

**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 the 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 a number of 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 that's what she wants the group to continue working toward in the future.

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 an ad hoc group list (**Attachment 2**) and said it's still a work in progress. It will be updated and provided to the 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 stated it is taking time for people to get established in the Department.

Legislative Updates.

P.L. 111-11. Mr. Dennis Kubly said he normally looks at bills that relate to endangered species, energy, and Federal Advisory Committee Act (FACA) issues. He said Congress passed Public Law 111-11, the Omnibus Public Land Management Act of 2009, and its accompanying appropriations bill. Mr. John Shields added that in Section 9107 of PL 111-11, it extends 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. A hearing was held on the Senate version of the bill on July 23, 2009. There was no non-Federal witness testifying on behalf of the bill as per the Water and Power Subcommittee's wishes. He said USBR Commissioner Mike Connor testified on behalf of the bill and reported the administration's concurrence with and support for that measure going forward. It's anticipated the House version of the bill (H.R. 2288) will be the subject of a hearing to be held in early September. Mr. Kubly added that in Section 9505 in P.L. 111-11 it requires the Secretary of Energy to assess the effects of climate change. He suggested the AMWG may want to keep current on this bill.

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 development and implementation of a comprehensive plan for the prevention and elimination of pollution in the Lower Colorado River and the maintenance of a healthy Lower Colorado River ecosystem.

H.R. 1320. Mr. Kubly reported there was a proposed bill to increase the transparency and accountability of Federal advisory committees and purposes. He said this was forwarded to the House without amendments so there is some movement in the bill. He read the short definition of the bill, "All appointments to advisory committees shall be made without regard to political affiliation or political activity, unless required by Federal statute." It directs each agency head 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 is the result of an initial review of a petition seeking to protect the northern leopard frog through its 19 western states range under the Endangered Species Act. The Service will undertake a more thorough, scientific review of the species to determine whether to propose adding the northern leopard frog population in 19 states west of the Mississippi River and Great Lakes 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 the Senate (**Attachment 4b**) addressed to the conferees offering substitute language and some other material regarding the AMWG.

Grand Canyon Trust Litigation Update. Mr. Bob Snow said he wanted to provide information on the litigation the GCT brought against the Dept. of the Interior (Bureau of Reclamation) in December 2007. There are two phases of the case with one part having to do with development and issuance of annual operating plans. A decision was issued by the judge in 2008 on that count. Since Mr. Snow's last update to the AMWG, the second phase of the case, which deals with the Department's experimental plan decision-making in 2008, and includes the Fish and Wildlife Service, was addressed by the court. The court has held two oral arguments. The most recent substantive decision was handed down by the court on May 26, 2009. The Department prevailed on the two counts dealing with the annual operating plans. On the most recent decision involving the 2008 experimental plan, there was a count dealing with NEPA, a count dealing with the Endangered Species Act, and a count dealing with the Grand Canyon Protection Act. On the NEPA and the GCPA counts, the court found in favor of the U.S. With respect to the ESA count, the court found that, in part, 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. There was a development in the case last night with respect to the portions of the case that the judge had issued substantive opinions. The GCT had asked the court to allow those portions to then be folded up to the Ninth Circuit for appellate review and Judge Campbell issued a denial. The next step in the case pursuant to the judge's order is that the FWS has to reassess some of the decisions that it reached in 2008 and FWS must complete that reassessment 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 complimented the AMWG on not trying to deliberate on the litigation since this was a FACA setting. 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 (won one, lost four, won on the ESA claim). He said the court states in the opinion that they're fully prepared to require SASF be done if FWS can't show the basis for changing their mind about MLFF. He referred to the 1994 Biological Opinion which quoted the FWS as saying MLFF will adversely modify chub habitat and then in the 2008 BO, FWS said no. He said there is a chance that steady flows will be required at Glen Canyon Dam but that will depend on what happens in November when the judge rules. He said the court has said it is willing to step in and change GCD operations so he just wanted people to know that we're in the midst of the 5-year Reclamation experimental plan and budgets have been created around it, but it's not written in stone and the litigation is more than an interesting context. It 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. There are eight claims before the court. It has not ruled on three claims. 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 be able to appeal to the Ninth Circuit when the court finishes ruling on the remaining claims. Once that is done, Mr. Lash said GCT will appeal on the claims they have lost.

River runners vs. NPS. Mr. Snow said this case went before the Superior Court and Judge Campbell as well. This case challenged the NPS Management Plan. He said the district court upheld the NPS River Management Plan. On June 30, 2009, the Ninth Circuit Court upheld the decision as well. He said the most interesting aspect was when the Ninth Circuit ruled in favor of the NPS, they adopted the Superior Court ruling in its entirety, Judge Campbell's opinion so there wasn't an additional formal opinion issued by the Ninth Circuit Court. They adopted and ratified the opinion.

AMWG Appointments/Re-appointments. Ms. Castle reported the paperwork to appoint/re-appoint members/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. As proposed, it would be housed in the Secretary's Office at a high level. It might be located either in the Phoenix/Flagstaff area in order to be close to the tribes or possibly in Washington, DC. The overall purpose of the position would be to allow the tribes to have more effective representation within the AMWG but that will require further discussion with the Secretary's office. 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 and need to be dealt with at the Department level. Some may also need to 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 presented two slides which showed the reporting schedule for the science results related to the 2008 March HFE. He said draft reports 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.

2010-11 AMP Fish Monitoring: Incorporating Protocol Review. Dr. Lew Coggins gave a PPT presentation on the Fish Monitoring PEP (**Attachment 5b**) and said the general recommendations were: 1) Shift resources from robust monitoring elements (as appropriate) to insufficient monitoring elements, and 2) Implement 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.

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

Nonnative Fish Management Plan. Dr. Coggins distributed copies of his PPT presentation (**Attachment 5d**) and provided an update on the status of the fish management plan GCMRC recently drafted. He said copies of the plan were given to the TWG for their review. He also passed out copies of the NN Fish Management Plan, Summary of Plan tasks included in the GCMRC FY10-11 work plan (**Attachment 5e**). He concluded with the next steps to undertake: 1) GCMRC to receive comments from the TWG by 8/30/09, 2) TWG to vote on acceptance at their 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 corresponding PPT (**Attachment 5f**). They 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 and then the TWG and GCMRC will discuss at the next TWG meeting.

Report on the Cultural Monitoring Research and Development Project. Ms. Helen Fairly distributed copies of her PPT presentation (**Attachment 5g**). She also 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.

Update on Sediment Inputs and 2008 High Flow. Dr. Paul Grams gave a PPT 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 said his PPT presentation (**Attachment 5i**) would focus on providing the AMWG with where they're at in 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.

