

PROPOSED ORGANIZATION
FOR A LONG-TERM MONITORING AND RESEARCH PROGRAM
FOR THE COLORADO RIVER IN GRAND CANYON

Prepared by the National Park Service
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INTRODUCTION

The completion of the Glen Canyon Dam Environmental Impact Statement (GCD-EIS) process in 1994 will result in a decision by the Secretary of the Interior on the operation of Glen Canyon Dam. It is intended that decision will initiate a process of "adaptive management," whereby the effects of dam operations on downstream resources will be assessed scientifically, and the results of those resource assessments will form the basis for future modifications in dam operations. Whereas the technical design for the long-term monitoring program is included as an appendix in the Draft GCD-EIS, there is no proposed institutional arrangement for implementing long-term monitoring and research in the Grand Canyon and Glen Canyon. The purpose of this paper is to propose an organization to complete the design and conduct long-term monitoring and research of natural and cultural resources along the Colorado River in the Grand Canyon and Glen Canyon.

ORGANIZATION PRINCIPLES

Several principles guide the design of an organization to develop and utilize scientific information about the response of downstream resources to dam operations.

1. Monitoring and research programs should be designed by research organizations in direct response to the needs of management agencies.
2. A structure is required to provide an interface between the information needs of the management agencies and the programs of the research organizations, and to coordinate and communicate management agency needs to research organizations.
3. A forum is required for the transfer of scientific investigations to the management agencies, and to develop consensus on management response to scientific information on river resource conditions, trends, and processes.
4. Independent scientific review should be provided for all research and monitoring programs in the Grand Canyon and Glen Canyon.

ORGANIZATION PROPOSAL

The organization proposed here considers the National Park Service, U.S. Fish and Wildlife Service, Bureau of Reclamation, Western Area Power Administration, Bureau of Indian Affairs, Arizona Department of Game and Fish, Hopi Tribe, Hualapai Tribe, Navajo Nation, Pueblo of Zuni, San Juan Southern Paiute Tribe and the Southern San Juan Paiute Consortium as the principle agencies with management interests and/or management responsibilities related to Colorado River flows through the Grand Canyon. These agencies are the "customers" for long-term monitoring and research. The U.S. Geological Survey (USGS) is identified as the preeminent agency in the Department of Interior responsible for conducting water and sediment scientific programs. The National Biological Survey (NBS) is identified as the preeminent agency in the Department of Interior for conducting biological research. Ecosystem monitoring depends upon the integration of the physical and biological sciences.

The following organizational elements are proposed.

1. Grand Canyon Colorado River Research Center: A Department of Interior joint USGS - NBS Grand Canyon Colorado River Research Center should be established in Flagstaff, Arizona. The center would be responsible for designing and managing all scientific natural resource monitoring and research programs on the Colorado River in the Grand Canyon and Glen Canyon, and would be responsible for the management of all scientific data collected as part of those programs. Grand Canyon National Park would remain responsible for conducting cultural resource monitoring in coordination with the Research Center. The Research Center would be staffed with research administrators, scientists and technicians. A Research Center Director would be appointed by the Secretary of Interior. The center would emphasize monitoring and research design, integration and program management. Implementation of monitoring and research would not need to be conducted solely in-house. In fact, cooperative arrangements with other agencies, universities, and tribes are encouraged, but all programs would be coordinated through this organization.
2. Department of Interior Technical Group: A Department of Interior Grand Canyon Colorado River Technical Group should be established and chaired by the Park Superintendent, Grand Canyon National Park. The Technical Group would be comprised of technical representatives of Interior Department management agencies and the Research Center, making it similar in structure - though slightly more narrow in representation - to the GCD-EIS Technical Team. The Technical Group would be responsible for assuring that both resource management and researcher technical perspectives were factored into the identification of monitoring and research needs. The Technical Group would advise the Executive Committee on technical matters associated with its role and function and would solicit and approve the annual program plans and budgets of the Research Center. In addition, the Technical Group would serve as primary audience for the transfer of technical investigations conducted by the Research Center. Most importantly, the Technical Group would

serve as a forum for interaction, communication and consensus-building regarding the implications to management of monitoring and research results, and would be responsible for forwarding technical management recommendations to the Executive Committee. The Technical Group will assure that all other organizations, tribe and agencies with an interest in the Adaptive Management process have an opportunity for input into the process.

3. Management Agency Executive Committee: A Grand Canyon Colorado River Management Agency Executive Committee should be established by the Secretary of Interior and chaired by the Regional Director, Upper Colorado Region, Bureau of Reclamation. The Executive Committee would be comprised of one management representative from each management agency, making it similar in structure to the GCD-EIS Cooperating Agencies Committee. The primary role of the Executive Committee will be to oversee technical and policy deliberations related to changes in operations of Glen Canyon Dam, and to forward recommendations on dam operations to the Secretary. As part of this responsibility, the Executive Committee will be responsible for insuring that appropriate technical information on downstream resource effects is available from the Technical Group and Research Center, and that information related to water, power and economic concerns is available to the decision-making process. In addition, the Executive Committee would be charged with resolving policy conflicts among the cooperating management agencies. As part of this process the Executive Committee would conduct informal and formal consultation with all interested parties.

4. Scientific Review Panel: A Scientific Review Panel should be established by the Secretary to provide independent review and oversight of monitoring and research programs developed and administered by the Research Center. The Review Panel would be responsible for making recommendations to the Executive Committee and Research Center regarding monitoring and research priorities, research integration, and research management.

