

**Glen Canyon Dam Technical Work Group Meeting  
Final Minutes  
September 27, 2004**

**Conducting:** Norm Henderson, Chairman

**Committee Members Present:**

Mary Barger, WAPA  
Marklyn Chee, Navajo Nation  
Kerry Christensen, Hualapai Tribe  
Jonathan Damp, Pueblo of Zuni  
William Davis, CREDA  
Lloyd Greiner, UAMPS  
Rick Johnson, Grand Canyon Trust  
Matt Kaplinski, GCRG  
Chris Kincaid, NPS/GLCA  
Robert King, UDWR

Dennis Kubly, USBR  
Glen Knowles, USFWS  
Phillip S. Lehr, Colo. River Comm./NV  
Ken McMullen, NPS/GCNP  
Don Ostler, UCRC  
Bill Persons, AGFD  
Mark Steffen, Federation of Fly Fishers  
Larry Stevens, Grand Canyon Wildlands Council  
Bill Werner, ADWR  
Michael Yeatts, The Hopi Tribe

**Committee Members Absent:**

Illa Bullets, So. Paiute Consortium  
Christopher Harris, CRB/CA  
Amy Heuslein, BIA

John Shields, WY State Engineers Office  
D. Randolph Seaholm, CWCB  
John Whipple, NM Interstate Stream Comm.

**Alternates Present:**

Don Ostler  
Don Ostler

**For:**

John Shields, WY State Engineers Office  
John Whipple, NM Interstate Stream Comm.

**Interested Persons:**

Mike Berry, USBR  
Kurt Dongoske, CREDA  
Helen Fairley, USGS/GCMRC  
Tom Gushue, USGS/GCMRC  
Mike Kearsley  
Josh Korman, Ecometric  
Mike Liszewski, USGS/GCMRC

Ted Melis, USGS/GCMRC  
Paul Li, IEDA  
Anthony Miller, Colo. River Comm./NV  
Barbara Ralston, USGS/GCMRC  
Barbara Steffen, Federation of Fly Fishers  
Barbara Wilson, NPS/GLCA  
Scott Wright, USGS/GCMRC

**Meeting Recorder:** Linda Whetton, USBR

**Convened:** 10 a.m.

**Welcome and Administrative Items.** The chairman welcomed the members, alternates, and interested persons. Attendance sheets were distributed (**Attachment 1**). The chairman asked the members to review the minutes from the June 30-July 1, 2004 meeting and send any edits to Linda Whetton by October 8, 2004.

**ACTION ITEM:** Any comments to the June 30-July 1, 2004, TWG meeting minutes should be sent to Linda by October 8, 2004.

**Review of Action Items.** Refer to **Attachment 2**.

**Database Sharing.** Mike Berry reported the Access database from Grand Canyon was transferred to GCMRC and Reclamation. The spatial data has not been transferred. He reviewed the Access database and needs to be brought up current relational database standards. He said one of the line items in the FY05 budget for Grand Canyon is to contract out professional services and have the database brought up to standard before transferring to GCMRC at end of the fiscal year. Mike said the database being maintained by GCMRC will have to be set up to receive the database structures that we're going to be building in Access. It's a send and receive issue.

**Genetics Management Plan.** Gary Burton said that at the Upper Basin Researchers Meeting a couple of weeks ago, one of the things on the agenda was for a contract to update the group on where he was on several things, one of which was the responsibility for the Genetics Management Plan. Tom Czaplá and Bob Muth have been so involved in gathering information in order to respond to the Grand Canyon Trust lawsuit that they haven't been able to do the upper basin responsibilities let alone anything in the lower basin. They're not progressing quickly at this point. Norm asked if this was something the TWG wanted to tackle as to how to resolve. Larry Stevens said he was outraged that the report was so late. He reaffirmed that the TWG can't proceed with humpback chub work until they have that report. He wants the researcher to make a presentation at the next TWG meeting. Dennis concurred with Larry and said he would advocate the AMWG look at reallocating FY05 budget dollars to get the work done. The work has gone on long enough and the prospects are not good for getting the work completed. He said the whole concept of having the FWS take on the responsibility is clearly not working. Dennis reminded the TWG that it's been since August 2003 that the work was assigned to FWS. Ted Melis said that the contractor (Mike and MarliSS Douglas) declared a one-time, non-funded extension to complete the report on their agreement. It's not subject to GCMRC's approval unless they request additional funding. Dennis said the Genetics Management Plan doesn't need to wait on the Douglas information because there is a genetics management plan for humpback chub in the upper basin which has been in place for some time so the TWG doesn't need to wait on the Douglas report. Norm said the TWG could recommend the AMWG take up the issue at their next meeting.

**Action Item:** Dennis and Norm will draft some motion language for the TWG to submit to the AMWG regarding the critical need of having the Genetics management plan done by FWS, that the 05 budget may need to be adjusted to have the work done because FWS isn't able to do.

