

**Glen Canyon Dam Adaptive Management Work Group Meeting  
September 9, 2008**

**Conducting:** Kameran Onley, Secretary's Designee  
**Facilitator:** Mary Orton

**Convened:** 9:15 a.m.

**Committee Members/Alternates:**

Steven Begay, Navajo Nation  
Charley Buletts, Southern Paiute Consortium  
George Caan, Colorado River Comm./NV  
Jennifer Gimbel, Colorado Water Conservation Board  
Jay Groseclose, NM Interstate Stream Comm.  
Amy Heuslein, Bureau of Indian Affairs  
Loretta Jackson-Kelly, Hualapai Tribe  
Leslie James, CREDA  
Nikolai Lash, Grand Canyon Trust  
Steve Martin, NPS/GCNP  
Andre Potochnik, Grand Canyon River Guides

Ted Rampton, UAMPS  
Dave Sabo, USBR  
John Shields, WY State Engineers Office  
Dennis Strong  
Sam Spiller, USFWS  
Mark Steffen, Federation of Fly Fishers  
Larry Stevens, Grand Canyon Wildlands Council  
Dennis Strong, UDWR  
Brad Warren, WAPA  
Bill Werner, ADWR  
Mike Yeatts, Hopi Tribe (alternate)

**Committee Members Absent:**

Bob Broscheid, AGFD (via phone at various times)  
Gerald Zimmerman, Colorado River Board/California

Leigh Kuwanwisiwma, The Hopi Tribe

**Interested Persons:**

Andrea Alpine, USGS  
Matthew Andersen, USGS/GCMRC  
Allen Anspach, Bureau of Indian Affairs  
Jan Balsom, NPS/GCNP  
Mary Barger, WAPA  
Mike Berry, USBR  
James Cason, DOI  
Kerry Christensen, Hualapai Tribe  
Rick Clayton, USBR  
Cindy Cole, Arizona Daily Star  
Tim Dealy, USGS/GCMRC  
Kurt Dongoske, TWG Chair  
Helen Fairley, USGS/GCMRC  
Dave Garrett, M<sup>3</sup>Research  
Paul Grams, USGS/GCMRC  
Martha Hahn, NPS/GCNP  
John Hamill, USGS/GCMRC  
Lynn Hamilton, Grand Canyon River Guides  
Matt Hangsleben, AGFD  
Norm Henderson, NPS  
Sarah Hurteall, AGFD  
Rick Johnson, Grand Canyon Trust  
Robert King, UDWR

Glen Knowles, USFWS  
Dennis Kubly, USBR  
Andy Makinster, AGFD  
Barbara McKenzie, USGS/GCMRC  
Ted Melis, USGS/GCMRC  
Steve Mietz, USGS  
Anthony Miller, Colorado Water Conservation Board  
David Nimkin, National Parks Conservation Assoc.  
Don Ostler, Upper Colorado River Commission  
Kathryn Parker, NPS  
Jessica Pope, public member  
Tom Ryan, USBR  
D. Randolph Seahom, CWCB  
Michael Schulters, USGS  
Hoda Sondossi, USGS/GCMRC  
Bob Snow, DOI Solicitor's Office  
Mike Snyder, NPS  
Gaylord Staveley, Canyoneers Outfitter, Inc.  
Fred Thevenin, Grand Canyon River Guides  
Melissa Trammel, NPS  
Larry Walkoviak, USBR  
Palma Wilson, NPS  
Scott Wright, USGS

**Meeting Recorder:** Linda Whetton, USBR

**Welcome and Administrative:** Ms. Kameran Onley welcomed the AMWG members, AMWG alternates, and members of the public. A roll call was taken and a quorum (15 members) was established. She welcomed Jennifer Gimbel (representing Colorado), Tom Ryan (new Reclamation alternate), and Shane Capron (new TWG Chair). Dave Sabo (Reclamation) transferred to Denver so Reclamation will be nominating a new member to replace him. She recognized Kurt Dongoske who had served for three years as the TWG Chair. Ms. Onley gave a brief update on her experience and believes water issues in the West are very important. She provided a copy of a memo from Secretary Dirk Kempthorne appointing her as the

new Secretary's Designee (**Attachment 1a**). She also distributed copies of a memo from Brenda Burman to Secretary Kempthorne forwarding the AMWG's recommendations from their May 22-23, 2008 meeting (**Attachment 1b**) along with a response memo from Lynn Scarlett addressing the first recommendation, a second memo forwarding the second recommendation from the May 2008 meeting (**Attachment 1c**), and a third memo from Lynn Scarlett to the AMWG with the Department's response to the second recommendation (**Attachment 1d**).

**Approval of the May 22-23, 2008, Meeting Minutes.** Without objection, the minutes were approved.

**Update on Liaison Position.** Martha Hahn reported a group was formed to help facilitate integrating their work with the proposed tribal liaison position. They're going to develop an outline on how the liaison position will work. Leslie James advised the group to focus on securing a funding source and to bring a recommendation back to the AMWG since it will have a budget implication. Martha said that would be covered in their outline.

**Action Item Tracking Report.** (**Attachment 2**) Mary Orton reviewed the items. Item 11: The original Roles Ad Hoc Group (Randy Peterson, Denny Fenn, Dave Garrett, and Kurt Dongoske) produced the first report in August 2005 and comments were requested from the AMWG. Personnel changes followed and the new Secretary's Designee, Mr. Limbaugh, asked again for comments from the AMWG. That report was introduced in May 2007. Ms. Onley asked the *new* Roles AHG members (Tom Ryan, John Hamill, Dave Garrett, and Shane Capron) to work on the report as she wanted to bring it to completion.

**Annual Report to Congress.** Mr. Tom Ryan said Reclamation is in the process of completing the report to include the 2008 information and forecasting for 2009. The report should be ready for the AMWG to review in early November and then it will be sent to Congress by the end of the calendar year. In response to Mr. Lash's question on whether it would include information from previous years, Tom said it is Reclamation's intent to include that as possibly an appendix with bulleted items that relate to operations of the AMP.

**Legislative Updates.** Mr. Dennis Kubly said at the last AMWG meeting he reported on three general categories of legislation: Energy, FACA committee revision, and the Endangered Species Act. Because Congress has just gotten back from a 5-week recess, there has been a good deal of activity generated in the recent week. He reviewed six energy bills and they seem to fall into two categories, a category that's espousing additional extraction of energy and a category that's concentrating on capping greenhouse gases and conservation. As far as movement through the system, all these bills are at the committee stage. He said there was an attempt to revise the Federal Advisory Committee Act to improve transparency with a bill submitted on June 25<sup>th</sup>, to a committee on Homeland Security and Government Affairs and is also still at the committee stage. He didn't find any revisions on the ESA legislation. He said the appropriations bills for energy and water, Senate Bill 3258, was placed on the Senate legislative calendar. It's likely that the Government will be operating under a Continuing Resolution.

**Litigation Update.** Mr. Bob Snow, DOI Solicitor's Office, said that in the May meeting he gave a quick update on ongoing litigation against the Department by the Grand Canyon Trust which involves some of the very issues the AMWG deals with. He didn't think the AMWG was the place to battle those things out. Since the litigation is ongoing, he cautioned people about their discussions and reminded them their comments are being captured for the record and could be brought into the litigation. Since the May meeting, the court scheduled an oral argument on August 29 whereby the judge issued an order asking for additional information which is due by close of business today. The judge indicated, although did not precisely commit, he would like to get a ruling out by the end of September/early October. If he does adhere to that schedule, it will only address that part of the case that's been litigated so far, but there are remaining claims that will be coming up in future months.

In response to a question about what claims have been litigated thus far, Mr. Snow responded that there are seven claims in the case and the easiest, non-subjective way to break them down would be:

Claims 1-5: These are the claims the court heard oral arguments on and have been briefed. They go to compliance with the 1995 Biological Opinion, the duty of the Department to prepare NEPA documentation and/or ESA consultation on the development of annual reports so that covers the claims that have been briefed thus far. There are three additional claims that have not been briefed yet. The judge wants to further consider the appropriate schedule for those claims, but did not indicate what his schedule would be for the second half of the case. It's quite possible he might announce his schedule for that if and when he announces his decision on the first half.

Claims 6, 7, and 8: These claims deal with the adequacies of the Bureau's Environmental Assessment that was produced earlier this year, the adequacy of the U.S. Fish and Wildlife Service's Biological Opinion that was also produced earlier this year, and the seventh claim deals with whether current GCD constitute an impairment or adverse impact on Grand Canyon National Park resources. The last three are the portions of the case that have not yet been briefed by the parties or argued before the court.

