

REPORT OF THE AD HOC WORKING GROUP  
ON NATURAL RESOURCE MANAGEMENT  
IN THE NATIONAL PARK SERVICE

JANUARY 26, 1995

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## Introduction

The mission of the National Park Service (NPS) to protect park resources has never been more clear. However, carrying out this mission has never been more challenging. This challenge has been well documented in "National Parks for the 21st Century: The Vail Agenda," as well as "Science in the National Parks" and a number of other evaluations of NPS resource stewardship. While these reports have clearly reinforced that the primary responsibility of the NPS is the protection of park resources, they have also explicitly identified major challenges facing NPS in meeting this responsibility. These challenges are due to such factors as the increased complexity of managing a highly diverse National Park System, escalating threats to park resources, the need to professionalize the work force, and major deficiencies in park natural resource information. These challenges have been further heightened by limitations in human and financial resources available to the NPS.

Two additional changes have also significantly affected NPS's stewardship of natural resources. First, the creation of the National Biological Service (NBS) in November 1993 resulted in the transfer of the majority of NPS natural resource researchers to another agency, and second, the on-going efforts to restructure (and re-engineer) NPS will fundamentally change the way the Park Service conducts its business.

It is in the context of the conditions described above that George T. Frampton, Assistant Secretary for Fish and Wildlife and Parks, in his approval of the NPS Restructuring Plan on September 21, 1994, charged NPS with reinventing its future to make "natural resource management flourish." This report is the result of the deliberations of an Ad Hoc Group, assembled in October, 1994, in response to Assistant Secretary Frampton's charge. Members of the Ad Hoc Group are identified in Appendix 1 to this report.

This report makes a series of recommendations in response to the following three questions which were specifically asked by Assistant Secretary Frampton:

1. What is the role of natural resource management in the NPS after the establishment of the NBS?
2. How can the NPS restructuring effort make natural resource management flourish?
3. How does research fit into a post-NBS, restructured NPS, and how can the relationship with NBS be enhanced to assure that NPS needs for biological research are met?



In order to carry out its charge, the Ad Hoc Group defined existing conditions and desired future conditions for natural resource management in NPS and specified a set of guiding principles to guide the group's deliberations with respect to each of the three questions asked by Assistant Secretary Frampton. This information is found in Appendix 2.

Assistant Secretary Frampton also asked the Ad Hoc Group to revise and update the Strategic Plan for Improving the Natural Resource Program of the National Park Service that was originally approved in 1992. A draft of this revised plan is found in Appendix 3.

### **Responses and Recommendations**

Responses to the three questions asked by Assistant Secretary Frampton and specific recommendations related to each question are provided below.

#### **Question 1.      What is the role of natural resource management in the NPS after the establishment of the NBS?**

Given that the NPS's primary responsibility is the protection of park resources, we believe that the term **natural resource stewardship** is an appropriate umbrella term to describe this responsibility and that **natural resource management**, along with research and operations, are the basic functions carried out by the NPS (and others) in meeting natural resource stewardship responsibilities. A more complete discussion of NPS natural resource stewardship functions is found in Appendix 4.

Further, we define **natural resource management** in the NPS as "an activity that seeks to know, maintain, restore, and protect park ecosystems, including the scenery, natural objects, biota, physical features, environmental processes, and their complex interrelationships." It should be emphasized that this activity is based on science but also requires special expertise in policy, planning, and regulatory programs. As a general matter, the natural resource management program of the National Park Service includes employees at all levels of the organization who work on natural resource issues at a relatively more highly skilled or specialized level in a variety of natural resource disciplines.

The transfer of approximately 90 research scientists and 100 biotechnicians and other support staff to the NBS did not diminish the NPS's responsibility for natural resource management. Rather, in some ways, it has made natural resource management in the NPS more challenging. Many functions formerly performed by these highly educated, credible experts, who linked the NPS to the academic community and provided valuable guidance to NPS managers, must now

be assumed by others in the NPS. The NBS was created, in part, to conduct biological and ecological research in support of park management. However, it should be recognized that in the NPS, research is only one part of a much broader function called natural resource management.

Natural resource management input is critical in most, if not all, of the steps of sound decision-making in or about parks. Such decision-making requires:

- Articulation of clear management objectives;
- Acquisition of data about natural resources, through inventory and monitoring, in order to **know the resources**;
- Analysis and management of data in order to make it usable;
- Interpretation of data to internal and external audiences in order to make it understandable;
- Utilization of data and other relevant information (e.g., laws and policies) in internal and external decision-making arenas to achieve protection of park resources; and
- Adaptive prioritization of needs and actions, based on management objectives and acquired knowledge.

In order to support decision-making, the NPS must employ an adequate number of natural resource professionals (e.g., as identified in NR-MAP [Natural Resource-Management Assessment Program]) and acquire sufficient information upon which to base decisions (e.g., through continued implementation of the NPS's Inventory and Monitoring Program).