Questions and Answers on Presentations

Q: *If one of the fundamental premises with the steady flows is that you have warmer temperatures nearshore and that benefits the fish, why was it a lower priority? Are we looking for additional funding for this or is this already within the budget? (Werner)*

A: *The uncertainties with respect to water temperature are not huge. There are two scopes of work that we proposed and one approach is to do intensive water temperature data collection in and around the LCR in association with the nearshore project and then there is a second SOW that involves potential overflights. The first SOW is around \$15,000 which is enough for a tech to accompany those trips and maintain those water monitors. (Kennedy)*

Q: *What's the cost of the second SOW? (Werner)*

A: *It depends on how many overflights are desired but it's around \$35,000 per overflight. (Kennedy)*

Q: *Andy, I'm wondering why you only told us how many RBT you had killed but didn't specifically mention how many brown trout were killed or how many other non-native fish (i.e., catfish, carp, bullheads, etc.) and also you didn't tell us a specific number of chubs that were captured. You also didn't mention if the stomachs were taken from the non-native fish and whether they were analyzed to see if there were any baby chubs in their stomachs. (Steffen)*

A: *I didn't present the numbers on all of those species due to shortening the presentation. In terms of brown trout, there was a total of 18 BT for the entire trip. We caught 60 carp and only saw one channel catfish the entire trip. Our biggest other non-native species, outside RBT, was fathead minnow and we caught around 300 at a minimum. We did not take stomachs from any of the species this year. That was done from 2003-2006. We caught around 262-362 chub. We did not catch any chub from the control reach. The only other species we caught up there were RBT, 2 BT, and 26 flannelmouth sucker, and 1 bluehead sucker. (Makinster)*

Q: *Did you catch any of those chubs more than once? (Steffen)*

A: *Yes, we did but I can't tell you the rate. (Makinster)*

Q: *Lew, you mentioned the PEP panel report and it looks like they recommended doing ASMR runs every 3-5 years. Do you have a take on what the thinking is in that it's a real important number and activity and it should be run annually? I'm curious to know what you think about that and what would be the process for analyzing the change? (Lash)*

A: *The PEP thought that almost any data collection after a monitoring program can provide a spurious one-year trend that one can basically look at the status of a resource and because of sampling conditions or some other uncontrolled factor, see a one-year trend that's not reflective of the trip. To guard against that the PEP recommended less frequent updates so that each of those updates might provide more certainty and a real change in population. As far as how to go about evaluating a change, it would be comparing the previous assessment with the current assessment. (Coggins)*

Q: *Who makes the determination of a change in protocols? Is it AMWG, you, GCMRC? Will we get to review the basis before a change is made? (Lash)*

A: *I'm not sure who makes the ultimate call but following the analyses of the PEP recommendations, GCMRC makes a set of recommendations for changes in monitoring for 2011. I'm sure that will include how GCMRC intends to respond to the PEP suggestions. That will be reviewed by the Science Advisors and I think both that review and GCMRC recommendations will be brought before the TWG.*

Q: *Helen, regarding the last paragraph on the AIF where it specifically states that if the NPS continues to view the LiDAR component of the cultural resources monitoring proposal for work to be done this year as being problematic and the field work that was planned for May-June of still hasn't received approval, I presume the work for this year will not occur as well. Can you elaborate what the NPS issues are? (Shields)*

A: *I'm not going to speak on behalf of the Park Service issues. We are working with them to resolve those issues and so hopefully we'll have something more definitive to say the next time we get together. (Fairley)*

R: *We recently had meetings with GCMRC in trying to integrate our two cultural resource monitoring programs. We've been monitoring the archaeology and have had significant programs in place for 60-70 years. The AMP has a very narrow focus and we have that focus plus the responsibilities for all the archaeology, relationships with the tribes, and recreational users. We're just trying to make sure we have the absolute best program. We also have the responsibilities as an agency for managing the science within the Park so it doesn't have conflict with wilderness values, tribal issues, Park recreation, and a whole variety of things. It's routine that our staff work with any researchers. It's interesting to know that only about 10%, not value-wise because of the \$10 million being spent, but it's for a number of research projects within the Park and this is just a small fraction and we have to iron out things for consistency. For example, on the overflights where GCMRC wants to do remote sensing but they put that right through the middle of the air tour and so we have to work out details to avoid collisions. (Martin)*

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

Science Advisor Comments. Dr. Dave Garrett said the Science Advisors received this program activity in 2005 for a first review. They were quite critical of the program approach. There was a list of management activities presented without any discernable linkages to other science activities that they knew were necessary and other management activities that would be promulgated by the activities promoted. It didn't have a systematic approach/outline of science and management integration and they were very concerned about that. The longer term nature of the activities listed were also not discernable. The 2007 draft comprehensive plan addressed many of their concerns they had from providing a strategy to a systematic integration of both science and management directed at outcomes that responded to Information Needs. They felt much better in doing their 2007 review and the process that had occurred. He said the AMP had a link to history and has had continued involvement of all parties to address a very important issue. 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 activities and agree with the TWG in moving the plan forward.

Q: *The Plan looks great. 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 they're in the process of doing the reintroductions and there are possibilities they will be doing additional ones elsewhere and how the migration of the chub affects or doesn't affect those aggregations. They also feel that's important information for the overall recovery. They feel it should be in there for consideration of the group when they look at 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, and 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.

Ms. Castle said it was her understanding that the underlying language, which was what everyone saw in their pre-meeting materials, was specifically identified because it didn't make it into the Draft Comprehensive Plan and so the review and acceptance of the Plan without that addition was not included. There was a feeling that was an important component of moving forward. The specification of the frequency, the annual monitoring, is a subject for further discussion. She said there was some feeling that if annual monitoring was specified, that would allow for it and allow for the TWG to consider annual monitoring and implementation but did not preclude a lesser frequency. But if annual monitoring wasn't specified, they might not be able to go the other way.

Ms. Gimbel said she was a little concerned when the AMWG goes to specific issues in a general motion because there are a lot of groups going through the Comprehensive Plan. She asked Mr. Martin if he accepts what has been said that this is already part of the Plan or could be part of the Plan. She said that a lot of times with the AMWG they make motions and then people say 'I don't think we need to go there.' She asked him to clarify why it has to be so specific.

Mr. Martin said the plan has lots of specifics and they felt from their science group and from people who have been looking at some of the translocations, they felt that along with all the other things that have been emphasized in the Plan that this would be good emphasis.

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:

Motion (Proposed by Steve Martin, seconded by Larry Stevens: The AMWG has reviewed the HBC Comprehensive Plan and accepts TWG's evaluation of the Plan. 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.			
Member	Alternate	Stakeholder Name	Vote
Werner, Bill	Benemelis, Perri	Arizona	Y
Senn, Mike	Persons, Bill	Arizona Game and Fish Dept.	Y
Heuslein, Amy	Cantley, Garry	Bureau of Indian Affairs	Y
Gold, Ann	Ryan, Tom	Bureau of Reclamation	Y
Zimmerman, Gerald	Harris, Chris	California	Y
Gimbel, Jennifer	Seaholm, Randy	Colorado	Y
James, Leslie	Davis, Bill	CREDA	Y
Steffen, Mark	Steffen, Tim	Federation of Fly Fishers	N
Spiller, Sam	Knowles, Glen	Fish and Wildlife Service	Abstain
Lash, Nikolai	Johnson, Rick	Grand Canyon Trust	Y
Stevens, Larry	Vacant	Grand Canyon Wildlands Council	Y
Jackson-Kelly, Loretta	Christensen, Kerry *	Hualapai Tribe	Y
Martin, Steve	Balsom, Jan	National Park Service	Y
Caan, George	Peterson, McClain	Nevada	Y
Groseclose, Jay	Ostler, Don	New Mexico	Abstain
Kucate, Arden *	Dongoske, Kurt *	Pueblo of Zuni	N
Bulletts, Charley	Skrzynski, LeAnn	Southern Paiute Consortium	Absent
Rampton, Ted	Barrett, Cliff	UAMPS	Y
Strong, Dennis	King, Robert	Utah	Y
Warren, Brad	Palmer, Clayton *	Western Area Power Administration	Y
Shields, John	Ostler, Don	Wyoming	Y
Potochnik, Andre	O'Brien, John	Grand Canyon River Guides	Absent
VACANT		Navajo Nation	
VACANT		Hopi Tribe	
Note: The member and alternate for Grand Canyon River Guides could not attend the meeting. Ms. Lynn Hamilton, Executive Director for GCRG, was allowed to sit at the table but could not vote.		Voting Results: Yes = 16 No = 2 Total Voting = 18 2/3 = 12 MOTION PASSES	

Bolded names indicate individuals who voted on the motion.

* 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.

