

Glen Canyon Dam Adaptive Management Work Group Meeting  
August 24-25, 2011

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

**Start Time: 9:30 a.m.**

**Committee Members/Alternates:**

Charley Bullets, Southern Paiute Consortium  
Kurt Dongoske, Pueblo of Zuni  
Alan Downer, Navajo Nation  
Ann Gold, U.S. Bureau of Reclamation  
Martha Hahn, NPS/GRCA  
Amy Heuslein, Bureau of Indian Affairs  
Loretta Jackson-Kelly, Hualapai Tribe  
Leslie James, CREDA  
Sam Jansen, Grand Canyon River Guides  
John Jordan, Federation of Fly Fishers  
Ted Kowalski, Colo. Water Conservation Board

Robert King, Utah Division of Water Resources  
LaVerne Kyriss, Western Area Power Admin.  
Nikolai Lash, Grand Canyon Trust  
Estevan López, NM Interstate Stream Comm.  
McClain Peterson, Colorado River Comm./NV  
Ted Rampton, UAMPS  
John Shields, WY State Engineer's Office  
Sam Spiller, U.S. Fish and Wildlife Service  
Larry Stevens, Grand Canyon Wildlands Council  
Bill Stewart, AZ Game and Fish Department  
Michael Yeatts, Hopi Tribe

**Committee Members Absent:**

Perri Benemelis, AZ Dept. of Water Resources  
Jennifer Gimbel, CO Water Conservation Board  
Arden Kucate, Pueblo of Zuni

Leigh Kuwanwisiwma, Hopi Tribe  
Dennis Strong, Utah Div. of Water Resources

**Interested Persons:**

Janet Bair, USFWS  
Jan Balsom, NPS/GRCA  
Debra Bills, USFWS  
Karen Breslin, NPS/Intermountain Region  
Todd Brindle, NPS/GLCA  
Shane Capron, WAPA/TWG Chair  
Brian Carey, NPS/GLCA  
Lori Caramanian, DOI  
Todd Chaudhry, NPS/GRCA  
Kerry Christensen, Hualapai Tribe  
Rick Clayton, USBR  
Marianne Crawford, USBR  
William K. Dickinson, NPS/Lake Mead NRA  
Helen Fairley, USGS/GCMRC  
Dr. Dave Garrett, M<sup>3</sup>Research/Science Advisors  
Pamela Garrett, M<sup>3</sup>Research  
J. Lonnie Gourley, USBR/Glen Canyon Dam  
John Halliday, DOI  
Jayne Harkins, CO River Commission/NV  
Beverley Heffernan, U.S. Bureau of Reclamation  
Fritz Holleman, DOI Solicitor's Office  
Lisa Iams, U.S. Bureau of Reclamation  
Bill Jackson, NPS/Water Resources  
Lynn Johnson, Regional Solicitor, Southwest Region  
Glen Knowles, U.S. Bureau of Reclamation  
Dennis Kubly, U.S. Bureau of Reclamation  
Jane Lyder, DOI/Fish, Wildlife and Parks  
Tricia McCraw, AZ Dept. of Water Resources

Ted Melis, USGS/GCMRC  
Bruce Moore, Southern Nevada Water Authority  
Gerald Myers, Federation of Fly Fishers  
David Nimkin, NPCA  
Claudia Nissley, USBR contractor  
Mary Orton, The Mary Orton Company  
Clayton Palmer, WAPA  
Larry Riley, Arizona Game and Fish Department  
Jack Schmidt, USGS/GCMRC  
Julaire Scott, USGS/GCMRC  
Dave Slick, Salt River Project  
Rodney Smith, DOI-Solicitor's Office  
Mark Sogge, USGS  
Pam Sponholtz, USFWS  
Bill Swan, Imperial Irrigation District  
Jason Thiriot, Colo. River Commission/Nevada  
Shana Tighi, USBR  
Meghan Trubee, NPCA  
Dave Trueman, USBR  
Dave Uberuaga, NPS/GRCA  
Scott Vanderkooi, USGS/GCMRC  
Keith Waldron, U.S. Bureau of Reclamation  
John Wessels, NPS/Intermountain Region  
Palma Wilson, NPS/GRCA  
Barry Wirth, U.S. Bureau of Reclamation

**Recorder:** Linda Whetton, USBR

**Introductions and Administrative.** Ms. Castle welcomed the members and the public. She invited Tricia McCraw (ADWR) to sit at the table in the absence of Ms. Benemelis, though she would not be allowed to vote. There were no objections from the members. She introduced Jack Schmidt (new GCMRC Chief), John Wessels (Regional Director, NPS), Todd Brindle, Superintendent of Glen Canyon

National Recreation Area, Dave Uberuaga, Superintendent of Grand Canyon National Park, and Keith Waldron (new Regional Archaeologist, USBR). Each made a few comments.

Approval of May 18, 2011, Meeting Minutes. Motion to approve the minutes proposed by Mr. Shields and seconded by Mr. Peterson. Pending two edits, the minutes were approved by consensus.

Action Item Tracking Report. (**Attachment 1**). While good progress has been made on the action items, Ms. Castle proposed the AMWG review the report in more detail at the next meeting.

Recommendations to the Secretary. Ms. Castle announced that the changes to the AMWG Charter recommended in February 2011 had been adopted by the Secretary. She distributed copies of the new AMWG Charter (**Attachment 2**) and said it incorporates the provision that the DOI agencies who are AMWG members will not vote on a trial basis. However, as part of that provision, the DOI agencies committed to actively participate in the AMWG and make their views known. Having discussed the TWG voting procedures with some AMWG members and internally with the DOI agencies, Ms. Castle said it would be consistent for the DOI agencies on the TWG to also not vote during the same trial period. As a result of changes in the charter, the AMWG Operating Procedures also need to be reviewed and she said DOI would take a first cut on possible changes and bring it back to the AMWG for further discussion.

**Action Item:** Anne Castle will see that a revision of the operating procedures (to be consistent with the new charter and other changes) will be drafted for feedback from AMWG.

Legislative Update. Mr. Knowles provided the following updates (**Attachment 3**):

- HR1719, Endangered Species Compliance and Transparency Act, was referred to the House Committee on Natural Resources and a subcommittee on Water and Power in May. The Act would require that WAPA and other power administrations report on estimates of each customer's share of the direct and indirect costs of ESA compliance. It would also direct the commissioner of Reclamation and any other federal agency to assist in identifying costs and require WAPA to submit an annual report of such costs to Congress.
- S1224, Bureau of Reclamation Fish Recovery Program Re-authorization Act. This would authorize appropriations for the Upper Colorado River Recovery Program and the San Juan Recovery Program for fiscal year 2012-2023 for base funding above and beyond the continued use of power revenues collected under the CRSP Act for operation, capital projects, and monitoring.
- HR1144, Transparency and Openness in Government Act, was referred to the House Committee on Oversight in Government Reform in March. This would amend the FACA to require appointments be made without regard to political affiliation or activity. It would also require agency heads to make specific information about FACA committees available on their websites and require the comptroller general to review compliance by agencies with FACA.
- On July 19, 2011, the FWS published a Federal Register Notice announcing a 12-month finding on a petition to list the Grand Canyon Cave Pseudoscorpion as not warranted at this time.
- On August 15, 2011, the FWS proposed revised critical habitat for the Southwest Willow Flycatcher. The proposed revision identifies 2,090 stream miles throughout the southwest for critical habitat for the SWWF. One segment is near the geographic boundaries of the GCDAMP. There is a segment that extends from the middle of Lake Mead about 46 miles upstream to RM 243. The lower geographic boundary of the GCDAMP and the upper boundary of the Lower Colorado Multi-species Conservation Program is RM 240, so essentially none of the critical habitat that's proposed for revision comes within the geographic boundaries of the GCDAMP.
- Mr. Spiller reported the FWS would publish a 12-month finding on the Northern Leopard Frog by the end of September per a settlement agreement.

