

QUESTIONS FOR THE RECORD  
SUBCOMITTTEE ON NATIONAL PARKS, FORESTS & PUBLIC LANDS  
SUBCOMMITTEE ON WATER AND POWER  
APRIL 8, 2010 OVERSIGHT FIELD HEARING:

*"On the Edge: Challenges Facing the Grand Canyon National Park. "*

Questions from Chairwoman Grace F. Napolitano:

1. Does the Grand Canyon Trust believe that the Glen Canyon Dam Adaptive Management Program, as described in the 1995 EIS and implemented by the 1996 Record of Decision, correctly meets the intent of the Grand Canyon Protection Act of 1992?

*GCT answer:* No.

According to the Charter for the Adaptive Management Program (AMP), "the AMP provides for monitoring the results of the operating criteria and plans adopted by the Secretary and research and experimentation to suggest appropriate changes to those operating criteria and plans." However, the AMP has been restricted by both a funding cap and the Adaptive Management Work Group's unwillingness to make recommendations to the Secretary on alternative flow regimes to protect park resources.

In 2001, one stakeholder in the Adaptive Management Program (Colorado River Energy Distributors Association) successfully lobbied Congress to place a funding cap on the Adaptive Management Program's budget.<sup>1</sup> This cap has severely restricted the Grand Canyon Protection Act's (GCPA's) requirement to implement "... *any necessary research and studies to determine the effect of the Secretary's actions under section 1804(c) on the natural, recreational, and cultural resources of Grand Canyon National Park and Glen Canyon National Recreation Area.*"

Although the AMP has accomplished important research on select resources, it has yet to implement adaptive management. The AMP has steadfastly refused to test policy choices such as Seasonally-Adjusted Steady Flows supported by science and law. Despite extensive evidence of resource degradation (e.g., a continuous decline in sediment conditions under the current Modified Low Fluctuating Flows),<sup>2</sup> no recommendations have been made by the AMP to adjust Glen Canyon Dam operations to protect Grand Canyon resources. Furthermore, the 1997 Operating Criteria for Glen Canyon Dam requires that the Secretary review the Operating Criteria for Glen Canyon Dam at least once every five years and determine if the Criteria need to be modified to better meet the intent of the GCPA,<sup>3</sup> but this has never

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<sup>1</sup> See Energy and Water Development Appropriations Act, 2001, and minutes for the January 11, 2001 AMWG meeting.

<sup>2</sup> For example, see Lovich and Melis, *The State of the Colorado River Ecosystem in Grand Canyon: Lessons from 10 Years of Adaptive Ecosystem Management*, 2007.

<sup>3</sup> Secretary Babbitt signed the Operating Criteria for Glen Canyon Dam on February 24, 1997. The Criteria states: "*The Secretary of the Interior shall review these Operating Criteria as the result of actual operating experiences to determine if the Operating Criteria should be modified to better accomplish the purposes of the Grand Canyon Protection Act. Such a review shall be made at least every 5 years*"

occurred.

An insightful law review article critical of the Glen Canyon Dam Adaptive Management Program was published this year -- "Collaborative Planning and Adaptive Management in Glen Canyon: A Cautionary Tale." Published in the Columbia Journal of Environmental Law Journal, the authors, Lawrence Susskind, Alejandro E. Camacho, and Todd Schenk, provide a detailed, critical assessment of the AMP. The article concluded: "*After thirteen years and millions of dollars, the AMP has failed to stabilize or otherwise improve the quality of the fragile downstream ecosystem.*"

2. Please explain the Grand Canyon Trust's interpretation of how the Grand Canyon Protection Act should be integrated into the *Law of the River*.

*GCT answer:* The Grand Canyon Protection Act of 1992 (GCPA) is a recent addition to the "Law of the River," and the Bureau of Reclamation describes the GCPA as one of the "notable" documents.<sup>4</sup> The Trust interprets the GCPA as having no influence in determining annual water volumes (i.e., annual deliveries between the upper and lower basins) because of the savings clause (Section 1802(b) of the Act) that requires the Secretary to implement the GCPA consistent with, "... *the provisions of the Colorado River Storage Project Act of 1956 and the Colorado River Basin Project Act of 1968 that govern allocation, appropriation, development, and exportation of the waters of the Colorado River Basin.*"

Regarding the pattern of monthly volumes and daily releases, however, the Trust interprets the GCPA as providing the Secretary with the duty to adjust monthly volumes and daily releases to protect park resources. The Trust interprets the 1996 ROD as providing the Secretary with the flexibility to meet this obligation by operating the dam anywhere between year-round steady flows and the upper limits of ROD fluctuations.

