

Glen Canyon Adaptive Management Work Group (AMWG)

FINAL

Minutes of January 12-13, 1999 Meeting Phoenix, Arizona

Presiding: Stephen Magnussen, USBR (Chairperson)

Recorder: Serena Mankiller, GCMRC Secretary

1/12/99: Convened: 9:30 a.m. **Adjourned:** 4:36 p.m.

1/13/99: Convened: 8:05 a.m. **Adjourned:** 11:57 a.m.

Welcome and Introductions

Stephen Magnussen introduced himself as the Secretary's Designee and Chairman for this committee. He welcomed the committee members, member alternates and visitors to the fourth Adaptive Management Work Group meeting.

Roll Call (*Attachment 1*)

The members introduced themselves and identified whether they were an appointed member or an alternate. A quorum was present on both days and the Chairman declared the meeting to be official. Alternates are authorized to vote and speak on issues as if they were a member. The Chairman welcomed Renne Lohofener, the new USFWS AMWG representative. On January 12, 1999, James Enote stated that he was a temporary alternate for the Pueblo of Zuni. The Chairman had not yet received an official letter and stated that Mr. Enote may participate in discussions but his vote cannot be counted. On January 13, 1999, Mr. Enote produced an official alternate designation letter. The Chairman accepted the designation and Mr. Enote was allowed to vote. The Chairman reminded the committee members to submit alternate letter two weeks in advance of an AMWG meeting. *Post-meeting update:* Lt. Governor Arden Kucate was named the AMWG representative for the Pueblo of Zuni in a letter dated January 20, 1999.

Review/Approval of Agenda: The Chairperson reviewed the agenda dated January 5, 1999, which had been revised and distributed to the AMWG members. Revisions were made to the January 13, 1999 agenda which changed Dave Sabo to the presenter for "Glen Canyon Dam Operational Releases," and "Cultural Resources" presentations were rescheduled to 9 a.m.

Recommendation: On motion duly made, seconded and carried, the agenda was approved.

ADMINISTRATIVE BUSINESS

Approval of July 1998 Meeting Minutes: (*Attachment 2*) Minor revisions were made to the minutes of July 21-22, 1998, and were noted by the members.

Recommendation: On motion duly made, seconded and carried, the draft minutes of the last meeting were approved as revised. The minutes will be finalized.

AMWG Charter Renewal: The Chairperson reported that the Secretary of the Interior signed the AMWG Charter renewal on December 29, 1998, and the Charter is in effect for another two years.

The Charter is scheduled to be renewed biennially.

AMWG River Trip: The Chairman stated that federal members of the AMWG participated in an Interagency Cooperative river trip last summer. The purpose of the trip was for the members to better familiarize themselves with each other away from the usual two-day meeting setting and to discuss AMP, KAS, and GCMRC issues. Issue papers were generated. It was suggested that the entire AMWG go on such a river trip, and it has been scheduled for either May 8-15 or May 15-22, 1999. One AMWG member or their official alternate may participate.

Recommendation: The AMWG decided on the May 15-22, 1999 dates for the river trip. Additional information will be forthcoming from the GCMRC.

TECHNICAL WORK GROUP

Robert Winfree (Chairperson, TWG) reviewed the overall tasks assigned by the AMWG to the TWG at the July, 1998 meeting. The goal of holding fewer TWG meetings was not realized in the past six months due to workload.

TWG Chairperson: Robert Winfree reported that nominations were solicited for election of the TWG Chairperson which is to occur in December each year. The charter requires the chairperson to be an official TWG member. No nominations were received. Issues were identified including chairperson time commitment, funding, affect on his/her regular job, and perceived lack of advocacy effectiveness for the chairperson's own organization while performing the dual role of chairperson and meeting facilitator. The TWG discussed the issues. Possible solutions are being investigated including use of a professional facilitator, and chairperson compensation. The process of conflict resolution also needs to be addressed. The AMWG identified an issue that the TWG may be spending some of its time attempting to address non-technical, policy-type of issues which naturally arise during performance of technical tasks charged to them by the AMWG.

Recommendation: On motion duly made, seconded and carried, the AMWG charged the TWG with "reviewing its structure, evaluating its effectiveness, seeking an outside facilitator and outside rules and deal with the issue of Chairmanship compensation, conflict resolution and decision making." The TWG shall make a recommendation back to the AMWG.

Overview of Activities: Status reports were presented by representatives from the ad hoc groups.

Strategic Plan/Goal of the AMP: Robert Winfree reported that the strategic and annual plans were not approved by the TWG in December 1998 as scheduled. The plans were not included in the 30-day mailing for AMWG approval at this meeting. Instead, a letter of explanation was sent (**Attachment 3**, memo from Barry Gold and Robert Winfree, dated December 11, 1998). The GCMRC continues to operate under its 1997-2002 Strategic Plan which was adopted in September 1997. A problem was identified at the TWG meeting that some members had basic differences of opinion about the purpose, scope, authority and responsibilities of the AMP. These recurrent, unresolved philosophical and policy perception issues hindered plan approval and resulted in failure

to meet the AMWG's deadline. Dr. Winfree previously outlined many of the issues and distributed them to the AMWG (**Attachment 4**, memo from Stephen Magnussen, dated December 29, 1998). Several options were discussed, and the TWG's majority recommendation was to deal with the scope of the AMP issue which includes geographical and operational scope, and then to deal with the other issues through the strategic plan. Two working meetings to be held in February 1999 were scheduled, one for the 2000-2004 Strategic Plan and one for the FY2000 Monitoring and Research Plan. A representative from the Solicitor's Office will be asked to attend the first meeting to provide legal interpretation and advice. Scott Loveless (Solicitor's Office) reminded the group that the AMWG is not a policy-making body; it is assembled to provide recommendations to the Secretary on how to operate the dam. It does not provide direction for program scope to the TWG. It is the Secretary's responsibility to develop policy, request recommendations and provide guidance. The AMWG may request the TWG to provide technical information and assistance. The AMWG identified that it needs to have a clear understanding of its relationship to agency jurisdictions and its role and function as an advisory body.