Note: 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, Mr. Spiller said he was advised by FWS legal counsel that he can no longer serve as a co-chair. He asked for

guidance from the AWMG in moving forward with getting some co-chairs so the Comprehensive Plan Implementation Ad Hoc Committee can start the in/out review process.

Ms. Castle said she would meet with Sam, Randy, and Nikolai during the break and bring a decision back to the AMWG later this afternoon.

Mid-Year Expenditures (AIF = Attachment 7a). Mr. Dennis Kubly passed out copies of a spreadsheet (**Attachment 7b**) and said there was a commitment made several years ago to present the mid-year expenses. Being far enough along in the fiscal year, he chose to present Reclamation's expenses through the third quarter. He briefly went through Reclamation's line items. The expectation would be that 75% would've been spent if they were right on target. He noted there are no large overages or underages so nothing to be concerned with. 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 and Interior has agreed to that. He explained it's hard to ask for additional funds when there are funds remaining in the account.

GCMRC Mid-year Expenses. Mr. John Hamill distributed and discussed several documents: general summary of expenditures, a detailed spreadsheet of 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 there is about 80% expended or obligated at this point in time. He pointed out the anticipated carryover associated with the projects. He said the carryover was summarized on Table 2 which reflects \$1,244,064 in projected carryover from FY09 to FY10. He said all that money 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 implemented in FY09 due to permitting issues with the NPS so that money is being applied to the FY10 budget. He said the other big item was the contingency fund being established for the overflight that was done in May 2009. They had some extra money set aside to cover whatever contingencies might come up with that. There were also 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 motion that appears on the AIF under tomorrow's agenda was modified to delete the \$70K allocation for NPS cultural resources. She said the motion was modified because the issue of the allocation is an internal Department of Interior issue. It's an allocation of responsibility between agencies and is one of the things they intend to address in the Adaptive Management Policy Group. Mary Orton reviewed the budget discussion procedures. She reminded members who intend to propose increases to a line item that they need to be prepared to explain what other 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 went 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. He said Dave Sabo (Reclamation) and others 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 PPT presentation (**Attachment 8b**) on the Upper Basin hydrology and projected operations for 2010. He said they saw 10 feet of filling at Flaming Gorge which they had anticipated. They also filled Blue Mesa right up to the top. It was uneventful down in New Mexico. There was 3 million acre-feet of additional filling in Lake Powell this season, starting out at 3,610 and the high point was 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. They’re trying to avoid being offline during the high power months of December-January and the summer of 2010.

Q: If you’re having three months of 25,000 steady, followed by two months of 14,000, how would you handle that transition? It seems like you leave half of the riverbed exposed immediately. (Steffen)

A: Certainly there would be a transition that we would have to work out and it’s something we haven’t done yet. We just barely worked out the transition for this year. That would be challenging but we would definitely have a transition in place for that. (Clayton)

C: The transition issue is alleged to have a deleterious effect on humpback chub in the Grand Canyon and it differs from the conclusions from one scientific report by Josh Korman on what the transition does and it may even be beneficial to HBC. I want to be on record that WAPA would like to see a scientific and clear objective for the transition. We would like to see it studied so that some conclusions can be made. I noticed when Ted Kennedy was talking about this earlier, he said they didn’t know what to do with such a short transition. I would like to let the scientists feel free to recommend a scientific process rather than a policy process on studying the transition. (Palmer)

C: I want to impart what I think Andre would say about the potential high flows and the equalization criteria: We have a tremendous amount of sediment export. There is a very good chance that Park resources could be adversely impaired. We haven’t seen flows like this for over ten years. We have more visitors than ever before. At those higher levels there is less hidden reaches than there are at the more normal levels so you’re going to have less range but more people which will certainly impact the recreational resource. There could also be impacts to the Old High Water Zone. There are temperature issues. So for a wide variety of perspectives, we have some concerns about things of that nature. (Hamilton)

C: Two things I would ask GCMRC to be thinking about: 1) Do we have capability to monitor what is being stranding? For example, food chain components, HBC, or anything else. 2) If the higher flows are going to result in perhaps erosion of some of the beaches that were spoken to, what can and can’t we do to monitor that? (Spiller)

Q: Just to clarify something, those aren’t steady flows at 25,000, those are peak flows, right? (Martin)

A: They’re steady. (Clayton)

Q: So basically you’re going to run steady flows? (Martin)

Q: What would the spillgates be? (Henderson)

A: 3,648 is the level of the spillway crest and then you need some level of water above that to use them. (Ryan)

TWG Chair Report. Mr. Shane Capron gave a PPT (**Attachment 8c**) which explained the two-year biennial budget process, the TWG’s action and processes, and the TWG motion. He said there would be more discussion tomorrow but today he would focus on the 2004 budget approach. He concluded with further considerations: 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 PPT presentation on “Trout or Humpback Chubs” (**Attachment 8d**). He said he used to support trout killing because it was limited in location and because it was part of a general non-native fish killing

operation. He didn't feel it always came off that way and seemed to always be trout or chubs. No one ever talked about the other non-native fish that were killed. He said he isn't going to support it now 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 isn't good evidence that trout eat chubs.

Pueblo of Zuni Dissenting Report. Mr. Arden Kucate passed out copies of the report (**Attachment 8e**). He said the Grand Canyon and the LCR are very significant to the Pueblo of Zuni. They have been trying to make it known that 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 the traditional cultural properties. They don't think the research supports the hypothesis that trout predation significantly impacts HBC has been well substantiated. He said Kurt Dongoske has been very involved in TWG meetings and asked him to talk about the dissenting report and the letter sent to Reclamation.

Mr. Kurt Dongoske said Governor Cooney sent a letter to Reclamation, FWS, and GCMRC stating the Tribe's position. The tribe 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 and that there needs to be a process within the AMP to consider that conflict and to come to a mutually satisfactory resolution that looks to the proper management of native fish within the canyon but also gives consideration and concern to the values of the Zuni people. One of their concerns is the transition from a research experiment about the predation of trout on HBC and how that has now morphed into a management action without dual consideration of the process within the AMP, about how management actions come about from research. They don't think the research supports the hypothesis that trout predation significantly impacts HBC population has been well substantiated. He cautioned relying on anecdotal reports about mechanical removal trips that talk about the reduction of trout numbers and the increase of native fish and trying to attribute it to mechanical removal because other factors are not being evaluated that may contribute to native fish increase or even if they're reliable indicators of the response to the population of native fish.

Mr. Kucate said their concerns warrant government-to-government consultation and that all parties understand the Tribe's concerns. 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 see if there is a way to tread through the process but she noted further discussions will be required. She asked for comments on either of the reports.

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. 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.

1. 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 wanted to 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 PPT, "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 the 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 Basin/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. Each tribe will use \$15,000 per year of appropriated dollars to conduct this monitoring. The source of the funding will be the unexpended appropriated dollars that have been deobligated from the original contracts and redistributed to the tribes via contract modifications.

He said the budget as it's laid out for Reclamation is not actually the budget that is passed by the TWG, except if the comments are considered in the line items where changes are proposed.

FY2010-11 Budget Presentation by GCMRC. Mr. Hamill distributed copies of a memo he wrote on July 14, 2009, on the proposed budget along with his PPT presentation (**Attachment 8g**) and mentioned his cover letter and an explanation on how GCMRC responded to the four TWG motions that asked as well as responses to all aspects of the AMWG motions that it passed last April. He said it wasn't unusual in preparing a budget that the demand for science and research projects generally exceeds the amount of funding that's available. He said it was especially challenging this year because they assumed a 0% CPI rate due to economic conditions. Even though the CPI rate is 0%, there are costs that 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 had asked it be considered an experimental action but GCMRC had originally proposed it as a management action that resulted in 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 FY08 and FY09, \$500K was deposited for each year. They had accumulated \$920K going into FY08 but basically exhausted that fund in FY08 and FY09 for the 2008 high flow experiment. In FY10, they're proposing to use some of that to complete the HFE synthesis which is about \$175K, \$150K for the non-native fish control project, and \$309K for non-native fish control and also for the SCORE report in FY11. He said a big part of the budget also has to pay for compliance and for increasing management actions.

