

**Technical Work Group  
February 13, 2001  
Phoenix, Arizona**

**Presiding:** Rick Johnson, Chairperson

**FINAL**

**Committee Members Present:**

Cliff Barrett, UAMPS  
Robert Begay, Navajo Nation  
Perri Benemelis, ADWR  
Kerry Christensen, Hualapai Tribe  
Dave Cohen, Trout Unlimited  
Wayne Cook, UCRC  
Jonathan Damp, Pueblo of Zuni  
William Davis, CREDA  
Kurt Dongoske, The Hopi Tribe  
Brenda Drye, So. Paiute Consortium  
Amy Heuslein, BIA  
Nancy Hornewer, USGS

Pamela Hyde, Southwest Rivers  
Matt Kaplinski, GCRG  
Robert King, UDWR  
Phillip S. Lehr, Colo. River Comm./NV  
Don Metz, USFWS  
Bill Persons, AGFD  
Randall Peterson, USBR  
Nikolai Ramsey, GCT  
D. Randolph Seaholm, CWCB  
John Shields, WY State Engineers Ofc.

**Committee Members Absent:**

Christopher Harris, CRBC  
Norm Henderson, GLCA

S. Clayton Palmer, WAPA  
Robert Winfree, GRCA

**Alternates Present:**

Gary Burton  
Janet Balsom

S. Clayton Palmer, WAPA  
Robert Winfree, GRCA

**Other Interested Persons Present:**

Mary Barger, WAPA  
Paul Barrett, USFWS  
Nancy Coulam, USBR  
Denny Fenn, USGS  
Andrew Gilmore, USBR  
Barry Gold, USGS  
Susan Hueftle, GCMRC  
Loretta Jackson, Hualapai Tribe

Linda Jalbert, GRCA  
Dennis Kubly, USBR  
Lisa Leap, GRCA  
Tom Lincoln, USBR-Denver  
Mary Orton, The Mary Orton Company  
Jim Ruane, REMI  
Bill Vernieu, GCMRC

**Recorder:** Linda Whetton, USBR

## **Meeting Opening and Administrative Items**

**Convened:** 9:40 a.m.

### **Welcome and Administrative:**

The Chairperson welcomed the TWG members, alternates, and guests. All introduced themselves. The Chairperson determined there was a quorum established. Attendance Sheets were distributed (Attachment 1).

### **Action Items from Last Meeting:**

1. Clayton will send a copy of the Draft LSSF Report to Barry Gold and Randy Peterson - Not done.
2. Randy reported that since the TWG is not a FACA chartered group there isn't a problem restricting access to the web discussion forum to just TWG members, which is the preference of the TWG members. Given that, he suggested the GCMRC set up a discussion forum on a web site for TWG members and alternates. Barry said a discussion forum web site has been set up and instructions will be provided later today.
3. Bill Davis reported the definition for "operational flexibility" was provided to Randy Peterson. Randy said the SP Ad Hoc Committee revised the definition and could bring a copy to tomorrow's meeting.
4. Dennis Kubly reported that suggestions from last month's meeting were incorporated into communication diagram and will be presented later today.

**MOTION:** Move to approve the Dec. 7-8, 2000, Meeting Minutes  
Motion seconded and carried.

**MOTION:** Move to approve the January 9-10, 2000, Meeting Minutes  
Motion seconded.

Edits noted. Linda will make corrections.

Without objection, minutes were approved pending corrections.

**Strategic Plan:** (Attachment 2) Mary Orton informed the TWG that the revision they are reviewing today is the same document that was used in December, which was before any small group recommendations, comments, or input from the TWG, (in black). All the changes that the Ad Hoc Committee made to the document based on the small groups' input, TWG input, both at the December

Meeting and at the last meeting and also any comments received from TWG members and alternates, are shown in redline. There is also a third set of redline changes which are pointed out in the cover memo. The AMWG changes that they actually voted on are not redlined as they had already been approved. In January, they went through the MOs and the ones they were okay with are shaded. Today's discussion will focus on Goal 6, Goals 8-12, proposed AMWG changes, and a discussion on a revised riparian issue paper.

