Glen Canyon Dam Technical Work Group Meeting
July 16-17, 2008

Conducting: Kurt Dongoske, Chairperson

July 16, 2008
Convened: 9:30 a.m.

Committee Members Present:

Jan Balsom, NPS/GCNP
Mary Barger, WAPA
Charley Bulletts, Southern Paiute Consortium
Kerry Christensen, Hualapai Tribe
Jonathan Damp, Pueblo of Zuni
William Davis, CREDA
Jay Groseclose, NM Interstate Stream Comm.
Norm Henderson, NPS/GCNRA
Robert King, UDWR
Glen Knowles, USFWS
Dennis Kubly, USBR
Anthony Miller, Colo. River Comm./NV
John O'Brien, GCRG
Don Ostler, UCRC
Scott Rogers, AGFD
John Shields, WY State Engineers Office
Mark Steffen, Federation of Fly Fishers
Bill Werner, ADWR
Michael Yeatts, The Hopi Tribe

Committee Members Absent:

Cliff Barrett, UAMPS
Steven Begay, Navajo Nation
Christopher Harris, Colo. River Board of Calif.
Amy Heuslein, BIA
Rick Johnson, Grand Canyon Trust
Bill Persons, AGFD
D. Randolph Seaholm, CWCB
Larry Stevens, Grand Canyon Wildlands Council

Alternates Present:

Garry Cantley
Scott Rogers

For:

Amy Heuslein, BIA
Bill Persons, AGFD

Interested Persons:

Matthew Andersen, GCRMC/USGS
Glenn Bennett, GCMRC/USGS
Shane Capron, WAPA
Helen Fairley, GCRMC/USGS
David & Pam Garrett, M^3Research
Paul Grams, GCMRC/USGS
William Halvorson, SWBC/USGS
John Hamill, GCRMC/USGS
Barbara McKenzie, GCMRC/USGS
Ted Melis, GCMRC/USGS
Tom Ryan, USBR
Tim Steffen, Federation of Fly Fishers

Meeting Recorder: Linda Whetton, USBR

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Welcome and Administrative. The Chairman welcomed the TWG members, alternates, and interested persons. Attendance sheets were distributed.

Approval of Draft Minutes from December 4-5, 2007, Meeting.

Motion (Proposed by Bill Davis, seconded by Bill Werner): The TWG should approve the Draft Minutes of the December 4-5, 2007. Pending two minor corrections the minutes were approved.

Approval of Draft Minutes from April 8-9, 2008, Meeting. Kurt said the April 8-9, 2008, meeting minutes were distributed for review only and will be put on the agenda for approval at the next meeting.

Review of Action Items. (***Attachment 1***)

Action Item 2007:06.25-26(4) John Hamill expressed concern about the process and how to get projects through the process that doesn't involve the TWG. He feels there needs to be some resolution to the process. Dennis said that the full TWG looks like they're not performing because the ad hoc groups aren't completing their work or providing information to the TWG. He plans to make revisions to the MRP addressing issues from the biological opinion and proposals to the MRP. Mary Barger recommended GCMRC set up a meeting at GMCRC for TWG members who are interested to discuss the issues. She feels the comfort level would go up with those issues resolved or elevated.

Kurt said that he John Hamill, John O'Brien, Dennis Kubly, and himself would meet sometime during this meeting to figure out how to get that issue resolved and report back to the TWG tomorrow. Kurt also said he and Dennis will talk about how to make ad hoc groups more effective.

OLD BUSINESS: None.

New Business: Nomination of TWG Chair. Dennis asked the members to think of people they'd like to see be nominated. They should provide names to Dennis or Linda.

FY09 Budget and Work Plan & Updates. Kurt said at the last TWG meeting, a series of nine issues were identified and hopefully during the past BAHG conference calls those specific issues were identified and dealt with. It's his plan the TWG will review those and then focus the discussion on new projects.

Socio Cultural Program Update. Helen Fairley said the only new project is under Goal 9 (line 103), "Compile and Analyze Existing Safety Data." A graduate student will be analyzing the data and develop an assessment of their knowledge of safety issues. In response to Dennis' question as to whether a comparative study was done, Helen said a 1996 study was compiled by Larry Stevens as part of a published book. Helen also said she has information on the R&D program and left copies on the table (***Attachment 2***).

Physical Science Update. Paul Grams, the new physical scientist manager at GCMRC, said he was going to focus on what they see as new initiatives in physical science and modeling. He said a lot of these were presented in great detail at the last TWG meeting especially with regards to the issue of modeling, but he wants people to really understand what projects are falling under Goals 7 and 8. He said projects fell into two different categories: 1) things directed to sediment accounting and the sediment bank account, the mass volume of sand they're working with, movement downstream, export to Lake Mead, and the tracking of the resources, and 2) activities directed to sand and sediment monitoring and keeping track of things that people care about.

