

Glen Canyon Dam Technical Work Group  
Final Meeting Minutes  
June 21, 2005

**Conducting:** Norm Henderson, Chairman

**Committee Members Present:**

Mary Barger, WAPA  
Timothy Begay, Navajo Nation  
Kerry Christensen, Hualapai Tribe  
Jonathan Damp, Pueblo of Zuni  
Brenda Drye, So. Paiute Consortium  
Lloyd Greiner, UAMPS  
Amy Heuslein, BIA  
Rick Johnson, Grand Canyon Trust  
Chris Kincaid, NPS/GLCA

Robert King, UDWR  
Dennis Kubly, USBR  
Glen Knowles, USFWS  
Ken McMullen, NPS/GCNP  
John O'Brien, CGRG  
Don Ostler, UCRC  
Bill Persons, AGFD  
D. Randolph Seaholm, CWCB  
Mark Steffen, Federation of Fly Fishers

**Committee Members Absent:**

William Davis, CREDA  
Phillip S. Lehr, Colo. River Comm./NV  
Larry Stevens, Grand Canyon Wildlands Council  
Steven Begay, Navajo Nation  
Christopher Harris, CRB/CA

John Shields, WY State Engineers Office  
Bill Werner, ADWR  
John Whipple, NM Interstate Stream Comm.  
Michael Yeatts, The Hopi Tribe

**Alternates Present:**

Emily Omana

**For:**

Larry Stevens, Grand Canyon Wildlands Council

**Interested Persons:**

Mike Berry, USBR  
Gary Burton, WAPA  
Jeff Cross, NPS/GRCA ??  
Helen Fairley, USGS/GCMRC  
Dave Garrett, M<sup>3</sup>Research  
Lisa Leap, NPS/GRCA  
Paul Li, IEDA

Mike Liszewski, USGS/GCMRC  
Ted Melis, USGS/GCMRC  
Barbara Ralston, USGS/GCMRC  
Pam Sponholtz, USFWS  
David Ward, AGFD  
Linda Whetton, USBR

Meeting Recorder: Linda Whetton, USBR

**Convened:** 1 p.m.

**Welcome and Administrative Items.** The chairman welcomed the members, alternates, and interested persons. A quorum was established and attendance sheets distributed. He said the agenda would be adjusted to account for those persons delayed by the fire in Flagstaff.

**Review of Action items:** Postponed until tomorrow.

### **Updates**

**HBC Concurrent Estimates** – Barbara Ralston reported that Dave Otis met with Lew Coggins to go over the datasets and is back in Iowa working on them. GCMRC is going to have another meeting with Dave toward the end of July to hear more on his progress. Dennis requested the scope of work be provided to the TWG. Barbara said will send the meeting minutes (**Attachment 1**) to Linda for posting to the TWG meeting page.

**Action Item:** Barbara Ralston will send HBC Concurrent Estimates meeting minutes to Linda for posting to the TWG meeting page.

**Knowledge Assessment.** Ted Melis said the second part of the workshop is scheduled for July 5-8. GCMRC will provide shuttle service from Sky Harbor Airport to Flagstaff. There is a block of rooms reserved at the Radisson Hotel through June 28. He asked for a count on those members planning to attend. A draft agenda will be sent out via e-mail from Reclamation on Friday. The purpose of the workshop is to assess the level of certainty and uncertainty relative to flow treatments, non-flow treatments, etc. By determining the level of uncertainty, GCMRC hopes to construct a general construction to address that uncertainty.

**Action Item:** Following the Knowledge Assessment Workshop II, Ted will prepare and distribute a matrix table identifying the flow treatments and certainty/uncertainty of them in relation to the various resources.

**Humpback Chub Comprehensive Plan Update.** Glen Knowles said the ad hoc group has divided up the plan and made writing assignments. It should be ready for review within the next two weeks. He received a copy of the Draft Genetics Management Plan (**Attachment 2a**) prepared by Tom Czapla (USFWS, Region 6) and distributed copies to the TWG. The HBCCP AHG has reviewed the plan and Glen provided their comments (**Attachment 2b**) to the TWG. He asked the TWG and GCMRC to also review and provide any comments to him so he could include those with his response to Tom. Glen is also going to request Tom provide another revision of the plan.

**Action item:** (1) Comments from the TWG and GCMRC on the Draft Genetics Management Plan are due to Glen Knowles by July 6, 2005. (See #2 on page 13).

**Science Planning.** Dr. Dave Garrett provided copies of his PowerPoint Presentation (**Attachment 3**). He said the proposal for the Science Advisors to assist the TWG, GCMRC, and the Budget Ad Hoc Group, and other groups in putting together the science planning documents (Strategic Science Plan, Core Monitoring Plan, Research Plan that wraps in the long-term experimental process, and other research activities) was handed out at the last TWG meeting. The Science Planning Group will be meeting on Thursday and Friday with the SAs and some GCMRC staff. Dave said the SPG will meet monthly for the next three months. Dave will coordinate the SAs work with the SPG and other groups via e-mail and conference calls. Dave said he will work with GCMRC and the SAs in developing the first strawman Strategic Science Plan and then that plan will be routed through the SPG and will come to a general, briefly written

document that will then cycle through the TWG while they are then working on the Core Monitoring Plan the next month, and then after that the Research Plan. They will go through that process through all those plans. All the plans have to be done before they can begin working with the Budget AHG on getting the FY07-08 annual work plans and budget estimates together. The last planning set will not be worked on aggressively until nearly October 2005. All the other documents will be in some sort of a drafted process by the end of September. They will use the month of October to try to do a final sound board with the TWG. Dave said he has all the meetings scheduled. He wants to make sure the SPG sees continued revisions of the plans at least 2-3 times before they are given to the TWG. Dave suggested the TWG have a summer meeting and then meet again in September or October in an effort to have the TWG review everything twice. The SPG is has targeted the end of November for the plans to be ready in draft format. They will use nine more months to get the plans out by the following July 2006. The requirement on the SPG is significant, a lot of reading, and nine 2-day workshops. Dave said there may be a point where they use the knowledge assessment against the information needs specified by management to ensure the matrix fits with the full suite of monitoring and science activities proposed.

Comments:

- *It would help me if you had an outline of each plans. It would also be helpful to have the TWG review and get buyin from the TWG. (Kincaid)*
- *You need to provide a detailed briefing to AMWG and get a buyin from them as quickly as possible. It might be a good idea to provide a monthly status update so it stays on AMWG's radar screen. The more you communicate, the better you'll be in getting acceptance at the appropriate time. (Cross)*

**Humpback Chub Translocation at Chute Falls.** Pam Sponholtz (USFWS) provided background information on the project, described what they've accomplished, and offered some recommendations for the future. She gave a PowerPoint presentation, "Monitoring for humpback chub above Chute Falls, Little Colorado River." (**Attachment 4**). She concluded with the following recommendations:

- Continue with translocation in 2005
- Initiate population estimates in Spring 2006
- Begin F1 genetics monitoring
- Develop a management plan that directs future actions

**Fish Parasites.** David Ward (AGFD) said he was going to talk about some of the new work being done in relation to Asian fish tapeworm. He gave a PowerPoint presentation, "Removal and quantification of Asian tapeworm from humpback chub using Praziquantel," (**Attachment 5**).

