

UNITED STATES DEPARTMENT OF THE INTERIOR

FINDING OF NO SIGNIFICANT IMPACT

PROPOSED MODIFICATION TO EXPERIMENTAL RELEASES FROM GLEN CANYON DAM AND CONTINUED MECHANICAL REMOVAL OF NON-NATIVE FISH

Three Department of the Interior agencies, the Bureau of Reclamation (Reclamation), National Park Service (NPS), and U.S. Geological Survey (USGS), are proposing modifications to experimental actions agreed to by the Secretary of the Interior in 2002. The actions, which involve experimental releases from Glen Canyon Dam and mechanical removal of non-native fish from the Colorado River, would occur in Glen Canyon National Recreation Area and Grand Canyon National Park, Arizona. Reclamation has responsibility for regulating releases from Glen Canyon Dam, NPS is the management agency responsible for the recreation area and national park, and Grand Canyon Monitoring and Research Center (USGS, GCMRC) has responsibility for mechanical removal of non-native fish.

The modified action, hereafter referred to as the Proposed Action, is based on a recommendation made by the Adaptive Management Work Group of the Glen Canyon Dam Adaptive Management Program (GCDAMP), a federal advisory committee to the Secretary of the Interior, in August 2004. It will be implemented in water years 2005 and 2006 to improve the potential for success in achieving the purposes of the original action agreed to in 2002. These purposes were: (1) to contribute to conservation of endangered native fish, especially the humpback chub, by reducing populations of non-native fish who compete with and prey on native fish in the Colorado River between Glen Canyon Dam and Lake Mead; (2) to conserve fine sediments that form sandbars, beaches, and habitat for young native fish by altering dam operations; and (3) to improve the Lees Ferry sport fishery by preventing the overabundance of trout. The proposed action is within the constraints established by applicable federal statutes (commonly known as the "Law of the River") and other applicable legal obligations.

The need for the Proposed Action arises because: (1) the Grand Canyon population of endangered humpback chub has declined to levels that threaten its viability and future existence, and (2) fine sediment that forms camping beaches and nursery habitats for native fish continues to be washed downstream and lost from Glen Canyon National Recreation Area and Grand Canyon National Park. These losses have occurred under dam operations agreed to in the 1996 Record of Decision by the Secretary of the Interior and their continuance suggests that predictions of resource responses in the 1995 environmental impact statement were, in some respects, incorrect.

PROPOSED ACTION — The Proposed Action consists of four major elements:

1. A high experimental flow of approximately 41,000 cfs released from Glen Canyon Dam between November 15 and December 31 contingent upon the input of a minimum 800,000 metric tons of fine sediments to the Colorado River from the Paria River and ungaged tributaries in upper Marble Canyon. Under the No Action alternative, this flow would have occurred in early January rather than November-December. The magnitude of the flow was reduced from 42,000-45,000 cfs in 2002 due to a lower reservoir level and one generator being disabled due to maintenance. The timing of the high experimental flow was changed to improve sediment conservation and reduce impacts to hydropower revenues.
2. Non-native fish suppression flows with daily fluctuations of 5,000-20,000 cfs Monday through Saturday and 5,000-8,000 cfs on Sunday from January 1 through April 7. Under the No Action alternative, these flows would not have occurred.
3. Sediment conservation and native fish flows in September-October having alternating periods of approximately 8,000 cfs steady and 6,500-9,000 cfs fluctuating releases with or without minimum sediment inputs. Under the No Action alternative, these flows would have occurred only if a minimum of 500,000 metric tons of fine sediment was input from the Paria River and ungaged tributaries during the period July 1-October 31.
4. Mechanical removal of non-native fish in January, February, March, July, August, and September 2005 and 2006, in a 12.3 mile reach of the Colorado River above and below the confluence of the Little Colorado River. Under the No Action alternative, mechanical removal would not have occurred.

MITIGATION MEASURES — Press releases will be made to the public and boaters and anglers will be advised prior to implementation of the high experimental flow. Mitigation measures have been identified and agreed to for the endangered humpback chub and the endangered Kanab ambersnail. The original proposed action was modified in two ways to reduce impacts to humpback chub after consultation with Fish and Wildlife Service. First, the high experimental flow release date was postponed from November 1 to November 15 to allow young humpback to grow and to move from nearshore habitats to deeper water habitats to reduce the impact of the high flow. Second, alternating low steady and low fluctuating flows in September and October that will allow comparisons of their relative effects on young humpback and their rearing habitats are scheduled to occur with or without a sediment trigger, rather than only with the sediment trigger as under the No Action alternative. During 2003 and 2004, young-of-year humpback chub were successfully translocated from near the mouth of the Little Colorado River upstream to above Chute Falls, a distance of 14.2 kilometers, under a conservation measure agreed to by the federal action agencies. Translocation places the young fish in a reach of the Little Colorado where they are less likely to be carried into the mainstream and suffer mortality. This action is scheduled to continue in 2005, and

also in 2006 if it is considered desirable to do so. Mitigation for loss of Kanab ambersnails and their habitat at Vaseys Paradise during the high experimental flow has been accomplished by establishment of a translocated Vaseys Paradise population in Grand Canyon National Park. During the high experimental flow, additional mitigation will occur under a conservation measure through removal of snails and habitat from the path of flood waters and replacing them once the high flow has receded. Ensuing studies will determine the degree of success for this effort.

