

Glen Canyon Adaptive Management Work Group  
**FINAL** Meeting Minutes

**Conducting:** Michael Gabaldon, Secretary's Designee  
**Facilitator:** Mary Orton

May 29, 2003  
Convened: 9:35 AM

**Committee Members:**

D. Larry Anderson, UDWR  
Robert Begay, Navajo Nation  
Perri Benemelis, ADWR  
Brenda Drye, So. Paiute Consortium  
Amy Heuslein, BIA  
Pamela Hyde, Southwest Rivers  
Loretta Jackson, Hualapai Tribe  
Leslie James, CREDA

Phillip Lehr, Colo. River Comm./NV  
Clayton Palmer, WAPA  
Ted Rampton, UAMPS  
\*Nikolai Ramsey, Grand Canyon Trust  
John Shields, WY State Engineer's Office  
\*Mark Steffen, Federation of Flyfishers  
Bruce Taubert, AGFD

**Committee Members Absent:**

Joe Alston, NPS  
\*John R. D'Antonio, NM  
Rick Gold, USBR  
Arden Kucate, Pueblo of Zuni  
Rod Kuharich, CWCB

Leigh Kuwanwisiwma, The Hopi Tribe  
Andre Potochnik, GCRG  
State Supervisor, USFWS  
Gerald Zimmerman, CRB/CA

**Alternates Present:**

Jeffrey Cross  
Wayne Cook  
Randall Peterson  
Jonathan Damp  
D. Randolph Seaholm  
Michael Yeatts  
Matt Kaplinski  
Sam Spiller  
Fred Worthley

**For:**

Joe Alston, NPS  
John R. D'Antonio, NM State Eng. Office  
Rick Gold, USBR  
Arden Kucate, Pueblo of Zuni  
Rod Kuharich, CWCB  
Leigh Kuwanwisiwma, Hopi Tribe  
Andre Potochink, GCRG  
State Supervisor, USFWS  
Gerald Zimmerman, CRB/CA

**Interested Persons:**

Jan Balsom, NPS/GRCA  
Mary Barger, WAPA  
Darryl Beckman, USBR  
Timothy Begay, Navajo Nation  
Gary Burton, WAPA  
Lew Coggins, USGS/GCMRC  
Nancy Coulam, USBR  
Jonathan Damp  
Bill Davis, CREDA  
Kurt Dongoske, CREDA  
Jeff English, Cliff Dwellers Lodge  
Denny Fenn, USGS/GCMRC  
Lisa Force, Living Rivers  
Steve Gloss, USGS/GCMRC

Lloyd Greiner, UAMPS  
Norm Henderson, NPS  
Rick Johnson, Grand Canyon Trust  
Chris Kincaid, NPS/GLCA  
Robert King, UDWR  
Glen Knowles, USFWS  
Dennis Kubly, USBR  
Lisa Leap, NPS/GRCA  
Mike Liszewski, USGS/GCMRC  
Ted Melis, USGS/GCMRC  
Bill Persons, AGFD  
Larry Riley, AGFD  
Dean Saugee, Atty., Hualapai Tribe  
Rich Valdez, R.A. V.A.

**Recorder:** Linda Whetton, USBR

\* pending appointment

**Welcome and Introductions:** Michael Gabaldon introduced himself as the Secretary's Designee and Chairman of the AMWG. He welcomed the members, alternates, and visitors to the meeting.

**Roll Call:** The members introduced themselves and identified whether they were a member or alternate. A quorum was established and attendance sheets (***Attachment 1***) were distributed.

**Administrative Items:**

1. The Chairman reviewed the motion passed at the January 2003 meeting which resulted in the formation of the Humpback Chub Ad Hoc Group (HBC AHG) to address the critical status of the humpback chub. Today's meeting will focus on the HBC AHG's Interim report.
2. Mike announced that Dennis Kubly replaced Randy Peterson as the new program manager for the Adaptive Management Program. Randy will continue to be involved to a lesser extent and will remain an AMWG alternate.
3. Mary Orton, who has been serving as the AMWG Facilitator, will be assisting Mike in some of the process issues. Mike suggested that if any of the members have ideas as to how to further use Mary in the program, they should let him know.
4. Pamela Hyde announced that Southwest Rivers will cease operation within the next few months and she will be resigning her seat on the AMWG. She is working with the environmental community and Reclamation to find a replacement.