Questions/Answers, Comments/Responses

**Q:** *Do the worms occur above Chute Falls? (Barger)*

**A:** *Yes. Prior to any translocation, we went up an verified that the tapeworms were there so that we weren't moving tapeworms from an infested area to a clear area.*

**Q:** *Are you also trying to figure out if the fish are evacuating parasites under certain conditions and what those conditions are? (Johnson)*

**A:** *The only thing I can think of that would cause parasites to be evacuated naturally would be temperature but that needs to be evaluated.*

**Q:** *Do you have an estimate of the proportion of fish that are infected? (Christensen)*

**A:** *We've got estimates from small sample sizes. Percentage-wise, it depends on how many fish of each size that your sampling, but it's really high. Almost all of the fish that you catch have some sort of infestation. The ones that have really high tapeworm loads that will probably impact growth or survival is fewer but they all are carrying them.*

**External Projects and AMP Linkages.** Norm said this presentation is to better understand how to incorporate with the budget and work plan for the Adaptive Management Program projects that are funded outside the program but relate directly to the AMP and what is trying to be done in accordance with the Grand Canyon Protection Act. He said that several individuals were asked to explain work that has contributed to efforts to enhance the resources in the parks.

**Arizona Game and Fish Department.** Bill Persons said the AGFD did creel surveys at Lees Ferry. The AGFD sends a creel clerk to the Lees Ferry boat ramp on a regular basis. They spend approximately \$15,000 a year on that effort to collect angler use and harvest information. He also sent some information on a state wildlife grant for the tapeworm work that David Ward did. Last year it was for \$14,000 and they are going to try and have more grants like that. He passed out copies of the "Humpback Chub Hatchery Evaluation: Prospective Refuge Facilities," (**Attachment 6**) which cost about \$18,000 and they also sent about \$10,000 to Dexter to complete the Willow Beach humpback chub genetics evaluation.

**Q:** *Was the visitor satisfaction survey part of the original program? (Fairley)*

**A:** *Our creel programs are concerned with angler catch rates. Most of our fisheries tend to be "put and take fishes" where we put some fish in and then anglers take them out. We want to monitor harvest so we can look at things like stocking rates. We've done more extensive work at Lees Ferry including asking questions like, "Are you satisfied with your trip, with the numbers you caught, the size you caught?" Those have been sporadic and not well coordinated. The questions have changed from time to time. I don't think at this point in time we're asking those questions. However, it would be possible to do. I suggested that several years ago when I did a data compilation report for GCMRC. (Persons)*

**Q:** *You have that analysis of the hatcheries. Who paid? (Henderson)*

**A:** *We paid for that. I'm not sure we want to take time to discuss this now. (Persons)*

It was decided to postpone further discussion until tomorrow and include as part of the update on action items.

**Cultural Resources Program in Grand Canyon** – Jeff Cross said their Cultural Resources program is the largest program that relates directly to what is happening in the adaptive management program. He gave a PowerPoint presentation.

**C:** *You didn't address endangered species on the CRP map. You had bald eagle but not sure if those were nests or sightings and that you have a peregrine falcon area. We've talked about the issues and don't have information on bald eagles and we haven't been gathering some of the bird data so it does sound like you guys are doing some other stuff. (Barger)*

**A:** *The bald eagle is a good example. We're actually in the process of finalizing our biological assessment for FWS on the River Management Plan and the bald eagle is one of the species that we're addressing. We've done eagle surveys down there for several years. We have an eagle that returns to Phantom Ranch just about every winter. There is other work that is going on that I haven't talked about, particularly endangered species.*

**Q:** *How are you looking at Traditional Cultural Property (TCP) issues and how is that folded into your program? (Heuslein)*

**A:** *For the river corridor site, we worked with all the tribes and we've identified three archeological sites that we determined for listing in the National Register. (Leap)*

**Q:** *You're talking strictly on the archeology but I think Mary brought up the point regarding biological aspects and TCPs can cover that area too. How does that interrelate into your program? (Heuslein)*

**A:** *We've worked with individual tribes on collecting biological resources and have permitted that collection of biological resources. I'm assuming that through the consultation on the CRMP that those issues will come up through the consultation process. We will probably deal with them on a tribe-by-tribe basis based on the CRMP consultation. (Cross)*

**Bright Angel Weir Project** – Jeff Cross gave a brief history on the status of the project and responded to questions.

**Q:** Are you evaluating habitat for the native fish that are either in or might be translocated to those tributaries in addition to removing non-native fish? (Kubly)

**A:** Yes. We're looking at the distribution and abundance of native and non-native fishes, where they're located, and in what parts of the streams.

**Q:** Is there any consideration in your management plan on the impact on the habit from removing the beavers and the beaver ponds in the creek? (Steffen)

**A:** No. The beaver were gone before we got here. We have no data on beaver in Bright Angel.

**C:** I have some. (Steffen)

**C:** If you could share it with us that would be fine. I'm concerned about the recreational folks. It's kind of a tradeoff in the park. The rangers tell folks to go soak in the creek and build these dams and there is a concern about flannelmouth migration. That's a pretty good stream for flannelmouth spawning and we have people creating rock dams and all sorts of things throughout the summer and what impact does that have on the flannelmouth. (Cross)

**R:** My experience was that there used to be a lot of beavers and a lot of beaver dams in Bright Angel Creek and from what I've understood, they were removed by park rangers that were trying to protect the trees they planted to shade the buildings down there. There are witnesses who saw park rangers removing beavers and destroying beaver dams in the late 1980s and early 1990s. My experience has been that the brown trout would go in in the fall and stage in the beaver ponds and then spawn in Nov-Dec and then the rainbows would come in shortly after that and stage in the beaver ponds as well. There was quite a bit of spawning in-between beaver ponds in fact and then late in the year, the flannelmouth suckers would come in quite large numbers and they would also stage in the beaver ponds. We assume that they were perhaps eating eggs and fry and then they would spawn later in the spring so as far as I was concerned the beaver ponds really created the habitat that was necessary for the whole process. Without the beaver ponds, the creek has been really much less productive as far as spawning of trout or flannelmouth suckers since the early 1990s. I was wondering if you had given any consideration to restoring the creek so that it would be a better habitat.

**A:** I think if you put any structure in that lower part of Bright Angel below the box, it's going to get blown out by flash floods. If you look at the size of the creek, it's all grown in as they try to keep the creek in that channel and keep it from spreading during the flash floods up on to destroying some structures. I don't think you can keep structures in there.

**C:** Some of the beaver ponds were quite huge and were capable of withstanding pretty large flash floods.

**R:** I don't think we're going back to those days though.

**Q:** Does you plan for Bright Angel Creek include rainbow trout removal as well or just brown trout at this point? (Sponholtz)

**A:** We've got a lot of pushback from some stakeholders on rainbow trout and that decision has not been made but my preference is to remove trout from BAC but we'll put the environmental assessment out and look at public comment. The Superintendent ultimately makes that decision.

Grand Canyon National Park Resource Linkages – Ken McMullen distributed copies of a handout on the “Grand Canyon National Park Resource Linkages to the AMP” (**Attachment 7a**). He said it covers areas on wildlife and species as well as looking at water quality issues along the river and tributaries. It touches briefly on wildlife resource projects and then details work on vegetation management aspects they are doing (tamarisk removal and some revegetation efforts). As the CRMP winds down, they'll be developing the back country management plan which will look at trails and things associated with recreational use on the river. He advised that if people have individual questions or need or need further explanation, they should contact him.

Multi-Species Conservation Program. Bill Davis was not present but provided copies of work that had been done (**Attachment 7b**).

Glen Canyon Vegetation Management Project. Norm said there are developing a vegetation management plan for the entire corridor from the dam on down to Lees Ferry and then to also start the process of managing the vegetation within that reach with a six-acre site at -6 Mile.