Mary informed the TWG that at the next meeting in March, a clean document will be presented for the TWG's recommendation to the AMWG in April.

Randy presented the revised riparian issue paper (Attachment 3). He said the issue paper resulted from the discussion at the last TWG meeting regarding the nature of Goal 6 and how various riparian resources were balanced against each other. After the last AMWG meeting, the AMWG provided comments and direction on how they felt Goal 6 should be addressed, particularly with respect to all of the riparian zones being important. He and Rick Johnson rewrote a brief narrative issue paper on how they expected to approach the issue of riparian vegetation in the canyon. They sought comments from the AHC but only received some editorial changes. He explained the thinking behind each paragraph and asked for comments.

There was a suggestion to delete the word "the" before OHWZ and NHWZ and a discussion surrounding the confusion in using the term "bare sand beach community" versus "sand beach community." Rick said that where bare sand beach is used, the intent was sand beach community as it was used in the EIS.

The Strategic Plan was then reviewed page by page and comments were recorded on flip charts (Attachment 4) and will be incorporated in the next iteration. Additional comments and edits should be sent to Mary. Her new web address is: [mary@maryorton.com](mailto:mary@maryorton.com)

**River Trip Update:** Barry passed out several documents related to the river trip: TWG River Trip Activities (Attachment 5), TWG River Trip Gear List (Attachment 6), and a TWG River Trip Itinerary (Attachment 7). He reviewed the time frames and would also like to involve the tribes in preparing the agenda to identify any places they feel should be visited or other cultural issues which need to be addressed. He said approximately 22 members/ alternates have committed to the trip. He has also asked for participation from the Solicitor's Office, from the Assistant Secretary's office, from the Commissioner's Office of the Bureau of Reclamation, and from the GCMRC. The trip will require the use of three boats. Barry asked the members to look at the handouts and e-mail him with any comments. Barry said this is intended to be a "working trip" and they are trying to bring 2-3 facilitators on the trip.

**ACTION:** TWG members to mail questions/comments regarding the upcoming river trip to Barry.

Mary said the trip will focus on: 1) reviewing and revising the Strategic Plan, 2) preparing a final draft version of the Vision Narrative, and 3) having additional technical discussions which will feed into the narrative primarily but potentially also into the Strategic Plan. In the evenings, the groups will present what they did on the river to the whole group and attempt to get consensus with the entire group. The areas of discussion are those accounted for on the draft itinerary and most of those stops are on the first part of the trip (upper half) so the plan would be to work on the Strategic Plan first.

**Integrated Water Quality Program PEP Review.** Barbara Ralston introduced Jim Ruane who was the chairman of the Protocol Review Panel that reviewed the Water Quality Program. The review took place the end of November and beginning of December 2000 and included a visit up on Lake Powell as well as the dam, and then a trip down to Lees Ferry. Jim's background is environmental engineering. He used to work for the Tennessee Valley Authority so is very familiar with large reservoir systems. He is also a modeler and is familiar with the CEQual modeling programs that are used to look at reservoir dynamics. He is currently retired and works as a consultant. Some of the other members included Bob Kennedy and John Nesler who were from the Corps of Engineers, Dale Robertson with USGS, Jeff Schaldow who is at the University of California at Davis and Jack Jones who is at the University of Missouri.

Jim said there was a diverse group of people on the panel and reviewed the individual qualifications. He said there was an extensive paper trail and they were not able to review everything. Barbara and the others at the GCMRC provided them with a lot of information and an overview of the program. Their report is based on what they did review. He proceeded with a PowerPoint presentation (Attachment 8).

**ACTION:** Barry will provide a copy of the IWQP Report to all TWG members and alternates.

**AMP Process Diagrams.** Dennis Kubly referred to the two diagrams included in the meeting packet and a set of questions (Attachment 9) that were e-mailed to the members/alternates. He said he wanted to provide a bit of background on the process. In several instances they have discovered that they don't really understand the lines of communication within the Adaptive Management Program and some people think there are ways to improve it but first we have to understand how it operates. He tried to put together what the network looks like but that is only step 1. Step 2 is to actually go through and ask ourselves *Do we have all the entities here? If not, what should be added? Where should they be placed? And to what other entities should they be connected?* The second question on the communication diagram was *Do all entities in each box communicate with all entities to which they're connected in other boxes and do they do so in the same manner?* The third one was to actually do a little diagnosis. *Do we have examples of these communication linkages that we have*

*experienced already? Are they working well? If not, what are ways we might improve them?* His first thought was that we would agree on the way it is and then we would move to the way we think it should be changed to make it better.