C: Well, I'm really looking forward to your report on where the trout come from. Personally I've seen them spawning throughout Marble Canyon and I don't believe they come from Lees Ferry and I don't believe you can prove that they do. I hope you'll see that and I'll be interested to see how you're going to do that. I could take you on a river trip in April and point out spawning trout all over the place. (Steffen)

R: That's why we're proposing to write it up in a journal and have it peer reviewed. It's our goal to take the data we have which has been published in Lew Coggins' dissertation. (Hamill)

Q: There is \$344K for equipment and replacement. Is there any provision to provide the tribes with computers and equipment you no longer use? (Stevens)

A: They are surplus and go to other agencies. (Bennett)

Q: What is the burden rate on the projects? (Shields)

A: The general concern is that 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. It was an attempt to understand how big those projects truly are. (Capron)

C: Personally it's not data I would use and don't see the utility on spending time on it. (Werner)

C: Randy Peterson set up the Experimental Flow Fund when there was a flow experiment. It seems like it is morphing into something else. When did it change from an EFF into something else. (Groseclose)

C: In 2002 we looked at HBC threats and the fund use was expanded to include non-native fish investigations. (Kubly)

C: We don't have the funding to do certain things, even the non-native contingency fund but we're raiding that fund for other things. That's a little imbalanced. (Groseclose)

R: The bottom line shows what the balances would be for each fiscal year and at the end of FY2011 there would be \$257,075 and potentially \$757K in FY2012 if we didn't use money from the EFF. In the years that we do high flow experiments, we defer a significant project, the channel mapping project which is about \$400K, so that money would be available to support any kind of experimental activities. While we don't have all the results in a final plan for what the next round of high flow experimentation would be, our impression in talking with the sediment scientists and the biologists is that we don't see this as being as robust a study effort as we conducted this last time. We'll have a lot of those results. We have these major monitoring programs and so we think we could do a credible job for the high flow experiment with the money that would still be on the table. (Hamill)

C: Part of my concern is there isn't a science plan for a reduced effort. We're up to about \$4.4 million with the reporting on the last one. Admittedly, there were bells and whistles on the last one that may not need to be on the next one. I think John is ending up with about \$700K, right? That's a lot of bells and whistles that we need to explain away. It's serious. It's a short-term versus long-term need consideration, it's involvement for competition of funds, and there is no easy answer. (Kubly)

C: And I think it highlights the issue quite well. In one case we're maybe missing an opportunity where the trigger amount would be in the next HFE. I think we still have to determine that. That's probably something that needs to go back to the work group for some kind of investigation. It seems like we may be shooting ourselves in the foot by continuing to do some of these, these optional things, and I'm leaning specifically on the non-native control right now. I'm not sure that need is thoroughly defined. And yet we're taking money from this experiment and putting on non-native control. That's my concern. (Groseclose)

Q: John, speak to me on your projections on what you may need for non-native fish control and I say that, and I want to say that with respect to the Pueblo of Zuni's concerns and any other tribes that have that concern, and with respect to sport and recreational fishing. You expressed to me that because of the response of trout, we

may need non-native fish removal events beyond the two per year. I want you to comment on that with regard to how much funding we have right now. How many can we do in FY10? With that in mind, I think we have a real question here with regard to Pueblo of Zuni and other tribes, recreational fishing, maybe we need to address this to re-evaluate, re-confirm, the need. To me, I want to be respectful of those concerns. I also have a responsibility with regard to HBC. It's a means for us to control. I'm hearing questions as to whether it's effective. I think we need to weigh into this. Do you think we may need additional non-native removals up to six and is there money available, IF we were to choose to do that? (Spiller)

A: *The question on how many trips we need is largely a function of the immigration rate that we see. We did one trip this year. With two trips you can look at what the change is in fish populations from the first trip to the second trip and estimate immigration rates. We weren't able to do that. We do know there are a lot of trout in the system right now. There are two large year of classes up in Lees Ferry so the expectation is that we're going to see a lot of fish show up. Our evidence is they do come from there and there is a connection. Lew's calculations that Andy Makinster showed yesterday would suggest that at the very minimum, two trips are needed and could be up to six. We have money to do two trips. Each trip costs about \$150K so at the upper end, we would be looking at \$900K for six trips. I don't know where we'll get \$900K unless you really want to slam the science program to just stop doing things and shut it down. That would be a pretty significant impact on our budget. I think it illustrates the problem we have with reasoning. What kind of management actions are coming on line? There is no real mechanism to fund these other than to go to GCMRC to fund it and I guess that's the prerogative of the Secretary to do that. Right now we're saying we can't fund a science program on what we have. (Hamill)*

Public comments: Ms. Castle said it was time to go to public comments. Following that, she wanted to extend the meeting for an additional 30 minutes in order to get any proposed motions on the table regarding the workplan and budget so that people could be prepared for tomorrow's discussion.

Jane Lyder (Deputy Asst. Secretary for Fish and Wildlife and Parks). This is my first meeting and I find it very fascinating. I just want to give an observation as to John Hamill's presentation and how much USGS is doing and how much GCMRC is doing, and how much everybody is asking of the Center. I was struck by the number of people he serves and the vast differences and interests among these people who are relying on him and his staff. I've been with Interior since 1977 and I'm not sure I've seen somebody really having to grapple with what he is doing and I just want to comment that I'm very impressed with the Center and how John is managing the process.

Continuation of Q&A:

C: *I know there is real good trout spawning at Lees Ferry the last couple of years, but I would also assume that there has probably been some real good trout spawning success at Marble Canyon and other places as well. It would only be logical that they would both be good. I'm certainly willing to concede that fish move but I do think we have other studies in the past that trout do not leave Lees Ferry. (Steffen)*

Q: *There are a lot more demands being put on the budget. On one page summary of EFF balance and I know we're looking for alternative sources of funding for mechanical removal, but as it stands right now we don't know if removing RBT from the mouth of the Little Colorado River benefits HBC. I think this group is making an assumption that it does. The 4-year experiment that was conducted between 2003 and 2006 was inconclusive. We saw HBC increase but we couldn't attribute that to mechanical removal or temperature. Are we going to be able to get an answer to that question do you think in the coming years? If we want to call this a management action, I hope we've got a pretty solid foundation for doing that and we're not just throwing our money away if it doesn't benefit HBC. (Persons)*

A: *My sense is the current 5-year plan wasn't set up as an experiment to answer that question specifically. There are a number of things going on. We have warmer temperatures in the river still and we have reduced populations of trout. We're keeping them suppressed and so if trout continue to expand, we still don't know whether it's temperature or it's reduced numbers of predators that are contributing to that. It's still going to be confounded. We originally set this up as a 16-year plan and we were going to control for 4 years, then let them come back, and then we were going to be able to do an experiment and replicate it under different conditions and that way you can isolate what are the 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. We found them in their gut before apparently in large numbers and so the question that Mark raises about is it a population effect, is*

that really the controlling factor of the survival of young fish in the mainstem or is it a temperature issue. We don't know that and it's probably going to be hard to answer that in the short-term. Hamill)

Q: *That question wasn't considered in the five year plan? (Persons)*

A: *You'd have to ask Reclamation and FWS about that. (Hamill)*

R: *It almost seems to me that doing mechanical removal under warm water may confound the original experiment but I guess we weren't allowed to consider that when the 5-year plan was laid out. (Persons)*