**FY06 Budget Discussions.** Dennis Kubly reminded the TWG that in October 2004 the AMWG accepted their recommendation on a 2-year rolling budget development process. The process, in addition to containing the development of a biennial budget, also included a process for developing appropriations requests and for 3-5 years of strategic outlook. He doesn't think anything has been done on the appropriations request for the 3-5 year outlook but said the strategic outlook will get invested in the planning process that Dave Garrett is spearheading. He gave a "Budget Ad Hoc Group Update" PowerPoint presentation (**Attachment 8a**) and said the BAHG put a high value on developing funds for a future experiment knowing that it was not likely in FY06 but that when the experimental plan was developed, there would be another opportunity. Fundamentally, any money that could be saved would be put in a carry forward fund and made available for a future experiment. Copies of the FY06 Budget and Work Plan (**Attachment 8b**) were distributed.

Dennis said that typically GCMRC does a lengthy presentation on the projects in the work plan but thought it would be more productive for the TWG to concentrate on specific questions they had or respond to the questions raised in the "Response to Comments Table (**Attachment 8c**)". He thought it might be of interest to hear what GCMRC had to say on experimental vs. non-experimental budget and their rationale for how the budget was formulated.

Ted Melis said a month ago he told the TWG that the appropriations request that was included in the President's budget for FY06 hadn't survived the House. Because of that, the implications for the science budget were potentially at a \$1.9 million shortfall in FY06. Within a week after the TWG meeting in May, they received word from USGS Headquarters that the director was committed to covering the cost share element for this program in FY06 which meant they could continue doing the science at the discounted DOI overhead rate of 17%. He said Denny Fenn would be at tomorrow's meeting and could present more details on the DOI cost share rules. However, the basic rule is that if a program doesn't have a source of appropriate funds to cover the cost share, then the full cost overhead rates have to be applied. The question now is for the outyear plans of FY07 and beyond, what is going to happen because the same rules will probably apply. Ted said in the past there was confusion as to which project elements would qualify for the discounted rate and which would qualify for the "pass through or special rate," which is only 6%. In the current budget they have accounted for it in each cell and have estimated and projected the 6% and the 17% rate within each component of the project's cost and tried to portray that in the indirect total. For the first time they believe they have a projection for what the real indirect costs will be for the total project in a hybrid kind of equation. One part may qualify for an interagency agreement or a cooperative agreement at the 6% rate, while other parts like their GCMRC salaries, contracts, purchases, etc. will have to be charged at 17%. The bottom line of that project reflects their best guess as to what that project will really cost.

Ted also pointed out there are some new line items for those things which have substantial costs (GCMRC Science Symposium) with a projected estimated cost for that element because in the past people have questioned some of those activities. GCMRC is trying to provide more clarity on how the money is approved and spent. They also tried to build in recommendations that came from the HBCCP AHG for what should continue to be funded in FY06 under conservation measures related to that draft plan. He said those were submitted through the BAHG process and GCMRC concurred with them and included in the budget. Ted said they were also committed to building up the experimental flow fund for FY07 and beyond. The carry forward element was also included as a line item and was targeted for \$750,000 by the BAHG. However, Ted said the best recommendation he could come up with while trying to cover all the costs for the projects they had recommended as well as those by the HBC AHG, topped out at \$600,000. He said he told Dennis they could get to \$750,000 if it was the will of the group but it

would come at some additional science costs and those would be affecting thing like downstream native and non-native fish work, or continuing experimental treatments.

**Q:** *What are the differences in what gets done between the non-experimental and experimental budget and work plan? (Kubly)*

**A:** *When you ask this question, you have to go to the individual sections in the plan. We've built into each project description a section that says "impacts of experimental vs. non-experimental work." If you go to each project, there is a new section that specifically says what will happen in either case. Overall, if you're doing the experimental work and you're funding these HBC activities, there are impacts to specific other projects. We had to basically had to balance the budget and maintain any semblance of a carry forward for experimental work. We had to downsize various elements of specific projects. If you look at each cell, there are notes which explain the decreases. You couldn't keep everything as it was originally proposed and do mechanical removal and do the second experimental recommended treatment which is continue looking at the impacts of fluctuating flows under MLFF in the winter on trout redds and fry. You couldn't simply do it all and still have a balanced budget and maintain a carry forward account for FY07 and beyond for experimental work. In the non-experimental version, the projects go back to where they were originally budgeted and described back in February and March with the exception of some of these projects that the BAHG specifically recommended we should change for specific reasons to the planning and provisional FY06 concept. What you also had in the non-experimental version is a much larger, over \$1 million, potentially that you could carry forward into FY07 and beyond for support new future experimental work. So you ended up with a larger carry forward. Most projects that had been initially blessed by the BAHG were restored to their original amounts while some others were still downsized and adjusted but it was more in response to this idea of folding them into startup and planning activities rather than having to downsize them for experimental treatments.*

**Q:** *Ted, do we have a single budget recommendation in front of us or are we going to tomorrow get into a balancing act pitting these two proposals against each other? (Greiner)*

**A:** *It was a motion that came from the AMWG to develop two budgets and it's our best attempt to try and portray those two budgets, one having the experimental recommendations that we at the Center believe should continue and be supported by the budget. The concept of doing a year without any experimental work including no mechanical removal is something that we at the Center don't advocate but it was something requested by AMWG members. It was our hope to have a discussion at this meeting about which of those two variants this body wants to move forward to the AMWG. Our official recommendation at the GCMRC is to go with continuation of the experimental work.*

**Q:** *Is there a thumbnail sketch of what will get done in terms of planning if no money is spent on experiments? Would we be poised to do even better work? (O'Brien)*

**A:** *There are two budget items in there that support planning. One of them is specific to experimental planning and that is tied to the HBCCP recommendation. That was a line item that had been in the budget for the past two years which was called "Glen Canyon Dam Operations for experimental planning support." That was restored at \$25,000. There is a new line item that never existed before specifically called "support for strategic planning" in the science budget to help support this activity that we're talking about with the SPG. Either version of the budget has that planning support built into it. Both versions of the budget have the HBC activities built into it. Both versions of the budget have a carry forward, one is just larger than the other. Both versions have a GCMRC science symposium scheduled. So the commitment is whether we're doing an experiment in FY06 or not, but the strategic planning is happening. The question is would we do a better job of it if we weren't doing any experimental field work. I couldn't say that but the commitment of the GCMRC program staff is to the strategic planning process knowing full well that if we implement the experimental treatments that we've recommended, we still have our administrative duties to keep those cooperative agreements and contracts functioning through the final year of phase one experimental work.*

**Q:** *Assuming that Dave Garrett is successful in coming up with our long-term research and long-term monitoring plans, which of these two budgets will transition best with the FY07-08 efforts? (Greiner)*

**A:** *The one with the experimental treatments for two reasons: we originally recommended to you almost four years ago to do a block of mechanical removal activities to try to get at this idea of whether or not HBC recruitment is being limited by non-native predation and competition. FY06 is the fourth year of that 4-year block that we originally recommended. We still fell compelled to finish that treatment as it was*

originally proposed. The fluctuating flows in the wintertime we feel like we've got a real solid report from Josh Korman (Ecometric) which is being finalized this week and the executive summary is available on the table today. We feel that three years of experimental fluctuating flows we got a really first class final report that would suggest to us and is recommended by the researchers, that the only way to finally resolve if those experimental flows in January-March were significant in creating additional mortality for rainbow trout vs. MLFF is to go back to MLFF and do some field verification to see whether the model simulations are in fact verified. The second recommendation besides continuing mechanical removal is to go back to our control operation or MLFF this winter and resume the field studies to the degree that's required to verify or refute the model simulations and those two treatments basically would in a sense end those two experimental activities as they were originally proposed in the FY02 GCMRC plan. The experimental recommendations are really twofold: continue mechanical removal and try to verify or refute whether or not the experimental fluctuations are significantly different from MLFF with respect to trout mortality and we feel like the best way to segway into the next phase of experimental work is to complete phase one experimental work and see both of those treatments as being a completion of that. We don't have a specific recommendation for a high flow sediment experiment in 06 even if we have sediment enrichment in the Paria River but part of the budget in 06 is really designed to complete analysis and reporting of the study that was done last November and have final reports done and to you in a year from now. We feel as we're planning the future, it makes sense to be wrapping up what we've done over the past four or five years.

