

**Glen Canyon Dam Adaptive Management Work Group Meeting
August 12, 2009**

Conducting: Anne Castle, Secretary's Designee
Facilitator: Mary Orton

Convened: 9:35 a.m.

Committee Members/Alternates:

Charley Bullets, Southern Paiute Consortium
George Caan, Colorado River Commission/Nevada
Kerry Christensen, Hualapai Tribe (provisional alt.)
Jennifer Gimbel, Colo. Water Conservation Board
Jay Groseclose, NM Interstate Stream Comm.
Christopher Harris, Colorado River Board/CA (alt.)
Amy Heuslein, Bureau of Indian Affairs
Leslie James, CREDA
Arden Kucate, Pueblo of Zuni (provisional mem.)
Nikolai Lash, Grand Canyon Trust
Steve Martin, NPS/GCNP

Ted Rampton, UAMPS
Tom Ryan, USBR (alt.)
Mike Senn, AGFD (provisional mem.)
John Shields, WY State Engineers Office
Sam Spiller, USFWS
Mark Steffen, Federation of Fly Fishers
Larry Stevens, Grand Canyon Wildlands Council
Dennis Strong, Utah Div. of Water Resources
Brad Warren, WAPA
Bill Werner, ADWR

Committee Members Absent:

Loretta Jackson-Kelly, Hualapai Tribe
Andre Potochnik, Grand Canyon River Guides
Gerald Zimmerman, Colorado River
Board/California

VACANT, Hopi Tribe
VACANT, Navajo Nation

Interested Persons:

Andrea Alpine, USGS
Deanna Archuleta, DOI
Mary Barger, WAPA
Perri Benemelis, ADWR
Glenn Bennett, USGS/GCMRC
Shane Capron, WAPA (TWG Chair)
Rick Clayton, USBR
Lew Coggins, USGS/GCMRC
Marianne Crawford, USBR
Bill Davis, CREDA
Kurt Dongoske, Pueblo of Zuni
Helen Fairley, USGS/GCMRC
Dave Garrett, Science Advisors
Pamela Garrett, M³Research
Mike Gazda, APA
Anamarie Gold, USBR
James Gourley, USBR (GCD)
Paul Grams, USGS/GCMRC
John Hamill, USGS/GCMRC
Lynn Hamilton, Grand Canyon River Guides
Norm Henderson, NPS
Doug Hendrix, USBR
Rick Johnson, Grand Canyon Trust
Ted Kennedy, USGS/GCMRC
Robert King, UDWR

Anne Kinsinger, USGS
Kate Kitchell, USGS
Glen Knowles, USFWS
Dennis Kubly, USBR
Jane Lyder, DOI-Deputy AS, FWP
Kelly McGill, NAU Graduate
Barbara McKenzie, USGS/GCMRC
Ted Melis, USGS/GCMRC
Steve Mietz, USGS
Doug Miller, CAWCD
David Nimkin, National Parks Conservation Assoc.
Mary Orton, The Mary Orton Company
Don Ostler, Upper Colorado River Commission
S. Clayton Palmer, WAPA
Bill Persons, AGFD
Jane Rodgers, NPS/GCNP
D. Randolph Seaholm, CWCB
Mike Shulters, USGS-PSW-WR
Bob Snow, DOI Solicitor's Office
Mike Snyder, NPS
Pam Sponholtz, USFWS
Jason Thiriot, Colorado River Commission/Nevada
Larry Walkoviak, USBR
Barry Wirth, USBR

Meeting Recorder: Linda Whetton, USBR

Welcome and Administrative: Ms. Anne Castle introduced herself as the new Secretary's Designee and welcomed AMWG members, alternates, and members of the public. A roll call was taken and a quorum (15 members) was established. Ms. Castle said the GCDAMP was one of the success stories of both adaptive management and collaborative action to balance competing interests. While she was aware that people don't always agree on issues and there are very important issues to be resolved,

she doesn't want people to lose sight of the fact that this is a success story. The AMWG has worked together, moved forward, and resolved a number of disputes in a collaborative way and she hopes that continues.

Approval of April 29-30, 2009, Meeting Minutes. Pending a few edits, the minutes were approved without objection.

Action Item Tracking Report. (**Attachment 1**). Mr. Larry Walkoviak distributed copies of a draft ad hoc group list (**Attachment 2**). It will be updated and provided to AMWG at their next meeting.

Policy Update. Ms. Castle said there is no response yet from the Secretary on the April 2009 minority and dissenting reports and noted the new Administration is still getting established.

Legislative Updates.

Mr. Dennis Kubly said he normally looks at bills that relate to endangered species, energy, and Federal Advisory Committee Act (FACA) issues.

P.L. 111-11. Mr. Kubly said Congress passed Public Law 111-11, the Omnibus Public Land Management Act of 2009, and its accompanying appropriations bill. He added that Section 9505 of P.L. 111-11 requires the Secretary of Energy to assess the effects of climate change. He suggested the AMWG may want to keep current on this bill. Mr. John Shields added that Section 9107 of PL 111-11 extended the authorization period for capital construction funding for the Upper Colorado and San Juan endangered fish recovery programs through Sept. 30, 2023, and increased the authorization ceiling by a total of \$27 billion. He said bills have been introduced in the United States House and Senate to extend the authorization period for annual base funding for those two programs as well and described the hearing schedule.

H.R. 3481. Mr. Kubly reported Representative Raul Grijalva (AZ) introduced H.R. 3481, which is to provide for the protection of the quality of water in the Lower Colorado River and the maintenance of a healthy Lower Colorado River ecosystem.

H.R. 1320. Mr. Kubly reported a proposed bill to increase the transparency and accountability of Federal advisory committees was forwarded to the House from committee without amendments. The short definition of the bill is, "All appointments to advisory committees shall be made without regard to political affiliation or political activity, unless required by Federal statute." It also directs each agency head to ensure that no individual appointed to serve on an advisory committee that reports to the agency has a conflict of interest that is relevant to the functions to be performed by the advisory committee, unless the head of the agency determines that the need for the individual's services outweighs the potential impacts of the conflict of interest.

FWS News Release - Northern Leopard Frog. Mr. Sam Spiller distributed copies of a News Release (**Attachment 3**) which was the result of an initial review of a petition seeking to protect the northern leopard frog through its range of 19 western states under the Endangered Species Act. The Service will undertake a more thorough, scientific review of the species to determine whether to propose adding the species to the federal list of threatened and endangered species.

H.R. 3183. Mr. Ted Rampton informed the AMWG there was language in the House, Energy, and Water Appropriations Bill (**Attachment 4a**) regarding the AMWG and other issues that were reported out of the House. There was a letter from certain Western Senators (**Attachment 4b**) addressed to the conferees, offering substitute language and some other material regarding the AMWG.

Grand Canyon Trust Litigation Update. Mr. Bob Snow provided information on litigation GCT brought against the Dept. of the Interior (Bureau of Reclamation) in December 2007. A decision was issued by

the judge in 2008 on the count regarding development and issuance of annual operating plans. The court has held two oral arguments on the part of the case that addresses the Department's experimental plan decision-making in 2008 and that includes the Fish and Wildlife Service. In a May 26, 2009 decision, the Department prevailed on the two counts dealing with NEPA and the GCPA and the annual operating plans. With respect to the ESA count, the court found that the ESA compliance may not have complied fully with the law and has remanded it to the Fish and Wildlife Service with specific instructions for further work and consideration.

As of last night, Judge Campbell denied GCT's request to allow those portions for which the judge had issued substantive opinions to be allowed to go to the Ninth Circuit for appellate review. FWS must now reassess some of its 2008 decisions by October 30, 2009. Mr. Snow said he didn't feel the AMWG meeting was the right forum to get into the litigation issues and feels it is especially true when a portion of the case has been sent back to FWS for a response. He said the judge's decisions are available if any of the AMWG members want them.

Mr. Nikolai Lash said he thought Mr. Snow's interpretation was factually correct. He stated GCT has eight claims before the court with five having been ruled upon. He said the court states in the opinion that they're fully prepared to require SASF be implemented if FWS can't show the basis for changing its mind about MLFF between the 1994 Biological Opinion and that of 2008. He said the court's decision could change things very much and GCT believes they are still seeing illegal flows from GCD. GCT feels there are serious violations taking place. The decision that the court made last night was to not allow GCT to go to the Ninth Circuit before the remainder of the case is adjudicated. GCT asked for special permission to move it to the Ninth Circuit (their loss on the NEPA claims for the experimental plan) but the court denied it saying it was too related to the existing issues. GCT will appeal to the Ninth Circuit on the claims they have lost when the court finishes ruling on the remaining claims.

River Runners for Wilderness vs. NPS. Mr. Snow said this case challenged the NPS Colorado River Management Plan, and the district court and the Ninth Circuit upheld the Plan. When the Ninth Circuit ruled in favor of NPS, they adopted the Superior Court ruling in its entirety.

AMWG Appointments/Reappointments. Ms. Castle reported the paperwork to appoint and reappoint members and alternates continues through Departmental review.

Tribal Liaison Update. Ms. Castle reported that DOI representatives met with members of various tribes and discussed a specific job description that Mr. Arden Kucate provided for the tribal liaison position. This position would act as liaison between the tribes and the Secretary of the Interior to allow the tribes to have more effective representation within the AMWG. It would be housed in the Secretary's Office, while the person might be located either in the Phoenix or Flagstaff area or in Washington, DC. Funding still needs to be arranged and they need to discuss what would be needed to effectuate the goals expressed by the tribes.

Pending Items

Roles Ad Hoc Group Report. Ms. Castle said she would not address this report as it includes issues that are in dispute that will be dealt with at the Department level. Some may be handled through the DOI Policy Group. She is hopeful that items which have been stalled can be resolved and brought back to the AMWG fairly soon.

GCMRC Updates (AIF=Attachment 5a)

Update on Reporting Schedule for the March 2008 High Flow Experimental Results. Dr. Ted Melis said draft reports for the science results related to the 2008 March HFE are being prepared this summer and final reports are scheduled for completion in December 2009. The results will be

presented to the TWG in early January 2010. In answer to a question, he said that the LSSF Synthesis report should be published in the next 3-6 months.

