up into the trees, threatening to topple them if left unchecked.

PHOTO © FINLEY-HOLIDAY FILMS

# Executive Summary

*The Natural Resource Challenge has instituted new and efficient approaches to managing natural resources.*

The Natural Resource Challenge is establishing a foundation for science-based management in parks for the first time. Significantly, the Challenge Program also provides a means to measure agency performance in resource preservation. Park managers need to know what natural resources they manage and the condition of those resources. They require the capability to act once they have resource information. The Natural Resource Challenge has made a strong start in meeting these needs using innovative approaches and expanded expertise and partnerships.

This fourth Report to Congress on the Natural Resource Challenge describes the expenditures and related accomplishments for FY 2003, reflecting funding that began in FY 2000. Documentation includes funding and activities associated with 11 Servicewide natural resource programs and 36 parks.

## ACHIEVEMENTS TO DATE

With the FY 2003 increases provided, \$67.432 million total had been added to natural resource programs by the Natural Resource Challenge since FY 2000. As of FY 2003 this additional funding enabled the National Park Service to achieve the following:

- 1,500 park natural resource data sets, including essentially complete inventories for all parks in seven of 12 basic inventory categories, making the National Park Service on track to meet its future inventory targets.
- Air quality monitoring in 63 parks, including new or expanded monitoring at 21 parks.
- Water quality monitoring capability in 17 networks encompassing 153 parks, and with passage of the proposed FY 2005 budget, capability in all 32 networks serving 270 parks.

- A web-based National Park Service Research Permit and Reporting System that facilitates the processing and tracking of more than 7,500 electronic records annually, including applications, permits, and accomplishment reports.
- 16 Exotic Plant Management Teams serving more than 219 parks.
- 36 national parks with new or expanded natural resource programs and strengthened ability to preserve native species.
- 12 Natural Resource Challenge-funded Research Learning Centers to host researchers and disseminate research information.
- Expanded funding for critical natural resource projects, including more than doubling the Natural Resource Preservation Program (NRPP) by adding more than \$7 million, resulting in funding of 281 high-priority natural resource projects in FY 2003.
- Additional field-based and Natural Resource Program Center expertise, including 15 field-based aquatic resource specialists, nine field-based air quality specialists, and expertise in key geologic and biologic disciplines (such as coastal geology, paleontology, animal disease, threatened and endangered species, exotic species, and restoration).

The following additional accomplishments have been made, although park vital signs monitoring is not complete:

- By the end of FY 2003, there were 17 networks, encompassing 153 parks funded for park vital signs monitoring; in FY 2003 12 of these networks completed identification of their vital signs and began final protocol and other design work.



One of nine NPS units in the Great Lakes Vital Signs Monitoring Network, Isle Royale National Park has received funding to implement a wilderness management plan, to develop a strategy for addressing zebra mussel infestations, and to resurvey rare plant plots. NPS PHOTO

- With passage of the proposed FY 2005 budget, 28 of 32 networks—encompassing about 87 percent of parks with natural resources—will be fully funded to implement park vital signs monitoring.

**PERFORMANCE ASSESSMENT**

Natural Resource Challenge programs directly contributed to the attainment or exceeding of seven out of 10 strategic plan goals related to Challenge activities with specific FY 2003 targets. The exotic species containment goal was surpassed by more than 100 percent. The three goals that were not achieved include those associated with air quality, water quality, and paleontologic resources. However, new and expanded monitoring information will allow park managers to work with state regulators and sources of emissions to seek ways to improve air and water quality in the future.