Litigation Update. Mr. Rod Smith provided an update on the GCT lawsuit. The District Court claims have been decided and ultimately resolved in favor of the defendants. Now they are on appeal in the Ninth Circuit Court of Appeals. A briefing on the merits is currently scheduled to occur in October through December of this year. Per the rules that were first filed in the District Court and later rejected at the end of July, there is a current motion before the Ninth Circuit Motions Panel for injunction pending appeal. That is in the process of being briefed and they are waiting for resolution. The Ninth Circuit has a highly variable timeline and they are a number of months away from deciding the case. It is not uncommon for these cases to last up to two years.

Progress on AMWG/TWG Nominations and Reappointments. Ms. Castle welcomed the following newly-appointed individuals: Mr. Gerald Myers, new alternate (FFF); Mr. Chris Hughes, (TWG member for NPS/GLCA); Mr. Mark Anderson (TWG alternate, NPS/GLCA); and Mr. Todd Chaudhry (TWG alternate, NPS/GRCA).

Southern Paiute Consortium Update. Mr. Charley Bullets said the Southern Paiute Consortium distributed copies of a video, "The River and Canyons of the Colorado," which includes a segment on their involvement with the GCDAMP.

Acting Chief GCMRC. Ms. Castle acknowledged that Dr. Ted Melis served as the acting chief of GCMRC for the past six months and did an outstanding job. He received a Star Award from the Department recognizing his superior service.

Desired Future Conditions (DFCs). (**Attachment 4a** = AIF and PPT). Ms. Castle referenced the AIF containing the history of the DFC process to the present. When the DFC Ad Hoc Group (DAHG) was formed in early 2010, they were tasked to look at the draft DFCs that had been put together by the regional directors for the DOI agencies. Co-chaired by George Caan and Larry Stevens, the DAHG made changes to the draft and also gathered input from a wide spectrum of stakeholders involved in the program. They revised the document and that was considered by the AMWG at its August 2010 meeting. The AMWG recommended further revisions and recommended that the DFCs as further revised be forwarded to the Secretary after further review within DOI. The DOI agencies reviewed the DFC draft for consistency with the mission and obligations of those agencies and conducted a legal review. Those reviews have been occurring for the past several months. Western Area Power Administration also reviewed the document and suggested changes. While the goal of the last review was to adhere as closely as possible to the DAHG's document, some changes were made (**Attachment 4b**). The changes were described in a memo that was sent with the revised DFCs. Ms. Castle suggested the DAHG be revived and that it include participants to conduct a final review of the changes made by DOI and Western and produce a document to be forwarded to the Secretary.

Mr. Mark Sogge said the regional directors were asked to look at the draft DFCs from the DAHG last fall. Their task was to focus on compatibility with agency mission, not to look at whether or not DFCs could be simultaneously obtained. They were to take the Phase I DFCs and ensure they were consistent with their agency missions. The resulting document went to the Department in January 2011. Mr. Wessels said it was a collaborative process and that everyone got something of what they wanted, but nobody got everything they wanted. As the DOI bureaus worked together not only on DFCs but on other Colorado River issues, Mr. Wessels said they did not in any way consider actions that would impact the Law of the River or existing water commitments throughout the Colorado River basin. They were careful throughout the process to concentrate very specifically on the objective, which was to work together to try to craft a set of DFCs that represent the best of what the DOI bureaus had to offer.

Ms. Castle also discussed Phase II of the DFCs, the quantitative as opposed to qualitative portion of the goals and objectives of the AMP. As originally discussed, the Phase II process would have followed directly on the heels of Phase I. However, Interior has begun the process of developing the LTEMP EIS, which will necessarily involve drilling down on some of the goals and objectives. Assistant Secretary Castle discussed whether having two parallel processes going on could result in inconsistencies and suggested that the focus be on Phase I DFCs. She suggested that particular DFCs be identified that need to be addressed quantitatively in the long-term plan. She also said that it was her understanding Perri Benemelis would be willing to serve as co-chair with Larry Stevens on the DAHG.

During discussion, members made the following points:

- Importance of having a very specific charge to the reconstituted DAHG
- Avoid being in a constant do-loop with review and revisions of the report
- The DAHG needs to hear from the agencies

- The AHG should consider other desirable conditions that individual agencies have that may intersect with the DFCs
- The reduction to one DFC for archeological sites and historical properties is a potential flaw
- Need to have full participation from all DAHG members in the new process
- Need more specificity in terminology
- Need for clear process on how to resolve issues upfront in order to move forward effectively
- Need for combined collaboration with AMWG, DOI, and DAHG in preparing a final document
- Uncomfortable sending a document from an ad hoc group to the Secretary of the Interior.

After discussion, the group agreed to the following motion by consensus:

**Motion (proposed by Ted Kowalski, seconded by McClain Peterson): To reconstitute the DFC Ad Hoc Group, with Larry Stevens and Perri Benemelis as co-chairs, with participation from federal agencies, with members who volunteer in the spirit of full participation, to provide a final review of the DFCs, focusing on changes made to the DFCs by the federal agencies, and submit the final draft DFC document for consideration by AMWG.**

**Action Item:** AMWG members with interest in serving on the DFC Ad Hoc Group should notify Linda Whetton ([lwhetton@usbr.gov](mailto:lwhetton@usbr.gov)) or Larry Stevens ([farvana@aol.com](mailto:farvana@aol.com)) by September 2, 2011.

**Species of Concern Ad Hoc Group (Attachment 5 = AIF: Species of Concern and PPT).** Mr. Larry Stevens reminded the members that the Species of Concern Ad Hoc Group was established in April 2009. As set forth in their charge, the group prepared a report that was a review of information and assessment of the status of habitat needs and availability, and ecosystem roles of native species of management concern. At present, there is no commitment for the AMP to fund taxa of management concern (TMC) restoration efforts. However, the AMWG could play an important multi-agency advisory role to the Secretary in evaluating TMC restoration priorities and potential in the CRE.

Mr. Shane Capron said the TWG reviewed the report and recommended that it be sent to the AMWG for further action. Ms. Castle thanked the committee for their work and said the outline for the LTEMP includes consideration of a recovery program. When looking at recovery programs, the MSCP dealt not only with existing listed species but also looked at species that might become listed in the future to gain reliability and Section 10 coverage for those species for a 15-year time period. The methodology developed by the ad hoc group is a means of prioritizing species that might be considered in a recovery program that is like that in MSCP, and includes more than just a list of species.

The group discussed whether to “accept” the report, with concerns that acceptance might indicate the commitment of some action. After discussion, the group approved the following motion by consensus:

**Motion (proposed by Larry Stevens, seconded by Alan Downer): AMWG acknowledges receipt of the report of the Species of Concern Ad Hoc Committee entitled, “Assessment of Taxa of Management Concern in the Colorado River Ecosystem, Glen and Grand Canyons, Arizona, USA: Habitat Needs, Availability, and Ecosystem Roles” dated 15 June 2011 (revised July 8, 2011), in fulfillment of the criteria set forth in the AMWG motion of April 2009, calling for “a review of information about an assessment of the status of habitat needs and availability, and ecosystem roles” of native species of management concern.**

**GCMRC Updates.** (Attachment 6 = AIF and PPT). Dr. Jack Schmidt gave a PPT presentation entitled, “Assessing what we know and don’t know,” which focused on results from a series of knowledge assessment workshops and information being collected on temperature and the sediment mass balance. He offered the following:

- There has been a system-wide increase in humpback chub populations, as well as in the population of other native fish species.

