

Glen Canyon Dam Adaptive Management Program
Technical Work Group Meeting
August 15, 2002

Presiding: Kurt Dongoske, Chairman

FINAL

Committee Members Present:

Perri Benemelis, ADWR
Kerry Christensen, Hualapai Tribe
Wayne Cook, UCRC
Jonathan Damp, Pueblo of Zuni
Bill Davis, CREDA
Brenda Drye, So. Paiute Consortium
Lloyd Greiner, UAMPS
Christopher Harris, CRB/CA
Norm Henderson, NPS/GLCA
Amy Heuslein, BIA
Pamela Hyde, Southwest Rivers

Matt Kaplinski, GCRG
Phillip Lehr, Colo. River Comm., NV
Don Metz, USFWS
Clayton Palmer, WAPA
Bill Persons, AGFD
Randy Peterson, USBR
Nikolai Ramsey, Grand Canyon Trust
Randy Seaholm, CWCB
John Shields, WY State Engineers Ofc.
Robert Winfree, NPS/GRCA
Mike Yeatts, The Hopi Tribe

Committee Members Absent:

Robert Begay, Navajo Nation
Dave Cohen, Trout Unlimited
Robert King, UDWR
John Whipple, NM Interstate Stream Comm.

Alternates Present:

Wayne Cook

John Whipple, NM Interstate Stream Comm.

Interested Parties:

Barbara Alberti, NPS
Mary Barger, WAPA
Debra Bills, USFWS
Gary Burton, WAPA
Denny Fenn, GCRM
Steve Gloss, GCRM
Dennis Kubly, USBR

Ruth Lambert, GCRM
Lisa Leap, NPS/GRCA
Robert Lynch, Attorney at Law
Steve Mietz, GCRM
Tony Morton, USBR
Tom Ryan, USBR
Dan Shein, AZ House of Representatives

Recorder: Linda Whetton, USBR

Meeting Opening and Administrative Items

Convened: 9:40 A.M.

Welcome and Administrative Items:

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

Announcements:

Ruth Lambert announced her resignation from the GCMRC. She will be moving to Durango, Colorado but will continue to do some transitional work for the GCMRC over the next few months. The TWG expressed their appreciation for Ruth's work at GCMRC.

Review of Action Items.

Kurt reviewed the action items from the TWG meeting held on May 16-17, 2002 (**Attachment 2**)
John Shields requested Steve forward all the comments he receives on the SCORE Report to the TWG.

ACTION: Steve Gloss will forward comments he receives on the SCORE Report to the TWG.

MOTION: Approve the minutes from the May 16-17, 2002, meeting.

Motion seconded.

Pending two edits, the minutes were approved.

Legislative Report

Randy Peterson said the Senate and House formed a conference committee on the Energy Policy Act (S517 and HR4). There has been very little action after the last AMWG meeting but about 50 of the amendments (non-controversial sections) to the Senate bill have now been reconciled in committee. There is still nothing that has been addressed or discussed with regards to hydropower generation, either maximizing or evaluating it by the Department of the Interior.

Nomination of TWG Chair for FY 03

Clayton Palmer nominated Kurt to continue as TWG Chair for the next fiscal year. The TWG voted unanimously in support of the nomination.

Update on Experimental Flow Test

After the AMWG meeting, Randy said he spent a week in Washington DC and had discussions with staff at the Asst. Secretary level regarding the proposed experimental flow. The response has been good and Reclamation has commenced preparation of an Environmental Assessment. There are still some missing sections – recreation, hydropower and economic analysis, and rewrite of the foodbase section. As a result, it will be several weeks before the document is ready for review by Interior personnel and then it will be made available to the public. The EA will be a joint document with Reclamation, the National Park Service, and the U.S. Geological Survey.

One of the concerns raised was the issue of electroshocking and the potential impact to humpback chub in the LCR confluence reach of the river. Randy suggested the Native Fish Work Group, the Non-native Fish Control Group, and possibly the Upper Basin Recovery Program Directors Staff meet and discuss

the potential for adverse effects to the HBC with the proposed action. There are some differences of opinion which need to be resolved before going further on the EA. Randy said a revised EA could be ready by the end of September which would allow enough time to resolve the HBC issue. There is a planned USGS/GCRMRC electroshocking trip scheduled for Sept 7-13 through the LCR confluence reach and it is likely more information will be produced to help address compliance issues, both in terms of NEPA and Reclamation's Section 7 consultation with the Fish and Wildlife Service. There are two consultations set up with the tribes to discuss trout disposal methods. Steve Gloss said the GCRMRC is of the opinion that for a lot of reasons (cultural, ecological, water quality) the best course of action would be to remove the salmonid carcasses from the canyon.