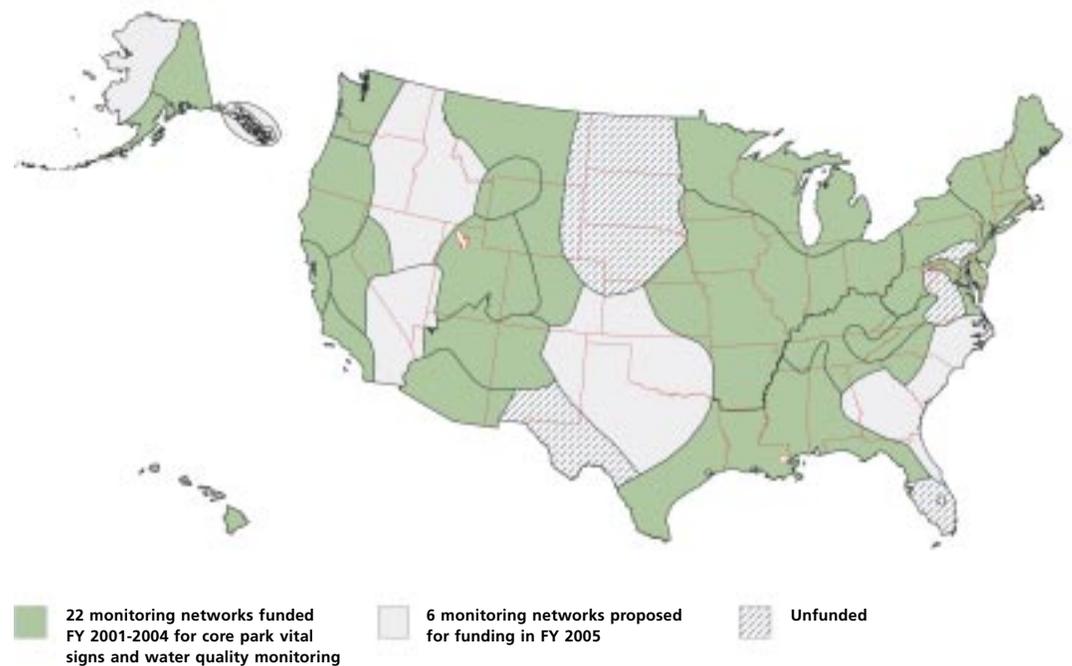
The Natural Resource Challenge has instituted new and efficient approaches to managing natural resources. National parks have been grouped into networks that share similar geographic and natural resource characteristics. Parks within networks share and coordinate fieldwork, staff and equipment, and business practices for monitor-

ing, as well as some inventories. Exotic Plant Management Teams serve multiple parks as mobile strike forces trained in identifying and controlling exotic plants. New partnering arrangements, exemplified by Cooperative Ecosystem Studies Units and Research Learning Centers, have also been established. These new approaches have resulted in significant leveraging of funding.

**REAL RESULTS**

- More than \$19 million was outsourced to universities, other non-government entities, and non-NPS government agencies for inventory and monitoring products.
- National Park Service Exotic Plant Management Teams leveraged more than \$2.8 million through partnerships to enhance invasive plant control as well as to inventory more than 627,000 acres and treat 10,666 acres of land.
- Use of the Cooperative Ecosystem Studies Units increased from a total of more than 380 projects and \$15 million in FY 2002 to 540 projects and \$19 million in FY 2003.

**National Park Service Vital Signs Monitoring Networks Status, FY 2004**





Saguaro National Park is one of 11 NPS units in the Sonoran Desert Vital Signs Monitoring Network. In the winter of FY 2003, the Sonoran Desert Network joined with the Sonoran Institute, the U.S. Geological Survey-Sonoran Desert Field Station, and the University of Arizona as the lead partners in a regional monitoring framework for the Sonoran Desert Ecoregion.

PHOTO © RUSS FINLEY/FINLEY-HOLIDAY FILMS

- Through partnerships and consistent communication, the Research Learning Center at Point Reyes National Seashore leveraged \$280,000 to conduct high-priority research in the park and surrounding community areas.
- The Sonoran Desert Network joined with the Sonoran Institute, the U.S. Geological Survey-Sonoran Desert Field Station, and the University of Arizona as the lead partners in a regional monitoring framework for the Sonoran Desert Ecoregion. The framework will embrace monitoring efforts of other federal agencies and Pima County, Arizona.
- The Great Lakes Inventory and Monitoring Network initiated a partnership with Michigan State University to develop an Internet-based gateway that will allow National Park Service staff, partners, and the public to search and download natural resource inventory and monitoring information using spatial and tabular queries.
- Great Smoky Mountains National Park, working with the University of Tennessee, reduced the cost of park stream water quality monitoring by more than 30 percent by applying a state-of-the-art analysis of long-term data sets.
- “Surfrider” volunteers collected marine nearshore water samples to help Olympic National Park determine how to monitor shoreline ocean water quality. Invasive tamarisk and perennial pepperweed were removed from riparian habitat along the Green and Yampa Rivers in Dinosaur National Monument by 524 volunteer “Weed Warriors,” who contributed 2,929 person-hours.
- Post-Hurricane Isabel response decision-making was greatly enhanced by the existence of detailed baseline geologic information provided through the Inventory and Monitoring Program and remote sensing data.