2010-11 AMP Fish Monitoring: Incorporating Protocol Review. Dr. Lew Coggins gave a presentation on the Fish Monitoring PEP (**Attachment 5b**), whose overall recommendations were: 1) Shift resources from robust monitoring elements (as appropriate) to insufficient monitoring elements, and 2) Implement detailed recommendations subject to analyses of proposed program changes. He said in FY2010 the USGS, USFWS, and AGFD will review fish monitoring data, particularly capture/recapture; an annual reporting meeting will be held in January 2010 to review the results; and recommendations for FY2011 projects will be reviewed by the Science Advisors. He noted that before any changes were made to protocols, following analyses of the PEP recommendations, GCMRC will make a set of recommendations for changes in monitoring for 2011, which will be reviewed by the Science Advisors. Both that review and GCMRC recommendations will be brought before the TWG.

Summary of 2009 Mechanical Removal Project. Mr. Andy Makinster gave a presentation (**Attachment 5c**) on mechanical removal of nonnative fish completed in May. Prior to the 2009 mechanical removal effort, the rainbow trout population in the LCR reach rebounded to an estimated 2,300-3,000. After removal of about 1873 RBT, roughly 500-1,100 RBT remain. He said one trip a year limits their ability to draw inferences about the effectiveness of RBT removal, but they gained additional knowledge on native species.

Nonnative Fish Management Plan. Dr. Coggins distributed copies of his presentation (**Attachment 5d**) and provided an update on the status of the fish management plan GCMRC recently drafted and gave to TWG for review. He also distributed copies of the Summary of Plan Tasks Included in the GCMRC FY10-11 work plan (**Attachment 5e**). He concluded with next steps: 1) GCMRC to receive comments from the TWG by 8/30/09; 2) TWG to vote on acceptance at its next meeting; 3) Contingent on the TWG's decision, AMWG may vote on its adoption at their next meeting; and 4) an implementation plan is being developed by cooperating agencies.

Fall Steady Flow Experiment Science Plan. Dr. Ted Kennedy gave a presentation (**Attachment 5f**), and hypothesized the effects of this experiment will be subtle because the proposed flows represent 'a conservative approach to changes in dam releases' (2008 BO). As such, the science plan 1) Incorporates multiple lines of evidence to evaluate humpback chub response, 2) Includes measurements of explanatory variables (i.e., water temperature and food resources), and 3) Includes rainbow trout studies in Lees Ferry. He said the plan was given to the TWG on 8/7/09 with comments due back on 9/4/09; TWG and GCMRC will discuss it at the next TWG meeting. In answer to a question, he said that water temperature data collection is a lower priority than the humpback chub projects. However, foodbase and water temperature are explanatory variables that will help us to interpret the chub data.

Report on the Cultural Monitoring Research and Development Project. Ms. Helen Fairly distributed copies of her presentation (**Attachment 5g**), which provided information on the geomorphic process and erosion control (check dam effectiveness study). She summarized the accomplishments to date and said the next steps will be to: 1) Complete evaluation of monitoring tools while mapping additional sites, 2) Complete assessment of existing GIS data, and 3) Complete additional Phase I reports. The goal is to design and implement a 3-year pilot program using tools and protocols evaluated in Phase I. Steve Martin from Grand Canyon noted they were trying to integrate the two cultural resource monitoring programs.

Update on Sediment Inputs and 2008 High Flow. Dr. Paul Grams gave a presentation (**Attachment 5h**) on current sediment inputs in Grand Canyon for areas they monitor. He offered the following conclusions regarding sand budget leading up to and through the 2008 high flow: 1) There was significant sand accumulation in all reaches between the 2004 and 2008 high flow, 2) Compared to

2004, there was more sand in 2008 and it was more evenly distributed throughout all reaches, and 3) Although the high flow resulted in sediment export, less sand was exported than had accumulated leading up to the high flow. As to post-2008 high flow sediment budget and tributary sediment inputs in 2009, so far this year's inputs have been minimal and have only resulted in net sand accumulation in the downstream reach that was affected by the highly unusual 2008 Havasu Creek flood.

Update on the General Core Monitoring Plan for the GCDAMP. Dr. Melis's presentation (**Attachment 5f**) focused on providing a status report on the development of a general core monitoring program. He gave the elements established in the first step of the four-step process and concluded with a timeline. The final step would incorporate TWG input and seek approval of the plan in FY 2010.

Humpback Chub Comprehensive Plan (AIF and Plan = Attachment 6a) Mr. Shane Capron distributed copies of the Plan and his presentation (**Attachment 6b**). He thanked everyone who worked on the Plan and noted that Glen Knowles had to recuse himself from working on the Plan due to the ongoing GCT litigation. He reviewed the Plan's table of contents and provided additional comments on specific items. He said the Plan would allow the group to analyze threats over the next few years and modify actions by the program.

Science Advisor Comments. Dr. Dave Garrett said when the Science Advisors received this program activity in 2005 for a first review, they were quite critical of the program approach. It didn't have a systematic approach or outline of science and management integration. The longer term nature of the activities listed was also not discernable. The 2007 draft addressed many of their concerns, from providing a strategy to a systematic integration of both science and management directed at outcomes that responded to Information Needs. He added the Humpback Chub AHG was established immediately and it triggered a whole year of multi-science activities. He said the Science Advisors feel strongly that the AMP needs to look at the management actions and agree with the TWG in moving the plan forward. In answer to a question, Dr. Garrett said that integration of such studies as the nearshore ecology, translocation, and mechanical removal should be linked in an overall plan.

Q: The Plan looks great. With the studies on nearshore ecology, translocation, mechanical removal, and now the Comprehensive Plan I wonder how all this fits together? It seems that when a Comprehensive Plan has been provided, it's going to take all the rest of the plans that are dealing with a particular resource and put it all together. Do some of the case studies that have been done need to move into a comprehensive study where all these competing studies are going on? The question of science to management actions is that we are still conducting science, still evaluating, and the idea of having to move from science to management is hard to understand and yet that's one of the goals of this group. In the comprehensive recovery plan which includes a lot of material on the HBC, we're also looking at the same goal with respect to information on building beaches and backwater habitats and translocation and mechanical removal. I'm not sure if that makes a lot of sense but I'm wondering how all this fits into a re-working of this type of thing instead of a review of this program. (Caan)

A: Systematic approaches that link all resources of concern is the adaptive management process and it is necessary. In the last five years, the AMP has made a major step forward in making those improved systematic planning directions. For example, the nearshore ecology and the native and non-native fish are now being brought together in the major plans. I think it's a step in the direction that you are looking for and it certainly is a step in the direction the SAs are looking for. (Garrett)

C: There is inevitably a larger scenario for what's being proposed here. This is pretty much restricted to Grand Canyon HBC and HBC elsewhere in the Colorado River Basin are in decline. We don't have the kind of control of information that would be ideal for this fish to be able to relate to what's going on with the HBC specifically to dam operations and that's the larger context. This program is always dealing with that issue but not really understanding what the context of what we can do with dam operations to improve this natural resource. (Stevens)

AMWG Motion (Proposed by Steve Martin, seconded by Larry Stevens). The AMWG has received and accepts TWG's evaluation of the HBC Comprehensive Plan and amends it to include annual monitoring of the abundance of HBC associated with the nine HBC mainstem aggregations listed in Valdez and Ryel (1995). AMWG forwards the Plan to the Implementation Plan Ad Hoc Group, with a request to review and make a recommendation to the full AMWG

on the following items: 1) Determine which actions identified in the Humpback Chub Comprehensive Plan can be accomplished under the AMP, and 2) Explore the various options for completing actions that do not fall under the authorities of the AMP.

Mr. Martin explained that he added language to the proposed motion to include annual monitoring of the mainstem aggregations because they are interested in how the migration of the reintroduced chub affects the mainstem aggregations. They also feel it would be important information for recovery, and he feels it should be included for consideration by the group when they determine what should be in and out.

Members expressed concerns about the amendment language being mandatory versus being permissive, over-handling of fish while doing monitoring activities, being less intrusive, reducing the number of mainstem fish survey trips, the establishment of a recovery implementation program, how often and where HBC are monitored, using science and analysis of data to improve the efficiency of the AMP, and Pueblo of Zuni cultural issues.

After further discussion, Ms. Castle advised the formation of the Comprehensive Plan Implementation Ad Hoc Committee (CPIAHC) could address the concerns expressed by the AMWG and report back to them at the next meeting.

After changes to the motion, Ms. Castle asked if there was objection to passing the motion by consensus. Hearing there were, a roll call vote was taken:

Stakeholder	Vote	Stakeholder	Vote
Arizona	Y	Hualapai Tribe*	Y
Arizona Game and Fish Dept.	Y	National Park Service	Y
Bureau of Indian Affairs	Y	Navajo Nation	Vacant
Bureau of Reclamation	Y	Nevada	Y
California	Y	New Mexico	Abstain
Colorado	Y	Pueblo of Zuni*	N
CREDA	Y	Southern Paiute Consortium	Absent
Federation of Fly Fishers	N	UAMPS	Y
Fish and Wildlife Service	Abstain	Utah	Y
Grand Canyon Trust	Y	Western Area Power Administration*	Y
Grand Canyon Wildlands Council	Y	Wyoming	Y
Grand Canyon River Guides	Absent		
Hopi Tribe	Absent		
Voting Results: Yes = 16 No = 2 Total Voting = 18 2/3 = 12 MOTION PASSES			

* Votes were considered "provisional" pending their official appointments to the AMWG by the end of the month. In an e-mail sent by Ms. Castle to the AMWG on 9/1/09, the provisional votes were considered official because the appointments had been finalized.