CRMP Update Litigation. Ms. Jan Balsom presented a PPT (**Attachment 3a**) "Colorado River Management at Grand Canyon National Park" which included why the Park is being sued and key points in the case. She said the U.S. District Court for the District of Arizona ruled in favor of the NPS on Nov. 27, 2007 (**Attachment 3b**). The Court granted an extension to the plaintiffs until Oct. 17, 2008 to respond back to the NPS' response. She reviewed the current status of the CRMP Implementation.

AMWG Charter Renewal. Ms. Onley said the AMWG Charter was renewed on July 23, 2008. A copy of the Charter along with a redline strikeout version was also provided for the AMWG's information (**Attachment 4**).

2008 High Flow Experiment (HFE). Update on Preliminary Observations (**Attachment 5a: AIF and PPT**). Mr. John Hamill said there were about eight different studies conducted in conjunction with the HFE. Most of the studies are still ongoing and data is being collected through the month of October, but trout work will extend into FY09. He thinks all the studies are on track and they're having discussions on where they take the results from an analysis and reporting standpoint. He expects FY09 will be a big year for producing reports on all the studies and then a synthesis of the results of this HFE ,along with results from the 1996 and 2004 events, will occur in FY2010.

Dr. Ted Melis said he had some new observational information to share with the AMWG and proceeded with a PPT presentation. He concluded more information will be presented at the November 2008 Symposium, preliminary draft reports will be completed in Winter 2008-09, and the final peer reviewed reports will be completed in December 2009.

High Flow Experiment, Update on Preliminary Observations.

Research Updates (**Attachment 6a: AIF**).

1. Completion of the HEC-RAS Model and New Report on Suspended-Sand Transport: Dr. Paul Grams mentioned the publication, "Coupled changes in sand grain size and sand transport driven by changes in the upstream supply of sand in the Colorado River: Relative importance of changes in bed-sand grain size and bed-sand area" and said it was available online and a few copies were available at today's meeting (**Attachment 6b**). He distributed copies of the report, "Modeling Water-Surface Elevations and Virtual Shorelines for the Colorado River in Grand Canyon" (**Attachment 6c**) and gave an accompanying PPT presentation. They are still finalizing metadata. He said the model provides good predictions of water surface throughout Grand Canyon at a wide range of flows.
2. Is there enough sand?: Dr. Scott Wright said the article "Is there enough sand" (**Attachment 6d**) was published in the GSA Today magazine and was also sent to the AMWG members. He gave a PPT presentation and provided the following conclusions:

- The “optimal conditions” for hydrology and dam operations has some variability for rebuilding and maintaining sandbar deposits.
  - The near-term rate at which sandbars could potentially be rebuilt is comparable to their erosion rate over the ~40 years since dam construction. This does not mean pre-dam construction could be achieved in 40 years; the rate of accumulation would decrease as sandbars are rebuilt.
  - Deviations from “optimal conditions” (e.g., wetter hydrology, fluctuating flows) will decrease the rate of accumulation or result in net erosion.
  - The largest uncertainty is in estimating  $F_b$ . Can high flow hydrographs be “optimized” to promote sandbar building while minimizing export?
3. LSSF Workshop Update – Dr. Matthew Andersen gave a PPT, “Low Steady Summer Flows 2000 Synthesis Project” (**Attachment 6e**). He said they’ve already held one synthesis workshop and anticipate future workshops will lead them to having the cooperators finish their initial work and complete a synthesis document with the data but perhaps not having a complete report. He said there was some peer review through the first workshop and went over those general conclusions (slides 6-9).
4. Trout diet analysis 2003 and 2004 – Dr. Andersen gave a PPT, “Grand Canyon Fishes Control Plan 1 – Short-Term Monitoring and Research Actions” (**Attachment 6f**). He said that during the time the data was collected, they estimated that rainbow trout ate about 16,000 fish, brown trout ate about 13,000 fish, for a total of \$29,000. However, there were many fewer brown trout but they’re just much more highly piscivorous. The majority of those, about 85%, were native fishes. Without fish suppression, they estimate those consumption rates would have been quite a bit higher, that brown trout and rainbow trout together might have consumed nearly 74,000 fish, 85% of which might have been native fish. They reviewed the data with Carl Walters and Jim Kitchell and they were pretty supportive of the data.
5. Short-term non-native fish control plan. Dr. Andersen gave a PPT, “Grand Canyon Nonnative Fishes Control Plan I – Short-Term Monitoring and Research Actions” (**Attachment 6g**). He said this plan focuses on identifying and addressing information needs and presently available methods for capturing non-native fishes. They expect to engage in mechanical removal at the mouth of the LCR for non-native species, conduct an annual workshop, and inform the public about the mechanical removal efforts. In summary, the short-term plan includes monitoring, research, an annual workshop, and management actions.

#### Concerns:

- *Risk level/impacts on other fish (channel catfish, carp, shiners, fathead minnows, etc.) as they go into the LCR.*
- *Tracking vegetation along the shorelines and need for determining the distribution of shoreline types, maybe sandbar vs. debris fan, vs. tallus, vs. vegetation for different flow levels.*
- *Any major surprises for sediment transport and sediment management to be explored to what seems to be now the forgotten topic of flows higher than 45,000 cfs for this system.*
- *Being able to compare similar flow regimes between the steady flows that going on now and October with the 5-year period in-between, a flow regime that is similar that has fluctuating flows. Need to be able to talk about the shoreline, sediment, etc. what that looks like between the steady and fluctuating flows for a similar flow.*
- *Need to know how much sand is needed once goal for rebuilding and maintaining the bars has been defined.*
- *Because the study is limited to the Marble Canyon Reach, it does address what is going on with sandbars down below. Not having enough sand is also directed at a policy statement.*
- *Need to consult with other tribes on whether they have uses for the fish (killed from mechanical removal) besides just the Hualapai Tribe.*
- *If non-native fish control will be ongoing, it needs to become the jurisdiction of either the AGFD or NPS and appropriate plan developed which includes public awareness, perhaps using the POAHG.*
- *Need to know what the 2000 LSSF told us in order to determine how to do steady flow experiments in the future. With natural warming experiment provided for the last 6-7 years it would be important to re-evaluate the need for a temperature control device.*

**Biological Opinion Conservation Measures Update** (**Attachment 7a: AIF and PPT**). Dr. Dennis Kubly provided an overview of the BO conservation measures and said this is the first time they’re looking at a

non-jeopardy biological opinion. He went through a history of the conservation measures and said the AMWG will be provided with future updates.

Near-Shore Ecology and Fall Steady Flow Science Plan. Matthew Andersen presented a PPT, "Update: Science Plan for Near Shore Ecology and Fall Steady Flows" (**Attachment 7b**). He provided the schedule for developing the Fall Steady Flows Science Plan for FY09 and said the SA and TWG review of the plan would occur in during Apr-June 2009 with the final plan completed in July 2009.

Humpback Chub Translocation. Glen Knowles said he was going to give some information on translocation of HBC above Chute Falls and others in Grand Canyon. He gave a PPT, "Humpback Chub Translocation" (**Attachment 7c**). Melissa Trammel provided some background information on the Park Service's Tributary translocation history. She said their hope was to put more HBC in tributaries and would also develop a plan for translocation. Based on basic hydrology, temperature regimes, the fish community that was present in the given tributary, using all that to rank the various tributaries and prioritize, they came up with three of the top priorities which were Shinimo Creek, Havasu Creek, and Bright Angel Creek, and possibly a fourth being Deer Creek. They selected Havasu Creek but due to constraints with other agencies/tribes involved, they settled on Shinimo Creek as their top priority. The Park Service has worked with other entities on this and have captured a number of fish. They intended to translocate the fish in October, but the fish turned out to be smaller than they liked. A decision was made to place the fish in a hatchery during the winter months so they could get bigger, be pit-tagged, and then would be translocated in May. This became a conservation measure in the 2008 Biological Opinion and as a result of that, there is an overarching translocation plan being developed.

George Caan said he thought it was a good report and given the success and efforts that they're taking on for other translocation, he asked if there was the potential for this action to meet the recovery goals. Glen said this is a part of everything they do. The FWS just issued a non-jeopardy BO in February 2008. He said this was one of the conservation measures of the proposed action. He said just in terms of increasing the size of the population it will contribute towards recovery.

Stakeholders' Perspectives and Interest in the Hualapai Tribe (**Attachment 8a: AIF and PPT**). Ms. Loretta Jackson-Kelly said she has worked for the Hualapai Tribe since 1991 and also works closely with the NPS. Together they went to all the archaeological sites. There have been discussions on traditional cultural properties and what the federal agencies are required to do. She gave a PPT, "Hualapai Tribe's Participation in the Adaptive Management Program: A Stakeholder's Perspective." She said the best practice in resource management may be achieved through caring for country, culture, and people. She offered the following suggestions to achieve success through communication and collaboration planning: 1) social justice, 2) ecological sustainability, 3) economic equity, and 4) cultural diversity.