TWG comments/questions:

- some tribes may fit into the “other experts box.” (example: the Havasupai tribe)
- are communication lines open between scientists ?
- communicating results of monitoring and research, is it filtered through GCMRC?
- process is a great mechanism for getting information to the public in an unfiltered form
- need for regular technical presentations at TWG meetings
- consider expanding process to other programs
- improving TWG’s access to GCMRC specialists?
- need for feedback loop to PEP panel/chairperson
- consider next diagram for consultation under ESA and NHPA

In reference to the PEP process diagram, Barry pointed out that the PEP process was adopted on the basis of a previously established protocol. There is a prospectus that describes the protocol evaluation process and it was on the basis of that document that an agreement was reached to use PEPs as the means of reviewing the programs. He cautioned that before the TWG heads too far, it look at that document so everyone is clear on what we had intended when we started this process. The way GCMRC would proceed right now would be to have Barbara, Bill, and Susan take the IWQP PEP recommendations and evaluate what changes should be made to their workplan and draft a new workplan to respond to those recommendations. Does there need to be an intermediate step of the TWG responding to the report in terms of what recommendations we should accept? Barry said he would like to work with Dennis on the PEP diagram.

**ACTION:** Barry will assist Dennis in another iteration of the PEP diagram using the IWQP PEP as an example. They will present results at the next TWG meeting.

**Stock Assessment Workshop** - Barbara Ralston reported that a year ago the GCMRC stated they were going to temporarily discontinue much of the native fish field work and look at all the data and really assess what’s going on downstream so that we can get a good native fish monitoring program. Between that time and the present, we’ve had steady flows as well as some analysis of historic data. One of the elements associated with this was Carl Walters coming down and giving a workshop on stock assessment techniques. The four-day workshop was held in Flagstaff in December 11-15, 2000, with the purpose of familiarizing the fisheries workers with stock assessment techniques, the basic principles behind it, looking at the historic data in a stock assessment context, and then looking at those results in terms of what needed to be done for monitoring for fish. Barbara presented several

overheads (Attachment 10) as part of her presentation.

The main index of fish population status derived from the stock assessment is recruitment rate. For humpback chub, the index can be calculated approximately 2 years after initial marking of individuals, or at about 3 years of age. Stock assessment will also be used for rainbow trout and, if feasible, flannelmouth and bluehead sucker.

**TWG-AMWG Discussion Forum.** Barry passed out the instructions for using the discussion forum (Attachment 11). He said there have already been some topics put on: Narrative Writing Group, Strategic Planning Ad Hoc Group. The instructions should allow the members and alternates to log on. If there isn't a topic for the group the member wants, the member can create that topic and start his/her own discussion thread. It's fairly self-explanatory.

**Conceptual Modeling / Science Symposium** - Barry provided copies of the activities planned for the AMP Science Week (Attachment 12) and reviewed the individual days. He asked for a count of those members planning to attend and it is his intent to get computers for everyone so they can have a "hands on" learning experience. Barry will also send an e-mail message confirming attendance.

**Adjourn:** 4:20 p.m.

**Technical Work Group  
February 14, 2001  
Phoenix, Arizona**

**Presiding:** Rick Johnson, Chairperson

**FINAL**

**Committee Members Present:**

Cliff Barrett, UAMPS  
Robert Begay, Navajo Nation  
Perri Benemelis, ADWR  
Kerry Christensen, Hualapai Tribe  
Dave Cohen, Trout Unlimited  
Wayne Cook, UCRC  
Jonathan Damp, Pueblo of Zuni  
William Davis, CREDA  
Kurt Dongoske, The Hopi Tribe  
Brenda Drye, So. Paiute Consortium  
Amy Heuslein, BIA  
Nancy Hornewer, USGS

Pamela Hyde, Southwest Rivers  
Matt Kaplinski, GCRG  
Robert King, UDWR  
Phillip S. Lehr, Colo. River Comm./NV  
Don Metz, USFWS  
Bill Persons, AGFD  
Randall Peterson, USBR  
Nikolai Ramsey, GCT  
D. Randolph Seaholm, CWCB  
John Shields, WY State Engineers Ofc.