He thought people were probably familiar with sand mass balance so he didn't want to go into those details but stated there are real time measurements and sampling going on. The ideal is to measure the storage and measure it repeatedly. It's not technically possible to map the entire bathymetry of the system and it's not just mapping but making the changes from one measurement to another in a given segment of river. Next year from Lee's Ferry to River Mile 30 they will have a measurement from storage between two points and putting together the whole sediment budgeting process. The sediment trend is the complete mapping from Lee's Ferry to River Mile 30. They will be able to do comparisons between what was done last year and this year. This is really moving into a long-term monitoring issue.

The other new initiative is directed toward modeling. While monitoring helps them to keep track of where they are, the modeling also helps them design the appropriate duration and exact timing and peak of flow events and compare them with the rest of the year and also look at different operation strategies.

Vegetation Classification Update. Matthew Andersen updated the TWG on a report Barbara Ralston developed and said he brought a few copies of the open file report, "A Vegetation Database for the Colorado River Ecosystem from Glen Canyon Dam to the Western Boundary of Grand Canyon National

Park" (***Attachment 3a***) and said it's under Goal 6 in the workplan. He then reviewed several posters (***Attachment 3b***) and identified what the program stored and what it meant in terms of looking at all the combined information. He encouraged people to look at the second poster as it depicts the best outcome of the computerized modeling. It looks at the 2002 overflight data that was used to produce the information and is broken up reach.

Remote Sensing. Glenn Bennett said he wanted to talk about DASA which is line item D6. They did R&D building, the types of surface classification which gives coarseness or roughness all the way up to boulders. He said their basic full tool is to automate so it can be used over multiple years. There should be a method paper available by the end of the year. Glenn added that Reclamation is setting up a huge biological database and taking input from other agencies. The goal is to come up with a full dataset that goes across the agencies. It looks like a good start with BLM, BOR, NPS, FWS, etc., and he thinks GCMRC's program will contribute to their database.

LSSF Workshop Update Matthew Andersen said in August 2007 a synthesis workshop was held to discuss the 2000 flows which were also referred to as the LSSF. This is in Goal 12. This has been done in a couple of stages and brings together the original workplan and those that have been completed. In the meantime, it was proposed to have two different workshops. The first of the workshops is scheduled for August 12-14 and the emphasis will be on the physical and biological sciences.

ACTION ITEM: GMCRC will provide a list of documents the TWG should review in preparation for the LSSF Workshop.

Rainbow Trout Diet/Predation Study. Mike Yard gave a PPT Presentation entitled, "Foraging Ecology of Nonnative Trout in the Colorado River, Grand Canyon Predation on Native Fishes and the Effects of Turbidity" (***Attachment 4***). He provided the following conclusions on rainbow and brown trout:

Rainbow Trout	Brown Trout
Detect ability rather than food availability appear to explain differences in rainbow spatial distribution and condition factors.	Highly piscivorous, but the least abundant trout
Drift feeing appears to be an inadequate strategy for providing daily rations	Brown trout distribution and condition are not correlated to increased turbidity
High electivity for larger prey items	Diet is not correlated with invertebrate drift availability
Foraging strategy may shift from visual sight feeding to a more mobile, searching strategy under increased turbidity	Incidence of piscivory is correlated with prey availability of native fish
At high densities cumulative effects from piscivory may exceed brown trout	Incidence of piscivory is not influenced by turbidity
	Brown trout use a mobile foraging strategy that includes epibenthic feeding and piscivory.

***Q**: I was wondering in the analysis you've done, can you help us in making tradeoffs and Mark's earlier question. There is a learning and research component. (Kubly)*
***A**: There are a number of information gaps that are not going to come out of this. It's really the brown that is the piscivorous one. It doesn't appear that they're independently reproducing. (Yard)*
***C**: Their recommendation was to keep the RBT population low. When they get high, they can have a negative effect. We were getting many fewer fish in the samples we were pulling in. (Andersen)*

ACTION ITEM: Kurt said a presentation on the native origin of rainbow trout would be put on the next TWG agenda.

Near Shore Ecology/Fall Steady Flows. Matthew Andersen said GCMRC and others have been concerned about nearshore ecology and fall steady flows and possibly combining the two studies. In working with the cooperator, they realized it would be difficult to start that study and have a completed draft to NPS for

permitting and to Carl Walters. The reviews have started to come back. Matthew said he would send the information to the TWG. Bill Davis expressed frustration in not seeing the report before it goes to the AMWG. John Hamill said the AMWG passed a motion and he was frustrated by Bill's reaction.