Recent Flow and Temperature – Grand Canyon Gage. Paul Grams presented preliminary data on the temperature and discharge graphs (**Attachment 9**). He pointed out that this is up to minute real time data and teasing apart temperature is difficult to do as a result of weather patterns, ambient temperatures that influence warming patterns in the river, tributary events that might put in pulses of either cold or warmer water into the river, and that continues until the steady flows.

Since there have been 60 days of steady flows, Mr. Spiller thought it would be helpful to be able to compare what they've seen in each of the five years to what it was pre-dam and requested GCMRC to provide that information.

Basin Hydrology and Operations (**Attachment 10: AIF and PPT**). Mr. Rick Clayton, acting lead hydrologist for USBR, presented several slides on the current Upper Basin hydrology. He emphasized that the drought is not over. Even though 2008 was an above average year, it's still one of the ten consecutive driest years on record since flows have been measured since 1998.

*Q: Is the steady flow plan for Sep-Oct, given that's a division of water year boundary right there, you're kind of constrained to release a certain amount of water based upon plans today not knowing how much water is coming next year for the first month of the year – October, how does that influence further planning throughout the rest of 2009 for*

*monthly volumes? In other words, putting more water into October, right? Somehow you've got to project forward to the year. At what point do you do that? Is that in February when you get that first inflow forecast or when does that AOP meeting occur that determines monthly volumes? (Potochnik)*

*A: In order to maintain the same flow in September and October, we had to release more water than we were originally projected to release in October. We've had to trim water out of the other months later in the year. So essentially that additional water is being released in October, if it were an equalization condition, that is equalization water that would not be released later on in the year. The issue will be is if we revert to a 8.23 maf year, we will have released more water in October than we would normally release under an 8.23 maf scenario. If that occurs, we will have to address those later months and determine which months we would have to cut back for when we normally release an 8.23 maf pattern. (Clayton)*

*Q: At what point does Reclamation that decision and how do you make that decision on which months you're going to trim back in order to make up for the excess water in October? (Potochnik)*

*A: We are constantly making decisions. Every single month we get a new forecast and we have a new outlook and so every month we are adjusting the remaining months to appropriately release the right volume for the year. For example at the end of October and things are getting dry, we are going to have to adjust the remaining months. You're asking about an AOP process and that's something we do actively throughout the water year and the AOP lays out the bounds of what those operations would be. It's not as if we would reconvene if the group that meets for the AOP to discuss, that it would be accounted for in the AOP in terms of the window of possibilities. (Clayton)*

**FY09 Budget, Workplan, and Hydrograph. (Attachment 11a: AIF with FY09 Workplan).** Mary said that Dennis Kubly, Kurt Dongoske (TWG Chair), and John Hamill would make presentations. She said there were not budget changes offered from the AMWG in advance of the meeting. If there are any that come up today, they will be listed at the end of the meeting and dealt with tomorrow.

Dennis said there are two graphs (page 2) depicting Lake Powell inflows and the second one is what Rick referred to his presentation. Dennis gave a PPT (**Attachment 11b**) on the development and review process for the FY09 budget. The BAHG, with input from the CRAHG, developed the budget with GCMRC. In May, a draft budget was presented. There were nine issues the AMWG had, the BAHG held a conference call and invited the full TWG. We ended up in TWG in July 16-17 and made a recommendation. GCMRC made a final pass for the workplan. Dennis provided the following anticipated funds and sources for FY09: information:

- **Base Program Revenues**
  - \$9,702,600 estimated hydropower revenues
  - \$1,975,000 DOI agency appropriations
    - \$1,000,000 USGS
    - \$475,000 (DOI agencies tribal funding)
    - \$500,000 Reclamation Conservation Measures
  - **Total Base Revenues \$11,677,600**
- **Ancillary Project Revenues**
  - \$261,000 NPS funds for archaeological excavations
  - \$361,000 Reclamation O&M (L. Powell)
  - \$185,000 Reclamation appropriations (CMs)
  - **Total Ancillary Project Revenues \$807,000**

WAPA Concern: Brad Warren expressed concern about the NHPA portion of the budget and the use of \$500K. WAPA has concern for AMP funds to mitigate for cultural sites that are not tied to dam operations. He said WAPA wasn't suggesting changing the amount of money in the budget but rather to look at the sites that are going to be for mitigation and are tied to dam operations. At one point they had an informal agreement about the 97,000 cfs and some sites are clearly above the 97,000 cfs. They would like to mitigate the sites that are below the 97,000 cfs level.

GCMRC Budget. John Hamill spoke about the new work they're proposing for FY09:

- Continuation of ongoing FY08 projects (~90%)

- Nearshore Ecology Study and Sept-Oct steady flow evaluation
- Trout pop estimate and nonnative control near the LCR
- Integrated sediment, flow, and temperature model
- Sediment core monitoring project
- Recreation safety data compilation and analysis
- Remote sensing overflight
- Fish monitoring PEP (Humpback chub, trout, etc)

He passed out copies of what changes were made to the workplan in agreement with the TWG (refer to page 3-4 on the AIF). They're going to produce reports for each project and bring in the project investigators.

**TWG Chair Report.** Kurt Dongoske said that in May, the TWG brought nine concerns to the AMWG. They held two conference calls to get approval of the FY09 budget. One of the issues was continuing to have a TWG Chair versus using a facilitator. At the last TWG meeting, an ad hoc group was established to bring a recommendation to the TWG. They held one conference call and should be reporting to the TWG at the next meeting. He said the budget was passed with 16 in favor, none against, and four abstentions (refer to page 2 on AIF). He said three stakeholders felt there wasn't sufficient information in the workplan for them to accurately review or comment on and another stakeholder didn't like the focus of the non-native control specifically on trout and would rather see non-native control to other cold water non-native fish. Kurt reminded the AMWG that in their May meeting there was a recommendation from the TWG regarding the deliberations on the desired future conditions on HBC and sediment that TWG was charged by Reclamation to deal with. That recommendation was not reviewed by the AMWG nor acted upon so he hopes it will be dealt with tomorrow during the strategic plan discussion. He said the TWG worked very hard on developed the DFCs for those two resources and the recommendation about future action on DFCs for other resources. He said it may also have budget implications so he wanted them to keep that in mind as they think about the budget today and their actions tomorrow.

#### Proposed Changes and/or Questions on the Budget:

**USGS Appropriations.** Leslie James asked about the \$1 million the program gets from USGS appropriations and if the amount were reduced like it was last year (\$987K) would it have any implications to certain projects. John said he fully anticipates that GCMRC will get the full \$1 million. However, if it were \$13K less, the projects could probably absorb the loss. Ms. Andrea Alpine said she would see to it that the AMP gets the full \$1 million as they have committed to in previous years.

**Fall Overflights.** Leslie asked about the overflights in Sep-Oct 2009. Matthew Andersen said there were a number of technical reasons to not conduct an overflight in the fall, vegetation coverage being one of the major ones as it would present a great deal of shading and shadowing that they couldn't control in the fall but wouldn't be present in the spring. They explored those options and are recommending to AMWG and the Secretary that the best plan is to maintain doing an overflight over the Memorial Day weekend in 2009. (Andersen)

#### Proposed Changes/Concerns:

1. Review by TWG of list of archaeological sites to be mitigated with relation to flow line.
2. The Long Term Experimental Plan effort and the description provided earlier today by Dennis Kubly and the word hiatus was used. If there was to be some change in the current administration within the DOI about that effort, would there be any impact on the budget? Dennis said there could be an effect by the Court which might make Reclamation go back and make a change. We have a proposed action and that has been accepted. It's our full intent to carry it out 320-12.
3. Explanation by John Hamill on \$500K for experimental work.

4. Is the group constrained to do experiments based on FY08 EA? John said that beginning in FY2010, some thought to do synthesis of 1996, 2004, etc. Tom said the EA did not authorize or preclude high flow experiments for the next four years.
5. AMP Effectiveness Workshop. If there is a decision to hold it by the Secretary's Designee, where does the money come from to accomplish that? John said there is no money in GCMRC's budget to support that.
6. When will the planning start for the next SCORE report and the costs associated with that? John said it would be 2010 before the next SCORE report would be done. It was called for every 5 years in the Monitoring and Research Plan.

Budget Change: Mary said there would be a motion to act upon tomorrow morning but with an exception from the NPS: They will only be doing translocation in Shinimo Creek in FY09.