Mr. Sam Spiller said he was one of the three co-chairs of the Humpback Chub Implementation AHG and along with Randy Seaholm and Nikolai Lash. Due to ongoing litigation with GCT and FWS, Mr. Spiller said he has been advised by legal counsel that he can no longer serve as a co-chair. Ms. Castle said she would discuss a resolution with Sam, Randy, and Nikolai during the break and bring a decision back to the AMWG later this afternoon.

Mid-Year Expenditure (AIF = Attachment 7a). Mr. Dennis Kubly distributed copies of a spreadsheet with Reclamation's mid-year expenditures report (**Attachment 7b**). Being far enough along in the fiscal year, he chose to present Reclamation's expenses through the third quarter. He

noted there are no items significantly over or under budget, and nothing to be concerned about. He said any carryover funds will go into the Experimental Flow Fund.

Mr. Kucate asked why the appropriated funds set aside for the tribes was not increased by the CPI as were other projects. Mr. Kubly said part of the problem with justifying the increase is the lack of the expenditure of the money. He said Mike Berry is having discussions with the tribes about how to expend the unexpended funds. He explained that it's hard to ask for additional funds when there are funds remaining in the accounts.

GCMRC Mid-year Expenses. Mr. John Hamill distributed and discussed several documents: general summary of expenditures, a detailed project-by-project accounting of expenditures and obligations through July 6, 2009, and Table 2 (all combined in **Attachment 7c**). He said in general terms about 80% of budget is expended or obligated. He pointed out the anticipated carryover associated with the projects was \$1,244,064, which is targeted for use in the FY10 budget. He noted \$287,904 for the R&D for core monitoring of cultural sites project has not been spent in FY09 due to NPS permitting issues, so those funds are being applied to the FY10 budget. He said the other big item was the contingency fund for the May 2009 overflight. They had some extra money set aside to cover whatever contingencies might come up with that. There were some discussions about doing a LiDAR overflight with that money; however, that project never got off the ground so that money is still available.

FY2010-11 Budget Discussion (AIF with FY2010-11 Budget and Workplan = Attachment 8a).

Ms. Castle said the budget motion that appears on the agenda was modified to remove the \$70,000 allocation for NPS cultural resources because it was a Department of Interior issue that will be resolved internally.

Mary Orton reviewed the budget discussion procedures. She reminded members who intend to propose increases to a line item that they will be asked to explain what line item would be decreased in order to ensure the budget is balanced.

Ms. James said with the complexity of the AMP budget, it would really be beneficial if members who wanted to make changes or had questions could submit them prior to the meeting so all the members have time to review them.

Mr. Lash said he has learned from past actions it hasn't been beneficial to bring motions early. He noted the rules allow for motions to come the day of the meeting and said that a motion for an SASF for example is not going to pass as much as it has to do with adaptive management, but more for political reasons. He said that probably two years ago GCT gave advance notice that they wanted to see the law complied with. They wanted to see the Annual Report to Congress delivered to Congress as required by the GCPA. Other members said they wanted GCT to withdraw their motion because they had 30 days to look it and orchestrate a response. An orchestrated response was "we'll take care of that if you'll withdraw the motion. We'll commit to getting it done." Mr. Lash said they never saw the Report to Congress and reminded people that it still hasn't been done. He said for members to propose motions that aren't going to pass, he feels they're basically putting in a placeholder in order to write a minority report and then go to the public and bring pressure on this group to do a better job of fulfilling the requirements of the GCPA.

Hydrograph and Basin Hydrology Report. Mr. Rick Clayton gave a presentation (**Attachment 8b**) on the Upper Basin hydrology and projected operations for 2010. Flaming Gorge had 10 feet of filling which was anticipated. Blue Mesa filled up to the top. It was uneventful in New Mexico. There was 3 million acre-feet of additional filling in Lake Powell this season, which started at 3,610 and reached 3,642. He said if Lake Powell is projected to reach the equalization elevation in the April 24-month study at the end of the water year, the equalization tier shall govern operations of Lake Powell for the remainder of the water year. He reviewed the maintenance schedule at Glen Canyon Dam, where the

effort is to avoid being offline during the high power months of December-January and the summer of 2010.

In answer to questions, he said that the Bureau had not yet worked out the transitions for the low flow experiment, the 25,000 cfs equalization flows would be steady, and the spillway crest would be 3,648. Other comments included:

- We would like to see a scientific and clear objective for the transition.
- We have concerns about the potential high flows and equalization, coupled with the high number of visitors, and the resultant impact on the natural and cultural resources.
- We suggest that GCMRC assess the dropping side and what is stranded (food, fish, etc.), and also monitor the potential erosion of beaches.

TWG Chair Report. Mr. Shane Capron explained (**Attachment 8c**) the two-year biennial budget process, the TWG's action and processes, and the TWG motion. He concluded with the following TWG priority concerns that they are working on: 1) Burden rate accounting details, 2) Is the GCMRC response to trout natal origins and HFE plan adequate? 3) Use of the experimental fund to support nonnative control, 4) Consideration of minority/dissenting reports, 5) Implementation of fish PEP changes in FY 11 budget, and 6) Start work on revising AMWG priority questions.

Minority Report. Mr. Mark Steffen distributed copies of his minority report and then gave a presentation on "Trout or Humpback Chubs" (**Attachment 8d**). He said he used to support trout removal because it was limited in location and because it was part of a general non-native fish killing operation. Now he feels it has become an issue of either trout or chubs, as no one discusses the other non-native fish that were removed. He will not support it if he feels it is unjustified or is expanded to other areas. He said there are some things to keep in mind: 1) chubs are warm water fish and trout are cold water fish, 2) chubs are doing very well as long as they stay in that warm, spring-fed LCR, 3) trout are doing reasonably well in cold water, and 4) trout can't go into the LCR. He argued there is not good evidence that trout eat chubs. In answer to a question, he said he was concerned about trout removal in places where there are no HBC, and that the removal efforts started when it was thought that the HBC numbers were down to 1,000 or 2,000 while now the lowest number is 5,000, which calls the need for the program into question.

Pueblo of Zuni Dissenting Report. Mr. Arden Kucate distributed copies of the Zuni dissenting report (so called because there was no official Zuni representative at the time) (**Attachment 8e**). He said the Grand Canyon and the LCR are very significant to the Pueblo of Zuni, and the disturbance to other native fish and the environment has had impacts on the cultural practices. He said Governor Cooney wrote a letter to the Bureau of Reclamation (*Zuni letter and Reclamation response included with Attachment 8e*) raising concerns about mechanical fish removal near traditional cultural properties. He asked Kurt Dongoske to speak on the subject.

Mr. Dongoske said Zuni wants the AMWG to consider the cultural concerns of the Tribe and the fact that there seems to be a conflict of cultural values with regard to mechanical removal. There needs to be a process within the AMP to consider that conflict and to come to a mutually satisfactory resolution that addresses proper management of native fish within the canyon and also gives consideration and concern to the values of the Zuni people. They are concerned about how a research experiment about the predation of trout on HBC transitioned into a management action without due consideration of the process within the AMP. They also don't think research supports the hypothesis that trout predation significantly impacts HBC population. He cautioned against relying on anecdotal reports that attribute to mechanical removal the reduction of trout numbers and the increase of native fish; other factors that may contribute to native fish increase are not being evaluated.

Mr. Kucate said their concerns warrant government-to-government consultation, and that the tribe was open to determining if there was a way to reduce nonnative fish populations to support the HBC.

Ms. Castle said Reclamation has scheduled a meeting with the Pueblo of Zuni on Sept. 15, 2009, in an effort to better understand the cultural values, and noted further discussions will be required.

Q: Mark, when you described your initial support for this program and how it's translated over time to not supporting it, one of the things you mentioned was that the reason you couldn't support it today is because it's arbitrary. I'm wondering how you could support mechanical removal. (Caan)

A: I don't know. It's not really that it's arbitrary, but what is arbitrary is when we want to start going around and killing trout in the extremities of the canyon where chub don't live anyway like Bright Angel Creek or directly downstream of the Paria. I would consider that arbitrary. We just need to re-evaluate the evidence. I really think that when this group decided to start doing this, it had good reason to. I don't think those reasons exist anymore and I don't think they were accurate at the time and that's the point I was trying to make and I wish we could stop doing something if we realize we were wrong for doing it in the first place. The reasons we started doing it weren't right. We were told that the chubs had declined to as low as maybe 1,000-2,000 and now we're pretty sure they never got any lower than 5,000. So obviously we were told things that were not true. I really don't think it's necessary. I don't think there is anything we need to do to help the chubs. (Steffen)

Q: Arden, it may or may not be shown in the long run that trout have an impact on chub. Like Mark, I take that information into consideration but I think we need more understanding of that process. There are non-native fish that are very piscivorous that certainly do damage the native fish populations. If it was shown that non-native fish do have an impact on HBC and we value HBC as a native species, is there a way to reduce the non-native fish populations in a way that is perhaps certainly more respectful than we have been doing? Is there a way to accomplish that that would be acceptable to the Zuni Tribe? (Stevens)

R: I noticed some of the concerns and questions that we really need to openly lay out on the table with the Governor, tribal council, and interpret all these areas of concerns back to the cultural folks to have a real transparent understanding if there is a way to mitigate this process. I think we also need to gage as to what other federal agencies are linked to this whole process and how does that apply to whatever other due diligence that it warrants for the Tribe to make sure they clearly understand. I think to initiate this government-to-government consultation is really going to be the opportunity for the Pueblo of Zuni to really put these questions on the table and hopefully we can come to consensus where we go from there. (Kucate)

Mr. Lash said he was anticipating the push/pull of the discussion and got the sense that even though there has been good thought given to this issue in the past, maybe the group hasn't examined the foundation for doing it the same way or slightly different. He asked if he could propose some motion language. Ms. Castle said he could read the language and then they would decide whether to consider it now or later because there would be motions presented on the budget and hydrograph.

Potential Motion (Proposed by Nikolai Lash): The AMWG directs the TWG to describe the potential approaches to minimize predation on and other approaches to reduce negative impacts or improve populations of HBC and other native fish, and to outline the benefits of each approach. The TWG will report back to the AMWG with a completed report at the spring 2010 AMWG meeting.

