

**Glen Canyon Dam Adaptive Management Work Group Conference Call  
January 17, 2008**

**Conducting:** Brenda Burman Secretary's Designee  
**Facilitator:** Mary Orton

**Convened:** 10 a.m. (MT)

**Committee Members on the Conference Call:**

Steven Begay, Navajo Nation  
Bob Broscheid, AGFD  
Charley Bulletts, Kaibab Band of Paiute Indians  
George Caan, Colorado River Comm./NV  
Jay Groseclose, NM Interstate Stream Comm.  
Amy Heuslein, BIA  
Loretta Jackson-Kelly, Hualapai Tribe  
Leslie James, CREDA  
Steve Martin, NPS  
Andre Potochnik, GCRG

Ted Rampton, UAMPS  
Nikolai Lash, Grand Canyon Trust  
John Shields, WY State Engineers Office  
Sam Spiller, USFWS  
Mark Steffen, Federation of Fly Fishers  
Larry Stevens, Grand Canyon Wildlands Council  
Dennis Strong, UDWR  
Brad Warren, WAPA  
Bill Werner, ADWR  
Gerald Zimmerman, Colorado River Board/California

**Committee Members Absent:**

Leigh Kuwanwisiwma, The Hopi Tribe

Dave Sabo, USBR

**Alternates Present:**

Jonathan Damp  
Randall Peterson  
Mike Yeatts  
Randy Seaholm

**For:**

Pueblo of Zuni  
Dave Sabo, Bureau of Reclamation  
Leigh Kuwanwisiwma, The Hopi Tribe  
State of Colorado

**Interested Persons:**

Jason Alberts, DOI  
Matthew Andersen, USGS/GCMRC  
Jan Balsom, GCNP  
Glenn Bennett, USGS/GCMRC  
William Davis, CREDA  
Kurt Dongoske, TWG Chair  
Helen Fairley, USGS/GCMRC  
Dave Garrett, M<sup>3</sup>Research  
Martha Hahn, NPS/GCNP  
John Hamill, USGS/GCMRC  
Norm Henderson, NPS

Doug Hendrix, USBR  
Rick Johnson, Grand Canyon Trust  
Robert King, UDWR  
Glen Knowles, USFWS  
Dennis Kubly, USBR  
Ted Melis, USGS/GCMRC  
Don Ostler, Upper Colorado River Commission  
Bill Persons, AGFD  
Ken Rice, USBR/Glen Canyon Dam  
Bob Snow, DOI

**Meeting Recorder:** Linda Whetton, USBR

**Welcome and Administrative:** Brenda Burman welcomed the AMWG members, AMWG alternates, and members of the public. A roll call was taken and a quorum (15 members) was established. She recognized the new member and alternate from the State of Nevada, George Caan and Anthony Miller.

Ms. Burman said the purpose of the conference call was to discuss the proposed upcoming High Flow Experiment (HFE) the Department of the Interior is considering for early March 2008. She reported discussions with numerous AMWG members about their concerns, as well as with federal agencies within the Department. As indicated in her December 20, 2007, memo (**Attachment 1**), she said that if NEPA compliance can be completed and additional comments sought from the public by February 28, the Department would issue a press release on February 29 with the decision on the HFE.

**Review of Agenda and Ground Rules.** Mary Orton reviewed the ground rules and said she or the Secretary's Designee would ask for public comments following each agenda item, as well as at the end of the meeting. She noted that the first item on the agenda, the update on the HFE, was not noticed in the Federal Register for action, while the second item, the outreach plan, was. She directed the members to the agenda and said the call would proceed according to the Agenda Item Form (**Attachment 2**).

**Overview of the Science Plan and Experiment.** John Hamill thanked the AMWG and TWG members for their continued participation over the course of the last year in completing the Science Plan (**Attachment 3**). He said his presentation would focus on the differences between the previous version of the plan and the one distributed for this meeting.

He said the purpose of the HFE is to build on knowledge gained from the 1996 and 2004 experiments. It would evaluate the efficacy of using high flows to conserve sediment resources in the Grand Canyon and benefit resources that are dependent upon that sediment, particularly backwater habitats for humpback chub. The 1996 experiment was conducted at a time when the river system was depleted of sand, and it resulted in a net reduction in sandbars. The 2004 experiment was conducted shortly after receiving major sediment inputs from the Paria River, and it produced some positive results, especially in the upper portions of Marble Canyon.