**FUNDING SUMMARY**

The FY 2004 appropriation and proposed FY 2005 budget for the Natural Resource Challenge contain increases for monitoring activities only. As a result, FY 2003 is the final year of this multi-year effort for increasing funding for non-monitoring elements; these components were significantly funded in FY 2000 through FY 2003.

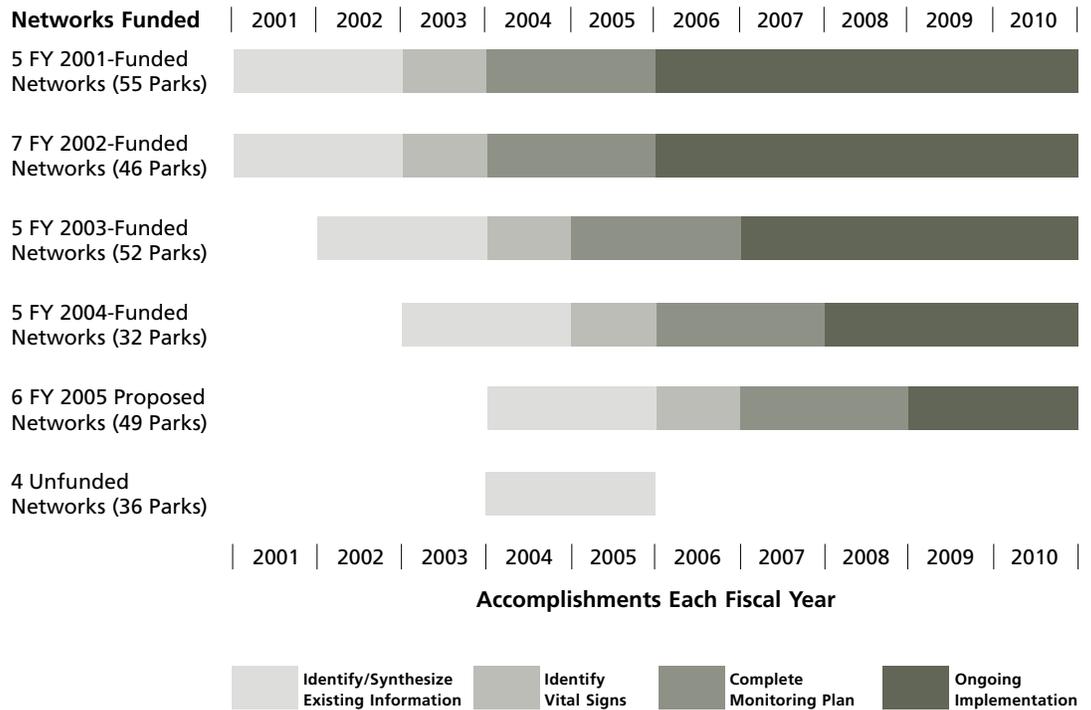
In FY 2003 there were nine increases totaling \$17.884 million to five programs:

- 1. \$2.235 million to accelerate vegetation mapping and \$1.987 million to accelerate other basic inventories, as well as \$6.855 million for park vital signs monitoring in five networks, encompassing 52 parks.

- 2. \$2.136 million for seven additional Exotic Plant Management Teams.
- 3. \$397,000 to participate in two additional Cooperative Ecosystem Studies Units.
- 4. \$497,000 for natural resource projects in Alaska.
- 5. \$200,000 for three field-based aquatic resource specialists and \$3.08 million for watershed assessments, as well as \$497,000 for water quality monitoring in five networks.

This report provides details on how the National Park Service has used funding and the results that have been achieved.