Ms. Castle said that since there may be other motions presented tomorrow that may modify the budget, workplan, and hydrograph, she would continue with the agenda and consider Nikolai's motion tomorrow.

FY2010-11 Budget Presentation by Reclamation. Mr. Kubly said he would provide more detail and build on Shane's presentation. He distributed copies of his presentation, "GCDAMP Bureau of Reclamation Draft FY2010-2011 Budget and Workplan" (**Attachment 8f**). He addressed Mr. Kucate's concern about the appropriated tribal funds and said that right now there is a surplus of those funds still remaining in Interior. He said according to Mike Berry, Reclamation executed an Interagency Agreement with the Park Service for \$10,000 to train tribal representatives to record archeological site condition data in accord with the Park Service monitoring protocol. That funding was available because Navajo Nation did not participate in the tribal monitoring program, leaving \$30,000 of power revenues unexpended. The remaining \$20,000 will be returned to the Experimental Flow Fund.

The purpose of the training will be to allow the tribes to serve an archeological stewardship function and assist Reclamation in monitoring at-risk archeological sites as identified in the treatment plan. This monitoring will become a component of Reclamation's NHPA section 106 compliance effort. After being trained, each tribe will have available \$15,000 per year of appropriated dollars for this monitoring. The funding source will be the unexpended appropriated dollars that have been deobligated from the original contracts with tribes.

He said the Reclamation budget as presented is the budget that was passed by the TWG, but that the amounts in individual line items need to be modified by qualifying language in the comments section of each line item.

FY2010-11 Budget Presentation by GCMRC. Mr. Hamill distributed copies of his July 14, 2009 memo on the proposed budget along with his presentation (**Attachment 8g**). He said it wasn't unusual in preparing a budget that the demand for science and research projects exceeds the amount of funding that's available. He said it was especially challenging this year because they assumed a 0% CPI rate. Even though the CPI rate is 0%, costs continue to go up such as salaries, doing business with others, etc. There was a significant expansion in the non-native fish control program, which the AMWG considered an experimental action but GCMRC proposed as a management action that resulted from a biological opinion. His presentation focused on 1) Funding sources and budget guidance, 2) General focus areas, major activities, and Technical Work Group (TWG) recommendations, 3) Program highlights, 4) High-flow experiment (HFE) findings and options, 5) Deferred projects, and 6) Other significant issues.

He said the "GCDAMP Status of Experimental Funds FY2008-12" handout (**Attachment 8h**) depicts what the experimental funds will be used for as part of the budget. In both FY08 and FY09, \$500K was deposited. The accumulated total was \$920K at the beginning of FY08, which was exhausted in FY08 and FY09 for the 2008 high flow experiment. In FY10, they're proposing to use some of the experimental fund to complete the HFE synthesis (\$175K), nonnative fish control (\$150K), and also for the SCORE report in FY11 (\$309K). He said a big part of the budget is dedicated to compliance and for increasing management actions.

Comments from AMWG members included:

- Interest in the study of natal origins of trout.
- As GCMRC replaced equipment, where the surplus equipment goes.
- Concern about project-by-project burden rate. There are projects in the budget that appear larger because the burden rate isn't equal among projects. If that money went away, there might have to be a bigger reallocation of funds. Others disagreed that this was an issue that should be addressed.
- Concern that the Experimental Flow Fund was changing into something other than saving for a future flows experiment without AMWG action, and using it for nonnative fish control without evidence that it is needed.
- Lack of a science plan for a reduced scientific effort for a flows experiment.

In answer to a question, Mr. Hamill said that the number of nonnative fish removal trips needed is a function of the immigration rate. GCMRC accomplished one trip this year; two trips will show the change in fish populations from the first to the second trip and estimate immigration rates. He said Lew Coggins' calculations suggest that at minimum, two trips are needed, and perhaps up to six. The proposed budget funds two trips (six passes); six trips would cost \$900,000. To fund them would involve shutting down much of the rest of the science program. He said his concern was management actions being performed by the program, since there is no mechanism to fund them other than the GCMRC science budget. He said the program cannot fund a science program and also management actions.

In answer to a question about whether it could be proven that removing RBT from the mouth of the Little Colorado River benefits HBC, Mr. Hamill said the current 5-year plan wasn't set up as an

experiment to answer that question specifically, and we don't know whether temperature or reduced numbers of predators that contribute to increased numbers of chub. He said originally it was to be a 16-year experiment: control trout for 4 years, then let them come back, and then replicate it under different conditions in order to isolate cause and effect relationships. I think if we keep doing this over time we'll probably get a better answer to that, but right now we do know that trout eat HBC. GCMRC convened a panel of experts in April 2007 to discuss the long-term experimental plan, and their recommendation was to control trout on a continuous basis. They felt there was enough evidence to suggest that trout were a problem and that protecting the resource would trump having an experiment.

In answers to questions, Mr. Hamill said:

- TWG had endorsed having a workshop to develop a workplan for additional economic analysis. Norm Henderson (NPS), Clayton Palmer (WAPA), and Dave Garrett (SAs) met with Helen Fairley and him and developed a prospectus (**Attachment 8i**) for the workshop.
- GCMRC is in discussion with NPS for permitting the cultural program for FY10.
- Researching temperatures for the nearshore ecology study is not in the FY10 budget.

Public comments:

Jane Lyder (Deputy Asst. Secretary for Fish and Wildlife and Parks) said she was impressed with GCMRC and how they were managing the process of serving so many people with vast differences and interests.

Ms. Castle asked for any anticipated motions with respect to the budget and workplan that the AMWG would want considered for tomorrow's discussion. She said Mr. Lash had given Mary some and that they would be typed up and passed out to the members before the end of the meeting so members could review overnight and come prepared to discuss tomorrow. She asked Mr. Lash to present his motions and provide any background information or reasons for proposing them.

Proposed Motions:

1. Motion (Proposed by GCT, Nikolai Lash): The AMWG directs the TWG to describe the potential approaches to minimize predation on and other approaches to reduce negative impacts or improve populations of HBC and other native fish, and to outline the benefits of each approach. The TWG will report back to the AMWG with a completed report at the spring 2010 AMWG meeting.

2. Motion (Proposed by GCT, Nikolai Lash): The AMWG requests that WAPA and GCT produce an economic analysis of the WY2009 hydrograph comparing the actual economic value under MLFF with a hypothetical SASF regime. AMWG recommends to the Secretary that GCMRC then subject both analyses to their standard peer review process.

Mr. Lash said the cost of doing experiments for the benefit of Grand Canyon resources is a significant issue, and this motion was one that he thought could make progress without too much expense. GCT hired Dr. David Marcus to do an analysis on what it would've cost to do SASF under certain conditions in the last water year and they found that the differential between what was run and what it would cost to do 12 months of steady flows was not very much, at least in relative terms. He thinks there are other ways to do the analysis. As a start, he would be interested in having WAPA and GCT take a shot at this upcoming water year. GCT would commit to pay for another Marcus report and see WAPA produce numbers and then have GCMRC do a peer review to identify the distinctions between the two analyses, where they go different, how they do it, and provide a real solid start for having the discussion instead of just hearing someone say it's going to cost \$1 million or \$100 million. He wants some clarity and that's why he proposed the motion. Dave Garrett said he appreciated the proposal, but the science advisors have a consistent concern about conducting science outside the scientific

process that was originally directed to the GCRM. He recommended that the best approach would be to ask GCMRC to conduct this type of analysis since they are the program's science center.

3. Motion (Proposed by GCT, Nikolai Lash): The AMWG recommends to the Secretary of the Interior that Reclamation forward a proposal for implementing both a TCD and Sediment Augmentation project to the TWG. The TWG will make a recommendation to the AMWG for consideration at the spring 2010 AMWG meeting.

Mr. Lash said that about two years ago the Bureau of Reclamation was in the midst of developing an analysis of the viability of a TCD and different alternatives. Some concrete information was provided on a possible two-unit version of the TCD. They got information on sediment augmentation, what it might cost, and what it might deliver, but the work was stopped mid-way and without explanation. Even though the project is in the HBC Comprehensive Plan, he feels it's a priority. He stated they're not saying "put in a TCD in 2010, put in sediment augmentation in 2010," they're saying let's finish the analysis process and get this before AMWG in a timely fashion. That's what this motion gets at.

Q: Point of Order. Will these be translated into Agenda Information Forms so that we can have background similar to the other yellow sheets that were produced? I was under the impression that there was a cutoff date of approximately 15 days ago relative to motions that would be offered relative to the budget and approval of the work plan for this meeting. I don't mind in the least and certainly wouldn't want to restrict anybody's ability to bring items to the table of a critical nature but either we all respect that time frame that was established or alternatively we make arrangements such that we can have that information in front of us. I'm not certain if you're wordsmithing motions that could've been wordsmithed 16-17 days ago is necessarily the right way to go right now at this time. I think it was very clearly expressed via the list serve and Linda Whetton's very conscientious about making sure that people were aware that that was a constraint that would be established and I guess when we go to our Ground Rules in terms of doing your homework, I want to ask at a minimum that we have yellow sheets prepared overnight so that we have these and so that we can consider this, in essence the nature of routine business as opposed to abnormal business that for lack of a better understanding, I don't know why it wasn't brought up and presented two weeks ago. (Shields)

R: John, I just wanted to clarify one thing. Your request for additional information is certainly reasonable. Linda's e-mail did set a deadline but it did not say that additional changes would not be entertained at the meeting and we always have entertained additional changes at the meeting. We like to have them in advance, and we encourage people to send in advance, but we've never had a rule that said if you don't make it by the deadline, you can't bring it up at the meeting. (Orton)

C: It's my understanding that motions from the floor are allowable. Certainly if the fact that it is done that way and that you don't have the back-up information causes you to vote against it, that is understandable. If you feel you don't have enough information to vote affirmatively, that's a burden on people that gives incentive to provide the motions in advance. I think we go into the discussion knowing that. (Castle)

Q: But what is the basis for one party at the table bringing up multiple motions at this point in time from five minutes when we've agreed to adjourn and then we're going to take up these motions first thing in the morning when we had a procedure set up and set forth to ensure that there would be a period of deliberative time to allow everybody to have the opportunity to consider these things in writing on paper and to in essence collaborate and communicate with one another about the most beneficial position ought to be relative to those motions? That's why I brought this up as a point of order. I'm not attacking Nikolai or anything. I'm just asking why we're not approaching this from the standpoint of the deadline and putting pressure on people for everyone to respect that deadline. There is no basis as to why these motions are being offered now. That's the bottom line. Why now? Why not two weeks ago? (Shields)

R: I think we understand the point. Nikolai can respond to the question you just asked. Your Ground Rules do not preclude motions being offered from the floor. If the group wishes to reconsider that ground rule, that is certainly within the group's prerogative. Currently, we're operating under rules that allow for this procedure. (Castle)

4. Motion (Proposed by GCT, Nikolai Lash): The AMWG recommends to the Secretary of the Interior that seasonally-adjusted steady flows with a March BHBF (if the sediment trigger is met) is implemented in WY 2010.