ORGANIZATION FUNDING

The Grand Canyon Protection Act (Title XVIII, P.L. 102-575) authorizes the Secretary of the Interior to use funds received from the sale of electric power and energy from the Colorado River Storage Project (power revenues) to fulfill his obligation to establish and implement long-term monitoring programs and activities that will insure that Glen Canyon Dam is operated (Section 1805) in such a manner as to protect, mitigate adverse impacts to, and improve the values for which Grand Canyon National Park and Glen Canyon National Recreation Area were established, including but not limited to natural and cultural resources and visitor use (Section 1802).

This organizational proposal recommends that the Secretary exercise this authority by

directing the obligation of Colorado River Storage Project power revenues from the Bureau of Reclamation to the Grand Canyon Colorado River Research Center for the express purpose and sole use of administering an annual research and long-term monitoring program.

The obligation of funds would occur on an annual cycle in such amounts as deemed appropriate by the Secretary in response to a project budget proposal by the Research Center, with the approval of the Technical Group.

This organizational proposal assumes USGS and NBS will contribute such personnel, facilities, and hardware necessary to establish, maintain and support the ongoing nature of the Colorado River Research Center - as part of their respective missions. The use of obligated power revenues would be confined to a specific program of monitoring and research to meet the mandates of the Grand Canyon Protection Act and the Record of Decision on the Operation of Glen Canyon Dam Environmental Impact Statement.

ORGANIZATION RATIONALE

Capitalizing on Agency Strengths and Mission

The management agencies are staffed with professional natural and cultural resource management specialists, and are experienced in the application of scientific knowledge to the resolution of natural resource management issues. These agencies specialize in the use of environmental compliance, regulatory, legal, and operational programs to achieve scientific resource management objectives. This organization proposal recognizes the capabilities and responsibilities of the management agencies to identify information needs, to administer the acquisition of those needs, and to utilize scientific information to develop management objectives and design appropriate management actions.

Distinct from resource management, the conduct of research is an endeavor subjected to established protocols of scientific method and objectivity. The implementation of research and long-term monitoring requires not only the capability to administer and conduct research, but experience in the design and management of programs of broad scientific objectives, comprised of numerous integrated scientific studies. The USGS and NBS are the only organizations in the Department of Interior whose primary mission is to conduct scientific research and monitoring. In establishing the NBS in 1993, the Secretary of Interior made clear his intent to separate the conduct of research from the advocacy roles of the management agencies. He further made it clear that the Department's research agencies were in business to meet the monitoring and research needs of the management agencies. This proposal is consistent with that model.

Establishing a Consultant - Customer Relationship

The Administration's recently-released report on "Reinventing Government" relies heavily on Federal programs establishing strong "customer" orientations. This proposal clearly identifies a service provider (Research Center) and its customers (management agencies). It further empowers the customer to define its needs and expectations and to provide payment (funding) to the provider in exchange for successfully providing the expected services. This organizational arrangement establishes the basic elements of program accountability, necessitates interagency communication, and makes strong interagency partnerships essential to the development and application of scientific information for river management.

Building on Existing Infrastructure

By relying on the Department's research agencies to design and manage long-term monitoring and research on the Colorado River in the Grand Canyon, the presence of adequate research infrastructure is assured. Specifically, the Research Center requires not only researcher expertise, but established capability in research program management. This management infrastructure should include protocols and administrative support for program design and review, data management, quality assurance and quality control, laboratory analyses, reporting/publications and peer review. The USGS, in particular, has established policies, protocols and an adequate administrative support system to insure the credibility of its programs and products.

Preserving Strengths of the Cooperative EIS Process

This proposal attempts to build upon the successful arrangement developed during the GCD-EIS, whereby the management agencies cooperated in applying scientific information to the analysis and recommendation of management alternatives. Specifically, the GCD-EIS Technical Writing Team served as an effective forum for resource managers to communicate and apply scientific information to the analysis of management questions, and to develop technical consensus regarding the implications of management alternatives to river resources. The Technical Group proposed here would be modeled after the GCD-EIS Technical Writing Team, but would be limited to representatives of Department of Interior agencies. The National Park Service would chair the Group because virtually all affected natural, cultural and recreational resources are part of the National Park System and subject to management under the NPS Organic Act and park enabling legislation - even though other agencies also have responsibility for the management of certain park resources. Like the GCD-EIS Technical Writing Team, the Cooperating Agency forum also was an effective organization during the preparation of the GCD-EIS. That organization served to provide a forum for dealing with political considerations and individual agency perspectives, and was a vehicle for developing consensus on policy issues and management recommendations. The Management Agency Executive Committee is modeled after the Cooperating Agency forum, and includes all the management/customer agencies and tribes. The Committee would be chaired by the Bureau of Reclamation, which has statutory responsibility for the operation of Glen Canyon Dam.

Coordinating With Broader Ecosystem Initiatives

The organization proposed here is designed to focus on the conduct of long-term natural and cultural resource studies as part of the adaptive management program for Glen Canyon Dam. Several other initiatives have been developed to promote broader basinwide - or ecosystem scale - monitoring and research programs for the Colorado River and Colorado Plateau. The organization proposed here is compatible with those more broadly-scoped programs. The Grand Canyon Colorado River Research Center might even form an effective organization to initiate aspects of broader-scale monitoring and research. If nothing else, it would provide a model for the integration of physical and biological research disciplines and agencies (USGS and NBS) in ecosystem studies, and in developing a customer-orientation in the design of ecosystem assessments. Also, many of the protocols developed for monitoring and research in the Grand Canyon would be applicable on broader, ecosystem scales. There is nothing in this organization plan that would preclude the Research Center from expanding the scope of its research programs in response to Department needs.

Management Agency
Executive Committee

Research
Review
Committee

DOI Technical
Working Group

USGS-NBS
Grand Canyon
Colorado River
Research Center

Figure 1

Proposed Organization for Long-term Monitoring and Research
on the Colorado River in the Grand Canyon