**Grand Canyon Trust Lawsuit Update.** Mary said she would also like a status report on the GCT lawsuit. Rick said the Department has asked the lawsuit be dismissed. It's under consideration right now and hopefully the judge will rule by mid-February on their motion to dismiss.

Chris Kincaid said she talked with NPS personnel and distributed copies of an e-mail message from Lisa Leap to the PA Group dated Oct. 21, 2003 (**Attachment 3**) which contained several recommendations related to the revision and updating of the data management plan. One of the impacts of the budget cut was the loss of a data manager position. They have also been trying to upgrade their system and they want people to understand that the Park Service has several cultural databases. They are also developing a new database for the graphic resource information program. Their overall policy is to share data on an as needed basis with anyone who requests information. They require a written request be submitted because one of the problems involved fulfilling lengthy requests. If sensitive information is requested, they try to review the information with the PA before it is released as they feel it is incumbent upon them to recipients of the data have protocols in place and the necessary security.

**ACTION ITEM:** Mike Berry will report back to the TWG on the outcome of the PA Meeting relative to the sharing of information between GCRM, NPS, and BOR.

Humpback Chub Comprehensive Plan Projects. Dennis Kubly said the TWG that the AMWG passed the HBC Comprehensive Plan in August 2003. He will provide a progress report to the AMWG at their next meeting. He asked Glen Knowles to remind the TWG to explain the plan's importance.

Glen said the plan would tell them what fish are in Willow Beach hatchery. There are some 100-150 humpback chub on station and the analysis will tell them what those fish represent in terms of what is known about the genetics of the species. The information should also fit nicely with the work being done by the Mike and Mariss Douglas at Colorado State University. Their research is focused on a genetics picture of the entire species in the upper and lower basin and will look specifically at the genetic makeup of the fish that were on station at Willow Beach. It could also shed some light on whether or not there is already a refugium population.

Bill Persons provided a copy of an e-mail message from Bruce Taubert. In it, Bruce stated that he "agreed to conduct an evaluation of the hatcheries to determine which ones, if any, met the dictates that the Service set out in their document." Dennis said the AMWG directed the GCMRC at their March 2004 meeting to evaluate the Hualapai fish facility and that now it sounds like there is something broader being undertaken. Bill said that it would be better to evaluate a variety of facilities vs. just one facility. He has state funds and a biologist currently working on setting up evaluation criteria and talking to the hatcheries but is not doing anything to look at growout ponds. Bill said they are looking at the feasibility of hatcheries as refuges for humpback chub and could provide an update on their work at the next TWG meeting.

Formation of Cultural Resources Design Ad Hoc Group. Kurt Dongoske reminded the TWG that they approved a motion to bring together the Cultural Resources Ad Hoc Group (CRAHG) to review the research design that was contracted by GCMRC to see how it applies to the adaptive management program. The research design for cultural resources is geared towards the archeology and it's a compliance-related document. It was contracted to be part of the Historic Preservation Plan so it may or may not make the crosswalk to the adaptive management program. While the TWG supported the 11 or 12 recommendations made by the Cultural PEP, they also offered another recommendation which was to establish a standing cultural resources ad hoc group. Kurt said he recalled that the members of that ad hoc group were pretty much all the PA members plus Matt Kaplinski. The chairman suggested disbanding the Cultural PEP and creating a new group. The PA members will be part of the new Cultural Resources Design AHG plus Mike Berry. Hearing no objections, the Cultural PEP group was disbanded and the new CRD AHG was created.

**CHARGE:** The new Cultural Resources Design Ad Hoc Group (CRDAHG) will review the research design to see if it makes the crosswalk to the adaptive management program. The group will report its status and/or make a recommendation to the TWG at the next TWG meeting. **CHAIR:** Mary Barger.

**ACTION ITEM:** Minutes from the CRDAHG meeting will be sent to Linda Whetton so she can capture any additional action items.

Warm Water Species Studies. The chairman reported there was an action item from the last AMWG meeting that GCMRC and the TWG would make a recommendation to the AMWG in October 2004 on warm water species studies, including a plan with dates starting in January 2005. He said this was proposing a research and development plan in trying to deal with warm water species in the mainstem. He said the TWG needs to decide what to do and fold into the FY 2005 budget if possible. He said it is a pretty important item to get started with since warm water is currently coming down from the dam. Dennis suggested GCMRC develop a process, schedule, and budget for presentation to the AMWG in October. The TWG will hear the presentation at that time and the AMWG could then decide how the work would be carried out.

**ACTION ITEM:** GMCRC will develop a process, schedule, and a recommended budget for suppression and control of non-native fish (warm water species) to be presented to AMWG at their October 2004 meeting.

