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## NATURAL RESOURCES ACTIVITIES 1991

Each year, developments occur at the national level that directly affect the management of natural resources in the parks. This short, but comprehensive, report has been prepared in an effort to keep park managers up to date on the major natural resource activities that occurred in 1991. Topics discussed include all areas in which substantial progress has been made in the past year to increase the National Park Service's ability to manage natural resources. Included are such subjects as development and implementation of new programs, production of information resources, and direct funding of numerous resource management projects.

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### Vail Symposium

The 75th Anniversary Symposium held in Vail, Colorado set the stage to use the 75th Anniversary of the National Park Service as an opportunity to consider future directions of the Park Service as well as an opportunity to celebrate accomplishments of the past. Natural resource research and management personnel at all levels of the organization participated fully in the symposium. The timing of this evaluation of the future of the National Park Service coincided well with the development of the Natural Resources Strategic Plan development.

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### Strategic Plan

While major strides were made during the 1980s in developing assessments of resource management needs (i.e., the 1988 assessment and the RMP data base), more must be done to provide a Servicewide framework and guidance for natural resource management activities and to improve the management of our research. The National Park Service must provide additional unified and focused efforts to meet the challenges faced in each park. To achieve this end, the Associate Director, Natural Resources (ADNR), has developed a 5-year strategic plan for natural resources in the National Park Service. Recommendations from the National Academy of Sciences' evaluation of research in the Park Service, scheduled for release in early 1992, can be used with the internal objectives set forth in the 5-year strategy plan to develop systemwide improvements to the natural resource management program.

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### Guidance

**NPS-77** In recent years, the National Park Service has not had an up-to-date, comprehensive guideline on natural resource management activities. In 1991, the publication of the Natural Resources Management Guideline (NPS-77) provided employees throughout the National Park System with a single reference containing the information necessary to design, implement, and evaluate a comprehensive natural resources management program.

**RMPs** The revised resource management plan instructions have continued to aid in the improvement of resource management plans (RMPs) across the National Park System. A newly automated Servicewide RMP data base identifying all ongoing funded projects and unfunded project needs was created in 1991. This first annual Servicewide RMP data base, which will be updated every year, has already helped develop information on natural resource funding needs for the FY 93 budget. A revised and enhanced resource management plan software program was distributed for park use at the end of the year.

**Publications** Culminating a 4-year effort to upgrade natural resource publications, the Natural Resources Publication Handbook was completed, providing comprehensive guidance on natural resource publication management. Topics covered in the Handbook include a description of the categories of natural resource publications, the planning and approval process, and formatting and other requirements. The handbook consolidates National Park Service, Departmental, and Government Printing Office requirements.

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## **Inventory and Monitoring**

A 1988 natural resources assessment indicated that 30 percent of the outstanding park natural resource needs were related directly or indirectly to inventory or monitoring. In April 1990, a 10-year program design was completed for a comprehensive and systematic inventory and monitoring effort by the National Park Service. The program will complete the natural resource information base in individual parks that is needed for informed decision making. This information will also provide a comprehensive understanding of the National Park System as a whole. The initial phase of this effort neared completion in 1991. An assessment of the completeness of biological inventories was completed for all parks with significant natural resources. Additionally, a Servicewide monitoring strategy--essential to alert managers to changing conditions requiring protective measures--will be developed by the end of the 10-year program. Results obtained by testing different monitoring designs in selected parks, called prototype monitoring parks, will be used to develop the strategy.

A \$1.25 million increase for this program was included in the FY 1992 budget, representing an important step in its implementation. The first parks were selected for prototype monitoring in 1991; they were Channel Islands, Denali, Great Smoky Mountains, and Shenandoah. These parks will begin instituting full scale monitoring in FY 1992.

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## Global Science

As much of the nation's natural habitat is converted to other uses, biological species diversity reduced, and air and water contaminated, the National Park Service gains importance as the steward of many of the least disturbed natural environments remaining in the country. Parks least changed by man offer outstanding places to study how natural processes work--and how the effects of these processes change as we alter the larger ecosystems and elements on which they depend. These parks provide some of the best available areas to preserve natural diversity. They also can serve as part of larger landscapes to study ecosystem sustainability.