Matthew said he has received approval from the upper level Park Service. Jan said they have to be very careful whatever they report. Jan said Matthew may be surprised that he would get approval. There was a lot of discussion about the solicitation and what goes in the proposal. Matthew said it was their intention to submit a full proposal to use motors in a non-motorized season. Kurt said that this will continue to be discussed between Park Service and GCMRC.

Pilot Study. Matthew went into more detail about the pilot study. He listed the various methods they plan to use in conducting the pilot study.

New Agenda Item: National Park Service Management at Grand Canyon. Jan Balsom presented a PPT, "National Park Service Management at Grand Canyon National Park (***Attachment 5***). She provided an update on the lawsuit with the River Runners for Wilderness, et al. vs. the National Park Service. She said more information can be found at the following web site: http://www.rrfw.org. Matthew said he attended a meeting last week in which Steve Martin and Martha Hahn assured him they were ready to sign the permit to use motorized equipment in the non-motorized season. Jan said she would check with Steve and Martha on the permit.

FY09 Budget and Workplan (*Attachment 6a*)

Bureau of Reclamation. Dennis said the Budget Ad Hoc Group held six conference calls. At the current time there is no recommendation from the BAHG. At the next TWG meeting he would like to discuss a more effective budget process and how the BAHG works. Some BAHG members would like to be involved in developing the spreadsheet which could also be discussed. The BAHG process is in place and has been agreed to by the AMWG. He thinks for the first time a 2-year budget should be done and, if so, they really need to get started. There were nine issues discussed. Dennis proceeded with a PPT presentation, (***Attachment 6b***). This budget doesn't include translocation but they hope to have that resolved before the AMWG meeting. He said the LTEP is still on hold.

ACTION ITEM: Develop a better budget process for the next TWG meeting and functions of the BAHG.

Norm asked what happens to the unspent tribal dollars. Dennis said any funds left in Reclamation's portion of the budget go into the Experimental Flow Fund.

Mary said that Navajo Nation still hasn't submitted a proposal. Apparently they are trying to hire someone to put something together, but Mike Berry is also trying to get something done. The question came up that if Navajo can't spend their monitoring money, is there a way for the other tribes to access the money rather than having it go into the Experimental Flow Fund. This is something that Mike is still awarding funds for FY08. Thus far, the tribes have not received their funding. Dennis asked how long contracting has been involved. Mike Yeatts said Hopi sent their proposal in January 2008. Mike Berry will do further checking and let Dennis know.

CRAHG Report. Mary Barger said the CRAHG still hasn't looked at the funds but are committed to doing mitigation. GCMRC's budget is proposing to finish out a lot of projects. Helen wanted to do some synthesis for some projects. The CRAHG agreed finishing the projects was a good idea. There will probably be a workshop in 2009. They asked to review the monitoring protocols and there was some question when monitoring begins by GCMRC.

ACTION ITEM: The tribal representatives will report back to Dennis if they would like to have their funds committed as individual entities rather than one lump sum.

Norm asked what happens to the carryover funds for the Experimental Flow Fund. Dennis explained that there are two sets of carryover. The AMWG sets aside $500K which stays in the basin fund and is carried on Reclamation's portion of the budget. GCMRC notifies Reclamation what they intend to carry over and they discuss what to do with it.

ACTION ITEM: Reclamation will look into the status of carryover funds on known year-to-year projects.

GCMRC FY09 Budget Emphasis. John Hamill gave a PPT presentation, (***Attachment 6c***). He mentioned several items that had changes. He brought copies of the AMWG motions relative to the budget. Two items were discussed and the only other issue was the tribal liaison position. He said the Deputy Secretary sent out a response to that and said DOI will be handling this issue. The other issue was a discussion on the near shore ecology and fall steady flows. He distributed copies of a letter he sent to the AMWG dated April 17, 2008 (***Attachment 6d***). They received only three responses on their budget comment form (***Attachment 6e***). GCMRC prepared responses to those comments and will share those with the group. He said it really helps to have the format so they are prepared for the budget discussion.

Norm asked about the $1 million GCMRC receives from USGS for use by the AMP. John told him the amount is included and will be changed in the budget before the next iteration. He explained that DOI customers get a "corporate" rate but the money is not shown as a final line item. Mary said she wants to see the whole burden rate with the $1 million subtracted. She said she has requested this information every year for the past three years and won't approve this year's budget without seeing it. John said he didn't see the value in providing that information as there are different burden rates applied to different projects.

ACTION ITEM: Dennis will send out a form for the AMP stakeholders to provide information on their ancillary projects within the GCDAMP.

Kurt asked Norm if he wants to go through each project that has a conservation measure within each component. Norm said he wants to see the total scope of the BCOM. Glen suggested Norm bring those to the table. Dennis asked if the group would agree in FY09 on the ancillary projects and determine if they're part of the program.