**Q:** Would you go over the autumn flows also that are part of the supplemental EA, the September-October, that's another part of our hydrograph that is defined unless the AMWG goes a different direction? (Kubly)

**A:** It's interesting because we're faced again with the question of what do we do. We have 8.23 hydrology scheduled for WY06. We've currently got that in 05. Operationally, what is the recommendation. We had to deal with last August at the AMWG meeting and GCMRC made a recommendation for what we did this year. The question now is the experiment as we've proposed it in 02 and been implementing it for three years required us to change what I call the normal apportionment of monthly volumes to some degree in order to accommodate the sediment experiment. We had to insure that September could be a flat flow 8,000 month to retain sand inputs if they occurred and in order to insure that in the 12th month of the water year, we had to take some volume out of what would be a normal MLFF and move that volume into June, July, and August which meant that we had higher peaking operations in those months but we guaranteed that if we got sediment inputs after September 1<sup>st</sup>, we could go to low flows for September presumably even through December because the original proposal was to do the high flow test in January. If we're not embracing a recommendation to do another sediment experiment this year and there are at least three or four reasons why I can recount why we're not making that recommendation, do we still want to stick with an apportionment that was designed to do something we're not proposing to do? In other words, does it make more sense now if you're not promoting the idea of doing a sediment experiment in the winter or even in November, of having these larger than normal monthly volumes in July and August and having a very low volume month in September? Should we basically talk about moving some of the volume in this July and August into September to make it more typical to what we saw in WY01 which was an 8.23 maf year without any experimental components? And then if we're also recommending to go back to our ROD for January-March of 06, again those volumes would be somewhat different than they have been for three years because we've been specifically trying to do 5-20,000 operations six out of seven days of week or so. Those kind of discussions are all detailed stuff and how is that related to the budget. It is related to the budget and it's something I believe we've got to try and resolve so that the folks in operations at BOR can basically implement the will of the group in terms of a recommendation of what to do in 06. This is the kind of detail that we have to wrestle with at the Center every day of the week and it's only rare opportunities like this where we get together as a group and ask you folks what you can support. The first thing you have to understand what your options are and what they're based on and that's my job and the second thing is you need to tell us what you support.

**Q:** Are we going to have those discussions as part of the work plan and budget deliberations? What would you like the TWG to do at this meeting? (Persons)

**A:** The Strategic Planning Group exists and not everyone can attend every meeting and then there are interactions with the science advisors who are meeting this week. We're here this week and whoever can stay here, maybe we can't get it all done within the context of a TWG meeting but certainly there is a



*need to get some sort of motion approved at this meeting for the budget and work plan because that is going to be required by the AMWG. The details of the hydrology, between now and August, we still opportunities to work with Tom Ryan and Dennis Kubly at BOR to determine what we're going to do for July and August. Does it make sense to move some of the volume from those two months into September and try to replicate as much as possible in 01 hydrology and operations because we're not really going to do a sediment experiment and I guess time is ticking away. We have this week to at least talk about it and the first order of business is to understand enough about these two versions of the work plan and budget for the TWG to be able to say we're going to support this one and move it to the AMWG as opposed to that one. Our official recommendation from the science center is we believe you should support the ongoing experimental work to complete two or three critical elements, sediment and two biological ones, as you spend time in the next year and a half in planning for the next phase in 07 and beyond. Of course the people at operations want to know what the suggestion is right now. We've got 12 days left before it's July.*

**Q:** *Can we approve a budget without having to necessarily approve hydrology? Are they that linked? (Knowles)*

**A:** *What I would say in this case is that having informally just talked with Tom Ryan who is the person in charge of scheduling operations at GCD with Western, we still have the ability and latitude to make adjustments to the remaining months of the water year and the question is why would those be made and how would they be in line with this program and science recommendations. I have to bring it to your attention that if we do exactly what we've done for the previous three years, the only reason we've done that in the previous three years is to set ourselves up to do a sediment experiment in the winter and restrain operations pretty severely in the fall to retain inputs. If that's not the strategy this year as an experiment, you just have to ask yourself is there some sense in continuing this. One reason for continuing doing it is because the supplemental EA has another series of flow based experiments that actually are tied directly to that proposed hydrology. So if our commitment is to continue doing that and our recommendation in the plan is to work on those TCD related issues, keeping the hydrology as it is despite the fact that we're not staging for a sediment experiment still makes sense.*

**C:** *The fall hydrology is, with the exception of Sept-Oct where the supplemental EA commits to those alternating steady and fluctuating flows, ROD flows in an 8.23 maf year. So devoid of a recommendation other than that, that is what is likely what would be forwarded. That then falls into Tom Ryan's world of monthly volumes and then what does the ROD say about how you schedule those flows. It's certainly within the purview of the TWG to say are there certain aspects of that and Ted has suggested one on the winter fluctuations. They would like to go back to MLFF, Jan-Feb-Mar, so that they can get a chance to test whether or not the anticipated effect on trout is realized as a comparison. (Kubly)*

**C:** *If you haven't had a chance to read the executive summary from Korman, et al., basically concludes that if we would've done experiments that were equivalent to what we call no action from the 80s, there might have been an increase in mortality to redds as high as 75% but with what we were doing for the past three years, his model would suggest that MLFF would've probably achieved the same level of mortality. So if you're trying to get to the cause and effect between flow operations and this one particular life history of this species of fish, the logical thing seems to be to go back to MLFF and see if the simulations are correct. (Melis)*

**Q:** *Then affects sediment transport? (McMullen)*

**A:** *It does and in a positive way because the data that we have on the transport clearly shows that we have elevated export under these 5-20,000 operations. We had hypothesized that there might be some benefit to that in that we might actually see greater deposition at 20,000 feet in the wintertime. What we've seen is increased export, some changes in habitat morphology which we're still trying to analyze and assess as part of this fine grain sediment work, backwaters and things that may have more benefit than just saying well there is more or less sand in a particular eddy. One question is what is the configuration of the bar with respect to nearshore habitat but what we can say based on the transport data is more peaking at 20,000 whether it's summertime, normal operations, or wintertime for experiments, the export rates are substantially higher so it's coming at the cost of another resource conservation objective.*

**Q:** *Would it be possible for you to lay out what your proposal would be for hydrology in 06? (Henderson)*

**A:** Yeah, we've kind of been doing it informally and this is the first chance to really talk about it. The recommendation for Jan-Mar or early April would be normal operations probably with monthly volumes that are smaller than they have been in the past three years and the only record that we have for MLFF operations under 8.23 hydrology is really reflected in the historical monthly releases from WY01 because that was post-LSSF and it was before we actually got into this game of staging for sediment inputs in 2002 and beyond. The other question would be what happens this summer and fall. I guess if we're committed to fully implement the test, the field efforts tied to the supplemental EA, related to constant flow vs. low fluctuating flows starting in September, we need to have that September volume be equivalent to what it has been in order to have constant 8,000 vs. 6,500-9,000 cfs. If you take volumes from July and August and restore them back into September, let's say make September 600,000 instead of 480, it's no longer possible to compare 8,000 for two weeks with 6,500-9,000 for two weeks there is just too much water and you have to change your experiment to a constant higher vs. a higher fluctuating flow. That's the tradeoff and I guess what we're really trying to resolve is that we have a supplemental EA with conservation measures attached to it and activities and a proposal now that Barbara Ralston has put together with Dennis and the other scientists and we're staging to do this. If we're committed to do this 100% and we're going to put it on the ground, we need to maintain the monthly volumes as they've been projected so that we can actually pull that off.