Another way to assure that natural resource management input is considered in NPS decision-making is to have people trained in the fundamentals of natural resource stewardship making the decisions. The recently adopted "Employee Training and Development Strategy" (Training and Development Task Force, November 1, 1994) addresses this need through proposed training programs for supervision, management, and leadership in resource stewardship.

### Recommendations

1. **Fully support, through the budget process, (a) the "Stewardship Today for Parks Tomorrow" goal to double natural resource management staffing by the year 2000, and (b) full**

implementation of the approved Natural Resource Inventory and Monitoring Program.

2. Provide full support to the recently adopted "Employee Training and Development Strategy" to provide training in supervision, management, and leadership in resource stewardship.
3. Identify and use incentives to assure that natural resource expertise and considerations are part of all major park decisions. (Having distinct natural resource management expertise input **directly** to the superintendent should be encouraged, even for small parks.)
4. Develop and adopt a system to evaluate decision-makers at all levels of the organization on how effectively they incorporate natural resource stewardship concerns into management decisions.
5. Approve and implement the Revised Strategic Plan for Improving the Natural Resource Program in the National Park Service (see Appendix 3).
6. Change the Associate Director's title in the NPS's restructuring plan to "Natural Resource Stewardship" (delete "and Science" to acknowledge that science is a part of stewardship, not separate from it).

**Question 2.      How can the NPS restructuring effort make natural resource management flourish?**

Natural resource management will flourish if sufficient numbers of well trained staff are provided at all levels of the restructured NPS. This new organizational structure has great potential to improve natural resource management in NPS, but only if certain minimum staffing and expertise levels are met. These minimum levels are referred to as the **core natural resource management program**.

**Core Natural Resource Management Program**

There must be a core program of natural resource management services that are distributed through all levels of the new organization. These services are needed to address issues such as exotic species, consumptive uses, degradation of natural resources, external resource threats, wilderness management, prescribed fire applications, integrated pest management, and visitor impacts. Personnel in natural resource management are needed in order to acquire, manage, analyze, interpret, and disseminate information,

as well as use the information in internal and external decision-making to ensure protection of park natural resources.

The core natural resource management program includes the following services:

- Program leadership/facilitation
- Biological sciences
- Physical sciences
- Environmental quality and coordination
- Resource information management
- Geographic Information Systems (GIS)
- Resource management planning and coordination
- Research coordination and contract management
- Specialized policy/regulatory expertise
- Research liaison/science advice

Appendix 5 provides a recommended distribution of natural resource management services for the core program in clusters, Field Director Offices (FDO's), the National Natural Resource Center, and WASO.

## **Recommendations**

### **Restructuring**

1. Increase the **minimum** staffing levels to support cluster operations<sup>1</sup> to 11 FTE's in order to meet the core natural resource management program areas listed above (also see Appendix 5):

The recommended FTE levels are exclusive of other stewardship functions and **do not include clerical and administrative support**. If clusters determine that there are additional programmatic or technical needs above and beyond the minimum core levels, they are encouraged to dedicate additional resources and to place them wherever necessary in the organization.

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<sup>1</sup> The restructuring plan recommends the following minimum staffing levels for System Support Offices (SSO's): 4-6 for natural resource and science functions, 0-2 for environmental quality and review, and 0-2 for GIS. These functions are recommended to be located in SSO's under the restructuring plan; depending on local circumstances, they may be effectively located elsewhere, but they must be dedicated to serving the entire cluster and not be assigned as corollary duties for park personnel.

The primary function of a **Systems Support Office (SSO)** is to provide programmatic and technical services to the parks and the cluster. Specific roles include assisting in the development and consolidation of stewardship proposals and responses, facilitating and brokering information and services, providing technical assistance directly to parks, providing coordination with the National Natural Resource Center, and serving as an advocate for the parks and the cluster to the Field Director, WASO, and others.

The research role at the cluster/SSO level is generally one of coordination and contract/agreement management rather than research liaison and providing high level, impartial scientific advice, a role generally reserved for the FDO. SSO personnel should be natural resource managers, not researchers, although some clusters may elect to also have their own research advisor.

The level of GIS technical support functions needed should be decided by each cluster. The core program should include a **coordinator** for GIS functions. However, if a cluster determines that it needs a technical support center for GIS, it should dedicate sufficient FTE's in addition to those recommended for the core program discussed above.

2. Establish two positions in each **FDO**: an Associate Field Director for Natural Resource Management<sup>2</sup> and a Research Advisor<sup>3</sup>.

Two distinct natural resource positions are needed at each FDO.

First, the **Associate Field Director for Natural Resource Management** provides strategic and multi-park leadership to natural resource management within the Field Area. This includes articulating and advocating multi-park needs, coordinating needs among SSO's, and providing

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<sup>2</sup> Assistant Secretary Frampton used the term "Assistant Director" in his memorandum of October 15, 1994, suggesting this position. The Ad Hoc Group strongly supports the establishment of a high level position similar to that recommended by the Assistant Secretary but believes that the title should be consistent with the other new positions which will represent the interests of the clusters at the FDO level.