WAPA Concern on Mitigation Sites. Mary said she thought it would be advantageous for the AMWG to hear WAPA's proposal on the mitigation sites, not as a change to the budget, but as a TWG review of the archaeological sites. She asked Brad if he had anymore to say.

Tom Ryan said he isn't familiar with the 97,000 cfs line but in talking to other people, a line was never established and 97,000 was never adopted as a delineation mark for consideration of cultural sites and that there were broad viewpoints with regard how to dam operations could affect cultural resources. John said that one of the activities they have laid out in the Cultural Resources Worplan is aimed specifically to address which of the sites are in fact affected by dam operations. It's been an ongoing debate within the program for probably since the beginning of time and he didn't there had ever been a real scientific assessment of what those effects are. There are indirect effects from Aeolian deposits and it's not a simple question to answer from a scientific standpoint but it is something they intend to address. It's probably nothing they could contribute to directly within the next year or so but it is something they are working on.

Brad said WAPA is looking for the science that indicates which sites are affected by dam operations. If there are 151 sites in the APE, then Brad would like to figure out which ones those are close and start doing some initial work. Mike Yeatts said the CRAHG went through those sites and only three sites were selected. He said the TWG, through the CRAHG, had already done this.

Mike Berry said there is a whole lot that goes into the determination of an APE. Under 36 CFR 800, the APE is determined by the lead agency which is Reclamation, in consultation with the SHPO. And in this case, because there are host of land managers involved, it's also a consultation with NPS, the Hualapai Tribe, and the Navajo THPO. In that consultation they ended up with a compromised APE. The contention that has surrounded this issue is what has actually prevented Reclamation from proactively seeking compliance under 106 for about a 12-year period. The compromise was between those who figured the APE was rim to rim and those who feel it's only inundation. They went back to the EIS and the EIS said that potentially 154-156 sites might be affected by dam operations which out of a population of about 400. Because Reclamation has been supporting the Park Service for a long period of time doing monitoring, Reclamation went to them and asked them to query their database and tell them how many sites were being actively eroded. It was 161 sites. They felt that was a pretty close approximation that they had in 1995 to what the reality was. They limited it to 161 plus one counting the one in the Glen Canyon ridge. Then the Park Service volunteered to take on ten of the larger sites under a separate MOA, which significantly reduced the cost to power revenues for the long-term project. Reclamation then sponsored Utah State University under a CESU agreement and subcontracted to Zuni to do an assessment and a treatment plan for those 162 sites. Their recommendations further narrowed down the target for actual data recovery to 54 sites that they felt could be accomplished in about a 10-year period. That's the agreement that Reclamation has made with the SHPOs, the THPOs, NPS, and the ACHP. That is currently the administrative, negotiated APE as it stands. He pointed out that sites may be an arbitrary line in the sand, but they are being actively eroded. Reclamation has a responsibility

to ensure that those sites that are going to be destroyed, data recovery needs to be done on them and that's what Reclamation is doing. He said if they really knew where effects were attributable to dam operations - that's a lot of research that GCMRC is doing and it would be completely unnecessary and he doesn't think that's the case.

Mary Barger, CRAHG Chair, said the CRAHG has been waiting for the HEC-RAS model for a number of years. They finally got it so at the last CRAHG meeting, she clarified when they decided on the sites, they agreed to the \$500K but she said she wanted to see where those sites would like in terms of the 97,000 flow line. That data just came in about three weeks ago so WAPA just received that data which is why this is up. The agreement on which sites it was wasn't clear at the CRAHG meeting. They hadn't agreed on which sites to be mitigated.

Mike Berry said the sites were selected in consultation with the Park Service for the coming year. The reason for that being sites can't just arbitrarily be selected along the canyon. There are logistics issues to consider. It's a combination of the intrinsic value of the sites as estimated by their principle investigator, logistical considerations, and the agreement with the ACHP and the SHPO. There are possibly 5-6 sites that will be done this year.

Brad said he would hope that the TWG would look at the sites and weigh in on it from a technical standpoint and believe they are related to dam operations. He reiterated that he isn't questioning Reclamation's 106 responsibilities. He said he doesn't understand the legal requirement that Reclamation is trying to meet. He asked if Reclamation is responsible legally to meet the requirement for dealing with the presence of the dam, including operations, or are the only legal responsibilities to deal with these sites based on operations of the dam. He's trying to get to a comfort level with the delineation. He questioned if Reclamation has 106 responsibilities due only to operations of the dam that is one thing, but if Reclamation has 106 responsibilities that are due to the presence of the dam, that may not deal with day-to-day operations, then he thinks there is a line between the two and have caused arguments over the years. He feels that's important in helping him understand where Reclamation is coming from.

Mike Berry said he didn't think there was anyone who could tell them what's attributable to normal environmental variation versus dam operations at this point. He said the sites re deteriorating and Reclamation is responsible not just for direct impacts. There are secondary impacts and tertiary impacts and that's what needs to be delineated and he thinks those all occur above the 97,000 line just as evidenced by the Park Service's monitoring record showing that they are eroding at a greater rate now than they were prior to dam operations. He said Reclamation has an obligation to err on the side of the angels as far as the impact goes and that's not just restricted to this project but that is generally how 106 is carried out.

Steve Martin said the Park Service has a level of uncertainty to echo what Mike said and that's why in the Park Service they have an overall responsibility regardless of where the line is to take care of the resources within the Park. He thinks that Reclamation recognizes through the research and he feels the Park is the expert because they've done the research on it. There is a choice in applying additional studies while the sites are damaged or there is a chance to manage these sites and take some action. Rather than trying to draw a fine line, the Park has taken the stance that there is a zone of uncertainty with unique resources that need to either be protected or information gathered on them and also working with the tribes. The agreement was to pool their money and work together in protecting the resources and meet both their responsibilities without having to wait and draw a line and then have valuable resources that are in the stewardship of the United States put at risk. He thinks it's quite a positive thing that's been done and he feels that trying to parse it out is only going to hurt the resources and perhaps compromise both their stewardship responsibilities. Steve said they've worked really hard with the tribes so they are completely behind all of the activities.

Brad said the bottom line from his viewpoint is that the AMWG is to make recommendations on how to spend the \$9.7 million of power revenues and the AMP was set up to deal with operations of the dam, not the presence of the dam. He said if everyone is comfortable with the 151 sites is a good way to spend the \$500K, he will just be in the minority. He thinks it's part of do diligence to point out that he has an issue with some of the sites and the locations being proposed to be using the AMP funds.

Ms. Kameran Onley said she wanted to go back and summarize what she heard about the cultural resources and see if the AMWG can address this request. She said what she thinks she is hearing is that the folks who are around the table looking at cultural resources and the impacts of cultural resources would like to be able to differentiate between those resources that are impacted by dam operations, not by the existence of, but by dam operations and they would like to do that in order to help narrow down the scope. So with the best filtering mechanism to know the number of sites, looking at those being eroded and using other filtering variables in the absence of being able to delineate for fact that the dam operations are impacting these specific sites. She asked if the AMWG still wanted the TWG to deliberate on this.

Brad said that since the CRAHG has been talking about the sites and now have the modeling information available to them, perhaps they can consider doing a re-prioritization of those sites.

Loretta Jackson-Kelly said that if this is going to be reviewed by the TWG, then the tribes would need to be consulted with. They held a lot of meetings and the tribes believe they are TCPs so there are some issues the tribes would have.

As the former TWG Chair, Kurt pointed out that if the AMWG wanted to send this to the CRAHG, it's really up to the TWG because the CRAHG is an ad hoc under the TWG.

#### **Public Comments:**

Lynn Hamilton (GCRG): I would like to thank all the presenters today and welcome the new Secretary's Designee. You mentioned about successes. I think one of the primary successes has been the BHBF to sediment inputs and triggers. I think when we have the opportunity to do them, I think we should do them. Sediment is critical for multiple resources. You've had the success with the HBC. I just want to make sure we can capitalize on those and what you've learned and build on what you've learned. Everyone has their own individual concerns. Whenever we have the opportunity to mitigate the downstream resources, that's what the GCPA tells us to do. I hope we can move forward. I hope the LTEP will come back off the shelf. I hope this program can move forward.