Mr. Loveless gave a brief overview of the laws which tend to nest within each other. There are two main considerations in the GCPA: the Grand Canyon and the recreation area downstream, and Glen Canyon. Congress said make them work together to the extent possible. Congress has plenary authority under Article 432 of the Constitution regarding U.S. public lands. It passed the GCPA, and the DOI cannot exceed the boundaries of what they are directed or authorized to do. Congress' focus and concern are the resources downstream of GCD and the effects of power operations specifically on those resources, but it was written in broader terms. The Senate Report says the primary purpose of Section 1802 is to prevent damage to downstream resources, principally from the dam's power operations. It recognizes that other reasonable remedial measures may be available to the Secretary by the statement that the Secretary may exercise other authorities under existing law. This means that the Secretary should consider and may implement non-operational measures to address these downstream effects of GCD. The phrase "mitigate adverse impacts" says inherently that there will be some adverse impacts. The direction is to minimize adverse impacts, protect what you can, and improve what you can. The ROD does not limit flexibility in this respect; the focus is still what are the effects of the dam and its operations on the resources downstream. The ROD was selected for the purpose that it appeared to be the best way to handle this. Long term monitoring is part of the GCPA. The ROD is not locked in place, and you are not inhibited by that. The guidance is still to monitor the resources, the effect on downstream resources, evaluate, and determine if the operations under the ROD are appropriate and if they can be refined to improve them. That is the focus of the way the GCPA was written. The EIS is in the ROD. Federal laws authorize or direct certain actions, and inherently they can also prohibit or not authorize certain actions. The GCPA directs the Secretary to operate GCD to protect, mitigate and improve. Section 1809 was added to say that various alternatives to replace lost power generations that may result from changes due to compliance with the GCPA may be investigated. The mandate described it clearly, and the authority is also fairly clear when it says that the Secretary can not only change the operations but do other things with existing authority.

A suggestion was made to develop an electronic meeting format so the AMWG is able to address issues which arise in between its regularly scheduled meetings. The TWG had previously discussed

the practicality of separating future plans into a programmatic strategic plan for the AMP (chapters 1-3), and a technical strategic plan for the GCMRC (chapter 4).

Recommendation: The AMWG charged the TWG to take immediate measures to resolve the problems and issues. Scott Loveless shall assist the TWG Chairperson and Vice-Chairperson in addressing the legal issues. Mr. Loveless shall provide a draft written analysis regarding the legal scope of the AMP process prior to the February 4-5, 1999, TWG AMP Strategic Plan workshop. At this meeting, the TWG will work on the first three chapters of the existing draft 2000-2004 Strategic Plan (dated November 5, 1998). The TWG shall return to the AMWG with a firm recommendation, as well as an analysis of the TWG's structure and how it is conducting its meetings and business. The AMWG cautioned the TWG not to miss future critical deadlines. On motion duly made, seconded and carried, "the TWG should focus on the Strategic Plan for the Adaptive Management Program first using the draft that was developed by the GCMRC, and completing the final draft for review and approval by the next AMWG meeting."

Location of GCMRC: Mark Schaefer (Deputy Assistant Secretary, Water and Science) reinforced the importance to the DOI of this experiment in adaptive management. He relayed a message of appreciation from Patty Beneke (Assistant Secretary, Water and Science) that this program is an example of a successful initiative in the DOI and its success is due to the dedication of time and effort on the part of the AMWG and the TWG. In the past, the GCMRC has reported organizationally to the Office of Water and Science. This was to be a temporary arrangement, and the GCMRC needs to be placed into a permanent organizational location. The Chairman reviewed the history of GCMRC. Barry Gold (Acting Chief, GCMRC) reviewed several options under consideration (**Attachment 5**). There is an immediate need to advertise and select a permanent director for the GCMRC (due to the retirement of L. David Garrett). The new director should be part of the same organization as the GCMRC staff. The permanent organizational location of the GCMRC is the Secretary's decision. Several members voiced opinions, concerns and considerations regarding science-based versus management-based agencies, funding issues, timeliness of completion of work tasks and products, and the original decision contained in the EIS about the intended organizational home. Steve Magnussen asked the members to participate in an unofficial straw vote as a means of soliciting the views of those who did not voice their opinion during the discussion of institutional home. Some AMWG members chose not to participate in the straw vote, and some were concerned about the process. The vote was 17 in support of having GCMRC in Reclamation outside the UC Region; 1 in support of the USGS; 0 in support of NPS; 0 in support of an interagency lead.¹ An official objection to the straw vote was expressed by the NPS at the second day of the meeting (January 13, 1999) regarding the appropriateness of the straw vote. Scott Loveless clarified that if a situation arises that does not require a full recommendation, the Chairman may ask for an informal vote.

State of Natural and Cultural Resources in the Colorado River Ecosystem: 1998 Draft Report

¹Following the AMWG meeting, three letters were sent to the Secretary indicating their opposition to the straw vote and one letter indicated that the member changed his position.