<sup>3</sup>An alternate title for this position is "Senior Scientist."



service and advice to the Field Director in carrying out her/his natural resource stewardship activities, including policy advice and priority-setting among clusters.

Second, the **Research Advisor** provides high-level, strategically-oriented research liaison and science advice and serves as the primary bridge from parks to the NBS and other research entities. This involves outreach, rather than internal research administration, and advice to the Field Director and parks on major issues. The Research Advisor advises the Field Director on research and scientific issues, assists parks with research questions, participates in strategic planning, provides research program coordination, facilitates the development of priority recommendations for research needs, and brokers research from the NBS and other research entities.

These two functions require different approaches as well as different complements of skills and abilities, and are therefore different positions. Since an important premise is the need to allow for research advice which is independent of management, the two functions must be performed by different individuals.

3. Establish a parallel SSO cultural resource management function and an Associate Field Director for Cultural Resource Management.
4. Support and strengthen, if possible, the National Natural Resource Center (NNRC). The NNRC provides highly specialized expertise for critically important, pervasive resources (e.g., air and water) in an efficient and effective manner. The NNRC should be distinguished from many other central offices, since it typically provides "one-of-a-kind" service and its role and function can generally be performed more efficiently and effectively in a centralized program. Moreover, the work of the NNRC directly benefits parks by providing specialized technical support to address complex natural resource issues in parks as well as developing needed park protection programs on both regional or national levels.
5. Reestablish the national program leadership and coordination roles of the NPS's GIS Program. These needs remain despite the transfer of NPS's former GIS program to NBS.

### **Professionalization**

1. Implement through the budget process the "Stewardship Today for Parks Tomorrow" goal to double natural resource management staffing by the year 2000.
2. Encourage, support, and accelerate the efforts of the Vail Agenda's Resource Careers Subcommittee to assure the professionalization of natural resource management positions within NPS. (Grade disparities and lack of career opportunities for natural resource managers should be rectified as soon as possible.)
3. In accordance with the recently adopted "Employee Training and Development Strategy," establish as soon as possible the Natural Resources Training Academy, implement the recently developed program entitled "Fundamentals for Professional Natural Resource Managers," and develop a competency-based natural resource management training and development program for positions from entry level through top management.
4. Mentor natural resource management personnel who demonstrate good managerial abilities into management development programs and career advancement opportunities.
5. Reserve a pool of FTE's to be allocated for recruiting under-represented groups in the natural resource management program as an incentive for supervisors to diversify NPS's work force.

### **Re-engineering and Cultural Change**

1. Re-engineer the Performance Management and Operations Evaluation Systems to better evaluate the effectiveness of natural resource stewardship.
2. Re-engineer some of the natural resource management programs of the National Park Service. For example, the Wildlife and Vegetation Division of the National Natural Resource Center should be re-engineered so that it better meets park and national stewardship needs. The Wildlife and Vegetation Division needs to be invigorated to provide national ecological leadership and integrated technical services, rather than being the collection of parallel, small programs in different biological disciplines that it is currently. The Service's integrated pest management function should be re-engineered and technical support centralized in this Center.
3. Evaluate management position descriptions and hiring processes throughout the NPS to ensure that there are no inappropriate

barriers to competition or promotion based on professional discipline.

**Question 3.      How does research fit into a post-NBS, restructured NPS, and how can the relationship with the NBS be enhanced to assure that NPS needs for biological research are met?**

There is still a critical role at all levels of the restructured NPS for research and research administration in managing units of the National Park System. This role includes ensuring that biological science, physical science, and wilderness research needs important to parks are met by the NBS, U.S. Geological Survey (USGS), U.S. Forest Service, and others.

It should be noted that parks have an important and distinct role in research. This role consists of information needs identification and prioritization, research administration, data base management, liaison with research entities, and interpreting and implementing research results for management application. In the restructured NPS, park-based natural resource management professionals will accrue greater responsibilities with respect to these research-related functions for both their own park and the other parks in the cluster. Some parks may need their own park research coordinator. A few larger parks might also elect to have a park research advisor, playing a role similar to the FDO Research Advisor (i.e., advising on science issues and acting as primary liaison with research entities, but not managing research directly).

A strong and effective relationship between NPS and NBS will improve the quantity and quality of the research results and information that NPS managers can use for decision-making. Such a relationship must focus NBS research on park management needs, thus improving natural resource management and therefore the overall quality of park management.

### **Recommendations**

**As support to NBS, the NPS should:**

1. Create a Chief Scientist position as part of the Associate Directorate, Natural Resource Stewardship to serve, among other duties, as the focal point for all remaining (post-NBS) natural resources research activities conducted internally by NPS regardless of the topical discipline. Hence, this office will help facilitate NPS's air quality research program and other physical science research activities. This office will



also provide the primary research liaison functions with the NBS, USGS, and other research providers on a national level.