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Loretta Jackson, Hualapai Tribe

Linda Jalbert, GRCA  
Dennis Kubly, USBR  
Lisa Leap, GRCA  
Tom Lincoln, USBR-Denver  
Barbara Ralston, GCMRC

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**Recorder:** Linda Whetton, USBR



## **Meeting Opening and Administrative Items**

**Convened:** 8:05 a.m.

### **Agenda Items:**

Gary Burton said he placed map directions to the WAPA Desert Southwest Office on the back table. No arrangements were made for vans and asked people to coordinate amongst themselves for a ride.

### **Legislative Updates.**

AMWG Charter and Memberships. Randy reported that the AMWG Charter was signed on January 10, 2001. The AMWG memberships expired on Feb. 4, 2001. As part of the transition program of the Bush administration, they are taking a look at everything including all existing committees and FACA committees as well. Those membership renewals are on hold pending outcome of that review. The letters have been prepared and are awaiting the Secretary's approval. Once they're signed, Randy will let the TWG know.

AMWG Recommendations. Randy said that after the last AMWG meeting, he drafted a letter on behalf of the Secretary's Designee to the Secretary transmitting the AMWG recommendations and the recommendation from the Designee that the Secretary accept those recommendations. That letter is in the process of being finalized and will most likely be sent out this week. A copy will be sent to all the assistant secretaries, agency heads, and all the AMWG members.

**ACTION:** Randy will provide a copy of the Secretary Designee's letter to the Secretary of the Interior with recommendations from the last AMWG meeting (Jan. 11-12, 2001) to the TWG at the next meeting in March.

Tribal Funding. A letter has been drafted for the signature of the Assistant Secretary of Policy, Management and Budget billing the other Interior agencies for their share of 2001 tribal consultation funding. The letter has not been sent yet as PMB is still in discussions with each of the various agencies regarding their willingness to participate in this revenue contribution.

Sec. 105 - Use of Federal Facilities. (Attachment 13). This is not yet part of the official Congressional record but Senator Murkowski (Chairman of the Senate Energy and Natural Resources Committee) is seeking comments on this draft legislation. Reclamation wasn't quite sure how far this language would go in terms of potential changes in GCD operation but it is basically asking the Corps of Engineers, Dept. of Energy, and Interior to take a look at existing Federal facilities to see how generation could be increased at those facilities.

Experimental Flow Fund. Randy reported that there is an agreement between WAPA, CREDA, and Reclamation regarding how power revenues in the CRSP Basin Fund are managed. The agreement is several years old but basically covers the transfer of funds from the Basin Fund to WAPA and Reclamation to operate the CRSP reservoir system. As a spinoff of that original agreement, a one-page protocol for the use of those funds was drafted (Attachment 14). Basically, it said that there is no carry over of personnel funds, you're expected to live within your budget, and if you don't spend all the money that you've been given this quarter of the year, next quarter your request will be reduced accordingly. Reclamation has modified that agreement and established an experimental flow fund (Attachment 15). This fund will be funded from power revenues within the power revenue cap for this program and there is provision within this agreement and also in Reclamation's 2003 budget to carry over money in this fund, basically building up the fund to a point where experimental flow research could be funded. By increasing the flexibility of using AMP revenue dollars and allowing money to be transferred from personnel funds to contracting line items, and between GCMRC and Reclamation, science activities could be also be increased. There is no backwards transfer from science work into personnel. Randy said it was his intent to have this as an agenda item for the next AMWG meeting.

