

LIVING RIVERS™

P.O. Box 1589 • Scottsdale, AZ 85252

480.990.7839 • Fax: 480.990.2662

LForce@livingrivers.net • www.livingrivers.net

Mr. Michael Gabaldon
Deputy Director of Operations
U.S. Bureau of Reclamation
Department of Interior
1849 'C' Street, NW
Washington, DC 20240

January 18, 2002

RE: Comments on Adaptive Management Working Group and proposed Strategic Plan

Dear Mr. Gabaldon,

The eight undersigned non-governmental organizations, including LIVING RIVERS, Center for Biological Diversity, Colorado Plateau River Guides, Flagstaff Activist Network, Forest Conservation Council, John Muir Project (Earth Island Institute), Maricopa Audubon Society, and Sierra Club write to submit comments on the proposed Strategic Plan of the Adaptive Management Work Group (AMWG).

We recognize the large amount of work that has been done on this plan, and we commend the scientists and others who have labored to produce that document. In the short period of its existence, the Program has made a significant contribution to expanding the scientific knowledge and understanding of the Grand Canyon ecosystem. However, despite its accomplishments the Program can and must be more effective. It is failing in its primary goal of protecting and mitigating the adverse impacts of Glen Canyon Dam on the river ecosystem of Grand Canyon National Park.

Our comments address a number of shortcomings of the Program and its Strategic Plan document as well as makes recommendations for addressing these shortcomings.

I. SUMMARY OF ADAPTIVE MANAGEMENT PROGRAM CONCERNS

A. The Program has failed to establish a new population of the endangered humpback chub, as required by the Record of Decision. This should be a top priority.

B. The Program has not made measurable progress toward recovery of endangered species, including the humpback chub and razorback sucker, or towards reintroducing extirpated species, including the endangered Colorado pikeminnow and bonytail chub.

- C. The Program has failed to provide suitable aquatic habitat conditions and water temperatures necessary for native fish reproduction and survival in accordance with the biological opinion on endangered fish.
- D. The Program has not attempted to remove non-native fish including trout and catfish that are known to prey on or compete with humpback chub.
- E. The Program has not undertaken necessary management activities, including dam operation changes, to significantly increase sediment deposition (including silts, sands, clays and detritus) into the riverine ecosystem which would increase the number and extent of beaches, backwaters, eddies and sand bars throughout the canyon ecosystem, provide wildlife and fish habitat and benefit recreational users, and protect from erosion damage irreplaceable archeological resources and cultural and sacred sites;
- F. The Program has failed to demonstrate compliance with the directive in the Record of Decision, to "find an alternative dam operating plan that would permit recovery and long-term sustainability of downstream resources while limiting hydropower capability and flexibility only to the extent necessary to achieve recovery and long-term sustainability."
- G. The Program has failed to encourage public involvement and participation in Program work.
- H. The Program has not prioritized goals and management activities, to emphasize protecting and mitigating the adverse impacts to park resources from Glen Canyon Dam, over hydropower generation and trout production.
- I. The Program has failed to publish and distribute an annual report on the review of monitoring data required by the Program's Charter, together with recommendations for management actions and modifications to the Record of Decision. Neither has the Program provided input to the Secretary for her required annual report to Congress and the States, pursuant to the Grand Canyon Protection Act, Section 1804(c)(2).
- J. The Program has failed to consult regularly with the US Fish & Wildlife Service on progress toward meeting reasonable and prudent alternatives, as required in the December 1994 biological opinion on endangered fish.
- K. The Program has failed to implement seasonally adjusted steady flows from Glen Canyon Dam as required by the December 1994 biological opinion on endangered fish.

These concerns will be addressed in more detail below.

II. CONSULTATIVE GROUPS, ADAPTIVE MANAGEMENT, AND THE SCIENTIFIC PROCESS

The shortcomings identified above result in part from the structure and function of the Adaptive Management Program. Despite the focus on science as a guiding principle for informing the process, decisions are made mostly by governmental officials and representatives of political and economic interest groups appointed to the Adaptive Management Work Group (AMWG). Science plays only an advisory role in the process.

The Grand Canyon Protection Act, Section 1805 requires consultation with various stakeholder interests on long-term monitoring programs and activities. Creation of the AMWG is authorized by the Record of Decision, Section VI(1), Environmental Commitments and Monitoring, in

accordance with the Federal Advisory Committees Act (FACA). Specific direction for Program management and operations is found in the updated AMWG Charter, dated January 10, 2001, and the AMWG Operating Procedures, dated June 18, 1998.