Randy said the big question is what will happen this fall if a sediment input were to occur. Reclamation doesn't believe the experiment can be started until they have completed environmental compliance. They can schedule monthly volumes in October and November with an average of 8,000 cfs and use ROD operations during those two months while they're waiting for the compliance to be completed. The flows would be about 5,000-10,000 cfs and if there were an input, most of the sediment would remain in the channel. If there is no sediment input, there isn't any ground lost and the plan would be to issue a document in October, conduct the public open houses, and have a decision sometime in November.

Bill Davis said that since the proposed experiment also includes a science plan, delaying the EA would also delay the science plan and therefore the science plan wouldn't start until October. With a difference in timing, Bill questioned how that was going to affect the experiment. Ted Melis said the month of September has a volume locked in place and operations would be low fluctuating flows which could also be considered part of the experiment. The overall goal of the pre-treatment from Sept-Dec is to try and retain new inputs. Right now September will probably be a retentive or conservative operation given when the system hits the low volume mark.

Norm asked if there wasn't sufficient compliance already in place in order to do the experiment. Randy stated that the whole purpose for doing NEPA compliance was to provide full public disclosure and conduct analysis of the impacts of the proposed experiment. In going through the evaluation process, things were discovered that had not been discussed at previous TWG meetings. For example, there would be 30 passes over the humpback chub in any given year in addition to the normal monitoring program. Norm questioned that if in the course of doing the evaluation they found impacts to the chub, would the whole experiment have to be terminated or could it be modified by removing one piece of it and proceeding with other pieces of the experiment? The proposed action could be modified slightly in terms of timing, extent, or location so as to reduce effects on the chub.

Randy reviewed the schedule for completion of the EA:

- The native fish biologists will discuss the effects of electroshocking on the humpback chub.
- During the same period of time, Reclamation will receive the outstanding documents to be incorporated into the EA.
- Reclamation will complete the EA
- After departmental review, the EA will be posted to Reclamation's web site, copies sent to the AMWG, TWG, and interested parties, and open houses will most likely be held in Flagstaff and Phoenix.

Interagency Group Update - Bob Winfree said he mentioned at the AMWG meeting there is an interagency group that is helping BOR identify issues related to production of the AMP public outreach program. The group has been calling the AMWG members and Bob encouraged the TWG as well as their AMWG representatives to take advantage of talking with members of the interagency group – to share any concerns or information needs they have related to the experiment particularly related to non-native fish removal. Within the next month or so, the group will be pulling all their information together.

Science Plan for Experimental Flows

Steve Gloss reminded the TWG of a motion made at the AMWG meeting in April 2002 and referenced the critical element of developing a science plan which stresses the need for preparing a long-range planning framework for adaptive management experimentation. He distributed copies of the "Comments on the Two-Year Science Plan for Experimental Flows Treatments and Mechanical Removal Activities" from the July 18-19, 2002, Science Plan Coordination Workshop (**Attachment 3a**) and the "Proposed Two-Year Science Plan" (**Attachment 3b**) and then proceeded with a PowerPoint presentation (**Attachment 3c**). GCMRC sees the Science Plan as providing a conceptual framework for the treatments as well as complementing the ongoing monitoring and research.

Ruth Lambert provided new material in the cultural section of the Science Plan (PowerPoint presentation – **Attachment 3d**) which acknowledges the ongoing monitoring being done by the Park Service.

Brenda Drye commented on the need for public outreach and ensuring people's safety is every stakeholder's responsibility. Ruth said they had also discussed preparing some public information sheets so people are aware of the proposed experiment.

Steve continued with GCMRC Recommendations: The TWG should adopt the science plan as a conceptual framework with additional research and monitoring that would be conducted. The GCMRC would like to revise the document so that the terminology which describes the various flow regimes is consistent with the EA being prepared. He referenced Table I in the Science Plan and said they added some preliminary budget estimate information and also tried to portray which AMP goals and management objectives of the various projects are consistent with or addressed. They have also tried to establish what they think ought to be the priority of funding of the projects. The costs come up to approximately \$4 million a year over the next two fiscal years. It is very unlikely that that amount of funding will be available so they have suggested that they try to prioritize projects at a level of about \$2 million. Even if the projects they consider high priority for management decision making exceed \$2 million.