**Review of Action Items from January 28-29, 2003 Meeting.**

#2 – Update: Sam Spiller said he and Bruce Taubert met in February to discuss captive breeding and how they could prepare ahead of time for doing that type of work. He said there has been a lot of concern expressed by the HBC AHG with regard to doing captive breeding without a committee management plan. Bruce said he attended several of the HBC AHG meetings and wanted to publicly thank Sam for taking a director's role in bringing people together to help facilitate the discussions.

**Review of January 28-29, 2003 Meeting Minutes.**

Pending a few minor edits and without objection, the minutes were approved.

**Legislative Updates:**

Randy Peterson reported that on April 11, the House of Representatives passed H.R. 6 (***Attachment 2***), which is basically an energy policy act. Section 1304 contains hydropower optimization and efficiency language. There are three basic provisions as part of that bill: 1) increasing efficiency of hydropower generation, 2) efficiency of water use, and 3) the increase of generating capacity. Senator Domenici has introduced similar legislation without the above language as Senate Bill 14, which is now under consideration in the committees. The House provision has controversial provisions regarding ANWR and the Senate likewise has controversial provisions regarding ethanol use. The Senate deliberations are somewhat stalled over the ethanol issue. Senator Domenici's goal is to have an energy bill this year. As written in the provisions, the Secretary of Energy and the Secretary of the Interior will have two years to complete any investigations they deem necessary in assessing the cost and environmental consequences of such measures. Those investigations could include placing generators on the outlet tubes thus increasing the potential generation at Glen Canyon up to 45,000 cfs.

Amy Heuslein asked that after the studies are done and there is a potential for the generators, what constitutes the type of compliance that needs to be done. Randy said an EIS would probably be the most logical mechanism.

**Humpback Status and Trends** – Steve Gloss said he has been representing the GCMRC on the HBC AHG. As science advisors, they agreed early in the process to develop a paper that put into context the most reasonable assessment of the status and trends of the species in the canyon based on their recent work and understanding of the historical work that has been done. Lew Coggins, their fishery biologist, and Carl Walters were largely responsible for the creation of the document which is in the HBC AHG Interim Report as Appendix B. It's an attempt to talk about the various approaches that have been taken over the years, what are reasonable expectations in terms of certainty from the scientific community, and what the difficulties are in assessing the status and trends of the species and ecology.

Steve said Carl has been working with the AMP and GCMRC for about five years, first in the role of developing the conceptual model and more recently with Lew and others in the fisheries and cooperators arena in helping them determine the best ways to sample and how to use the data from the sampling. In 1986, Carl wrote a book called "The Adaptive Management of Renewable Resources," which is one of the hallmarks of adaptive management work. He is highly regarded as one of world's few experts in fisheries stock assessment work and will be publishing a new book entitled, "Assessing and Managing Marine Ecosystems" within the next few months.

Carl proceeded with a PowerPoint presentation (***Attachment 3a***). He said all the methods they have for assessing absolute and relative abundance of humpback chub in the canyon, which mainly consists of the Little Colorado River, reveal adult populations of HBC in Grand Canyon have declined by about 60% since 1990. The sources of data range from a lot of marked recapture estimates made as early as the 1980's to a whole lot of them in the last 3-4 years as they realized a potential problem to high technology methods for integrating all the historical data and looking at all the potential sources of bias to hoopnet indices where nets have been set in the mouth of the LCR at the same place every spring for a number of years. One of the things that caused a lot of confusion in the canyon up until the last 3 years is that one of their index methods, trammel netting (a long net is set out along the break between the eddy and the main current in the river) has been effective in capturing chubs but didn't show any trend pattern from the late 1980's to mid-1990's. All the data they have from the late 1990's to the present lines up with the downward trend they are seeing. (Questions and Answers were captured in ***Attachment 3b***).

**Humpback Chub Recovery Goals** – Rich Valdez said the humpback chub has been considered an endangered species since 1967. In 1969 it was considered endangered under the Endangered Species Conservation Act, a precursor to the Endangered Species Act. In 1973, it was grandfathered into the ESA so it has been endangered for 40 years. He gave a PowerPoint presentation (***Attachment 4***).