The group continued to review the nine issues. He said the lengthy discussion on the 2000 LSSF made him feel good about what GCRMC is doing and asked the TWG if that issue was resolved. Mary said she wasn't sure they had enough money to do the work. Kurt asked if other people felt the same way. John Hamill reminded them that if they take money from one project, they have to put it in another.

Mary said that Glenn and Ted had mentioned what can be done with the money for LiDAR so she was wondering what can be done "with more than less." Glenn said it would be more because plant and species responses can be delineated but cautioned there is a limit. He is to trying to find out the costs and said a big part of the overflight costs are in the overprocessing.

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Convened: 8:15 a.m.

Committee Members Present:

Jan Balsom, NPS/GCNP
Mary Barger, WAPA
Charley Bulletts, Southern Paiute Consortium
Kerry Christensen, Hualapai Tribe
Jonathan Damp, Pueblo of Zuni
William Davis, CREDA
Jay Groseclose, NM Interstate Stream Comm.
Norm Henderson, NPS/GCNRA
Amy Heuslein, BIA
Robert King, UDWR
Glen Knowles, USFWS
Dennis Kubly, USBR
Anthony Miller, Colo. River Comm./NV
John O'Brien, GCRG
Don Ostler, UCRC
Scott Rogers, AGFD
John Shields, WY State Engineers Office
Mark Steffen, Federation of Fly Fishers
Bill Werner, ADWR
Michael Yeatts, The Hopi Tribe

Committee Members Absent:

Cliff Barrett, UAMPS
Steven Begay, Navajo Nation
Christopher Harris, Colo. River Board of Calif.
Amy Heuslein, BIA
Rick Johnson, Grand Canyon Trust
Bill Persons, AGFD
D. Randolph Seaholm, CWCB
Larry Stevens, Grand Canyon Wildlands Council

Alternates Present:

Leslie James
Scott Rogers

For:

Cliff Barrett, UAMPS
Bill Persons, AGFD

Interested Persons:

Matthew Andersen, GCRMC/USGS
Glenn Bennett, GCMRC/USGS
Shane Capron, WAPA
Helen Fairley, GCRMC/USGS
David & Pam Garrett, M^3Research
Paul Grams, GCMRC/USGS
William Halvorson, SWBC/USGS
John Hamill, GCRMC/USGS
Barbara McKenzie, GCMRC/USGS
Ted Melis, GCMRC/USGS
Tom Ryan, USBR
Tim Steffen, Federation of Fly Fishers

Meeting Recorder: Linda Whetton, USBR

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Welcome and Administrative. The Chairman welcomed the TWG members, alternates, and interested persons. Attendance sheets were distributed.

Action Item Updates: 1) Leslie James gave an update on the power economics presentation in response to a list of questions prepared by Rick Johnson. Leslie said that many of his questions can be answered if he goes to the AMP website and review the documents posted. If he has any additional questions, he should bring them forward to the group. 2) She reported a Life Cycle Study has been done and as soon as it has been peer reviewed, she thought the authors could make a presentation to the TWG. Mary added that a presentation will be made at the upcoming Science Symposium. There are also questions on Rick's list that deal with current litigation and we're not going to answer those questions.

FY09 Budget and Workplan. Kurt said the group dealt with issues on the LSSF, nearshore ecology, and fall steady flows. The issue of the tribal liaison position has been dealt with and is no longer an issue for the TWG. Even though the TWG supports having an AMP Effectiveness Workshop in FY09 that issue has been turned over to the Department for further direction/action.

Kurt asked if the sediment transport study was still an issue and if further discussion with GCMRC is needed. Don said he thought the TWG talked about the questions the managers had and what the modelers are doing. Because the high flows are expensive and modeling is cheaper, he wants to make sure the questions are consistent with what the modelers are doing. John Hamill said he would arrange a meeting with the modelers and other people to make sure they're doing the work that people want. Kurt said that issue for discussion dealt with conservation measures. He asked if his concerns were adequately addressed with what Dennis said yesterday. Norm said they were but that they need to be included in a workplan. He said there are other potential management actions and AMP activities being done.

ACTION ITEM: John Hamill will set up a meeting with GCMRC modeling staff and interested TWG members to ensure the correct things are being modeled.

Line 73, Mainstem Coldwater Fish Control – New Initiative. Kurt said the next several issues would be more difficult to deal with particularly the concern with removing rainbow trout from the LCR. Mark Steffen said he wrote a minority report (***Attachment 7***) because he's very unhappy about how the program is killing non-native fish especially trout because it is a desirable sport fish. He said he wrote the report because he wants to be very clear in his opposition. He would like to have an individual vote on that line item.

