A Strategic Plan
for
Improving the Natural Resource Program
of the
National Park Service

I. Introduction

The 358 units of the National Park System represent a diverse collection of lands and resources, among which are many of the finest examples of natural areas in the country. The National Park Service must remain one of the world's premier agencies in managing natural resources if it is to successfully fulfill its mandate to manage and preserve these resources in perpetuity.

It is an immense challenge to preserve park natural resources in the face of increasing population growth and attendant land development. The task is complicated even further by predicted global change effects, increasing air and water pollution, increasing visitation and recreational use, and continued incursions by non-native species. Protection alone is not enough. Under these conditions, the National Park Service can only hope to successfully meet its objectives through a natural resource program that is scientifically based, professionally staffed, adequately funded, and supported by a long-term commitment from park

management and the American public.

In addition to meeting the challenges arising from the threats listed above, the Service is also the steward of many of the most extensive natural areas in the country for which there is some hope of long-term ecosystem protection. Many have called these areas the greatest natural laboratories on earth. As such, the value of these areas to society is immense and ever increasing. They are among the last remaining areas retaining enough naturalness to reasonably serve as the ecological baselines against which scientists can measure the impacts of human activities in the biosphere. Parks, in effect, become our country's "miners canaries" in the environment. Long-term data sets gathered in parks through basic research and ecological monitoring programs can become part of the Service's greatest contributions to society.

Clearly, given its enormous responsibilities, the Service cannot settle for anything less than the best possible research and resource management program. Furthermore, the research program must include basic, long-term studies as well as problem oriented short-term research. However, the ability of the NPS to fully accomplish these resource preservation functions is not yet adequately developed. Significant improvements and advancements in the agency's natural resource program structure, commitment, tools, and techniques are required.

This document outlines a plan of action for improving the National Park Service's natural resource program. This plan is designed to make significant improvements in the ability of the NPS to manage resources, train its professional staff, and respond to natural resource issues that arise. As these actions are implemented, management and public support for the natural resource program will be increased, long-term monitoring will be institutionalized, and the program will become more professional and effective. Also importantly, park and regional base funding for preserving natural resources will be increased to levels that reflect identified needs and NPS data management abilities will be modernized. Furthermore, employees will be better trained and more professionally qualified and career ladders will be clarified and strengthened.

The successful accomplishment of the goals, objectives, and actions outlined in this plan will better prepare the National Park Service to face the significant natural resource management challenges of the future.

II. The Natural Resource Program

There is a strong interdependence among natural and cultural resource management, research, interpretation, maintenance, planning, and law enforcement in the National Park Service. The activities of one function often have significant impacts on the others. However, because of the complexity of the issues at hand,

the focus of this document must be limited to the areas of natural resource management and research. That notwithstanding, the actual implementation of any actions proposed in this plan will be carefully coordinated across all functions and at all levels of the organization to ensure maximum effectiveness.

The definition of the natural resource program which guided the preparation of this document was a modified version of the expanded definition contained in NPS-77. The working definition, listed below, encompassed the four main tasks of the natural resource program, which are to know, restore, maintain, and protect the natural resources of the National Park System, including ecosystem functioning and dynamics.

> The natural resource program is the function by which the NPS strives to understand natural processes and human induced effects; mitigate any potential or realized effects; monitor for ecosystem trends; and protect existing ecosystems from further human induced effects.

As shown in Figure 1, the NPS natural resource program consists, in broad terms, of two synergistic components: research and natural resource management. In some cases, NPS organizational units reflect the desired close relationship between these two components by combining them under one division. In other cases, they are managed as distinct but coordinated functions. In many

parks, the research component is fulfilled by a Cooperative Park Studies Unit at a nearby university rather than by staff stationed in the park. Furthermore, in practice, there is not always a clear distinction between what is research and what is resource management. Resource monitoring, for example, contains elements of research even though it is largely a resource management function. Regardless of how these two functions are covered in a given unit, it should be clear that *one component* without the other results in a program that is incomplete.