Basin Hydrology. Andrew Gilmore distributed copies of a graph depicting the Colorado River Basin Precipitation (Attachment 16a). Currently in the basin it is about 85% of average for the water year thus far. The snow map (Attachment 16b) indicates trends are very much from north to south, the north part being drier. The Upper Green has only about 66-67% of average snowpack. The San Juan is 100% of average. Currently we are at 80% of average on snowpack. The February 1st forecast was for 6.8 maf, 83% of average April-July inflow. A chart was shown describing the minimum, maximum, most probable operations at GCD (Attachment 16c). The most probable release is about 8.7 - 8.8 maf for the current water year, so we have about 500,000 acre-feet of release above an 8.23 maf release year. ROD flows are planned except for a space in early June where we'll be doing some aerial photography, 6.5 days at steady 12,800 cfs release.

This led to a discussion regarding doing aerial photography at 12,800 cfs. Randy said there was a need for an extended period of aerial photography to try and make up for last year's failed effort to collect the LIDAR information. The results of the contract last year, while promising, turned out not to be within the specifications. Errors were as much as 1-2 meters in the X-Y plane and as much as 1.5 meters in the vertical plane. GCMRC believes a new contractor can get it right this time, that's why a week of time is needed instead of the three to four days that are typically released as steady flows for aerial photography.

The power rates for that time period are expected to be about \$400/megawatt hour on-peak which is about 20 times the normal rate. In proposing a release of 12,800 cfs, we are trying to minimize the economic impact. Concerns were expressed about not following our protocols which have either been

8,000 steady or 15,000 steady. If it's a low release year, we release 8,000 cfs. If it's a medium to high year, we release 15,000 cfs. This being a low release year, we would theoretically release 8,000 cfs, but that would cut the on-peak releases back substantially and require a lot of external purchases to fill in that gap. TWG members listed a number of questions relating to the proposed photography (Attachment 17).

Randy stated that the GCMRC has about 30 days before issuing the contract. He will contact Barry and relay the questions to him, that there is a lot of discomfort about the 12,800 level, and ask him to post answers to those questions on the TWG discussion forum and let members respond to that explanation.

**ACTION:** Randy will provide the TWG list of questions surrounding the proposal to conduct LIDAR aerial photography to the GCMRC. Mike Liszewski will post the questions to the TWG discussion forum website so the TWG can discuss their concerns.

**Interim Surplus Guidelines.** Randy passed out five graphs from the Interim Surplus Criteria FEIS (Attachment 18). This is the third presentation on this. Jayne Harkins gave a very thorough presentation last fall on what the expected impacts would be prior to the release of the Final EIS. The first graph is historic Lake Powell elevations to give a sense about how the other remaining future projections relate to what we've seen in the past 25 years. The second graph shows projected Lake Powell elevations into the future for the next 50 years. Of course, no one knows what the future holds and so we make some statistical or probabilistic statements about what we would expect. Those statements are based on what we have measured and seen for the last 100 years. We used the concept of traces into the future for different possibilities, different orderings of historic hydrology. All those alternatives were examined as future projections were evaluated. With 90 different possible traces, you can make statistical ranking at each time slice.

Probably the curve of most concern is the probable minimum curve, and it shows a downward declining trend. The primary cause of this downward declining trend in Lake Powell elevation is that upper basin depletions are expected to increase. Depletions have increased in the past and are projected to continue to increase in the future. There are very few new federal water projects that are going to contribute to that increase, most of it comes from population growth and increasing demand from existing infrastructure. As a result of that, the inflow into Lake Powell is expected to decrease in the future and a result of decreased inflow is lower lake levels since the requirements for lower basin deliveries remain the same as present. One thing that happens in the Colorado is that despite these significant droughts that severely draw down Lake Powell elevations, there is also just as often cyclic high flow periods which restore the lake level.

The decision that Secretary Babbitt made on which alternative to select was based on an investigation

of how these curves differ. Referring to the second page, for all the six alternatives the Dept. looked at, they were all relatively close together. There was not an extreme amount of differences although there were differences between the curves. In the more conservative surplus delivery strategies to California and the lower basin, the reservoir would be slightly higher than in the more liberal surplus strategies. In the future, now that the ROD has been signed and some of the additional California environmental compliance efforts are underway, as soon as this is implemented, there will be specific guidelines or criteria under which these surplus conditions will be determined for the Lower Basin.