**National Park Service Vital Signs Monitoring Networks Funding and Accomplishments**





Work at Glacier National Park is underway to evaluate the ecological integrity of park watersheds.

PHOTO © RUSS FINLEY/FINLEY-HOLIDAY FILMS

# Chapter One: Funding

*The Challenge includes new funding requests, designed by field superintendents and subject matter experts, necessary to meet future natural resource management needs.*

This fourth Report to Congress documents the fourth year of the Natural Resources Challenge Program. Congress endorsed and took the first steps to fund the Challenge, beginning in Fiscal Year 2000. This report describes the expenditures and related accomplishments for FY 2003, as directed in the House Report 106-22 for the FY 2000 appropriations for the NPS and other Department of Interior and related agencies. The intent of the report is to demonstrate agency accountability for stewardship responsibilities and financial obligations, as well as to communicate that implementation of the Challenge Program has been extremely successful to date.

The Challenge Program includes new funding requests, designed by field superintendents and subject matter experts,

necessary to meet future natural resource management needs. Natural Resource Challenge funding has been requested as a series of discrete requests for a specific set of actions included in the Natural Resource Challenge action plan, which features many expansions of preexisting programs. As a result, only some of the Challenge budget increases are easily identifiable programs. In many cases, Challenge funds are mixed with previous program bases. In addition to the Servicewide programs, 36 parks have received funding as a result of the Natural Resource Challenge. The accompanying table shows Natural Resource Stewardship programs appearing in the ONPS: Summaries portion of the National Park Service Budget Justification, with the Natural Resource Challenge components that comprise all or part of the programs.

Natural Resource Challenge Components of Natural Resource Stewardship Programs	
PROGRAM	COMPONENT
Air Quality Program	<ul style="list-style-type: none"> <li>■ Park air emissions inventory</li> <li>■ Expand air quality monitoring and related activities</li> </ul>
Biological Resources Management Program	<ul style="list-style-type: none"> <li>■ Native/nonnative species management and Exotic Plant Management Teams</li> </ul>
Cooperative Ecosystem Studies Units	<ul style="list-style-type: none"> <li>■ Establish Cooperative Ecosystem Studies Units</li> </ul>
Geologic Resources Program	<ul style="list-style-type: none"> <li>■ Protect geologic resources</li> </ul>
Inventory and Monitoring Program	<ul style="list-style-type: none"> <li>■ Basic inventories (except vegetation mapping)</li> <li>■ Vegetation mapping (with USGS)</li> <li>■ Monitor vital signs in park networks</li> </ul>
Natural Resource Data and Information Program	<ul style="list-style-type: none"> <li>■ Make natural resources data useable</li> </ul>
Natural Resource Preservation Program	<ul style="list-style-type: none"> <li>■ Natural Resource Preservation Program project funding</li> </ul>
Research Learning Centers	<ul style="list-style-type: none"> <li>■ Establish Learning Centers</li> </ul>
Resource Damage Assessment & Recovery Program (including Oil Spill Pollution Act)	<ul style="list-style-type: none"> <li>■ Implement Resource Protection Act/restore resources</li> </ul>
Resource Protection Fund	<ul style="list-style-type: none"> <li>■ Establish resource protection fund</li> </ul>
Water Resources Program	<ul style="list-style-type: none"> <li>■ Monitor water quality in park networks</li> <li>■ Water resource protection and restoration project funds</li> <li>■ Water resource protection and restoration/field specialists</li> </ul>
National Park System Units, Other Field Units, and Central Office Natural Resource Stewardship Programs	<ul style="list-style-type: none"> <li>■ Park invasive species control/T&amp;E species recovery</li> </ul>

The accompanying table shows the history of the funding of Servicewide Natural Resource Stewardship programs, distinguishing those affected by Natural Resource Challenge funding and those that have not been affected. This history since FY 1999—the year before the first Challenge increases—demonstrates how the Natural Resource Challenge has affected these programs.