Nominations for the TWG Chair. Dennis Kubly asked if there were any nominations for the TWG Chair for the next fiscal year (Oct 1-Sep 30). Larry Stevens suggested that because much of the chair's responsibilities are clerical in nature, a facilitator should be hired to alleviate some of the chair's work. Dennis said Reclamation is responsible for the meeting minutes and works closely with the TWG Chair in preparing the meeting agenda so he wasn't sure a need exists. Larry countered that a facilitator could keep the members on track and limit discussions. Dennis said there isn't any money in the budget for a facilitator but if the chair doesn't need to be paid, then money would be available. Dennis asked Norm if he would consider serving another term. Norm said he would be willing if nobody else wanted to serve.

**MOTION: Move to accept Norm Henderson as the TWG chair.**

**Motion seconded.**

**Passed by consensus.**

Lees Ferry Management Objectives and Monitoring Metrics. Bill Persons said his presentation was in response to a question raised about the relationship between population estimates and management objectives for fish in the Lees Ferry Reach at the November 2003 TWG meeting. The issue revolves around the need for population estimates, how the population estimates are obtained, whether the methodology is appropriate, and the bigger issue of management objectives throughout the program. Bill stated there are no numbers or metrics on most of the management objectives in the Strategic Plan. While the program wants to do good things for the resource, they don't always know if the target is being met because the targets aren't clear. Bill proceeded with a PowerPoint presentation (**Attachment 4**).

Mark Steffen stated that some people have expressed dissatisfaction to him with regard to recent newspaper articles stating the Grand Canyon is being ruined partly by trout. There is also concern that the AMWG has not demonstrated any support for trout above Lees Ferry. All the recent press has created a lot of concern among the fishermen. Bill Persons suggested Mark provide copies of the newspaper articles to the AMWG Public Outreach AHG for their action.

**Terrestrial Vegetation Monitoring**. Mike Kearsley said his presentation would focus on the progress that has been made with vegetation monitoring during the first three years of the project. He said if there was time he would also talk about links between vegetation and other components of the terrestrial system, most notably birds, small mammals, and invertebrates. He gave a PowerPoint presentation (**Attachment 5**).

## **GCMRC UPDATES**

**Mechanical Removal** – Ted Melis referenced a wall poster updating the status of mechanical removal. He anticipates the next trip will start in January-March 2005 and will be done through an outside contractor. As part of the plan for year three and to simplify it, they won't be doing the diet analysis portion. They are not approved for funding at the same level so are just going to focus on the removal and then finish processing the stomachs. Ted informed the TWG that Thursday was Mike Yard's last day at GCMRC, however, Mike intends to finish his work. Ted hopes to have the work completed in 2005 but they don't have the staff to do a lot of field work due to attrition.

Bill Persons expressed concern that an outside contractor might not know how to handle the fish or get the contract and consequently the work may not get done. Ted said it's their intention to have Lew Coggins work through the transition with the contractor.

**SCORE Report Update** – Ted said the SCORE Report is in progress and that GCMRC hired Lara Schmit (Northern Arizona University) to prepare it. The draft for the text is due in October but Ted wasn't sure what the schedule was for having the TWG review it.

**MOTION: Move the TWG have an opportunity to review the Table of Contents of the Score Report as soon as available and to review a draft before it is sent out for a formal internal USGS review. GCMRC will provide a timeline of when the report will be available for review.**

**Motion seconded.**

Discussion.

Voting Results:            Yes = 16                            No = 0                            Abstaining = 2

Motion passed.

Mike Yeatts (abstaining): I support reviewing the draft but GCMRC should be looking at the resources we think are important. I want the information when it is finalized.

Marklyn Chee (abstaining): I'm just waiting for the input.

**GCMRC Personnel Changes** – Ted provided the following staff updates:

- Scott Wright has been with the Center since last December. He is the coordinator within the integrated science program and doing science and modeling.
- Paul Barrett will start as the biological coordinator. (Update: Paul declined the position.)
- Tom Gushue is replacing Steve Mietz (DASA Group).
- Dr. Dave Topping's 4-year detail ends Feb. 15, 2005. Dave is planning to sell his house in Flagstaff and move to Denver as directed by the USGS.

There was some discussion as to whether the TWG should send a memo to USGS requesting they keep Dr. Topping on staff at GCMRC in order for him to complete work on the FIST project.

**MOTION: The TWG recommend that AMWG recommends to the Secretary of the Interior that Dr. David Topping's detail to GCMRC be extended for the duration of the FIST Project, or the end of FY05.**

**Motion seconded.**

**Discussion.**

**Voting Results:**      **Yes = 4**                      **No = 12**                      **Abstaining = 2**

**Motion fails.**

Rick Johnson (abstaining): The transfer of Dave to Denver is an internal USGS matter and I'm uncomfortable sending that recommendation to the AMWG.