**Adjourned:** 5:03 p.m.

## Glen Canyon Dam Adaptive Management Work Group Meeting September 10, 2008

**Conducting:** Kameran Onley, Secretary's Designee  
**Facilitator:** Mary Orton

**Convened:** 9:15 a.m.

**Committee Members/Alternate Members:**

Steven Begay, Navajo Nation  
Bob Broscheid, AGFD (via phone at various times)  
Charley Bulletts, Southern Paiute Consortium  
George Caan, Colorado River Comm./NV  
Jennifer Gimbel, Colorado Water Conservation Board  
Jay Groseclose, NM Interstate Stream Comm.  
Amy Heuslein, Bureau of Indian Affairs  
Leslie James, CREDA  
Nikolai Lash, Grand Canyon Trust  
Steve Martin, NPS/GCNP  
Andre Potochnik, Grand Canyon River Guides

Ted Rampton, UAMPS  
Dave Sabo, USBR  
John Shields, WY State Engineers Office  
Dennis Strong  
Sam Spiller, USFWS  
Mark Steffen, Federation of Fly Fishers  
Larry Stevens, Grand Canyon Wildlands Council  
Dennis Strong, UDWR  
Brad Warren, WAPA  
Bill Werner, ADWR  
Mike Yeatts, The Hopi Tribe (alternate)

**Committee Members Absent:**

Loretta Jackson-Kelly, Hualapai Tribe  
Gerald Zimmerman, Colorado River Board/California

Leigh Kuwanwisiwma, The Hopi Tribe

**Interested Persons:**

Andrea Alpine, USGS  
Matthew Andersen, USGS/GCMRC  
Allen Anspach, Bureau of Indian Affairs  
Jan Balsom, NPS/GCNP  
Mary Barger, WAPA  
Mike Berry, USBR  
James Cason, DOI  
Kerry Christensen, Hualapai Tribe  
Rick Clayton, USBR  
Cindy Cole, Arizona Daily Star  
Tim Dealy, USGS/GCMRC  
Kurt Dongoske, TWG Chair  
Helen Fairley, USGS/GCMRC  
Dave Garrett, M<sup>3</sup>Research  
Paul Grams, USGS/GCMRC  
Martha Hahn, NPS/GCNP  
John Hamill, USGS/GCMRC  
Lynn Hamilton, Grand Canyon River Guides  
Matt Hangsleben, AGFD  
Norm Henderson, NPS  
Sarah Hurteall, AGFD  
Rick Johnson, Grand Canyon Trust  
Robert King, UDWR

Glen Knowles, USFWS  
Dennis Kubly, USBR  
Andy Makinster, AGFD  
Barbara McKenzie, USGS/GCMRC  
Ted Melis, USGS/GCMRC  
Steve Mietz, USGS  
Anthony Miller, Colorado Water Conservation Board  
Don Ostler, Upper Colorado River Commission  
Kathryn Parker, NPS  
Jessica Pope, public member  
Tom Ryan, USBR  
D. Randolph Seahom, CWCB  
Michael Schulters, USGS  
Hoda Sondossi, USGS/GCMRC  
Bob Snow, DOI Solicitor's Office  
Mike Snyder, NPS  
Gaylord Staveley, Canyoneers Outfitter, Inc.  
Fred Thevenin, Grand Canyon River Guides  
Melissa Trammel, NPS  
Larry Walkoviak, USBR  
Palma Wilson, NPS  
Scott Wright, USGS

**Meeting Recorder:** Linda Whetton, USBR

**Welcome and Administrative:** Mr. Larry Walkoviak, the alternate to the Secretary's Designee welcomed the AMWG members, AMWG alternates, and members of the public. A roll call was taken and a quorum (15 members) was established. He gave a big thank you to GCMRC for hosting the barbecue last night.

**FY09 Budget, Workplan, and Hydrograph (cont).** Mary said this was a follow-up from the discussion yesterday for the HEC-RAS model to help identify the cultural sites. She said a motion was worked on last night and presented the following motion language.

**MOTION** (Proposed by Brad Warren, seconded by Bill Werner): To direct the Technical Work Group to review the flow levels (as indicated by the HEC-RAS model) associated with each of the 162 archaeological sites that have been identified for monitoring and/or mitigation, and to reports its findings and any recommendations to the AMWG at its next meeting, with the provision that any recommendation will not alter the choice of sites selected for mitigation in FY09.

**Concerns:**

- *I think the motion as it is written is fine but I think it would be useful to include some of the rationale for why we're asking this be done. Whether that's noted in the minutes or is made part of the motion, I think it's important to relate to the discussion yesterday and that is to say we're getting back to pointing out to the TWG why it is that we're asking this be done. (Shields)*
- *I think the rationale is that the information associated with flow levels of each of the archaeological sites is information that the TWG has not seen before and they should have that information and it be vetted through the process. (Warren)*
- *We're opposed to this and can't see the benefits for drawing a fine line. The GCMRC and TWG would waste a lot of time and could be working on other more important tasks. We're opposed to directing the TWG to do the work. (Martin)*
- *It's important to know all of the reasons why these sites are eroding and the flow level will have some bearing on why they're eroding. If that's the reason, then I see value but only see part of the value. (Steffen)*
- *I want to know what the report and findings are. What are you looking for out of that? There are issues of sites at the same flow levels and have vastly different flow levels. Getting a better flow line for each site is good. (Yeatts)*

The motion was revised:

To direct the Technical Work Group to review the flow levels (as indicated by **the currently available shorelines of the** HEC-RAS model) associated with each of the 162 archaeological sites that have been identified for monitoring and/or mitigation, and to reports its findings and any recommendations **with regard to how these data would fit into the process of making choices of sites to be mitigated** to the AMWG at its next meeting, with the provision that any recommendation will not alter the choice of sites selected for mitigation in FY09.

- *We could do an initial analysis fairly quickly with the data that currently exists. (Hamill)*
- *To get the information that would be useful in that band would require additional work and not sure what we would do with it once we get it. This shouldn't be isolated to a final flow line. As a result and this is our general concern, we gather and pursue a lot of information that is not resulting in changes to dam operations which is our charge. We don't see the benefits for it and using valuable discrete resources when we have so many other things that are tied more directly to the reason why we're here. (Martin)*
- *I need more clarification from John Hamill about the screening and then ask if Brad would add to the model. (James)*
- *What exactly if we go through this and go back to the SHPO and go to the tribes, how would this be used to change the operations of the Dam? (Martin)*
- *I'm not suggesting changes in dam operations. I don't believe how to spend those funds have been fully vetted through the budget process. The decision on the monitoring of the sites was made with the NPS, USBR, and SHPO and now we're saying those AMP funds will be used to fund those sites. I see this as a process issue. (Warren)*
- *Rather that expand the reach where this motion goes, given that a management action will come out of it and flow levels will be examined or adjusted. That's not even a possibility. This is a FACA committee to address the obligations of the GCPA and this group makes recommendations to the Secretary on flow recommendations. This program doesn't do richer, deeper analysis for improvement of the resources. (Lash)*

- *I think data is good information and all the data that is simple and easy to produce, let's put it in. I'm concerned with "findings" because a data table will be developed and would be associated with those sites. The findings open the door to what the TWG would do and I'm not sure what that would mean to the TWG. (Ryan)*
- *Data is always good and we're looking at the process of operations and wanting some peak flows and I think it would be helpful to know what kind of sites we have within those peak flow ranges. It just seems like it's good information to have and you can't go wrong with the data. There are a lot of different ways to use it. (Seaholm)*
- *I just want to remind you that the TWG's work schedule coming up is going to be quite heavy and this looks like an academic exercise to me and without further clarification from what the AMWG expects from the TWG, I'm just afraid it's going to cost the TWG at least a half a day trying to meet the obligations of this motion. (Dongoske)*

Mike Berry corrected the group in that sites are not mitigated, they are monitored but the impacts are mitigated.

REVISED MOTION:

To direct the Technical Work Group to review the flow levels (as indicated by **the currently available shorelines of the** HEC-RAS model) associated with each of the 162 archaeological sites that have been identified for monitoring and/or mitigation **of impacts**, and to report ~~its findings~~ this information and any recommendations **with regard to how these data would fit into the process of making choices of sites to be mitigated** to the AMWG at its next meeting, with the provision that any recommendation will not alter the choice of sites selected for **impacts mitigation** in FY09.

The language was revised. Brad and Bill agreed to the changes.

The Chair asked if there was any objection to consensus. Seeing there was, he asked for a roll call vote.

**MOTION** (Proposed by Brad Warren, seconded by Bill Werner): To direct the Technical Work Group to review the flow levels (as indicated by the currently available shorelines of the HEC-RAS model) associated with each of the 158 archaeological sites that have been identified for monitoring and/or mitigation of impacts, and to report this information and any recommendations with regard to how these data would fit into the process of making choices of sites to be monitored and/or impacts mitigated to the AMWG at its next meeting, with the provision that any recommendation will not alter the choice of sites selected for impacts mitigation in FY09.