<b>NPS Natural Resource Stewardship Programs Funding (dollars in thousands)</b>					
<b>PROGRAM COMPONENT</b>	<b>FY 1999</b>	<b>FY 2000</b>	<b>FY 2001</b>	<b>FY 2002</b>	<b>FY 2003</b>
<b>SERVICEWIDE NATURAL RESOURCE PROGRAMS</b>					
<i>Programs Affected by Natural Resource Challenge</i>					
Air Quality Program	\$ 6,285	\$ 6,226	\$ 6,443	\$ 9,065	\$ 8,998
Biological Resources Management Program	-	3,449	3,441	5,846	7,930
Cooperative Ecosystem Studies Units <sup>1</sup>	-	-	1,596	46	443
Geologic Resources Program	1,918	1,989	2,676	2,700	2,670
Inventory and Monitoring Program <sup>1</sup>	5,787	12,799	18,565	21,757	32,385
Natural Resource Data and Information Program	-	456	1,542	1,553	1,542
Natural Resource Preservation Program	5,432	8,307	8,289	12,289	12,693
Research Learning Centers <sup>1</sup>	-	-	898	1,800	-
Resource Damage Assessment and Recovery Program (including Oil Spill Pollution Act)	873	879	886	1,394	1,276
Resource Protection Fund	-	-	-	300	298
Water Resources Program	4,754	4,735	6,869	7,905	11,614
<i>Programs Not Affected by Natural Resource Challenge</i>					
Cave and Karst Research Institute	-	-	-	350	348
Everglades–Comprehensive Restoration Plan (CERP)	-	-	2,497	5,544	5,513
Everglades–Critical Ecosystem Studies Initiative	1,200	7,908	6,194	4,000	3,974
Everglades–Task Force Support	800	800	1,316	1,325	1,329
Geographic Information System (GIS) Program	1,336	1,337	1,315	1,316	1,307
Glen Canyon Adaptive Management Program	-	-	-	-	99
Natural Sounds Program (formerly Overflight Program)	200	1,000	1,003	949	931
<b>SUBTOTAL</b>	<b>\$ 28,385</b>	<b>\$ 48,885</b>	<b>\$ 62,527</b>	<b>\$ 77,190</b>	<b>\$ 92,320</b>
<b>NATIONAL PARK SYSTEM UNITS, OTHER FIELD UNITS, AND CENTRAL OFFICE NATURAL RESOURCE STEWARDSHIP PROGRAMS</b>	<b>\$ 65,832</b>	<b>\$ 74,137</b>	<b>\$ 84,530</b>	<b>\$ 94,653</b>	<b>\$ 97,644</b>
<b>TOTAL <sup>2</sup></b>	<b>\$ 94,417</b>	<b>\$ 124,022</b>	<b>\$ 148,060</b>	<b>\$ 172,792</b>	<b>\$ 190,994</b>

<sup>1</sup> Some funds transferred to park or regional bases and not reflected in the programs subsequent to transfer.

<sup>2</sup> Total of Natural Resources Research Support, Natural Resources Management and Everglades Restoration and Research components of Resource Stewardship Subactivity, Park Management Activity, Operation of the National Park System Appropriation.

This table shows FY 2002 funding and changes resulting from FY 2003 increases and other actions for all of the programs affected by the Natural Resource Challenge. The following three chapters focus on describing the accomplishments achieved in

FY 2003 through the natural resource programs and parks affected by the Natural Resource Challenge. Additional detail about previous years and allocation of the funding within programs may be found in Chapter Five and several of the appendices.

**FY 2003 Changes to NPS Natural Resource Stewardship Programs Funding With Natural Resource Challenge Contributions Highlighted (dollars in thousands)**