Amy asked if the Hualapai are still taking the trout remains and if the issue has been brought up in the POAHG. Matthew said he would check with Loretta to find out if the Hualapai are still interested in the fish. Mike said the issue has been brought up in the POAHG meetings.

Line 15, TWG Chair Reimbursement. Kurt said the issue of the TWG using a facilitator has been brought up in lieu of the TWG chair not seeking reimbursement. The issue has a lot of ramifications for the TW and suggested they look at a way to accommodate both a TWG Chair and a facilitator, determine what the interaction would be, who would report actions to the AMWG, and finally look at the cost of having a facilitator. He wondered if the decision would be easier handled by an ad hoc group and asked if there was interest in forming one.

Concerns:

- *We're in a transition period. It's a logical time to flesh out ideas as to how this committee operates. It should be done before the next AMWG meeting so a recommendation can be made. This doesn't need to wait a whole year. (Hamill)*
- *If we had a facilitator, it might be more attractive for someone to serve as a TWG Chair. (Barger)*
- *Let's not let this drag on. I propose having a vote for establishing an ad hoc group or a facilitator. (Heuslein)*
- *I'm concerned about the overall overhead for the facilitator. (Ostler)*
- *A facilitator would probably charge around $130/hour so the budget would be impacted. (Kubly)*

Kurt asked who would like to be part of an hoc group to discuss this further. The following members volunteered: Jan Balsom, Kerry Christensen, Bill Davis, and Bill Persons.
The charge for the TWG/Facilitator AHG will be: To evaluate the benefits and costs of either maintaining the TWG chair or bringing in a facilitator, and if the facilitator is brought in, what are the costs, and how do you change the Operating Procedures? The ad hoc group is weighing the benefits, staying status quo or their analysis.

Since this line item has budget implications, the group will need to bring a recommendation back to the TWG for consideration before making a recommendation to the AMWG.

Review of Issues presented at yesterday's meeting. Kurt reviewed the following:

Sediment

- Important for GCMRC to meet with TWG reps regarding questions asked of the sediment models**.** **Action: The Center has dealt with**

DASA

- Look at running HECRAZ model against archaeologist site locations. **Action: Glenn Bennett is willing to look at that against the archaeological models. He will make some runs on that. Mary B said she'd like to go to 100,000. Glenn said he could do that. No budget impact to FY09**

Near Shore Ecology Pilot Project – TWG review part of AMP? **Action: John Hamill said GCMRC would share the scope of work on that project with the TWG. Matthew said he got the SAs review back and will respond to those and then distribute to the TWG. John said they also need to talk with the NPS for permitting on the pilot study. Mary said if there is going to be a problem, the TWG needs to be informed.**

BOR Budget

- Tribal Monitoring Funding – What happens to non-expended funds? **Action: Mike Berry is heading up the effort between Reclamation and tribes and whether those funds can be redistributed to the tribes and if there is something leftover, determine how those fund can be distributed. Mike will report back to the TWG at a later date.**

- Tribal AMP Participation Funding expended listed by individual tribes. **Action: The Tribes will respond to Mike Berry and information will be presented to the TWG.** The four tribes attending today's meeting concurred (Southern Paiute, Hopi, Hualapai, Zuni) with this action.

GCMRC Budget

- HFE Research Projects that continue into 09 are not shown in the budget. **Action: John Hamill will create an addendum on ongoing projects with the HFE for the TWG's information. John said he would include a summary spreadsheet in FY09 and is out of the Experimental Flow Fund and can also include some language about linkages to other projects.**

Dennis said he couldn't find the tie with the original AMWG assignment and that this project is intended to fulfill that directive but is losing its identity.

- Show full overhead for each project (how USGS contribution is expended). **There was a very lengthy discussion with Mary Barger requesting that each GCMRC project show the actual cost including burden and then having GCMRC subtract the $1 million they receive at the bottom of the spreadsheet. She has asked for this for the past several years and it never gets done. John said he didn't see the utility in doing two different spreadsheets and asked the TWG to weigh in on what they feel should be done and then proposing that to the AMWG for a decision.**

Mary said she provided comments on a spreadsheet and didn't know if the group would have time to discuss. There isn't a lot of detail in the projects. Her reason for bringing up the issue again is that she is a very detail oriented person and feels it would better inform the TWG in their budget deliberations.

Kurt asked John how difficult it would be to respond to Mary's request. John said he thought it might be good to do what Bill had suggested in putting together a narrative and see how it plays in the overall process and buy down the USGS overhead rate. He would need to talk with Barbara McKenzie because the USGS overhead rates are quite difficult to understand. He understands Mary's concern but said it is a very laborious exercise.

BO Conservation Measures identified in FY09 as ancillary projects and in FY10 vetted through the In/Out AHG and budget process.