The third page speaks to how much variability there is within each of these individual traces. These three traces explain to some degree the concept of a reservoir staying relatively full and being drawn down significantly. Trace 20, for example, shows how even year to year there can be tremendous changes in Lake Powell elevation even when the general climate trend over many years is dry.

Page 4 show the probabilities that BHBF's would be triggered. The EIS segments the next 50 years into two separate time periods, the period that the interim surplus guidelines are in effect the next 15 years and then the ensuing 35 years after that. As a result of the surplus guidelines, there is a decrease in the near term from 15.9% to 14.8% of the probability that a BHBF would occur in any given year.

Page 5 shows the probability of 8.23 maf release years. There is some confusion here with respect to what these numbers mean, especially in meeting the terms of the Fish and Wildlife Service Biological Opinion. That is a correct conclusion. In the near term, because we're starting with a full reservoir, the likelihood of an 8.23 maf release year right now is about 38.2%. As we go through time over the next 50 years, the increased likelihood that Lake Powell will be drawn down will increase the probability of these 8.23 maf release years occurring up to over 60%. So when taken in total for the next 50 years, our prediction is about half the time is indeed correct. In the near term it won't be as frequent, farther out it will be more frequent than half the time.

John Shields referred to the presentation made yesterday by Jim Ruane and stated the information Mr. Ruane had about the interim surplus operating criteria and the operations under them was in error. John said he hopes that information is corrected before the report is finalized. Secondly, he feels everyone should realize that the interim surplus operating criteria are absolutely essential from the standpoint of their keeping peace on the river, truly an historic event in the history of the Colorado River.

Randy stated that the Department, as it concluded this administration's efforts, also opened discussions to some extent on flows to the Delta as well. There has been a conceptual minute drafted with the country of Mexico by the State Department which talks about working cooperatively together on the Delta issue.

**TCD Expert Panel Workshop Report.** Dennis Kubly reported that he TCD Workshop was held on

January 22-24, 2001, at the Saguaro Lake Ranch in Mesa, Arizona. He presented some preliminary information (Attachment 19) and said a more complete report will be given at the TWG meeting in March. One of the agenda items of the workshop was to move forward with the development of a research and monitoring plan to discuss the effects of the TCD if it was constructed and operated. They quickly realized that you can't divorce hydrology and temperature. At some point if you're manipulating hydrology, you're manipulating the volume of water that you're delivering downstream through the canyon, you're also going to change the water temperature as the water progresses down through the canyon. They divided the types of monitoring they were going to address into two categories: 1) core monitoring, the purpose of which is to measure the status in terms of high priority resources and is characterized by being highly standardized and has few changes once established; and 2) effects monitoring which is more of a before and after approach. This monitoring is more flexible, is event driven, and is set up to accommodate particular actions.

Kurt reminded Dennis that there are two Indian tribes who have land adjacent to the Colorado River and that they should have been invited to the workshop. Dennis said he has tried very hard to not restrict the group and will continue to follow up with the tribes as needed.

### **AD HOC GROUP UPDATES**

Narrative Ad Hoc Group. Gary Burton said he asked the small writing groups to send him their rewrites. He has received several of them. He has tried to stay true to the mission as he made revisions to the Vision Narrative document. It's not yet at the point where the writing groups feel it is a consensus document. There hasn't been time to review what everybody put together and what he has done with everyone's comments. They are at the point of having a new version to come to the TWG and will try to have that done two weeks before the March TWG meeting and then have a consensus document to take on the river trip. They are also trying to reduce the length of each paper to 1-2 pages.