- The flow regime since 1991, including the 1996 and 2008 HFEs, has benefited rainbow trout. We do not understand the decline in RBT between 2001 and 2007.
- The food web of the Grand Canyon is very simple. Availability of high-quality food resources limit fish populations – black flies and midges are the most important parts of the present food web.
- Rainbow trout (RBT) are less piscivorous than brown trout (BT), but there are far more rainbow trout.
- RBT and BT disproportionately prey on native fish.
- Warming increases growth and production of algae and invertebrates.
- Warming increases the growth rate of humpback chub.
- The mainstem Colorado River water temperature is typically well below the thermal optimum for native fishes, but recently has been warmer.

He encouraged everyone to attend the next knowledge assessment workshop on October 18-19, 2011 in Phoenix.

Referencing the April 2007 GCMRC workshop that addressed conservation needs to maintain HBC, Mr. Spiller said one of the recommendations from the scientists to the managing agencies was to do mechanical removal in the LCR if needed. He is now hearing something different from the scientists and needs to know what biological changes have occurred. Dr. Vanderkooi said the concurrent declines in populations between treatments and a control is driving the uncertainty. He said where there is a system with system-wide declines, the cause of declines cannot be identified. Mr. Spiller requested this be addressed more thoroughly in the upcoming GCMRC workshop.

Sediment Update. Dr. Paul Grams joined the meeting via conference call. He presented several slides and offered the following summary of findings:

- Water temperatures at Lees Ferry and near the Little Colorado River confluence are unusually high despite the high inflows this year.
- The relatively high volume dam releases of winter-spring-summer 2001 (~17,000 to 24,000 cfs) is predicted to cause net sediment depletion.
- The scour has resulted in export from Marble Canyon of all of the sand that accumulated last fall and winter.
- The sand being scoured from Marble Canyon is moving through downstream reaches “like a pipe,” and those reaches are also losing sediment.

**NPS Colorado River Resource Monitoring and Mitigation Report.** (**Attachment 7** = AIF and PPT).

Ms. Martha Hahn said that Glen Canyon National Recreation Area and Grand Canyon National Park conduct active, long-term monitoring and mitigation work along the Colorado River and within associated tributaries of Glen and Grand Canyon. This work includes watershed restoration, invasive plant eradication, vegetation mapping, and Leopard frog re-introduction. Because of the significance of these projects and programs for aiding Park Service resource management decisions, and their inherent overlap with AMP activities and goals, it is important the AMWG be informed and updated on these ongoing efforts. The NPS would like to collaborate with the AMWG on identifying existing NPS work that could be expanded to incorporate AMP-driven monitoring and mitigation activities. She outlined the ongoing NPS activities and areas with the potential to aid future accomplishments of the AMP.

**Basin Hydrology.** (**Attachment 8** = AIF and PPT). Mr. Rick Clayton said the 2011 hydrology has been very wet. Since May 15, Reclamation has been operating GCD to release as much water as the powerplant can release in order to achieve the Interim Guidelines Equalization objective for this year (end of water year elevation of Lake Powell of 3643 feet above sea level). Under the Interim Guidelines Upper Elevation Balancing Tier, operation of Glen Canyon Dam shifted to being governed by the Equalization Tier in April 2011. Currently releases from Glen Canyon Dam are approximately 24,000 cfs.

At the end of August, operation of Glen Canyon Dam will transition to a lower steady release regime to meet the requirements of the 2008 EA/FONSI which requires releases to be steady for the months of September and October. The transition plan was coordinated with the Fish and Wildlife Service and involves a 3 day reduction in release volumes at the end of August. For water year 2011/2012 the steady release target has been set to 15,500 cfs. This is the 4<sup>th</sup> year of the 5 year steady flow experiment which began in 2008.

Reclamation is trying to release as much water as possible with the goal of achieving equalization by the end of the water year. However, they will likely not achieve that goal, so their obligation is to release water as quickly as possible. WAPA estimates that the 15,500 cfs is the maximum sustainable steady release rate for 61 days beginning on September 1.

Because 2011 was a very wet year, storage increased in the Colorado River Basin substantially. Basinwide storage in the Colorado River Basin is projected to increase by approximately 6 maf. The wet conditions experienced in 2011 will not appreciably increase the storage in reservoirs above Lake Powell. Current projections, however, indicate that both Lake Powell and Lake Mead will likely experience increases in storage during water year 2011 of about 2.8 maf.

In August, reservoir modeling will be updated to reflect an outlook forecast for water year 2012 which is being developed by the Colorado Basin River Forecast Center (CBRFC). The outlook forecast provides a range of inflow conditions that is likely to occur in water year 2012. Under this range of likely inflow conditions, operation of Glen Canyon Dam in water year 2012 under the Interim Guidelines will result in a range of possible release volumes. At this point it is unclear what this range will be projected to be. In August, when the reservoir modeling is complete, Reclamation will have a better idea what the release range is likely to be. For now, based on the July 24-Month Study, the most probable release volume in water year 2012 is 12.48 maf. Depending on actual operations for the remainder of water year 2011 and the outlook forecast from the CBRFC, the range of possible releases could be as low as 8.23 maf (plus any equalization volume carried over from water year 2011 to 2012), to as high as 14.8 maf which is the estimated release capacity of Glen Canyon Dam Powerplant during water year 2012.

In terms of GCD maintenance, four turbine runner replacements have been completed. Unit 1 has been out of service for a full year but could be back on in December. However, Unit 2 will then be taken offline. Units 3 and 4 also need turbine runner replacements.

**2012 Hydrograph** (**Attachment 9** = AIF and PPT). Mr. Dave Trueman said, in development of the 2012 proposed hydrograph, DOI started with the 2011 hydrograph. Reclamation analyzed several combinations of hydrologic and operational scenarios with regard to impacts to sand retention and cost. The desired outcome was to minimize costs while maximizing sand retention high in the system for a potential fall HFE. He presented the following two options:

WY 11 Hydrograph Method	Targeted Method (recommended for WY12)
<ul style="list-style-type: none"> <li>• Monthly volume may vary +/- 100 kaf from average of remaining balance</li> <li>• 16,000 cfs daily limit up to 11.0 maf annual release</li> <li>• 22,000 cfs daily limit above 11.0 maf annual release</li> <li>• No limits if needed for equalization</li> <li>• ROD limits apply</li> </ul>	<ul style="list-style-type: none"> <li>• August releases are limited using the percentage method to conserve sediment inputs</li> <li>• September and October low-steady releases also conserve sediment</li> <li>• No limits on other months</li> <li>• No limits if needed for equalization</li> <li>• ROD limits apply</li> </ul>

Ms. Castle referred to the AIF, which includes a detailed description in motion format of the targeted hydrograph release schedule. She said the changes from last year's hydrograph were designed to address changing hydrology. The targeted schedule would focus on the required remaining release rather than a fixed amount of volume and fluctuations from month-to-month. It also suggests that restrictions for sediment purposes are unnecessary in months where sediment inputs are not expected.

