

Technical Work Group Meeting
Phoenix, Arizona
November 13, 2001

Presiding: Kurt Dongoske

FINAL

Committee Members Present:

Robert Begay, Navajo Nation
Kerry Christensen, Hualapai Tribe
Dave Cohen, Trout Unlimited
Bill Davis, CREDA
Brenda Drye, So. Paiute Consortium
Norm Henderson, GLCA
Amy Heuslein, BIA
Nancy Hornewer, USGS
Rick Johnson, Southwest Rivers
Matt Kaplinski, GCRG

Robert King, UDWR
Phillip S. Lehr, Colo. River Comm./NV
Don Metz, USFWS
S. Clayton Palmer, WAPA
Bill Persons, AGFD
Randall Peterson, USBR
Nikolai Ramsey, GCT
D. Randolph Seaholm, CWCB
Robert Winfree, GRCA
Micheal Yeatts, The Hopi Tribe

Committee Members Absent:

Perri Benemelis, ADWR
Wayne Cook, UCRC
Jonathan Damp, Pueblo of Zuni
Lloyd Greiner, UAMPS

Christopher Harris, CRBC
John Shields, WY State Engineer's Office
John Whipple, NM Interstate Stream Comm.

Alternates Present:

Suzette Homer
Leslie James

For:

Jonathan Damp, Pueblo of Zuni
Lloyd Greiner, UAMPS

Other Interested Persons:

Mary Barger, WAPA
Gary Burton, WAPA
Lew Coggins, GCMRC/USGS
Nancy Coulam, USBR
Steve Gloss, GCMRC/USGS
Barry Gold, GCMRC/USGS
Vickie Kieffer, GCRMC/USGS

Dennis Kubly, USBR
Ruth Lambert, GCMRC/USGS
Lisa Leap, GRCA
Mike Liszewski, GCMRC/USGS
Ted Melis, GCMRC/USGS
David Orr, Living Rivers
Joe Shannon, NAU

Recorder: Linda Whetton, USBR

Meeting Opening and Administrative Items

Convened: 9:30 a.m.

Welcome and Administrative

Kurt Dongoske welcomed the TWG members, alternates, and guests. All introduced themselves. A quorum was established and attendance sheets were distributed (*Attachment 1*).

Review of Action Items:

2. Status on TWG Cultural Resources PEP Ad Hoc Group Issue Paper - Mary Barger said the paper was sent out about three weeks ago. She asked for comments within the next two weeks and then it will be finalized and sent to the TWG. It should be ready for review before the next TWG meeting.
1. Gary Burton said he didn't receive very many comments. The small group prepared a set of definitions that are contained in the INs document which was distributed at this meeting.
2. Clayton said he will provide copies of the Emergency Response Criteria at tomorrow's meeting.

Rick Johnson said he noticed two other action items from the last TWG meeting and asked for updates on those:

1. In reference to the Kanab ambersnail report, the status of the taxonomy. Barry said a report would be given at tomorrow's meeting.
2. On page 5, item 4, status on the science advisors report. Barry said the report was distributed at the INs Workshop as part of the background information for working on the INs.

Matt Kaplinski said he put copies of the Sediment Ad Hoc Group Report on the back table and hopes to finalize the recommendations at tomorrow's meeting. He asked the members to review and bring concerns to him.

Approval of Draft Minutes for Sept. 6-7, 2001 meeting.

The members offered the following corrections:

- Page 8 - include more language from discussion on AMP 2003 budget and PEP recommendations because the 2003 budget is based on PEP recommendations.
- Page 8, under the second motion, add ad hoc members for clarification.
- Page 9, under "ongoing monitoring", line 4, it should read because the plan is not
- Page 14, last paragraph, change to Automatic Generation Control
- Page 14, GC Releases should be 2001 - 2002

ACTION: Linda will make the necessary additions/corrections and the revised minutes will be put on the agenda for approval at the next TWG Meeting.

TWG Calendar for FY 2002 - Kurt said he met with Barry and Randy about scheduling TWG meetings throughout next year to accomplish some of the tasks in order to help GCMRC meet their timelines for developing work plans and budgets. They questioned whether the TWG should meet for one and a half days or two full days and use a half day for science updates. With longer meetings perhaps the frequency of meetings could be reduced. Kurt asked Barry to talk about what he needs from the TWG in order to complete GCMRC assignments.