**Q:** Is it possible you could put a written proposal for tomorrow that we could discuss? It's hard to have the TWG buy off on anything here without something. (Henderson)

**Q:** Someone else asked the question of do you need to know what the flow is before you can make a recommendation around the budget and work plan. What does the group think about that? Which has to come first? (Kubly)

**C:** The volumes are there for the year and the releases are there so if it's a fixed volume and release pattern on a yearly basis. We're just talking about shifting from month to month. We talk about hydrology and we get confused. That implies some natural variation. It's not a natural variation. It's a monthly release pattern. We have the choice between two release patterns: what we've done in the last couple of years or what we did in 2001. If you've chosen the release pattern, then you've chosen the budget. If you chose the budget, then you chose the release pattern. (King)

**C:** If you embrace the non-experimental version, the recommendation would be to go back to 2001 operations, month by month, and you wouldn't spend \$800,000 on mechanical removal and you wouldn't spend about \$150,000 on the trout study so that money just goes into this carry forward which moves up to. (Melis)

**Q:** The question is: What's the difference between steady flows in September and some sort of variation of flows in September? You're suggesting moving water out of the peak power months, July and August, and putting in September which is generally a low cost market. From a power standpoint, if the scientists don't need the water in September, I would rather see it in July and August I think without knowing what Western is going to do for an analysis. Intuition tells me from a basin fund impact, it's best to have the water in July and August if you don't need it September. Now if you put water in September, how does that impact your monitoring costs or the effort you have to do to monitor those 8,000 vs. the fluctuations in September. If that's a wash, then monthly volumes is not an issue. (Greiner)

**C:** The thing that's referred to as the TCD work in Appendix A, there is a work element called B11, and it says in the note, "GCMRC prepared a work plan and budget in collaboration with Bureau of Reclamation during the spring, summer of 2005. Report on this work will be made in June 05 at the TWG." That work is suppose to go on in either version of the budget because it's actually coming from a recommendation from the HBCCP AHG so we have a line item in there and we concur with the recommendation to do the work and actually develop a proposal to do the work based on the supplemental EA and to do it as it's described requires that the volumes stay as they're currently projected through early September and October, correct? That's not an experimental recommendation. That's a recommendation that came through the BAHG from the HBCCP AHG. It's flow-based work. It could be seen as experimental work but it's really not part of the experimental plan. If you go back and look at the experimental planning document from 2002, it doesn't really talk about what's described in the supplemental EA or what's described in the proposal for TCD related research. In either case of either budget, that work is suppose to go on. In order for it to go on the way it's described in the EA we would stick with the volumes that are projected for July and August and we would have a 480,000 maf in September. Then the question is, what happens in WY06 which starts the next day on October 1. That's kind of where it's the second part of the question because if we're doing the experimental recommendation or not, you're probably back to MLFF, normal operations starting January thru the rest of the year. Those volumes will probably be

*reduced slightly because they were slightly smaller in WY01. They became inflated a little bit when we started the experiment in 03 in order to make 5-20,000 work. There really are two elements of what we're talking about. Part of it is tied to the experimental recommendation which is Jan-Mar. Part of it is tied to work that will go on which is really a recommendation from the HBCCP which affects Jul-Oct.*

**C:** *If we go to the comparison of the steady and the fluctuating, CREDA would like to see the fluctuating come first in September. That's not a research question but it is an impact on the power industry question. (Greiner)*

Norm asked the TWG to review the budget and work plan tonight and be prepared to discuss specific concerns at tomorrow's meeting.

Social Cultural Program. Ted said that Helen Fairley was involved in a PEP panel river trip and was unable to participate in the final preparation of the work plan before it was given to the TWG. He said that projects C2 and C3 were revised upon Helen's return to the office and she provided copies (**Attachment 8d**) to the TWG in preparation for tomorrow's discussion.

Hopi Tribe Response. Following the TWG meeting, the Hopi Tribe sent a letter (**Attachment 8e**) to the TWG Chair dated June 24, 2005, in which they explain their inability to attend this TWG meeting "due to the ongoing lack of participation funding." The Hopi Tribe also expresses its strong opposition to elimination of the Terrestrial Monitoring Program in the FY06 budget. "Many resources of cultural importance to the Hopi Tribe ... and without this monitoring, a vital component of the overall river ecosystem will be missed ...."

#### Budget Concerns

Bill said he was in the BAHG and on the last conference call there were only three or four people who participated. He wasn't entirely comfortable because there wasn't good representation and questioned if the TWG was okay with so few people providing input on the budget.

Ken said he raised that question at the last TWG meeting and that "consensus through lack of voice" didn't make him feel comfortable with what the BAHG was doing.

Adjourned: 5 p.m.

Glen Canyon Dam Technical Work Group Meeting  
June 22, 2005

**Conducting:** Norm Henderson, Chairman

**Committee Members Present:**

Mary Barger, WAPA  
Timothy Begay, Navajo Nation  
Kerry Christensen, Hualapai Tribe  
Jonathan Damp, Pueblo of Zuni  
Brenda Drye, So. Paiute Consortium  
Lloyd Greiner, UAMPS  
Amy Heuslein, BIA  
Rick Johnson, Grand Canyon Trust  
Chris Kincaid, NPS/GLCA

Robert King, UDWR  
Dennis Kubly, USBR  
Glen Knowles, USFWS  
Ken McMullen, NPS/GCNP  
John O'Brien, CGRG  
Don Ostler, UCRC  
Bill Persons, AGFD  
D. Randolph Seaholm, CWCB  
Mark Steffen, Federation of Fly Fishers

**Committee Members Absent:**

William Davis, CREDA  
Phillip S. Lehr, Colo. River Comm./NV  
Larry Stevens, Grand Canyon Wildlands Council  
Steven Begay, Navajo Nation  
Christopher Harris, CRB/CA

John Shields, WY State Engineers Office  
Bill Werner, ADWR  
John Whipple, NM Interstate Stream Comm.  
Michael Yeatts, The Hopi Tribe

**Alternates Present:**

Emily Omana

**For:**

Larry Stevens, Grand Canyon Wildlands Council

**Interested Persons:**

Mike Berry, USBR  
Gary Burton, WAPA  
Jeff Cross, NPS/GRCA ??  
Helen Fairley, USGS/GCMRC  
Dave Garrett, M<sup>3</sup>Research  
Lisa Leap, NPS/GRCA  
Paul Li, IEDA

Mike Liszewski, USGS/GCMRC  
Ted Melis, USGS/GCMRC  
Barbara Ralston, USGS/GCMRC  
Pam Sponholtz, USFWS  
David Ward, AGFD  
Linda Whetton, USBR

Meeting Recorder: Linda Whetton, USBR

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

**Welcome and Administrative Items.** The chairman welcomed the members, alternates, and interested persons. A quorum was established and attendance sheets distributed. Norm announced that due to a family emergency, Nancy Hornewer's presentation would be rescheduled for a future meeting.

