

Glen Canyon Dam Technical Work Group
FINAL Meeting Minutes
June 30, 2004

Conducting: Norm Henderson, Chairman

Committee Members Present:

Mary Barger, WAPA
Jonathan Damp, Pueblo of Zuni
William Davis, CREDA
Lisa Force, Grand Canyon Trust
Lloyd Greiner, UAMPS
Christopher Harris, CRB/CA
Amy Heuslein, BIA
Matt Kaplinski, GCRG
Robert King, UDWR
Dennis Kubly, USBR

Glen Knowles, USFWS
Phillip S. Lehr, Colo. River Comm./NV
Ken McMullen, NPS/GCNP
Don Ostler, UCRC
Bill Persons, AGFD
D. Randolph Seaholm, CWCB
Mark Steffen, Federation of Fly Fishers
Larry Stevens, Gr. Canyon Wildlands Council
Bill Werner, ADWR
Michael Yeatts, The Hopi Tribe

Committee Members Absent:

Kerry Christensen, Hualapai Tribe
Marklyn Chee, Navajo Nation

Illa Bullets, So. Paiute Consortium
John Shields, WY State Engineers Office

Alternates Present:

Chris Kincaid
Don Ostler

For:

John Ritenour (retired), NPS/GLCA
John Whipple, NM Interstate Stream Comm.

Interested Persons:

Jan Balsom, NPS/GRCA
Mike Berry, USBR
Gary Burton, WAPA
Kurt Dongoske, CREDA
Helen Fairley, USGS/GCMRC
Dave Garrett, Science Advisor
Lance Gunderson, Science Advisor
Lisa Leap, NPS/GRCA

Mike Liszewski, USGS/GCMRC
Jeff Lovich, USGS/GCMRC
Ted Melis, USGS/GCMRC
Mary Orton, The Mary Orton Company
R. Scott Rogers, AGFD
David Ward, AGFD
Scott Wright, USGS/GCMRC

Meeting Recorder: Norm Henderson

Convened: 8 a.m.

Welcome and Administrative Items. The chairman welcomed the members, alternates, and general public. A quorum was established, introductions made, and attendance sheets (**Attachment 1**) distributed. The Chairman reminded the TWG that selection of the new TWG Chairman will occur at the next TWG Meeting.

Review of Action Items. See attachment (**Attachment 2**)

Review and Approval of May 3-4, 2004, Meeting Minutes. Without objection, the minutes were approved as distributed.

Report on AMWG Retreat. The chairman reported that the AMWG held a retreat on June 28-29, 2004. They looked at the overall functioning of the AMP and specifically at five different aspects: AMWG, TWG, GCMRC, SAs, and the budget process. Each of the members brought a list of questions they were interested in discussing at the beginning of the retreat. Norm said he had copies of the questions along with the results from the small group work. It boiled down to a perceived or real dysfunctionality between the AMWG and the various groups. They felt better communication and interaction was needed. They perceived the TWG might be too aggressive about what it does without specific direction from AMWG which causes confusion about leadership and product development. The major outcome was that the AMWG needs to be clear about setting priorities for the program so that other parts of the program have clear direction. An additional day was added to the upcoming AMWG meeting for further discussion on the AMP's priorities. As such, this creates a dilemma for the planning documents which will be delayed another 4-5 weeks. AMWG agreed to spend a couple of hours at each AMWG meeting to address the remainder of the issues that were identified.

Dennis added that one discussion centered on the schedule of products from GCMRC. He said that Reclamation was sent documents by the cooperating scientist and asked to put them on the AMP website. This was done but with a disclaimer that they were preliminary and not to be released or referenced in any reports. Ted said there was a peer review protocol established when the GCMRC was first formed when they were still under Reclamation. They said at that time they would not present to AMWG or distribute reports until they had been peer reviewed and considered final. However, they did do preliminary presentations to the TWG. He said that over time that policy changed into something in which they have difficulty in tracking products. In 2002 they presented preliminary HBC data and it was their first departure from the protocol. Ted said they always assumed TWG members would brief their AMWG members. He questioned whether that protocol needs to be changed. As for posting documents on their web site, Ted said he told the cooperators they could share reports with anyone who made a request but it was not a practice sanctioned by the USGS. Scientists could disseminate their work, but GCMRC could not. Dennis feels there needs to be protocol in place. Jeff Lovich said that the USGS has developed a new peer review process. It has received final approval by the Chief and is now at the regional level awaiting approval. Denny Fenn is responsible for giving that approval. The new policy will apply to everything GCMRC produces. It is still evolving and the protocols are still being written. Jeff said he would provide an update when it is finalized which could be another six to nine months, years, etc. It varies by district, division, and discipline so it is not a unified effort. Mike Liszewski said this issue has also created a certain amount of difficulty for the GCMRC librarian because it has been their policy not to publish without final approval even though some reports are posted on the AMP website. Dennis said the TWG could ask AMWG to address the issue of distributing preliminary reports.