Barry said the issue came up because it appears the TWG is meeting more frequently and he wondered if things were being scheduled in the most efficient manner. He thought the TWG might want to schedule 2-3 day meetings relative to budget, development of annual plans, information received, and consideration of scheduled AMWG meetings. There also appears to be more work going into ad hoc groups and that by meeting for two full days, the morning of the first day or afternoon of the second day could be used for some of the ad hoc groups to meet rather than having to meet at other times. He said he was trying to be more efficient especially since a lot of the ad hoc groups are being formed around science activities. With more information coming back, there isn't enough time in the TWG meetings to have in-depth discussions.

Randy added that the feedback time has been so short that there really hasn't been enough time to digest an issue and make a purposeful decision. By separating the meetings and giving enough time for discussions and then collapsing all the ad hoc group meetings, there would be more time to do that.

Concerns from members:

- Look at current status of ad hoc groups and the GCRMC calendar relative to time frames for completing/submitted reports.
- If issues came up during a TWG meeting, ad hoc members might not be prepared to deal with those items after a TWG meeting because there may be things they need to consult with their agencies or organizations.
- A lot of the members serve on two or more ad hoc groups so it may be difficult for them to decide which ad hoc meeting to attend.

- Need to look at budget sequencing again and time frames for getting budget approval from AMWG.
- Include a calendar in the TWG mailing packets.
- Concern with flight schedules in light of new security measures (additional check-in time).
- Consider scheduling next two meetings for 2 days on a trial basis and re-evaluate.

Kurt said he would like to get a schedule set with clear objectives on what is to be accomplished at

each meeting. He distributed copies of a draft calendar (*Attachment 2*) and asked the members to review it and be prepared to discuss at tomorrow's meeting.

Legislative Updates. Randy informed the members that if they were to log on to <http://thomas.loc.gov> and do a search for "energy" they would get about 50 bills that have been introduced, energy being one of the ties to Glen Canyon operations. Most of those bills have been added to the comprehensive energy package. The bill that had a 3 or 4 digit house tracking number in the Spring has now been renamed H.R. 4. It encompasses everything about conservation, alternative energy, and there is still some language regarding hydropower but the bill is much broader than it was a year ago. He doesn't think the language has changed on hydropower and basically calls upon the Secretary of Interior to make an analysis of the federal hydropower facilities under her jurisdiction of ways in which the capacity could be increased and report back to Congress.

Approval of the Information Needs. Barry said Randy would go over some of the overarching issues that were developed following the workshop on Oct. 22 and go through some of the details. He said there were some changes made to the definitions of core monitoring, effects monitoring, and research information needs. He went through and did a redline/strikeout version incorporating all the comments that were in the 102-page table that was used at the workshop and forged a final draft. He reminded the members that goals 7, 8, 9, and 11 were completed at the workshop.

Randy said at the last meeting quite a bit of time was spent talking about overarching philosophy or political issues and so a small group was tasked to re-define the definitions that were introductory to the INs. The group met and found that if they took the politics out of the equation, resolving the definitions issue was fairly easy. The definitions included are what the group came up with. There was no charge or direction on how to solve the politics process and so a few of the members talked about that issue. Randy passed out a diagram (*Attachment 3*) of the Adaptive Management Program. He explained that prior to the EIS, there were some conditions both in the canyon and with respect to dam operations and what the EIS and ROD did was make a selection by the Secretary of the Interior. In addition, the GCPA also authorizes other authorities to be used in contributing to the preservation or protection of park values. These can be some of the physical activities and could include non-native fish control, the TCD, as the GCPA house language talk about, the report language, the stabilization of beaches, park management issues, etc. They found that the contribution the dam makes to the park values is part of the equation but the other authorities also contribute to that equation as well.