Kurt asked if the TWG was ready to make a recommendation to the GCMRC. The following questions/concerns were noted:

- At what point do we try to pare down that work to the \$2 million range per year? What kind of a process are we going to go through to do that? (Cook)
Response: There is \$1 million in power revenue funds in the experimental flow account and an expectation off another \$1 million made available through Interior. (Gloss)
- We need to use a competitive approach (request for proposals) in order to get the best science possible but there isn't a lot of time. (Persons)
- Are you evaluating LIDAR? (Palmer)
Response: GCMRC is discussing internally. As early as 1997, they had high hopes for using LIDAR, first as a mapping tool and then in change detection movement. (Melis)
- Consider having different scenarios for doing the experimental flow because if the sediment aspect of the experiment doesn't work out, the intent is to carry out the non-native fish suppression part of the experiment. This is not condition dependent and therefore some high priority and/or more expensive items that are associated with setting the sediment aspect of the experiment may not be carried out. (Hyde)
- #'s 24-25 (Tribal resource studies and the economic studies on impacts to concessionaires and anglers) – \$500,000 is allocated for additional tribal trips as a high priority and \$40,000 at medium priority for other user groups. This is out of balance and there should be some room to economize on resources that are significant to the tribes. The impacts to other user groups should have a higher priority. (Winfrey)

- That same discussion applies to line item #22 also. The deposition of arroyos. GCMRC should seriously look at the implication of budget expenditures if, in fact, there are no sediment inputs. Perhaps those additional dollars could be used for other research needs which had priorities changed. (Cook)
- Recommend TWG re-examine the budget for the high priority items. (Christensen)

Randy directed the TWG to look at the AMP Summary page. The GCMRC has re-programmed money this year from the existing budget to go toward the experimental flows. Reclamation is in the process of transferring \$500,000 from the experimental flow fund to the GCMRC. On October 1 there will be another \$500,000 programmed into the AMP from power revenues for experimental flows, so that provides a little over \$1.5 million. There is also probably some potential for re-programming of 2003 dollars with respect to administrative and Reclamation costs and GCMRC proposed science activities, things that were proposed one and a half years ago. Reclamation believes there will be about \$2M available in 2003. In 2004, the USGS is making a request to the Dept. for additional appropriated funds for \$1 million for this effort and there is also a request for \$500,000 for power revenues within the existing AMP budget. If the experiment doesn't occur, there may be some flexibility to move the money around.

Pam said she felt uncomfortable advocating for certain projects and asked if the TWG could have a few days to come up with their lists, have it compiled, and send to the GCMRC.

ACTION: TWG to provide comments on the science plan to Steve Gloss by August 23, 2002.

Basin Hydrology - Tom Ryan presented basin hydrology graphs (***Attachment 4***):

2002 Upper Colorado April-July Unregulated Inflow – It is extremely dry in the north and in the south, with 14% of normal inflow into Lake Powell.

Aggregate Upper Colorado River Basin Precipitation – WY 2002 – There has been a little bit of monsoonal weather in July, 65% average for the basin.

Water Year 2002 Lake Powell Inflow Compared to 1977 – This shows a comparison to 1977. They are pretty close in terms of the spring peaks. The difference in the late summer is the monsoonal activity which occurred in 1977 and is only just happening now.

Colorado River at Lees Ferry Synthesized Natural Flows – This slide was presented at the AOP last week. This is a synthesis of data where some daily hydrographs were simulated of the three driest years in the last 100 years. 2002 is one of the three driest years. 1934 and 1977 stood out as the only two years with less than 7 maf of natural flow and both of those were substantially below, about 5.8 maf for 1934 and 5.6 maf for 1977.

Projected 2003 Lake Powell Inflow - This is what was presented at the AOP meeting last week. To adjust those flows to account for the dry conditions in the basin, they used the Weather Services' ESP (Extended Streamflow Prediction) tool which models a physical system using analogs of climate for all the sequence of historical years. They then look at the hydrologic response in terms of the streamflow and see how long it takes to come back to averages. Based on that, they developed the minimum, most, and maximum probable scenarios which are off from averages.

Natural Flow at Lees Ferry, Arizona – This slide depicts the variability seen through the years.

Glen Canyon Dam Average Monthly Releases – This depicts releases and where things are headed. Next year will likely be a 8.23 maf release year, about a 70% probability. Lake Powell is substantially lower than Lake Mead. Unless we have a pretty good year, there won't be equalization next year.

Lake Powell Water Surface Elevations Based on August 2002 Final Forecast – This shows monthly volumes with the experiment and without the experiment.