ACTION ITEM: Jeff Lovich will visit with persons drafting the protocol to see if he can influence the direction of the protocol.

Jeff will keep the TWG apprised. This is to make sure that the science is beyond reproach. Norm said he could make a report to the AMWG on this subject. Bill expressed concern that when reports are tendered to GCMRC, they are in final form and the TWG should weigh in on the recommendations made in the reports. He feels the TWG needs to make a distinction between what is science and what is policy. He expressed concern for seeing documents posted to the web site which haven't been reviewed by the TWG.

ACTION ITEM: TWG members should give Norm feedback on this issue. He will make it part of the report to the AMWG.

GCMRC Strategic Plan Progress Report. Jeff said a draft Strategic Plan has been developed for GCMRC. It is not a science plan but more of a business operating plan. It was needed because every organization needs to have one to provide employees with a clear understanding of its vision, mission, and goals. He said that much of the material they needed was already articulated in the Adaptive Management Strategic Plan. He went on to say that it will be an internal document to be approved by GCMRC. The Science Advisors reviewed it and provided comments to him yesterday. Jeff would still like to receive comments from the TWG and will try to have final draft ready for the October meeting.

Activity Schedule Review. The chairman referenced the Activity Schedule (**Attachment 3**) and said he would keep it current. This will be reviewed and updated at every meeting.

Core Monitoring Plan Progress Report. Jeff said the Core Monitoring Plan is a collaborative effort with 14 or more TWG members and GCMRC staff involved. The Core Monitoring Ad Hoc Group was established in April 2004. Their first task focused on how to develop the plan and identifying the resources of concern. They talked about attributes and developed a set of questions: What do the managers need to know? Where? How often? Level of accuracy needed? They called for decision points periodically. The decision points became position statements which articulated what was agreed upon for each issue discussed. The writing assignments were completed and incorporated into the document. At the second meeting, they developed a straw dog document to comment on. A rough draft was sent to Science Advisors and Dave Garrett provided their comments to Jeff yesterday. The CMAHG will review the comments and incorporate into a revised Core Monitoring Plan. In August, Jeff will give an update to the AMWG and then in October a draft should be ready for their review.

Dennis asked that if it was a collaborative effort then why did the science advisors review it only to GCMRC. Dave said the science advisors had some concerns about their own decision-making process. He devoted considerable time to building the protocols. They won't breach that process which is to come up with ideas, technical direction, give direction to the Center, and build the program. The SAs are the peer review body for the Center and advise them accordingly. Dave said the review process needs to be quick and effective.

ACTION ITEM: Jeff Lovich will read through the documents and send out a timeline for next meeting of Core Monitoring Ad Hoc Group.

Long Term Experimental/Research Plan Progress Report. Dennis reported that the LTEP AHG will work with the Science Advisors to develop a risk assessment on the two LTEP concepts to develop a proposal or set of proposals to TWG with an ultimate recommendation to AMWG.

Humpback Chub Comprehensive Plan Progress Report. Dennis said an additional meeting or a conference call with the HBC AHG would be needed to review the latest draft plan (before July 9th). He advised that tribal consultation would occur through the AMWG Meeting.

Science Advisors' Report. Dave Garrett reported that GCMRC needs both a strategic science plan and a strategic science business plan. What they are getting now is only a business plan. In laying out a strategic science plan, GCMRC needs to determine how each of the planning docs (LTEP, HBC Comprehensive Plan, etc.,) interrelate. They also need funding strategy to implement the plans. Bill Davis commented that in dealing with endangered species, they may never know all the answers and may incur some flack for advocating doing good in deference to science. Lloyd Greiner advised that while they are implementing, they need to use different ways to devise a long-term experimental plan and not just a block or reverse titration.