Stakeholder	Vote	Stakeholder	Vote	Stakeholder	Vote
Arizona Game & Fish Dept	y	Grand Canyon Trust	n	Fish and Wildlife Service	a
State of Arizona	y	GC Wildlands Council	n	UAMPS	y
Bureau of Indian Affairs	a	Hopi Tribe	n	State of Utah	y
Bureau of Reclamation	y	Hualapai Tribe	absent	WAPA	y
State of California	absent	National Park Service	n	State of Wyoming	y
CREDA	y	Navajo Nation	y	San Juan Southern Paiute	vacant
State of Colorado	y	State of New Mexico	y	Pueblo of Zuni	absent
Grand Canyon River Guides	n	So. Paiute Consortium	n		
Federation of Fly Fishers	a	State of Nevada	y		

**Motion passed by a vote of 12 yes, 6 no, 3 abstaining, with 3 absent.**

The Chair said there was a motion proposed on the FY09 Budget and workplan. Mary reviewed the changes and read the new motion. While waiting for Mr. Broscheid to join the meeting, the Chair asked for discussion on the motion:

- *The Grand Canyon Trust still believes that what the budget and anything tied to this 5-year experimental plan is actually illegal so I can't recommend moving something forward to the Secretary that I think is illegal. Let me clarify and for Kameran in particular. We didn't bring litigation to the court to disrupt this group. This is an advisory committee that makes recommendations to the Secretary and we sued the Bureau of Reclamation and in some of the other claims, Fish and Wildlife Service, because we think that they have violated federal law. This group can't violate Federal law but we still can't support something that's tied to what we believe is a violation of federal law. So my intent, and the Trust's intent, is not to disrupt the workings of this group. This group couldn't commit a violation of Federal law so far as I know but agencies can and can be sued by citizens for citizen groups that have standing under the law as well. So if we're wrong about that, if no Federal law has been violated, we'll lose in court and that's fine, but the court is the only place that can adjudicate an alleged violation of federal law. This group can't. That's why I welcome and hope that people don't feel so uncomfortable talking about issues that, of course, overlap with what the litigation is about. Needless to say the reason why I'm voting no again, in short, is that this is tied to something that we believe involves a Federal agency violating the law. (Lash)*

**MOTION** (Randy Seaholm, seconded by Robert King): To recommend that the Secretary of the Interior adopt the GCDAMP FY09 annual budget and workplan dated August 8, 2008; and that the Water Year 2009 hydrograph will consist of Modified Low Fluctuating Flow operations from November 2008 through August 2009, include experimental steady flows in October 2008 and September 2009, and include up to 5 days of steady flows at 8,000 cfs in late May 2009 to accommodate the planned remote sensing overflight of the Colorado River; with the following changes:

- Page 237: the summary of the 2008 conservation measures will be replaced by the full text of the conservation measures;
- Page 27, line 562: reference to Havasu Creek and Bright Angel Creek will be removed.

Stakeholder	Vote	Stakeholder	Vote	Stakeholder	Vote
Arizona Game & Fish Dept	absent	Grand Canyon Trust	n	Fish and Wildlife Service	y
State of Arizona	y	GC Wildlands Council	a	UAMPS	y
Bureau of Indian Affairs	y	Hopi Tribe	y	State of Utah	y
Bureau of Reclamation	y	Hualapai Tribe	absent	WAPA	y
State of California	absent	National Park Service	a	State of Wyoming	y
CREDA	y	Navajo Nation	y	San Juan Southern Paiute	vacant
State of Colorado	y	State of New Mexico	y	Pueblo of Zuni	vacant
Grand Canyon River Guides	a	So. Paiute Consortium	y		
Federation of Fly Fishers	y	State of Nevada	y		

**Motion passed by a vote of 16 yes, 1 no, 3 abstaining, with 3 absent.**

**Stakeholders' Perspectives and Interest in the AMP - Federation of Fly Fishers. (Attachment 12: AIF and PPT)** Mr. Mark Steffen gave a PPT on the Federation of Fly Fishers. He began by thanking The Department of the Interior and Ms. Brenda Burman for taking into consideration his request that the flood be done as early as possible. He thinks that doing it the first week of March things turned out really well. He recognized how difficult it was for GCMRC and Reclamation, but he really believes that it was the best time it could've been done. He said that some of the things they do are: conserve and restore all fish in all waters; teach fly fishing, fly tying and angling ethics to all ages; provide a standard of excellence for casting instructions; manage the Certified Casting Program; and provide information on fly fishing guides through their Guides Association.

**Hydropower Economics. (Attachment 13a: AIF)** Mr. Brad Warren gave a PPT, "Colorado River Storage Project, Hydropower and the Basin Fund." Brad began by telling the group that Western is an agency of the U.S. Department of Energy. It was established in 1977 by transfer of Power Marketing

functions from USBR. It is one of four power marketing administrations covering most of the United States.

**Q:** How do the maintenance budgets on all the facilities play against your overall net worth? (Shields)

**A:** Reclamation's budget for power and CRSP in Western's total is probably on average between \$65-70 million range per year. I don't have those figures handy. I tried to get them this morning but the rates people weren't responding to my e-mail, but I can follow up and get some actual numbers if you want. (Warren)

**Q:** People tend to think of this apportionment that was created by the 1956 Colorado River Storage Project Act as a big mystery in a black box and what the Congress attempted to do in setting up apportionment was to do approximately what the Colorado River Compact did for water when the Compact was put into effect. It stopped there being a race for development because of the water being a portion of the Upper Basin and the Lower Basin, as you all know from reading the Compact, then all of a sudden water was no longer an article of interstate commerce and whether you had an early priority date relative to developing the water was no longer important. And the Congress in creating the 1956 CRSP, which largely was a bill authorizing the comprehensive development of water projects across the upper basin, was trying to do the same thing. And it was trying to assure that there wouldn't be a race for development relative to building these irrigation and storage projects. And so apportionment was designed to make sure that if one project got ahead of another in terms of being in line for congressional funding, there would be funds available in the future for those other projects as they came along. (Shields)

**Q:** You talked about the service or marketing areas and the different entities that are being served. How many tribes do you have in the servicing area you mentioned and how many tribes are within the AMP program you serve? (Heuslein)

**A:** We market to 53 tribes within the service territory. As far as we know, we've made an offer and I think each of them are receiving CRSP power if I'm not mistaken - receiving an allocation. (Warren)

**Q:** I feel like there's so much I don't know that I have a mix of confusing questions. So I wonder if the group's interest wouldn't be better served if we form something like an ad hoc group or perhaps a "Loveless" white paper that we did a long time ago. I wonder if we couldn't develop questions jointly answer them with guidance from Brad and others on the hydropower side of the equation so it's clearer on the nature of hydropower generation. (Lash)

**Q:** How do the rates you sell power for compare to rates that other producers sell their power for? (Potochnik)

**A:** When we're short, then we have to buy it from the market. There were times this spring when some energy companies were giving away off the energy saying that if we wanted it, we could take it. But that was because the demand was low and for whatever reason, that was the market at that time. Now you go to peak hours and you \$100-150 for a megawatt hour which is 15 to 20¢ per kilowatt-hour to buy from the market and again that's the energy price and the utility still has to get it to you. And the market prices can vary quite a bit by demands, seasons. If Palo Verde goes down because it has a problem, everybody is going to get more money because they're offline and that's the market demands. (Warren)

**Q:** A great presentation and we'd be interested in participating in a follow-up. In a year like this where the projections were for 8.23 maf and we ran 9+3 through the dam, how much additional revenue did you see because of that 10% bump in hydropower going through and did those profits go directly off the top into the basin fund. So basically, what's the net gain from a good year like this year and next year being 800-900,000 acre-feet? Can you give us an approximate value of what you saw in addition to what your 8.23 projections were? (Martin)

**A:** Our contracts are structured so that when we have what we call available hydro which is hydro energy above the minimum commitment is that our customers get first chance at it. (Warren)

(See **Attachment 13b** for full transcript.)

Since there was a lot of interest in having Brad provide more information, Mr. Walkoviak said Reclamation would take the lead in gathering questions from the AMWG, forwarding them to Brad, and arrange for a separate meeting to further discuss.

**ACTION ITEM:** Brad will send information to Steve Martin on 1) how much additional revenue was seen as a result of that 10% bump in hydropower going through and if those profits went directly off the top into the basin fund, 2) the net gain from a good year like this year and next year being 800-900,000 acre-feet, and 3) provide an approximate value of what Western saw in addition to what their 8.23 projections were?