Dennis suggested an inquiry be made to the Chief of GCMRC as to how Dr. Topping's departure would impact the program's budget and ask how GCMRC will handle the vacancy.

**Kanab Ambersnail Update** – Glen Knowles gave a PowerPoint presentation on the Kanab Ambersnail (**Attachment 6**).

**Humpback Chub Comprehensive Plan** – Glen Knowles gave a PowerPoint presentation on the HBC Comprehensive Plan (**Attachment 7a**) and said that between March 3-June 9, 2004, there was a lot of work done. Glen referenced an updated HBC Projects List (**Attachment 7b**) prepared by Dennis Kubly. Glen said that a lot of the projects have been put in place, funded, and work is progressing. He feels it has been a success and complimented the HBC AHG for their work but said questions remain about how the plan is to be completed. Dennis added the HBC AHG was formed as an AMWG ad hoc group. Even though a lot of TWG members participated, there was no direct reporting to the TWG. As such, the TWG hasn't been as involved as others in the group would have liked. Glen said he tried a year ago to have the TWG develop an ad hoc group to keep the momentum but it failed. Dennis said the three options on how to complete the plan relate very little to the technical issues identified in the slides and part of the reason is that those three options came largely from the thoughts of the four AMWG members and the technical issues came from the TWG level so consequently there has been differing viewpoints.

**Draft Core Monitoring Plan** – Helen Fairley said a copy of the Draft Core Monitoring Plan (**Attachment 8a**) was posted to the AMP web site on Saturday, Sept. 25, and hard copies were brought to today's meeting. She suggested the TWG provide comments to their AMWG members in preparation for a presentation of the plan to the AMWG in October. Norm suggested comments could also be provided to he and Dennis and they would present to the AMWG as well. She gave a brief history of what has occurred and what remains to be done. Scott Wright assisted with a PowerPoint presentation, "Current Core Monitoring & Research and Development for Long-Term Monitoring Protocols" (**Attachment 8b**).

**Questions/Comments:**

- Is the frequency of sampling you're proposing necessary to track changes in water quality or can we reduce the frequency based on your knowledge of the monthly variability? (Davis)
- All of these major resource categories need to be looked at in terms of the quality of synthesis that has been done on them. What are the big questions? (Stevens)
- How do we advance the Core Monitoring Plan? What do you need to know from the managers? We need to go through a more formal process of addressing these questions (pg. 11) or we're not going to get to a Core Monitoring Plan that we'll agree on. (Kubly)
- There are weaknesses in the system. Perhaps do more research into different techniques to assess abundance rather than a closed mark recapture estimator for example, snorkel survey, a catch per unit estimator either from electrofishing, etc. If you're contributing money that can be shown, then it should be included. If there is other work being done, it should be shown - In-kind services, people, etc. It doesn't show up here. Need for a feedback loop with the managers. Let's target some management objectives that have no metrics. (Persons)

- This discussion correlates with the HBC issues. We're at the same position with the trout and it makes sense to me that trends are more important than a number. (Steffen)

ADJOURNED: 5:10 p.m.

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September 28, 2004**

**Conducting:** Norm Henderson, Chairman

**Committee Members Present:**

Mary Barger, WAPA  
Marklyn Chee, Navajo Nation  
Kerry Christensen, Hualapai Tribe  
Jonathan Damp, Pueblo of Zuni  
William Davis, CREDA  
Lloyd Greiner, UAMPS  
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Matt Kaplinski, GCRG  
Chris Kincaid, NPS/GLCA  
Robert King, UDWR

Dennis Kubly, USBR  
Glen Knowles, USFWS  
Phillip S. Lehr, Colo. River Comm./NV  
Ken McMullen, NPS/GCNP  
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Bill Persons, AGFD  
Mark Steffen, Federation of Fly Fishers  
Bill Werner, ADWR  
Michael Yeatts, The Hopi Tribe

**Committee Members Absent:**

Illa Bullets, So. Paiute Consortium  
Christopher Harris, CRB/CA  
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John Shields, WY State Engineers Office

Larry Stevens, Grand Canyon Wildlands Council  
D. Randolph Seaholm, CWCB  
John Whipple, NM Interstate Stream Comm.

**Alternates Present:**

Kelly Burke  
Don Ostler  
Don Ostler

**For:**

Larry Stevens, Grand Canyon Wildlands Council  
John Shields, WY State Engineers Office  
John Whipple, NM Interstate Stream Comm.

**Interested Persons:**

Mike Berry, USBR  
Kurt Dongoske, CREDA  
Helen Fairley, USGS/GCMRC  
Josh Korman, Ecometric  
Mike Liszewski, USGS/GCMRC

Ted Melis, USGS/GCMRC  
Paul Li, IEDA  
Anthony Miller, Colo. River Comm./NV  
Randall Peterson, USBR  
Barbara Wilson, NPS/GLCA

**Meeting Recorder:** Linda Whetton, USBR

Convened: 8 a.m.