(Rev. 12-9-98): Larry Stevens (GCMRC) briefly reviewed and gave a demonstration of the report now available online at the web site: <http://130.118.161.89/gcmrc/gcmrc.html>. The report was developed by Dr. Stevens and Kirsten Rowell of the GCMRC staff. The TWG was given a copy of the report at its December 1998 meeting, and the GCMRC is receiving comments. This is probably the first major ecosystem which has a current, comprehensive report on the state of its resources available online to the public. A link is available through the GCMRC AMWG/TWG web site. The AMWG gave overall positive feedback, and may submit comments to the GCMRC. Some members desired to be able to print out the report more quickly and easily. The GCMRC will need to investigate options because the report is very large and graphically designed for online interaction.

BASIN HYDROLOGY

Fall Maintenance Flows: Randy Peterson (USBR) stated that he and Ted Melis (GCMRC) had proposed last year to test the release of maximum power plant capacity flows from GCD during a Paria tributary input event (**Attachment 6**). The purpose is to accomplish overbank deposition of nutrient-laden clay and silts at the time they are available. A formal proposal was distributed to the TWG and some comments have been received. The intent is to obtain a more scientific analysis of the proposal and ask the TWG to determine if the proposal should be pursued. The TWG would then make a recommendation to the AMWG at its July 1999 meeting about whether or not to proceed. Concerns exist about young-of-year HBC and if the proposed flow will have much of an effect on the sediment resource.

1999 Forecast/BHMF: (**Attachment 7**) Randy Peterson reported that the current reservoir elevation is approximately 3682 feet (21.6 MAF). Over the last month the Upper Basin received very little precipitation. The forecast for next year's spring runoff has dropped 2.2 MAF to 71% of normal projected for April through July. Basinwide snowpack conditions in the basin range from 50 to 90 percent of normal. For the next 2-3 months, the probability of a BHBF trigger is 10% or less. GCD releases were decreased to 15,000 cfs (average) starting January 11. However, the reservoir is expected to be near full this spring and if the last two weeks in May are cold and wet there is the potential to trigger a BHBF or a spill.

BEACH/HABITAT-BUILDING FLOW

1999 BHBF/Compliance: Tony Morton (USBR) stated that in January 1998, the AMWG tasked the TWG to determine what level of BHBF below 45,000 cfs would take less than 10% of the occupied KAS habitat and thus be acceptable in terms of the BO. TWG's Compliance Ad Hoc Group has determined the incidental take would be less than 10% at a flow of 44,000 cfs. The AMWG agreed that the USBR should seek a Letter of Concurrence from the USFWS for a controlled high flow from GCD (March-April, 2-4 day event of 44,000 cfs), should the hydrologic triggering criteria be met.

Recommendation: On motion duly made, seconded and carried, the AMWG recommended, "based on a recommendation from the TWG, to conduct a BHBF in Water Year 99, between March 1 and

April 30, from 2-4 days, at a magnitude of up to 44,000 cfs. The Bureau of Reclamation will seek a letter of concurrence from the U.S. Fish and Wildlife Service with respect to all endangered species.”

Tony Morton reported that the Compliance Ad Hoc Group has also continued work on evaluating an array of BHBFs between power plant capacity and 90,00 cfs for 1-14 days that would occur between January-July annually. A draft document was received in November 1998 from the GCMRC suggesting what the parameters should include. Input has been received from WAPA and Randy Peterson. Once these have been evaluated and factored in, the NEPA and Section 7 compliance processes will be initiated.

Resource Criteria: (*Attachment 8*) Barbara Ralston reviewed the decision-making process, species of concern, and resource analysis associated with BHBFs and Fall Maintenance Flows. The analysis was presented to the TWG at its December 8, 1998 meeting. The analysis provides a comparison of no action/BHBF action for January-June 1999 (flow scenario #2), incorporating flow objectives and resource areas. USFWS expressed concern that its staffing and workload requirements will not accommodate short turnaround time for consultation on a 44,000 cfs BHBF, with post-BHBF fluctuating flows, between May-July. It may use its discretion to not render a BO for a May release because current timing is less than the required 135 days.

Compliance specialists felt that a more specific definition of the proposed action for the programmatic compliance process was needed. USBR confirmed that compliance will not begin on either action (the programmatic or the 44,000/May-July) until the TWG has defined the post-flood flows.

The TWG met on January 11 and recommended to proceed with developing a science plan for a BHBF and for post-BHBF flow studies, which would be either load following or steady flows, within whatever hydrologically-driven flows are appropriate. The TWG respectfully requests that the AMWG decide for or against moving forward with developing such a plan and that the AMWG be prepared to recommend implementing such a flow if the hydrologic trigger is appropriate for the timeframe March through July. Concern was expressed that March-July in-canyon research is not funded.

Clarification on the motion (contained in “Recommendation” below) was requested on January 13, 1999. The issue was discussed again but the group preferred not to revise the motion. They desired to keep the motion broad, and have the TWG continue its work on designing whatever flows (steady or fluctuating) shall follow the BHBF and then compliance will be pursued. If load following is not done, no additional compliance is needed because the post-flood flows are normal and compliance is not done on them. The management action is the 2-4 day treatment. The TWG may narrow the options as they gather more information. Tony Morton confirmed that the proposed action will be 44,000 cfs, 2-4 days, in May, June or July 1999, with whatever flows follow the BHBF (to be determined by the TWG).

