Technical Work Group Meeting
Phoenix, Arizona
September 6, 2001

Presiding: Randall Peterson, USBR

Committee Members Present:

Robert Begay, Navajo Nation
Kerry Christensen, Hualapai Tribe
Wayne Cook, UCRC
Bill Davis, CREDA
Kurt Dongoske, The Hopi Tribe
Brenda Drye, So. Paiute Consortium
Lloyd Greiner, UAMPS
Norm Henderson, GLCA
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
S. Clayton Palmer, WAPA
Bill Persons, AGFD
D. Randolph Seaholm, CWCB
Robert Winfree, GRCA

Committee Members Absent:

Perri Benemelis, ADWR
Jonathan Damp, Pueblo of Zuni
Christopher Harris, CRBC
Nancy Hornewer, USGS
Rick Johnson, Southwest Rivers
Nikolai Ramsey, Grand Canyon Trust
John Shields, WY State Engineer's Office
John Whipple, NM Interstate Stream Comm.

Alternates Present:

Wayne Cook
Dennis Kubly

For:

John Whipple, NM Interstate Stream Comm.
Randall Peterson, USBR

Other Interested Parties:

Jan Balsom, GRCA
Mary Barger, WAPA
Linda Jalbert, GRCA
Kirk LaGory, USGS
Ruth Lambert, GCMRC
Mike Liszewski, GCMRC
Ted Melis, GCMRC
David Orr, Living Rivers
Barbara Ralston, GCMRC

Recorder: Linda Whetton, USBR

Meeting Opening and Administrative Items

Convened: 9:30 a.m.

Welcome and Administrative:

Randy Peterson announced he would act as chairperson at today's meeting since Rick Johnson would not be present. He welcomed the TWG members, alternates, and guests. All introduced themselves. A quorum was established and attendance sheets were distributed (***Attachment 1***).

Barry Gold introduced Steve Gloss who will be the new Program Manager for Biological Resources at the GCMRC.

Change to Agenda: Bob Winfree requested some time on the agenda to talk about the Grand Canyon Learning Center proposal. It will be added as time allows.

Review of Action Items:

1. Matt will provide copies of the Sediment Report after lunch.
2. This action item was modified. The TWG decided to form an ad hoc group (chaired by Mary Barger) to write down the status of the PEP and TWG's recommendations which will be forwarded to the AMWG. The ad hoc group will be meeting in Flagstaff on Oct. 2 where the issue paper from Nancy Coulam and the TWG ad hoc will be finalized.
3. Randy said it was difficult to find a time for everyone to meet and said he would try and hold a meeting later tonight after the FY 2003 AMP discussion today.

MOTION: Move to approve the August 7, 2001, Meeting Minutes.
Motion seconded.
Discussion: None
Minutes approved without exception.

Nomination of new TWG Chairperson. Randy asked if there were any members who wanted to volunteer or propose a nomination for the new TWG Chairperson for the upcoming fiscal year (Oct. 1, 2001 - Sep. 30, 2002). Kurt Dongoske volunteered.

MOTION: Move to appoint Kurt Dongoske as the new TWG Chairperson.
Motion seconded.
Discussion: None
Motion passed unanimously.

Legislative Updates: Randy said Congress has been in recess much of the last month but has just recently returned. There are a couple of bills and two appropriations bills that will influence the AMP. The two bills are both the Senate and House versions of the Energy Development Act. The latest version prior to the recess included language about the investigation of potential for increasing hydropower generation at federal facilities. The previous versions had language which directed those investigations to areas other than Glen Canyon Dam. That language doesn't seem to be present in the current version. The bill numbers are 2412 and 2436.

The other legislative activities are the appropriations bills and there has been some talk Congress may stay in session through late October-November to complete those. Thus far, only 5 of 13 have passed. The Energy and Water bill passed both the House and Senate and is scheduled to go into committee soon. The same applies for the Interior appropriations bill which governs the other Interior agencies. Both bills will have an effect on this program.

Bob Winfree asked about the status of other bills which were discussed a few months ago dealing with hydropower increases and transmission lines. Randy said they were replaced by the Energy Development Act bills.