**TWG Chair Report.** Mr. Capron said the TWG heard reports on the development of the hydrograph proposal at its March and June 2011 meetings. No significant issues were raised with regard to the targeted proposal. Some concerns were discussed regarding the potential effect of an HFE on the hydrograph and some of the language in other parts of the report. He read the motion that the TWG passed at its June meeting: "The TWG recommends to AMWG for their approval the DOI-DOE Proposed Hydrograph for Water Year 2012 as described in the Proposed Operating Parameters of the June 6,

2011, document.” He said Grand Canyon Trust objected to the TWG motion because they could not support a proposal that the models suggest will push four million metric tons of sediment out of the Grand Canyon.

Mr. Lash asked why steadier flows were not possible with so much water in the system and the possibility of reaching the maximum probable this year. He said the sediment scientists have reported that fluctuations erode while steady flows conserve, and have predicted that upwards of four million metric tons of sediment will be lost in transport through Grand Canyon. He added that the modeling shows that 365 days of steady flows costs somewhere less than \$3 million. He said the group is looking to save some money but then spend a little bit more in order to finesse the proposed hydrograph. If there is the capability of playing with some fluctuations, he feels this is the time to conserve sediment.

Ms. Kyriss said that when they know about how much water can be sent down the river, there is significant value in terms of the timing. Some of the cost is Western’s, but a much larger part borne by power customers. She offered to talk with Nikolai offline further, and proposed the motion listed on the AIF.

Mr. Trueman told Nikolai the essence of their charge was to come up with something that would fall within the existing compliance and MLFF. He said the targeted approach he showed in those last few slides are under fairly high flow releases and indicated the targeted approach really reduces those August releases. He said there isn’t a model that can predict how that will occur or how long it will improve for, but their intent is to store the sediment in anticipation of a high flow and build up the beaches.

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

Motion (proposed by LaVerne Kyriss, seconded by Robert King): AMWG recommends to the Secretary of the Interior his approval of the DOI-DOE Proposed Hydrograph for Water Year 2012 as follows:

- Monthly Release Volumes will be adjusted each month based on the most current forecast of the annual release required by the 2007 Interim Guidelines.
- Monthly Release Volumes are anticipated to vary within the targets identified for each month as set forth below. This monthly operational flexibility will be used for existing power production operations under the Modified Low Fluctuating Flow (MLFF) alternative selected by the 1996 ROD and contained in the 1995 FEIS. The targeted operation will also be adjusted as necessary to accommodate a targeted release volume for the month of August 2012 based on the schedule below:
  - January: August 2012 Volume target set to greater of 800 kaf or 10% remaining annual release volume.
  - February: August 2012 Volume target set to greater of 800 kaf or 10% remaining annual release volume.
  - March: August 2012 Volume target set to greater of 800 kaf or 12% remaining annual release volume.
  - April: August 2012 Volume target set to greater of 800 kaf or 15% remaining annual release volume.
  - May: August 2012 Volume target set to greater of 800 kaf or 20% remaining annual release volume.
  - June: August 2012 Volume target set to greater of 800 kaf or 25% remaining annual release volume.
  - July: August 2012 Volume target set to greater of 800 kaf or 40% remaining annual release volume.
  - August: Release volume established as 100% of remaining annual release volume (release could be less than 800 kaf in some cases).
- In some Equalization release scenarios, the release volume required in August could be as high as the full capacity of the powerplant.
- Steady flows will occur in September 2012 (and October 2012) per the 2008 HFE Environmental Assessment (EA).
- Monthly release volumes will be modified each month in consultation with Western Area Power

Administration. <ul style="list-style-type: none"> <li>▪ The remaining annual release volume will be computed as the projected WY2012 annual release volume pursuant to the Interim Guidelines less volume already released in WY2012 less the September 2012 projected Steady Flow Experiment release volume.</li> <li>▪ Additionally, the Bureau of Reclamation will continue to apply best professional judgment in conducting actual operations and in response to changing conditions throughout the water year. Such efforts will continue to be undertaken in coordination with the DOI/DOE agencies to consider changing conditions and adjust projected operations in a manner consistent with the objectives of these parameters as stated above and pursuant to the Law of the River.</li> </ul>			
Stakeholder	Vote	Stakeholder	Vote
Arizona	absent	Navajo Nation	Y
Arizona Game and Fish Department	Y	Nevada	Y
California	vacant	New Mexico	Y
Colorado	Y	Pueblo of Zuni	Y
Colorado River Energy Distributors Assn.	Y	Southern Paiute Consortium	Y
Federation of Fly Fishers	Y	Utah	Y
Grand Canyon River Guides	Y	Utah Assoc. Municipal Power Systems	Y
Grand Canyon Trust	N	Western Area Power Administration	Y
Grand Canyon River Wildlands Council	A	Wyoming	Y
Hopi Tribe	Y	San Juan Southern Paiute	vacant
Hualapai Tribe	Y		
Voting Results: Yes = 16                      No = 1                      Abstaining = 1 <b>Motion Passes</b>			

**Fiscal Year 2012 Budget** (**Attachment 10a** = AIF). Ms. Orton reminded the members that a motion on the budget wouldn't occur until tomorrow and that the discussion would focus only on those changes to the second year of the biennial budget. She said the members would be asked to approve the August 5, 2011, memo from Mr. Melis and Mr. Knowles to Ms. Castle detailing those changes.

Ms. Castle said the TWG did exactly what the AMWG asked them to do in dealing with technical issues and elevating policy issues. Referencing her May 4, 2011 memo, she said they're trying to ensure the issues that are elevated to the Secretary are significant ones that are fully developed. The U.S. Institute of Environmental Conflict Resolution survey pointed out that the advisory committee processes worked better if the Secretary or the agency that's being advised delineates the question that they're being asked.

**TWG Chair Report.** Mr. Capron gave a PPT presentation (**Attachment 10c**) and said the last remaining issue was whether to restore full funding of the cultural resources monitoring budget. There are a lot of recommendations in the Anne Castle memo of August 18 (**Attachment 10b**), and he felt it would be helpful for the AMWG to give specific instructions to the TWG for their consideration. He stressed the importance of setting up timelines for interactions between the DOI agencies and the TWG so the TWG has sufficient time to conduct in-depth discussions. He read the TWG budget motion passed on June 28, 2011.

**USBR Budget.** Mr. Knowles gave a PPT (**Attachment 10d**) and said Reclamation and GCMRC agreed to move all funds from line 18 (GCMRC Nonnative Fish Suppression Contingency Fund) and line 19 (Reclamation Nonnative Fish Suppression Contingency Fund) to line 20 (Reclamation Experimental Funds Carryover) to avoid the appearance that decisions have been made about non-native fish control projects. Reclamation also proposed increasing the facilitation contract (by \$11,301), TWG Chair reimbursements (by \$3,703), and decreasing AMWG personnel and travel costs (by \$3,571 each). In response to TWG policy issues, he said Reclamation will meet with the five AMP members tribes, Arizona SHPO, the Advisory Council on Historic Preservation, NPS, and other interested parties in early September to (1) determine adequate resolution of adverse effect for NHPA purposes for the two EA undertakings, (2) determining why the PA hasn't been fully effective and how to make it so, and (3)

Reclamation's compliance with Section 106. In 2012, Reclamation will support continued monitoring of the condition of sites identified in the Treatment Plan and undertake remedial actions as necessary to mitigate actual impacts; at the same time it will seek agreement among the Section 106 consulting parties on the terms of an effective programmatic agreement to address such impacts in the long term using line item #27, Canyon Treatment Plan for implementation in FY 2012.