Randy directed the members to look at the second page and said the park values become the focus of this program as well as the focus of the GCPA. The Solicitor has determined that the NPS is the group to identify those park values through their management plans. The NPS mandates seem to push toward retention of natural ecosystems but there are other things that factor in and human intervention and the construction of the dam has dramatically altered the achieving of that goal. These values should be the basis for determining the target levels for the MOs and those target levels should be reasonable, achievable, and work together. When we get to the point we are doing the things that we thought would produce a certain result, we can then look at the canyon and see if that result exists. In some

ways the EIS ROD was that very process where they thought that by doing these things right here, we would have a certain effect and now five years down the road, we are looking at the effect and trying to decide if it worked or not. Those targets are essential because that will then really form the picture and will give meaning to the MOs. The MOs are so vague that the targets could dramatically affect the meaning of the MO just on the selection of a numerical target value.

Bob Winfree said that often when discussing the targets, they lead to concerns about whether the target should be something more or less than, identical to NPS targets for resources, and do they reflect the values for which the NPS was established. He thought it would help if everyone was working from the same starting point and passed out copies from the NPS Strategic Plan and other documents (*Attachment 4*) so the TWG could see the different approaches the NPS uses, what the non-negotiable points are, and the key values which Congress will not allow them to bend.

Randy suggested putting a small group together with assistance from the GCMRC to discuss the concerns, bring their findings back to the TWG, and then take to the AMWG.

MOTION: Form a TWG small group to develop MO targets or the process to develop the MO targets within the existing framework and flesh out the underlying issue, e.g., vision, MOs in or out of AMP, and who pays.

Motion seconded.

Discussion: None

Public Comments: None

Dennis Kubly: I wanted to follow up on something Matt said awhile ago. I assume there is nothing here that precludes scientists from being brought into the discussion by this small work group because the uncertainty that he reflected on that it is an impediment to reaching targets can be alleviated by bringing in expertise. That's where you bring in the scientists to work with management. Does everybody pretty much understand that is the case, this is not exclusive of the people doing the science?

Nancy Hornewer: Will there be someone from the Park involved in this?

Call for question.

Voting: Yes = 19 No = 0 Abstained: 0

Motion passed.

Volunteers:

Paul Barrett/Don Metz

Robert Begay

Kerry Christensen

Wayne Cook

Bill Davis

Barry Gold (GCMRC)

Norm Henderson

Rick Johnson

Phil Lehr

Clayton Palmer

Bill Persons

Randy Peterson (Chair)

Nikolai Ramsey

Randy Seaholm

Bob Winfree

Mike Yeatts

The first meeting will be scheduled in early December.

Barry said the GCMRC has been working on a set of articles reporting on the findings from the 1996 flood experiment as a special invited feature in Ecological Applications. He distributed copies of the article (*Attachment 5*).

Aquatic PEP Review Presentation - Steve Gloss introduced Mike Bradford who was the chairperson for the Aquatic Protocol Evaluation Panel. Mike is a research scientist and shares a joint appointment between the Canadian Department of Fisheries and Oceans and the School of Resource and Environmental Management at Simon Frazier University. He is a native of British Columbia and did his undergraduate and Master's work at Simon Frazier and then went to McGill University to do his doctoral work. Mike has worked extensively in fresh water fish population dynamics, family habitat relationships, and adaptive management programs as they pertain to large rivers. He had a group of five or six other scientists assisting him in this panel.

Mike said the panel was convened in May 2001 and the bulk of the panel's activities consisted of a trip down the Colorado River with 8-10 other people who were involved in both logistics of the trip and had some experience with various elements of the aquatic resources program. He proceeded to make with an overhead presentation (**Attachment 6a**) in conjunction with his report (*Attachment 6b*).

Barry asked who wanted to be on the ad hoc group to review the Aquatic PEP Report. The following individuals volunteered:

Gary Burton
Bill Davis
Steve Gloss
Rick Johnson
Dennis Kubly (Chair)
Bill Persons

Discussion of Information Needs - Barry informed the members they were sent the final draft of the INs (*Attachment 7*) in the package mailed on November 2. He said he would like the TWG to go through as much of the document as possible and focus on substantive issues. He said the other thing that occurred afterwards and is reflected in the document is that the small group went away and worked on definition of the information needs categories and came up with a core monitoring information need, definition of effects monitoring, and then research information needs. He then took all of the comments on Goals 1-6 and 12 and tried to adjudicate between all the differing comments and put them in a consistent framework. Since this was the first time the group has seen the definitions, he suggested starting with those. He said the goal today is to get comments, make the necessary revisions, and then send to the AMWG for review at their January meeting. Barry noted the TWG's comments and will incorporate in the next revision.