**Global Change** Participating in the U.S. Global Change Program will aid the National Park Service in fully realizing its global change research potential. As a part of this effort, six biogeographical areas (BGAs) containing one or more parks and cooperating areas were chosen as global change research sites in 1991, the first year of program funding; four additional BGAs were approved for future funding. (These BGAs are among a total of 20 planned Park Service BGAs.) The Global Change Coastal Barriers thematic initiative was also begun in 1991, and the Coral Reefs thematic initiative is planned for 1993. The decision to join the Global Change Program was influenced by the participation of the National Park Service in a 10-year effort to study acid rain, which was one of the first times that the Park Service had joined a national level, multi-agency, multi-university research effort. Both of these programs emphasize interagency cooperation and demonstrate the scientific contributions of the National Park Service.

**Biodiversity** The Park Service is participating in national efforts to address the issue of biodiversity. In past years, the National Park Service has sponsored or cosponsored a number of workshops to develop its own awareness of biological diversity. In 1991, the Park Service cosponsored an international and interdisciplinary meeting convened by the Keystone Center to critique a developing international strategy for conservation of biodiversity and to explore ways to apply this strategy to North America. In addition, the April 1991 Keystone report from the two-year interdisciplinary policy dialogue on biodiversity on federal lands, cosponsored by the National Park Service, made recommendations on how parks can contribute to the conservation of biodiversity in the landscapes of which they are a part.

**Neotropical Migratory Bird Program** Turning plan into action, the National Park Service this year joined an international public and private sector initiative to reverse the decline of neotropical birds (i.e., birds that breed in North America and winter in Central and South America). The reduction of rain forest in the Southern Hemisphere affects the continued survival of these birds, as does the status of breeding grounds in North America. The Park

Service is developing an action plan for participation in an interagency conservation program that will draw on the Park Service's twin strengths of protected natural areas and interpretation to make significant contributions to public understanding, park resource preservation, and the needs of cooperators.

**Man and the Biosphere** The National Park Service continued to increase the role of biosphere reserves in addressing regional, national, and international issues, including global change. By year's end, twelve of the 30 Park Service units found in biosphere reserves were exploring ways to use biosphere reserves for regional cooperation. Through the U.S. Man and the Biosphere Program (USMAB), a comparative study involving National Park Service biosphere reserves got underway in the Olympic Peninsula and the Southern Appalachians to understand how ecological, cultural, and economic factors influence regional landscapes. Working with USMAB and the U.S. Global Change Research Program, the Park Service is helping to develop a "Network of Networks" to link biosphere reserves and other ecological research areas for coordinated monitoring to detect hypothesized global change effects. Internationally, through USMAB, we are using the biological inventory system developed by the National Park Service to develop an inventory of biological data on North American and European biosphere reserves. We are also developing a data base of scientific information about biosphere reserves as part of a EuroMAB Biosphere Reserves Integrated Monitoring Program. These data will help identify opportunities for international cooperation.

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## **Increasing Capabilities**

In the last 2 years (FY 1991 and FY 1992) appropriations, Park Service funding for natural resources has increased over 35 percent. In addition to the I&M and global change efforts mentioned above, these increases have gone to:

- the NRPP, or Natural Resource Preservation Program (over 2 million in FY 91 and 92), which funds high priority resource management and research projects, mostly in the parks;
- park and regional natural resource base programs (over 14 million in the FY 91 and 92);
- Geographic Information Systems;
- water rights;
- watershed protection;
- wetlands management;
- Clean Air Act amendments permitting activities; and
- the National Natural Landmarks Program.

While a proposed targeted parks budget proposal was unsuccessful, innovative approaches are being sought to use the budget to increase natural resources capabilities at the park level, in addition to supporting base increases.

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## **Training**

Recognizing the need to improve the knowledge of employees to meet modern technical and scientific challenges, the National Park Service has placed a high priority on training. An intensive, 18-month natural resource trainee program for 22 National Park Service employees graduated its fifth class in September 1991. In addition to the trainee program, several one-week courses on specific topics (water resources, endangered species, air quality monitoring, integrated pest management, geographic information systems development, etc.) were conducted.

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## **GIS**

By the end of 1991, there were geographical information data bases for over 90 parks. Over half of these parks have full scale Geographic Information Systems (GISs) that include hardware and trained operators as well as data. Nearly all of the approximately 240 parks with natural resources have the potential to effectively use a GIS, and many have plans to do so in the near future. Many of the remaining 118 units, which are primarily small cultural units, can also use GIS technology to improve resource management. FY 91 and 92 funding increases of \$936,000 and \$550,000, respectively, are increasing our capability to grow in the use of GISs in a coordinated, systematic fashion. During 1991, efforts were focused on defining and developing strategies for park, regional, and Washington level roles in operating and providing support to park GISs.

