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A Project to Synthesize and Interpret Existing Natural Resource Information and Studies to Better Inform Park Planning in Three Northeast Region Units of the National Park System

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Introduction and purpose

The National Park Service (NPS) needs planning information that is relevant, understandable, usable, and transferable for general management planning (GMP) and park resource planning efforts and products. Statements supporting that need are found in two significant places.

The original Natural Resource Challenge budget strategy called for a new planning framework:

In the past, planning has often proceeded without adequate information on resources, resulting in siting facilities in a manner not sensitive to resource impacts. A new planning framework needs to be developed that ensures that available *resource information is synthesized and interpreted for planning* purposes, with information gaps and their significance analyzed.

The project also responds to the National Parks Omnibus Management Act, P.L. 105-391 and NPS Management Policies 2001, section 2.3.1.5:

Decisions documented in GMPs and other planning products ... will be based on current scientific and scholarly understanding of park ecosystems and cultural context.... The collection and analysis of information about park resources will be a continuous process that will help ensure that decisions are consistent with park purposes.

This project is centered at three complex Northeast Region (NER) parks, Shenandoah National Park, Fire Island National Seashore, and New River Gorge National River. Each of these three parks is anticipating the start of the GMP process. The project goal is to make critical natural resource information available in a format that informs the process in an understandable and useful fashion. New River Gorge has now initiated its GMP, Fire Island is scheduled for 2006 pending funding, and Shenandoah will be scheduled at a later date. Each park's GMP, five-year strategic plan, and annual action plan will benefit by more fully incorporating existing natural resource data into the planning process. Facility siting and planning will respond better to natural resource-driven constraints.

This project is intended to serve as a pilot for similar efforts throughout the NPS. Adequate and usable information is vital if the NPS is to base its management decisions on a "current scientific and scholarly understanding of park ecosystems."

Shenandoah, Fire Island, and New River Gorge have been the subjects of numerous natural resource studies and data collection efforts. The NPS Inventory and Monitoring (I&M) program is well underway in these parks and this project presents itself as logical use of I&M program outputs. All have highly visible resource issues that will become a focus of their GMP efforts (e.g., air quality at Shenandoah, shoreline erosion at Fire Island, landscape scale forest management at New River Gorge). Unfortunately, the information is often focused on individual resource types and has not been synthesized to provide a collective description of park natural resource characteristics and issues. Park staff turnover has reduced institutional knowledge of the scale and content of past studies and data collection efforts. Past research is a matter of historical record and copies of most documents are often scattered. Information requirements are often overlooked or unknown early in the planning process because of a lack of knowledge. In many cases potentially usable data have not been systematically identified and mapped using geographic information systems (GIS). Without GIS the information is not readily available for use in general management or facilities planning.

This project compliments ongoing NER efforts to assure that cultural resource information is synthesized and interpreted for planning.

Project objectives

For each of the three parks (Shenandoah, Fire Island, New River Gorge) the project objectives are to:

- Identify and review existing natural resource studies and data sets using NRBIB and other appropriate sources;
- Analyze, consolidate, and synthesize this information in a manner that portrays the historical and existing park ecosystem(s) and identifies the natural resource characteristics and conditions in the context of each park's purpose and mission;
- Identify issues and opportunities that should be addressed during the GMP process;
- Identify critical gaps in the knowledge base that must be addressed prior to initiating the planning process;
- Identify and map (using GIS) usable natural resource data to better inform the GMP process;
- Present the results of this work to park planners and managers in a way that is understandable and usable in the park planning and management process;
- Identify a cadre of knowledgeable natural resource professionals who would continue in an advisory role during each park's planning process;
- Identify a cadre of knowledgeable natural resource professionals and park planners who may assist similar projects at other units of the NPS;
- Evaluate the methodology undertaken to complete the project, identify any potential improvements, and assess the applicability of the project for use in other units of the NPS; and,
- Prepare a paper outlining the results of this project and its potential for servicewide application.

Project methodology

NER's two senior scientists (John Karish and Mary Foley), in cooperation with park managers and natural resources staff, have selected knowledgeable natural resource investigators from a variety of disciplines to compile, analyze, and synthesize existing natural resource-related studies and data for each of the three parks. Each team will have a team leader. The teams will be drawn from the Cooperative Ecosystem Study Units (CESUs) that were established to provide research, education, and technical assistance to the NPS and other federal land managers. While the team members may vary in number and duration during the course of project, the overall effort is estimated at one full-time-equivalent position (FTE) per park. It is estimated that the process of compilation and synthesis will occupy a six-month period for each park.

The preponderance of the data will be park specific. NPS I&M Level I data, basic hydrology, geology and topography, park-based research, and information concerning broader ecological context of the park will be compiled and synthesized. NPS I&M Level I data sets include but are not limited to vegetation and wetlands, reptiles, amphibians, mammals, birds, threatened and endangered plants and animals, and air and water quality. Available threatened and endangered plant and animal habitat data will also be utilized.

In consultation with park and NER central office planning staff, park resources staff, and the project teams, the field technical support centers for GIS at the University of Rhode Island and North Carolina State University GIS staff will provide assistance. They have assisted the team in identifying natural resource information that can be transferred to maps useful in the planning process and for other relevant park purposes. GIS staffs have also consulted with other federal, state, and local agencies to determine if their available GIS data layers contain information (e.g., state-endangered or -threatened animal species, point and non-point sources of pollution, etc.) that inform the GMP process. Identified data layers were transferred to maps by GIS utilizing the services provided by the two field technical support centers. The workload associated with the consultation is estimated at 0.25 FTE per park for the duration of the project.

Park and NER planning and National Environmental Policy Act (NEPA) staff briefed the resource assessment teams on the GMP process (Director's Order #2) at the commencement of the project. This allowed assessment team members to become familiar with the intent and structure of plans and the types, combinations, and levels of information that would be most valuable in undertaking the respective GMPs. Park and NER planning and NEPA staff have met with the team at mid-course to assist in evaluating the usefulness of the data identified to date, and to provide guidance on how they may be best articulated for planning purposes. At the conclusion of the project there will be a seminar to conduct a project evaluation and assessment of transferability.

Project budget

The budget includes two NPS funds sources and in-kind contributions: natural resource NRPP funds and GMP park planning funds. The funds from the two sources were provided to pay for investigators, GIS costs, and project overhead. They were divided more or less equally over the three parks. Shenandoah, Fire Island, New River Gorge, and NER

planning and natural resource staff have provided in-kind staff contributions and miscellaneous expenses. Terry Moore, NER chief of park planning and special studies, has provided the coordination for the overall project. Total funds received for each of fiscal year 2002 and FY2003 was \$66,000 from NRPP and \$66,000 from the GMP 409 account. The total amount of project funds provided was \$264,000.

Project evaluation and assessment of transferability

The discussion today initiates the evaluation of this project. The project proposal stated that NER would present this project at a symposium. For that purpose we had this very conference in mind when the project started. The symposium would involve the NER participants, team members, and interested NPS personnel from the Washington Office and other regions to describe the methodology, discuss the products, and share the joint evaluation noted above.

Upon completion of the reporting phase, NER and park resource, planning, and GIS staff will meet with the teams to jointly evaluate the project's success, changes that should be made in the methodology, and any additional factors that should be considered in similar undertakings.