FY 2003 Work Plan (*Attachment 8a*)- Barry said there were two things he wanted to bring to the members' attention about the work plan: 1) Given that there is not a completed set of INs, each of the project descriptions are tied to a set of management objectives because that was all that was adopted and accepted at the time of trying to bring the work plan forward. They did look at the INs as they currently exist under the MOs and that is what helped them write the project descriptions and tag them to the MOs. They did not specifically identify any INs and they recognize that once the INs are adopted, they will have to cycle back through this and make sure they can document which INs are being addressed. 2) There are two PEPs working their way through the process which will have an influence on the work plan prior to its implementation and that is the Integrated Water Quality PEP and the Aquatic PEP. The IWQP folks are working to respond to the PEP and bring back a revised long-term monitoring plan that responds to the PEP recommendations. GCMRC is seeking to get this adopted in January with the recognition that between January-October 2002, there will need to be some changes made to the work plan.

He reminded everyone that this work plan focuses on only a portion of the budget tablet that was given to the TWG earlier in the process and only deals with budget items 5 on down. Budget items 1-4 are in Randy's program. He said he would like to go chapter by chapter but wants to begin with Chapter 2 on scientific activities.

Clayton said that since approval of the work plan and budget is on the agenda for today, he questioned if he could send in comments at a later date. Barry said it was his plan to take comments, make a revision, and then send that revision to the AMWG recommending they adopt. Clayton said he received it on Nov. 5 and hasn't had time to study it and asked for additional time. Kurt commented that since the members had had two previous opportunities to look at the plan that they should be ready to approve it. Barry said there was a schedule agreed to and GCMRC committed to mailing the document on Nov. 2. Randy said the Budget Ad Hoc Group considered the work plan on Oct. 23. Kurt suggested the TWG make a provisional approval and recommendation to AMWG. Barry said more descriptions were added but none of the budget numbers were changed from previous presentations. Kurt asked the members how they felt about proceeding with discussion on the work plan.

MOTION: Move to accept and forward the FY 2003 Work Plan to the AMWG.

Motion seconded.

Discussion.

MOTION WITHDRAWN.

It was decided to use the remaining time to review the nine new projects. Barry noted the comments made.

ACTION: TWG members must submit their comments on the FY 2003 Budget and Work Plan to Barry by Monday, November 26 in order for him to revise and be able to include in the AMWG meeting packets to be mailed by mid-December.

MOTION: Approve ongoing projects and extend comment period on new projects to Nov. 26.

Motion seconded.

MOTION WITHDRAWN.

Randy said as a follow-up on the budget issue, the Budget Ad Hoc Group has considered a GCMRC carry over request and passed out copies of their memo (*Attachment 8b*) requesting such along with a copy of Randy's approval letter (*Attachment 8c*).

Adjourned: 4:50 p.m.

Technical Work Group Meeting
Phoenix, Arizona
November 14, 2001

Presiding: Kurt Dongoske

FINAL

Committee Members Present:

Robert Begay, Navajo Nation
Kerry Christensen, Hualapai Tribe
Dave Cohen, Trout Unlimited
Bill Davis, CREDA
Brenda Drye, So. Paiute Consortium
Norm Henderson, GLCA
Amy Heuslein, BIA
Nancy Hornewer, USGS
Rick Johnson, Southwest Rivers
Matt Kaplinski, GCRG
Robert King, UDWR

Phillip S. Lehr, Colo. River Comm./NV
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Michael Yeatts, The Hopi Tribe

Committee Members Absent:

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Wayne Cook, UCRC
Jonathan Damp, Pueblo of Zuni
Lloyd Greiner, UAMPS

Christopher Harris, CRBC
John Shields, WY State Engineer's Office
John Whipple, NM Interstate Stream Comm.