The AMWG delegates authority to the Technical Work Group (TWG) to supervise the scientific and management work of the Grand Canyon Monitoring & Research Center (GCMRC), a federally funded agency affiliated with Reclamation and the US Geological Survey. The TWG makes recommendations to the AMWG about scientific priorities, protocols, and research needs. The AMWG takes those recommendations into consideration when making Program recommendations to the Secretary.

The Program is structured so that a diverse group of stakeholder interests (AMWG) makes recommendations to the Secretary on a consensus basis (or nearly so), on a wide range of complex scientific and technical issues that are often highly contentious. Economic interests within this framework have significant influence over the decision making process, including the scientific monitoring and research agenda.

Program scientific work is of high caliber and is making an important contribution to the body of knowledge of river ecosystem function in Grand Canyon National Park. However, managers are ignoring much of this science. Program decisions, dominated by water and power interests, often limit scientific effectiveness. Restoration objectives are subservient to water and power objectives. Hydropower revenues fund the vast majority of Program activities, and it is not surprising that hydropower interests have blocked some efforts to run experimental high flows that bypass the dam's turbines. Water users insist that all experimental flow regimes be consistent with, and subordinate to Law of the River delivery criteria, even when this limits the effectiveness of the scientific research agenda.

The Program has been extremely successful and effective in demonstrating that as long as the dam is operated for water and power needs, the ecosystem continues to be degraded. The science may conclusively confirm that the dam's impacts cannot be adequately mitigated or overcome, yet there exists no provision in the Program for addressing such an eventuality.

III. DAM OPERATING CONSTRAINTS LIMIT SCIENTIFIC FLEXIBILITY AND OPPORTUNITIES

Glen Canyon Dam is currently managed under operating constraints that limit flexibility for scientific inquiry and experimentation. Dam operations--including meeting water delivery criteria and hydropower generation demands--are sometimes in direct conflict with scientific experimentation objectives. Constraints on dam operations can infringe upon experimental flow regimes that may offer significant benefits. The Record of Decision mandates that high experimental flows that bypass the dam's turbine generators may only occur in conjunction with "dam safety" releases--i.e. high-water events that require the reservoir to be drawn down quickly. The pre-dam Colorado River in Grand Canyon reached its peak flow in late spring and early summer, and scientists argued for conducting high flows tests to coincide with the natural high flow season. However, "dam safety release" conditions tend to occur in early spring. It is therefore not possible under existing operating criteria to fully mimic the river's natural hydrograph, which may be necessary to ensure recovery.

To realize the full benefits of adaptive management for dam-controlled river ecosystems, scientists need freedom to design and conduct a range of experimental flows and other management actions. Legal constraints, including mandated water delivery schedules under the Law of the River, are probably not possible to change. However, hydropower generation

needs do not have the same level of legal protection that water delivery does. Program managers should consider potential changes to dam operating criteria that would permit greater flexibility for scientists, even if hydropower production may be reduced.

IV. COMMENTS ON STRATEGIC PLAN

The Strategic Plan proposed for adoption contains a "Vision and Mission" statement, a set of nine Principles, a list of twelve Goals, a matrix of Management Objectives tiered to each of the Goals, and a detailed set of Research and Information Needs identified to address the Management Objectives. We appreciate the extensive effort that has gone into producing this complex document, and we applaud the high caliber of scientific work and analysis that underlies this plan. However, here are several areas where the plan is deficient and in need of changes or refinement.

A. Vision and Mission. The statement notes the Program's obligation to follow applicable laws and mentions the "Law of the River" by name, but lacks an explicit reference to the Grand Canyon Protection Act. Since the Program owes its existence to the Act, it is appropriate to note that. The statement also refers to protecting, mitigating, and improving the "Colorado River ecosystem affected by Glen Canyon Dam." This is useful language, but should be strengthened by adding specific reference to Grand Canyon National Park.

The Secretary has a substantial legal mandate, embodied in numerous laws, that requires protection of the natural ecosystem of Grand Canyon National Park. This body of law has been made subservient to the body of law that supports the interests of water and power users. When conflicts occur, the weight is usually in favor of water and power. The Program vision and mission statement must recognize that the two bodies of law have equal force, and note that these are in substantial, direct conflict.

Principles and Goals.