Although the GCPA explicitly maintains the existing agreements regarding water supply allocations among the seven basin states, the Act does anticipate the diminishment of hydropower revenue in the bargain to benefit Grand Canyon. This view is consistent with the intent of Congress to reduce the value of hydropower produced at Glen Canyon Dam in order to protect Grand Canyon resources.<sup>5</sup>

3. Three high flow experiments have been conducted at Glen Canyon Dam (1996, 2004, and 2008) and have resulted in short-term benefits (and costs) to the environment and stakeholders. As an organization established to protect the Grand Canyon, in your estimation do the high flow events provide enough of a gain in resources to warrant their continuation (Secretary of Interior's December 2009 Announcement) without

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<sup>4</sup> Bureau of Reclamation. Colorado River Interim Guidelines for Lower Basin shortages and coordinated operations for Lake Powell and Lake Mead, 2007.

<sup>5</sup> For example, see House Report 102-114 Part 1, the dialog between Senator McCain and Senator Bradley in the Congressional Record for October 8, 1992 (acknowledging that hydropower revenue will be diminished in order to improve Grand Canyon resources), and the 1996 ROD that restricts daily fluctuations.

implementing other concurrent actions, such as steady flows after the event or sediment augmentation?

*GCT answer:* No.

High flows followed by the current pattern of monthly volumes and daily releases (i.e., Modified Low Fluctuating Flows) provide some additional scientific data on sediment transport, but will not maintain sediment in Grand Canyon over the long term. What is needed to maintain sediment in Grand Canyon is a combination of high flows and steady flows.

Maintaining sediment in Grand Canyon to improve resource conditions will require minimizing the rate of erosion between flood flows. Simple physics are adequate to demonstrate that steady flows are less erosive than fluctuating flows. Implementing frequent flood flows under enriched sediment conditions and changing dam releases between flood events from the current fluctuating regime to a steady regime will maintain more sediment in Grand Canyon. This is the release pattern the Trust is advocating for.

A recent USGS Fact Sheet stated support for this change in dam operations: "*Building on what has been learned through experimentation, scientists have concluded sandbars can be potentially rebuilt using short-duration high flows following each average to above-average input of sand from tributaries; this approach would move sand from the riverbed to sandbars before it can be carried downstream. The effectiveness of this strategy rests on minimizing sand export and sandbar erosion during periods between high flows.*"<sup>6</sup>

Regarding the detrimental effect of the fluctuating flows that followed the 2008 high flow experiment, GCMRC concluded: "*Although sandbar building was widespread in response to the 2008 HFE, which occurred under highly sand-enriched conditions, these gains were short lived owing to erosion that occurred once releases from the dam resumed normal fluctuating-flow operations.*"<sup>7</sup>

At this point, it is not clear whether sediment augmentation can be used to significantly increase the level of sediment storage in Grand Canyon, or if it is more likely to be useful solely to increase turbidity (as a mechanism to reduce predation and competition by non-native sight-feeding fish such as rainbow trout). The Trust has made a recommendation within the AMP that additional information and analysis on sediment augmentation be developed.

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<sup>6</sup> John Hamill, Status and Trends of Resources Below Glen Canyon Dam Update—2009. USGS Fact Sheet 2009-3033, Grand Canyon Monitoring and Research Center.

<sup>7</sup> Ted Melis, 2008 High-flow Experiment at Glen Canyon Dam Benefits Colorado River Resources in Grand Canyon National Park, 2010. USGS Fact Sheet 2010-3009, GCMRC.



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May 21, 2010

The Honorable Representative Grace F. Napolitano  
Chairwoman  
Subcommittee on Water and Power  
United States House of Representatives  
Washington, DC 20515

Dear Congresswoman Napolitano:

Thank you for the opportunity to provide testimony to your Subcommittee on Water and Power and Chairman Grijalva's Subcommittee on National Parks, Forests and Public Lands on April 8, 2010 at the Grand Canyon. The scope of the challenges and threats facing the Grand Canyon are real and profound. This is apparent from the testimony provided by several of your expert witnesses as well as my own testimony.

In response to your letter of May 5, 2010 requesting additional information related to three questions, I submit the following.