2. Provide research liaison to the NBS's Regional Offices through FDO Research Advisors.
3. Continue to offer logistical support to, and cooperation with, NBS research projects and programs in parks that involve former NPS researchers and meet the objectives of park managers.
4. Work with the NBS in developing and supporting NBS budget initiatives that seek funding increases (or redirections) to specifically meet priority needs for park research.

**As support to NPS, the NBS should:**

1. Continue to provide FTE's and funding for NPS research needs at a level at least equivalent to what was transferred to NBS.
2. Maintain close contacts with parks to provide scientific expertise and technical assistance needed to manage parks.
3. Be structured to facilitate joint advocacy of research programs. The current NBS Science Center structure appears to be the appropriate place in the NBS organization to invest in a research program that serves NPS natural resource management research needs. The NBS will identify specific budgetary "line item" programs within NBS Science Centers to provide research services to parks.

**In support of the NPS/NBS Partnership, the NPS should:**

1. Accelerate the development of uniform internal procedures, based on Resource Management Plans, for determining and communicating priority research and technical assistance needs to the NBS. The NBS will then use the priority setting procedure termed "A Partnership Approach to Identification and Prioritization of Information Needs" to make final funding and technical assistance determinations. The NBS will provide the NPS with a regular schedule and sufficient lead time for all requests for NPS research and technical assistance priorities.
2. Support NBS efforts to provide funding under the control of the NBS Regional Directors to meet tactical research needs in parks. However, some limited Natural Resource Preservation Program (NRPP) funding should be maintained by the NBS at the national level to meet NPS strategic research needs.

3. Assure that the NPS employs a sufficient number of qualified "peer receptors" for research who will work closely with NPS research coordinators and park managers in formulating and communicating the NPS's research priorities and who will advise on the implementation of research results.

**In support of the NPS/NBS partnership, the NPS and NBS should:**

1. Develop a budget initiative to establish NBS Field Stations in all NPS units with "significant" natural resources.
2. Cooperate in supporting inventory and monitoring activities in parks. The NBS should increase funding for vegetation mapping, design prototype monitoring programs, and provide assistance in designing resource inventories for parks. The NPS should conduct operational monitoring and inventorying in parks and provide data to the NBS for analysis. The NBS should then produce status and trends reports.
3. Support the signing of three-way Cooperative Agreements involving NBS, NPS, and universities. The NPS should station personnel at these units when appropriate and needed.
4. Hold meetings of the respective NBS Regional Directors and NPS Field Directors in 1995, and biennially thereafter to evaluate the effectiveness of the research accomplishments and the interagency relationship.
5. Work out ways to deal with incongruities between the NPS's FDO boundaries and the NBS's regional boundaries that make the communication of priority research needs more complicated.
6. Jointly develop a method to measure success and to ensure that the NPS will continue to receive equivalent or better research services from NBS than it did from its former internal research program.

## **APPENDIX 1**

### **Members of the Ad Hoc Working Group**

Thirteen experienced employees from the National Park Service, along with one employee from the Assistant Secretary's Office and two employees from the National Biological Service, all three of which were former Park Service professionals, were selected to serve on this ad hoc working group. The working group membership was as follows:

Gary Davis, Channel Islands National Park, National Biological Service  
Nancy Deschu, Alaska Regional Office  
Dennis Fenn, Acting Associate Director, Natural Resources  
Russell Galipeau, Wrangell-St. Elias National Park & Preserve  
Elizabeth Johnson, Delaware Water Gap  
Bruce Kilgore, Western Regional Office  
Dan Kimball, Water Resources Division  
Bob Krumenaker, Shenandoah National Park  
Gary Larson, CPSU/Oregon State University, National Biological Service  
Suzanne Lewis, Timucuan Ecological and Historic Preserve  
David Manski, Acadia National Park  
Ken Mabery, El Malpais National Monument  
Bob Moon, Rocky Mountain Regional Office  
Jack Oelfke, Isle Royale National Park  
Molly Ross, Office of the Assistant Secretary, Fish and Wildlife and Parks  
William Schreier, Denver Service Center

Valuable staff assistance was provided to the Ad Hoc Working Group by John Dennis, Gary Johnston, Abigail Miller, and William Walker, all of the WASO Natural Resources Directorate.