Alternates Present:

Suzette Homer
Leslie James

For:

Jonathan Damp, Pueblo of Zuni
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Other Interested Persons :

Mary Barger, WAPA
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Lew Coggins, GCMRC/USGS
Nancy Coulam, USBR
Steve Gloss, GCMRC/USGS
Barry Gold, GCMRC/USGS
Leslie James, CREDA

Dennis Kubly, USBR
Lisa Leap, GRCA
Mike Liszewski, GCMRC/USGS
Ted Melis, GCMRC/USGS
David Orr, Living Rivers
Jeff Sorensen, AGFD
Steve Wiele, USGS

Recorder: Linda Whetton, USBR

Convened: 8 a.m.

Welcome and Administrative

Kurt Dongoske welcomed the TWG members, alternates, and guests. All introduced themselves. A quorum was established and attendance sheets were distributed.

Follow-up on Action Items:

Clayton provided copies of the GCD Emergency Response Criteria (*Attachment 9*).

Discussion of INs (cont). Barry went over the schedule for the members to review the document and provide comments to him.

ACTION: TWG members must e-mail their comments on the INs to Barry Gold by close of business on Friday, Nov. 16. He will produce a redline/strikeout version and e-mail to the TWG by Nov. 26. TWG members will have until Dec. 7 to provide final comments. The document will be included in the meeting packet to the AMWG to be sent out December 14.

TWG Small Group Meeting Update - Randy said the TWG Small Group Meeting will be held on Dec. 3 (9:30-4:00) in Phoenix. A package will be put together and sent out next week. It will contain foundation documents for that meeting and those members will be required to read those documents before attending the meeting. Randy said that if there were any particular documents the members felt should be included in the package, they should send him an e-mail on or before Friday, November 15.

Basin Hydrology - Tom Ryan presented the following graphs:

Upper Colorado 2001 Precipitation (Attachment 10a) - This graph depicts pretty dry conditions in the basin. In WY 2001 it was 56% of average April-July, and 59% for the entire water year. There have been many more years that have been drier but it is the second year in the row, 60% of average. If you put those two together, you start to see some pretty significant impacts on the system. One thing to point out is precipitation in WY 2001 was not that much off of average. We ended up with 60% of average runoff into Lake Powell. The system is depleted in terms of soil moisture and groundwater storage and we also had a very inefficient melt last year because there were wind patterns where the south wind blew for about 5-10 days and a lot of the would-be runoff ended up in the atmosphere. We came into this summer very dry, and had about a 6-week period in which the monsoon kicked in in late July and most of August and got some moisture back in the soils but then it just shut down the last week of August. From August until now, with the exception of the storm around Halloween, there has been very little moisture in the basin and November is tracking the same way. We're looking at probably three straight months of significantly below average precipitation in the basin.

Water Year 2001 Lake Powell Unregulated Inflow (Attachment 10b)- This shows what an average hydrograph is. We had an early runoff last year but didn't have any volume and by July it was way down. Tom pointed out the deviation between the average line and what was seen on the unregulated inflows being in September and the patterns continuing in October. We are running about 45-50% of average inflows right now so the base flows are significantly off of where they ought to be. The whole system is biased down towards a dry state.

Glen Canyon Releases 2001-2002 (Attachment 10c) - This shows the release pattern and in 2001 water was scheduled using equalization criteria as the governing criteria for the operation last year. As the inflow forecast dropped off more and more and we got to about June-July, it became apparent that the operation was not being governed by equalization. It was going to be a 8.23 maf objective release year. We did release 8.23 maf. We had water scheduled in July and August that was above smoothly transitioning to that 8.23 maf pattern and for power needs we kept those releases fairly high in July and August and then had to drop releases significantly in September so that the total release for the year would be 8.23 maf. We only released 450,000 acre-feet which was an average of 7,500 cfs. In October, we went back to 600,000 cfs and again this month. The scheduled releases for December are 800,000 cfs and then you see the two patterns deviate. We will get an April-July forecast probably in mid-December and I'm guessing it will be on the low side. The snowpack right now is 28% of average. We are still looking at our most probable scenario of being 90% of average and that's basically the most probably distribution ratched down somewhat based on the dry conditions. Once we get a forecast, these three release patterns will tighten up somewhat and probably all shift lower unless we have a significant change in our hydrology in the next 4-6 weeks. Looking at these distributions, the probability of an 8.23 maf release next year is about 35% but realistically given the forecast it's probably going to be around 50%.