**Review and Approval of May 18-19, 2005, Meeting Minutes.** Pending several minor edits and without objection, the minutes were approved.

**Review of Action items:** Refer to updated Action Items List (**Attachment 9a**). Listed below are additional comments from specific items:

**#2 HBC Genetics Management Plan.** It was felt that the Science Advisors should provide a review of the plan. Dave Garrett advised the TWG it would take at least a month for the SAs to provide any comments on the plan to them. Rick felt that perhaps the SAs could review after the next revision. Glen said the HBCCP AHG hasn't submitted their comments and he would like to include those with the TWG's comments and send to Tom. Dave said he would arrange a time for the SAs to do a conference call with the purpose of offering suggestions on ways to improve the content of the plan, adding sections, etc., and committed to have something to Glen by July 4, 2005.

**Action Item.** (2) Dave Garrett will report back to Glen Knowles by 7/6/05 on suggestions made by the Science Advisors for ways to improve the HBC Genetics Management Plan.

**#4 Humpback Chub Hatchery Evaluation: Prospective Refuge Facilities.** Bill Persons said he received feedback on one issue but no technical assessment of the report. If anyone wants to provide information to him, they can but he doesn't need anything else from the TWG. He said there has been some controversy because AGFD made a statement that the fish should be pulled out. AGFD wasn't subject to the propagation policy and didn't need permits. Bill was adamant that AGFD will not relinquish their authorities and said they are proposing to take fish out and need NPS and FWS permits to do the removal. Ken said the NPS wants to make sure their mandates are followed in accordance with the law and want to be advised of the area where AGFD will be pulling fish out. Dennis advised that the HBC AHG is developing criteria for taking fish out but that process isn't ready. Dennis also said there are other implications such as the number of fish being taken out at Chute Falls and so the decision was made to allow FWS to use their discretion but AGFD never identified a need. He asked if FWS would reduce their take. Bill said that AGFD won't have any money until July and they have to wait until FWS come back from their sampling so nothing will be done until late July. Dennis said there are technical and policy issues and advocated the policy issues go to the HBC AHG committee and the technical go to Glen as the TWG HBC ad hoc chair. Randy concurred and felt it would be appropriate to have some preliminary discussions with Glen's group to help formulate their proposals. Rick said it would be a good idea to see if there is consensus on what to do next and suggested the TWG hold a conference call to discuss and then be able to make a recommendation to the AMWG at their next meeting. Rick congratulated the AGFD for pushing the work forward. Refer to new Action Item #15.

**Action Item:** The TWG will hold a conference call between now and July 27, 2005 to discuss the "Humpback Chub Hatchery Evaluation: Prospective Refuge Facilities" report with the purpose of determining what action should be done and develop a recommendation to the AMWG for consideration at their next meeting (Aug 30-31).

**#11. Comments on Flow Alternatives.** Ted reminded the group that Josh Korman agreed to help the TWG accumulate comments on the flow recommendations by June 8, however, they only got two comments and those were forwarded and sent to Linda. (Linda forwarded to TWG on 6/25/05). Rick requested the comments be included in the meeting minutes (**Attachment 9b**). Gary Burton said that Clayton Palmer is formulating principles and guidelines on when the experiment is structured and will be sent to Ted shortly. It will be included as part of the workshop.

**FY06 Budget Deliberations.** Norm asked for specific concerns on the FY06 budget. The following were identified and discussed:

C2. page116. Tribal Monitoring Activities

Kerry took exception with the rationale for the program and didn't like how the Hualapai Tribe was being characterized. He said that GCMRC wants to synthesize all the work they did for \$10,000.

Helen said the work done was a less than successful terrestrial monitoring effort. The project that was described in the work plans was intended to integrate tribal concerns and issues within a single program. It didn't work from a tribal perspective because a lot of concerns aren't just about ecological change but also the values they describe to traditional values. The TM by the western scientists was based on random sampling and didn't meet the tribe's needs. Helen said she learned that programs being done by tribes are actually attempting to meet multiple needs including TCP and 106 issues. When they originally proposed to fund the project, it included a workshop that would clarify the goals of the efforts and make sure the monitoring protocols would address in clear linkages, but for various reasons the BAHG was not supportive. She feels the best use of those funds would be to support the tribes that haven't been doing monitoring all along and put a document together showing what monitoring has been done thus far. She also reminded the TWG that the tribal funding issues haven't been resolved. Currently, there is no plan in the tribal funding contracts to do this kind of work so this could be a valuable way to get the information out in a document and answer questions.

Kerry said he doesn't believe there is adequate funding for each of the tribes to do the synthesis work. He believes that if the Hualapai Tribe had brought their results to the AMWG, people would've understood the value of the programs.

Comments:

- *I would like to ask Reclamation about some integration between the \$95K the tribes have been getting and this program. I have a problem that only three of the five major tribes are here and also that the NPS was excluded. I support your effort to get people together. I'm not sure synthesis of previous approaches is our primary need. (Kincaid)*
- *Going back to the handouts, Navajo Nation wasn't there because of funding needs. Navajo has been attending these meetings on our own money because we haven't received our funding. Navajo doesn't have a person who is up to speed on all the issues. Every time we participate, it's not monitoring. (Begay)*
- *Zuni submitted two proposals and we have not been engaged in this process to allow us to plot some of the places. We have never gotten that assistance. We have gotten the archeological sites but can't put together a comprehensive plan because we're not part of this process. We do have a lot of the data from our river trips and will be put in a couple of formats. We have not seen these proposals. We should be doing the TCP eligibility study when the money comes from USBR. I hear a lot about the \$95K for developing programs. We got our money two weeks before we could spend it. For this year, Mike Berry asked us to do a definite scope of work and I did a breakdown on the \$95K, \$15k goes to river trips, the rest gets an indirect cost of 10% and then you calculate \$70 a night for a hotel, elders who go on the river trips for 10-14 days and they want to be compensated from their regular salaries*



*and all that takes about 30% of time plus it takes time and money to come to these meetings. As a result, there is no money left over for monitoring. We'd love to be involved in monitoring. We've asked the Center to assist us in developing GIS for the canyon but haven't gotten anywhere. (Damp)*

- *I suggest that having the workshop is important. (Kubly)*
- *It really bothered me when Dennis said the tribes have to do this at a running start. When I came back in March and the tribal administrator gave us a proposal for \$50K for each tribe, we had three choices of what we wanted to do. We sent a proposal into Helen. We've done everything we've been asked to do. We didn't know what we were going to do at the workshop and now we have to do this at a running start along with integrating our tribal values. We also were supposed to define tribal values and because of the sensitive issues, I'm not sure I can present that information here. After that meeting, Helen wanted to have another meeting but that was contingent upon the contractors' time. We couldn't make that meeting. I talked to her and suggested she contact the tribes to set up a time to come to a meeting. It's like holding us back when we should've been involved and then we would all be on the same page. In reviewing this, the tribes themselves have a lot of experience in putting together. We could've helped Helen put the workshop together. (Drye)*

Dennis said his reference to getting a running start using the \$25,000 was in response to not having to wait until FY06 to start. It seems the tribes and GCMRC can't get together on resource evaluation and he feels part of the reason is because they don't have an agreed upon approach.