**Welcome and Administrative Items.** The chairman welcomed the members, alternates, and interested persons. Attendance sheets were distributed. He advised more discussion is needed on the draft Core Monitoring Plan and the agenda would be adjusted to accommodate that the issue this afternoon.

**HBC Augmentation Feasibility.** – Sam Spiller said that Randy Van Haverbeck prepared "The Feasibility of Developing a Program to Augment the Population of Humpback Chub in Grand Canyon Final Report" (**Attachment 9a**) but because Randy couldn't attend today's meeting, he would give a PowerPoint presentation on the report (**Attachment 9b**).

The chairman asked if the TWG wanted to adopt the report and forward it to the AMWG. He asked if anyone wanted to make a motion. The members discussed whether the TWG was ready to forward it to the AMWG.

**Concerns:**

- Parts of the report I accept and others I don't. I'm concerned about some things that aren't well defined particularly the attempts to put the fish in other places and especially if we attempt to put them in places where the habitat is not suitable. (Steffen)
- It's not clear this is something we can put a stamp of approval on. The information feeds into the Humpback Chub Comprehensive Plan and provides some background material but it's not a document that tells us what action to take. The decision is what we should be commenting on and sending to AMWG, not the background information. (Johnson)
- The report analyzes a lot of the issues but it's not really recommending anything so I would feel that I was trying to second guess their analysis, whether it was right or wrong, but it's not an action document in that sense. We start out defining the actions and treatments but there isn't anywhere in here that is well defined about what we're really trying to learn. We need to determine what the unknowns are to address what we're trying to get out of this long-term experimental flow and that feedback loop really isn't in there. (Yeatts)
- We can accept it as a scientific document and then debate if we support the conclusions. We have a responsibility to accept scientific reports as they come in, that they're adequate and complete. I work in the Upper Basin Recovery Program and we get reports at almost every meeting in which we are asked to judge if a report is complete. The author can write any report and draw any conclusions but as they apply to the program, that's a different matter. We don't have any right to second guess the scientist and suggest we accept the report as it's written. (Davis)
- Most of our reports have firm recommendations. This covers all the bases that would augment but doesn't specifically do this and why. It doesn't say roll them out, do only this, don't translocate here and not there. In terms of making a recommendation to AMWG, there is no firm recommendation. (Barger)

**MOTION: Move to accept "The Feasibility of Developing a Program to Augment the Population of Humpback Chub in Grand Canyon" Final Report and its conclusions.**

**Motion seconded.**

**Voting Results:      Yes = 13                      No = 0                      Abstaining = 5**

**Motion passed.**

**Rick Johnson** (abstaining): My reason for abstaining is that within the next year or two, we're going to look back at this and go, "what did we mean by *accepted*." Does that mean we're

going to do what they say? Did we mean we thought it was scientifically credible? This is what we do constantly with virtually every motion that we make.

Mark Steffen (abstaining): I didn't vote it because of the inclusion of the word "conclusions." I'm not sure what the conclusions are and I don't know that I agree with all of them. I consider this to be a situation of a TWG function and probably disagree that we even need to approve this.

**Redds Mortality.** Josh Korman said he would talk about the results of a 2-year study that is in its final four months looking at the effects of the enhanced fluctuating flows from Glen Canyon Dam during January 2003-March 2004. This was a small project initiated by Ted Melis and Mike Yard at GCMRC looking at how changes in the substrate in Grand Canyon caused by reduced sediment inputs might improve spawning habitat suitability for rainbow trout and rearing habitat. He gave a PowerPoint presentation on the "Effects of 2003/2004 GCD Enhanced Fluctuating Flows on the Early Life History Stages of Rainbow Trout in Glen Canyon" (**Attachment 10**).

**Update on Nearshore Thermal Data Work.** Matt Kaplinski reported that temperature monitoring equipment was installed at three locations: (1) above Lees Ferry, (2) one in Marble Canyon, and (3) one below the Little Colorado River. At each site they installed a string that has thermistors at every point from the 2,500 cfs level up to 20,000, so every 2,500 cfs. At each site they installed five strings with thermistors as well as two in the backwater, two in the tallus shoreline habitat, and two in shallow sand shorelines. When they installed them in August to get the vertical gradient, they floated over a daily hydrograph cycle so that in August it was from 10,000-18,000 cfs. They also floated a buoy system which had thermistors on it to get an idea over the range of the hydrograph in August but the vertical gradient is temperature. They also went back in September and did it at the 5,000 – 10,000 level.