Matt Kaplinski asked if the language about the hydropower facilities in the lower basin was dropped from the bills. Randy said the last time he checked the language was not there which would open the door for the investigation of additional generation at Glen Canyon or anywhere. The way it read at the end of July was that it was directing the Secretary to investigate the potential and the effects of increasing that generation so it would be something similar to a NEPA document. Randy said it was Reclamation's thinking they would give Congress a copy of the 1996 EIS which addresses the expected effects of increased generation.

Randy advised that if anyone wanted to find out more about the bills to go to the following web site: http://thomas.loc.gov

Kanab Ambernsail Report - Bob Winfree referenced the report (***Attachment 2***) which was distributed at the last TWG meeting. He said the ad hoc members reviewed the KAS Panel's report and also the KAWG's earlier response to the panel's report. They identified five questions they felt needed to be addressed by the TWG and the AMWG and wanted to focus on those five questions (pgs. 3-4) today. He also passed out a list of recommendations (***Attachment 3*****)** for the TWG to consider.

Concerns raised:

- Status of taxonomy. Barry said they are still waiting for a final report but feels there may be a need to do some additional taxonomy. He offered to report on the status at the next meeting.
- Legal and conservation concerns can't be separated because of scientific questions. Until the

Biological Opinion and current recovery plans are revised or replaced, they still stand as valid documents.

- Based on new information, the need for Reclamation to request Fish and Wildlife Service to reconsult.
- Need to find out if KAS is a listed species.
- Suggestion that Vaseys Paradise is a rare taxon, perhaps a unique taxon.
- Recovery Implementation Plan vs. Recovery Plan. The RIP would bridge the gap in getting some things done under the existing recovery plan before developing a new recovery plan.
- Lump or split different populations.
- Need for consultation with the tribes
- Funding for taxonomy. Barry said there is a proposal in the 2003 work plans for a project that deals with starting to resolve the KAS and taxonomy. He provided other ~~funding~~ sources for consideration: 1) Species at Risk Program under the USGS, 2) Smithsonian Institution, and 3) National Science Foundation.

MOTION: Accept Ad hoc group report and recommendations and forward them to AMWG for approval.
Motion seconded
Public comments: None
Voting: Yes = 17 No = 1 Abstaining: 0
Comment:
Norm Henderson: I feel like some of the discussion here and some of the recommendations leave a little too much wiggle room with regard to what the expert panel said. I would like it a little more straightforward on this. I think we're going to get down the line and we're going to get evaluating the Biological Opinion again moving the snails up slow and will be going through the same thing, that it's not routine but will be an exceptional circumstance.

MOTION: Move that the TWG recommend Reclamation reconsult on the Kanab ambersnail with the Fish and Wildlife Service based on new information.
Motion seconded.
Discussion: None
Public Comments: None
Voting: Yes = 15 No = 1 Abstaining: 2
Bob Winfree: I would put the energy into consulting on new program of flows rather than doing it right now.
Dennis Kubly: If the recommendation were that the ad hoc committee accumulate and develop the information to be forwarded to Reclamation that might be used in a reconsultation, if it's justified, then I would have a lot easier time dealing with the recommendation. I think that the committee struggled at length with the panel's recommendations and if you read the report, you'll find a 50/50 agreement with the expert panel by the committee. One could easily argue that the new information makes the picture

murkier than it was before and so reconsultation doesn't have a firm foundation particularly with respect to the effects of past actions.

Matt asked what the time frame was on reconsultation. Randy said there would first be a formal recommendation made from the AMWG to the Secretary and secondly a recommendation to Reclamation and they would have to decide if they were going to do it.

Information Needs Workshop Results - Barry Gold said he received comments on the draft document (***Attachment 4***) from three sources: 1) NPS - Linda Jalbert dealing primarily with Goal 9, 2) comments from CREDA (***Attachment 5***), and 3) the Science Advisors (***Attachment 6***) report. He said the process was that GCMRC would produce a revised final draft based on the August workshop, mail it out to everyone for comments, focus on those comments today, revise the document one more time then use as a basis for a one-day workshop in October. The following issues were raised in the written comments:

1. The definition of core monitoring
2. The use of Record of Decision vs. dam operations
3. Goal 10 and the way goal 10 emerged in the revised document and some specific comments
4. Science advisors report and propose it be addressed at the next TWG meeting.
5. Discuss the Comments Table.