Dave went on to say that the best program in the world has to have a programmatic direction. The problem they see is strict adherence to an ineffective process. He questioned how the group moves

through a mature organization like the GCDAMP. The science advisors are charged with evaluating planning direction. He said a problem with certain planning/science documents not being reviewed by GCMRC, i.e., HBC Comprehensive Plan, a long-term experimental plan outside GCMRC will be sent to the AMWG and breach this protocol. Try to work any science proposal to go through GCMRC. Could merge the two LTEP approaches. Both approaches have risk because of inconclusive information. HBC enhancement should be on the front burner. Why were the HBC and LTEP plans not coordinated? The biggest problem is with process. Merging should be a requirement. Place treatment that you know the most about and would be positive should be implemented first.

Basin Hydrology. Dennis distributed copies of the current basin hydrology (**Attachment 4**) as prepared by Tom Ryan.

ACTION ITEM: USBR, NPS, and GCMRC to work out GIS data layer issues and report back to TWG at the next meeting.

Monitoring of Cultural Sites. Reclamation passes baton of long-term monitoring of cultural sites in GRCA and GLCA to GCMRC in 2006.

Geomorphology Symposium Update. Helen Fairley presented information on the upcoming geomorphology symposium (**Attachment 5**). Matt Kaplinski proposed the TWG accept the recommendation by GCMRC to organize and hold a geomorphology workshop. Due to limited time, further discussion was deferred to the end of the day.

Discussion:

Seaholm – Not convinced that geomorphology symposium gets us closer to the rest of the APE.

Kaplinski– Symposium may not get us to a specific determination of APE but it will be the start of the process to get us to resolution to that issue.

Fairley – Look at different models and talk about the strengths and weaknesses of the various models.

Seaholm – Potential agreement between the BOR and NPS regarding the APE.

Barger – Three party agreement is stalled not sure why.

Kincaid – Within agreement the agencies will determine site by site a determination of effect. Every site will have a treatment plan independent of effect.

Seaholm – Feel better if an agreement was in place to lead the way on how to do each part of 106.

Kincaid – Made good progress on treatment in CRE with issuance of NAD agreement

Leap – All sites would be looked at for effects of dam ops not just those in APE. Treatment plan would identify the specific sites

Seaholm – Was an agreement to assign effect now it is nebulous

Stevens– Symposium is different than the process of developing treatment plan. Need review of research design by TWG

Fairley – A symposium proceedings would be developed to document the results of the workshop.

Seaholm – The NPS/BOR agreement needs to be settled first

Kaplinski – How much will it cost?

Fairley - Will be important to get knowledge to move forward. Only \$20K to develop workshop.

Lovich – We should move forward with workshop without getting all details before we recommend it to AMWG

Seaholm – Wants the agreement in place before we move forward with symposium.

Stevens - Recommend that a timeline be developed for PA products

Dongoske – Worried that after symposium we won't be any further along on determination of effect. Want to get more details on symposium before CREDA would agree

Lovich – We should move forward with symposium its good for science

Damp – Won't come away with any answers. Need to be careful with presenters at symposium. Shouldn't use just geologists. Different conclusions from same presentation

Stevens – Should we have a separate symposium for geologists?

Barger – Symposium may not answer the questions about effects/APE

Synthesis of Historical Flow and Sediment Transport Data for the Colorado River at Lees Ferry and Grand Canyon Stations. David Topping gave a PowerPoint presentation (**Attachment 6**)

The Degraded Reach: Rate and Pattern of Bed and Bank Adjustment in the First 25 km Downstream from Glen Canyon Dam. Paul Gramms gave a PowerPoint presentation (**Attachment 7**)

Sand bar simulations for MLFF and Alternative Fluctuating Flow Release Patterns. Steve Wiele gave a PowerPoint presentation. (**Attachment 8**)

Adjourned: 5:15 p.m.