2002 Upper Colorado April-July Unregulated Inflow – This graph depicts elevations. With this year's lack of inflow, we held steady for a few weeks and then started falling off again. The current predictions are that we will go as low as elevation 3,603 feet.

Role of Science Advisors in AMP. Kurt said he placed this topic on the agenda because he wondered what the process for evaluation was and had some question about the science advisors' comments . Some comments were focused directly on the issue of the experimental flow while others seemed to be focused on the broader adaptive management program. He wanted some discussion on the role of the science advisors with the GCMRC and posed several questions: How does the TWG respond to the science advisors' comments? Do they respond at all? Does the GCMRC provide any comments on their evaluation of the science advisors' comments, and how much of their comments do they incorporate into their science plan?

Denny said he met with Dave Garrett who is the serving as the Executive Secretary to the science advisors group. Denny distributed a copy of the Operating Protocol for the GCMRC Science Advisors (***Attachment 5***). He referenced page 4 and said the Science advisors are available to everyone in the AMP, however, the science advisors report directly to the GCMRC because they report to and are paid by the GCMRC. Wayne said it was his understanding the science advisors could report directly to the Secretary of the Interior. Denny said that was correct. Denny said there should be some procedures put in place and the science advisors need to operate the way it should. Kurt asked if GCMRC could provide the TWG with an assessment of their comments to things the science advisors have said. Denny said he would be happy to do whatever the TWG wants. Denny said copies of the science advisors' reports could be made available to the TWG and the GCMRC would be happy to engage in further discussions with the TWG. Denny said he would also be willing to share all reports from the science advisors even if there is disagreement among the individual science advisors.

Ad Hoc Group Updates

Non-Native Fish Control – Bill Persons reported the group hasn't done anything since the last meeting. He asked if anyone had received the report that Rich Valdez sent out and said he would try sending it again. He is going to send another mail message in hopes of getting the group together again. Randy suggested the group could benefit from some cross-pollinization with other sub-basin groups.

Budget Ad Hoc – Randy reported the Budget Ad Hoc Group met during the last TWG meeting and had good discussions about the proposed 2004 budget. The comments were presented to the TWG on May 17 and there was no passage of the 2004 budget by the TWG. As a result, the same thing happened at the AMWG meeting. Randy posed several questions: Is the process working all right? Is there enough time to review the budget proposals, make comments, and come to recommendations on the issues? Is the Budget Ad Hoc Group serving a useful role in having those involved discussions? Do you think the comments that come out with respect to the budget proposals have reached a conclusion or a decision point in the motions that follow? Do you feel your comments are getting resolved and then we end up doing the right thing in terms of making recommendations for the scientific efforts? He said he looked through the comments on page 13 of the minutes of the last TWG meeting and there are some pretty substantive comments about the budget proposal.

Comments:

- The Budget Ad Hoc Group is the place to explore ways to improve the budgeting process in resolving TWG questions and comments. It would be better if there were multi-year long-term monitoring budgets and just dealt with research budgets every year. (Palmer).
- Need to increase the discussion time to ensure TWG and Budget Ad Hoc approval on the work plan before it goes to the AMWG and that there ample opportunity for the TWG to discuss with their AMWG representatives in advance of the meetings in an effort to reduce new questions. (Gloss)
- There were concerns raised about the FY2004 budget but the bottom line figure was going to Washington whether the members approved or not. Would like to try and resolve some of the discomfort with the bottom line dollars before going to the AMWG for approval. (Dongoske)

Randy anticipates the Budget AHC will meet prior to the next TWG meeting to work out the details of the 2004 budget and what activities will occur with the proposed experiment.

Establishment of a Cultural Resources Ad Hoc Group – Kurt said one of the recommendations of the Cultural Resources group was to establish the group and define its charge. Kurt sees it covering all the issues that fall into cultural resources and doesn't see economics or other resources falling into it. Mary Barger said one of the things they talked about was dealing with recommendations made by other groups and how they should be dealt with. The group that was established wasn't set up for anything but the cultural resources issues so if geomorphology is going to be discussed, then the group needs to be expanded. Kurt said the original group was to evaluate the PEP recommendations on the PA and the GCMRC's cultural program. That group is now defunct and he isn't sure if we should design a formal charge or give them specific assignments.