Mr. Lash Nikolai said this motion was intended to reinforce what they asked for at the AMWG meeting held in 2007. They're looking for the same hydrograph of a March BHBF plus a seasonally adjusted steady flow regime. He said there was a hydrograph in the 1995 EIS that is comparable to one for an SASF.

Mr. Arden Kucate presented the following amendment:

5. Amendment : Recommend that the Secretary of the Interior meaningfully consult with the participating tribal stakeholders regarding the non-native fish control (i.e., mechanical removal efforts) portion of the 2010/2011 budget and work plan including an examination and evaluation of different locations for carrying out the mechanical removal and a compelling presentation on the scientific data that demonstrates a one-to-one cause/effect relationship between the destruction of thousands of trout and the improved condition of the Humpback Chub population and their critical habitat. Additionally, AMWG requests a review by GCMRC of the GCDAMP fisheries management program to determine if the mechanical removal requirement is no longer viewed as an experimental effort, but has transitioned into a management action.

Mr. Stevens expressed two concerns he felt the AMWG needs to consider: 1) understanding the assumptions behind whatever is being studied and, 2) making a comparison between what is known and unknown which usually involves some mechanism of control. He added that much of the science is founded on those topics, and it would be nice to bring those to the floor, especially as the AMWG tries to improve the ecological model of the river ecosystem.

Mr. Ryan offered a different amendment to the budget motion related to Mr. Kucate's amendment: **AMWG calls to the Secretary's attention the concerns of the Pueblo of Zuni and other tribes with the nonnative fish removal project, and requests that he take them into account as he considers this recommendation.**

Adjourned: 5:40 p.m.

**Glen Canyon Dam Adaptive Management Work Group Meeting
August 13, 2009**

Conducting: Anne Castle, Secretary's Designee
Facilitator: Mary Orton

Convened: 8:05 a.m.

Committee Members/Alternates:

Charley Bullets, Southern Paiute Consortium
George Caan, Colorado River Comm./NV
Kerry Christensen, Hualapai Tribe (provisional alt.)
Jennifer Gimbel, Colorado Water Conservation Board
Jay Groseclose, NM Interstate Stream Comm.
Christopher Harris, Colorado River Board/CA (alt.)
Amy Heuslein, Bureau of Indian Affairs
Leslie James, CREDA
Robert King, UDWR (alt.)
Arden Kucate, Pueblo of Zuni (provisional mem.)

Nikolai Lash, Grand Canyon Trust
Steve Martin, NPS/GCNP
Ted Rampton, UAMPS
Tom Ryan, USBR (alt.)
Mike Senn, AGFD (provisional mem.)
John Shields, WY State Engineers Office
Sam Spiller, USFWS
Mark Steffen, Federation of Fly Fishers
Larry Stevens, Grand Canyon Wildlands Council
Brad Warren, WAPA
Bill Werner, ADWR

Committee Members Absent:

Loretta Jackson-Kelly, Hualapai Tribe
Andre Potochnik, Grand Canyon River Guides
Dennis Strong, Utah Div. of Water Resources

Gerald Zimmerman, Colorado River Board/California
VACANT, Hopi Tribe
VACANT, Navajo Nation

Interested Persons:

Andrea Alpine, USGS
Deanna Archuleta, DOI
Mary Barger, WAPA
Glenn Bennett, USGS/GCMRC
Shane Capron, WAPA (TWG Chair)
Lew Coggins, USGS/GCMRC
Marianne Crawford, USBR
Kevin Dahl, Nat'l Parks Conservation Assoc.
Bill Davis, CREDA
Kurt Dongoske, Pueblo of Zuni
Helen Fairley, USGS/GCMRC
Dave Garrett, Science Advisors
Pamela Garrett, M³Research
Mike Gazda, APA
Anamarie Gold, USBR
James Gourley, USBR (GCD)
Paul Grams, USGS/GCMRC
John Hamill, USGS/GCMRC
Lynn Hamilton, Grand Canyon River Guides
Norm Henderson, NPS
Doug Hendrix, USBR
Rick Johnson, Grand Canyon Trust
Ted Kennedy, USGS/GCMRC

Anne Kinsinger, USGS
Kate Kitchell, USGS
Glen Knowles, USFWS
Dennis Kubly, USBR
Barbara McKenzie, USGS/GCMRC
Ted Melis, USGS/GCMRC
Steve Mietz, USGS
Doug Miller, CAWCD
David Nimkin, NPCA
Mary Orton, The Mary Orton Company
Don Ostler, Upper Colorado River Commission
S. Clayton Palmer, WAPA
Bill Persons, AGFD
Jane Rodgers, NPS-GRCA
D. Randolph Seaholm, CWCB
Mike Shulters, USGS-PSW-WR
Bob Snow, DOI Solicitor's Office
Pam Sponholtz, USFWS
Jason Thiriot, Colorado River Commission/Nevada
Larry Walkoviak, USBR
Barry Wirth, USBR

Meeting Recorder: Linda Whetton, USBR

Welcome and Administrative: Ms. Anne Castle welcomed the AMWG members, AMWG alternates, and members of the public.

Continuation of Motions/Amendments. Ms. Castle said she would like to address the amendment-type motions that were presented yesterday first before dealing with the main motion on the budget

and workplan. Ms. Orton distributed an amendment page (**Attachment 8j**) with the proposed budget motion and the six proposed amendments from yesterday's discussion. Mr. Stevens offered another amendment regarding the transfer of surplus equipment to AMP stakeholders. The motions/ amendments were taken in order of their introduction.

1. Motion (Proposed by Nikolai Lash, seconded by Larry Stevens): The AMWG recommends to the Secretary of the Interior that Reclamation forward a proposal for implementing both a TCD and Sediment Augmentation Project to the TWG. The TWG will make a recommendation to the AMWG for consideration at the spring 2010 meeting.

Mr. Werner asked if Mr. Capron had any idea how this work would affect the work currently being done by the TWG. Mr. Capron said that this motion begins first with a recommendation from Reclamation and he wasn't sure when that would happen. He pointed out that these are two components of the HBC Comprehensive Plan and will come back from the Implementation AHG when that's reviewed so he felt it was jumping ahead of that process. Ms. Gimbel felt this was a product of the TWG and didn't feel the AMWG should be micromanaging their schedule. She also expressed concern about having the money to do the analysis. Mr. Lash said it was already a task Reclamation was doing so he just wanted them to complete the work. Mr. Spiller said he was concerned with using the word "implementing" and offered the following change: remove the word "implementing" and add "review and advise the Secretary's Designee prior to the next AMWG meeting in regard to the potential for implementing both a TCD and a sediment augmentation project." Ms. Castle asked if the language change was acceptable. Mr. Lash said the proposal language was not meant to be a narrowing of alternatives but to clarify the analysis. After discussion and revision, the following motion was presented for vote:

Revised Motion (Proposed by Nikolai Lash, seconded by Larry Stevens): The AMWG recommends to the Secretary of the Interior that Reclamation report on the status of the TCD and sediment augmentation projects to the TWG. The TWG will make a recommendation to the AMWG for consideration at the spring 2010 AMWG meeting.

Passed by consensus with one abstention (Mark Steffen)

2. Motion (Proposed by Nikolai Lash, seconded by Larry Stevens). The AMWG directs the TWG to describe the potential approaches to minimize predation on HBC and other native fish, and to outline the benefits of each approach. The TWG will report back to the AMWG with a completed report at the spring 2010 AMWG meeting.

Mr. Werner questioned how this effort would be different and separate with the non-native control plan and the HBC Comprehensive Plan. Mr. Stevens said they addressed issues of cultural sensitivity about activities at the mouth of the Little Colorado River and this would be an opportunity to explore alternative means for the fish that are captured. Mr. Senn said that in looking at some of the preliminary data with the warmer temperatures and the increased populations of HBC, minimizing predation is not the only means to increase those fish populations. He asked if the following language change would be acceptable, after "minimize predation" consider inserting "and other approaches to reduce negative impacts or improve populations of HBC" and then just strike "on." After discussion, the motion read:

Revised Motion (Proposed by Nikolai Lash, seconded by Larry Stevens): AMWG directs the TWG to describe the potential approaches to minimize predation on and other approaches to reduce negative impacts or improve populations of on HBC and other native fish, and to outline the benefits of each approach. The TWG will report back to the AMWG with a completed report at the spring 2010 AMWG meeting.

Some members expressed concerns for addressing tribal issues and how this work is currently nested in the HBC Comprehensive Plan. Mr. Lash said he would be happy to withdraw his motion if there

were concerns. Ms. Castle decided to curtail further discussion until the Pueblo of Zuni expressed their concerns.

3. Amendment (Proposed by Nikolai Lash, seconded by Larry Stevens): The AMWG requests that WAPA and GCT produce an economic analysis of the WY2009 hydrograph comparing the actual economic value under MLFF with a hypothetical SASF regime. AMWG recommends to the Secretary that GCMRC then subject both analyses to their standard peer review process.