## **APPENDIX 2**

### **Philosophical Underpinnings of the Ad Hoc Working Group**

#### **Existing NPS Conditions.**

While the NPS has come a long way in its natural resource stewardship, it still does not consistently accomplish its stewardship mission to conserve and leave unimpaired the nation's natural heritage. Factors that contribute to this difficulty are as follows:

- The recently completed NR-MAP (Natural Resource - Management Assessment Program) process has shown that the NPS currently has only about 25% of the needed staffing in natural resource management.
- Many in the NPS believe that natural resource management has an "identity crisis" (e.g., people inside [and outside] the agency do not know what natural resource management is, who does it, or what constitutes doing it well).
- There is a common internal and external perception that "research" is "natural resource management."
- With the transfer of researchers to the National Biological Service (NBS), the resulting perception is that NPS natural resource management needs will be addressed by another agency.
- The NPS lacks consensus on what constitutes a core program to adequately manage natural resources.
- The NPS decision-making process in many cases does not involve natural resource management expertise.
- Managers frequently lack data to make informed decisions and the knowledge of what data they need to make decisions.
- Many in the agency do not understand the NPS's basic natural resource policies and what is needed to implement these policies.
- Many natural resource managers are unskilled in communicating information and advice to management regarding sound natural resource stewardship.

#### **Desired Future NPS Conditions.**

The NPS must make some fundamental changes in its culture, accountability and reward system, recruitment practices, budgetary priorities, and training programs in order to improve its execution of natural resource stewardship responsibilities. These changes would create a set of desired future NPS conditions that are described as follows:

- Managers seek and apply natural resource information before acting.
- Managers seek to be rewarded/recognized for natural resource stewardship.
- Natural resource information is incorporated early in the planning process.
- The NPS values the education and professional development of its natural resource management staff.
- Managers ensure that natural resource managers participate in the decision-making processes (i.e., natural resource management has "a place at the table" with other key park advisors).
- Effective managers from the natural resource management program who so desire have an equal opportunity to become park managers.

### **Guiding Principles of the Ad Hoc Working Group.**

The Ad Hoc Group adopted the following set of principles to guide its deliberations on each of the three questions asked by Assistant Secretary Frampton:

#### Role of Natural Resource Management

- The condition of the resource is the ultimate accountability for the NPS in meeting its mission. Hence, the term **natural resource stewardship** is an appropriate umbrella term which includes **natural resource management** as a component.
- The essential functional elements of natural resource stewardship are to know, maintain, restore, and protect natural resources (see Appendix 3).
- Every NPS employee has an obligation with respect to the NPS's natural resource stewardship responsibilities. Therefore, accomplishing these functions requires a **team** effort by natural resource managers, researchers, park operations personnel, park managers, and others.

#### Making Natural Resource Management "Flourish"

- Effective natural resource stewardship is based on having an adequate core program, not on any particular organizational structure.
- Natural resource management must have input into all significant park management decisions.
- Decision-making affecting natural resources must be based on scientific information and applicable statutes, regulations, and policies.

- NPS decision-making must consistently err on the side of resource protection.

Research in the Post-NBS, Restructured NPS

- The NPS retains the primary responsibility for ensuring that research needs of park management are met.
- Research is a component of natural resource stewardship, and each organizational level has responsibility for ensuring that research needs are met.
- A strong, effective working relationship between the NPS and NBS is critical to the success of both agencies.

### **APPENDIX 3**

#### **Revised Strategic Plan for Improving the Natural Resource Program of the National Park Service**

The original Strategic Plan for Improving the Natural Resource Program of the National Park Service was approved in October 1992. It included goals, objectives, and tasks to improve the management of natural resources in parks, including measures to meet recommendations of the National Research Council's "Science and the National Park Service" report. It also explicitly addressed many Vail Agenda recommendations. Although initiated before the Vail conference, the Plan was intended, when released, to be a means of addressing those Vail recommendations that were identical to objectives within the plan. Eight teams and an interpretive committee were established to carry out the Plan. The teams originally involved 63 people, including 22 from parks, 18 from regions, 13 from Washington offices, 9 from Cooperative Park Study Units (CPSUs), and 1 from DSC; changes to team membership have since involved additional personnel.

Thirteen months after the original plan was released the National Biological Service (NBS) was established, effectively removing from NPS management a large portion of the organization addressed by the plan and many of the human resources being used to carry it out. Seventeen implementation team members, including team leaders, were transferred to the NBS. In addition, many Vail work groups have been established to address on a Servicewide basis some of the activities that the plan has been addressing for Natural Resources. Furthermore, many major tasks included in the plan have now been completed or largely completed, including the workload assessment (NR-MAP) and related planning for an initiative to increase resource management staffing, as well as the training component. Finally, proposed reorganization and reengineering of the Park Service would significantly alter both the organizations addressed and the context in which natural resource management activities are conducted.

In light of these circumstances, and the fact that three years that have elapsed since the original plan was approved, it is felt that the time is right to update and revise the plan. This revised plan is contained here in Appendix 3.