In addition to the two broad, interrelated components of research and resource management, there are also functional responsibilities at three organizational levels, namely, the Washington Office (WASO), the 10 regional offices, and the 358 park units. The natural resource program will also be incomplete without a strong and balanced execution of assigned responsibilities at each of the three levels of the organization. As the diagram shows in necessarily oversimplified fashion, WASO responsibilities are mostly in the resource policy formulation and broad programmatic research areas. Regional offices have nearly equal responsibilities in the policy and technical support areas. The parks are almost exclusively involved with the tasks of basic and problem oriented research, monitoring, and hands-on resource management.

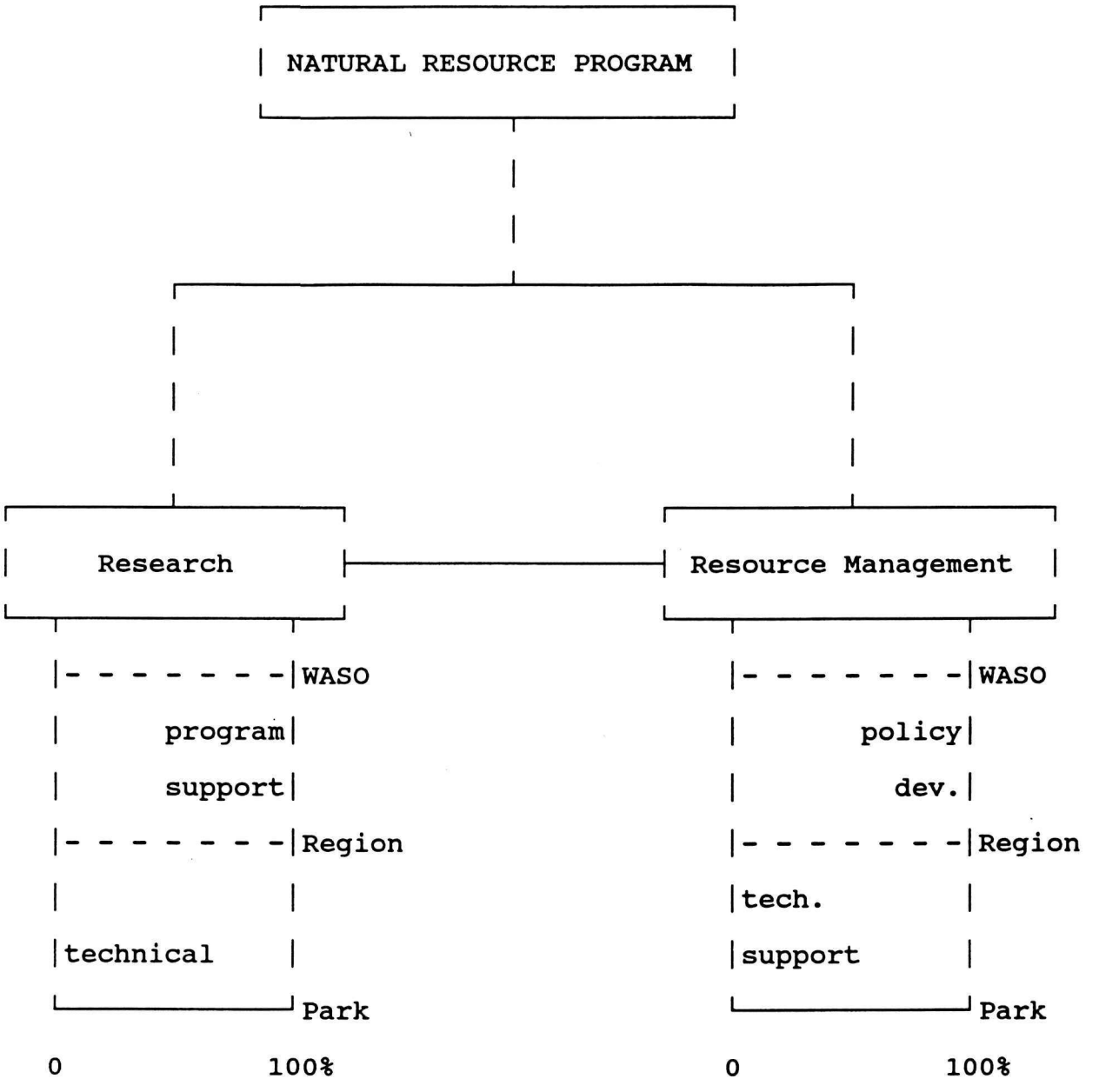

Figure 1: Diagram showing the two basic components of the NPS Natural Resource Program and the primary responsibilities at each of the three levels of the organization.

III. Implementing the Plan

Listed in the pages that follow are four goals and related objectives and tasks. The four goals are as follows, 1) improve natural resource management and research in the parks, regions and WASO; 2) provide a scientific foundation for managing natural resources; 3) increase the usefulness of natural resource data for managing parks; and 4) promote an effective understanding of and support for the NPS natural resource management and research program. Under each goal are several objectives. Under each objective are several items that represent the specific actions that will be taken during the execution of this plan. These steps must each be accomplished if we are to satisfy our agency mandate and fulfill public expectations of our stewardship.

1. Improve Natural Resource Management and Research in the Parks, Regions, and WASO.

A. Identify natural resource program responsibilities.

1. Prepare role and function statements for resource managers and research scientists at the park, regional, and national levels.

2. Define natural resource management and protection responsibilities for line managers at the park, regional, and national levels.

3. Develop performance standard elements for line managers and resource professionals that reflect necessary accountability for their resource stewardship as identified in the role and function statements.

B. Develop organization, staffing, and budget.

1. Develop a budget initiative that is sufficient to address resource issues and needs at the park, region, and WASO levels.