Bill Davis asked why it is going to take five years to develop a non-native control plan. Matthew referred to line 62 and said this is a short-term plan to be delivered broadly to the TWG within the next few weeks and that emphasis is on the species and techniques known today. GCMRC thinks that modeling will help them make some educated guesses on the greatest threat to the species. John said that it would also focus on testing specific species. Dave said the interpretation was there and will cover all current known capabilities, sample design, gear, etc. and that's due in two weeks. Between now and 2011, new information will be developed on new techniques and then that improved plan will be delivered.

Kurt suggested that if there are specific concerns with the plan, they need to talk with Matthew.
Bill Davis said he is trying to understand the plan and by 2011 it will change considerably. He feels the plan should be updated annually rather than waiting to put a firm plan in place by 2011. He thinks a different approach would be better and stated the long-term monies should be used for a fixed plan.

Concerns:

- *The level of detail is lacking for a lot of reasons and should be noted. (Balsom)*
- *Do we need to see all the detail of the MRP in the budget every year? It doesn't have all the detail the MRP does. (Werner)*
- *We talked about having a hydrograph in the proposal and since it's a requirement of the GCPA, it should be inserted in this document. (Henderson)*

2000 LSSF synthesis funding adequate. **Action: This was discussed at length yesterday and Kurt said his sense was that the TWG is happy with GCMRC and how they're doing it.**

MOTION (Proposed by: Bill Werner, seconded by Don Ostler): The Technical Work Group recommends the FY 2009 Annual Budget and Workplan to AMWG for approval at its September 2008 meeting.

Representative	Stakeholder Entity	Vote	Representative	Stakeholder Entity	Vote
Bill Persons Scott Rogers	Arizona Game & Fish Dept.	Y	Rick Johnson	Grand Canyon Trust	absent
Amy Heuslein	Bureau of Indian Affairs	Y	Larry Stevens	Gr. Canyons Wildlands Council	absent
Dennis Kubly	Bureau of Reclamation	Y	Mark Steffen	Federation of Fly Fishers	A
Mike Yeatts	Hopi Tribe	Y	John O'Brien	Grand Canyon River Guides	Y
Kerry Christensen	Hualapai Tribe	Y	Bill Werner	State of Arizona	Y
Jan Balsom	NPS-GRCA	A	Christopher Harris	State of California	absent
Norm Henderson	NPS-GLNRA	A	Randy Seaholm	State of Colorado	absent
Steven Begay	Navajo Nation	absent	Anthony Miller	State of Nevada	Y
Jonathan Damp	Pueblo of Zuni	Y	Jay Groseclose	State of New Mexico	Y
VACANT	San Juan Southern Paiute	absent	Robert King	State of Utah	Y
Charley Bulletts	Southern Paiute Consortium	Y	Don Ostler	State of Wyoming	Y
Glen Knowles	U.S. Fish & Wildlife Service	Y	Bill Davis	CREDA	Y
Mary Barger	Western Area Power Admin.	A	Cliff Barrett	UAMPS	Y
				Total Yes	**16**
				Total No	**0**
				Total Abstain	**4**
				Total Voting	**20**

	Motion Passes	

- *Jan Balsom (Abstaining): There is not enough detail and whether projects would be in conflict with our policies. We do either a conditional approval and can't approve with the minimum required.*
- *Norm Henderson (Abstaining): No additional comments.*
- *Mark Steffen (Abstaining): I've already distributed a minority report with my concerns.*
- *Mary Barger (Abstaining): I concur with Jan that the level of detail is not there. We should be getting a higher level of detail. I depend on the ad hoc groups and individuals who are reviewing. The information is not there and don't know what's happening there. I'm really uncomfortable with that. That's a concern of mine. I'm still concerned that the LSSF happens. We had talked about whether additional funding would come in. I'm also concerned that the MRP is being held up because of permitting problems.*

General Core Monitoring Plan for GCDAMP. John Hamill said they've been trying to finalize the plan. Helen worked with the Core Monitoring AHG some time ago. The GCMRC agreed to a core monitoring step process. John said it was becoming difficult to develop within their staff but were able to get help from Dr. Bill Halvorson. Dr. Halvorson has a degree in ecology from ASU. Dr. Halvorson presented a PPT entitled, "General Core Monitoring Plan for the GCD-AMP" (***Attachment 8***).

General Core Monitoring Plan Table of Contents
Chapter 1 – Introduction and Background
Chapter 2 – Conceptual Ecosystem Models
Chapter 3 – Framework and Context of the Core Monitoring Program
Chapter 4 – General Long-Term Core Monitoring Proposals
Chapter 5 – Data Management
Chapter 6 – Data Analysis and Reporting
Chapter 7 – Administration & Implementation of Core Monitoring Program
Chapter 8 – Budget and Schedule
Chapter 9 – Literature Cited.