Ted said if the first sediment trigger occurred at 500,000 tons from the Paria, they had the option of going into an experimental re-operation mode where they would have two weeks of constant 8,000 cfs flows alternated with two weeks of 6,500-9,000 cfs flows. It was initially intended as a sediment transport experiment to see if they could even detect a difference in sand transport rates of the two flow regimes. He said that they're not at that first trigger yet but if and when they get there, the thermistors are in place. They could then re-deploy the surface component and it would continue not only as a sediment transport experiment but as a thermal experiment looking at what the warming would be in September or October at constant flow vs. an even smaller fluctuation of 5,000-10,000 cfs.

**Update on Effects of MLFF.** Ted Melis said they were originally going to go through the White Paper, "A Discussion of the Evidence for Perceived Failure of the Modified Low Fluctuating Flow Alternative (MLFF) to Benefit Most Ecological Resources Below Glen Canyon Dam, 1991-2001," (**Attachment 11a**), but instead he and Josh will provide data via a PowerPoint presentation, "Data Related to our MATA Discussions on MLFF and Fishery Responses" (**Attachment 11b**). Ted said they looked at the enhanced fluctuating flows component, the concept of designer flows, where a change in operation on a seasonal schedule could achieve or optimize certain objectives over others. It's a radical departure from the status quo which has been in place for 13 or 14 years so there was some level of discomfort in the discussions relative to moving in the direction of trying different things. It was GCMRC's attempt to better outline what the alternative options might be from an experimental point of view if it's determined that long-term experimentation will continue. They're also looking at what the options are from a cost benefit ratio which is really what MATA was intended to do. Ted said a lot of time has passed between the various workshops and meetings so it's important for the TWG to remember why this was started and what was achieved at various milestones. This

was part of something that was originally designed to help with the metric designations and then later became a planning tool towards long-term experimental design. However, the very impetus was back when Barry Gold was trying to enlist Carl Walters, Josh Korman, and others to help the TWG wrestle with the idea of establishing metrics.

Ted said he was going to shift from discussing the biological component to issues of sand resources and habitat responses related to sand. One of the big questions that came up was if there was an enhanced fluctuating experiment, what resources would be impacted - suspended sand transport and physical biomorphology in reaches of concern or interest. He referred to the 1995 EIS which stated there were many reasons for conserving sand but one of the primary objectives was to modify and maintain backwaters as physical habitat or nursery habitat for YOY fish leaving the Little Colorado River. If that's the case, those fish are primarily moving downstream into a reach that may or may not have those nursery habitats depending on how the sand supply is being managed. They looked at this from a shear sediment transport point of view with help from Dr. David Topping. Josh Korman did some work and then Steve Wiele looked at what the consequences might be of an enhanced fluctuating flow in terms of biomorphology. This was Dr. Topping's attempt to help people understand the relationship between grain size and size of diameter and concentration and transport of sand.

Ted said it may be helpful for people to go back and read the white paper because people were thinking that fluctuating flows were good at conserving or limiting sand transport but that's not true and it might be worth considering an alternative flow regime. From riverware simulations, about half of the projected monthly release volumes will likely be between 600,000-800,000 acre-feet and would therefore increase sand transport under alternative fluctuating flow regimes relative to MLFF. But again, during the periods when there is more water it might be best to change daily operations for a variety of reasons, one of which might be to reduce the amount of sand exported vs. MLFF.

Dennis asked what GCMRC plans to do with the report. Ted said the white paper was an attempt to record what happened at the MATA workshop and subsequent MATA discussions and was never intended for general consumption by the AMWG or the public. Ted said they are trying to synopsise the work without producing an 80-page report. It hasn't been formally peer reviewed but part of it is simply a summarization of already published information. With respect to some of the biological components, it's either partially been published and reviewed or hasn't even been submitted to peer review literature. Ted said it acts as a precursor to the SCORE Report and that a lot of what is in the document will appear in the SCORE Report. Josh added that it would be a good start for developing the framework of the long term experimental plan.

Dennis asked if it was going to become an official USGS peer-reviewed document because it has so much writing on it in terms of future direction. He thinks that is why the AMWG is interested in knowing what the scientists think and what conclusions have been made. He asked if the TWG should review and provide comments as a component into the MATA process.

**ACTION ITEM:** The TWG will review the White Paper and provide comments to Ted Melis GCMRC by October 15, 2004. Ted will include the comments and have a final report by the end of the year.

**Draft Core Monitoring Plan Discussion (continued)** Helen Fairley said a copy of the plan was sent to the TWG and AMWG at the same time and they don't plan on sending out another

revised version before the next AMWG meeting. She asked how the TWG wants to respond to it and provide input the AMWG. She felt it would be important for the TWG to review internally and provide comments to GCMRC. She also suggested that the TWG members could provide comments to their AMWG member and those comments could be submitted to GCMRC.