Kerry proposed the following motion: Convene a meeting among GCMRC, the tribes, Reclamation, and other stakeholders to identify a scope of work for integration of tribal monitoring into the overall program and add \$50K to the project (C2).

Motion seconded.

Discussion:

- We received scopes of work. Do we need to have a dialogue on how these meet the needs of this program? I run into difficulty because what is this program asking for? It's difficult without this broader discussion. (Fairley)
- What are you going to develop and implement? I'm struggling with a request for \$100K to have a meeting and develop a scope of work and don't know what we're going to implement. That seems excessive. (Seaholm)
- In the the BAHG we weren't sure how much money to put in this effort? (Persons)
- I would like to see something described in the budget summarizing what they've done for the past 10 years come to the TWG. It's important for us to know. We need the reporting. Second comment: I think the motion on the board is fine if we don't try to change the money portion. That has to do with the scope of work and outcome of the meeting is something that would have to come after the meeting. (Burton)
- If what the tribes hasn't been included in the SCORE Report, then that needs to be done. If the cost exceeds \$50K, the carry forward would cover the additional costs. (Kubly)
- With that \$50,000, we can get a scope of work out and meet in the middle in how the monitoring can be done. We can do better and improve our relationship. You'll have to put some money into it. (Begay)
- How would this different from an ad hoc? Who decides on what is needed? Is there a scope of work and then it comes back to this group to make a recommendation? I need those answers before I can vote on the motion. (Johnson)

Denny Fenn said the AMP Roles Ad Hoc Group is recommending that when the budget is approved. It hasn't been adopted but that is what they're going to recommend.

**REVISED MOTION: Convene a meeting among GCMRC, the tribes, Reclamation, and other stakeholders to identify a scope of work (which will be inserted into the '06 Budget**

**and Work Plan) for tribal monitoring into the overall program and add \$50K (if necessary) from the experimental flow fund to the project (C2).**

**Motion seconded.**

**Discussion:**

**Voting Results: Yes = 12 No = 4 Abstaining = 0**

**Motion passed.**

Rick Johnson: I don't necessarily object. I just don't feel I have enough information to vote.

Kerry said he would convene a meeting with GCMRC, the tribes, Reclamation, and other stakeholders for Thursday, June 30.

#### B.11, Page 117, Temperature Control Device

Bill Persons questioned how the work will be done and how it will affect other programs. He said there was a good discussion at the last TWG meeting on what's been happening to flows. His thought was that treatment will be taken away, however, he heard yesterday that GCMRC is looking at two weeks of fluctuating flows and two weeks on and off and he's not sure what is going to be learned. He hasn't heard anything from fisheries and wondered what the plan is.

Dennis said the flows in September and October were agreed to by the Secretary but only if there was a sediment trigger. The trigger would lead to fluctuating flows with emphasis on whether sediment could be detected. When it came time to do the supplemental EA, it was determined there were times that we could switch and the emphasis would be on native fish. In FY06 the AMWG would have an opportunity to make a recommendation to the Secretary on flows if they want to do something else. He asked Barbara what they hope to learn.

Barbara said there would be an effort on thermal modeling for the mainstem and some modeling along the shoreline. The second project is looking at backwater habitats and developing some similar approaches and tie into the food base initiative. The data from the TCD flows will be supportive of the foodbase work that is going to start this fall in the Glen Canyon area. The data will also be used in a modeling effort likely with thermal in rearing habitats relative to the mainstem. The third project will be in seining in back waters. GCMRC has previous data from AGFD on backwaters. That data has been analyzed to determine if there are particular characteristics that promote habitat for rearing fish. They will also be collecting benthic productivity between each of those flood flow regimes. For two weeks they will put out samplers that quantify how much colonization is occurring among the benthos in backwaters as well as in shorelines. She said GCMRC has the historic data to support the modeling effort and can provide the project descriptions and approaches if people want. She said the available to you. This project is being funded by FY05 money.

Dennis reiterated that the work Barbara is working on is in under FY05. He said that Bill has been a party to meetings and voiced his concerns. He said it is not just a fish experiment but has a lot of relevance to the hydropower community. Failure to reject the null hypothesis that there are significant differences between the steady and low fluctuating dam releases is very important to the hydropower industry and Reclamation has brought \$200K of TCD funding to test the hypothesis.

Bill made the following motion:

**MOTION: Add \$50K to Downstream Fish Monitoring below Diamond Creek (B9 in Budget and Work Plan) taken from experimental flow fund/TCD/MSCP (B9 in Budget and Work Plan) depending on turbidity/feasibility and warm water workshop and existing data analysis.**

**Motion Seconded.**

**Discussion.**

**Voting Results: Yes = 15 No = 1 Abstaining = 0**

**Motion passed.**

Dennis Kubly (abstaining): The TWG is not in charge of its own destiny. There are too many things hanging on this motion. There is so much we don't know. Do we want to recommend spending these dollars?

C3, p. 116, Integrated Campsite Monitoring Program

Randy Seaholm posed the following questions: (1) Why isn't this part of the beach monitoring? (2) Does it need to be part of the core monitoring endeavor? (3) Why can't it be done as part of remote sensing because then you can identify all the beaches?

Helen responded that the camping beach change evaluation has been a separately funded item but was piggybacked on the FIST work because the methodologies were an outgrowth by NAU on monitoring sandbars. They were looking at topography at sandbars and so in the late 1990's it was extended to include more camping beaches. Two years ago NPS (Norm) came up with some funding to use some remote sensing technology to measure the same kinds of things. It was reasonably accepted. She is proposing to try and move to a more remotely sensed effort to what is being measured on the ground. When they were doing the change detection work in conjunction with the FIST, they could match up with the sites. In FY06 there is no field component in the FIST project so that is why it is being pulled out.

Norm said the discussion they had would have the monitoring done as part of core monitoring. Randy said then it should be identified as research and development and not core monitoring. He could accept if it was listed as R&D. He's fine with folding them in but doesn't want it built in as core monitoring.

C1, p. 115, Integrated Archeological Site Monitoring

Gary Burton expressed concern that what was thought be level funding now looks like a large increase. There is no information on the NPS doing separate fee demo work for monitoring. Their understanding was it would be flat funded at the FY05 level at \$250K until a treatment plan was developed so they knew what was going to be monitored. It appears there was a significant increase and he wants to know how that happened.

Helen said in the past the monitoring work being done in the cultural resources realm was to address 106 impacts as a result of dam operations. When she first proposed looking at dam results and needed a more site specific, she came up with a program to meet both needs. GCMRC then added more elements in an effort to look at a select set of sites and relate them to flow regimes.

Ted added there is a salary that is distributed between C1, C2, and C3 because GCMRC is proposing to hire an employee to assist with the Social Cultural Program.

Gary asked what work was going to be done for the additional \$150K. Helen said they are going to make modifications in how they measure changes in sites. Right now the monitoring can tell them whether impacts are occurring or not but not how fast. They're trying to get that information in a more timely manner.