Recommendation: On January 12, 1999, a motion was duly made, seconded and carried with one

dissenting vote. The AMWG recommended, “the TWG and the GCMRC be charged with developing a research plan for an experimental flood and post flood experimental flows contingent on the ability to do good science, get funding and complete compliance and following the triggering criteria (established by the GCMRC and approved by TWG and AMWG).” A clarification was made to the motion: “this applies to March through July.” After discussion on January 13, 1999, the motion remained as stated.

AMP BUDGET AND PROGRAMMING

Barry Gold identified a long term budgeting issue which does not provide the GCMRC with flexibility to keep up with inflation, contractor budget increases, etc. This lack of an inflation indexing method results in a cumulative decline in purchasing power. This impacts GCMRC’s ability to maintain the current level of work effort necessary to meet the information needs of the adaptive management process. The GCMRC inherited an ongoing monitoring and research program that consists of many sequential research projects. It is attempting to connect these to build a long term record to determine how resources have changed in response to dam operations, and what has been learned in the process. The AMWG discussed the issue. Some members voiced the opinion that the budget should be kept flat, some thought an acceptable method of indexing would be appropriate, and some felt that the science and information needs should drive the budget and any increases should be fully justified.

Kurt Dongoske (the Hopi Tribe) identified an issue that in FY99, NAAO funding for tribal participation in the Glen Canyon AMP process has been significantly cut. The tribes do not have funding for these activities. The AMWG should consider or charge the TWG to seek a protected source of funding to ensure continued, long term tribal participation in the AMP process as a line item in the budget. WAPA offered to assist with funding Native American participation. USBR reiterated that this is a shared responsibility with other agencies with federal trust responsibilities. It is important to maintain tribal participation in this process as well as the integrity of the AMWG and the AMP process.

The AMWG federal agency representatives were requested to meet on January 12 and report back to the AMWG on January 13. A suggestion was made that maybe a portion of tribal participation in the AMP funding for FY2000 come out of GCMRC’s Cultural Resources budget. GCMRC felt that the kind of participation required for the AMP process does not fall under the definition of participation in its cultural resource project-driven activities. A suggestion was made that the tribes submit five-year budget proposals which can be evaluated and synchronized with existing budget processes. The tribes need to be able to participate in both the PA Program and the AMP, not one or the other. Participation in the AMP will be determined by each tribe as to what it deems to be the culturally-appropriate way to interact with this process. They need access to technical expertise such as consultants employed to review documents and understand the issues, in addition meeting attendance funding. This topic has not been discussed in the past, and significant discussions still need to occur to ensure future tribal participation. It would be appropriate for the federal agencies and tribes to further discuss these issues and get to a point where tribes have some assurance that there will be some level of funding to maintain their participation. The Chairman asked the federal representatives to meet again on January 13, 1999 and decide on another process.

Recommendation: The group shall hold additional meetings which include tribal representatives and all the federal partners. Charley Calhoun will give a status report at the next AMWG meeting.

Approval of Revised Protocols: (*Attachments 9, 10*) Bruce Moore (USBR) explained the revised budget protocols document and attached chart which arrays three years of the budget process. This is an informational rather than a recommendation item. Please contact Bruce Moore regarding any questions.

GCMRC Draft FY2000 Annual Plan: Barry Gold (GCMRC) stated that the FY2000 plan was not recommended for adoption by the TWG at its December 8, 1998 meeting. (This topic is further discussed in these minutes under "Strategic Plan/Goal of the AMP.") The TWG did approve the bottom line budget figures for the individual program areas and wished to maintain flexibility to shift monies between the programs areas. A letter from Drs. Gold and Winfree was distributed to the AMWG on December 11, 1998 (refer to Attachment 3) which reviewed the status of the GCMRC 2000-2004 Strategic Plan and the FY2000 Monitoring and Research Plan. The GCMRC needs to release its RFPs in March or April 1999 to maintain continuity in monitoring and research activities. It is critical that these RFPs be released in a timely manner, and the TWG respectfully requests the AMWG delegate the authority to the TWG to implement the FY2000 Plan after it has reviewed and approved more detailed work statements at its February 23-24, 1999 meeting.

Recommendation: On motion duly made, seconded and unanimously carried, the AMWG recommended, "to delegate the TWG to work with GCMRC to finalize, then review and approve the Plan so that the RFPs can be issued." (Note: in this motion, "the Plan" refers to the GCMRC FY2000 Monitoring and Research Plan, Draft 2 dated November 20, 1998 as revised; "RFPs" refers to GCMRC FY2000 Request for Proposals.)

FY2001: Bruce Moore explained that FY2001's budget process begins in March 1999. Estimates will be presented to the AMWG in July and they will have time to review and interface with the budget process. The process is not as time constrained as previously thought. The USBR will submit AMP budget estimates with the revenue budget in September 1999 to the DOI.

Conceptual Model: Barry Gold gave a status update on the conceptual model efforts. Phase I has produced a final version of the model and a user's guide. A final report will also be generated. A number of TWG members have begun to use the model. Additional work will be done in 1999 with the modelers to address concerns raised by some TWG members, and to update elements of the model with data that have not yet been incorporated. A presentation will be made by Josh Korman (Ecometrics, Inc.) at the AMP science symposium in February 1999. Dr. Gold plans to give the AMWG a demonstration in July 1999 to show how the model can aid decision making in the AMP process. It is planned to utilize the model as a framework for synthesizing current knowledge and understanding of the system, and to help identify where informational data gaps exist to enable better work prioritization for long term monitoring and research. The model can also assist in development of hypotheses that can be tested when an experimental flood opportunity arises.