B. Funding Concerns: Principle One states, "Some of the objectives and actions that fall under the these goals may not be the responsibility of the ... Program, and may be funded by other sources, but are included here for completeness." Given the growing and urgent problems affecting the Grand Canyon, it is critical to indicate in the Plan, which objectives and actions are not considered to be the responsibility of the Program. There is an expressed need for additional funding for scientific monitoring and research. The Secretary and the public need to know which activities are funded, and through what sources, and those activities where other sources must be secured.

C. Managing for Endangered and Native Species. Principle Two states, "The construction of Glen Canyon Dam and the introduction of non-native species have irreversibly changed the Colorado River ecosystem." While some ecosystem changes *may* be irreversible, others are susceptible to change. This statement should be modified to read "... non-native species have led to many changes to the Colorado River ecosystem, some of which may be irreversible."

Principle Three states, "Much remains unknown about the Colorado River ecosystem below Glen Canyon Dam and how to achieve the Adaptive Management Program goals." There is much about the ecosystem that *is* known, and this statement could be interpreted so as to mean that too little is known for management actions to be taken at this time. The Principle should be reworded to avoid giving the Secretary a misleading impression. Suggested change:

"Much remains unknown about the Colorado River ecosystem below Glen Canyon Dam but enough is known to guide the implementation of the Adaptive Management Program goals."

Principle Four states, "Management efforts will prevent any further human-induced extirpation or extinction of native species." This statement should be strengthened to make the Principle consistent with the National Park Organic Act and the recovery standard of the Endangered Species Act. Suggested addition: "...and will strive to recover endangered species and reintroduce extirpated species."

Goal One states, "Protect or improve the aquatic foodbase so that it will support viable populations of desired species at higher trophic levels." Non-native species generally constitute a threat to native species' survival. This Goal should be clarified to emphasize viable populations of desired *native* species.

Goal Two states, "Maintain or attain viable populations of existing native fish, remove jeopardy from humpback chub and razorback sucker, and prevent adverse modification to their critical habitat." Federal agencies are required to contribute to endangered species recovery. This Goal should be amended to read: "Maintain or attain viable populations of existing native fish, remove jeopardy from humpback chub and razorback sucker *and contribute to their recovery*, and prevent adverse modification to their critical habitat."

Goal Three states, "Restore populations of extirpated species, as feasible and advisable." This Goal may be inconsistent with National Park Service regulations that require the agency to reintroduce all native species, wherever it is ecologically feasible to do so. Use of the term "advisable" in the context of this Goal implies that the National Park Service has discretion to reintroduce species on the basis of "advice," but such is not the case. Also, use of the term "feasible," without qualification, may be interpreted as economic feasibility, implying that extirpated species may be restored only if funding is readily available. Finally, as noted above, agencies are required to contribute to recovery of listed species. The Goal should be amended to read, "Restore populations of extirpated *native* species, *wherever ecologically feasible, and contribute to their recovery.*"

D. Rainbow Trout Management: Goal Four states, "Maintain a naturally reproducing population of rainbow trout above the Paria River, to the extent practicable and consistent with the maintenance of viable populations of native fish." This Goal is not supported by law, and is known to be in direct conflict with native fish recovery efforts. Trout are known predators of endangered humpback chub and other fish, and the cold water temperatures needed to support trout are known to hamper humpback chub reproduction. Maintaining a reproducing population of rainbow trout requires maintaining a year-round, cold-water regime. Low water temperature in summer is one of the primary known contributing factors of native fish endangerment. This Goal should be deleted because it is in direct conflict with achieving the goal of the Grand Canyon Protection Act and the Endangered Species Act.

E. Kanab Ambersnail: Goal Five states, "Maintain or attain viable populations of Kanab ambersnail." The Vasey's Paradise population of Kanab ambersnail, by virtue of its primary habitat location below the pre-dam high water line, is considered to be at risk in the event of future high experimental flows. To emphasize the need for protecting this population, this Goal should be qualified by adding a phrase such as, "...including one or more populations located above the old (pre-dam) high water line."

F. Experimental Approaches. Principle Six states, "Dam operations and management actions will be tried that attempt to return ecosystem patterns and processes to their range of natural

variability. When this is not appropriate, experiments will be conducted to test other approaches." The Principle does not explain what circumstances might make restoration of natural processes inappropriate, nor does it suggest what other approaches would be appropriate that accomplish something other than restoring ecosystem patterns and processes. The first sentence of the Principle stands on its own, and the second sentence should be deleted.

G. Prioritizing Competing Management Actions. Principle Seven reflects the intent to maximize benefits across the board wherever possible, while minimizing negative impacts on individual goals where conflicts arise. This approach assumes that all Program goals are (more or less) equally worthy. However, the goals that promote non-native fish reproduction and seek to increase hydropower generation should be considered of lower priority than those that improve native habitat and contribute to species recovery. The Principle should be rewritten to clarify this distinction.