GCMRC Budget Presentation. Dr. Ted Melis provided copies of his PPT presentation (**Attachment 10e**) and said that GCMRC's proposed changes are in alignment with the four DFCs, the work plan elements reflect DOI priorities, and the appropriate science is scheduled to meet AMP goals and support the future LTEMP EIS effort. GCMRC agreed to find funding to return the Adopt-a-Beach Program as part of the campsite monitoring effort and made adjustments to restore Science Advisor support through FY2012. The proposed budget increases expenditures from \$5.9M to \$6.2M.

Science Advisors' Review of Budget and Workplan. Dr. Dave Garrett distributed a handout (**Attachment 10f**) which identified five key issues from the SA review of the FY2011-12 budget and workplan: (1) Support of TWG and GCMRC programming, (2) BOR and GCMRC cultural programs, (3) Integrated assessment of biological information, (4) Greater integration of physical and biological resource assessments to information management, and (5) Socioeconomic programs to provide estimates of needed market and non-market values. The SAs feel that the program areas the TWG wants to pursue are critical areas and there needs to be more integration and conflict resolution on cultural resource issues.

**Attachment 10g** = Glen Canyon Dam Adaptive Management Program Biennial Budget and Work Plan—Fiscal Years 2011-12 dated September 22, 2010

Ms. Castle said the federal agencies met with the AMP tribes yesterday to address some of the cultural issue concerns. She said Mike Yeatts took the lead with a small group to develop motion language. He distributed copies of a handout with revised motion language to address cultural resource concerns (**Attachment 10h**).

Ms. Castle asked if there were any additional questions or policy issue changes to the budget. Hearing none, she asked for public comments.

**Public Comment:** None.

Ms. Castle invited everyone to attend "movie night" following the meeting where two videos prepared by the NPS and the Hualapai Tribe would be shown.

**Adjourned:** 5:05 p.m.

Glen Canyon Dam Adaptive Management Work Group Meeting  
August 24-25, 2011

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

**Start Time: 9:30 a.m.**

**Committee Members/Alternates:**

Perri Benemelis, ADWR  
Charley Bulletts, Southern Paiute Consortium  
Kerry Christensen, Hualapai Tribe  
Alan Downer, Navajo Nation  
Ann Gold, U.S. Bureau of Reclamation  
Martha Hahn, NPS/GRCA  
Amy Heuslein, Bureau of Indian Affairs  
Leslie James, CREDA  
Sam Jansen, Grand Canyon River Guides  
Robert King, UDWR  
Ted Kowalski, Colo. Water Conservation Board

LaVerne Kyriss, Western Area Power Admin.  
Nikolai Lash, Grand Canyon Trust  
Estevan López, NM Interstate Stream Comm.  
Gerald Myers, Federation of Fly Fishers  
McClain Peterson, Colorado River Comm./NV  
Ted Rampton, UAMPS  
John Shields, WY State Engineer's Office  
Sam Spiller, U.S. Fish and Wildlife Service  
Larry Stevens, Grand Canyon Wildlands Council  
Bill Stewart, AZ Game and Fish Department  
Michael Yeatts, Hopi Tribe

**Committee Members Absent:**

Jennifer Gimbel, CO Water Conservation Board  
Arden Kucate, Pueblo of Zuni

Leigh Kuwanwisiwma, Hopi Tribe  
Dennis Strong, Utah Div. of Water Resources

**Interested Persons:**

Janet Bair, USFWS  
Jan Balsom, NPS/GRCA  
Debra Bills, USFWS  
Mike Black, BIA  
Karen Breslin, NPS/Intermountain Region  
Todd Brindle, NPS/GLCA  
Shane Capron, WAPA/TWG Chair  
Brian Carey, NPS/GLCA  
Lori Caramanian, DOI  
Todd Chaudhry, NPS/GRCA  
Marianne Crawford, USBR  
William K. Dickinson, NPS/Lake Mead NRA  
Kurt Dongoske, Pueblo of Zuni  
Helen Fairley, USGS/GCMRC  
Dr. Dave Garrett, M3Research  
J. Lonnie Gourley, USBR/Glen Canyon Dam  
John Halliday, DOI  
Jayne Harkins, CO River Commission/NV  
Beverley Heffernan, U.S. Bureau of Reclamation  
Lisa Iams, U.S. Bureau of Reclamation  
Bill Jackson, NPS/Water Resources  
Loretta Jackson-Kelly, Hualapai Tribe  
Lynn Johnson, DOI Solicitor's Office  
John Jordan, Federation of Fly Fishers  
Glen Knowles, U.S. Bureau of Reclamation  
Dennis Kubly, U.S. Bureau of Reclamation  
Jane Lyder, DOI/Fish, Wildlife and Parks  
Tricia McCraw, AZ Dept. of Water Resources

Ted Melis, USGS/GCMRC  
Bruce Moore, Southern Nevada Water Authority  
David Nimkin, NPCA  
Claudia Nissley, USBR contractor  
Mary Orton, The Mary Orton Company  
Clayton Palmer, WAPA  
Larry Riley, AGFD  
Jack Schmidt, USGS/GCMRC  
Julaire Scott, USGS/GCMRC  
Dave Slick, Salt River Project  
Rodney Smith, DOI-Solicitor's Office  
Mark Sogge, USGS  
Pam Sponholtz, USFWS  
Bill Swan, Imperial Irrigation District  
Jason Thiriot, Colo. River Commission/Nevada  
Shana Tighi, USBR  
Meghan Trubee, NPCA  
Dave Trueman, USBR  
Dave Uberuaga, NPS/GRCA  
Scott Vanderkooi, USGS/GCMRC  
Keith Waldron, U.S. Bureau of Reclamation  
John Wessels, NPS/Intermountain Region  
Palma Wilson, NPS/GRCA  
Barry Wirth, U.S. Bureau of Reclamation

**Recorder:** Linda Whetton, USBR

**Introductions and Administrative.** Ms. Castle welcomed Mr. Mike Black, Director of the Bureau of Indian Affairs. Mr. Black said he is an engineer by training and spent 15-19 years in construction and

facilities management, four years as a deputy regional director, two years as a regional director, and was appointed as BIA director in April 2010.

**FY 2011-12 Budget Discussion (Cont).** Mr. Mike Yeatts read the proposed motion language that was distributed at yesterday's meeting:

**Motion** (proposed by Mike Yeatts, seconded by Larry Stevens): To address cultural resources issues #1 and #2, below, AMWG requests Reclamation develop a timeline and process for their resolution during the meeting already scheduled for September 6-8, 2011, to discuss Section 106 and PA issues. AMWG further requests that results of that meeting be shared at the next AMWG meeting. To address cultural resource issue #3 below, AMWG directs the TWG to reconstitute the Cultural Resources Ad Hoc Group and make a recommendation to the AMWG on the issue at its February 2012 meeting.

1. AMWG recommends that the Secretary of the Interior consider a review of the GCDAMP programs related to archaeological site monitoring and compliance with NHPA section 106 and the GCPA, to clarify how DOI (and the GCDAMP) is achieving compliance with both NHPA section 106 and the GCPA and what is specifically necessary to do so.
2. AMWG recommends to the Secretary that Reclamation implement the process that has been identified in Reclamation's 2007 Treatment Plan to comply with the requirements of NHPA section 106 for the operation of Glen Canyon Dam.
3. AMWG indicates its intention to make a recommendation to the Secretary on the following questions: How should the program fairly treat conflicts of cultural values, specifically those involving Native American perspectives? How will tribal values be monitored and tracked in this program?

Ms. Castle said the motion is intended to deal with several of the policy issues in the original proposed budget motion, specifically, numbers 1, 3, and 4. Policy issue number 2 was addressed when GCMRC restored the SAs funding.