R: *To be fair to the FWS and Reclamation, we did convene a panel of experts in April 2007 to talk about what the long-term experimental plan should look like. Their recommendation was to control trout on a continuous basis because they felt that there was enough evidence to suggest that trout were a problem and that protecting the resource would trump given an experiment. That was their conclusion, that if you're really concerned about the resource, they felt there were enough lines of evidence to suggest that trout were a problem and that control would be appropriate. (Hamill)*

C: *One of the items from the AMWG motion in April that there was lack of economic analysis capacity in the program and additional analysis would be considered. I wonder what you've done with that. (Henderson)*

R: *The TWG endorsed moving it forward and facilitate a workshop to basically develop what a workplan for additional economic analysis would look like. Norm, Clayton Palmer, and Dave Garrett came to Flagstaff and met with Helen and I and we hammered out a prospectus for what that workplan would look like or at least the sideboards on what that study would be with the idea that we were going to come together in a workshop that would involve the TWG and some outside experts to really hammer out some of the details on a scope of work. There is a copy of that prospectus (**Attachment 8i**) up here and so we're intending to pursue that. I'm hoping there will be enough carryover remaining at the end of the year that I think we need an additional \$15-16K from GCMRC to do that and I think WAPA and the NPS said they could support some aspects of the workshop and bring back what a scope of work would look like to the AMWG. (Hamill)*

Q: *In the budget, how many passes for mechanical removal? (Palmer)*

A: *Two trips, six passes. (Hamill)*

Q: *For FY10, are you permitted by NPS for the cultural monitoring program? (Palmer)*

A: *No, we are talking to NPS and could result in some redirection in the program, termination of the program, etc. It's on Anne Castle's list to resolve. There are some policy issues that come into play. It's getting sorted out right now. (Hamill)*

C: *We've approved the permitting on all the cultural projects except for one component. We're in meetings to resolve that one piece. Part of the cultural program has been approved. Just to clarify, we have approved those permits. There are issues over one portion and that's one portion just to make sure that we really understand that it's a relatively, maybe important, but might be component of the overall work and again it's partly trying to integrate and become more efficient and effective so that we're doing a better overall program. (Martin)*

Q: *That sounds positive. While we're on that topic, is there still a permitting issue related to the steady flow work? (Palmer)*

A: *The general permit has been approved. We're evaluating the methodology of operating and using motors in the non-motorized season on the river. Part of one of the things that Bob brought up in the report was the fact that we have a 6.5 month non-motor season and it's also within proposed wilderness and so we have to do a minimum tool requirement in addition to the permitting so we're working with GCMRC to make sure that we pass that minimum tool. It's interesting to note that we get a lot of complaints from users. There are a lot of conflicts because people have waited 10-12 years to down in the non-motorized season and to have long periods of motor use for some of these operations puts us in conflict so we try to work with them to reduce that and combine our resources so that's the least impact. So the permit itself has been approved and we're working with them to try and minimize the impacts on other visitors in the Park and I think it really is important to remember everything that's going on there. We're trying to work to balance that and I think we're having success. It's the same thing with overflights. When we approve those overflights while were in the biggest issues that pertains to sound scape in the country, when we allow these trips, then we get a lot of complaints and spend a lot of time dealing with people who are upset over them. It's all a matter of balance and it's something that we deal with for all activities in the Park. (Martin)*

Q: *There's a non-native fish control plan yet to be developed but I think it may occur in 2010 (Palmer)*

C: *It's before the TWG to review that plan and I think Ted reported on the elements of that plan yesterday and in which some aspects of that plan are currently being implemented through this budget. (Hamill)*

Q: *Ted also reported on \$15K that he wanted to use in looking at temperature for the nearshore ecology, is that part of the FY10 budget? (Palmer)*

A: *It's not part of the FY10 budget. (Hamill)*

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 members all have ideas of how much things cost and obviously the cost of doing experiments for the benefit of Grand Canyon resources is a significant issue and in some ways he thought it might be THE issue. This motion was one that he thought could make sufficient headway on 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.

Q: Would this be similar analysis to what was done by the Science Planning Group that the LTEP ultimately produced because that type of analysis was done so is that the same kind of thing you're looking for but for one water year? (James)

A: Yes, using actual data that's gone by the most recent data. That's why we did last year's with what we had available. We wanted to have actual numbers and comparisons made and that was the basis for doing that. Well, what would it cost if we run 12 months of steady flows? We're so big on that and arguably good for the resources but what kind of hit is hydropower taking, what's the average, what the residential utility user having to pay and so we got some numbers and, of course, there's going to be some push-pull on this. Let's do a better job on that rather than the Trust bringing something that's a good advocacy piece. Let's go to the place where we go to do a peer review and do it in a way that we don't just start with the Trust contracted but we look at WAPA numbers and look at Marcus' numbers. We figure out a middle road that the group can buy into and say these are good numbers, let's use these for discussion purposes. (Lash)

C: I appreciate your proposal. The science advisors have a consistent concern about conducting science outside the scientific process that was originally directed to the GCRMC. I have a great deal of respect for Marcus but I think the best approach would be to ask GCMRC to conduct this type of analysis since they are your science center. The science advisors feel that would be a better approach. (Garrett)

R: It's one of those issues in my mind.

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, what it might deliver but then 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.

Mr. Shields took exception with the number of motions Mr. Lash was presenting and felt that he should've submitted them earlier as requested in an e-mail from Reclamation well in advance of the meeting. He felt that introducing six new motions at the end of the day was going to make it very difficult for the members to contemplate overnight and be sufficiently prepared for tomorrow's budget discussion. He also felt discussion on the motions would further delay presentations scheduled for tomorrow. Ms. Castle said she understood John's concerns but stated the Operating Procedures permit motions to be made at the meeting and she would allow it. However, she encouraged members in the future to present motions well in advance of the meeting so there is time for the members to adequately consider them.

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 intent 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 offerered 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 request 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. There was more discussion and 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." The motion now reads:

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 is a thought otherwise. 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 said Dr. Marcus' model is very good and deserving attention. 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 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 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.

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 dissenting report.

Ms. Castle asked the three members who indicated they would be voting against the motion if there were any language modifications which would induce them to vote for the motion, otherwise she felt the question should be called. Mr. Caan felt there were no changes that could be made to generate his support for the motion. Ms. Hamilton said she hoped the group would always be open to experimentation because that's how they learn and move forward in the process. She said that SASF hasn't been tried to the extent proposed and suggested that if the group can't agree on this particular motion, perhaps it might be helpful to do some modeling using the 8.23 maf, 10.4, and the 13.4 scenarios and translate those to steady flows.

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.

Member	Alternate	Stakeholder Name	Vote
Werner, Bill	Benemelis, Perri	Arizona	N
Senn, Mike	Persons, Bill	Arizona Game and Fish Dept.	A
Heuslein, Amy	Cantley, Garry	Bureau of Indian Affairs	A
Gold, Ann	Ryan, Tom	Bureau of Reclamation	A
Zimmerman, Gerald	Harris, Chris	California	N
Gimbel, Jennifer	Seaholm, Randy	Colorado	N
James, Leslie	Davis, Bill	CREDA	N
Steffen, Mark	Steffen, Tim	Federation of Fly Fishers	N
Spiller, Sam	Knowles, Glen	Fish and Wildlife Service	A
Lash, Nikolai	Johnson, Rick	Grand Canyon Trust	Y
Stevens, Larry	Vacant	Grand Canyon Wildlands Council	Y
Jackson-Kelly, Loretta	Christensen, Kerry *	Hualapai Tribe	N
Martin, Steve	Balsom, Jan	National Park Service	A
Caan, George	Peterson, McClain	Nevada	N
Groseclose, Jay	Ostler, Don	New Mexico	N
Kucate, Arden *	Dongoske, Kurt *	Pueblo of Zuni	N
Bulletts, Charley	Skrzynski, LeAnn	Southern Paiute Consortium	N
Rampton, Ted	Barrett, Cliff	UAMPS	N
Strong, Dennis	King, Robert	Utah	N
Warren, Brad	Palmer, Clayton *	Western Area Power Administration	N
Shields, John	Ostler, Don	Wyoming	N
Potochnik, Andre	O'Brien, John	Grand Canyon River Guides	Absent
VACANT		Navajo Nation	
VACANT		Hopi Tribe	

Note: The member and alternate for Grand Canyon River Guides could not attend the meeting. Ms. Lynn Hamilton, Exec. Director for GCRG, was allowed to sit at the table but could not vote.