H. Hydropower Generation. Goal Ten states, "Maintain power production capacity and energy generation, and increase where feasible and advisable, within the framework of the Adaptive Management ecosystem goals." As noted above, power generation is a lower priority relative to Program priorities and is often in conflict or potential conflict with ecosystem restoration objectives. The intended meaning of the phrase "increase where feasible and advisable" is unclear. This Goal should be modified with language like the following: "Allow for power production capacity and energy generation, where not in conflict within the framework of the Adaptive Management ecosystem restoration goals."

V. RECOMMENDED PROGRAM CHANGES AND IMPROVEMENTS:

A. Annual Report. According to the AMWG Operating Procedures, Item #11, "Records and Record Keeping," AMWG is required to prepare an annual report pursuant to the Grand Canyon Protection Act, Section 1804(c)(2). This report should include the State of the Natural and Cultural Resources in the Colorado River Ecosystem, as well as recommendations to the Secretary on future dam operations.

B. Establish a New Population of Humpback Chub. The Record of Decision, Section VI(5), states, "New Population of Humpback Chub: In consultation with the U.S. Fish and Wildlife Service (FWS), National Park Service, and Arizona Game and Fish Department (AGFD), [Bureau of] Reclamation will make every effort (through funding, facilitating, and technical support) to ensure that a new population of humpback chub is established in the mainstem or one or more of the tributaries within Grand Canyon." This language makes clear that the Secretary intended that *every effort* should be made to establish a new population of chub, yet there is no evidence that the agency has undertaken this task. This is a major concern that must be addressed immediately by Reclamation and by the Program.

C. New Information on Chub Requires a Supplemental EIS. Preliminary data recently released by the Grand Canyon Monitoring & Research Center (GCMRC) indicate a precipitous decline in the number of adult humpback chub of reproducing age. This decline, while not surprising given lack of management activities on behalf of the chub, was not anticipated when the Record of Decision was signed. The population has been considered to be fairly stable over the last decade or more. Therefore, under National Environmental Policy Act (NEPA) regulations found at 40 CFR 1502.9(c)(1)(ii), these new data represent "significant new circumstances or information relevant to environmental concerns," triggering a requirement to prepare a Supplemental EIS (SEIS) to the 1996 Glen Canyon Dam EIS. The Bureau of Reclamation, the

National Park Service, and other agencies may be in violation of the Endangered Species Act and the Grand Canyon Protection Act for failing to ensure protection and recovery of the humpback chub population in Grand Canyon National Park.

D. Trout and Non-Native Fish Management. Eliminate from the Plan the Goal and Management Objectives for encouraging trout production, and pursue an aggressive effort to reduce the population of brown trout, rainbow trout, and the various species of catfish, carp and other non-native fish that prey on or compete with the native fish species.

E. Recover and Reintroduce Endangered Species. Make measurable progress toward endangered species recovery. Reintroduce razorback sucker, Colorado pikeminnow, bonytail chub, and other extirpated native species. In accordance with the biological opinion on endangered fish, prevent adverse modification of critical habitat, and provide suitable aquatic habitat conditions and water temperatures necessary for native fish reproduction and survival. Assess and report on the status of flannel-mouth suckers and other native species that are not yet listed but which may require special management assistance to prevent listing in the future.

F. Establish an Independent Review Panel to Study the Program and Make Recommendations. The Record of Decision provides for independent scientific review panels to monitor and provide oversight of Program research activities. An independent review panel should be convened to analyze and evaluate the effectiveness of the Program as a whole, and make annual recommendations on ways of making the Program more effective, including changing the structure of the Program.

G. Establish a Public Communications and Outreach Program. The Program should undertake an outreach effort to inform the public and encourage public participation in the adaptive management process. Information about the Program is not readily accessible to a lay audience, and few people are well informed of the important yet complex issues. Holding public meetings in different cities would help to raise the profile of the issues. Making creative use of the Program's Internet site as an access point for information could be a particularly helpful strategy. Combining efforts with the Grand Canyon Monitoring & Research Center, Grand Canyon National Park, and other entities could result in dramatically increasing public understanding of the issues before the Program.

H. Seek Additional Program Funding Sources. The Program must have sufficient funding to conduct science activities and take authorized management actions. Additional funding from hydropower revenues, as well as appropriated funds and grants from non-governmental sources should be sought to ensure that all necessary scientific and management activities are conducted in a timely fashion.