**DRAFT**

**REVISED STRATEGIC PLAN FOR IMPROVING THE NATURAL RESOURCE PROGRAM  
OF THE NATIONAL PARK SERVICE**

**Goal 1: IMPROVE NATURAL RESOURCE MANAGEMENT IN PARKS, REGIONS,  
AND THE WASHINGTON OFFICE.**

**Objective 1: DEVELOP MORE UNIFORM UNDERSTANDING OF NATURAL  
RESOURCE PROGRAM RESPONSIBILITIES THROUGHOUT THE  
NPS.**

**Action 1:** Integrate the Professional Development Program document with the Resource Careers Subcommittee actions and publish the completed portions of the document.

**Action 2:** Adopt a set of guiding principles for an effective natural resource management program in the NPS.

**Action 3:** Adopt a Core Program for natural resources at all levels that consists of the following:

- Leadership/facilitation
- Biological Sciences
- Physical Sciences
- Environmental Quality and Coordination
- Resource Information Management
- Geographic Information Systems
- Resource Management Planning and Coordination
- Research Coordination and Contract Management
- Specialized Policy/Regulatory Expertise
- Research Liaison/Science Advice

**Objective 2: INCREASE PROFESSIONAL CAPABILITIES IN NATURAL  
RESOURCE MANAGEMENT.**

**Action 1:** Implement the "Stewardship Today for Parks Tomorrow" funding and staffing strategy to double natural resource management staffing capabilities--increasing them to 50% of the NR-MAP identified optimum level--by the year 2000.

**Action 2:** Under the auspices of the Resource Careers Subcommittee, and using the Professional Development Program document as a starting point, identify professional standards for natural resource management and research personnel in the NPS.

**Action 3:** Under the auspices of the Resource Careers Subcommittee, and using the Professional Development Program



document as a starting point, define career opportunities and strategies for natural resource professional in the NPS.

**Objective 3:** DEVELOP NATURAL RESOURCE TRAINING AND EDUCATIONAL OPPORTUNITIES FOR NATURAL RESOURCE PERSONNEL.

**Action 1:** Under the auspices of the Training and Employee Development Task Force, and using the Professional Development Training Program as a starting point, develop a competency-based natural resource management training and development program for positions from entry level through top management.

**Action 2:** Continue implementation of the approved Natural Resource Management Training Program.

**Goal 2:** PROVIDE A SCIENTIFIC FOUNDATION FOR MANAGING NATURAL RESOURCES.

**Objective 1:** DEVELOP AND IMPLEMENT A PROGRAM OF NATURAL RESOURCE INVENTORY AND MONITORING IN PARKS.

**Action 1:** Implement the approved detailed strategy for conducting natural resource inventories in parks.

**Action 2:** Implement a natural resource monitoring and evaluation program in 11 identified prototype parks or clusters by the year 2000.

**Objective 2:** STRENGTHEN THE NATIONAL PARK SERVICE NATURAL RESOURCE RESEARCH PROGRAM.

**Action 1:** Implement the following specific recommendations of the report "Science and the National Parks II: Adapting to Change," also known as the Evison-Risser Report, that are specific to the NPS and not included in other action items:

- Retain Regional Chief Scientist or equivalent positions and fill them with credible scientists;

- Provide the Director access to top-level national stature scientists, such as a visiting scientist;

- Improve relationships with professional societies and incentives for employees to attend science conferences and be involved with professional societies;

- Develop and implement measures to demonstrate NPS receptiveness to outside research;

- Enhance effective collaboration between the NPS and NBS by 1) clearly defining respective roles; 2) using NBS expertise in NPS planning; and 3) establishing specific mechanisms for information exchange between NPS and NBS priority-setting for research and evaluation;

- Enhance physical and social science research in the NPS;

- Promote a legislative mandate for research in the NPS.

**Action 2:** Continue to encourage NBS to adopt recommendations of the report "Science and the National Parks II: Adapting to Change," also known as the Evison-Risser Report:

- establish separate programs in NBS to address national, ecosystem-level, and unit-specific needs;

- establish a competitive grants program in which NPS would share in the allocation decisions;

- establish positions in NBS with responsibility to act as liaisons to NPS; and

- fully recognize and demonstrate that the protection of park resources is a mission of NBS.

**Action 3:** Implement newly developed procedures to communicate NPS priority research needs to NBS, USGS, and other research providers.

**Action 4:** Convene a work group to assess the physical science research needs of the NPS and increase capabilities of NPS to acquire physical science research directly.

**Action 5:** Convene a work group to assess the social science research needs of the NPS and increase capabilities of NPS to acquire social science research directly.

**Objective 3:** ESTABLISH A PROFESSIONAL QUALITY CONTROL PROCESS FOR THE NATURAL RESOURCE PROGRAM OF THE NATIONAL PARK SERVICE.

**Action 1:** Assess status and effectiveness of systems and procedures for ensuring the transfer of scientific information to natural resource managers and decision makers and identify methods to encourage managers to use science; develop and implement new standards and procedures where needed.

**Action 2:** Develop a series of technical handbooks or manuals as a follow-up to NPS-77 to provide detailed guidance on natural resource management practices.