**Hearing no objection, the motion was passed by consensus.**

**Action Item:** TWG members with interest in serving on the Cultural Resources Ad Hoc Group should notify Shane Capron ([capron@wapa.gov](mailto:capron@wapa.gov)) by September 2, 2011.

Motion proposed by Kerry Christensen, seconded by Larry Stevens). The AMWG recommends to the Secretary of the Interior adoption of the USGS and Reclamation FY12 Budget and Work Plan (as approved by the Secretary of the Interior on Sept. 22, 2010) with changes described in the table in the memorandum from Ted Melis and Glen Knowles to Anne Casted dated August 5, 2011.

Recapping the proposed changes to the budget, Mr. Capron said that as part of the response from DOI, there was a recommendation to review roles this year, working with GCMRC, and providing that information to AMWG. He said that issue could be rolled into the FY13-14 work plan. He didn't think a motion was needed if DOI intends to have GCMRC work with the TWG to further define the goals and their responsibilities for FY13-14. In response to earlier technical requests made by the TWG, he said DOI responded by increasing the funding for the SAs support in FY12. The SAs are currently fully supported in FY12.

Regarding the economist position, Mr. Schmidt said he didn't see how a center like GCMRC can inform the GCDAMP or DOI about dam management unless economics and tradeoffs in decision-making are part of the analysis. He said the reality of the GCDAMP and GCMRC's budget is that they're never going to be able to do all that they want to do. They have to make tradeoff decisions constantly.

During discussion, the following concerns were captured on funding an economist position at GCMRC: (1) Timing/need for an economist to help develop the socioeconomic implementation plan, (2) Consider building in oversight to ensure the economist position is focused on AMP work, (3) Need to identify that the economic analysis work will be highly controversial, and (4) The program is long overdue in hiring an economist.

Addressing policy issue #6 in the original budget motion, Ms. Castle suggested taking up the discussion of power economics and market based recreational economics separately. She felt it was different from the budget issues in that it gives direction to the TWG about how to move forward with the socioeconomics implementation plan. She asked if there were any remaining questions or concerns on the overall budget.

**Motion (proposed by Kerry Christensen, seconded by Larry Stevens): The AMWG recommends to the Secretary of the Interior adoption of the USGS and Reclamation FY12 Budget and Work Plan (as approved by the Secretary of the Interior on September 22, 2010) with changes described in the table in the memorandum from Ted Melis and Glen Knowles to Anne Casted dated August 5, 2011. Hearing no objection, the motion was passed by consensus.**

Motion (proposed by Jerry Myers, seconded by John Shields): AMWG recommends that the Secretary direct GCRMC to consider hiring an economist only after the AWMG approves a Socioeconomic Implementation Plan and provide a chair for the TWG Socioeconomic Ad Hoc Group who has expertise in economics from the Science Advisors; and TWG further recommends that AMWG direct TWG to focus the socioeconomic program initially on a robust and scientifically-based program dealing with power economics and market based recreational economics.

Comments:

- The wording “power economics” is overly broad; need something specific
- Don’t understand hiring an economist and then telling them to do specific things
- This motion circumscribes and limits the analysis too early in the process. Hire the economist and have him help the SEAHG figure out priorities
- Have TWG re-evaluate needs of an economist to help inform GCMRC in selection process
- Need resolution or integration of the various competing studies
- Don’t think this motion has anything to do with directing the economist at GCMRC
- Want to see resolution of competing studies

Ms. Castle said to the extent the concern is about who does GCMRC hire, they could have a feedback panel like they’ve used in previous positions within GCMRC and that would give people who are interested an opportunity to talk about what characteristics that economist will need in order to serve the program well. She said if this motion is adopted as stated, there is an implication that this program is only going to focus on market-based and power economics and the group needs to think about the message that that sends as they’re discussing the motion.

Dr. Garrett said one of the SAs big concerns is that there is an LTEMP EIS process coming and also a core monitoring plan programming process that will require tradeoffs that everyone is concerned about. There are ways in which you can go through market and non-market assessment of values that are laying in the landscape out there through various literature surveys, management surveys, Delphi processes with professional hydro economists and non-market economists. The SAs thought it was best that the group be focused in the near term on trying to do that because 12-15 months from now they will need at least first best estimates.

**Mr. Shields withdrew his second on the motion.**

**Mr. Robert King seconded the motion.**

Mr. Capron said the socioeconomic plan TWG developed has a timeline that specifies what years certain activities would be implemented based on the draft INs. He said the delay is because they do not have the economic expertise to ensure those INs are sound and scientifically-based. With the help of the SAs and GCMRC staff this fall those INs could be completed and then the group could circle back through the projects. He's hopeful of having a draft plan to the AMWG at its February 2012 meeting.

Ms. Castle adjourned the meeting for a 20-minute break.

**USGS Publications Update.** Dr. Melis distributed copies of a new USGS Fact Sheet, "An Experiment to Control Nonnative Fish in the Colorado River, Grand Canyon, Arizona" (**Attachment 11a**). He announced that Open-File Report 2011-1220, "Summary Report of Responses of Key Resources to the 2000 Low Steady Summer Flow Experiment, along the Colorado river Downstream from Glen Canyon Dam, Arizona" (**Attachment 11b**) was published. If there are any questions about the report, people should contact Barbara Ralston ([bralston@usgs.gov](mailto:bralston@usgs.gov)) or Scott Vanderkooi ([svanderkooi@usgs.gov](mailto:svanderkooi@usgs.gov)).

**FY 2011-12 Budget Discussion (Cont).** Ms. Castle said she felt there may not be a complete understanding of the process that the TWG has undertaken to this point on the socioeconomic plan and the next steps the TWG envisions. She asked Mr. Capron to provide an update.

Mr. Capron said that the timeline, "Table 3," was presented at previous AMWG meetings. It starts out with power economics, the base case, change case analysis, and works through market and non-market recreation. It has a logical timeline flow of when they feel it will be reasonable to implement different parts of the program, what should come first and how they would build on things, and different parts of the program that would need to be set up getting to non-market and non-use economics. These have to be timed to allow certain end points at a certain timeline. The timeline integrates power, market, non-market, and non-use economics over five years. The TWG thinks it is a logical approach and is looking forward to working with the SAs to refine it. He said he would appreciate an AMWG motion to affirm Table 3 and that the TWG is headed in the right direction.

**Revised Motion proposed by Jerry Myers, seconded by Robert King: AMWG directs TWG to continue with the current socioeconomic implementation plan, per Table 3 as presented to the AMWG at its February 2011 meeting.**

**Hearing no objection, the motion was passed by consensus.**

**Public Outreach AHG Report (Attachment 12 = AIF and PPT).** Ms. Castle announced Mike Yeatts would be stepping down as a co-chair of the POAHG, and thanked him for doing a great job. Mr. Yeatts said the POAHG had earlier attempted to develop a high-flow fact sheet but because of the controversial nature of the topic at the time, it was never formally adopted by the AMWG. Given that the AMP is likely to embark on a 10-year plan of high flow experiments and that GCMRC has released a technical report detailing the findings of all of the previous HFEs, the timing is ripe to have information regarding HFEs disseminated to the public. He distributed copies of the new fact sheet and gave a PPT presentation.

**Motion (proposed by Mike Yeatts, seconded by Sam Jansen): AMWG approves the High-Flow Fact Sheet as sent to AMWG, dated August 2011. Hearing no objection, the motion was passed by consensus.**

Mr. Shields suggested the fact sheet be updated to include "hyperlinks" to the reports mentioned in the fourth paragraph from the bottom on page 2. Mr. Yeatts concurred.