Glen Canyon Dam Technical Work Group
FINAL Meeting Minutes
July 1, 2004

Conducting: Norm Henderson, Chairman

Committee Members Present:

Mary Barger, WAPA
Jonathan Damp, Pueblo of Zuni
William Davis, CREDA
Lisa Force, Grand Canyon Trust
Amy Heuslein, BIA
Matt Kaplinski, GCRG
Robert King, UDWR
Dennis Kubly, USBR

Glen Knowles, USFWS
Ken McMullen, NPS/GCNP
Don Ostler, UCRC
Bill Persons, AGFD
D. Randolph Seaholm, CWCB
Mark Steffen, Federation of Fly Fishers
Larry Stevens, Gr. Canyon Wildlands Council
Michael Yeatts, The Hopi Tribe

Committee Members Absent:

Kerry Christensen, Hualapai Tribe
Marklyn Chee, Navajo Nation
Illa Bullets, So. Paiute Consortium
Lloyd Greiner, UAMPS

Christopher Harris, CRB/CA
Phillip S. Lehr, Colo. River Comm./NV
John Shields, WY State Engineers Office

Alternates Present:

Chris Kincaid
Don Ostler

For:

John Ritenour (retired), NPS/GLCA
John Whipple, NM Interstate Stream Comm.

Interested Persons:

Jan Balsom, NPS/GRCA
Mike Berry, USBR
Gary Burton, WAPA
Kurt Dongoske, CREDA
Helen Fairley, USGS/GCMRC
Lisa Leap, NPS/GRCA
Paul Li, IEDA

Mike Liszewski, USGS/GCMRC
Jeff Lovich, USGS/GCMRC
Ted Melis, USGS/GCMRC
Robert Snow, DOI
Chris Updike, NAU
Carl Walters, Presenter
Scott Wright, USGS/GCMRC

Meeting Recorder: Norm Henderson

Convened: 8 a.m.

Welcome and Administrative Items. The chairman welcomed the members, alternates, and general public. A quorum was established, introductions made, and attendance sheets distributed.

The Chairman said that several TWG members met after yesterday's meeting and wanted to offer the following motions for consideration:

MOTION: The TWG recommends to the AMWG that GCMRC proceed with planning and convening a geomorphic symposium in conjunction with the NPS and BOR.

Voting Results: Yes = 8 No = 7 Abstaining = 2

With modifications the no votes would have changed. ?????

MOTION: TWG requests from BOR (in consultation with PA) a timeline and outline on the process for completion of the HPP and ongoing 106 compliance process.

Voting Results: Yes = 15 No = 0 Abstaining = 2

MOTION: TWG have the Cultural Resource Ad Hoc Group review the cultural resources research design and bring a report back to TWG regarding whether it meets the needs of the program.

Voting Results: Yes = 14 No = 2 Abstaining = 1

AMP Budget Process Development Progress Report. Dennis Kubly suggested the discussion be deferred in order to get more involved in the flow proposal for '05.

Lovich – The level of reporting in the budget process could be a problem depending on the level of detail.

Kubly - Proposal would be that the conceptual framework of the budget would be sent forward to the AMWG. The details of the process would be worked out once the concept is approved by it.

MOTION: TWG recommends that the budget process specified by the budget ad hoc group be considered by the AMWG for adoption at its august meeting and applied to the '06 budget with details on reporting to be provided by GCMRC.

The motion was passed by consensus.

Multi-Attribute Trade-off Analysis (MATA) Presentation. Carl Walters distributed copies of his report, "Evidence for the Failure of the Modified Low Fluctuating Flow Alternative (MLFFA) to Benefit Most Ecological Resources in Grand Canyon" (**Attachment 9**). Carl identified several points from the report:

- Update on stock assessment predictions conclude that there is little chance of extinction of humpback chub in the next 10 years. Will stabilize soon.
- Unusually large abundance of juvenile HBC and fms in recent years. A good chance there will be a large recruitment of these fish over the next several years.
- Five times stronger than in the '90s.
Decline will flatten out sooner than expected.
HBC above atomizer look real good. The calculations for contribution to the LCR population looks good.
Small aggregations of chub in mainstem downstream of LCR.
- Get a hint that these may be additional mainstem populations. Possibility that we may have more population structure in the CR than originally thought

Discussion:

Force – Concerned that if we proceed with MATA that we revisit many of the assumptions that were used. It seemed that we used MATA to propose some

Walters - May have solved the native fish problem already

McMullen - Why can't the reverse titration process be used -

Walters - Because you can't get all the treatments in place in the near term. The only way to avoid false positives is to repeat treatments. How long to keep the treatments going?