Mr. Lash said his reason for proposing this was because he feels it's a fundamental issue but if they had to pick polar opposites of flows it would be MLFF and SASF. He said the issue that comes up most often is the cost of running more steady flows, specifically more than two months of steady flows. He said the reason he thinks they didn't see SASF conducted is because they disturb the peaking power generation in the late summer months. The problem there is largely revenue. The GCT had Dr. David Marcus do an analysis of last year's water year and contrasted what was done with 12 months of SASF and depending on the assumptions and how monthly volumes were spread, the cost of doing that over and above the MLFF was two months of steady flows was between \$1.0 million and \$8.9 million. He thought that if WAPA did an analysis for this water year and contrasts the costs with what is being done versus the more expensive regime, see what the differential would be, and then have WAPA and GCT do an analysis and then have GCMRC sort out the differences and make a peer review of the studies and a comment on the studies. Mr. Palmer said he felt that in order for the analysis to be credible, they would want Argonne to do the work. Dr. Garrett said that GCMRC is the science entity for the program and should do the work. Mr. Hamill said he is proposing to hold a workshop in November where this issue could be discussed. Mr. Lash said if the motion could reflect the November workshop with a focus on contrasting MLFF and SASF, he would be okay with revised language.

Revised Motion (Proposed by Nikolai Lash, seconded by Larry Stevens): AMWG recommends to the Secretary that, at the November Socioeconomic Workshop, GCMRC produce a workplan for an economic analysis of the WY2009 hydrograph comparing the actual economic value under MLFF with a range of flows including a hypothetical SASF regime and pre-ROD flows.

Ms. Castle said it appears they are getting motions that are directing things that are already happening. She asked Mr. Lash to go back and refine the motion language and then reintroduce it later today.

4. Amendment (Proposed by Nikolai Lash, seconded by Larry Stevens): The AMWG recommends to the Secretary of the Interior that seasonally-adjusted steady flows with a March BHBF (if the sediment trigger is met) be implemented in WY 2010.

Mr. Werner asked if Reclamation had compliance in place. Mr. Ryan said it wasn't in place but there is some funding for compliance in their budget. He said there are two components, high flow and SASF. The SASF would probably be more difficult and challenging because it might interact with the interim guidelines.

Ms. Castle concurred with Mr. Shields' observation that this motion was made and voted on at the April 2009 AMWG meeting. She also noted the concept embodied in the motion is the subject of litigation.

Mr. Caan referenced the discussion held yesterday with GCMRC about the various high flow experiment options that were proposed were based on the synthesis of the HFE and the ability to garner science and the development of a science plan was based on the ability to get that synthesis so he felt it was incumbent upon the AMWG to wait for that synthesis before doing another BHBF or HFE. He advised he would not be voting for this motion.

Ms. Gimbel said she didn't feel the Department could proceed with this under the current court order. She also commented that it is not helpful to what is supposed to be a consensus building, collaborative process to continue bringing these kinds of motions to the floor knowing they won't get passed. She also took issue with Mr. Lash in his comments yesterday in which he said he makes the motions to use against us and that he doesn't give the AMWG a heads up on the motions. To her, she feels it poisons the process. For those reasons she said she would also vote against the motion and wants to make sure her comments are known to the Secretary when he receives a report.

Ms. Castle asked the three members who indicated they would be voting against the motion if there were any language modifications that would induce them to vote for the motion, otherwise she felt the question should be called. As there were not, she called for a vote.

Amendment (Proposed by Nikolai Lash, seconded by Larry Stevens): The AMWG recommends to the Secretary of the Interior that seasonally-adjusted steady flows with a March BHBF (if the sediment trigger is met) be implemented in WY 2010.			
Stakeholder Name		Stakeholder Name	
Arizona	N	Hualapai Tribe*	N
Arizona Game and Fish Dept.	A	National Park Service	A
Bureau of Indian Affairs	A	Navajo Nation	Absent
Bureau of Reclamation	A	Nevada	N
California	N	New Mexico	N
Colorado	N	Pueblo of Zuni*	N
CREDA	N	Southern Paiute Consortium	N
Federation of Fly Fishers	N	UAMPS	N
Fish and Wildlife Service	A	Utah	N
Grand Canyon Trust	Y	Western Area Power Administration*	N
Grand Canyon Wildlands Council	Y	Wyoming	N
Grand Canyon River Guides	Absent		
Hopi Tribe	Absent		
Voting Results: Yes = 2 No = 14 Total Voting = 16 2/3 = 11 MOTION FAILS			

* Votes were considered "provisional" pending their official appointments to the AMWG by the end of the month. In an e-mail sent by Ms. Castle to the AMWG on 9/1/09, the provisional votes were considered official because the appointments had been finalized.

5. Amendment (Proposed by Arden Kucate, seconded by Mark Steffen): AMWG recommends that the Secretary of the Interior meaningfully consult with the participating tribal stakeholders regarding the non-native fish control (i.e., mechanical removal efforts) portion of the 2010/2011 budget and work plan including an examination and evaluation of different locations for carrying out the mechanical removal and a compelling presentation on the scientific data that demonstrates a one-to-one cause/effect relationship between the destruction of thousands of trout and the improved condition of the Humpback Chub population and their critical habitat. Additionally, AMWG requests a review by GCMRC of the GCDAMP fisheries management program to determine if the mechanical removal requirement is no longer viewed as an experimental effort, but has transitioned into a management action.

After discussion, the following motion was considered and passed by consensus:

Revised Motion: AMWG recommends that the Secretary of the Interior conduct meaningful consultation with the participating tribal stakeholders regarding the non-native fish control (i.e., mechanical removal efforts) portion of the 2010/2011 budget and work plan including an

examination and evaluation of different locations for carrying out the mechanical removal and a compelling presentation of the scientific data. AMWG further recommends that the results of the consultation be reported to the AMWG.

Passed by consensus.

Ms. Castle said the AMWG would now take action on two previous motions.

2. Motion: The AMWG directs the TWG to describe the potential approaches to minimize predation on HBC and other approaches to reduce negative impacts or improve populations of on HBC and other native fish, and to outline the benefits of each approach. The TWG will report back to the AMWG with a completed report at the spring 2010 AMWG meeting.

Mr. Lash withdrew this motion.

3. Motion: AMWG recommends to the Secretary that, at the November socio-economic workshop, GCMRC produce a workplan for an economic analysis of the WY2009 hydrograph comparing the actual economic value under MLFF with a range of flows including a hypothetical SASF regime and pre-ROD flows.

Mr. Lash felt the motion was redundant so he withdrew it.

7. Motion (Proposed by Larry Stevens, seconded by Robert King): AMWG recommends to the Secretary of the Interior that federal agencies be directed to first offer surplus equipment purchased with GCDAMP funds to other AMP stakeholders, subject to applicable Federal laws and agency policy.

The motion was passed by consensus.

Mr. Walkoviak advised there are GSA rules about how surplus equipment is handled and that each agency has internal policies and regulations. He suggested the agencies look at their specific regulations.

Motion (Proposed by Jennifer Gimbel, seconded by Bill Werner):

The AMWG recommends that the Secretary adopt the Glen Canyon Dam Adaptive Management Program FY2010-2011 budget, workplan and hydrograph dated July 12, 2009, with the following changes:

- **The AMWG recommends to the Secretary of the Interior that Reclamation report on the status of the TCD and Sediment Augmentation projects to the TWG. The TWG will make a recommendation to the AMWG for consideration at the spring 2010 AMWG meeting.**
- **AMWG recommends that the Secretary of the Interior conduct meaningful consultation with the participating tribal stakeholders regarding the non-native fish control (i.e., mechanical removal efforts) portion of the 2010/2011 budget and work plan including an examination and evaluation of different locations for carrying out the mechanical removal and a compelling presentation of the scientific findings. AMWG further recommends that the results of the consultation be reported to the AMWG.**
- **AMWG recommends to the Secretary of the Interior that Federal agencies be directed to first offer surplus equipment purchased with GCDAMP funds to other AMP stakeholders, subject to applicable federal laws and agency policy.**

Mr. Palmer said WAPA wanted the burden rate to be shown for each project in the GCMRC budget. His concern was that some monies could be saved by having Reclamation do the contracting and avoid the occurrence of burden. He said he hoped GCMRC could provide the burden rates without additional work.

Ms. Alpine said that if the AMWG would like to have a presentation on how GCMRC computes their burden rates on various projects, she would volunteer Barbara McKenzie to make that presentation at a future meeting.

Mr. Lash said GCT wouldn't be able to vote for the budget because it's their position that they should be doing SASF this year and the budget is set around an unsupportable hydrograph.

Hearing there wasn't consensus on the budget motion, Ms. Castle asked for a roll call vote:

Motion (Proposed by Jennifer Gimbel, seconded by Bill Werner): The AMWG recommends that the Secretary adopt the Glen Canyon Dam Adaptive Management Program FY2010-2011 budget, workplan and hydrograph dated July 12, 2009, with the following changes:

- The AMWG recommends to the Secretary of the Interior that Reclamation report on the status of the TCD and Sediment augmentation projects to the TWG. The TWG will make a recommendation to the AMWG for consideration at the spring 2010 AMWG meeting.
- AMWG recommends that the Secretary of the Interior conduct meaningful consultation with the participating tribal stakeholders regarding the non-native fish control (i.e., mechanical removal efforts) portion of the 2010/2011 budget and work plan including an examination and evaluation of different locations for carrying out the mechanical removal and a compelling presentation of the scientific findings. AMWG further recommends that the results of the consultation be reported to the AMWG.
- AMWG recommends to the Secretary of the Interior that federal agencies be directed to first offer surplus equipment purchased with GCDAMP funds to other AMP stakeholders, subject to applicable federal laws and agency policy.