Annual Report to Congress: Bruce Moore stated that USBR sends Congress an annual report on

dam operations for the year just completed and the upcoming year. Input received from the AMWG was incorporated into last year's report. Bruce Moore and Barry Gold are working on the current draft report which is behind schedule. They plan to finalize the draft, send it to the AMWG for comments as soon as possible, and incorporate those comments appropriately. The report will be sent to the Washington office by the end of February 1999 for submission to Congress. The AMWG felt the suggested process for this year was acceptable and Bruce Moore and Barry Gold will proceed accordingly. The plan will be prepared on schedule next year.

Science Symposium: Ted Melis (GCMRC) announced that the GCMRC will host a "Glen Canyon Dam Adaptive Management Program Colorado River Ecosystem Science Symposium." The symposium will be conducted February 16-17, 1999, at the GCNP South Rim, Shrine of the Ages auditorium. The purpose of the symposium is for GCMRC-contracted researchers to review and share their findings gathered from the beginning of their 1998 contracts to present. A series of technical presentations and panel discussions will be held. More details will be forthcoming from the GCMRC. The AMWG, TWG and interested public may attend.

NRC: Barry Gold stated that GCMRC has a contract with the National Research Council to review GCMRC's science program and scope, institutional home, staffing, resources and other issues. A final report is due in May 1999. Jim Wescoat (NRC) stated that NRC members have contacted most of the TWG and the AMWG to discuss the strategic plan and how it responds to the AMP. GCMRC is interested in obtaining a briefing from the NRC on preliminary findings it can release prior to May because some outstanding issues may be decided before then. It is not the NRC's policy to release pre-report information, but it is willing to assist the GCMRC by providing a short feedback session (no discussion) at its general meeting in Phoenix in February 1999. The session will cover some of the NRC's questions, concerns and observations.

Glen Canyon Dam Operational Releases: Charley Calhoun stated that the AMWG has previously discussed GCD operational release events that occurred in April 1998. The AMWG has discussed issues regarding interpretation of the ROD requirements specifically relating to the 1500 cfs downramp. At the July 1998 AMWG meeting, WAPA and USBR made a commitment to review monitoring and measurement of discharge. They reviewed dam and power plant operations in an attempt to avoid further misunderstandings and reach agreement on power plant operations which more completely address the AMWG's and TWG's concerns. Dave Sabo reviewed the history of dam releases since the early 1990s and prepared a paper which includes emergency exception criteria from the ROD and regulation under normal operations. WAPA uses a single conversion factor when prescheduling the power plant. This requires a translation of megawatts into an hourly schedule. This single factor does not take into account other conditions, and the actual releases are off +/- 7%. Some of the other conditions which have an effect include lake elevation and efficiency variability of the generators. Some uncertainty exists with the electrical measurement done by the SCADA system versus the actual turbines output measured by the Accusonic system, and that data is rather new and they are not yet confident about how accurately it records dam output. These variabilities have an effect on the 1500 cfs downramp criteria. They will decrease the bandwidth to 1450 to try to avoid violating the 1500 cfs downramp. They will investigate shifting regulation as much as possible to Aspinall and Flaming Gorge. WAPA is trying to be a good steward for the

resource and recognizes its legal responsibilities and environmental implications. CREDA's board members have strong concerns about the additional 50 cfs downramp issue from economic and legal perspectives, but will pursue endorsement of WAPA's report at the upcoming CREDA board meeting.

GCMRC is receiving SCADA data but wants to link web sites and have access to Accusonic data. This is to achieve its goal to make unit value data from the USGS streamflow sites downstream of the dam available through a link between GCMRC's and USGS' web sites. Charley Calhoun will investigate if the Accusonic data can be made available. A link to WAPA's release information is available through a link on the GCMRC AMWG/TWG web site.

Glen Canyon Science Advisory Board: Barry Gold reported that GCMRC did not receive a sufficient number of applicants for a competitive roster. The issue has been discussed with the TWG. GCMRC is proposing to reevaluate the amount of compensation being offered to the candidates and conduct a more targeted recruiting effort. A list of candidates will be compiled and contacted to determine interest in participating on the independent review panel which was recommended in the EIS. The SAB is intended to be an advisory body as opposed to the NRC which is a reviewing body.

CULTURAL RESOURCES

Programmatic Agreement: Nancy Coulam reported that the PA Group is converting the draft HPP into an action plan/strategic plan. The HPP is a requirement in the Secretary's Standards on Preservation Planning. The plan will cover 2000-2004, and is scheduled for completion by the end of 1999. Consultation will be obtained throughout the year and the plan will be adopted. The annual report/plan will include reporting requirements, public outreach and information sharing. Several agencies have submitted their annual accomplishments for inclusion in a summary plan which is distributed to the PA Signatories. This process will be broadened and a short statement will be incorporated into the annual AMP Report to Congress.