ANALYSIS REGARDING WHETHER THE PROPOSED ACTION WILL HAVE A SIGNIFICANT EFFECT ON THE HUMAN ENVIRONMENT— As defined in 40 CFR § 1508.27, significance is determined by examining the following criteria:

- **Impacts that May Be Both Beneficial and Adverse**
- **Degree of Effect on Public Health or Safety**
- **Unique Characteristics of the Geographic Area of the Proposed Action**
- **Degree of Controversy for Effects of the Proposed Action**
- **Degree to which Effects of the Proposed Action are Highly Uncertain**
- **Degree to which the Proposed Action Sets a Precedent for Future Actions with Significant Effects or Represents a Decision in Principle about a Future Consideration**
- **Whether the Action is Related to other Actions with Individually Insignificant but Cumulatively Significant Impacts**
- **Degree to which the Action may Adversely Affect Historic Properties or Cause Loss or Destruction of Significant Cultural Resources**
- **Degree to which the Action may Adversely Affect Federally Listed Species or their Critical Habitat**
- **Whether the Action Threatens a Violation of Federal, State, or Local Environmental Protection Law**
- **Impairment of Park Resources or Values**

Each element is discussed as follows:

Impacts that May Be Both Beneficial and Adverse— The Proposed Action will not affect environmental justice, National Park Service operations or employee and visitor health and safety. The National Park Service will maintain all services during the Proposed Action that would have been available under the No Action alternative. The only restriction to be imposed is that boats disembarking upstream from Lees Ferry during the period of above powerplant capacity dam releases November 22-25, 2004, must be equipped with motors of at least 25 horsepower. Some short-term effects of the proposed modification on biotic communities, Federally listed species and their critical habitats, recreational angling and boating, trout and other non-native fishes, and wilderness are expected to be adverse. The long-term expected outcome of the proposed modification is to benefit sediment conservation and native fish, principally the

endangered humpback chub. Based on best available information, negative effects, where they occur, are predicted to be minor and temporary.

Degree of Effect on Public Health or Safety— No effects on public health or safety are anticipated from the Proposed Action.

Unique Characteristics of the Geographic Area of the Proposed Action — The Proposed Action will occur within the confines of Glen Canyon National Recreation Area and Grand Canyon National Park. No wild and scenic rivers will be affected by the Proposed Action. No Indian Trust Assets are found in the project area. Some effects on ecologically critical areas will occur, but the effects will be indiscernible from those under the No Action alternative. They will be temporary in nature and the long-term effects are expected to be beneficial.

Degree of Controversy for Effects of the Proposed Action— The major controversy associated with the Proposed Action is concern by the public that additional water may be released through Glen Canyon Dam during this period of extended drought. The public identified that Lake Powell is presently 130 ft below full pool and that the local economy in the Page, Arizona, area has been negatively impacted by the drought. The federal agencies respond is that the anticipated annual release of water from Glen Canyon Dam during the period of this action is 8.23 million acre feet under both the Proposed Action and the No Action. The amount of this release has been determined during consultation between the Colorado River Basin states and the Secretary of the Interior. The federal agencies acknowledge that the timing of releases will be affected by the high experimental flow, which would occur in November-December under the Proposed Action and in January under the No Action alternative. The public expressed concern that access and services might be restricted during the high experimental flow, but the National Park Service will not make any changes in access and service at this time other than requiring a minimum of 25 horsepower motors on boats going upstream from Lees Ferry during the period when dam releases are above powerplant capacity (about 31,000 cfs). Some members of the public expressed concern for the loss of hydropower from water that bypasses the powerplant, and there was a specific concern that the data used to assess hydropower impacts were not complete. The analysis conducted for the supplemental environmental assessment, using best data available to Western Area Power Administration, predicted that the overall financial effect of the Proposed Action would be slightly positive for hydropower.

Degree to which Effects of the Proposed Action are Highly Uncertain— The proposed modification is being carried out as part of the GCDAMP to achieve goals of that program and provisions of the Grand Canyon Protection Act. It is being carried out as an experiment that will be monitored under the auspices of the GCMRC using a science plan developed specifically to assess the Proposed Action and reviewed by the Science Advisors to the GCDAMP. As an experiment, the Proposed Action operates on

hypotheses constructed from the best available scientific information after years of study by scientific researchers in the Grand Canyon. As with all experiments, this action has some uncertainty in outcomes; however, the level of uncertainty, particularly given the feedback system to resource managers built into accompanying research and monitoring, does not rise to the level of highly uncertain, unique or unknown risks.

Some members of the public commented that the previous high experimental flow conducted in spring 1996 had failed, and that they therefore expected this experiment also to fail. Scientists and resource managers admit that not all expectations were met from the 1996 experiment, but they identify that learning and improved understanding of the Colorado River ecosystem have occurred and that the Proposed Action takes advantage of the improvement in knowledge gained from the earlier experiment.