Comments:

- *If you're going to use more sophisticated methods, we want to see more proposals. (Damp)*

- *On the premise of adding the geomorphology component, we need to be more processional in our approach and tie to dam operations and terrace erosion and this description does not illustrate what the hypothesis is, etc. If we're going to be monitoring, those should be tied to the testing of specific explanatory models and that isn't happening. (Kincaid)*
- *Jeff Cross and I met on 6/20/05 with Mike Berry and Randy Peterson and it was determined that we have brought money to do treatment on ten sites identified by the science advisors and the treatment overlaps with the list of 150 sites that Reclamation has determined need treatment. In the next two weeks we will send out a letter to everyone fleshing out our proposed direction of how these treatment plans will come about. The first ten sites will be done based on available funding and we'll coordinate with USBR on a treatment plan for other sites. We will take ten sites out of the AMP program and use the same treatment plans for all 150 sites as it is developed. This is from the \$1.2 million fee demo money and it's covering the recreational impacts to those sites and working Reclamation to coordinate and collaborate on how those sites can be treated. (McMullen)*

#### A2, p. 113, Integrated Downstream Water Quality

Don Ostler asked for an explanation on why this budget item was increased by three times and what additional work was being combined into it.

Ted said the FY05 components for IWQG and stream flow/suspended sediment were two separate projects with separate funding. GMCRC is proposing to combine the efforts into one project in FY06. In FY05 with the combined associated salary costs, logistics costs, etc., for the combined projects, there is a decrease of \$100K if they had been administered separately. When the two get added together in a combined effort to what it was in FY04 and FY05, it's an attempt to have a smaller combined project in FY06.

Dennis said the BAHG spent a lot of time on the burden and asked Denny to explain what will he anticipates may happen in FY07.

Denny said at this point in time he can only speculate because USGS Director Chip Groat resigned last Friday. Denny had sent Chip an e-mail message a month ago and told him the \$750K was voted down for base funding in this program. By the time the message had arrived, Denny was told GCMRC would get the \$1M and the \$750K so Chip gave GCMRC the \$1M off the top of USGS appropriations. Chip also set it up so that the \$750K would be in the USGS budget every year. With Chip gone, Denny isn't sure what the new director will do. By deciding to reject the Mark Schaefer overhead, the USGS now has \$750K as extra costs as a consequence of that decision. Now that Chip is gone Dennis isn't sure what the new director will do. Therefore, he feels Reclamation will have to go back to the Shafer memo and reduce that overhead. The decision has been made in F06. In the interim, Pat Leahy has been named as the acting director of USGS. Reclamation Commissioner John Keys has requested that NPS and USFWS plan a 10-day river trip for high level officials to see this program firsthand around September 3, 2005. Denny said he can only speculate if GCMRC will get the \$1 million in FY06 and FY07.

#### A1, p. 117, Lake Powell Monitoring

Rick Johnson asked if all the costs for fall monitoring work were coming out of power revenues or if the AMP was subsidizing some of the costs. Barbara said that a portion of the salary for Lake Powell is for one of the employees and is covered through A2 so the logistics and full salary of a GCMRC person is covered in A1 and half of the salary is covered in A2.

Norm asked if there was any problem leaving the money in there with the caveat that it will be fully discussed in the core monitoring process. Dave Garrett said all of the monitoring needs are going to be fully vetted in the process.

#### B9, p. 115, Diamond Down Fish Monitoring

Kerry Christensen reported the Hualapai found an incredibly strong spawn last year. He feels with the warming of the water and the future of a temperature control device that this program needs to be continued and complement the upstream fish monitoring program.

Mark said he agreed with Kerry and questioned why it was taken out. Barbara said it was taken out because GCMRC is trying to balance doing experimentation and other work. They met with the HBC AHG and this action was not moved forward out of that group.

Dennis said part of the answer was the return on investment. The sampling was very expensive work and hasn't been done every year and also hasn't been run through the core monitoring process. He's not sure it will be done in 06.

Bill said they had dismal results the first year because the turbidity was high and their sampling efforts weren't good. He thinks there was a \$50K as a placeholder. With warm water coming out of Lake Powell, he thought the TWG might want to consider continuing a portion of the downstream monitoring. They haven't received a full report from the team that just got off the river and he wasn't sure whether a decision to defer on this project could be made.

Ken asked how this tied in with the warm water fisheries. Barbara said that Lew Coggins had provided an approach for an initiative that would proceed over a 2-3 year period at \$200-300K a year. AMWG advised doing a workshop and recommended the funds designated for AMWG/TWG requests be used for the workshop. Given GCMRC's planning efforts, the workshop won't be held until later in the fall. Barbara thought the workshop would be around \$30K but they're also using some of the money for the Knowledge Assessment workshop.

Dennis advised that the TWG will also need to how to use those dollars with respect on studying the early life stages of fish, either down to Diamond Creek or down to Diamond Creek and beyond. He said it's really the control and suppression they should be interested in doing. He said he would also like to know what else isn't being fully funded before he could vote on the budget.

#### B10, pg. 115, Humpback Chub Estimates

Randy said it wasn't clear to him if the concurrent estimates work was going to get done. Barbara said that because they will be doing mechanical removal, they're challenged to do concurrent estimates in the same area that fish are being pulled out and there isn't enough equipment to do the work at the same time. She said the modeling results wouldn't be done until December so they're proposing to delay until FY07 when mechanical removal will also be finished.

Rick asked if the monitoring is to determine if concurrent estimates are necessary. Barbara said that was one part of it if sampling is done. She didn't know how much sampling would be needed.

Ted said that in deliberations with the BAHG, there were two issues, complex logistical issues with doing mechanical removal in Jan-March and the concurrent population work. He said the

results won't be coming in so the sense of the group was to defer and the money could be carried forward from FY06 to FY07.

Dennis said that Rick's first question was clearly an objective of the evaluation and that the simulation modeling will point to that. Barbara said that wasn't a specific outcome and that they're working with FWS. Dennis reminded her that she is working with the DOI agencies and that is a higher priority. He also requested to see the scope of work. Barbara said that if there is confidence among the stakeholders on numbers and methods being used, then concurrent estimates don't need to be done even though Dave Otis won't come right out and say that.

Randy reminded the TWG that they have a clear directive from AMWG that concurrent estimates need to be done. Barbara said there was a minority report and the agreement was to do the monitoring to determine what the confidences were around population estimates.

**MOTION: Move we accept this beautiful budget.**

**Motion seconded.**

**Voting Results: Yes = Unanimous**

**TWG Effectiveness.** Norm distributed copies of the comments he had received on how to improve the TWG's effectiveness (**Attachment 10**). Norm said the Roles Ad Hoc Group will be making a presentation to the AMWG at the August meeting and advised waiting until after that to see what changes they are considering to make before making any changes to the TWG Operating Procedures.

**Nomination of TWG Chair for FY06.** Dennis said that if anyone is interested in being the TWG Chair for FY06 (Oct. 1, 2005 - Sept. 30, 2006), they should contact him for more details. The TWG chair will be elected at the TWG meeting in September.

**Future Agenda Items:**

- AMWG Assignments
- TWG Effectiveness
- Water Quality in relation to reservoir level
- Fine sediment monitoring
- Outgrowth from the Tribal Monitoring meeting
- Results from Downstream fish monitoring
- Ad Hoc Updates
- Recreation PEP Feedback
- Update from all the Ad hoc groups
- Revisit the TWG Ground Rules
- Update from Knowledge Assessment Workshop
- SPG Update
- Election of new TWG Chair
- Tribal briefings
- Tribal treatment plans
- Discussion for possible cultural resources workshop
- Update on Programmatic Agreement
- Tribal Consultation Plan Update
- TCD Update
- Would like to see a one-day workshop on cultural resources.

Adjourned: 1:30 p.m.

Next TWG Meeting: November 29-30, 2005

Location:

Bureau of Indian Affairs  
2 Arizona Center 400 N. 5<sup>th</sup> Street, 12<sup>th</sup> Floor, Conference Rooms A&B  
Phoenix, Arizona



### General Key to Adaptive Management Program Acronyms

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