Barry addressed the above items:

1. Barry read the definition of "core monitoring" (***Attachment 7***) provided by Gary Burton.

2. Barry referenced the August 7, 2001, TWG meeting minutes, page 3, for the use of ROD vs. dam operations and include the following:

> *GCD operations refers to the operation of the powerplant and other release structures such as bypass structures, spillways, and potentially a temperature control device among others. Their uses conform to applicable law. The AMWG develops recommendations for all of the dam's structures to further the purposes of the GCPA, the EIS, and the ROD. This is done within the limits of the ROD and/or through experimentation.*

3. Barry asked Linda Jalbert to address Goal 9 and said there was substantial revision to the goal, MOs, and the INs, and told the members to look at the CREDA document and particularly comment S which deals with Goal 9. Linda said the goal is the same and is based on the workshop and the first set of comments received from the science advisors. She did some reordering, re-editing, and combining based on comments from the science advisors.

Barry said he had a procedural concern about making changes to the MOs. Randy said he was reluctant to change the MOs because they were approved by the AMWG but feels that as new information is obtained, there should be a willingness to make changes and bring those to AMWG's attention. A copy of the Strategic Plan was included in the AMWG meeting packet but does not include any of the proposed changes. It will be an ongoing process.

Kerry Christensen said he would like the following changes made: (MO 9.1 and 9.3) change to NPS and Tribal Management Plans, and (MO 9.4) use CRE instead of GRNP

Barry said he would like to send out another draft which would show the MOs in a redline/strikeout format because they are different from what the AMWG is going to be approving and should be identified as such.

Lloyd Greiner questioned the use of "enhance" rather than maintain in MO 9.5. Linda said in order to be consistent with MO 4, she would change to maintain or enhance.

MOTION: Accept Linda's changes to Goal 9 with revisions made by Kerry Christensen and Lloyd Greiner.
Motion seconded.
Discussion: None
Public Comments: None
Motion passed.

Discussion of Core Monitoring (cont). Clayton said that when they were meeting at the INs Workshop he labored under a false assumption that when somebody said "core monitoring" they were talking about monitoring the ROD. He said Barry pointed out that GMCRC's definition of core monitoring means just a routine monitoring, monitoring at the same time and place. That issue concerned him and he questioned whether the ROD is accomplishing its effects as perceived by the EIS. If it's not, then some experiments may need to be done to see what adjustments can be made to try and hit those resource targets. One of the key things that monitoring ought to be doing is figuring out if the ROD is accomplishing the EIS stated resource goals. He referenced Gary's definition of core monitoring and said the first paragraph agrees with GCMRC's definition of core monitoring. The second paragraph suggests that monitoring is being done against the ROD. If you agree with that, then you have to go back through the INs and make sure that under each resource the key IN is to monitor against the ROD. Monitoring can be for other things but certainly must be monitoring the ROD. He said he wasn't sure about the process for today and therefore didn't put together language for every resource. He said if the group agreed, then GCMRC could put the specific language into the document.

Gary Burton added that he set up the ROD as the baseline which has to be established first then the

monitoring program monitors against that. He said there are three ways to do that: 1) establish the ROD baseline ahead of time before instituting core monitoring, or 2) include an MO and INs appropriate to establish that baseline under ROD (modified low fluctuating) flows under each goal, or 3) set up a separate goal with attendant MOs and INs to set up that ROD baseline.

Barry proposed that Gary illustrate on a couple of the MOs what the core monitoring INs might be so people could understand them better and then GCMRC would send out a revised document.

Refer to Flip Chart notes on INs Discussion - ***Attachment 8***

ACTION: Send comments to Gary Burton.

In order to do another review of the document, Barry proposed the following schedule:

Sept. 14, 2001 - GCMRC will mail the revised INs document to the TWG
October 5, 2001 - Comments due to the GCMRC
October 12, 2001 - GCMRC will mail out a Comments table
October 22, 2001 - One-day INs meeting at Sky Harbor Airport

Goal 10: Barry asked Bill Davis to lead the group through the changes. Bill said the goal speaks to maintaining or increasing power production and the MO speaks to maintaining or increasing power or energy production, but the original IN did the same thing. The change was noted and will be incorporated in the next revision.