PROGRAM COMPONENT	FY 2002	FY 2003 PROGRAM INCREASES	FY 2003 <sup>3</sup>
<b>SERVICEWIDE NATURAL RESOURCE PROGRAMS</b>			
Air Quality Program	\$ 9,065	\$ -	\$ 8,998
<i>Challenge Contribution</i>	2,800	-	2,800
Biological Resources Management Program	5,846	2,136	7,930
<i>Challenge Contribution</i>	5,849	-	7,985
Cooperative Ecosystem Studies Units <sup>1</sup>	46	397	443
<i>Challenge Contribution</i>	1,596	-	1,993
Geologic Resources Program	2,700	-	2,670
<i>Challenge Contribution</i>	696	-	696
Inventory and Monitoring Program <sup>1</sup>	21,757	11,077	32,385
<i>Challenge Contribution</i>	17,446	-	28,523
Natural Resource Data and Information Program	1,553	-	1,542
<i>Challenge Contribution</i>	1,098	-	1,098
Natural Resource Preservation Program	12,289	497	12,693
<i>Challenge Contribution</i>	6,875	-	7,372
Research Learning Centers <sup>1</sup>	1,800	-	-
<i>Challenge Contribution</i>	2,698	-	2,698
Resource Damage Assessment and Recovery Program (including Oil Spill Pollution Act)	1,394	-	1,276
<i>Challenge Contribution</i>	500	-	500
Resource Protection Fund	300	-	298
<i>Challenge Contribution</i>	300	-	300
Water Resources Program	7,905	3,777	11,614
<i>Challenge Contribution</i>	3,095	-	6,872
Cave and Karst Research Institute, Everglades Research and Restoration, Glen Canyon Adaptive Management Program, and Natural Sounds Program	13,484	-	13,501
<i>Challenge Contribution</i>	-	-	-
<b>NATIONAL PARK SYSTEM UNITS, OTHER FIELD UNITS, AND CENTRAL OFFICE NATURAL RESOURCE STEWARDSHIP PROGRAMS</b>	<b>\$ 94,653</b>	<b>-</b>	<b>\$ 97,644</b>
<i>Challenge Contribution</i>	<b>\$ 6,595</b>	<b>-</b>	<b>\$ 6,595</b>
<b>TOTAL NATURAL RESOURCE STEWARDSHIP PROGRAMS</b>	<b>\$ 172,792</b>	<b>\$ 17,884</b>	<b>\$ 190,994</b>
<i>Challenge Contribution</i>	<b>\$ 49,548</b>	<b>\$ 17,884<sup>2</sup></b>	<b>\$ 67,432</b>

<sup>1</sup> Some funds transferred to park or regional bases and not reflected in the programs subsequent to transfer.

<sup>2</sup> All Natural Resource Stewardship increases in FY 2003 associated with Natural Resource Challenge.

<sup>3</sup> Net program totals shown; differences between years reflect across-the-board reductions, salary increases, etc., in addition to program increases shown.



Vegetation data collection at Curecanti National Recreation Area contributes to inventory and monitoring efforts within the Northern Colorado Plateau Network.  
NPS PHOTO

## Chapter Two: Measuring Progress

*Activities associated with the Natural Resource Challenge have contributed to achievement of nearly all the Servicewide long-term goals directly linked to natural resource preservation.*

The National Park Service, like most governmental organizations, has an increasing responsibility to report its performance in a measurable way. The Government Performance and Results Act (GPRA)<sup>1</sup> formalizes reporting requirements and stresses measuring performance by tracking “outcomes.” For the natural resources of the National Park System, the desired outcome is “resources in good condition.”

Development of the initial National Park Service Strategic Plan (1997) and emergence of the Natural Resource Challenge were closely linked. At that time, most meaningful indicators of resource condition were beyond the National Park Service’s ability to measure. A few national parks undertook some monitoring; yet, they monitored different parameters. The natural resource goals described in the plan continue to exist as a collection of factors the National Park Service *could* measure, rather than a comprehensive approach to measure the

condition of park resources definitively. The third NPS strategic plan, beginning in FY 2004, features condition goals that are more comprehensive. The National Park Service could adopt these improved goals for measuring progress in natural resources preservation because of Natural Resource Challenge funding.

Resource information is critical input for measuring and improving resource conditions and for measuring performance in caring for resources. Many factors affect the condition of natural resources, including some elements that are not under the control of NPS managers. Furthermore, there are many aspects to resource condition. Distilling and agreeing on the appropriate indicators to measure ecologically diverse national park resources is not simple, especially when funding constraints exist. However, the Natural Resource Challenge is establishing a foundation for developing the kind of cohesive, comprehensive, and