This HFE is proposed due to significant inputs of sediment – an estimated 2.5-3 million metric tons - from the Paria and the Little Colorado River. The flows would begin to increase on March 4, reach a peak of 41,000 cfs at about 4:00 am on March 6, remain at that level until 3:00 pm on March 8, and return to normal flows (around 10,000 cfs) by about 10:00 am on March 9. This hydrograph – 41,000 cfs for 60 hours – replicates the 2004 experiment. The proposed 2008 experiment, however, would be conducted with about three times more sediment in the system. The sediment is probably more evenly distributed throughout the system, as it has been subjected to ROD flows since August 2006 when the inputs began, and there has been significant conservation of that sand because of reduced volumes and flows in the Colorado River.

He said the Science Plan identifies a number of biological reasons why March is a good time to do this experiment. In addition, it is the earliest time, logistically and administratively, they could conduct the experiment. He referred to Table 1 of the Science Plan, which articulates the science questions the HFE would address. The questions build on the strategic science questions (SSQs) in the Monitoring and Research Plan (approved at the last meeting), and address the specific high flow science questions that would be addressed in the experiment.

He referred the attendees to Table E.1 in the Executive Summary, which describes experimental studies proposed by this Science Plan, including cost estimates for fiscal years (FY) 2008–09. This Table shows the following study areas:

- Sediment, archaeological sites, and backwaters: sand budgeting, eddy-sandbar studies, response of sandbars and select cultural sites, and backwater habitats
- Riparian vegetation studies
- Aquatic food base: food availability
- Rainbow trout: redds study, movement
- Lake Powell: nutrient releases and changes in the hypolimnion

Addition cost centers in Table E.1 include conservation measures for Kanab ambersnail, knowledge synthesis, and logistical support.

One of the major changes since the TWG had reviewed and approved the Plan was an increase in scope and cost of the backwater studies. They would study the formation and states of backwater habitats beginning in February, from pre-high flow data through fall, and determining how different flow regimes that occurred during that period affect the persistence and productivity of backwaters, and the use of backwaters by fish. The reporting and synthesis added about \$250,000 for that activity, which would continue into FY 2010. The projected cost changed from \$100,000 to about \$1.1 million.

To address suggestions from TWG members, another element of the science plan now addresses long-term strategy. It acknowledges that this experiment by itself probably will not address all of the uncertainties, and additional experiments in the future would be required to determine whether it results in a sustainable conservation of sand over the long run. Some of the additional experimentation could be mitigated by the development of sediment models that could provide predictive capability to rule out certain

scenarios and allow us to interpolate between some of the known data. Ultimately, managers will decide what level of certainty they need to decide whether this is an effective management strategy, and that level of certainty will determine how much experimentation is needed.

The Science Plan was reviewed and revised by the Science Advisors before the final changes. GCMRC asked them to review it again, and received their latest comments a few days ago.

In October, the TWG recommended more focus on sandbar and nearshore habitats, assessing nearshore foodbase response, fish movement and how they would be affected, how backwater habitats could be created, and how temperatures would change. Mr. Hamill said he feels GCMRC has been responsive to these concerns. However, the suggestion of a comprehensive economic analysis of cost and benefits of high flows was not within the scope of the workplan and was not addressed.

The experiment increased from about \$2 million when the TWG last reviewed the plan to about \$3.7 million for FY08-09. Mr. Hamill said that both Reclamation and National Park Service (NPS) would be contributing funding for the experiment. Randy Peterson said Reclamation has about \$1.5 million in the Experimental Flow Fund through 2008 can probably expect another \$500,000 available in FY09. Reclamation will also provide \$1.3 million in appropriated funds, restricted to HBC temperature and habitat issues. Steve Martin said they could offer \$400,000 in in-kind services, as well as contracting and other services, to reduce GCMRC's costs without diminishing research capabilities. They will pursue other NPS funding sources in the FY09 budget.

In answer to questions, Mr. Hamill and Ted Melis made the following points:

- GCMRC would probably not be able to offset \$400,000 in costs with the NPS offer of in-kind funding, and so there might be a shortfall. Additional NPS appropriations for the experiment would be most useful in FY09.
- Much of the GCMRC workplan activities not associated with the experiment would be postponed three to six months. This is not anticipated to result in a carryover of funds because of the addition of staff to accomplish the experiment.
- While a shorter duration of the experiment was considered, the 60-hour duration was derived from model simulations conducted by Steve Wiele and others in USGS, whose models suggested that most of the sandbar building would occur between 48-60 hours with the current sediment concentration conditions. This was corroborated by field measurements after the 2004 experiment.