John said they would have a draft ready for the TWG's fall meeting. They would like to update the AMWG at their winter meeting and have a plan the program could endorse in spring 2009. John feels it would get everyone on the same page for monitoring.

Ad Hoc Group Updates:

Sediment AHG. John O'Brien said the Sediment AHG will try and bring a recommendation by the next TWG Meeting (possibly November) then TWG will review those. He said that if he doesn't intend to submit a recommendation, then the TWG can discuss in October and make recommendations for GCMRC and AMWG.

CRAHG/PA Update. Mary Barger said there was a PA meeting and a follow-up the second day. The first day they talked about the PA being rewritten for ACHP and SHPO and there was a lot of discussion on how the AMP fits into the 106 Compliance. They didn't feel the AMP should be part of the PA and that the AMP should put together a MOA. The CRAHG will write that so they need advice or direction from TWG to write an MOA on how the AMP fits with the PA.

Dennis asked if it was a change in budget. Jan told him the SHPO and ACHP don't have any legal authority outside 106 compliance. They can't be involved with anything other than 106; it's a way to fund things. They don't feel they can sign off on anything without NHPA. Dennis said they should bring it as a proposal to the TWG and then it goes up the line for further discussion.

John Hamill stated this group has no authority to enter into an agreement with a FACA committee. GCMRC provided a lot of comments about their role in this process and he didn't understand why that was taken out of the GCPA. Mary said the GCPA was taken out of the document. They said that

GCMRC has 106 responsibilities but their compliance is picked up by USBR and NPS and should have a signatory. Helen said she participated in that meeting and one of my concerns is that NPS and USBR are trying to set up a PA for operations of GCD without mentioning the AMP.

Kurt suggested the CRAHG get with Mike Berry and develop a report identifying the concepts for an MOA and bring it to the TWG for review and discussion.

Election of the New TWG Chair for FY09. Mark Steffen nominated Shane Capron. Shane accepted the nomination.

Shane expressed two concerns: 1) the possibility of using a facilitator for TWG meetings. Since WAPA would be paying his salary, he felt that freed up the TWG Chair reimbursement funds, and 2) he would also like to be able to make substantive scientific comments on behalf of for WAPA when warranted in TWG meetings.

Bill Davis expressed concern that the TWG chair remain neutral. Don Ostler said he has been associated with many other boards and they work fine. They all know that the chair has the right and ability to raise information for their advocacy.

Dennis said the use of a facilitator would still need AMWG approval because it has changes in the budget as to what a line item is being used for.

Without objection, Shane was nominated as the new TWG Chair.

Adaptive Management Progression: Potential Transition from Experiments to Management Actions. Dennis Kubly presented five slides and said he would like to get feedback from the TWG on the difference between experiments and management actions. There will be aspects that will be technical and remanded to the AMWG such as the HFT science plan.

John Hamill asked if there was a distinction between what is an experimental action or a management action. Dr. Garrett said the adaptive management process is based on a science based program. He said it's important in adaptive management for having some basis for what the group does. They need a definition as to when the experimental action is fruitful and ask the following questions: Will this help the program? Will it help the resource? There is a need to have accountability because we're using the social resources. When is it appropriate to take action? He said most adaptive management programs have limited funding so it might have some applications. The other is accountability to the public. It's important when the program takes action. There is no bright line and monitoring is a continuum but the experimentation process provides you have sufficient knowledge to know what the outcome will be.

Bill Werner commented that in the wake of the HFE and reading some of the newspaper articles, some people have concluded that we have to do them every year or every other year. Then he sees Ted's presentation, the preliminary results and some of the bars created in 2004 are gone. He feels that until we have a good understanding where we're going, it's hard to know what to do. He's also heard a lot about control of non-native fish and said maybe the money should be spent on doing it rather than researching it.

Jan said one of the biggest concerns is watching things happen without doing something. The other part is they've done a lot of the inventory on sites and identified threats which are important things to consider and are responsible for those resources. They will never know anything for certain so judgment calls have to be based on the best available information.

Dennis said there are some people who see a hard line between the two but wondered if there are shades of gray. Who pays and who does the work? It's the responsibility of this technical group to make

the distinction and answer the questions. While the LTEP is currently on the shelf, it may be resurrected at a later time.

Dennis said for the next steps, the group might entertain Carl Walters' thoughts when he comes out again. He asked what would wait until 2021 and suggested that perhaps the AMWG or the Science Advisors must advise the TWG which issues to pursue.

John Hamill said the TWG needs to do better annual planning and he stated some things that will be coming up:

1. LSSF Synthesis
2. MRP Update
3. NSE/FSF Science plan
4. Biennial work plan
5. Science Symposium
6. HFE Reporting
7. Core Monitoring Plan
8. Roles Report

Dennis said there will be core monitoring and if people aren't objective and technical, then what are the alternatives. Dave suggested the TWG take one resource and see if it could be piloted through the process.