Stakeholder Name	Vote	Stakeholder Name	Vote
Arizona	Y	Hualapai Tribe*	Y
Arizona Game and Fish Dept.	Y	National Park Service	Y
Bureau of Indian Affairs	Y	Navajo Nation	Vacant
Bureau of Reclamation	Y	Nevada	Y
California	Y	New Mexico	Abstain
Colorado	Y	Pueblo of Zuni*	N
CREDA	Y	Southern Paiute Consortium	Absent
Federation of Fly Fishers	N	UAMPS	Y
Fish and Wildlife Service	Abstain	Utah	Y
Grand Canyon Trust	Y	Western Area Power Administration*	Y
Grand Canyon Wildlands Council	Y	Wyoming	Y
Grand Canyon River Guides	Absent		
Hopi Tribe	Absent		
Voting Results: Yes = 16 No = 2 Total Voting = 18 2/3 = 12 MOTION PASSES			

* Votes were considered "provisional" pending their official appointments to the AMWG by the end of the month. In an e-mail sent by Ms. Castle to the AMWG on 9/1/09, the provisional votes were considered official because the appointments had been finalized.

Voting Procedures. Ms. Castle said the Department has committed to meaningful consultation with Pueblo of Zuni and any other interested tribal stakeholders with regard to the non-native mechanical removal issue in particular. That consultation could result in modification to the workplan, specifically with respect to mechanical removal. DOI agency votes for the 2010-11 budget and workplan were not intended to undermine that consultation. Similarly, DOI agencies do not believe that the votes on the budget and workplan preclude another high flow experiment during the 2010-11 water years. She stated that was the position that the United States has taken in the pending litigation and it is the

express position in Reclamation's environmental assessment that is under review by the Federal District Court.

Ms. Gimbel said Colorado has always thought that a high flow experiment was a possibility depending on the triggers.

Mr. Lash said GCT brought litigation because they thought the law was violated, not to disturb the collaborative effort among AMWG stakeholders. He said he knew that it wasn't very helpful to bring forth four motions at the eleventh hour; however, he felt people listened and some good work was done. He said in the future GCT will be more forthcoming in presenting motions ahead of time and will commit to doing a better job of involving GCMRC when proposed motions might implicate their actions.

Stakeholder's Perspective. Mr. Mike Senn with the Arizona Game and Fish gave a presentation, "Arizona Game and Fish Department Perspective" (**Attachment 9**). He said the AGFD functions as a commission with five members appointed by the Governor to serve 5-year staggered terms. He said their agency takes its trust responsibility seriously, and manages wildlife as a trust responsibility for the citizens for the State of Arizona. Their goal is to seek and refine balance among all the resources. He said the thing that makes them unique as a state agency is that they receive no general funds from the State of Arizona. Their revenue is the proceeds from the sale of hunting and fishing licenses, matching excise taxes, state lottery funds, Indian Gaming funds, and contract work.

TWG Chair Report. Mr. Capron passed out copies of the TWG 1-year work plan (**Attachment 10a**) and the Biennial Budget Discussion Paper (**Attachment 10b**), and then gave a presentation (**Attachment 10c**). He reviewed the TWG's activities from last year and reported on accomplishments. The TWG also held a web conference in an effort to make progress and be more responsive to GCMRC, and he hopes to do more of those in the future. There could be a November TWG meeting or workshop to consider the economics workshop and the general core monitoring plan.

Mr. Capron concluded with the pros and cons between a 2-year rolling budget and a 2-year non-rolling budget.

Ms. James complimented Shane on the work being done by the TWG and said the 2-year proposal is a good approach.

Mr. Hamill said they spend a considerable amount of time working with the TWG to develop a budget and he said there are policy issues that the AMP struggles with that haven't been dealt with due to the time spent developing annual budgets. He feels a more forward looking approach on the part of AMWG and the TWG would be very effective in moving the program along instead of dealing with policy issues through a budget process. He's not sure having a rolling budget is going to save them any time and isn't sure what the FY2011 budget means and that there will likely be more discussions next year.

Dr. Garrett said that in 2007 the Science Advisors reviewed the AMP and one of the proposals was to move to a 2-year budget process. As such, the Science Advisors would like to see the program use a 2-year budget process and suggest using the off-year to deal with some of the management-science interface issues.

Mr. Kubly said that he thinks Shane is looking for direction from the AMWG for the TWG to engage in further deliberation and then to reach some consensus on a recommendation back to the AMWG. He said the Budget AHG spent at least six months in developing the budget process agreed to by AMWG

in August 2004. They put it in front of the Science Advisors and got their feedback. He said they weren't asking for a decision now but support that the TWG is moving in the right direction.

Motion (Proposed by Leslie James, seconded by George Caan): AMWG directs TWG to develop a two-year, FY11-12 two-year, non-rolling budget; and that a description of that process be provided by TWG to AMWG at its next meeting. Passed by consensus.

Funding for Non-native Fish Control and Other Future Funding Challenges (AIF = Attachment 11a). (Panel included Mike Senn, John Hamill, and Sam Spiller). Mr. Senn said AGFD was searching for funding for mechanical removal of non-native fish before they understood the concerns from Pueblo of Zuni tribe, and he respects the tribe and its concerns. He reminded people that AGFD has a dual role of managing both the sport fish and the native fish in the system and are an advocate for finding where those appropriate triggers for balance lie.

Mr. Hamill reviewed the sources of funds from his presentation yesterday. The major funding source is the experimental flow fund. They also used the non-native fish contingency fund and power revenues. He said having to implement the program within GCMRC's budget resulted in a number of projects that had to be deferred or scaled back. He said they had planned for two trips but data suggested that if they were concerned about meeting the goal that the FWS has established, it could require a doubling or tripling of that effort. This could increase it from \$300K per year to \$600-900K per year, which would have further ramifications to projects. He said the AMP is now at a point where the science is starting to transition into management actions, and he feels it is time to determine what needs to be done not only from a science but also a management and compliance standpoint.

Mr. Spiller gave a presentation on "Potential Funding Sources Beyond 2012" (**Attachment 11**). He reiterated that meetings were held to discuss funding in case mechanical removal were going to be done. He reviewed funding sources of the Upper Colorado River Basin Recovery Program. He said pending the consultation with the Pueblo of Zuni and any other tribes, the AMP has a real need with regard to non-native fish removal, because it will allow them to manage the fishery and maintain HBC downriver.

In answer to questions, Mr. Spiller said;

- When the Biological Opinion that included nonnative fish removal was written, FWS did not determine fund sources, and assumed that the management agency (in this case, Reclamation) would find the funds.
- FWS sent a proposed plan for a Recovery Implementation Program to the Department of the Interior, and a previous Secretary's Designee asked for revisions. That revision is in the FWS Regional Office. He offered to discuss it at the next AMWG meeting. In any case, that program as well would need to be funded.

A suggestion was made to determine how and when something moves to a management action, instead of starting with funding. Ms. Castle confirmed that the group had not considered criteria for determining management actions versus experimentation. Mr. Capron said the TWG had brought a proposal to address the management action question to the AMWG and it was put on hold.

ACTION ITEM: Mr. Spiller will provide an update on the progress of developing a RIP at the next AMWG meeting.

After further discussion and review of the motion passed by TWG, the following motion was passed by consensus:

Motion (Proposed by Sam Spiller, seconded by Bill Werner): The AMWG requests that the Science Advisors survey other adaptive management programs and develop a report which describes their definitions of criteria for defining science-based management actions and the transition from research to management. The report should be provided to the TWG and AMWG members, and TWG should review the report and forward to AMWG options for AMWG to consider with regard to how GCDAMP should handle these issues.
Motion passed by consensus.

Q: In order to define the criteria for moving from research to management actions, don't you need to know what the desired future conditions are before so they can achieve those goals for it to become something to be done and forwarded as a management action. (Hamilton)

A: I don't mean to minimize what you're saying, the DFCs are extremely important. Our FWS mission is to work with other agencies and the public. This is a more operational, generic-type approach that we need to do and it's not contingent upon the specifics of a DFC and we have those goals in our Strategic Plan. I don't think we need DFCs to accomplish this and I don't think it would be of value. (Spiller)

C: I think this is a worthwhile and effective motion and something we should do. I would think that looking at other adaptive management programs, how they move to research to management, I would presume that they also struggled with how to define the future conditions that those management actions would need to accomplish as well as how they sought to balance those conditions to come up with the kind of management actions. I'd be really interested, not just in did they meet defined future conditions and how did they develop those, but also what did they do to try to seek balance among those defined future conditions to come up with a management action that could be supported. I think this is a good motion and fully support it. (Caan)

C: As a researcher, I typically see managers considering management actions to not be scientific. In other words, decisions are made and simply follow through and I don't want to lose sight of the science. These management actions as adaptive management actions are still learning processes. I think you need to include the word "science" in there some place would be reasonable, "criteria for defining scientific management actions." (Stevens)

2007 and 2008 Biological Opinion Conservation Measures Update (AIF = Attachment 12a).

Razorback sucker. Mr. Kubly gave a presentation (**Attachment 12b**) on the conservation measures for razorback sucker. He said Reclamation will, as a conservation measure, undertake an effort to examine the potential for habitat in the lower Grand Canyon for the species, and institute an augmentation program in collaboration with FWS, if appropriate. He said that FWS Region 2 has informally requested to Region 6 that Lake Mead be included as a named recovery site in the upcoming reissuance of the recovery goals for the four big river endangered fish. Previous sampling of razorback sucker larvae in the inflow to Lake Mead may be evidence for a potential Lower Grand Canyon/Lake Mead population.

Chute Falls Translocation. Mr. Glen Knowles gave a presentation, "Humpback Chub Translocation and Refuge Development" (**Attachment 12c**). He said they decided to move juvenile HBC below the system upstream above Chute Falls because they thought they would have a higher survivorship rate. It began as a conservation measure in a 2002 Biological Opinion, and was carried over as a conservation measure in the 2008 biological opinion, with the goal of improving survivorship of young chubs and thereby increasing the abundance of the HBC population in Grand Canyon. They also hoped to develop an understanding the species' life history. They have documented the fastest growth rates ever recorded in HBC.