Experimental Flows Ad Hoc Group. Randy reported that the Experimental Flows AHG met on Monday for about four hours to talk about its remaining three assignments and briefly those are: 1) develop a program of experimental flows for BHBF's, 2) a program of experimental flows to comply with the Biological Opinion, and 3) determine criteria for when an 8.23 maf release year would exist. They had a very good discussion and started out listing their assumptions. This group is going to initially address the BHBF issue then turn to the Biological Opinion flows and in the process consider a mix or impacts that one flow experiment might have on the other. Certainly antecedent and post event conditions are going to effect how the experiment is both conducted and monitored and how long the results will remain in place. They started off with the BHBF discussion and listed the assumptions on a board of what they thought they knew about BHBF's. The difficulty in doing this might be a reflection on how much they've learned as part of the science discussions, how clear the TWG presentations are

technically, or how clear summary documents are that might summarize scientific information. They thought it would be a good idea to take the assumption list with respect to BHBF's by resource and make a matrix of what they thought knew and didn't know, and how important each of the various boxes in the matrix might be. The ambersnail and the native fish work groups might also be able to contribute. Perhaps by doing this, they might build an entire matrix of the Grand Canyon, the processes which might affect the various resources in the canyon. They will try and do that over the next couple of weeks and give a draft to the GCMRC who would then feed back to us and help clarify the matrix.

**ACTION:** Randy will have the TWG Experimental Flow Ad Hoc Group "assumptions and remaining questions" posted to the TWG discussion forum. Comments and additional questions are requested from the TWG members by February 23, 2001.

They then moved into a list of questions about BHBF's (Attachment 20) that remain unanswered or only partially answered. The questions were intended to address all resources and as they were developed, the group kept in mind the biological opinion flows as well. There are expected/intended to be integrated linkages as the group evaluates what questions remain unanswered regarding BHBF's. They asked the TWG for comments and additional questions be provided to the ad hoc group. He proposed posting the questions on the TWG discussion forum for the members to respond to or provide other ideas or concepts they feel should be included. He would like to receive those comments within the next two weeks because by April, the ad hoc group wants to complete its initial work on developing the BHBF experimentation program.

By the May TWG meeting, the group will have an interim recommendation on BHBF tests to bring before the TWG and likewise to the AMWG in July. He said interim because they also expect to begin work on the Biological Opinion flows in April and that by late summer, expect to have concluded their work on those. There is certainly going to be some interaction between the effects that a BHBF would have and the previous year's flows. If a previous year's flows are high and there are no tributary inputs, then the effects of the test will be very different than if the previous releases were low and a Biological Opinion steady flow were run in the summer and there were tributary inputs. The antecedent conditions would be quite different. By the end of the calendar year it is their intent to offer the AMWG an integrated program of experimentation that will take these factors into account.

Finally, Randy encouraged the TWG to attend the Science Week in April because they expect that by April they can have initial BHBF experiments designed and ready to test in the conceptual model.

**Budget Process.** Cliff Barrett said that in September 2000, the TWG was discussing the fallout from the 2001 appropriations process. A number of issues were raised regarding the budget process, comments were recorded on a flip chart, and an ad hoc group was formed to address the concerns. The members of the group included Cliff, Clayton Palmer, Randy Peterson, Wayne Cook, Robert

Begay, Bill Persons, and Norm Henderson. The ad hoc group made a fundamental assumption that the AMWG and the TWG want to be deeply involved in the GCMRC budget process from the beginning. That basic assumption was questioned by one of the members of the work group with a valid point: Does AMWG really want the TWG to be that heavily involved in the budget process? Does AMWG itself want to be that deeply involved in the budget process? With the assumption that the answer was yes to both of those questions, the group wrote a paper (Attachment 21). Cliff reviewed the recommendations and stated that if the TWG accepts the recommendation to form a permanent budget group, then the budget process ad hoc group can be dissolved. However, he cautioned that the TWG really needs to ask the AMWG how much they want the TWG to be involved in the budget process. If they do want the TWG involved, then the "conflict of interest" issue needs to be addressed immediately. Cliff also provided a timeline of the budget process (Attachment 22).

Kurt Dongoske felt it was a good idea to have a permanent budget as the tribes have recommended a budget process for a number of years and moving toward integrating the PA process with the overall AMP funding. He would like to see that incorporated to whatever ad hoc budget group is formed. Cliff said that throughout the document where it references talking with USBR and the GCMRC, it was his intent to include PA budget activities in that process.