FY 2003 AMP Budget (*Attachment 9*) - Randy said he would present on first portion of the budget and Barry would present on the bottom portion. Randy directed the members to turn to page 2, IIIA, line 4 (Monitoring costs) and said the principle that they've been operating under is that until the HPP is complete, the monitoring program would stay as it is and the changes in the monitoring program would be dictated by the HPP. When Nancy Coulam put together the budget, there was the assumption that by 2003 all needed work would have been completed and we'd be down the track with having GCRMC contract out the monitoring or RFP the monitoring program for the PA. The $40K of what was left over from the studies needed to complete the HPP (the geomorphic study that contracted for treatment plan, the public involvement plan, curation, archival, and NAGPRA plans). The HPP has got to be done so we will have some guidance on how to proceed. We would propose changing the monitoring costs (A4) back to $227,000, making the subtotal $685,000. The money would come from the Experimental Flow Fund so the amount of $569,000 would be reduced to $382,000.

Pam asked if there is $382,000 in the experimental flow fund in 2003 and if conditions are appropriate for conducting an experiment, does the lack of sufficient funds prevent doing the experiment. Randy said it was that same thing that prevented us from doing anything this year with an 8.23 maf release

year. Randy directed the members to look at page 3, at Available Funds. The CRSP power revenues is the maximum allowed under law with the appropriations bill language. The $475,000 was included from the tribal appropriations, and the USGS is asking for +/- one million dollar appropriation to supplement scientific research. Within those dollars, that is how an experimental flow will be funded. If it weren't for the tribal appropriations, there would be no experimental flow fund.

Kurt said that at the last TWG meeting he brought up that he didn't see a line item dealing with mitigating adverse effects for the 2003 budget and asked if that was included in the monitoring costs. Randy said it would depend on his definition of monitoring - as you monitor, you're trying to salvage archaeology, piecemeal treatment, etc. then it is part of that. He said he didn't see it as being any large item efforts for data recovery or data preservation. Kurt said he was concerned that it get done. Randy said that Bob Winfree may have a motion to make which would push this back to the PA to handle. Kurt said he feels a little frustrated because while the PA signatories are a body that the Bureau of Reclamation consults with about being in compliance with the PA, the ultimate responsibility lies with the Bureau of Reclamation. The Bureau makes the final decision so he doesn't understand why it would be punted to the PA group when it clearly is Reclamation's responsibility. Randy said he thought it would be a good idea to have a discussion with the PA group. Kurt said he would like to see it addressed either in parentheses next to monitoring costs *(include treatment of adverse effects)* or another item *(7)* under the work plan activities which talks about mitigation of adverse effects.

Bob Winfree said he made two motions at the last TWG meeting but since there wasn't a quorum available at that time, they couldn't be voted on so he proceeded to make the motions again:

MOTION: The cultural budget should be reviewed by the PA Signatories as a group to provide recommendations to Reclamation and the TWG.

It was decided that since there is already an understanding that the PA signatories review the cultural budget, there was no need for a motion.

MOTION: Establish an ad hoc group for the Cultural PEP.
Motion seconded.
Voting: Yes = 16 No = 0 Abstaining = 1
Motion passed.
Members: Loretta Jackson, Mary Barger, Matt Kaplinski, Bob Winfree/alternate, Nancy Coulam, Ted Melis

Scientific Activities - Barry thanked Barbara Ralston for the time she spent as the acting Program Manager for the Biological Resources Program and said she has been instrumental in accomplishing a number of things for the GCMRC.

Terrestrial Ecosystem Activities - Barbara referenced the "Terrestrial Ecosystem Activities" handout (***Attachment 10)*** and said there were only two projects associated with biological resources are the KAS taxonomy project and a terrestrial mapping and inventory project. The purpose of the KAS project is to resolve the taxonomic relationship of the snail at Vaseys Paradise relative to KAS and other outgroups. She is proposing to fund a graduate student for four years and that student would have to find additional funds to do the genetics or the travel associated with things outside of the Colorado River Ecosystem. If there were a base of $20,000, then matching funds or cost sharing could bring in more funds. This would also free up about $50,000 for terrestrial research which are undefined projects (population model for KAS and augment for holocene or habitat mapping, leopard frog monitoring for other terrestrial programs or information needs). She anticipates the project will be more defined after the information needs are prioritized. The purpose of the terrestrial mapping and inventory project is to develop vegetative coverage in a GIS format for the river corridor that delineates the communities that the AMP has defined to provide a baseline for a larger community constituency than what the current monitoring program addresses and it would probably be done in a 5-year time scale.