**ACTION ITEM:** Reclamation will work with Western to set up a follow-up to the hydropower economics presentation.

**Strategic Plan, Desired Future Conditions, and Collaboration. (Attachment 14=AIF)** Mr. Walkoviak said the intention of this agenda item was to build upon the discussions from the previous meeting. Dr. Gunderson had made a presentation and there was a very productive question and answer session that followed. As chair at that time, Brenda Burman thought it would be a good topic to continue and the goal is have enough time to discuss this before and after lunch today. One of the thoughts was to have a panel of people come and make presentations to this group but their schedules didn't allow for that. They were interested and would like to do that some time in the future. He noted on the agenda there was a proposed motion and this was put together based on the notion of having a panel discussion and a fairly vigorous discussion about issues. He suggested that if the group still wanted to address the proposed motion, it be done after lunch so members of the public could be present as noted on the agenda. He thought the purpose today would be to have some discussion and information sharing about the strategic plan. Over last several months, the DOI regional directors have been discussing the various functions within the agencies and somewhat as an outgrowth, they also started thinking about where they are on certain items. He said the RDs asked their staffs to start discussions and build on the Strategic Plan and specifically work done by the TWG. They brainstormed amongst themselves on those 12 goals as well the categories under each of those goals and instructed their individual staffs to draft some desired future conditions. He feels the Strategic Plan needs to be updated and more work done on the desired future conditions, but realizes this is going to take some time. He asked for any suggestions on the best way to use their time for this agenda item.

*Q: This is under Goal 3 and we're still a long way from having an ecosystem approach and actually what species we have down there and that's a topic that needs to be brought up. At the next meeting I'd like to address some motion language. It's one of many issues in there. (Stevens)*

*A: The RDs looked at Goal 3 and started brainstorming which species were extirpated and that's where we stopped. I think that will give you the level of what we're thinking about. (Walkoviak)*

*Q: I'm hearing there's a shared participation in DFC's. Since we're talking about DFC's in the Park, the Park should have a clear lead in the process, consult with the appropriate agencies and the Bureau. The Park Service has the responsibility to develop the resource conditions that need to be met. I hope this group doesn't move forward to develop the DFCs because the NPS has their agency authority. (Lash)*

*Q: I've watched this group from afar. The Strategic Plan – are we talking about one for the AMP or are we talking about one for the Park Service, USBR, etc.? Or are we talking about a Strategic Plan for this FACA group? I was puzzled when extirpated species was brought up yesterday. What does the operation of dam have to do with extirpated species? (Gimbel)*

*A: I don't think this group has a good understanding of what extirpated species are. We don't have a place to go to for extirpated species and that this program is moving forward with the GCPA. This program has let one species go extinct. To Nikolai, the NPS does not know all the species and resources. The tribes also need to be included. (Stevens)*

*Q: With regard to the previous action I don't see any mention on the AIF. On January 4, a report was forwarded from the DFC AHG and sent to Randy Peterson. There is no mention on the AIF. Where is in the process? Will Reclamation use that report? (Shields)*

*A: We've asked our staff to use the Strategic Plan and the DFCAHG Report. (Walkoviak)*

*Q: Why wasn't it listed on the agenda? (Shields)*

*A: As we were putting this agenda together with Brenda and the question came up because there was a recommendation from the TWG to work on these. The motions from TWG are suggestions for action. The motion was not made by an AMWG member. There was a lot of work done. Brenda said it was there once, AMWG didn't act on it, but it wouldn't be proper to bring it up over and over. (Orton)*

*Q: I have a slightly different recollection. Ms. Burman asked me about that agenda item. It wasn't presented before the AMWG and the AMWG didn't have a chance to deal with the motion. This group never really looked at what was recommended to them. I'm curious why that issue is then taken up by a minority of stakeholder representatives. (Dongoske)*

*A: The RDs just thought it would help forward what the TWG prepared. There was no attempt to have a minority group take over the process. We just asked staff to put together some input and then we could share with the AMWG. (Walkoviak)*

*C: The NPS could make a presentation on what things we're working on. There are legal requirements with development of those. (Martin)*

**C:** *No single stakeholder can unilaterally use his body for substance or a result. I think this is an important issue and I think it's the NPS' responsibility to develop the DFCs in cooperation with the tribes, other stakeholders, and other entities. The TWG is part of the advisory process. Nothing gives Reclamation the authority to give the TWG an assignment. (Lash)*

Larry said he will work with the Secretary's Designee and bring the issue up at the next AMWG meeting. He said full consideration will be given to the TWG report and hopefully have a more defined discussion at the next meeting.

**ACTION ITEM:** Larry will work with the Secretary's Designee in developing a more complete discussion on the DFCAHG Report for an agenda item at the next AMWG meeting.

**NPS Resource Challenge.** (**Attachment 15a=AIF and PPT**). Jan Balsom distributed copies of two reports: 1) "Park vital signs monitoring" (**Attachment 15b**) and 2) "Monitoring the Condition of Natural Resources in US National Parks" (**Attachment 15c**). Dr. Steve Martin said they wanted to give some information on their monitoring program and the NPS' capacity to conduct science in the parks. Under Gale Norton and under Kempthorne, we did a major study on management policies and think it's very important to the DOI Secretary and as an advisory group, the AMWG should be aware. We appreciate the advice of the AMP but wanted the AMWG to know of other activities relative to the Park.

**Q:** *What is the annual budget for the Park? (Warren)*

**A:** *We get \$21million for operation of the National Park Service. We collect a percentage of fees when people enter the park and also from concessionaire operations. We can also apply for money for major infrastructure projects. We have about \$1.5 billion worth of constructed assets within Grand Canyon that we're fully responsible for the maintenance of. Through these national programs, we can apply for money for deferred maintenance and other things but the total expenditures for last from all sources were roughly \$40 million. On recent analysis we have about \$300 million in deferred maintenance so we figure we're operating at an annual deficit of about \$14 million a year. (Martin)*

**Q:** *Recognizing what you said yesterday that you're in litigation regarding your management, I'll ask the question anyway. Can you give us some insight as to your management philosophy as to treatment of areas within the Park as wilderness versus motorized uses, building construction, etc., and maybe how that relates to the Organic Act? (Warren)*

**A:** *The real question goes back to the Wilderness Act of 1964 that charged the land management agencies with evaluating areas that I think were over 5,000 acres that unique characteristics on representations of wild America. We were actually charged by Congress to evaluate not only national parks but the Forest Service and others as we all know. During that process, the NPS did a wilderness management plan that made recommendations on areas within Grand Canyon National Park that met those criteria the NPS was recommending which were consistent with the law and had been vetted through that process. Most of the Park met the criteria. Subsequent to that and layered over the top of it, we've done a couple of back country management plans in the last 30 years that evaluated the undeveloped portions of the Park and we are required for wilderness recommendations that are not acted on to manage those as wilderness until Congress acts so we're basically managing those areas as wilderness. We also did the Colorado River Management Plan and there's been a big debate on whether or not that should be fully wilderness or not. The recommendation of the CRMP, and to a certain extent is a well thought out compromise, is there would be portions of the year when it would be motorless and portions when it would be. It's a way of managing for different constituencies and so that's been through a full EIS as well. (Martin)*

**Update on Lees Ferry Trout Fishery Ad Hoc Group.** (**Attachment 16=AIF**) Mr. Sam Spiller reminded the AMWG they passed a motion at the last meeting that a Lees Ferry Trout Fishery AHG be formed and the group provide recommendations back to AMWG at this meeting with regard to some environmental assessment commitments of Reclamation's EA for the HFE that was prepared in February. He said the group is close to finishing their assignments but he had a couple of items that he wanted some guidance on and felt a report would be finished by November. He said the EA specifically recommended forming a group that would facilitate discussions and this grew out of Ms. Burman asking the FWS to lead a group in November 2007 to discuss with fishermen and guides their concerns about high flow tests. When they were doing the EA in February, Sam said he made a recommendation to Randy Peterson that there should be an item in the EA that essentially created an ad hoc group within the AMP. They identified the

AMP because they saw it as their advisory system to the Secretary and both he and Randy felt that was consistent with the way DOI was working. The report included trout fishing guides, Marble Canyon business owners, and recreational rafting companies. When they had discussions within the ad hoc group, the question came up if they should focus only on recreational rafting use from Glen Canyon Dam down to Lees Ferry. When he initiated this request to Randy, it included GCD to Lees Ferry, and Lees Ferry through the lower canyon. That is what the Marble Canyon business owners were saying heavily affected their economic interests. Sam asked if the group was comfortable having recreational rafting interests throughout the canyon or limit it to just Lees Ferry back up to GCD. Sam said he thought Ms. Burman had heard concerns from the anglers and the fishing guides. When they held a meeting, the businesses were there. Brenda told Sam that the local economic entities need to be kept as viable as possible and that's what he included in his recommendation.

Mary asked the members if there was any objection to Sam's recommendation.