2000, 2001 Budget: Nancy Coulam stated that the PA Group has been working with the TWG on the PA budget. They have between \$1,000,000-\$2,000,000 per year of needs. Due to the request for a flat budget, through 2004 it is planned to keep the budget at or under \$1,000,000 per year as a cost containment goal. Concern was expressed that combining USBR's biological and cultural compliance budgets may cause competition for funding, and the cultural resources budget should request the funding it needs rather than be constrained to a flat budget. Appropriated NAAO dollars for tribal participation for 1999 were cut to zero recently, but the PA shall absorb FY99 costs. There are plans to pursue participation by tribes which are not currently represented on the AMWG, especially the Havasupai. The Pueblo of Zuni expressed concern that tribes that have done long term monitoring throughout history prior to the establishment of science efforts must disproportionately struggle for funding to participate in this process. There seems to be a lot of resources to do science, but the tribes must continue to make concessions and compromises. The group was reminded that tribal participation in this process is essential not only for their own

interests but also to help those accountable to meet their legal responsibilities. Ms. Coulam stated that tribal monitoring is funded under the PA program for cultural resources. However, it is constrained by regulations defining properties or sacred sites which are eligible for funding under those compliance programs. Over the next couple of years, the group plans to find out if it may review and revise DOI's regulations, guidance and standards documents to include other important properties which do not currently meet the eligibility criteria.

GCMRC: Ruth Lambert gave a status update on four cultural resources projects and one recreation project, which were approved in 1998. The total budget for the cultural resources program for FY99 is \$340,000. Conceptual Modeling research projects \$12,400. Protocol Assessments \$30,000. GCNRA terrace photographic monitoring project \$14,000. These projects are funded a year out and have gone through review and an RFP process.

- Cultural Resource Data Synthesis - one year project, extended from 1998, completion in FY99 (\$59,000)
- Flow Model Deposition (USGS) - two year project, completion in FY2000 (\$140,000)
- Geomorphic Hypothesis Testing - two year project
- Hopi Ethnobotanical - two year project, completion in FY99 (\$100,000)
- Recreational User Preferences - completion in FY2000 (\$70,000)
- Conceptual Modeling (\$30,000)

GCMRC-contracted researchers, participating PA parties, and Richard Hereford (USGS) will give presentations at the March 1999 TWG meeting.

GCMRC's view on funding tribal participation in the AMP out of its Cultural Resources budget is that a provision is made for tribes to participate within a project format. All of GCMRC's activities funded in any resource area are project driven. In the cultural arena, tribal participation is associated with a project. Tribal participation in the AMP is different because it is participation in meetings and a process versus a project.

A comment was made that there is an ongoing national recreational lakes study effort. There is a FACA process in place, a web site, and a final report was presented recently at a meeting in Washington, D.C. CREDA submitted funding comments which expressed concern about potential overlap with existing processes such as this one. The final report recommends a five-year process nationwide to look at recreational issues related to federal lakes.

AMP/PA Integration: Kurt Dongoske with the Hopi Tribe said he and Michael Yeatts wrote an AMP/PA Integration paper (**Attachment II**), December 11, 1998 AMWG mailing). It explains the scope, differences and commonalities of the two separate legal programs: the GCD PA program on cultural resources and the GCMRC cultural resources program. The discussion paper proposes a process to integrate the functioning of the two programs, based on work proposed. The TWG respectfully requests that the AMWG accept the discussion/information paper as part of the entire AMP plan.

Recommendation: On motion duly made, seconded and unanimously carried, the AMP/PA Integration document was adopted as a discussion paper.

GCMRC STAFFING & 1998 EXPENDITURES

GCMRC Staffing: GCMRC has a total of 26 employees filling 22 FTEs. One of those FTEs currently resides in the USGS (Dave Garrett's FTE which is currently vacant), and 21 FTEs in USBR. The staff is comprised of 11 permanent, 6 term, several students, and temporary employees, as well as some vacant positions.

1998 Expenditures: Barry Gold reviewed a three year array of GCMRC's budget figures (**Attachment 12**). Some FY98 activities were deferred into FY99 to avoid going over budget in FY98, and those activities will need to be completed in FY99. Taking into account obligated funds, overall GCMRC underspent its FY98 budget by \$3,000. The FY99 budget could come in as much as \$200,000 over budget. GCMRC will continue to work with the TWG to find cost savings to avoid going over budget in FY99. In FY2000, \$7,600,000 had been recommended due to a decrease in the Lake Powell Program budget of \$325,000. These activities are being funded by other means. The remote monitoring technologies budget increased. Figures "above the line" represent the AMP budget/agency responsibilities, and "below the line" are GCMRC figures and are controlled by the GCMRC.

LAKE POWELL

Scope of Work and Funding: Norm Henderson (NPS) gave a brief history of the TWG's work on the Lake Powell program. At its July 21-22, 1998 meeting, the AMWG tasked the TWG to assess the MO's and IN's and the Lake Powell five-year plan, recommend a delineation of downstream effects and other effects, and recommend appropriate program budget and funding methodology. A Lake Powell Program Split Ad Hoc Group was formed, and has not yet completed the entire task. A framework was developed to separate the MO's and IN's into categories. A process for developing an integrated water quality program was reviewed (**Attachment 13**). GCMRC will develop a long term research program based on the splits. USBR and the LP Group will review and comment. GCMRC will then revise the plan based on those comments convene a peer evaluation panel (PEP) to review the program. The TWG will review the plan for recommendation and adoption. It is planned that the AMWG will approve the plan at its July 1999 meeting. The proposed budget contained in the document would be submitted to Reclamation for final implementation into their O&M process. The \$325,000 has been removed from the AMP budget. It is intended to be moved into the quality of water item in the USBR O&M budget. This will occur after the tasks are completed of identifying the IN's and developing and adopting a program. The dollar figure is subject to change based on those results.

Work remains to be completed to identify and split out the Lake Powell IN's which are to be addressed by the monitoring and research activities in Lake Powell. The TWG will review those splits and recommend them for adoption. Mr. Henderson reviewed the white, gray, and black resource effects categories (**Attachment 14**) as follows:

White Areas: those MO's & IN's that relate to downstream effects and are conducted downstream of GCD. These are GCMRC or GCMRC-contracted activities, its protocols apply, and they are funded by the AMP budget.