HBC Refuge. Mr. Knowles said the FWS goal of HBC refuge development was to establish two refuge populations at hatchery facilities. The purpose is to genetically represent the wild population in Grand Canyon with the refuge populations so, should there be a catastrophic event that results in a drastic decline in the wild population, the refuge populations could aid in re-establishing the wild population.

Shinumo Creek Translocation. Mr. Steve Mietz gave a presentation on "Shinumo Humpback Chub Translocation Site" (**Attachment 12d**). He showed when and where the translocation occurred and

the field activities involved, and said this was a cooperative effort among several DOI agencies, the Grand Canyon Wildlands Council, and volunteers. He said they translocated 300 HBC in May and June 2009 with no mortalities. Future plans include a September monitoring trip to evaluate the results, a workshop in the fall, a comprehensive translocation framework, and a review of all the tributaries that have potential for translocation. He said more information can be found at: <http://www.nps.gov/grca/naturescience/shinumotransloc.htm>, and that data will be made available to everyone.

Mr. Caan asked if the information would be included in the USGS Fact Sheets and Mr. Mietz said that since this is a collaborative effort, the data will be shared and made available to everyone. Ms. Heuslein said the removing the chubs from the LCR should be discussed with the tribes to see how they feel about those translocations.

Update on Science Advisor Nominations (Attachment 13 = AIF with attachments). Dr. Dave Garrett, Executive Coordinator of the Science Advisors, distributed copies of his report on the protocols for selecting science advisors and gave a presentation, "Selections for Science Advisor Specialists for 2010-2012." He said when new science advisors are proposed by the Executive Coordinator, discussions are held and input requested from AMWG, TWG, and GCMRC. The Executive Coordinator then recommends specific appointments to the GCMRC Chief, who makes the final appointments and informs the AMWG. He said replacement positions for 2010-2012 will be one Cultural Resource Specialist (part-time) and three full-time positions for a System Ecologist, Systems Analyst, and an Aquatic Ecologist.

GCMRC Updates (continued). Dr. Melis gave a presentation entitled, "Update on November 2008 Colorado River Science & Resource Management Symposium Proceedings" (Attachment 14). He said it was the first symposium that brought together all four elements of all four federal programs throughout the Colorado River Basin. They encouraged discussion among resource managers and scientists to promote and facilitate transfer of knowledge and communication. He announced the 10th Biennial Conference for Research on the Colorado Plateau will be held Oct. 5-6, 2009 in Flagstaff, Arizona. He concluded with the possibilities for another Colorado River Science and Resource Management Symposium.

Comprehensive Plan Implementation Ad Hoc Committee. Mr. Spiller said this Ad Hoc Group originally had three co-chairs, Randy Seaholm, Nikolai Lash, and himself, but he had to recuse himself because of ongoing litigation. He said he will participate but not in the decision-making of the group. He said Mr. Seaholm would retire in November, which leaves Nikolai Lash as chair. He said Bill Werner has agreed to be the other co-chair. He asked that any members or alternates who wanted to participate to send their name to Linda Whetton by August 24, 2009.

ACTION ITEM: Members/alternates who wish to participate in the Comprehensive Plan Implementation Ad Hoc Committee (CPIAHC) should provide their names to Linda Whetton by August 24, 2009

Proposed discussion for next AMWG meeting. Mr. Stevens said he believes lack of understanding of scientific controls is one of the shortcomings of the technical program. At the next AMWG meeting, he will provide a motion to enhance the group's understanding of scientific controls and how they can be applied. He said in science they know what they know because they compare their treatments against controls, or situations where the treatment is not applied. In the AMWG, they're trying to manage the Colorado River ecosystem in the Grand Canyon, and it is difficult to tease apart impacts from the dam, climate changes, and other long-term changes. Cataract Canyon has many of the features that they've been working towards – strongly seasonal flow patterns, high flows in the spring months, ample sediment, warm water temperature – and yet the fisheries are in worse condition than in Grand

Canyon. Establishing control reaches might provide some insight into possible solutions for the Grand Canyon reach. Mr. Hamill suggested Larry provide his concerns to the TWG first.

Ms. Castle thanked Larry for bringing the concept to the attention of the AMWG in advance of having a motion. She asked that he provide that motion to Linda in advance of the next AMWG meeting with the necessary backup information.

Public Comments:

Lynn Hamilton (Executive Director, Grand Canyon River Guides) expressed support for exploring scientific controls because of the complexity of the system.

Closing Comments.

Ms. Castle said the next meeting would be scheduled in February 2010. Several dates will be sent out and she asked the members to respond by the deadline.

She suggested the group make an effort to provide motions in advance of the meeting. She suggested that the group evaluate whether any changes to the Operating Procedures on that subject would be appropriate. When members provide proposed motions, Mary Orton will work with them to make sure that they have been thoroughly vetted and to write them in a way that has the best opportunity for success. She cautioned that motions only provided at the meeting will tend to reduce their probability of success.

She said there were a number of votes cast provisionally by members or alternates whose appointments were in process, and apologized that not all the letters of appointment had been completed. She asked if there was any objection to recording those votes as legally cast as long as they receive the letters of appointment by the end of August. There was no objection.

Ms. Castle thanked everyone for the productive discussions and said she felt it was a collaborative effort. She will be a part of the process of moving forward and said the GCDAMP is a high priority for her. She committed to take issues to Washington, to convene the Policy Group, to work on issues within the Department, and to bring the Department's consensus back to the AMWG for further consideration. She thanked everyone for helping her during her first meeting and educating her on the more complex issues.

Documents distributed but not formally presented:

Attachment 15: Beyond Conjecture: Learning About Ecosystem Management from the Glen Canyon Experiment by Alejandro E. Camacho

Attachment 16: Collaborative Management of Glen Canyon Dam: The Elevation of Social Engineering Over Law by Joseph M. Feller

Attachment 17: June 2009 Monitoring of Humpback Chub (*Gila cypha*) and other Fishes above Lower Atomizer Falls in the Little Colorado River, Arizona (Trip Report by Dennis M. Stone)

Attachment 18: The Status, Ecological Role, and Potential for Reintroduction of Species Extirpated From the Colorado River Ecosystem, Glen and Grand Canons Arizona; Draft Executive Summary dated March 15, 2009 by Grand Canyon Wildlands Council and corresponding PPT

Adjourned: 2:20 p.m.

Respectfully submitted,

Linda Whetton
U.S. Bureau of Reclamation
Upper Colorado Region

NEXT AMWG MEETING:

Wednesday, Feb. 3, 2010

Thursday, Feb. 4, 2010

Phoenix, Ariz

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	MATA – Multi-Attribute Trade-Off Analysis
AMWG – Adaptive Management Work Group	MLFF – Modified Low Fluctuating Flow
AOP – Annual Operating Plan	MO – Management Objective
BA – Biological Assessment	MRP – Monitoring and Research Plan
BAHG – Budget Ad Hoc Group	NAAO – Native American Affairs Office
BCOM – Biological Conservation Measure	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
BHTF – Beach/Habitat Test Flow	NPS – National Park Service
BIA – Bureau of Indian Affairs	NRC – National Research Council
BO – Biological Opinion	NWS – National Weather Service
BOR – Bureau of Reclamation	O&M – Operations & Maintenance (USBR funding)
CAPA – Central Arizona Project Association	PA – Programmatic Agreement
GCT – Grand Canyon Trust	PEP – Protocol Evaluation Panel
CESU – Cooperative Ecosystems Studies Unit	POAHG – Public Outreach Ad Hoc Group
cfs – cubic feet per second	Powerplant Capacity = 31,000 cfs
CMINs – Core Monitoring Information Needs	PPT – PowerPoint (presentation)
CRBC – Colorado River Board of California	R&D – Research and Development
CRAHG - Cultural Resources Ad Hoc Group	Reclamation – United States Bureau of Reclamation
CRCN – Colorado River Commission of Nevada	RBT – Rainbow Trout
CRE – Colorado River Ecosystem	RFP – Request For Proposals
CREDA – Colorado River Energy Distributors Assn.	RINs – Research Information Needs
CRSP – Colorado River Storage Project	ROD Flows – Record of Decision Flows
DASA - Data Acquisition, Storage and Analysis	RPA – Reasonable and Prudent Alternative
CWCB – Colorado Water Conservation Board	SA – Science Advisors
DBMS – Data Base Management System	Secretary – Secretary of the Interior
DFCAHG – Desired Future Conditions Ad Hoc Group	SCORE – State of the Colorado River Ecosystem
DOE – Department of Energy	SHPO – State Historic Preservation Office(r)
DOI – Department of the Interior	SOW – Scope of Work
EA – Environmental Assessment	SPAHG – Strategic Plan Ad Hoc Group
EIS – Environmental Impact Statement	SPG– Science Planning Group
ESA – Endangered Species Act	SSQs – Strategic Science Questions
FACA – Federal Advisory Committee Act	SWCA – Steven W. Carothers Associates
FEIS – Final Environmental Impact Statement	TCD – Temperature Control Device
FRN – Federal Register Notice	TCP – Traditional Cultural Property
FWS – United States Fish & Wildlife Service	TES – Threatened and Endangered Species
FY – Fiscal Year (October 1 – September 30)	TWG – Technical Work Group
GCD – Glen Canyon Dam	UCRC – Upper Colorado River Commission
GCT – Grand Canyon Trust	UDWR – Utah Division of Water Resources
GCMRC – Grand Canyon Monitoring & Research Ctr.	USBR – United States Bureau of Reclamation
GCNP – Grand Canyon National Park	USFWS – United States Fish & Wildlife Service
GCNRA – Glen Canyon National Recreation Area	USGS – United States Geological Survey
GCPA – Grand Canyon Protection Act	WAPA – Western Area Power Administration
GLCA – Glen Canyon National Recreation Area	WY – Water Year (a calendar year)
GRCA – Grand Canyon National Park	
GCRG – Grand Canyon River Guides	
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

Updated: 2/3/09