I. Increase the Role and Visibility of the National Park Service: The U.S. Bureau of Reclamation is designated as the lead agency for logistical coordination of Program work. However the focus of the Program is protecting and restoring the riverine ecosystem of Grand Canyon National Park. As the agency charged with protecting the park, the National Park Service should play a prominent role in public outreach as well as in the Program's decision making process and scientific research efforts.

J. Comply with the USFWS Reasonable & Prudent Alternative. The USFWS December 1994 biological opinion, under "Elements of the Reasonable and Prudent Alternative [RPA]," page 34 states, "Those elements [of the RPA] that can be accomplished without further verification of NEPA compliance should be implemented without delay... Reclamation and the Service will

meet at least annually to coordinate reasonable and prudent alternative activities." The document goes on to prescribe, on page 35, "high steady flows in the spring and low steady flows in summer and fall during low water years (releases of approximately 8.23 maf) to verify an effective flow regime" and specifies that the "research design and hypotheses to be tested will be based on a flow pattern that resembles the natural hydrograph, as described for those seasons in the SASF [seasonally adjusted steady flow regime]." The RPA requires these flows to be implemented by 1998 at latest, and provides for re-initiation of consultation with Reclamation in the event that study design does not provide information necessary to support removal of jeopardy to the endangered fish. Reclamation must demonstrate that it is making every effort to comply with RPA requirements and remove jeopardy, including managing Glen Canyon Dam releases in accord with the SASF regime and experimenting with beach habitat building flows in spring in conformance with RPA specifications. Should it be necessary, Reclamation should reinitiate consultation with USFWS at the earliest opportunity.

K. Tribal relationships. The Program should make every effort to include the Indian tribes in the decision making process and ensure that their concerns and their funding needs are addressed . In particular, the protection of archeological and cultural resources, as well as sacred sites in the Grand Canyon should be a high priority. The Program should consider the tribes as sovereign nations and coordinate administrative and programmatic work with them in recognition of their sovereign status.

VI. CONCLUSION.

The importance of the Adaptive Management Program to ensuring the future health and vitality of the globally significant Grand Canyon ecosystem cannot be overstated. Much good work has been done to illuminate the opportunities for addressing threats to ecosystem function, and this work must continue. However, growing evidence indicates an ongoing decline in many key indicators. At the same time, there exist numerous inefficiencies and impediments to solving the difficult problems caused by Glen Canyon Dam, and these threaten the integrity of the Program over the long term.

Our organizations seek a cooperative and constructive approach that maximizes the effectiveness of management actions and makes full use of the scientific data being collected. We look to the agencies and other entities involved in the Program to provide leadership and expertise to make progress, before more species go extinct or are added to the endangered list.

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We seek evidence of forward momentum, in particular, from the agencies with statutory responsibility to protect the Grand Canyon ecosystem. As noted above, the new population data on humpback chub appears to require a Supplemental EIS for dam operations. This would provide an opportunity to address a range of scientific and management issues that have been informed by five years of Program monitoring and research activities. We look forward to working with you on these issues. Please let us know how we can be of assistance. We look forward to hearing from you at your earliest convenience.

Sincerely,



Lisa Force, Program Director
LIVING RIVERS
Scottsdale, Arizona

and the following organizations:

Center for Biological Diversity
Daniel Patterson, Ecologist
Idyllwild, California

Colorado Plateau River Guides
Annie Payne, President
Salt Lake City, Utah

Flagstaff Activist Network
Roxane George, Director
Flagstaff, Arizona

Forest Conservation Council
John Talbert, Executive Director
Santa Fe, New Mexico

John Muir Project (Earth Island Institute)
Chad Hanson, Executive Director
Washington, DC

Maricopa Audubon Society
Robert Witzeman, M.D., Conservation Chair
Phoenix, Arizona

Sierra Club (Plateau Group)
David Sherman, Chair
Flagstaff, Arizona

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cc: Hon. Gale Norton, Secretary of the Interior
Hon. John Keys, Commissioner, U.S. Bureau of Reclamation
Mr. Rick Gold, Director, Upper Colorado Region, U.S. Bureau of Reclamation
Mr. Robert Johnston, Director, Lower Colorado Region, U.S. Bureau of Reclamation
Mr. Joseph Alston, Superintendent, Grand Canyon National Park
Ms. Kitty Rogers, Superintendent, Glen Canyon National Recreation Area
Mr. Barry Gold, Director, Grand Canyon Monitoring & Research Center