2. Develop organizational and staffing plan for resource management and research at the various organizational levels.

3. Identify appropriate professional qualifications for natural resource management and research personnel in the NPS.

4. Develop clearly defined career ladders for natural resource professionals in the NPS.

5. Develop appropriate organizational structures for resource management and research to ensure reasonable consistency among WASO, regions, and parks wherever possible.

2. Provide a Scientific Foundation for Managing Natural Resources.

A. Identify natural resource issues and needs.

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

2. Develop revised and improved Resource Management Plans for each park using the March 1989 Servicewide instructions by December 1993.

3. Update the Servicewide Natural Resources Assessment and Action Program Report in standard, computerized format by December 1994.

4. Complete development of a computer program that meets Resource Management Plan data needs at park, regional, and WASO levels.

B. Develop and implement a program of natural resource inventories in parks.

1. Assess the current state of natural resource

inventory information in parks.

2. Complete and publish a guideline for conducting natural resource inventories in parks (NPS-75).

3. Develop and implement a strategy for conducting natural resource inventories in parks.

C. Develop and implement NPS natural resource monitoring and evaluation program.

1. Develop a rationale and strategy for a natural resource monitoring and evaluation program.

2. Implement a natural resource monitoring and evaluation program in at least eight prototype parks by 1995.

D. Develop adequate training and educational opportunities for natural resource personnel.

1. Identify, develop, and establish options for expanded professional development opportunities for NPS natural resource personnel and line managers.

2. Develop program to better use existing personnel authorities to recruit underrepresented minorities for resource management and research careers in the NPS.

3. Reevaluate resource management trainee program and recommend needed adjustments.

E. Strengthen the NPS natural resource research program.

1. Develop and execute an implementation plan based on the accepted recommendations from the National Academy of Science's evaluation of the NPS research program.

2. Evaluate the adequacy of the network of Cooperative Park Study Units to meet the identified natural resource management, research, and training needs of the Service.