Degree to which the Proposed Action Sets a Precedent for Future Actions with Significant Effects or Represents a Decision in Principle about a Future Consideration

—The GCDAMP operates under the principles of adaptive management in which lessons learned by doing, through scientific experiments, are built into present and future management decisions. The iterative approach taken in this process helps to ensure that changes in management direction do not have significant adverse effects on the system and its resources. Neither does any single outcome represent a decision in principle about a future consideration because the outcome of each experiment is added to the knowledge gained in previous experiments in making prospective management decisions.

Whether the Action is Related to other Actions with Individually Insignificant but Cumulatively Significant Impacts—No non-Federal projects were identified as planned, in progress, or completed in the project area. Eight Federal projects, programs, or plans were identified in the 2002 environmental assessment and some of them are still ongoing at this time. Many of these actions are complementary to the ongoing experimental action in achieving NPS and GCDAMP management objectives; only one was identified as having a minor negative effect on achieving management objectives for the GCDAMP¹, but it does not affect implementation of the proposed modification to experimental flows. Adverse impacts of the proposed modification would be a relatively minor component of the overall minor cumulative impacts.

Degree to which the Action may Adversely Affect Historic Properties or Cause Loss or Destruction of Significant Cultural Resources—There will be no adverse effects to historic properties as a result of implementing the proposed modification. Some Native American tribes that are participants in the GCDAMP expressed concerns in 2002

¹ The Colorado River Interim Surplus Criteria EIS identified a slight reduction in the frequency of Beach/Habitat Building Flows from Glen Canyon Dam as a result of implementing interim surplus criteria. Any impacts resulting from the adoption of Interim Surplus Criteria were considered when this proposed action was developed.

concerning the proximity to sacred sites of certain research activities and for the beneficial use of non-native fish remains obtained through mechanical removal. Agreements have been reached to avoid sacred sites and sensitive areas, and to provide non-native fish remains to the Hualapai Tribe for use as fertilizer on their gardens. The Hualapai Tribe has indicated that they may not be able to use all fish remains, and the federal action agencies have agreed that any remains that can not be used will be transported to a landfill and disposed.

Degree to which the Action may Adversely Affect Federally Listed Species or their Critical Habitat— Six federally listed species, three of which have designated critical habitat, may occur in the Proposed Action area. Three of those species, the Kanab ambersnail, humpback chub, and bald eagle have received “may affect, likely to adversely affect” determinations for the Proposed Action and the Fish and Wildlife Service has completed a biological opinion on those determinations. Identified adverse effects on listed species or their critical habitat are short-term in nature, and long-term consequences of the Proposed Action are expected to be beneficial. Conservation measures identified in the 2002 EA for Kanab ambersnail and humpback chub to reduce potential negative effects will be carried out in conjunction with the Proposed Action as indicated above under Mitigation Measures. The remaining impacts to listed species or their critical habitat are expected to be negligible to minor. No adverse effects to federally listed species will be exacerbated by the Proposed Action.

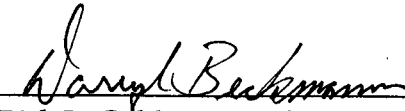
Whether the Action Threatens a Violation of Federal, State, or Local Environmental Protection Law— The Proposed Action violates no federal, state, or local environmental protection laws.

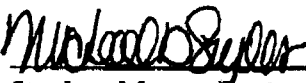
Impairment of Park Resources or Values— The Proposed Action is designed to enhance, rather than impair the resources and values for which Grand Canyon National Park and Glen Canyon National Recreation Area were established through the GCDAMP’s role in fulfilling provisions of the Grand Canyon Protection Act of 1992. There will be no significant adverse effects to park values from the proposed modification.

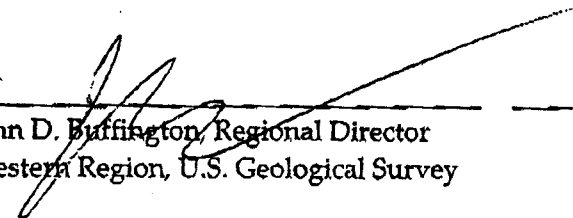
DECISION — The Proposed Action will not have a significant adverse effect on the human environment. The Proposed Action is designed to reverse negative trends in sediment retention and endangered humpback chub abundance that were not predicted at the time of the adoption of the Glen Canyon Dam Record of Decision in 1996. Negative environmental impacts that could occur are negligible to moderate, and are expected to be short-term in effect. No significant unmitigated adverse impacts on public health, public safety, threatened or endangered species, historic properties, or other unique characteristics of the region have been identified as a result of analysis of the Proposed Action. No highly uncertain or controversial impacts, unique or unknown risks, significant cumulative effects, or elements of precedence were identified.

Implementation of the Proposed Action will not violate any federal, state, or local environmental protection law.

Based on the Supplemental Environmental Assessment, an analysis of all oral and written comments received on that document, and the foregoing, a finding of no significant impact is justified for the Proposed Action. Therefore, an environmental impact statement is not necessary to further analyze the environmental effects of the Proposed Action.

Approved:  11/19/04
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