Mark Steffen expressed concern about insufficient consideration of the impact of the duration and flow levels on the aquatic foodbase.

Brad Warren said the experiment would require the movement of the release of 230,000 acre-feet of water into March, making that an 830,000 acre-foot (AF) month. Western has agreed with Reclamation to move the water from April, May, July, August, and September. Based on that, Western estimates an impact to power of \$3.3 million (**Attachment 4**).

**Compliance and Schedules.** Randy Peterson said that since the last AMWG meeting there has been a strong, continued interest in conducting a HFE from a number of entities. In conjunction with that, Reclamation has reinitiated ESA consultation with the FWS on the operation of Glen Canyon Dam, including the possibility of a HFE in March 2008 and a 5-year period of experimental steady flows in September and October. Reclamation transmitted a Biological Assessment (BA) under the ESA to the Service in mid-December. Since that time, they have had no additional discussions with the FWS. Mr. Peterson said if there were any questions about the proposed action or the reinitiation of consultation, he would encourage a careful examination of the BA. Reclamation expects a response on the BA from the FWS by the end of February 2008.

With regard to NEPA, Mr. Peterson said Reclamation initiated the preparation of an Environmental Assessment (EA) on the proposed action and they expect to have it available for public comment by February 8. The comments will be due on February 23, and a decision will be made by February 29. With respect to the National Historic Preservation Act, Reclamation will award a contract early next week for the treatment of the one site in the Glen Canyon reach that would be potentially affected by the proposed HFE. He expects work to commence on that site in early February and to be completed in 10 working days.

Mr. Peterson said if the HFE occurs in March, a science plan for the fall steady flows would need to be developed. He said he appreciated the difficulties GCMRC has had in developing the existing Science Plan, and that he would expect to re-engage GCMRC and others in the AMP process in planning for the experimental fall steady flows and the science associated with them beginning in April 2008. He pointed out that the existing Science Plan includes an extensive monitoring trip in September 2008, which could be a vehicle for studying and monitoring the steady flow period. After the Biological Opinion is completed by FWS, and after the decision is made on whether to have a HFE, Reclamation will reassess the Long Term Experimental Plan (LTEP). The Desired Future Conditions transmitted by TWG were valuable, not only to the development of the alternatives and the LTEP in general, but also to the functioning of the adaptive management program.

In answer to questions, Mr. Peterson made the following points:

- One EA will be developed for both the HFE and the five years of steady flows.
- The HFE and the five years of steady flows were packaged together to link the studies on the impact of high flows on backwater creation and a study on how steady flows impact backwaters. This could help us better understand how backwaters are created and affected by the HFE and also how the steady flows would then help facilitate recruitment and survival of the chub.
- The EA does not preclude or require additional HFEs; it is restricted to the proposed action. After the experiment, if it occurs, we would discuss whether there should be additional experiments, whether there would be additional non-flow actions that could be conducted to benefit the resources, etc.

Nikolai said that the Council on Environmental Quality requires a 30-day comment period when there is a public controversy, and that there would be public controversy if Reclamation packages the BHBF with the steady flows proposal. He said he thought it would be a serious mistake to combine the fall steady flows with the HFE at this late hour, particularly when there has been no discussion of it at the AMWG and no outreach to the interested public. They should be separated, with separate EAs and separate comment periods.

Jay Groseclose said he would like to have a thorough analysis done on this HFE over the next five years before deciding whether to have additional HFEs.

**Preparations and Plans.** Steve Martin reported on preparations by the National Park Service (NPS), including:

- research permitting, to ensure that all of the trip permits and permits for science applications were addressed;
- notifying river runners via the Internet, mail, phone calls, and in person at Lees Ferry of the possibility of an HFE, and distributing hydrographs and other high flow data for trips launching during the HFE, including information on campsites;
- ensuring that no hikers on the trails or campers along the river encounter any mishaps;
- setting up a joint lead with the Bureau of Reclamation for an incident command system that would include an incident command team, safety office, public information, and an operations chief that could work throughout the full reaches of the river including the lower gorge;
- coordinating with the Hualapai Tribe on their river running operations; and
- establishing stations at Lees Ferry and Phantom Ranch, special backcountry and river patrols, and an emergency response group with access to the emergency helicopter.