**MOTION**: Forward the Budget Ad Hoc Group's recommendations to the AMWG for their approval. Motion seconded.

Discussion concerns/questions:

- Is it appropriate to form a permanent budget group without first asking the AMWG how much they want the TWG involved in budget issues?
- Need to address "conflict of interest" issue from the onset
- If budget group formed now, they could start process of asking Contracting Officers about the conflict of interest concern
- By forwarding the budget ad hoc recommendations, is TWG approving the report?
- How deeply do we want to "micro manage" the budget? Are we operating with this report in total disregard with what has already taken place in AMWG meetings?
- Level of budget detail requested by Bruce Taubert
- Consider postponing decision to form a permanent group until April and find out from AMWG exactly how much they TWG involved in budget process
- If TWG not involved, still need regular budget updates
- Timing. Mid-April to the latter part of April is too late to actually implement for this year
- Lobbying. Inform people who are appropriating those dollars know that AMP funding has friends or else that funding will find some other friend.
- Consider that it is going to be in the USGS budget request as opposed to the Bureau of Reclamation's request and USGS typically has a harder time on the Hill
- Sense of urgency as USBR and USGS are already sending their 2003 budgets to the Dept.

Voting Results:

Yes = 17

No = 1

Abstained = 3

Kurt Dongoske: I think it's premature to recommend the adoption of this report to the AMWG without a response to the first recommendation. At what level do they want the TWG involved in the budget process?

Randy Seaholm: From where I sit, I'm not sure I disagree with these but I would certainly like to have the opportunity to have some discussion with my AMWG member and some direction really from the AMWG before instituting a number of these recommendations. I understand the urgency but I think there are things we can continue to do now as we've done in past years and I guess I don't see any problem with doing that and putting this in place in the right order.

Amy Heuslein: I don't necessarily disagree with the recommendations here either. I think they're positive steps. I just have a problem with forwarding a recommendation of approval of this package and trying to get the nod from AMWG and going ahead and instituting something

John Shields: I'm a bit uncomfortable to the extent we haven't heard from an official State of Arizona position about this. I would feel much more comfortable if I heard from Arizona, specifically Bruce Taubert, that this is something that they're interested in doing. The second point I would make to you is in the case of supporting funding for the Colorado River Basin Salinity Control Program. . . . It's that organization that doesn't feel any compunction about not going and lobbying Congress and that is an option for this organization as well.

Rick asked for volunteers to be on the permanent budget ad hoc group. The following people volunteered or were recommended by another member:

Cliff Barrett	Norm Henderson
Robert Begay	Rick Johnson
Perri Benemelis	Clayton Palmer
Dave Cohen	Bill Persons
Wayne Cook	Randy Peterson (chair)
Barry Gold	

**Strategic Plan.** Randy reported there are 20-22 people who have agreed to write the Strategic Plan. He has received about 80% of the assignments and the rest should come in by early next week. When those come in, he will incorporate those into the plan and e-mail out a new version by the end of next



week. He wants alternative philosophic comments, not editorial changes. There will be a discussion at the March TWG meeting to talk about the different points of view to be resolved on the river trip.

Sediment Ad Hoc Group Update. Matt reported that the Sediment Ad Hoc Group formed in December is scheduled to meet later on this month. Ted Melis sent out an e-mail message so if any of the members who were on that group didn't receive, contact him or Ted. The meeting will be held next Tuesday at the airport.

### **Future Agenda Items**

- budget ad hoc group report
- LSSF cost analysis (Clayton)
- Cliff's recommendation NEPA, conflict of interest
- LIDAR discussion
- status of tribal funding
- vision narrative discussion
- TCD Workshop update
- Murkowski legislation
- Coordination with MSCP discussion
- compliance process diagram
- PEP diagram
- update on California power crisis
- recovery goals for endangered fish
- final count on river trip

### **Meeting review**

#### **positive**

good discussions - all positive and very helpful.  
Feel a sense of improvement in working together

#### **negative**

need for smaller meeting room  
no need for A/C in winter

Adjourned: 12:05 p.m.

### General Key to Adaptive Management Program Acronyms

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