Voting Results: Yes = 2
 No = 14
 Total Voting = 16
 2/3 = 11
MOTION FAILS

Ms. Gimbel said she wanted to make sure that the other members were reading their “no” votes as not opposing experimental flows.

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.

AMWG calls to the Secretary’s attention the concerns of the Pueblo of Zuni and other tribes with the nonnative fish removal project, and request that he take them into account as he considers this recommendation.

Mr. King questioned what was meant by “meaningful” consultation and who determines what is meaningful. Mr. Steffen responded that he thought it meant if everything else in the motion occurs. Mr. Palmer said he had two concerns, 1) that the language seems to be directing the science, and 2) representatives of the tribes are here and can express concerns about how the mechanical removal is conducted, if conducted. He also expressed concern with the TWG making a recommendation to the AMWG, the AMWG approving a process for mechanical removal, and then basically having the tribes consult after the fact. He said WAPA would be willing to vote in favor of the motion if it could be amended by getting rid of “directing the science” and “allow for meaningful consultation on cultural issues” but not have a process where the science is approved by the AMWG and then modified through consultation with the tribes.

Tom Ryan proposed the following amendment:

~~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 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. AMWG further recommends that the results of the consultation be reported to the AMWG.~~

~~AMWG calls to the Secretary’s attention the concerns of the Pueblo of Zuni and other tribes with the nonnative fish removal project, and request that he take them into account as he considers this recommendation.~~

Tom said his changes were based on John’s presentation on demonstrating one-on-one cause/effect relationship and the uncertainties there. He said the last sentence made him wonder what the GCDAMP fisheries management program was referring to as there are agencies that have management responsibilities to carry out those roles and there is a process in place to do that.

Mr. Dongoske said he wanted to respond to some of the comments made. He referenced “meaningful consultation” and said the tribes are used to consultation being a letter from a Federal agency

requesting to meet on a project with 30 days to respond. If after 30 days there is no response, the federal agency would assume that the tribe concurred with their decision. If a letter is sent, most of the times the tribes never hear back from the agency on how the tribes' concerns were integrated or considered within the decision-making process. They are asking for consultation in the AMP be a dialogue with the tribe and the federal agencies to understand how the tribes felt their concerns were considered in the decision-making process and how they tried to negotiate or consult with the tribes and leading to a satisfactory resolution for both parties, something that is rarely done. He went on to say that they don't want to see the dominant, anthropological perspective of the ecosystem trump Zuni cultural concerns about how resources and the ecosystem are managed. From this process, they're afraid the science will just do that, that the effort in consultation will be to try and demonstrate and persuade the Zuni's that the scientific data is so overwhelming that Zuni cultural concerns can't be fully considered or brought into the management of the non-native fish. They feel there is a need to re-evaluate the underlying assumptions and hypotheses about trout predation on HBC which motivates the mechanical removal. Mr. Dongoske said they were comfortable with the language in the motion as long as the concerns he expressed are taken to heart by the Federal agencies.

Mr. Caan questioned why the motion would state that AMWG recommend that consultation take place when consultation is a Federal requirement. He asked what his responsibility was as an AMP stakeholder. Mr. Dongoske told him that letters to Reclamation, FWS, and GCMRC were sent because the Pueblo of Zuni had voiced their concerns at AMWG and TWG meetings in the past and their concerns were not given consideration at those meetings. Instead of having to go outside the process to the Federal agencies to express their concerns, they want a process developed within the AMWG that gives due consideration to the cultural concerns of the tribes that may be in conflict with some of the science and that has yet to happen.

Mr. Steffen said he didn't like the amendment as it goes back to why they were doing mechanical removal in the first place and questions how it has changed. The tribes were told this was going to be done to help the chubs and no one knows if it did help the chubs. They were then told it was an experiment so he's concerned that it has changed into a management action. He said he wants to make sure that it does help the chubs and that it was going to be an experiment.

Mr. Ryan withdrew his change so the final motion was revised accordingly:

Revised Motion: AMWG recommends that the Secretary of the Interior conduct meaningfully 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.

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.

Proposed Budget 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 his absence yesterday didn't allow him to address WAPA's concern about the burden rate being shown on each project. He said WAPA had voted on that in the TWG meeting for fiscal years 2005 and 2006 because USGS advanced to the program \$1 million of appropriated funds. The AMWG recommended a budget for scientific studies and staff costs that included that \$1 million. Once the budget had been approved, the USGS said that money was for burden and not to be spent and used to offset the burden rate. He said that is what started the discussion on the true burden rate by USGS on the programs. It turned out the burden wasn't 17% but was more like 35% or 40% and so WAPA was interested in full disclosure on the burden. He said \$8 million of power revenues is collected from power sales and transferred from WAPA to Reclamation and then to USGS. He said he didn't know how much was taken off the top during each transfer and so the concern was that some monies could be saved by having Reclamation do the contracting and avoid the occurrence of burden. He said WAPA would be fine if GCMRC could provide the burden rates if it didn't cause them 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.

Member	Alternate	Stakeholder Name	Vote
Werner, Bill	Benemelis, Perri	Arizona	Y
Senn, Mike	Persons, Bill	Arizona Game and Fish Dept.	Y
Heuslein, Amy	Cantley, Garry	Bureau of Indian Affairs	Y
Gold, Ann	Ryan, Tom	Bureau of Reclamation	Y
Zimmerman, Gerald	Harris, Chris	California	Y
Gimbel, Jennifer	Seaholm, Randy	Colorado	Y
James, Leslie	Davis, Bill	CREDA	Y
Steffen, Mark	Steffen, Tim	Federation of Fly Fishers	N
Spiller, Sam	Knowles, Glen	Fish and Wildlife Service	Y
Lash, Nikolai	Johnson, Rick	Grand Canyon Trust	N
Stevens, Larry	Vacant	Grand Canyon Wildlands Council	Y
Jackson-Kelly, Loretta	Christensen, Kerry *	Hualapai Tribe	Y
Martin, Steve	Balsom, Jan	National Park Service	Y
Caan, George	Peterson, McClain	Nevada	Y
Groseclose, Jay	Ostler, Don	New Mexico	Y
Kucate, Arden *	Dongoske, Kurt *	Pueblo of Zuni	Y
Bulletts, Charley	Skrzynski, LeAnn	Southern Paiute Consortium	Y
Rampton, Ted	Barrett, Cliff	UAMPS	Y
Strong, Dennis	King, Robert	Utah	Y
Warren, Brad	Palmer, Clayton *	Western Area Power Administration	Y
Shields, John	Ostler, Don	Wyoming	Y
Potochnik, Andre	O'Brien, John	Grand Canyon River Guides	Absent
VACANT		Navajo Nation	
VACANT		Hopi Tribe	
Note: The member and alternate for Grand Canyon River Guides could not attend the meeting. Ms. Lynn Hamilton, Executive Director for GCRG, was allowed to sit at the table but could not vote.		Voting Results: Yes = 19 No = 2 Total Voting = 21 2/3 = 14 MOTION PASSES	

Voting Procedures. Ms. Castle said that over the course of the last two days several parties have said they want to make sure the reasons for their votes were reflected in the minutes and she wanted to take the opportunity to explain the thinking behind the DOI agency votes on the budget and workplan motion. She 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. She felt the group understood that but she wanted to make sure it was on the record. The agency votes for the 2010-11 budget and workplan were not intended to undermine that consultation. Similarly, the vote on the budget and workplan, and those documents in particular, the DOI agencies do not believe that they 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. The high flow experiment is not precluded so by voting on the FY2010-11 budget and workplan, the Interior agencies did not intend to send a signal that a HFE would not occur. She wanted to make sure that that sentiment and rationale for the vote was on the record.