Mr. Martin said felt confident that they have planned for any contingency in order to protect NPS employees and members of the public.

In answer to questions, Mr. Martin explained:

- Park staff is working on a case-by-case with private boaters to ensure that they are dealt with fairly and they can take their trip in circumstances with which they are comfortable, including by rescheduling or extending their trips as needed.
- While incident command centers are usually on the South Rim, it could be mobile or at field stations. This decision will be made with Reclamation.

**Tribal Consultations.** Amy Heuslein said that if BIA undertakes activities affecting tribal rights or trust resources, they must be sensitive and respectful of tribal sovereignty and they do this in a government-to-government relationship with Native Americans. In this instance, BIA started the communication process by making phone calls to the tribal AMWG representatives and alternates in November and December 2007. There was also discussion of the possible HFE at the TWG meeting in early December. BIA initiated a government-to-government consultation with tribal representation at a meeting on January 10, 2008.

Tribes expressed concerns about potential damage to resources, both from an economic standpoint and a biological and cultural standpoint, from high flows. The Tribes are will have pre- and post-monitoring activities.

A Memorandum of Agreement regarding mitigation of adverse effects on historic properties downstream from the Dam will be completed this week, and it will be signed by various parties, agencies, and the tribes.

BIA will send a formal letter to the tribes this month, with copies to agencies involved in the program, regarding government-to-government consultation.

**Policy Issues Ad Hoc Group Report.** Randy Peterson reminded the AMWG that the Policy Issues Ad Hoc Group was formed because of concerns expressed at recent AMWG meetings about HFEs. The group developed a list of policy concerns and issues, not only from that meeting, but also from comments received on other documents and from AMWG members, TWG members, and others. The issues were discussed at the meetings the group held, and some progress has been made. The focus on the BA, EA, and the Science Plan reduced the time available to hold meetings. However, the group has made assignments to address the policy issues, and they expect to provide their thoughts, ideas, and options on those policy issues to the AMWG over the next few months.

**Outreach Plans – GCMRC.** John Hamill gave an overview of the outreach and communication efforts associated with a potential HFE. He said the Secretary of the Interior intends to participate at the Dam, which would create a significant event and attract a lot of public interest.

The goals of the outreach and communication effort are to provide to the public accurate and timely information about the experiment, including (1) information on why it is being done, its scope, and what they hope to learn, and (2) information that will facilitate the experiment being done in a safe and healthy manner. He said they would also discuss the role of the AMP in the overall process and position the AMP and AMWG as a valuable partner. There have been some reports in the media but nothing formal has come from the Department. They hope to distribute a press release later this week, and they established a website ([www.gcmrc.gov](http://www.gcmrc.gov)) which would be the central repository for all information related to the study. It will have direct links to the Park Service website, the AMP, and Reclamation's website.

Reclamation would be responsible for logistics and security associated with the event. Mr. Hamill said they are looking at how best to give invited guests direct exposure to what is happening.

He said that GCMRC is working closely with the Park Service to provide information to them to use in their interaction with both river and backcountry users, to ensure that these users have accurate information about which campsites would be affected. They are considering open houses in Flagstaff, Page, and possibly the South Rim, to allow people to ask questions, receive the latest information, and interact with agency representatives.

In answer to a question, he clarified that these outreach efforts would not be connected with the public participation aspects of the EA.

**Outreach Plans – POAHG.** Mike Yeatts said the POAHG met on January 10 to discuss outreach needed should the HFE occur. There were representatives from GCMRC, BOR, FWS, NPS, and AGFD; a broader group of individuals than those normally involved. The POAHG agreed that it would have very limited involvement because it was not an AMWG-sanctioned event. POAHG could serve as coordinator between AMWG and the other outreach activities, and could provide the approved Fact Sheets and other information about the AMWG's role.

George Caan asked that the outreach messages take into account the last official action of the AMWG on this subject.

**Public Comments:** None.

Hearing no comments, Ms. Burman thanked everyone for their participation and adjourned the meeting.

The meeting adjourned at 12:05 p.m. MDT.