Tribal Participation - Ruth Lambert presented a handout (***Attachment 11***) and said she would address cultural/tribal participation which deals with the cultural component of the terrestrial monitoring project that is just underway for the first time in 2001. There are three tribes involved for 2001 and they are the Hopi Tribe, Southern Paiute Consortium, and the Hualapai. They are proposing in 2003 to have all five tribes involved. They had a meeting with the tribes when they first began talking about the project and all five were interested in participating.

Ongoing, Monitoring Plan - Ruth said the PEP review called for a monitoring plan that would coordinate all the monitoring efforts in the cultural arena and the funding for that was approved in 2002. The $50K is to implement that plan. She said some of the information is sketchy because the plan has been done, the RFP has not gone out, and she is not sure what the plan will recommend. There has been no funding or effort made to implement the monitoring plan and that also needs to be somewhere in the cultural plan.

Aquatic Ecosystem Activities - Barbara said the aquatic ecosystem activities are primarily monitoring. The program is undergoing a large change. They are just getting back the Aquatic PEP Report which should be presented by Mike Bradford at the November TWG Meeting. An RFP should be put out this year with the intent that 2003 would be a continuation of that work. One of the recommendations that is coming out of that PEP is to integrate more the aquatic foodbase with water quality parameters and make a decision about what water quality and food base should reflect. There may be better ways to make linkages with the aquatic foodbase than doing sampling in the river , doing some more stable isotope work in terms of how food items are assimilated into the aquatic system.

Integrated Water Quality Program Lake Powell - Barbara said this is also undergoing changes and

asked Barry when the plan would be mailed. Barry said the revised plan with the comments table will be annotated with footnotes so everyone can see how the comments were incorporated. The schedule is to mail it out on October 12 with discussion at the next TWG meeting.

Integrated Terrestrial and Aquatic Ecosystem Activities - Ted Melis had a family emergency and had to leave early but Barry said he would be happy to go through the documents Ted prepared or try to have Ted connected via a conference call tomorrow so he could field any questions the members had. Barry passed out copies of a memo Ted, "Briefing on initial results of LISST-100 field testing in the Colorado River ecosystem" (***Attachment 12***) and "Integrated Aquatic and Terrestrial Ecosystem Monitoring and Research" (***Attachment 13)***. Barry said he would check on setting up a conference call with Ted and inform the TWG tomorrow morning.

Project C7 - Barry pointed out that Project C7 is the pilot test which was done pro bono by borrowing a piece of equipment and doing a little add-on to a trip that they wanted to have before they proposed it to the TWG. This is for tracking purposes only.

Ruth provided comments on a couple of projects which had recreational components.

Refer to Flip Chart notes on Budget Discussion (***Attachment 14***)

Agenda Update: Presentation on Information Technology (Mike Liszewski) and the GRCA Learning Center Proposal (Bob Winfree) will be placed on tomorrow's agenda

Adjourned: 5:15 p.m.

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Dennis Kubly, USGS
Kirk LaGory, USGS
Ruth Lambert, GCMRC
Mike Liszewski, GCMRC

Recorder: Linda Whetton, USBR

Meeting Opening and Administrative Items

Convened: 9:30 a.m.

Welcome and Administrative:

Randy thanked Rick Johnson for all his hard work and willingness to serve as the TWG Chairperson for the past two years and presented him with a plaque.

Information Techology Program - Mike Liszewski passed out handouts on the Project Descriptions (***Attachment 15***), Project Costs (***Attachment 16***), and the ITP Portion of the FY 2002 Annual Plan (***Attachment 17***)

Clayton said he is quite supportive of the conceptual model and its use for the adaptive management program but doesn't know whether the decision support system has added benefit. Mike said that if all the AMWG/TWG decision needs are met by the conceptual model, they will be identified in the needs assessment however he anticipates there are going to be other needs. Barry said the conceptual model is valuable up to a point but doesn't help make decisions. They are trying to use the information that exists so when decisions come up to the AMWG or TWG, the decision support system will be an aid in making those decisions.