Ms. Gimbel said she appreciated Ms. Castle's explanation and wanted to point out that it's always been in the plan that if the triggers are right, they could do a high flow experiment. She said that Colorado has always thought that was a possibility depending on the parameters. She wanted to make sure that people knew how Colorado felt.

Mr. Lash said GCT brought litigation because they thought the law was violated. They don't want to disturb the collaborative effort among AMWG stakeholders, but they feel the Federal agencies have violated NEPA and there are consequences for that. He said it was not their intent to raise the anxiety level more than it already is. He admitted that it wasn't very helpful bringing four motions at the eleventh hour, however, he felt people listened and some good work was done. He still feels it's good to bring motions forward at the eleventh hour that deal with special circumstances and the AMWG Operating Procedures allow for that. 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 that might implicate their actions.

Stakeholder's Perspective. Mr. Mike Senn with the Arizona Game and Fish gave a PPT 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 really 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. They are a self-funded agency and all the revenue and the way they function is on the proceeds through the sale of hunting or fishing licenses, matching excise taxes, some funding from the state lottery, some from Indian and Gaming, and a lot from contracting work.

TWG Chair Report. Mr. Capron passed out copies of the TWG 1-year Running Work plan, a Biennial Budget Discussion Paper, and then gave a PPT presentation (**Attachment 10**). He went through the activities the TWG undertook last year and reported on their accomplishments. The TWG also held a web conference in an effort to keep things moving along and be more responsive to GCMRC and he hopes to do more of those in the future so the TWG can be better prepared for meetings. He mentioned there could be a November TWG meeting or workshop to consider the economics workshop and the general core monitoring plan. He 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 use the off-year to deal with some of the issues that allows the management-science interface to be very effective.

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 he wanted to start the topic by putting it in the context of recent events. When AGFD calls meetings to look at funding for mechanical removal of non-native fish, it was before they had seen the letter from Pueblo of Zuni tribe. He wanted to make sure that everyone knows that those meetings were called out of no disrespect to the tribes but merely after the last meeting, it sounded as though some form of mechanical removal of non-native species was going to move forward but it wasn't readily apparent how that was going to be funded. The meeting was called in an effort to secure funding if those activities were going to move forward. 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 reminded people that he summarized the sources of funds in his presentation yesterday. They used a variety of funding sources with the major funding source being the experimental flow fund. They also used the non-native fish contingency fund and the regular power revenues. He said it was a difficult exercise and having to implement within GCMRC's budget resulted in a number of projects that had to be deferred or scaled back to accommodate that effort. 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 which could increase it from a \$300K a year commitment to a \$600K or \$900K a year commitment which has further ramifications to projects. He said the AMP is now at a point where the science is starting to translate into management actions and feels it's timely to determine what needs to be done not only from a science but also a science and compliance standpoint so they're not in a highly competitive, acrimonious process trying to solve problems at the expense of someone else.

Mr. Spiller gave a PPT presentation on "Potential Funding Sources Beyond 2012" (**Attachment 11**). He reiterated that meetings were held to discuss the need for funding if mechanical removal was going to be done. He began by looking at the Upper Colorado River Basin Recovery Program and its funding sources. He said pending the consultation with the Pueblo of Zuni and any other tribes, that the AMP has a real future need with regard to non-native fish removal. They see it as an ability to manage that fishery which involves maintaining HBC down river.

Q: Question for clarification. I'm looking at the Dec. 12, 2007 BiOp on the Interim Guidelines for lower basin shortages and coordinated operations. In that, it says that Reclamation has included the following conservation measures for listed species and the action as part of the proposed action. That includes non-native fish control in Marble and Grand canyons. The term of that is December 2008-2026. The BiOp dated February 27th brings that forward as presented in the Biological Opinion on the Shortage Guidelines Reclamation will coordinate with AMP participants and continue efforts to assist with warm and cold water fish. The shortage guidelines BiOp

was proposed by Reclamation as part of the proposed action through 2026. I wasn't part of the discussion on those guidelines and just a question on what was the intention at the time on how that would be funded. This was forwarded from the Lower Colorado Region to the Service. (Werner)

A: Yes, I am familiar with that biological opinion. I was not involved in the development of it. I can't answer the question about how funding was expected to take care of that. (Ryan)

C: We don't often get that specific in developing conservation measures. We know the action agency, Reclamation, will seek the funding to develop that work. (Spiller)

C: I have a different comment. About 2004 WAPA and Colorado proposed and the AMWG agreed that the focus of this program wasn't recovery of endangered fish. The AMWG adopted a motion to recommend to the Secretary of the Interior to explore a Grand Canyon RIP. This is to a large part what Sam is talking about. Someone in the Department asked WAPA to broadly scope out what that RIP might look like so we took a shot at it and proposed dividing the responsibilities along the lines of what Sam said which is the science would be recommended and done here and the monitoring done by GCMRC but once management actions were identified, they would become the responsibility of a newly formed RIP and there would be separate funding sources. We still don't know why that wouldn't be a good idea. Sam was assigned by the Department to explore that option and to my knowledge that has been stalled because of getting new people into the administration. WAPA still believes that if you're going to recover endangered fishes in the Grand Canyon, you need a body outside of a FACA group to hit the ground, have funding sources, involve agencies with statutory responsibilities, and get that stuff done. For example, one of the things identified in the recovery goals is second containment of hazardous spills in the Little Colorado River. There has been very little, if any, focus on that and yet that has to happen before HBC can be delisted. The reason that hasn't happened is basically someone who has the responsibility to get that done hasn't done it. (Palmer)

R: I was tasked to develop a strategy by former Deputy Lynn Scarlett in response to a motion from AMWG. That report was delivered to Brenda Burman, Secretary's Designee, and at the time we were just engaging in consultation with Reclamation on the 2008 high flow test. We revisited with Brenda in May 2008 and she requested that it be updated because the report didn't show the 2008 test. That report is in my regional office and I'm just not sure what to do with it because of the new leadership. If it's appropriate, we could bring up at our next AMWG meeting. As we start seeing more data collection, we're going to start seeing the need to carry out some management actions. We are going to need to fund that management. If we take the money out of the program for management, we will lose that data analysis and recommendations. (Spiller)

Q: I thought this discussion was going to center on how you make the determination of when something moves to a management action. We've skipped that step and gone toward the funding piece. Granted, it's a very important side of it but again hearing the TWG's discussions most recently, there isn't consensus and I would hope that someone smarter than me would come up with even a strawman on how you determine – what's the point when something becomes a management action? Let's start there and then let's figure out the funding side of it. (James)

Ms. Castle asked if the group considered criteria for determining management actions versus experimentation. Mr. Spiller said they didn't. Mr. Hamill said that it's difficult to determine what is a management action or an experimental action. He feels that laying everything out is a good first step in determining what they want to do and then how it gets categorized can follow.

Mr. Capron said the TWG tried to tackle the management action question and brought forward a proposal to the AMWG and it was put on hold.