Administrative History Prospectus. Mr. Yeatts asked if there were any comments or suggestions on the prospectus that had been distributed before the AMWG meeting. Due to the nature of the report and the involvement of others in preparing the document, they will be seeking outside funding. Ms. Castle said it is important the scope of the administrative history be developed so that the individuals who may be doing the work are focused on specific tasks. Mr. Yeatts said it is their intent to develop a prospectus and share it with the TWG before bringing it to the AMWG. She asked the members to provide comments and/or suggestions on the prospectus to Mike Yeatts or Larry Stevens.

**Action Item:** AMWG members with interest in serving as chair of the Public Outreach Ad Hoc Group should notify Linda Whetton ([lwhetton@usbr.gov](mailto:lwhetton@usbr.gov)) or Anne Castle ([anne\\_castle@ios.doi.gov](mailto:anne_castle@ios.doi.gov)) by September 2, 2011.

Survey Instrument AHG Presentation (**Attachment 13a** = AIF and PPT). As co-chair on the SIAHG, Mr. McClain Peterson said the group discussed how the AMP could participate in an NPS economic survey and help inform the process. He said there were two different types of questions submitted in their report to Ms. Castle, one is an actual question put into the survey and the other is a question about the survey. He reviewed the questions submitted to the NPS (page 6 of AIF). After one face-to-face meeting, a conference call, and final review of the product prepared by Dr. Garrett, the group submitted a final report to Ms. Castle on June 22, 2011. Ms. Martha Hahn provided the NPS responses to the SIAHG's suggestions (**Attachment 13b**). She said that all the suggestions but one were either added to the NPS survey or were already included in it.

Tribal Liaison Report (**Attachment 14** = AIF and PPT). Mr. John Halliday said one of the issues the tribes had brought up was their desire to have tribal interns. In February, the tribes were informed of a grant program administered through the USGS Office of Tribal Relations (in DC) in which they could hire an intern. As such, Ms. Julaire Scott was hired to conduct surveys on water resources and how they've changed during the drought. She is a student at NAU and a member of the Navajo Nation.

He said the definition of Tribal Ecological Knowledge (TEK) from a Hualapai document is, "TEK is a cumulative body of knowledge and beliefs, handed down through generations by cultural transmission, about the relationship of living beings (including humans) with one another and with their environment." He said the tribes are saying that they have knowledge of how to survive, what works, what doesn't work, and that they want to share that knowledge. It may also be something that has not been documented. For example, 65% of the current U.S. pharmacopeia comes from traditional medicines. He said TEK has been implemented by forest management burning practices, and the Inner Tribal Chamber Council, the U.S. Forest Service, and the Bureau of Indian Affairs have fire science programs where they are working collaboratively. In order to integrate TEK, he said the tribes would be asked for their suggestions with the goal of determining how things can be done to benefit everyone. He offered the following recommendations for integrating TEK: (1) Examine program data sets on a site-by-site basis to see how the data sets add to collective knowledge, (2) All cultural resources monitoring reports should be located on GCDAMP website, (3) Clarify roles and responsibilities and how they are utilized, and (4) Conduct an annual river trip for DOI leadership and tribal spiritual leaders and/or AMWG tribal representatives.

Ms. Jackson-Kelly asked if the AMWG might consider doing a cultural sensitivity training river trip, and it would be nice to have a tribal facilitator. She said the AMP tribes could help develop cultural understanding, particularly those associated with conflicting values at various sites. Ms. Castle said the training sounded like a very good idea, but there would need to be a specific outcome in mind. She said the AMWG would need to discuss further.

Report on the LTEMP EIS. (**Attachment 15** = AIF) Ms. Beverley Heffernan said that on July 6, 2011, the Notice of Intent to Prepare an Environmental Impact Statement for LTEMP was published in the

Federal Register. A second notice will be published in the near future to inform the public of specific scoping meeting dates, times and locations, as well as the deadline for submitting scoping comments. Ms. Martha Hahn said the Park Service has hired a project manager that will lead the Park Service effort with BOR. They have identified the teams that will participate and said Argonne will serve as the NPS interface to bring all the data together.

FWS Recovery Program. Mr. Sam Spiller said the FWS recommends that a habitat-based program similar to the Lower Colorado River Multi-Species Conservation Program (LCRMSCP) and focused on conservation and recovery of humpback chub, razorback sucker, and other non-listed species, would be an appropriate model for Marble and Grand Canyons. The GCPA tells the FWS to look at protection and restoration of natural and cultural values. He said the FWS will take the lead in developing a program, and recognized that it will not work unless AMWG representatives and other parties are at the table.

Concerns were raised about funding the program, setting up a workshop to discuss further collaboration, how a recovery program may be included in the LTEMP scoping process, and reconstituting the HBC Implementation Ad Hoc Group.

**Action Item:** Sam Spiller will look into the former Recovery Implementation Plan Ad Hoc Group and send the information on its membership and accomplishments to Mary Orton ([mary@maryorton.com](mailto:mary@maryorton.com)) and Anne Castle ([anne\\_castle@ios.dog.gov](mailto:anne_castle@ios.dog.gov)).

**BOR Environmental Updates** (**Attachment 16** = AIF and corresponding PPTs)

High-Flow Experimental Protocol EA Update. Mr. Dennis Kubly said the High-Flow Experiment Protocol EA is being developed to establish a set of guidelines that will enable the Glen Canyon Dam Adaptive Management Program to conduct experimental dam releases on a multi-year, multi-experiment basis, while reducing the time and expense of compliance activities. The EA was provided to the public for a 30-day review on January 14, 2011, and a second public review occurred from July 5-19, 2011. Reclamation needs to complete ESA consultation with USFWS, tribal consultation and NHPA compliance, and NEPA compliance for a decision on the proposed HFE Protocol.

Non-Native Fish Control EA Update. Mr. Glen Knowles said the Bureau of Reclamation began the process to develop an EA for non-native fish control in March 2010, when it was determined that, due to tribal concerns over the taking of life in a sacred place, mechanical removal of non-native fishes in FY 2010 would be cancelled. He said the major themes of comments received during the second public comment period (July 5-26, 2011) were (1) Provide more clearly defined and specific proposed action, (2) Not enough evidence linking trout predation and competition to humpback chub population viability, (3) Need to specify that no trout removal would occur at all unless the 7,000 humpback trigger is reached, and (4) EAs should be combined into an EIS. Reclamation and the Department of the Interior continue to meet with each of the AMP Tribes to conduct tribal consultation on the EA, and NHPA and ESA compliance will be completed before a NEPA decision notice on the Non-Native Fish Control EA.

**Stakeholder's Perspective** (**Attachment 17** = AIF and PPT). Mr. Sam Spiller said the mission of the FWS is "working with others to conserve, protect and enhance fish, wildlife, and plants and their habitats for the continuing benefit of the American people." He said the U.S. Commission on Fish and Fisheries was created by Congress in 1871. He reviewed some of the laws the FWS operates under and resource concerns.

**Mediator/Facilitator Role**. (**Attachment 18** = AIF) Ms. Mary Orton said she was happy to have an opportunity to talk about her role as a mediator and facilitator for the AMWG. Her contract is with Reclamation and people should feel comfortable to contact them or her if they feel she isn't fulfilling the

terms of her contract. During her graduate work, she found that there was not an agreed-upon distinction in the literature between facilitation and mediation. In a group such as the AMWG where there are 24 stakeholders who have very different points of view, very different paradigms of how the world should work and how the world does work, what the goals of the program ought to be, and how this program should operate, she said those differences are dealt with through mediation. She reviewed some of the tasks she performs in terms of pre-meeting preparations, helping parties develop motions, and encouraging sound decision-making processes.