Grand Canyon Learning Center Proposal - Bob Winfree passed out a flyer (***Attachment 18***) and said the Grand Canyon is seeking National Park Service and Foundation funding to develop laboratories, lodging, office and classroom space for visiting scientists and educators at the Park. It would be one of a network of 32 nationwide if the funding is approved. It would add to existing facilities and services and would not duplicate or replace any ongoing programs. Scientists and educators would be able to use the facilities through an advanced reservation system. Any fees (lodging) would be kept as low as possible. The project would support the adaptive management program and management objective 12.3a which specifically calls for us to maintain or attain the participation of externally funded investigators. This would provide facilities for investigators who have funding or who don't to come and work in the parks. Several universities, research centers, and other parks and grant organizations have indicated their support their support for this program through letters sent to the park to be forwarded with our proposal. He is looking for a letter from the outgoing or new TWG chairperson stating the TWG's support of their proposal to the NPS and to private grant organizations to seek funding for this program. Bob said the review proposal process has already started. If a letter could be written before Sept. 15, it would be very appreciated.

MOTION: The TWG strongly supports the GRCA National Park's Learning Center proposal. The TWG encourages the AMWG to do the same.
Discussion: None

Motion passed unanimously.

Ad Hoc Group Reports

Experimental Flows - Randy said that in conjunction with the last TWG meeting, there was another Experimental Flows meeting which also met with the Native Fish Work Group. They didn't get down to specifics but the idea of how to structure experiments was well discussed in terms of sequencing the years, what a series of years might look like, and how they might interact with each other. The issue is becoming more complex than what most people initially thought a year ago. Reclamation committed to running the riverware model for 20-30 years in the future and bringing back to the group a number of diverse traces of possibilities in the future of different patterns of year-to-year releases so that the group could look at those patterns and see if they altered their thinking. If it was clear that 8.23 maf release years would often occur back to back or if there would be long periods of high flows, low flows, or whatever, these might significantly influence the experiment decision. They expect to have that work done in the next couple of weeks and will convene another meeting of the NFWG/Exp. Flows in the next 3-4 weeks to consider those things. They have already started the discussion of merging the concepts of the high flow experiments with the low flow experiments as well. One of the potential tests would be to have a BHBF test following a low steady 8.23 maf release year.

Sediment Ad Hoc - Matt Kaplinski passed out copies of the ad hoc report (***Attachment 19***). He said at the TWG meeting held in May, a presentation was made on the results of the report. He received some comments and made revisions to the report. The ad hoc group needs to meet again and suggested they hold a conference call in order to prepare some recommendations based on recent sediment findings. They will bring those recommendations forward at the next TWG meeting for a vote to pass on to the AMWG.

Randy added that it might help to talk about the next steps. There is some new information that perhaps the TWG hasn't considered, particularly Jack Schmidt's work on photographic analysis of changes over the last few decades. He thinks the conclusions that the group came up with in response to the three Rubin-Topping recommendations is probably still appropriate and adequate. The document should be finalized from that point and the group to continue to analyze new information as it becomes available.

Basin Hydrology - Chris Cutler provided copies of several graphs depicting the current basin hydrology (***Attachment 20***):

UC River Basin Precipitation WY 2001. This was another below average year. The year started out pretty wet, immediately went dry, and hasn't recovered very well. There were a lot of dry warm winds which evaporated a lot of moisture from the snowpack so there was a pretty ineffecient runoff season. September temperatures were supposed to be 5-10° above normal this year and looking at November, it will be about 5° above normal so it will continue to be a little bit on the dry side.

2001 Upper Colorado, Apr-Jul Inflow - There is a dry gradient in the north and a little bit wetter in the south. It has been a drier Spring and Lake is at 56% inflow for April-July and for water year, it is 60%.

Water Year 2001 Lake Powell Unregulated Inflow - We had an earlier than average peak with the peak of the hydrograph dropping off earlier than expected. The purple line shows the average, the blue line incidates this year's inflow. Generally, the hydrograph drops off starting around July but this year it started in June. The year started dry and hardly approached normal.

Glen Canyon Releases - 2001-2001. Looking ahead to 2002, there is about a one in three chance of having a 8.23 maf release year. The most probable inflow is pretty near normal so the magnitude of inflows of all three scenarios is close to the upper-mid and lower-mid deciles. There is an 8% chance in 2002 for a BHBF.

Lake Powell Elevations - 2001-2002 - Chris said that in June some releases were transferred to August in order to do some aerial photography. July and August power releases, Sept. end of the budget so there was more opportunity for aerial photography.