3. Establish a professional quality control process to assure adequacy and standardization in research proposal formats and expectations in the NPS.

4. Develop a required peer review process for evaluating research proposals from all researchers

seeking NPS funding.

F. Establish a professional quality control process for the natural resource program of the NPS.

1. Assess status of systems and procedures for ensuring the transfer of scientific information to natural resource managers and decision makers.

2. Implement new standards and procedures where needed to improve the effectiveness of transfer of scientific information to natural resource managers and decision makers.

3. Develop and implement a peer review process for manuscripts that result from NPS research.

4. Review and strengthen the research grade evaluation process to ensure that managers are provided with top quality research results.

5. Develop and implement an improved operations evaluation process that adequately addresses NPS research and resource management programs in parks, CPSUs, regions, and WASO.

G. Strengthen the natural resource publication program.

1. Require publication of natural resource data in NPS reports and concurrent publication of hypothesis-based research results in the open, peer-reviewed literature.

2. Provide needed resources at all appropriate organizational levels to meet editorial workload.

3. Analyze and determine expected workload for NPS science publications program over next 5 years.

3. Maximize Utility of Natural Resource Data in Selecting, Planning, and Managing Parks.

A. Integrate natural resource data bases for resource and program management.

1. Identify the needs, sources (including other agency data bases), and uses of data bases for planning, natural resource management, and research activities at the park, region, and WASO levels.

2. Identify actions (including coordinated opportunities with other agencies) needed to provide necessary data in formats which improve their usefulness.

3. Prepare and distribute handbooks, procedures, standards, etc., on data base construction activities.

4. Evaluate data management approaches to identify appropriate data management technology, techniques, and procedures for NPS use.

5. Develop data management procedures to integrate

natural resource data bases at all organizational levels.

6. Establish data management standards for inclusion in scopes-of-work or research designs to ensure the development of consistent and useable information.

7. Develop budget initiatives to provide resources necessary to satisfy data management needs of NPS (hardware, software, and staff).

B. Develop adequate capability to use information management technology for managing natural resource data.

1. Provide technical direction, expertise, coordination, consultation, and guidance on the selection, installation, and use of software and hardware.

2. Develop models and applications to help understand and assess alternative solutions for park resource management issues.

3. Provide methods to facilitate data transfer data among all natural resource users in NPS.

C. Develop minimum standards for collecting natural resource data.

1. Assess the common data collection needs and activities in the NPS.

2. Develop a series of natural resource data collection handbooks on standard operating procedures for selected resource topics.

3. Develop instructional materials on data collection techniques.

4. Promote a Better Understanding of and Support for the NPS Natural Resource Management and Research Program.

A. Develop a reporting system for program activities and natural resource conditions.

1. Develop template options for a State-of-the-Park report as a part of the Inventory and Monitoring program.

2. Develop procedures to integrate the State-of-the-Park report into Resource Management Plan updates, applying first to target parks and Inventory and Monitoring Program funded parks.

3. Work with Interpretation at the park level to develop a one page brochure from the State-of-the-Park report for distribution to park visitors.

4. Develop triennial regional and national "State-of-the-Parks" reports based on an analysis and synthesis of park-level reports.

B. Support interpretive programs and displays highlighting natural resources.

1. Work with Interpretation to develop interpretive programs addressing natural resource issues.

2. Biennially produce an educational video on major resource issues facing many parks in the System.

3. Investigate the status of National Park magazine proposal and opportunities to utilize such a magazine and other popular "external" publications to inform the public about natural resource issues.

C. Develop adequate understanding, cooperation, and partnership with public and private organizations and individuals.

1. Develop adequate WASO, regional, and park funding and staffing capabilities to establish and coordinate partnerships.

2. Develop procedures to implement FY 92 challenge cost-share program in a manner that facilitates accomplishing park research and resource management objectives.