Respectfully submitted,

Linda Whetton  
U.S. Bureau of Reclamation

## General Key to Adaptive Management Program Acronyms

ADWR – Arizona Dept. of Water Resources	LCR – Little Colorado River
AF – Acre Feet	LRRMCP – Lower Colorado River Multi-Species Conservation Program
AGFD – Arizona Game and Fish Department	LTEP – Long Term Experimental Plan
AGU – American Geophysical Union	MAF – Million Acre Feet
AIF – Agenda Information Form	MA – Management Action
AMP – Adaptive Management Program	MLFF – Modified Low Fluctuating Flow
AMWG – Adaptive Management Work Group	MO – Management Objective
AOP – Annual Operating Plan	MRP – Monitoring and Research Plan
BA – Biological Assessment	NAAO – Native American Affairs Office
BAHG – Budget Ad Hoc Group	NAU – Northern Arizona University (Flagstaff, AZ)
BE – Biological Evaluation	NEPA – National Environmental Policy Act
BHBF – Beach/Habitat-Building Flow	NGS – National Geodetic Survey
BHMF – Beach/Habitat Maintenance Flow	NHPA – National Historic Preservation Act
BIA – Bureau of Indian Affairs	NPS – National Park Service
BO – Biological Opinion	NRC – National Research Council
BOR – Bureau of Reclamation	NWS – National Weather Service
CAPA – Central Arizona Project Association	O&M – Operations & Maintenance (USBR funding)
GCT – Grand Canyon Trust	PA – Programmatic Agreement
CESU – Cooperative Ecosystems Studies Unit	PEP – Protocol Evaluation Panel
cfs – cubic feet per second	POAHG – Public Outreach Ad Hoc Group
CMINS – Core Monitoring Information Needs	Powerplant Capacity = 31,000 cfs
CRBC – Colorado River Board of California	PPT – PowerPoint (presentation)
CRAHG - Cultural Resources Ad Hoc Group	R&D – Research and Development
CRCN – Colorado River Commission of Nevada	Reclamation – United States Bureau of Reclamation
CRE – Colorado River Ecosystem	RBT – Rainbow Trout
CREDA – Colorado River Energy Distributors Assn.	RFP – Request For Proposals
CRSP – Colorado River Storage Project	RINs – Research Information Needs
CWCB – Colorado Water Conservation Board	ROD Flows – Record of Decision Flows
DBMS – Data Base Management System	RPA – Reasonable and Prudent Alternative
DFCAHG – Desired Future Conditions Ad Hoc Group	SA – Science Advisors
DOE – Department of Energy	Secretary – Secretary of the Interior
DOI – Department of the Interior	SCORE – <b>S</b> tate of the <b>C</b> olorado <b>R</b> iver <b>E</b> cosystem
EA – Environmental Assessment	SHPO – State Historic Preservation Office(r)
EIS – Environmental Impact Statement	SOW – Scope of Work
ESA – Endangered Species Act	SPAHG – Strategic Plan Ad Hoc Group
FACA – Federal Advisory Committee Act	SPG– Science Planning Group
FEIS – Final Environmental Impact Statement	SSQs – Strategic Science Questions
FRN – Federal Register Notice	SWCA – Steven W. Carothers Associates
FWS – United States Fish & Wildlife Service	TCD – Temperature Control Device
FY – Fiscal Year (October 1 – September 30)	TCP – Traditional Cultural Property
GCD – Glen Canyon Dam	TES – Threatened and Endangered Species
GCT – Grand Canyon Trust	TWG – Technical Work Group
GCMRC – Grand Canyon Monitoring & Research Ctr.	UCRC – Upper Colorado River Commission
GCNP – Grand Canyon National Park	UDWR – Utah Division of Water Resources
GCNRA – Glen Canyon National Recreation Area	USBR – United States Bureau of Reclamation
GCPA – Grand Canyon Protection Act	USFWS – United States Fish & Wildlife Service
GLCA – Glen Canyon National Recreation Area	USGS – United States Geological Survey
GRCA – Grand Canyon National Park	WAPA – Western Area Power Administration
GCRG – Grand Canyon River Guides	WY – Water Year (a calendar year)
GCWC – Grand Canyon Wildlands Council	
GUI – Graphical User Interface	
HBC – Humpback Chub (endangered native fish)	
HMF – Habitat Maintenance Flow	
HPP – Historic Preservation Plan	
IEDA – Irrigation & Electrical Districts Assoc. of Arizona	
INs – Information Needs	
IT – Information Technology	
KA – Knowledge Assessment (workshop)	
KAS – Kanab ambersnail (endangered native snail)	

**Q/A/C/R** = Question/Answer/Comment/Response