**Action 3:** Develop and implement measurable program standards and a process to evaluate National Park Service natural resource programs, including the effectiveness of research provided by outside agencies.

**Goal 3: MAXIMIZE UTILITY OF INFORMATION THROUGH MODERN TECHNOLOGY FOR USE IN PARK STEWARDSHIP.**

**Objective 1:** CREATE A GROUP OF INFORMATION MANAGEMENT PROFESSIONALS IN THE NPS WHO ARE FULLY DEDICATED TO AND WORKING ON PARK NATURAL RESOURCE/SCIENCE INFORMATION MANAGEMENT, INCLUDING GIS.

**Action 1:** Consolidate recommendations from NR-MAP, the Information Resource Management Report (dated 4/94), and recommendations of the GIS Coordinators (GIS in the Restructured NPS, 9/29/94 memo to ADNR) with needs defined by park clusters to recommend a Servicewide Information Management Program for NPS natural resource management and research.

**Action 2:** Implement the approved Information Management Program (including program responsibilities, organization and staffing, and associated funding), in part through the new Monitoring and Natural Resource Information Division of the Natural Resource Program Support Center.

**Objective 2:** INTEGRATE AND COORDINATE SCIENTIFIC DATA BASES FOR PARK STEWARDSHIP AND PROGRAM MANAGEMENT.

**Action 1:** Identify needs, sources, and uses of data bases for planning, natural resource management, and research throughout the Service.

**Action 2:** Develop data formats to facilitate access, transfer and linkage with other data bases.

**Action 3:** Identify appropriate data management technologies, techniques, and procedures for use by the NPS, including metadata and data access requirements.

**Action 4:** Develop data management procedures and methods to facilitate integration of scientific data bases at all organizational levels, and with other organizations that are sources of data.

**Objective 3:** ENSURE PARK NATURAL RESOURCE MANAGERS/SCIENTISTS ARE CONNECTED VIA COMPUTERS (HARDWARE, SOFTWARE, AND COMMUNICATION LINES) TO NETWORKS AND REPOSITORIES OF SCIENTIFIC INFORMATION.

**Action 1:** Query park natural resource managers/scientists to determine their information needs.

**Action 2:** Establish fully-interactive INTERNET connection for every park natural resource manager/scientist who is determined to need information accessible through INTERNET.

**Action 3:** Evaluate commercial services and delivery systems to provide needed information to parks.

**Action 4:** Acquire and provide information delivery systems.

**Action 5:** Provide educational opportunities to park natural resource managers/scientists to maximize their use of the NPS Information Management System.

**Action 6:** Establish a natural resource management/science bulletin board on electronic mail.

**Goal 4:** PROMOTE A BETTER UNDERSTANDING OF AND SUPPORT FOR THE NATIONAL PARK SERVICE NATURAL RESOURCE MANAGEMENT AND RESEARCH PROGRAM.

**Objective 1:** DEVELOP A REPORTING SYSTEM FOR DISSEMINATING INFORMATION CONCERNING PROGRAM ACTIVITIES AND THE CURRENT CONDITION OF NATURAL RESOURCES.

**Action 1:** Develop guidelines for a park-generated State-of-the-Park-Resources Report, to be tailored to individual park needs, and a template for a Systemwide Report for which data can be generated through Servicewide programs. Use parks receiving prototype monitoring funding to assist in development of models and guidelines.

**Action 2:** Develop procedures to integrate the State-of-the-Park-Resources Report into resource management plan updates, applying first to parks with the most currently available scientifically credible information (e.g., parks benefitting from the inventory and monitoring program).

**Action 3:** Work with Interpretation at the park level to develop a one-page brochure from the State-of-the-Park-Resources Report for distribution to park visitors.

**Action 4:** Develop triennial cluster and national State-of-the-Park-Resources Reports based on an analysis and synthesis of park-level reports.

**Action 5:** Implement annual accomplishments report to track park base funds and other resources (e.g., FTEs, contributions from other agencies) devoted to natural resource management (in the broad sense) pursuant to the RMP and NR-MAP. This report should provide a basis for program evaluation, sharing of information, and planning for subsequent cooperation, for internal and external audiences at all levels.

**Objective 2:** HIGHLIGHT NATURAL RESOURCE PROGRAM ISSUES BY SUPPORTING INTERPRETIVE PROGRAMS, DISPLAYS, AND ENVIRONMENTAL EDUCATION EFFORTS.

**Action 1:** Work with Interpretation at park, cluster, and Washington Office levels to assure inclusion of natural resource program issues in all interpretive planning documents (eg., Interpretive Prospectuses) and to develop interpretive programs, displays, and materials addressing natural resource issues.

**Action 2:** Work with the Contracting Division and researchers to add a requirement in every research study for a deliverable that summarizes the results of the study in a nontechnical format suitable for presentation to the public, including graphics, visual media, slides, etc.

**Action 3:** Encourage inclusion of funding in all resource-related projects (e.g., NRPP projects, highway projects) for a communications product.