Ms. Castle said an option would be to bring the TWG's proposal back before the AMWG at their next meeting. She asked if that worked for everybody.

Mr. Palmer said that he would like Sam to bring an update on the process of exploring a RIP.

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

Mr. Dongoske said he wanted to extend Mr. Kucate's apologies for not being able to attend the afternoon session of the meeting as he had to leave for religious reasons.

Ms. Castle said that during the lunch break they went back and looked at the specific language in determining criteria for experimentation versus management actions because they wanted to be clear on what the sense of the AMWG was in the morning discussion so they could give clear direction to the Science Advisors. The motion that was passed by the TWG was put up on the screen. Ms. Castle felt it required some updating to capture the sense of the AMWG. Additional language was also included and Ms. Castle felt that following the AMWG's review, and if appropriate, it should be adopted by motion so everyone is clear on the direction. She said the first paragraph was passed by the TWG but the implementation was taken offline by the AMWG, really just postponed, until the transition of leadership was in place. She said that was a TWG request to the Science Advisors. The proposed motion has the AMWG requesting the Science Advisors and instead of developing a report on management actions that describes the transition, she thought the sense of the AMWG was to ask the Science Advisors to survey other adaptive management programs and develop a report describing definitions of or criteria for defining management actions and the transition from research to management. She said the TWG would review the report and then forward to the AMWG options for the AMWG to consider with regard to how the AMP handles these issues.

Passed by TWG earlier this year: The TWG requests that the Science Advisors develop a report on management actions from other programs which describe the transition from research to management. This should be developed in coordination with the TWG Chair, TWG Co-Chair, and Chief of GCMRC. The report should be provided to the TWG at its next meeting and a presentation should be provided. The Science Advisors should also be available.

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). Mr. Kubly said that each meeting they go through the progress that's been made on the conservation measures and said today there would be three presentations. He gave a PPT 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 of 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 PPT presentation, "Humpback Chub Translocation and Refuge Development" (**Attachment 12c**). He said the translocation occurred in Chute Falls. As a conservation measure they decided to move juvenile HBC below the system upstream above Chute Falls because they thought they would have higher survivorship. It started out as a conservation measure in a 2002 biological opinion and carried over as a conservation measure in a 2008 biological opinion with the goal of improving survivorship of young chubs and thereby increasing the overall abundance of the HBC population in Grand Canyon and better understanding the life history. They thought that habitat upstream of the Falls would be good habitat for them. They noted the fastest growth rates ever recorded in HBC and are still seeing that level of growth. He gave a brief update on the HBC refuge development and said the FWS purpose of that conservation measure was to establish two refuge populations at hatchery facilities. The purpose is to try and genetically represent the wild population in Grand Canyon with the refuge populations so that should there be a catastrophic event that results in a drastic decline in the wild population, they could utilize the refuge populations to re-establish the wild population.

Shinumo Creek Translocation. Mr. Steve Mietz gave a PPT on the "Shinumo Humpback Chub Translocation Site" (**Attachment 12d**) project and said it was another conservation measure. He presented several slides focusing on when and where the translocation occurred, the field activities involved and said this was a cooperative effort among several DOI agencies, the Grand Canyon Wildlands Council, and volunteers. He said in May/June 2009 there were 300 HBC translocated with no mortality. A September monitoring trip is planned from which they will evaluate the results, convene a workshop in the fall, and develop a comprehensive translocation framework and plan to look at all the tributaries that have potential for translocation. He said more information can be found at the following website: <http://www.nps.gov/grca/naturescience/shinumotransloc.htm>.

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 distributed copies of his report on the protocols for selecting science advisors and then gave a PPT presentation, "Selections for Science Advisor Specialists for 2010-2012." He said when new science advisors are proposed by the Executive Coordinator (Dr. Garrett), 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 PPT presentation, "Update on November 2008 Colorado River Science & Resource Management Symposium Proceedings" (**Attachment 14**). He said it was the first symposium of its kind as they brought together all four elements of all four federal programs throughout the Colorado River Basin. They really tried to mix things up between resource managers and the scientists to promote and facilitate some transfer of knowledge and communication. He announced the 10th Biennial Conference for Research on the Colorado Plateau to

be held Oct. 5-6, 2009 in Flagstaff, Arizona. He concluded with the possibilities for the next Colorado River Science and Resource Management Symposium.

Comprehensive Plan Implementation Ad Hoc Committee. Mr. Spiller said they originally had three co-chairs but had to recuse himself from being a co-chair because of FWS ongoing litigation. He said he will participate but won't participate in the action decision-making of the group. He said Randy Seaholm will be retiring in November so he is no longer a co-chair which leaves Nikolai Lash chairing the group. He said Bill Werner has agreed to be the other co-chair. He said Clayton Palmer and Larry Stevens indicated they wanted to be members. He asked if any other members/alternates wanted to participate to send their name to Linda Whetton by August 24.

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 yesterday he mentioned the issue of understanding controls better and he sees it as being 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 to help the AMWG better understand where they are in the process. He was asked to explain a little bit more about what he means by controls. He said in science they know what they know because they compare their treatments against controls. In the AMWG, they're trying to manage the Colorado River ecosystem in the Grand Canyon and there are times in which they blame everything on the dam. While there are climate and long-term changes that are going on in addition to the dam, they haven't been able to tease apart in the AMP. They haven't paid attention to the Cataract Canyon reach upstream that has many of the features that they've been working towards – strongly seasonal flow patterns, high flows in the spring months, lots of sediment, warm water temperature – and yet up there the fisheries are in worse condition than they are in Grand Canyon. Therefore, if they're not paying attention to control reaches that might provide some insight into what problems are or working towards restoring the hydrograph of Grand Canyon may not solve the program's problems. He feels understanding the controls is a big issue programmatically and it applies to pretty much every study that's done. There is an array of controls up and downstream and modeling is another way to get at some of the problems but feel more attention needs to be brought forward. 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, it will facilitate a really productive discussion at the next meeting.

Public Comments:

Lynn Hamilton (Executive Director, Grand Canyon River Guides): I also like Larry's thought because so often with this program, because it's all so complex and so many inter-relationships, we get so centered on Grand Canyon itself that we forget that perhaps there are other situations that we should be considering outside the Grand Canyon that could provide parallels that could inform our process.

Meeting Comments.

- Ms. Castle said with respect to the next meeting, she wanted it to be scheduled in February 2010. Several dates will be sent out and she asked the members to respond by the deadline.
- She said there was some discussion yesterday about the process that the AMWG follows with respect to making motions and the timing of provisional motions. She appreciated Nikolai's undertaking to provide motions on a more timely basis in the future and suggested the group honor that undertaking and evaluate whether any changes to the Operating Procedures are

appropriate at a later date. When people provide proposed motions, she said Mary Orton would work with the individuals to make sure that they have been vetted through the various people to craft them in a way that has the best opportunity for success. She cautioned that motions only provided at the meeting do tend to reduce their probability of success.

- She said there were a number of votes taken provisionally and apologized that not all the letters of appointment have been completed. She asked if there was any objection to holding those provisionally and recording them so long as they receive the letters of appointment by the end of August. There was no objection.

Ms. Castle thanked everyone for the really productive discussions and felt it was a collaborative discussion. She hopes to be a part of the process of moving forward and said it is a high priority for her. She committed to pay attention and do the things she has promised to do in terms of taking issues back to Washington, convening the Policy Group, to work on issues within the Department and bring the Bureau's consensus back to the AMWG for further consideration. She hopes to have some of that done by the next meeting. She thanked everyone for helping her through the process for her first meeting and educating her on some of the tougher, 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, Arizona

General Key to Adaptive Management Program Acronyms

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

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

Updated: 2/3/09