1. What role is NPCA playing in the cleanup of the uranium tailings mine at Moab, Utah?

NPCA has not had a direct role in the advocacy and the negotiations surrounding the cleanup of this serious threat. The great work of key advocacy groups and frankly, the important leadership of your Subcommittee are making a difference. Removal of these tailings is protecting the quality of Colorado River water for benefit of downstream users and certainly the welfare of national park units downstream (Canyonlands, Glen Canyon, Grand Canyon, Lake Mead).

2. Does NPCA believe that there is sufficient scientific understanding to justify making adjustments to the current operations of Glen Canyon Dam in order to conserve sediments and enhance/protect native fish habitat in Grand Canyon National Park?

NPCA believes that the science to justify making adjustments to current operations of Glen Canyon Dam is comprehensive and conclusive. Since 1996 when the Record of Decision was signed by Department of Interior Secretary Babbitt, the impact of the modified low fluctuating flow (MLFF) regime on sedimentation and protection of native fish habitat has been ably and exhaustively reviewed. The USGS report, State of the Colorado River Ecosystem in the Grand Canyon (SCORE Report), which was released in 2005, makes two strong points that have been substantiated without

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ambiguity by subsequent research: 1) the MLFF regime has not effectively conserved sediment in the main stem of the river, and 2) high flow experiments completed in 1996, 2004, and 2008, while providing some initial promise, have been undone by sustaining the MLFF regime. The SCORE Report further notes that the declining population of humpback chub corresponds with the construction and implementation of current operating criteria. While the science related to native fish populations is not as conclusive (as to its detrimental impacts) as sedimentation, the report states that “the MLFF alternative had neither a negative effect nor no effect at all, but it has not had a measurable beneficial effect on the humpback chub.”

In these matters, therefore, it is apparent from the rich scientific research, that the current operations of Glen Canyon Dam as prescribed in the 1996 ROD are not fulfilling the requirements of the Grand Canyon Protection Act. NPCA believes, as represented in both my written and oral testimony to the Subcommittees, that the requirements of the Grand Canyon Protection Act are not being served by the current dam operations and that this is clear and evident from the extensive scientific research that has been completed and as prescribed by law. What we don't seem to have is the will to make the necessary corrections to dam operations that the science clearly suggests would be an improvement.

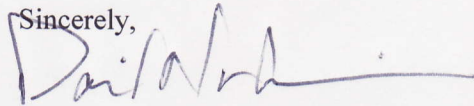
3. In the opinion of NPCA, is the current Adaptive Management Program at Glen Canyon Dam performing adequately to meet the intent of the Grand Canyon Protection Act and does the current operational regime adequately protect the resources of Grand Canyon National Park?

NPCA believes that the Adaptive Management Program at Glen Canyon Dam is dysfunctional. We believe that the Grand Canyon Protection Act appropriately stipulates that the Secretary of the Interior shall review dam operating criteria as a result of actual experiences and make a determination if the criteria should be modified to better accomplish the purpose of GCPA. This review and subsequent recommendation shall be made at least every 5 years. This periodic review has not occurred. Despite the richness of the science and its clear determination that the key ecological indicators have been adversely affected, the Adaptive Management Program has not adequately resulted in the required adjustments to the dam operating criteria. The current regime is clearly not protecting the resources of Grand Canyon National Park. While we are not able to specify, exactly, why the program is not working as originally conceived, it is clear that the scientific inquiry is sound and strong. Enormous sums of money have been spent to examine current and contemplated dam operations and its impact on Grand Canyon. The inability of the Adaptive Management Work Group to effectively use this rich trove of information to make forceful recommendations is clearly

one critical factor that contributes to the failure of the AMP to fulfill its purpose.

NPCA is carefully monitoring the work of the Adaptive Management Work Group and conferring with park managers and GCRMP scientists and other experts. We believe that Grand Canyon National Park is at risk and that the mechanisms are in place to make the necessary adjustments to dam operations that the science has deemed, conclusively, to be import to protect this system. We both applaud your leadership and support your efforts to ensure that the Adaptive Management Program is functional and the stipulations in the Grand Canyon Protection Act are honored. Thank you for the opportunity to be of service.

Sincerely,

A handwritten signature in dark ink, appearing to read "David Nimkin", with a long horizontal flourish extending to the right.

David Nimkin  
Director, Southwest Region