Burton – What did we do 2001/2002 that elicited good response?

Walters - 2001 cohort is first symptom of successful mechanical removal. 2001 cohort felt great reduction of pressure from trout predation in 2002.

Stevens - Climate signal is being seen in LCR with 2000 dry and 2001/2 relatively wetter

Walters - Need to repeat treatments to get answers

Walters/Melis - Should we go over experimental design we left off in February or should we go through in detail the MLFF report?

Kubly - Concerned that we don't have the scientific expertise in the room to go over expert design. We have scheduled a meeting with the scientists should we go over now without that input.

Walters - We don't need scientists at this point

Walters – Problem lies with policy decisions. Rather than having options driven by stakeholder desires the alternatives are driven by experimental options.

Kaplinski – Values used to rank alternatives are not important?

Walters - Not that important. Numbers were surprising since many were no impact. Some had a huge range in predicted outcomes. Third bunch could be revised quantitatively but there were few. As a consequence you don't need to spend a great deal of time refining values.

Kubly - Sociological answer to consequence tables. There is a level of trust involved and therefore must be revisited.

Force – Framework gives you a structured way to walk through the alternative development process. Does not eliminate all uncertainty. Getting more people involved will increase the credibility of the program and process. The world needs to see how the decision making process worked.

Walters/Force - Another 2-3 workshop would get you where you want to go. Already have the understanding of the process so it should be cleaner.

Kubly – First meeting using MATA had many members uncomfortable. Need to build trust in the process to get buy in by the AMWG.

Force - Who makes the final decision. There is no other way to evaluate the priorities without a process. This framework is really the only way to do this. AMWG will ultimately make the decision.

Walters - Don't have to use MATA name can use only the con

Kubly – May need to adjust schedule. Brings up issue of water year '05.

Walters – Whether to implement low steady flow in '05. Might get

TWG Effectiveness – changes to operating protocols

- Proxy voting
- Agenda preparation
- Meeting materials
- Ground rules and meeting protocols
- New business
- TWG membership (USGS)
- Requirements for TWG chair
- Process for changing Ops
- TWG roles and responsibilities clarified (direction from retreat)
- Budget development defined in Ops

05 Experimental Proposal:

TWG will develop an '05 flow today (7/1) to be recommended to AMWG at its August meeting. If more time is needed, the ad hoc will meet in the coming days to get a proposal to AMWG in August.

Long Term Experimental Plan:

1. By the end of July, the LTEP ad hoc and GCMRC will meet to organize a 2-3 day MATA workshop to be scheduled in the fall (to include all relevant subject matter experts).
2. Convene a pre-meeting for the MATA (two weeks before MATA) to establish options with a small group. (To include all potential actions, e.g., flow options and attributes)
3. TWG will update AMWG at its August meeting on LTEP progress (including September MATA meeting) along with a proposed timeline for completion.

2005 Flow Proposal

August 1, 2005 – October 31, 2005

Three options:

1. Continue power operations (same fluctuations with no sediment input)
 2. Steady flows (any flow (below 9K for sed); monthly step ok)
 3. Steady flows (above) only if LCR floods (any flow above base) Fish scientists strongly recommended
- October 1, 2004 – July 31, 2005

Continue with experimental design (mechanical removal plus flows of '03/'04)

Additional Attachments provided at the meeting:

Attachment 10 - Long-term Experimental Ad Hoc Meeting (5/26/04) Notes & Additional Notes

Attachment 11 - Proposed Approach and Core Elements of Long-term Experiment in the Grand Canyon

Attachment 12 - Effects of Fluctuating Flows from Glen Canyon Dam on the Early Life History Stages of Rainbow Trout in the Lee's Ferry Reach of the Colorado River

Attachment 13 - Modeling of sand bar response to fluctuating flows PPT presentation

Attachment 14a - TWG Budget Recommendation Process

Attachment 14b - Timeline for Budget and Workplan Development

Attachment 15 - Multi-Attribute Evaluation of Management Options

Attachment 16 - Draft Outline for SCORE Report

Adjourned: 12 noon

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