Comments:

- There is a lot of material to go through and the report should be reviewed in-depth. The CMAHG hasn't had time to review it and they should do so and then bring to the TWG for further discussion. (Davis)
- One thing that's happened is the change to the red, green, and yellow. Maybe it's appropriate for AMWG to look at plan closer and if it is a good idea to separate those things out in the different levels. Are the CMINs appropriate? Are we missing some CMINs? If we want a clean document, this is the time to do it. (Barger)
- We have the lack of targets that's been mentioned numerous times as well as the lack of metrics. Do they come out of the CM Plan or down through the Strategic Plan. (Kubly)

**ACTION ITEM:** The TWG will provide comments on the Core Monitoring Plan to Jeff Lovich by October 15, 2004.

The next CMAHG meeting is tentatively set for November 15-16, 2005.

**Paria Inputs Update** – Ted gave a quick PowerPoint presentation on “WY 2004 Experimental Fine-Sediment Update Paria River Inputs & 41,000 vs. 45,000 cfs Sand Bar Simulations” (**Attachment 12**).

**Cultural Resources Section of the Core Monitoring Plan** – Helen Fairley said there are several components to the latter part of the plan that deal with the heritage resources, archeological sites, traditional cultural properties, other resources of traditional concern, the recreational component and some subcomponents within that, and the socioeconomics part of the program. She gave a PowerPoint presentation, “Cultural and Recreational Monitoring Program” via a PowerPoint presentation (**Attachment 13**).

**Long Term Experimental Ad Hoc Group Update** – Dennis passed out a copy of the minutes from the last LTEP AHG meeting (**Attachment 14**). He said the Core Monitoring AHG meeting on 9/13/04, the LTEP AHG met on 9/14/04, and the Budget AHG met on 9/15/04. He felt it was beneficial those ad hoc group meetings followed one another because it helped them discover how much overlap there is in the activities of the groups. He said a presentation was made to the AMWG at their last meeting and he requested an extension to develop the Long Term Experimental Plan. They agreed to the extension but now there is an obligation for a draft plan in July 2005 and a final in January 2006. The AMWG said that in granting the extension they want an identification of what the schedule will, the processes involved, along with milestones, and who would be accomplishing each of the tasks. He said the focus of the LTEP AHG meeting was to set the schedule and stated an update would be provided to the AMWG at their October meeting.

He referred to Table 1 and explained the process for completing the boxes: If an action fits eventually into the column of known effects, where you think you know what the effect of that action would be on (and using two as an example) humpback chub and fine sediment. If you think you know what the effects of that action would be on those resources, then you might put

that in the known category and you might implement that action and also might carry it on through the entire period of the long term experimental plan. In general, when they spoke about how long that would be, it's been on the order of 15 years. The treatments would be those other actions for which you determine you do not know the effect of that action and also that you're going to manipulate it over time. You're going to turn it on and off, or have it occurring in several different states of intensity. They came up with 11 sets, 7 of which were identified in the Humpback Chub Comprehensive Plan. He said the table was used in a brainstorming session but said that if there are any other actions or treatments that should be added to the set for consideration to let him know.

Mike Yeatts commented that even though the program starts out defining the actions and treatments, it's not well defined what is learned. The feedback loop isn't in there. What they want to learn should guide what actions are going to be implemented but on the other hand some actions are going to drive what is being learned.

**ACTION ITEM:** Dennis will send out an e-mail message tomorrow and get the next LTEP AHG meeting scheduled.

**FY 2006-07 Budget Discussion.** Dennis Kubly said the Budget AHG group had some recommendations to offer (**Attachment 15**). The first one they don't really have to deal with right now but he wanted the TWG to know there was a discussion on how to divide up the budget and work plan when there is a core monitoring and long-term experimental plan or something new that is discovered in the research and development component. The second thing they talked about was a need to identify actions being conducted by agencies that are part of the AMP or it could in some cases be other organizations that are not funded by the AMP but that could either complement synergistically or have a negative effect on the program. As a result, they're asking for the TWG to consider that in the development of the budget, in each cycle, those actions be brought forward and identified and discussed at the TWG level. This is intended to result in a more comprehensive and collaborative process for maximizing information gained in exchange.

Dennis said another component of the budget is the 5-year outlook. He thinks the TWG can do a much better job of strategically looking at the future if they're aware of the suite of projects that are anticipated to be undertaken than just a narrow outlook of what the program is doing. He said that if people would agree to do this on an informal basis, the BAHG would go back and do more work. However, he doesn't feel they can do it on the schedule that AMWG has agreed to and need an additional month. As such, he will be asking the AMWG in October for the extra time. The first meeting would bring together GCMRC, the PA, and BOR to develop a first draft that would then be moved to the BAHG (November 17-18). There is also an agreement in the budget process to develop an appropriations request but the BAHG didn't feel they had the expertise to work on that. There was a suggestion to involve John Shields in that effort because he is familiar with going to Washington seeking additional funds from Congress. Since John was an AMWG member, it was determined that the TWG would ask the AMWG if this is the direction they want to go.