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## **National Natural Landmarks**

The National Natural Landmarks (NNL) program is currently undergoing an extensive program review. Three major accomplishments were achieved in 1991 which will greatly strengthen the program. The proposed revised regulations for the program were published in November. Proposed changes include strengthening and clarifying procedures for owner notification, adding a requirement for voluntary owner consent for natural landmark designation, and providing for review of natural landmark nominations by the National Park System Advisory Board. In September, work began on a contract to confirm names and addresses of private owners for the currently designated NNLs. This is part of an overall effort to corroborate ownership of all 587 designated NNLs and to contact these owners in writing and inform them about the NNL Program. Finally, the NNL program received a budget increase beginning in fiscal year 1992 of \$750,000. This increase will allow for a full-time NNL coordinator position in every region.

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## Air Quality

The National Park Service air quality monitoring program provides technical data, analyses, and interpretation of data on air quality in over 70 parks, including the 48 Class I areas. Analyses, strategies, and options are prepared by the Park Service for use by the Assistant Secretary, Fish and Wildlife and Parks. The Assistant Secretary is the Federal Land Manager with legal responsibilities under the Clean Air Act to make decisions on maintaining and improving the air quality in these parks. Specific issues involving actual and potential pollution at several parks, including the Grand Canyon and Shenandoah National Parks, have resulted in actions to reduce air pollution.

**Grand Canyon** The Administration announced on August 8, 1991, that a negotiated agreement was reached among the owners of the Navajo Generating Station and representatives of the environmental community. This agreement came in response to EPA's February 1991 proposal to require reductions in Navajo's pollutant emissions to improve visibility at Grand Canyon National Park. The case represents the first time that EPA has instigated a regulatory action solely on the basis of visibility.

On September 18, after a 30-day public comment period, the President announced the final agreement at the Grand Canyon. The agreement provides for the installation of controls on the power plant that would reduce the emissions of sulfur dioxide by 90 percent on an annual basis. The controls would be installed in three phases beginning in 1997 with full control being achieved by 1999. This reduction in emissions will achieve significant visibility improvements at Grand Canyon, particularly in the winter, and in other "Golden Circle" parks. Information produced by the Park Service was key to the proposal to retrofit the plant and to the final outcome.

**Shenandoah** 1991 marked the first time since the Clean Air Act Amendments of 1977 established a regulatory mechanism that the Department has asked a state permitting authority to deny permits to major new sources of air pollution to avoid adverse impacts on park resources. Approximately 20 new coal-fired power plants are planned within a 200-kilometer radius of Shenandoah National Park. The Assistant Secretary asked that the Commonwealth of Virginia deny the permits for these plants unless the proposed pollution increases are offset by pollution reductions from existing sources.



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## **Wildlife and Vegetation Management**

Parks provide only part of the ecosystems on which wild animals depend, and development is continuing to increase outside park boundaries. To devise effective wildlife management techniques, the National Park Service is working to compile a scientific information base and devising ways to cooperate with others involved in these kinds of management decisions.

**Bison** A current example of cooperative decision-making involves the management of Greater Yellowstone Area bison that may have the potential to transmit brucellosis to domestic cattle. In recent years, there has been public controversy over appropriate management schemes for bison leaving Yellowstone National Park boundaries in winter. The National Park Service is cooperating with the State of Montana, the Fish and Wildlife Service, the U.S. Forest Service, and the Animal and Plant Health Inspection Service in the development of a long-range bison management plan for the Greater Yellowstone Area. Work on the plan and the accompanying EIS has progressed this year and should be completed by early 1993. Until that plan is completed, the Yellowstone bison will be managed according to a cooperatively developed interim plan. Bison shot by the State of Montana under this interim plan are being extensively sampled. Samples taken by the State of Montana and Texas A&M University will provide information on brucellosis. Samples taken by Yellowstone will provide detailed information about the bison, including information on bison diseases, genetics, nutritional status, etc.

**White-tailed Deer** 1991 brought a renewed interest and commitment to the white-tailed deer issue in eastern U.S. national park units. The emphasis in 1991 was primarily on publishing the results of scientific research that explored management possibilities. Drs. William Porter and Robert Warren presented papers on "Values and Science: White-tailed Deer Management in Eastern National Parks" and "Ecological Justification for Controlling Deer Populations in Eastern National Parks" at the North American Wildlife and Natural Resource Conference in Edmonton, Canada. Dr. Porter's "White-tailed Deer in Eastern Ecosystems: Implications for Management and Research in the National Parks" was published as a National Park Service Technical Report. A draft version of the "Eastern White-tailed Deer Management Guide: Integrated Problem Management" is complete; the final document will be available in FY 92. Numerous other reports and publications are scheduled for FY 92, as well as a special initiative thrust for white-tailed deer research and management.