### Relation of National Park Service Mission Goals to U.S. Department of the Interior Strategic Plan

NPS Mission Goal	Relevance to U.S. Department of the Interior Strategic Plan	
	DOI Strategic Mission Goal	DOI Outcome Goal
1. Preserve Park Resources	1. Resource Protection	<ul style="list-style-type: none"> <li>■ Improve Health of Watersheds and Landscapes</li> <li>■ Sustain Biological Communities</li> <li>■ Protect Cultural and Heritage Resources</li> </ul>
2. Provide for Public Enjoyment and Visitor Experience of Parks	2. Recreation	<ul style="list-style-type: none"> <li>■ Improve Access to Recreation</li> <li>■ Ensure Quality of Recreation</li> <li>■ Receive and Provide Fair Value in Recreation</li> </ul>
	3. Serving Communities	<ul style="list-style-type: none"> <li>■ Protect Lives, Resources, and Property</li> </ul>
3. Strengthen and Preserve Natural and Cultural Resources, and Enhance Recreational Opportunities Managed By Partners	2. Recreation	<ul style="list-style-type: none"> <li>■ Improve Access to Recreation</li> <li>■ Ensure Quality of Recreation</li> <li>■ Receive and Provide Fair Value in Recreation</li> </ul>
	3. Serving Communities	<ul style="list-style-type: none"> <li>■ Protect Lives, Resources, and Property</li> </ul>

<sup>1</sup> GPRA was passed in 1993 to improve operational efficiency and effectiveness by requiring agencies to define their mission goals and identify long- and short-term program goals through strategic planning, and to measure and evaluate program accomplishments through annual performance reports to the American people.



Souvenir hunters and grazing by livestock once reduced the number of silversword plants, or '*Ahinahina*, at Haleakala National Park to fewer than 1,000 individuals. Park resource managers successfully implemented a fencing program, which along with federal protection regulations, allowed silversword numbers to increase to a present population of 50,000 plants. A project has now been developed through the Endangered Species Program to restore populations of the endangered silversword to Hawaii Volcanoes National Park using funding from the Natural Resource Preservation and Resource Protection Programs.

NPS PHOTO

*credible* measurement of NPS resource conditions that should be in place for such important public assets.

Development and implementation of strategic monitoring programs, started in FY 2001, will build on a foundation of information that began with inventories. These strategic monitoring programs will allow the NPS to possess definitive information on resources managed by the agency, and to measure management performance. When fully funded and implemented, a means to measure resource condition will be established.

Through FY 2003, 17 networks (of a total of 32) involving 153 of approximately 270 parks managing natural resources will have been funded for condition monitoring. The resulting scientifically sound information is critical for designing strategies to protect and restore natural resources, for working with others whose actions influence resource conditions, and for measuring the condition of park resources.

Activities associated with the Natural Resource Challenge have contributed to achievement of nearly all the Servicewide long-term goals directly linked to natural resource preservation. Of the 10 goals related to Challenge activities that had specific FY 2003 targets, seven were attained or exceeded. The exotic species containment goal was exceeded by more than 100 percent. The three goals that were not achieved were those associated with air quality, water quality, and paleontologic resources. New and expanded monitoring information will allow park managers to work with state regulators and sources of emissions to seek ways to improve air and water quality in the future.

The accompanying table shows the relationship of Natural Resource Challenge activities and natural resource programs to the NPS Strategic Plan goals. The goals are from the plan in effect through FY 2003; the current plan in effect beginning in FY 2004 features several new and more comprehensive goals for natural resources.

**Natural Resource Challenge Activities Supporting Natural Resource-Related Programs Relationships to Strategic Plan Goals and Results**