Lake Powell Elevations 2001-2002 (Attachment 10d) - This where we are at in storage. We are a little bit above 3660 right now. Notable is that even under the maximum probable, you don't fill the reservoir so if it's a wet year as in a 1 in 10 wet year, the operation is still being governed by equalization - you're moving that water from Lake Powell down to Lake Mead, filling them both up at the same time. With that in mind, you don't get a BHBF even under a 1 in 10. It probably takes a 1 in 20 to get a BHBF trigger, with a caveat that there are different ways a BHBF trigger can be played out. In terms of an 8.23 maf release year, stay tuned and once there is a forecast then we can work up a different probability that can help in any planning that needs to be made.

SCIENCE UPDATES

Trends in the Recruitment and Abundance of the Little Colorado River Population of Humpback Chub. (Attachment 11) Steve Gloss introduced Lew Coggins. Lew has been with the GCMRC as a fishery biologist for about two and a half months. Prior to that, he worked for the USFWS in the Flagstaff office where he coordinated Grand Canyon fisheries programs. His roots are actually in Arizona. He has an undergraduate from the University of Arizona. He went to Alaska for about 10 years where he worked for the Alaska Dept. of Fish and Game in a variety of positions,

mostly having to do with stock assessment of salmon populations both related to commercial fishing harvest as well as sport fishing harvest. Lew's bant in fishery science is to take a quantitatively reliable and rigorous approach to try and understand fisheries problems.

Lew recognized Carl Walters who was his co-author on the above work. He proceeded with a PowerPoint presentation.

Interim Conservation Plan for Ambersnails of the Southwestern United States. (*Attachment 12*) Jeff Sorensen said last year Reclamation asked the Arizona Game and Fish Dept. to take the lead on writing this particular document, putting in all the different viewpoints, as well as the previous recommendations. The title is going to be changed so it reflects more specifically to KAS and those species in Arizona and Utah as much as the Southwest. This report updates the information in the 1995 Recovery Plan as well as the goals. The FWS is adamant about not trying to do a revised recovery plan until the taxonomic issues are resolved. The best choice right now is to come up with this interim conservation plan in lieu of the recovery plan. He said Debra Bills and Larry England told him that the FWS would like to actually incorporate this plan as the revised recovery plan sometime in the future. Right now it contains the recommendations from the KAS Expert Review Panel, comments and suggestions from the KAWG, as well other suggestions that came out this summer. It prioritizes the research as well as conservation needs. However, like the Recovery Plan, none of these activities or responsible parties that have been identified are binded to this document so it still revised to the specific agencies as well to legal authorities if they want to pursue particular actions. He proceeded with his PowerPoint presentation.

Jeff said the initial draft of the conservation plan was submitted to the KAWG for a 30-day review period which turned out to be a 90-day review period. They held two KAS group meetings, one in Page and one in Phoenix, from which they received a number of comments and edits and are working on those now to revise the draft. A new draft will be coming out the end of December. For those members on the KAWG, Jeff said he would accept comments through December 7. The next draft will go as a deliverable to Reclamation and from there it will be their decision of how much review it needs.

ACTION: TWG members have until Friday, December 7 to provide comments to Jeff Sorensen on the "Interim Conservation Plan for Ambersnails of the Southwestern United States."

Sediment Ad Hoc Group Report (*Attachment 13*) - Matt Kaplinski said the group wanted to make two motions: 1) that the TWG accepts the ad hoc group's findings and forwards the recommendations to the AMWG, and 2) the Sediment Ad Hoc Group be established as an ongoing ad hoc group. Matt said there were no substantial changes made to the report other than the addition of a table with the three recommendations from the Rubin, et al memo and the two alternative recommendations made by the Ad Hoc Group which they prioritized into three different levels. There was also some minor text added on the section response to Rubin recommendations and a paragraph added about detailing the other two dam release options (middle of page 7). He asked for comments.