Andre Potochnik was supportive of Sam's recommendation but asked Sam to define what he thought were the "local" businesses (i.e., including the Grand Canyon River Runners Association). He asked if a local business was confined to just Marble Canyon and the Lees Ferry area or is the local business also in Page, Kanab, and Flagstaff. He wanted to know the boundaries of Sam's concerns.

Mark Steffen said he didn't think there was a huge need for this other than because of the EA and what led to the perceived need for this was really based on past experiments that had negative consequences on the Lees Ferry Trout Fishery. The 2004 flood did have negative consequences and so the fishing guides and the Marble Canyon businesses were afraid the same thing would occur again. It didn't occur again in 2008 because it happened in the springtime instead of the winter so he thinks things are okay right now.

Sam said that in their process they recognized two agencies have a very important responsibility, Arizona Game and Fish Department in regard to their trust responsibility and also Glen Canyon National Recreational Area. He said that AGFD offered to develop a proposal to see how this would work. He said the group would see something that addresses steady flows because certain decisions will have to be made on years 2-5 on the steady flows. Those local interests would like to have some way of communicating to AMWG and meeting Reclamation's commitment in the EA. They would like to work on that as well.

Dennis asked if GCMRC would be traveling to this meeting with this group. Sam said they attended the first meeting in November and were very active and would expect that from what John and Matthew said that they will continue to be. Sam said that all the Federal agencies who are interested should be at those meetings. Sam said the tribes would also be invited.

Future Agenda Item. Upon returning from lunch, Andre said after having watched Scott Wright's presentation on having enough sand, he wondered whether people had also considered Matthew Andersen's paper on LSSF and warming for non-native fish. If the flows can be slowed, there's a better chance of recovering species. He would like to have this added as an item for a future meeting.

### **Grand Canyon Monitoring and Research Center Updates (Attachment 17a =AIF).**

Monitoring and Research Plan. John Hamill gave a PPT (**Attachment 17b**) "Updating the GCMRC's Strategic Science Plan and Monitoring and Research Plan." John said he thought both the documents are important.

*Q: How do you incorporate a flexible plan? (Martin)*

*A: The priorities may need to be readjusted with some of the new work we're doing. The MRP would be updated on a 5-year basis that adjusts the annual work plan. I don't anticipate major revisions being needed based on new things that come up. (Hamill)*

*Q: You brought up Carl Walters to help you. (Stevens)*

*A: Those were laid out and he's on board. There's going to be some changes and will be heavily involved in near shore ecology work that will emerge in next four years. (Hamill)*

*Q: Having the SSP and the MRP by the middle of next month, I'd like to see this on the agenda for the next meeting, whether it needs AMWG approval and also because we have all these different documents. It would be nice to have some kind of matrix on the reports and it would be helpful to track the documents and when updates are due and could start discussing things to be done in the future. (Heuslein)*

*A: We're going to be sharing something like that with the TWG. (Hamill)*

*C: I'm talking about Reclamation's documents, BO and BA documents, Strategic Plan, etc. (Heuslein)*

Science Symposium, November 18-20, Scottsdale, AZ. Dr. Ted Melis distributed copies of the flyer for the symposium (**Attachment 17c**) and encouraged the stakeholders to talk with people in their agencies to attend. They need to have at least 300 people attend.

Core Monitoring Plan. John Hamill gave a PPT, "General Core Monitoring Plan for the GCD-AMP" (**Attachment 17d**). He thinks they're getting close to completing a plan with assistance from Bill Halvorsen (USGS-Tucson). The draft is being reviewed internally and should go to the TWG this fall along with a review by the Science Advisors and then it will be presented to the AMWG at their next meeting.

*Q: I think there is a significant overlap so I hope we can work closely and save the program money. On the ecosystem approach, how does that work interface with other charges outside the operation of the dam? (Martin)*

*A: I hope we can sit down after we have a comprehensive document and talk to the Park about opportunities for collaboration and do it within the next 45 days. Carl Walters is going to help update the conceptual model. We would like to talk with the terrestrial environment and bring in external assistance. (Hamill)*

*Q: Does that relate to cultural resources? (Martin)*

*A: We need to talk about that. (Hamill)*

*C: I'd like to have the FWS Conservation office involved. (Pam Sponholtz)*

*C: We've been at this process for 11 years and don't have an administrative history of this process. We've had many adventures and it might be useful and before we get too elderly and let us know our foundation and early decisions. (Stevens)*

*R: I'd welcome your assistance and include as an appendix. I want this plan done.*

Humpback Chub Updates. (**Attachment 18a=AIF**). Mr. Matthew Andersen gave a PPT, "Abundance Trends and Status of the Little Colorado River Population of Humpback Chub: An Update Considering data 1989-2006."

Humpback Chub Comprehensive Plan and Recovery Implementation Plan Updates. (**Attachment 18b=AIF and PPT**). Glen Knowles, U.S. Fish and Wildlife Service, said he wasn't going to spend a lot of time on this Plan.

Fish and Wildlife Service Draft Revised Recovery Goals for the Colorado River fishes: Razorback Sucker, Bonytail, Humpback Chub, and Colorado Pikeminnow (**Attachment 18c=AIF and PPT**) – Dr. Tom Czaplá, Sam Spiller, and Glen Knowles, U.S. Fish and Wildlife Service.

Genetics Management Plan Update (**Attachment 18d = AIF and PPT**) Dr. Connie Keeler-Foster and Glen Knowles, U.S. Fish and Wildlife Service. The plan has been completed but only covers our area.

Humpback Chub Refuge Development (**Attachment 18e = AIF and PPT**). Glen Knowles and Sam Spiller, U.S. Fish and Wildlife Service.

Humpback Chub Population Estimate (modeled using data through 2006)– Matthew Andersen, Grand Canyon Monitoring and Research Center.

**Q:** *When we talked about a recovery implementation program, I would think that not having an LTEP would prevent progress on the RIP. (Werner)*

**A:** *I'd agree with that. (Knowles)*

**C:** *We will be putting fish and Shinimo Creek and want to make sure they're large enough to pit tag at Shinimo. (Trammell)*

**Q:** *Is there a number of fish of population estimates in the Canyon that you don't need any more? (Alpine)*

**A:** *Just based on the recent population trend, we saw some improvement and decline. I could foresee a time when we didn't need them. We think we need a refuge now. (Knowles)*

**Q:** *With Shinimo Creek population, will you need to establish a critical habitat? (Potochnik)*

**A:** *There aren't any plans to examine the critical habitat we have. (Knowles)*

**Q:** *There were four major areas of change in the recovery and one of them was climate change, what did you put in there? (Heuslein)*

**A:** *The goals address climate change through replication of populations by replicating two core populations of humpback chub to delist the species. (Knowles)*

**Q:** *We want to have a longer record for HBC and tagging started in late 70's, what prevents using the early tags. Is it necessary they be pit tags? (Kubly)*

**A:** *I think the strength of the ASMR ... estimating the population that you captured from a group of fish but won't know the fate of those individuals. (Andersen)*

**Q:** *How do recovery goals interact with the DFCs? I'm still confused about those. (Gimbel)*

**A:** *There are broader issues and the RDs are going to look at those. (Walkoviak)*

**Public Comments:** Lynn Hamilton. As far as this body goes, it's good to know the DFCs will be reviewed by this body. There are more than just two resources. Thank you for coming to Flagstaff.

Reports provided at the meeting but not formally presented:

<b>No</b>	<b>Attachment</b>	<b>Author</b>
<b>19</b>	Monitoring Fine-Grained Sediment in the Colorado River Ecosystem, Arizona - Control Network and Conventional Survey Techniques (USGS Open File Report 2008-1276, version 1.0)	Joseph E. Hazel, Jr. and others
<b>20</b>	Specific Conductance in the Colorado River between Glen Canyon Dam and Diamond Creek, Northern Arizona, 1988-2007(USGS Data Series 364, version 1.0)	Nicholas Voichick
<b>21</b>	Aggradation and Degradation of the Palisades Gully Network, 1996 to 2005, with Emphasis on the November 2004 High-Flow Experiment, Grand Canyon National Park, Arizona (USGS Open File Report 2008-1264)	Joseph E. Hazel, Jr. and others
<b>22</b>	Update on Regulation of Sand Transport in the Colorado River by Changes in the Surface Grain Size of Eddy Sandbars Over Multiyear Timescales (Scientific Investigations Report 2008-5042)	David J. Topping, David M. Rubin, and John C. Schmidt

Adjourned: 3:05 p.m.

Respectfully submitted,

Linda Whetton  
 U.S. Bureau of Reclamation  
 Salt Lake City, Utah

### General Key to Adaptive Management Program Acronyms

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

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