The next BAHG meeting is tentatively scheduled for the week of January 10, 2005.

**PA UPDATE:** Mike Berry reported that CREDA, WAPA, and BIA had expressed an interest in becoming signatories to the Cultural Programmatic Agreement. Letters were distributed to all the current PA signatories requesting their opinions, objections, concurrence, and Reclamation

gave them 30 days to respond. However, the deadline was extended to 45 days to ensure that everyone who wants to participate will be able to do so. To date, Reclamation has received two letters, one from the SHPO and one from the Advisory Council. Reclamation decided to treat them as non-responsive because they don't object so much to the addition of the three new members as they object to the fact that GCMRC is not going to become a member. It was explained to them quite carefully that GCMRC doesn't have any Section 106 responsibility under the current PA. They may have their own 106 but that's a separate issue. Mike said he has been led to understand that the National Park Service will be sending a letter with their objections and that he will likely hear from the Hopi Tribe objecting to CREDA.

**Geomorphology Workshop Update.** Helen Fairley said the workshop is being postponed until early winter, probably the early part of February. The reason for postponing it was to get more participation from those who worked on geomorphology issues in the river corridor.

**Adjourned:** 2:55 p.m.

### **General Key to Adaptive Management Program Acronyms**

ADWR – Arizona Dept. of Water Resources  
AF – Acre Feet  
AGFD – Arizona Game and Fish Department  
AGU – American Geophysical Union  
AMP – Adaptive Management Program  
AMWG – Adaptive Management Work Group  
AOP – Annual Operating Plan  
BA – Biological Assessment  
BE – Biological Evaluation  
BHBF – Beach/Habitat-Building Flow  
BHMF – Beach/Habitat Maintenance Flow  
BHTF – Beach/Habitat Test Flow  
BIA – Bureau of Indian Affairs  
BO – Biological Opinion  
BOR – Bureau of Reclamation  
CAPA – Central Arizona Project Assn.  
cfs – cubic feet per second  
CRBC – Colorado River Board of California  
CRCN – Colorado River Commission of Nevada  
CREDA – Colorado River Energy Distributors Assn.  
CRSP – Colorado River Storage Project  
CWCB – Colorado Water Conservation Board  
DBMS – Data Base Management System  
DOI – Department of the Interior  
EA – Environmental Assessment  
EIS – Environmental Impact Statement  
ESA – Endangered Species Act  
FACA – Federal Advisory Committee Act  
FEIS – Final Environmental Impact Statement  
FRN – Federal Register Notice  
FWS – United States Fish & Wildlife Service  
GCD – Glen Canyon Dam  
GCMRC – Grand Canyon Monitoring and Research Center  
GCNP – Grand Canyon National Park  
GCNRA – Glen Canyon National Recreation Area  
GCPA – Grand Canyon Protection Act  
GUI – Graphical User Interface  
HBC – Humpback Chub (endangered native fish)  
HMF – Habitat Maintenance Flow  
HPP – Historic Preservation Plan  
IEDA- Irrigation and Electrical Districts Association of Arizona  
IN – Information Need  
IT – Information Technology (GCMRC program)  
KAS – Kanab ambersnail (endangered native snail)  
LCR – Little Colorado River  
LRRMCP – Lower Colorado River Multi-Species Conservation Program  
MAF – Million Acre Feet  
MA – Management Action  
MO – Management Objective  
MRAP – Monitoring and Remedial Action Plan  
NAAO – Native American Affairs Office  
NAU – Northern Arizona University (Flagstaff, AZ)  
NEPA – National Environmental Policy Act  
NGS – National Geodetic Survey  
NHPA – National Historic Preservation Act  
NPS - National Park Service  
NRC - National Research Council  
NWS - National Weather Service  
O&M - Operations & Maintenance (USBR funding)  
PA - Programmatic Agreement  
PEP - Protocol Evaluation Panel  
Powerplant Capacity - 31,000 cfs  
Reclamation – U.S. Bureau of Reclamation  
RBT – Rainbow Trout  
RFP - Request For Proposals  
RPA - Reasonable and Prudent Alternative  
SAB - Science Advisory Board  
Secretary(=s) - Secretary of the Interior  
SWCA - Steven W. Carothers Associates  
TCD - Temperature Control Device (for Glen Canyon Dam water releases)  
TCP - Traditional Cultural Property  
TES - Threatened and Endangered Species  
TWG - Glen Canyon Technical Work Group (a subcommittee of the AMWG)  
UCR - Upper Colorado Region (of the USBR)  
UCRC - Upper Colorado River Commission  
UDWR - Utah Division of Water Resources  
USBR - United States Bureau of Reclamation  
USFWS - United States Fish & Wildlife Service  
USGS - United States Geological Survey  
WAPA - Western Area Power Administration  
WY – Water Year (a calendar year)