Several members were very complimentary of Mary's role saying they appreciated her institutional knowledge of the program, preparation of pre-meeting documents, and facilitation at ad hoc group and TWG meetings. Because of changes in stakeholders, Ms. Heuslein asked if there was a need to do some collaborative training with the AMWG or if the group has evolved into utilizing the consensus voting process. Ms. Orton said some training would be helpful and that there was a recommendation in the Roles Report that this group would be served well by occasionally looking inward at its own processes and procedures. The last AMWG retreat was held in 2004 and much good came from that. Ms. Castle said in the two years she has worked with the program, she has learned all the different things Mary does. She said there are so many threads that have to be pulled together and woven into a fabric at these meetings and Mary is the person who makes that happen. She has been in other facilitated discussions and none of them have been as complex as this one, and none of them has worked as well as this one, and she credits Mary for that. Not only is Mary wonderful to work with, but Ms. Castle said she does everyone a service by laying the foundation for discussions and making sure the group focuses on things said and not said.

**Public Comment:** Mr. Mike Black (BIA): I was able to pick up a lot of different things and see some of the processes of this program. I was involved previously with a similar project, the Green River Basin Interagency Roundtable. We didn't have as many acronyms as this one does. I look forward to participating in this and just want to let people know that we are engaged in DC and will continue to be moving forward. It was a pleasure being here.

Mr. David Uberuaga (NPS): I haven't been to very many meetings where I recall this much horsepower from Washington helping us lead and direct. If I may on behalf of all of us, thank you, Anne, for your leadership and for Jane's leadership. I think it's just outstanding to have it and we wouldn't be where we are without it.

**Review of Action Items:**

1. Persons interested in serving in the reactivated Cultural Resources AHG need to contact Linda Whetton ([lwhetton@usbr.gov](mailto:lwhetton@usbr.gov)) or Shane Capron ([capron@wapa.gov](mailto:capron@wapa.gov)) by 9/2/11.
2. Persons interested in serving in the POAHG and/or willingness to be a co-chair need to contact Linda by 9/2/11.
3. Persons interested in serving on the reconstituted Desired Future Conditions AHG (DAHG2) need to let Linda know by 9/2/11. Ms. Castle also reminded them that if they choose to be involved, they need to be fully engaged.

**Closing Remarks.** Ms. Castle said she wanted the group to know that they're doing important work. Even though they may lose themselves in the minutia of motion language, that doesn't take away from the fact that this is a federal advisory committee to the Secretary of the Interior on the operation of one of the most high-profile dams in the country that is upstream of one of the iconic national parks and a world heritage site. She appreciated that people were listening to each other and reaching recommendations by consensus. The Department of the Interior recently finalized its adaptive management guidelines and the GCDAMP was used as an example of a successful adaptive management program. She said Secretary Salazar is very interested in what goes in this program. She thought it was extraordinary that

60 to 100 people attended the 2-day meeting and listened to the issues being discussed. She thanked everyone for their participation and in making this a successful program.

**Adjourned:** 2:10 p.m.

**Attachment 19** (added 12/8/11): Memo from AS-WS Anne Castle to Ken Salazar Dated Dec. 5, 2011, Subj: Report and Recommendations from the Glen Canyon Dam Adaptive Management Federal Advisory Committee, May 18, 2011, and August 24-25, 2011, Meetings.

Respectfully submitted,

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

### General Key to Adaptive Management Program Acronyms

ADWR – Arizona Dept. of Water Resources	HPP – Historic Preservation Plan
AF – Acre Feet	INs – Information Needs
AGFD – Arizona Game and Fish Department	KA – Knowledge Assessment (workshop)
AIF – Agenda Information Form	KAS – Kanab ambersnail (endangered native snail)
AMP – Adaptive Management Program	LCR – Little Colorado River
AMWG – Adaptive Management Work Group	LRRMCP – Lower Colorado River Multi-Species Conservation Program
AOP – Annual Operating Plan	LTEP – Long Term Experimental Plan
BA – Biological Assessment	LTEMP – Long-Term Experimental and Management Plan
BAHG – Budget Ad Hoc Group	MAF – Million Acre Feet
BCOM – Biological Conservation Measure	MA – Management Action
BE – Biological Evaluation	MATA – Multi-Attribute Trade-Off Analysis
BHBF – Beach/Habitat-Building Flow	MLFF – Modified Low Fluctuating Flow
BHMF – Beach/Habitat Maintenance Flow	MO – Management Objective
BHTF – Beach/Habitat Test Flow	MRP – Monitoring and Research Plan
BIA – Bureau of Indian Affairs	NAU – Northern Arizona University (Flagstaff, AZ)
BO – Biological Opinion	NEPA – National Environmental Policy Act
BOR – Bureau of Reclamation	NHPA – National Historic Preservation Act
CAHG – Charter Ad Hoc Group	NPS – National Park Service
CAPA – Central Arizona Project Association	NRC – National Research Council
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	R&D – Research and Development
CRCN – Colorado River Commission of Nevada	RBT – Rainbow Trout
CRE – Colorado River Ecosystem	RFP – Request For Proposals
CREDA – Colorado River Energy Distributors Assn.	RINs – Research Information Needs
CRSP – Colorado River Storage Project	ROD Flows – Record of Decision Flows
DAHG2 – Desired Future Conditions Ad Hoc Group	RPA – Reasonable and Prudent Alternative
DASA – Data Acquisition, Storage and Analysis	SA – Science Advisors
CWCB – Colorado Water Conservation Board	Secretary – Secretary of the Interior
DBMS – Data Base Management System	SCORE – State of the Colorado River Ecosystem
DOE – Department of Energy	SHPO – State Historic Preservation Office(r)
DOI – Department of the Interior	SOW – Scope of Work
DOIFF – Department of the Interior Federal Family	SPAHG – Strategic Plan Ad Hoc Group
EA – Environmental Assessment	SPG – Science Planning Group
EIS – Environmental Impact Statement	SSQs – Strategic Science Questions
ESA – Endangered Species Act	SWCA – Steven W. Carothers Associates
FACA – Federal Advisory Committee Act	TCD – Temperature Control Device
FEIS – Final Environmental Impact Statement	TCP – Traditional Cultural Property
FRN – Federal Register Notice	TES – Threatened and Endangered Species
FWS – United States Fish & Wildlife Service	TMC – Taxa of Management Concern
FY – Fiscal Year (October 1 – September 30)	TWG – Technical Work Group
GCD – Glen Canyon Dam	UCRC – Upper Colorado River Commission
GCT – Grand Canyon Trust	UDWR – Utah Division of Water Resources
GCMRC – Grand Canyon Monitoring & Research Center	USBR – United States Bureau of Reclamation
GCNP – Grand Canyon National Park	USFWS – United States Fish & Wildlife Service
GCNRA – Glen Canyon National Recreation Area	USGS – United States Geological Survey
GCPA – Grand Canyon Protection Act	WAPA – Western Area Power Administration
GLCA – Glen Canyon National Recreation Area	WY – Water Year (a calendar year)
GRCA – Grand Canyon National Park	
GCRG – Grand Canyon River Guides	
GCWC – Grand Canyon Wildlands Council	
HBC – Humpback Chub (endangered native fish)	
HMF – Habitat Maintenance Flow	