Servicewide Natural Resource Program	Natural Resource Challenge Activity	Strategic Plan Mission Goal Ia: Protect Park Resources FY 2003 Goals and Results
Parks	Park invasive species control/threatened and endangered species recovery	<ul style="list-style-type: none"> <li>■ <b>Ia1B.</b> Exotic Plant Species: Exotic vegetation on 4.6% of targeted acres of park lands (122,600 of 2,656,700) is contained. <b>(exceeded)</b></li> <li>■ <b>Ia2.</b> Threatened and Endangered Species: 14.5% of the 1999 identified park populations (64 of 442) of federally listed threatened and endangered species have improved status, and an additional 22.3% (99 of 442) have stable populations. <b>(exceeded)</b></li> </ul>
Air Quality	Inventory air emissions/Expand air quality monitoring and related activities	<ul style="list-style-type: none"> <li>■ <b>Ia3.</b> Air quality in 61% of reporting parks is improving or remains stable. <b>(not met)</b></li> </ul>
Biological Resources Management	Create native/nonnative species program/field teams for nonnative species management (entire program is Natural Resource Challenge-funded)	<ul style="list-style-type: none"> <li>■ <b>Ia1B.</b> Exotic Plant Species: 4.6% of targeted acres of park lands (122,600 of 2,656,700) with exotic vegetation are restored. <b>(exceeded)</b></li> <li>■ <b>Ia2.</b> Threatened and Endangered Species: 14.5% of the 1999 identified park populations (64 of 442) of federally listed threatened and endangered species have improved status, and an additional 22.3% (99 of 442) have stable populations. <b>(exceeded)</b></li> </ul>
Geologic Resources	Protect geologic and paleontological resources	<ul style="list-style-type: none"> <li>■ <b>Ia1A.</b> 6.1% of targeted park lands disturbed by development or agriculture as of 1999 (122,000 of 222,300) are restored. <b>(exceeded)</b></li> <li>■ <b>Ia9A.</b> 30% of known paleontological localities in parks are in good condition. <b>(not met)</b></li> <li>■ <b>Ia9B.</b> 95,820 sq. ft. of cave floors are restored. <b>(exceeded)</b></li> </ul>
Natural Resource Preservation Program	Expand NRPP project fund, specialized inventories, training, etc.	<ul style="list-style-type: none"> <li>■ <b>Ia.</b> Natural and cultural resources and associated values are protected, restored, and maintained in good condition and managed within their broader ecosystem context.</li> </ul>
Resource Damage Assessment and Recovery (including oil spills)	Implement Resource Protection Act to restore resources	<ul style="list-style-type: none"> <li>■ <b>Ia.</b> Natural and cultural resources and associated values are protected, restored, and maintained in good condition and managed within their broader ecosystem context.</li> </ul>
Resource Protection	Establish resource protection fund	
Water Resources	Monitor park water quality/ Expand water resource protection and restoration	<ul style="list-style-type: none"> <li>■ <b>Ia4.</b> 65% of 288 park units have unimpaired water quality. <b>(not met)</b></li> </ul>
Servicewide Natural Resource Program	Natural Resource Challenge Activity	Strategic Plan Mission Goal Ib: Gain Knowledge About Park Resources FY 2003 Goals and Results
CESUs	Establish Cooperative Ecosystem Studies Units	<ul style="list-style-type: none"> <li>■ <b>Ib.</b> The NPS contributes to knowledge about natural and cultural resources and their associated values. NPS management decisions about resources and visitors are based on adequate scholarly and scientific information.</li> </ul>
Inventory and Monitoring	Complete basic inventories, except vegetation mapping	<ul style="list-style-type: none"> <li>■ <b>Ib1.</b> Natural Resource Inventories: Acquire or develop 59% (1,498) of the 2,527 outstanding data sets identified in 1999 of basic natural resource inventories for all parks. <b>(exceeded)</b></li> </ul>
	USGS vegetation mapping cost-share	
	Monitor vital signs in networks of parks	<ul style="list-style-type: none"> <li>■ <b>Ib3.</b> Vital Signs: 40% of 270 parks with significant natural resources have identified their vital signs for natural resource monitoring. <b>(exceeded)</b></li> </ul>
Natural Resource Data and Information	Make natural resource data useable for management decisions and the public	<ul style="list-style-type: none"> <li>■ <b>Ib.</b> The NPS contributes to knowledge about natural and cultural resources and their associated values. NPS management decisions about resources and visitors are based on adequate scholarly and scientific information.</li> </ul>
Research Learning Centers	Establish Learning Centers	
Water Resources	Monitor water quality in parks and assess watershed condition	<ul style="list-style-type: none"> <li>■ <b>Ib5.</b> Initiate 30 watershed assessment projects in cooperation with USGS. <b>(exceeded)</b></li> </ul>



Student Conservation Association volunteers assist with Monitoring and Avian Productivity and Survivorship (MAPS) work such as mist-netting and banding of small land birds. NPS PHOTO