Suggestions/Questions:

- Clarification on relationship between AMP and PA (Seaholm)
- Review the science advisors recommendations (Heuslein)
- Review the science plan for experimental flows (Heuslein)
- Recommendation on cultural resource issues from the TWG (Winfrey)

Group members: Mary Barger, Garry Cantley, Kerry Christensen, Nancy Coulam, Jonathan Damp, Bill Davis, Loretta Jackson, Matt Kaplinski, ~~Ruth Lambert~~, Lisa Leap, Mike Yeatts

TCD Update - Dennis Kubly said the primary reason for putting this item on the agenda he wanted to hear from the TWG what would make up the risk assessment for the TCD. The first thing to do is determine the factors and what are their effects and prioritize them. There are a number of factors to look at. What are the components of a risk assessment? What are the potential benefits?

The following concerns were listed:

Risk Assessment

Benefits vs. Risks

Time is of the essence

Reversible vs. irreversible impacts

Complicated → Qualitative for Biological

Physical less complicated

Consider Irretrievable Losses

Define what is being considered. What is at risk?

Who

Fish biologists

Limnologists

Hydrologists
Policy types
Risk types
Look at conceptual model

Pam suggested Reclamation consider hiring someone who has expertise in designing a risk assessment. She would be happy to assist in any way she could.

TWG Activities – Kurt reviewed the meeting scheduled for FY 2003. He asked if the TWG wanted to keep the meetings the way they are and how much time should be allocated to TWG meetings?

Comments:

- Keep to 2 full days with one day devoted to science reports. (Kaplinski)
- Prefer to have meetings on Wed-Thur (Greiner)
- Schedule ad hoc meetings on second day because it's easier to meet. Would like to have whole reports from principal reporters. Instead of extending days, devote TWG meetings to technical reports. (Palmer)
- GCMRC will advise Kurt when reports need to be put on the agenda. (Fenn)

Kurt asked for member preferences on meeting lengths:

1.5 days	-	12
2 full days	-	6
3 full days	-	

Next TWG Meetings:

- February 26-27, 2003
- April, 2003 - Meeting will be scheduled at a later time depending on when GCMRC schedules their April Symposium (possibly April 2-3-4, 2003).
- May 28-29, 2003

Adjourned: 4:45 PM

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Alternates Present:

Garry Cantley
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For:

Amy Heuslein, BIA
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Interested Parties:

Mary Barger, WAPA
Gary Burton, WAPA
Denny Fenn, GCRM
Steve Gloss, GCRM
Dennis Kubly, USBR

Lisa Leap, NPS/GRCA
Paul Li, Robert Lynch's Office
Ted Melis, GCRM
Tony Morton, USBR
Mary Orton, The Mary Orton Company

Recorder: Linda Whetton, USBR

Meeting Opening and Administrative Items

Convened: 8:10 A.M.

Welcome and Administrative Items:

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

Information Needs Sequencing

Mary Orton said in April the AMWG directed the TWG to use a paired comparison process to put the INs in sequence order. At the May meeting the TWG put 16 information needs in order (**Attachment 6**). After the meeting, she sent them another form to rank the remaining INs. Mary analyzed those returns and of the 189 INs, there was significant agreement on 135 (70%) so they need to work on the remaining 54, which is the exercise for today. The remaining information needs will fit into this expanded framework. She will return the results and then the TWG will decide on what recommendation to give to the AMWG.

She said they would follow the same process as in May – members would consider two INs and discuss why one should be addressed before another, with the majority ruling. Mary led the members through the exercise. Mary said the INs that are left are the ones that when they were ranked before there wasn't enough unanimity to understand the sense of the group.

It was decided to have an additional work meeting to complete the remaining rankings. It was scheduled for Wednesday, Sept. 4, (8-2:00) in Phoenix.

Target Development – Ted Melis said he talked with Ecometrics (Carl Walters and Josh Korman) and they have agreed to help the TWG address target development strategies. Kurt suggested Carl and Josh come to the TWG meeting in November and present their proposal to the TWG and discuss when a workshop should be scheduled.

Future Agenda Items:

- target development process
- experimental flow status / science plan, EA budget, sediment, removal of non-native fish
- LSSF Report on integrated sediment studies
- warm water science plan
- GCMRC Cultural Resource Program Manager – position description
- 2004 Annual Plan and budget
 - budget ad hoc group report

Member Announcement - Bob Winfree said his name has been forwarded to the regional chief scientist for a job in Alaska so this will probably be his last TWG meeting.

Fish Recovery Goals – Randy distributed copies of the latest update on the endangered fish recovery goals from Bob Muth. (**Attachment 7**).

Adjourned: 12:35 p.m.