Gray Areas: those MO's & IN's that relate to downstream effects but are conducted within Lake Powell. These were identified by the Lake Powell Assessment, conducted by GCMRC or its contractors, and its protocols apply. They would be part of the AMP and use AMP procedures, but funded by BOR's O&M budget or other sources (not necessarily the AMP budget). There is agreement to investigate other funding categories, but in the near future funding will be through the O&M budget. The scope of work will be developed by the GCMRC and coordinated with the USBR and the Lake Powell Group. A PEP review will be conducted before submission to the AMWG & TWG for approval. They will be submitted to the AMWG & TWG for recommendation & adoption.

Black Areas: MO's and IN's within Lake Powell that are affected by dam operations but generally stay within the Lake Powell environment. They are not part of the AMP, but will still be listed as an "information needed" category. This enables AMWG to review and make decisions regarding issues such as selective withdrawal (which may have an effect on lake fisheries). Activities would be funded by USBR, possibly members of the Lake Powell Group, or other sources. The MO's and IN's are retained in the non-program/information-desired category. GCMRC protocols may not apply because work can be done by different individuals. Results will be shared with the GCMRC and the AMWG.

Recommendation: On motion duly made, seconded and carried, "the AMWG accepts this document as delineating a methodology for which the white, gray, and black areas will be funded." A motion to amend was made, seconded and carried "and incorporate the Technical Work Group's recommendations outlined in the document 'Process for Developing an Integrated Water Quality Monitoring Program for Lake Powell.'" The AMWG requested that dates be added to the steps outlined in this document.

GLEN CANYON DAM TEMPERATURE CONTROL DEVICE (Dave Trueman, USBR)

Dave Trueman distributed copies of the draft EA. The decision facing USBR is whether or not to proceed with temperature control. Implementation depends on whether there are significant potential impacts on downstream resources. If in the review process this is found, it will be evaluated if the effects can be mitigated, avoided or reversed. If it is found that endangered fish will benefit with temperature controls and all other resources receive neutral or positive impacts, USBR will probably recommend the action alternative. The AMWG should review the EA regarding technical issues which should be evaluated by the USBR, and opinions on whether or not the analysis is correct. Please respond in writing to the USBR and comments will be evaluated and responded to in writing in the NEPA process. A final EA will be produced, and a decision made on how to proceed. At that time, USBR will decide whether to take the "action" or the "no action" alternative. A third alternative is an EIS. If comments are received that indicate other resources will be negatively impacted, the USBR will see if those impacts can be avoided, mitigated or reversed.

If so, the USBR will probably proceed with the action alternative. If environmental tradeoffs are warranted to benefit the native fish, then an EIS might be conducted. Concerns were voiced about impacts to trout fisheries above and below the dam, and recreation interests support an outside scientific review. Overall, the amount of warm water to be released from the reservoir is rather small, and the two major resources which may be impacted are believed to be protected. The group discussed funding, including the possibility of reducing other monitoring priorities to stay within the existing budget, or increasing GCMRC's monitoring budget. A question arose if there are plans for an outside science panel to review the EA. There are no such plans. Concern was expressed that input is being solicited mainly from the public and other interested parties. This review process may not produce adequate scientific review. Barry Gold suggested using GCMRC's established external peer review process, but staying within USBR's established schedule may be problematic. Tony Morton (USBR) stated that a recommendation can be made to extend the comment period on the EA to allow time for scientific peer review. Some members felt that since the law is being complied with by the USBR, additional scientific review of USBR's work product is not needed. Some members felt that it is not within the purpose or budget of the AMWG committee to change the process in place, and the agencies are afforded the opportunity to give their input during the comment period. Some members felt that management actions which affect the dam, the river, its resources and endangered species are well within the purview of the AMWG to ensure that adequate scientific review occurs. There are also future obligations contained in the document involving the GCMRC and the AMP.

Recommendation: A first motion was duly made and seconded: "It is to the benefit of all of the processes of this group to have a peer review group panel of experts to review the work and pass some level of judgment on it." An amendment to the motion was made and seconded: "if time constraints are such that a panel cannot come in with results so that it can be discussed by the TWG before the deadline, that we make a request through the NEPA process for an extension of the comment period in order to do that." A substitute motion was made and seconded, "to authorize the USBR to move ahead with this document as they have proposed and that we see what the comments are, and if the comments are significant enough that it requires an EIS or additional studies, certainly that is what is going to happen." A second motion was duly made and seconded to "retract any motions that are on the floor" Said motion carried (*Vote: In Favor: 8; Opposed: 4*). **All motions were stricken.** The AMWG will make written comments to the USBR as part of the public comment process.

Post-meeting point of order: it was identified that the word "authorize" in the above substitute motion should have been "recommend." The law states that a FACA body (the AMWG) can make recommendations on government actions, but cannot authorize them. (Please note that the final decision was to strike the motion.)