Jay said the program's purpose is to avoid the damage to any resources, to determine the purpose of an experimental, and to have a controlled action before going to a management action. He views the MLFF as a restriction upon flows and other things that had been operated on 9 Mile and we couldn't turn the old system off.

Dennis said he saw a lot of editorials about the HFE and they were very critical. He questioned how receptive the public will be when the program does the 10th or 12th high flow. One of the biggest criticisms to adaptive management is that it's good in theory but not in practice. Dennis asked John if Carl would have time to meet at our October meeting. John said he would talk about it and let the group know.

Regarding the editorials, Amy said part of program's problem is informing the public of what adaptive management is. The group and even the POAGH needs to do more than we're currently doing.

Adjourned: 2:55 p.m.

Respectfully submitted,

Linda Whetton
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Upper Colorado Region

General Key to Adaptive Management Program Acronyms

ADWR – Arizona Dept. of Water Resources
AF – Acre Feet
AGFD – Arizona Game and Fish Department
AGU – American Geophysical Union
AIF – Agenda Information Form
AMP – Adaptive Management Program
AMWG – Adaptive Management Work Group
AOP – Annual Operating Plan
BA – Biological Assessment
BAHG – Budget Ad Hoc Group
BCOM – Biological Conservation Measure
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 Association
GCT – Grand Canyon Trust
CESU – Cooperative Ecosystems Studies Unit
cfs – cubic feet per second
CMINs – Core Monitoring Information Needs
CRBC – Colorado River Board of California
CRAHG - Cultural Resources Ad Hoc Group
CRCN – Colorado River Commission of Nevada
CRE – Colorado River Ecosystem
CREDA – Colorado River Energy Distributors Assn.
CRSP – Colorado River Storage Project
DASA - Data Acquisition, Storage and Analysis
CWCB – Colorado Water Conservation Board
DBMS – Data Base Management System
DFCAHG – Desired Future Conditions Ad Hoc Group
DOE – Department of Energy
DOI – Department of the Interior
EA – Environmental Assessment
EIS – 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
FY – Fiscal Year (October 1 – September 30)
GCD – Glen Canyon Dam
GCT – Grand Canyon Trust
GCMRC – Grand Canyon Monitoring & Research Ctr.
GCNP – Grand Canyon National Park
GCNRA – Glen Canyon National Recreation Area
GCPA – Grand Canyon Protection Act
GLCA – Glen Canyon National Recreation Area
GRCA – Grand Canyon National Park
GCRG – Grand Canyon River Guides
GCWC – Grand Canyon Wildlands Council
GUI – Graphical User Interface
HBC – Humpback Chub (endangered native fish)
HMF – Habitat Maintenance Flow
HPP – Historic Preservation Plan
IEDA – Irrigation & Electrical Districts Assoc. of Arizona
INs – Information Needs
IT – Information Technology
KA – Knowledge Assessment (workshop)
KAS – Kanab ambersnail (endangered native snail)
LCR – Little Colorado River
LRRMCP – Lower Colorado River Multi-Species Conservation Program
LTEP – Long Term Experimental Plan
MAF – Million Acre Feet
MA – Management Action
MATA – Multi-Attribute Trade-Off Analysis
MLFF – Modified Low Fluctuating Flow
MO – Management Objective
MRP – Monitoring and Research Plan
NAAO – Native American Affairs Office
NAU – Northern Arizona University (Flagstaff, AZ)
NEPA – National Environmental Policy Act
NGS – National Geodetic Survey
NHPA – National Historic 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
POAHG – Public Outreach Ad Hoc Group
Powerplant Capacity = 31,000 cfs
PPT – PowerPoint (presentation)
R&D – Research and Development
Reclamation – United States Bureau of Reclamation
RBT – Rainbow Trout
RFP – Request For Proposals
RINs – Research Information Needs
ROD Flows – Record of Decision Flows
RPA – Reasonable and Prudent Alternative
SA – Science Advisors
Secretary – Secretary of the Interior
SCORE – **S**tate of the **Co**lorado **R**iver **E**cosystem
SHPO – State Historic Preservation Office(r)
SOW – Scope of Work
SPAHG – Strategic Plan Ad Hoc Group
SPG– Science Planning Group
SSQs – Strategic Science Questions
SWCA – Steven W. Carothers Associates
TCD – Temperature Control Device
TCP – Traditional Cultural Property
TES – Threatened and Endangered Species
TWG – Technical Work Group
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)

Q/A/C/R = Question/Answer/Comment/Response

Updated: 02/03/09