Suggested changes:

- add a schematic showing the different storage distinctions
- add some sentences to the table which more fully describe what is proposed under 1a and 1b, the mechanism or rationale of why 1a and 1b.

MOTION: Accept ad hoc findings and forward recommendations to the AMWG.

Motion seconded.

Call for question

Discussion:

Public Comments: Do some editing for clarity

Voting: Yes = 16 No = 0 Abstentions: 0

Motion passed.

MOTION: Establish the Sediment Ad Hoc Group as a standing ad hoc group to incorporate ongoing sediment issues into TWG discussions.

Motion seconded.

Call for question.

Public Comments:

Discussion.

Voting: Yes = 17 No = 0 Abstentions: 0

Motion passed.

Experimental Flows Group Update - Randy reported the group had a pretty good discussion about the experimentation required under the Biological Opinion during an 8.23 maf release year at the last meeting. He said the hydrology presentation (*Attachment 14a*) from that meeting was e-mailed on Nov. 12 and if anyone has any comments, they should call him.

He directed the members to the bottom of the second page of the Meeting Minutes (*Attachment 14b*) on common elements or ideas with respect to the low flow year experiments proposed for the Humpback chub. He said the idea of consecutive and multiple years of testing was an important issue to the biologists present at that meeting and it will be one of the topics the Native Fish Work Group will be discussing at their meeting tomorrow. He asked the members to look at the section on Alternative Ideas for Experimental Flows during 8.23 maf Release Years (page 3) and provide him with any comments. These will be discussed by the NFWG as well.

Presentation on Comparing Stage/Discharge Below the GCD Gage and Lees Ferry - Steve Wiele from the USGS gave a PowerPoint presentation (*Attachment 15*).

The members raised the following concerns:

- Is there enough information to determine whether the gage should be taken out?
- Is it possible to see the SCADA data?

- How does Kirk LaGory's report on the AGC fit into Steve's presentation?
- Is there a paper trail on how this report was initiated?
- Does the TWG have enough information to make a decision to take out the gage?
- How do we address the biologic issues with respect to those differences in stage?
- Should the TWG prepare a position paper supporting their decision?
- Need for peer review on reports. (GCMRC would like to do peer reviews on WAPA studies)
- When can a decision be made on the gage so as not to commit to another \$20K for operation of the gage?

MOTION: Take out the gage below Glen Canyon Dam.

Motion seconded.

Discussion.

Public Comments.

Call for the question.

Kurt cautioned the members on voting because they might be feeling rushed and it may appear later on that they acted rather hastily.

MOTION WITHDRAWN.

ACTION: Bill Persons will prepare a TWG Position Paper by the end of November and send it to the TWG members for review. They will have a week to review and then an e-mail poll will be done by December 7, 2002.

TWG Meeting Schedule for FY 2002 Kurt said he, Randy, and Barry will put out a complete schedule of meetings and what is to be accomplished at each meeting and will send it out via e-mail. He suggested the TWG meet for an hour or two after the AMWG meeting in January to firm up the schedule.

Review of Agenda Items:

- (Randy S.) Outline for Information Needs. Hope before they are finally blessed that the TWG will have a chance to look at them in conjunction with the work that the small group will produce about the "picture" so we have things moving together. He appreciates Barry's efforts in trying to make the research needs *politic neutral* but he would still like the opportunity to feel like he agrees with that.
- (Randy P.) Member Preparation. Feeling frustrated that people don't come to the meetings prepared to engage in the agenda items that are listed. Everyone needs to make a commitment to come prepared to do the work. Reminder of our Operating Procedures and Ground Rules.
- (Barry) Commitments to Schedules. If we agree to a schedule, then the work needs to be done by

the deadlines. Need to think more carefully of what we commit to a schedule.

- (Leslie) Work Plans. Would like to see the work plans in the format they came out with in the September time frame then you have time to digest it. It would be helpful to have that level of detail.
- (Nancy C) Great to have technical presentations (... inaudible).

Adjourned: 12:20 p.m.

General Key to Adaptive Management Program Acronyms

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