**Objective 3:** DEVELOP UNDERSTANDING, COOPERATION, AND PARTNERSHIP WITH PUBLIC AND PRIVATE ORGANIZATIONS AND INDIVIDUALS.

**Action 1:** NRM programs, particularly at large parks, clusters, and higher levels, should take advantage of the talents of publicists/marketers for popularizing NRM issues for the general public, non-visitors, casual visitors, and neighbors. These talents can be obtained from a) an NRM FTE, b) contracted services, c) NPS public affairs office, or d) NPS employees encouraged through incentives to write credible popular publications.

**Objective 4:** FOSTER UNDERSTANDING, COMMUNICATIONS, AND MUTUAL RESPECT AMONG NRM DIVISION/DIRECTORATE AND OTHER NPS DIVISIONS/DIRECTORATE.

**Action 1:** Identify and evaluate existing mechanisms for communication and cooperation. Develop/institutionalize successful programs at all levels.

**Action 2:** Work to schedule symposia/meetings/training to encourage interactions among disciplines (e.g., joint sessions; George Wright Society - Ranger Rendezvous - Association of National Park Maintenance Employees; NPS plus partner conferences).

**Action 3:** In conjunction with professionalization and training, produce a video on stewardship of park resources. Depict roles of all employees (including central offices) in stewardship of natural resources. Emphasis on sound management decisions through analysis of information and adaptive management. Good opportunity to plug interdisciplinary approaches, resource management plans, and NEPA.

**Objective 5:** EXPAND OPPORTUNITIES FOR COMMUNICATION CONCERNING NRM PROGRAM ISSUES WITH OTHER PARTS OF THE DEPARTMENT OF THE INTERIOR, WITH OMB, AND WITH CONGRESSIONAL MEMBERS AND STAFF.

**Action 1:** Utilize proposed Desk Officers at the WASO and Field Directorate levels to schedule additional field experiences and tours; including knowledgeable NRM personnel in briefings; and establishing more legislative details open to NRM personnel.

**Action 2:** Identify and evaluate existing mechanisms for communication and cooperation. Develop/institutionalize successful programs at all levels.



**APPENDIX 4**

**NPS NATURAL RESOURCE STEWARDSHIP PROGRAM FUNCTIONS**

"Natural Resource Management" has been a general, undefined, and evolving term within NPS and in other agencies. Reliance on this term has resulted in confusion to people within and outside the NPS as to what NPS natural resource managers actually do. This table provides a summary of the functions of NPS natural resource managers and others involved in natural resource stewardship.

<b>NPS Program Functions</b>	<b>NATURAL RESOURCE MANAGEMENT</b>	<b>RESEARCH (NBS, USGS, EPA Universities, etc.)</b>	<b>OPERATIONS (Rangers, Interpretation &amp; Maintenance)</b>
<b>KNOW RESOURCE CONDITION AND PROCESSES</b>	Inventory, survey, & monitor resources, modify protocols, and analyze results	Conduct inventories, design monitoring protocols, and analyze results	Identify emergencies, disseminate information and coordinate field actions
<b>MAINTAIN ECOSYSTEMS</b>	Apply and adapt strategies and techniques (e.g., manage alien species, apply and modify fire prescriptions, etc.)	Develop strategies and techniques (e.g., design fire prescriptions, manage alien species, etc.)	Coordinate field operations, maintain facilities (e.g., trails, wastewater treatment plants, etc.)
<b>RESTORE RESOURCES AND ECOSYSTEMS</b>	Apply and adapt strategies and techniques (e.g., manage alien species, revegetate disturbed areas, etc.)	Develop strategies and techniques (e.g., to restore watersheds, to design fishery replenishment zones, etc.)	Stabilize emergency situations, interpret issues, design facilities
<b>PROTECT RESOURCES AND ECOSYSTEMS</b>	Assure compliance with regulatory programs and policies (e.g., NEPA, CWA, CAA, etc.); planning; external coordination	Develop ecosystem understanding and mitigation strategies and techniques	Develop and enforce regulations, conduct emergency triage, interpret threats to resources

## APPENDIX 5

### CORE NATURAL RESOURCE MANAGEMENT PROGRAM ELEMENTS

Organizational Level  Function	Cluster (Parks)	Field Director's Office	National Natural Resource Center	WASO
Leadership and Facilitation	*	*	*	*
Biological Sciences	*		*	
Physical Sciences	*		*	
Environmental Coordination	*			*
Resource Information Management	*		*	
GIS	*		*	
Resource Management Planning	*			*
Research Coordination and Contracting	*			
Research Liaison and Science Advice	*	*		*
Specialized Policy and Regulatory Expertise, Multi-Cluster		*		*
<b>Recommended Minimum FTE's</b>	11	2	TBD	TBD

\* indicates function should be performed at that organization level.



## **APPENDIX 6**

### **References**

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