**Endangered Species** National parks provide habitat for approximately 130 known endangered species. Management of endangered species, including restorations, is complicated by reduced and isolated habitats. In order to improve resource managers' understanding of endangered species issues, training funds were provided to five regions and a short course presented to the 1991 natural resource trainees. A brochure for visitors describing endangered species and their protection in national parks was distributed to the parks to help educate the public. In addition, activities focusing on specific species were:

**Gray Wolf** The National Park Service has continued to study the appropriate methods to restore gray wolves into Yellowstone National Park. A committee established by law to evaluate restoration schemes made their recommendations to Congress in 1991. An environmental impact statement will be required before a final decision can be made.

**Spotted Owl** The role of Park Service habitat was one of the considerations in the events in 1991 concerning the safeguarding of the northern spotted owl, listed as threatened in 1990. The National Park Service also succeeded in obtaining a highly sought position on the northern spotted owl recovery team.

**Recreational Use** The National Park Service has been active with other offices of the Department in developing a recreational fisheries program and a watchable wildlife program that cooperate with similar programs in other Interior agencies. The Park Service participated in the development of the Secretary's Initiative, "Enjoy Outdoors America."

**Recreational Fisheries Program** In conjunction with the "Enjoy Outdoors America" Initiative, the Park Service produced a four-color brochure outlining the Park Services' Recreational Fishing Program. The Park Service has also entered into a cooperative agreement with the American Fisheries Society for fisheries research and management activities and has signed the "Fishing Has No Boundaries" memorandum of agreement to promote fishing opportunities for disabled individuals.

**Watchable Wildlife Program** The Service became a partner in the nationwide Watchable Wildlife Program when it signed an MOU in December 1990, along with 12 other public and private partners. The goals of the program are to enhance opportunities for viewing wildlife, provide education about wildlife and its needs, and promote active support of wildlife conservation. Ten National Park Service units are included in the four-state wildlife viewing guides published this year as part of the program. Many other parks will be included in the state guides currently being prepared. A color folder on Watchable Wildlife in the National Parks is in preparation and should be available in 1992.



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## Water Resources

Water resources issues, concerns, and needs are pervasive throughout the National Park System. Problems include the degradation of park water quality due to external activities, the alteration of natural flow regimes and ground water levels caused by both in-park and external development, and the lack of secure water rights. Additional issues include impacts to park wetlands, disruption of coastal and floodplain dynamics, and impacts to water quality and quantity due to mineral extraction, geothermal activities, hazardous material spills, atmospheric pollution, and visitor use.

Numerous water rights issues are being addressed by the National Park Service. Presently, over 50 parks are involved in water rights adjudications and hearings or other proceedings related to water rights. Significant water rights accomplishments in 1991 include negotiating an instream flow agreement for the Gunnison River in Black Canyon of the Gunnison National Monument, and implementing an interagency agreement to develop technical information in support of federal agency protests to a massive ground water pumping proposal by the Las Vegas Valley Water District. Additionally, major study programs are underway at Zion National Park, Glacier National Park, and other Park Service units in support of their water rights.

Water quality issues are being addressed through a wide array of activities, including formal participation in state and interstate water quality programs, development of site-specific water quality information, and analyses of water quality impacts on aquatic resources.

**Everglades** This year a lawsuit was settled between the Department of Justice and the South Florida Water Management District and the Florida Department of Environmental Quality which will contribute directly to the protection of water quality in Everglades National Park. Specifically, the settlement calls for the reduction of nutrient loading into the park and improved delivery of water to the park.

**Glen Canyon Dam** In 1991, technical information was developed which contributed to the design and implementation of "interim test flows" at Glen Canyon Dam. The interim test flows are intended to reduce the adverse impacts to downstream resources in the Grand Canyon caused by the rapidly fluctuating daily flows which resulted from the operation of Glen Canyon Dam for hydroelectric peaking power. The National Park Service is currently evaluating the interim test flows and is participating in a multi-agency program to identify improved operating procedures for Glen Canyon Dam. Technical information and subsequent reports to Congress were also prepared in cooperation with other agencies to address potential impacts to thermal features at Crater Lake and Yellowstone National parks.