WRAP-UP

Action Items/Additional Assignments: Action items which were assigned during the meeting and their due dates include:

- TWG Structure and Effectiveness Evaluation; Chairperson Compensation (July 1999)
- AMP Strategic Plan - final draft for AMWG review (July 1999)
- Fall Maintenance Flows - scientific analysis of the proposal; determine if the proposal should be pursued; vote; recommend to AMWG whether or not to proceed (July 1999)
- Native American Participation in AMP - federal agencies and tribes meet to determine future funding - C. Calhoun to give status report or decision (July 1999)
- GCMRC FY2000 Monitoring and Research Plan - TWG to work with GCMRC to finalize, review and approve the plan (February 1999)
- Report to Congress - B. Moore & B. Gold to finalize the draft; obtain AMWG comments as soon as possible; incorporate the comments appropriately (ASAP)
- Accusonic Data Availability for GCMRC Web Site Linkage - C. Calhoun to investigate availability of data (due date not specified)
- Process for Developing an Integrated Water Quality Monitoring Program for Lake Powell - add dates to the steps outlined - N. Henderson (due date not specified)

Next Meeting Dates and Locations: The next meeting will be July 21-22, 1999, at the Embassy Suites in Phoenix, Arizona.

Possible Agenda Items for Next Meeting:

- Native American Funding for Future AMP Participation (C. Calhoun)
- AMWG River Trip Review (GCMRC)
- AMP Strategic Plan - final draft for AMWG review (TWG Chairperson)
- GCMRC FY2000 Monitoring and Research Plan - update (GCMRC)
- TWG Structure and Effectiveness Evaluation (TWG Chairperson)
- TWG Chairperson Election Results (TWG Chairperson)
- New Director of GCMRC (AMWG Chairperson)
- Location of GCMRC (AMWG Chairperson)
- Conceptual Model Demonstration - an aid to AMP decision making process (B. Gold)
- Report to Congress - update or briefing (B. Moore)
- Science Symposium; Abstracts Document - update (GCMRC)
- NRC Final Report on GCMRC (GCMRC)
- SAB - Recruiting Efforts (GCMRC)
- Lake Powell - AMWG approval of long term research program (N. Henderson)
- TCD - update (USBR)
- Fall Maintenance Flows - recommendation from AMWG (R. Peterson/T. Melis)

Public Comment: The Chairman requested comments from the public at the end of major topics. Any comments made are contained in the text of these minutes.

Adjourn: There being no further business, the Chairman adjourned the meeting at 11:57 a.m. on January 13, 1999.

Respectfully submitted,

/s/

Serena Mankiller, GCMRC Secretary

Key to Adaptive Management Program Acronyms

ADWR - Arizona Department of Water Resources

AF - Acre Feet

AGFD - Arizona Game & Fish Department

AGU - American Geophysical Union

AM - Adaptive Management

AMP - Adaptive Management Program

AMWG - Glen Canyon Adaptive Management Work

Group

AOP - Annual Operating Plan

BA - Biological Assessment

BE - Biological Evaluation

BHBF - Beach/Habitat-Building Flow

BHMF - Beach/Habitat Maintenance Flow

BHTF - Beach/Habitat Test Flow

BIA - Bureau of Indian Affairs

BO - Biological Opinion

BOR - Bureau of Reclamation

CAPA - Central Arizona Project Assn.

cfs - cubic feet per second

CRBC - Colorado River Board of California

CRCN - Colorado River Commission of Nevada

CREDA - Colorado River Energy Distributors Assn.

CRSP - Colorado River Storage Project

CWCB - Colorado Water Conservation Board

DBMS - Data Base Management System

DOI - Department of the Interior

EA - Environmental Assessment

EIS - Final Environmental Impact Statement

ESA - Endangered Species Act

FACA - Federal Advisory Committee Act

FEIS - Final Environmental Impact Statement

FRN - Federal Register Notice

FWS - United States Fish & Wildlife Service

FY - Fiscal Year (Oct 1 to Sept 30 each year)

GCD - Glen Canyon Dam

GCMRC - Grand Canyon Monitoring and Research Center

GCNP - Grand Canyon National Park

GCNRA - Glen Canyon National Recreation Area

GCPA - Grand Canyon Protection Act

HBC - Humpback Chub (endangered native fish)

HMF - Habitat Maintenance Flow

HPP - Historic Preservation Plan

IEDA - Irrigation and Electrical Districts Association of Arizona

IN - Information Need (stakeholder)

IT - Information Technology (GCMRC program)

KAS - Kanab ambersnail (endangered species list - snail)

KAWG - Kanab Ambersnail Work Group

LCR - Little Colorado River

LCRMCP: Little Colorado River Multi-Species

Conservation Program

MAF - Million Acre Feet

MA - Management Action

MO - Management Objective

NAAO - Native American Affairs Office

NAU - Northern Arizona University (Flagstaff, AZ)

NEPA - National Environmental Policy Act

NGS - National Geodetic Survey

NHPA - National Historical Preservation Act

NPS - National Park Service

NRC - National Research Council
O&M - Operations & Maintenance (USBR
funding)
PA - Programmatic Agreement
PEP - Protocol Evaluation Panel
Powerplant Capacity - 31,000 cfs
Reclamation - United States Bureau of
Reclamation
RFP - Request For Proposals
RPA - Reasonable and Prudent Alternative
SAB - Science Advisory Board
Secretary('s) - Secretary of the Interior
SWCA - Steven W. Carothers Associates
TCD - Temperature Control Device (for Glen
Canyon Dam water releases)
TCP - Traditional Cultural Property
TES - Threatened and Endangered Species
TWG - Glen Canyon Technical Work Group
UCR - Upper Colorado Region (of the USBR)
UCRC - Upper Colorado River Commission
UDWR - Utah Division of Water Resources
USBR - United States Bureau of Reclamation
USFWS - United States Fish & Wildlife
Service
USGS - United States Geological Survey
WAPA - Western Area Power Administration
WY - Water Year (a calendar year)