Aerial Photography - Mike Liszewski said he wanted review the slides ***(Attachment 21***) he presented in Flagstaff with the addition of one more and then answer questions regarding the 2001 annual overflight. The overflight was done toward the end of June and they were able to get 3-3.5 days of steady flows to do that overflight which was contingent upon a couple of caveats: 1) had perfect weather, and 2) no equipment failures. A day after the steady flows were started from the dam, they experienced a power supply failure and were prevented from collecting any additional data that day. On the next day (Sat.) they had some issues with the helicopter and speed and weren't able to collect as much data as they had hoped to. On Sunday, they had to return early due to bad weather. Refer to attachment for more details on following flights.

They have been in contact with the USGS to get another contractor in before the end of September to re-fly the mission. They are currently soliciting bids for a number of combinations for data collection and should have those by close of business next Tuesday and then make a decision as to whether or not they are going to re-fly and collect the data. They are not requesting steady flows for that overflight. He has long conversations with contractors that use that data and how important steady flows are to them. As a result of those conversations, they are going to attempt to do some type of evaluation next Spring when they do the 2002 annual photography of the effects of non-steady flows on the monitoring project that utilize that data.

Automatic General Control - Kirk LaGory said he is an ecologist working with Argonne Laboratories. He has been working with Western Area Power Administration for over ten years. They prepared the Power Marking EIS for WAPA published in 1996. He had been working on upper

basin issues, serving on the recovery team for the endangered fish, and also on a team developing flow recommendations for Flaming Gorge Dam.

Before he started his presentation, he wanted to recognize the important role Gary Burton played in pulling the information together, arranging to have the data collected, and coordinating operations of the dam during some of the tests.

He proceeded with a PowerPoint presentation (***Attachment 22***)

Emergency Responses at Glen Canyon - Clayton Palmer said that on March 28, 2000, Reclamation announced that it was going to conduct a LSSF and also sent a letter to the USFWS. There would be two things that would stop the experiment: if hydrology overwhelmed the ability or if restriction of electricity (brownouts). WAPA read the letter and started to develop a criteria for use of GCD to meet brownoujt situations. WAPA increased development of a process to use GCD. They had to make sure they were talking about emergencies and that criteria used for GCD was basin emergency. He passed out a short description of this (***Attachment 23)***. We will not meet California needs specifically, but will respond to any western connected utility. Providing power out of GCD to avoid brownouts is not an emergency but when it becomes a life and death situation (a blackout situation) when traffic lights go out, air conditioning, etc., they have to stick pretty close to the criteria listed on page 2.

Barry asked for the actual policy vs. the draft that Clayton is distributed.

Action: Clayton will provide a copy of that policy at the next TWG meeting.

Future agenda items:

- Wiele gage comparison report
- Melis - sediment inputs
- Mike Liszewski - CIR Evaluation
- GCMRC - SCORE Report
- Cultrual PEP ad hoc
- Aquatic PEP
- Experimental flows ad hoc group
- budget ad hoc group
- sediment ad hoc group
- INs
- FY 03 Work Plan
- KAS Ad hoc
- Recovery Implementation Plan
- Native Fish Recovery Goals
- Reconsultation implications on KAS
- 2001 Monitoring activities
- GCMRC products for LSSF Conference
- LIDAR v. other monitoring tradeoffs (all remote sensing)
- GCMRC long-term monitoring plans
- Terrestrial PEP review by TWG
- Aquatic PEP review by TWG
- IWQP Long-term plan
- Legislative updates

- more process diagrams

September

24-25 - AMWG Meeting – > CANCELLED on 9/14/01

October

22 - INs Meeting
22 - (evening) Sediment/Exper Flow/NFWG

23 - Budget Ad hoc group work plan

November

13-14 TWG Meetings s –> BIA location
2003 Work Plan
INs

December

January 2002

15-16 - tentative AMWG meeting

End of the Fiscal Year

- Exceptional year
- more meetings in Flagstaff
- staying better informed with what's happening on the ground - make the TWG meetings 2 full days and dedicate ½ day to GCMRC science updates
- Annual science symposiums
- Mary Orton's facilitiation has been very useful
- Additional training on collaborative processes.
- engage adaptive management network to evaluate us
- educational tour to D.C.

Adjourned: 12:05 p.m.

Respectfully submitted,

Linda Whetton
Bureau of Reclamation

General Key to Adaptive Management Program Acronyms

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