Rich clarified that recovery is taking a species that is on the brink of extinction, getting it back on its feet essentially, reversing that trend of decline, and also neutralizing the threats. Recovery does not say the species will be restored to what it used to be. The goal of the process is the maintenance of secure, self-sustaining wild populations with a minimum necessary investment of resources. Recovery is not putting animals in a zoo. Recovery is bringing them to a point where they are self-maintained and secure. Typically, this is looked at over a period of 100 or 200 years into the future. It does, however, allow for periodic maintenance such as periodic control of non-native fish. When a species is listed, there are five listing factors that are examined. In any federal register announcement that shows a designation of an endangered species, these five factors are examined and the threats that are associated with these five

factors have to be addressed. Recovery is simply the reverse of that. The Service has done that with the recovery goals so the recovery factor criteria are identified for the upper basin recovery unit and the lower basin recovery unit.

**Recovery Implementation Plan Concept** – Clayton Palmer said he would like to present a concept for a recovery program in the Grand Canyon. In order to delist or downlist HBC, there are specific management actions that must be achieved. He said the Upper Colorado Recovery Implementation Program (***Attachment 5***) put together state stocking procedures where the state would limit its stocking of exotic fishes in order to minimize their escaping into areas where endangered fishes live and competing or preying upon them. Another management action attempted to remove a threat by implementing measures to minimize hazardous material spills at Cameron Bridge while another provided legal protection of flows. While these are things that generally have been outside the purview and jurisdiction of the GCD AMP, they need to be accomplished in order for the threats to be removed and the fish to be delisted. At present, these management actions would have to be implemented and the recovery goals achieved in both the upper and lower basins in order for these fish to be delisted. There has been some discussion that HBC in the lower basin may be delisted as a distinct population unit but that determination of whether the lower basin is a distinct population would be made at the time of delisting once the threats were removed and the management actions completed. It is not clear that would occur and recently Tom Pitts, who represents the water users in the upper basin, wrote a letter to the Secretary of the Interior saying that he would like to see the Secretary move to establish a lower basin recovery program.

Clayton referenced the 21 projects identified in the HBC AHG Report as a possible start of a comprehensive plan to benefit HBC in the Grand Canyon but questioned how it would be implemented. Because there are adaptive management jurisdictional issues, many of the recovery goals and management actions to achieve the goals are outside of the AMP. The AMP's ability to focus on recovery of HBC may be diffused. In recent weeks, he has been talking about these issues with the state of Colorado, the Upper Colorado River Commission, the Bureau of Reclamation, and the National Park Service to try to identify some possibility of discussing or implementing an institutional structure.

He questioned how a comprehensive plan for HBC recovery in the Grand Canyon population would be implemented. He suggested the plan be sent to the Secretary of Interior along with an institutional structure for funding it. He hopes to broaden this effort and work with the AMP and others in order to identify the right institutional structure.

**AMWG Comments:**

- Contact the Colorado River Wildlife Council because its function is to coordinate some of the efforts along the Colorado River. The Lower Basin Directors are also going to be more involved and will be making some leadership changes in their efforts to help lower basin fish. (Taubert)
- Am concerned about another program outside the AMP with an additional layer of bureaucracy as well as the interaction between the AMP and some recovery implementation program. The Grand Canyon Protection Act addresses the Secretary's responsibility on this part of the river. (Hyde)
- If you want to coordinate the recovery of a fish species that spans the full basin, then an entity like a RIP would make more sense if it were on a larger scale and encompassed both the upper and lower basins. (Kaplinski)
- The HBC, flows, sediment, etc. are actually linked. One key resource should not be taken away from the program. (Cross)

- We have to look at the lower basin and come up with some effort to address the HBC or to fit it in with the other lower basin big river fish with regard to a recovery plan there or other programs like the MSCP. This AMWG has to advise the Secretary. (Spiller)
- Recovery is under the purview of the regional director who has authority for that species. It's very different when you talk about recovery than when you talk about what AMWG's responsibilities are centered around. (Taubert)
- Agree with the need for a comprehensive plan but have concerns about housing it within the AMP. If we allow this much flexibility for the HBC, why not allow the same amount of flexibility for the other resources in the AMP? Funding is also a critical issue. (Yeatts)

Public Comments:

- When the FWS did the recovery goals for HBC, they simultaneously did three other species in the Colorado Basin, two of which still have opportunities for recovery to be defined in the lower basin. Have you thought about it being broader than HBC? (Steve Gloss)
- Congress has already divided the river and if you're going to deal with a recovery plan for the HBC in the Grand Canyon or however you wish to define it, you have to take into account that Congress has legislated with regard to the recovery plan in the upper Colorado that you do have the GCPA that defines a specific area of inquiry and action. In the MSCP, the lower Colorado River is intended to write them into federal legislation in the not too distant future and has a totally different focus than the kind of plan you are talking about in the upper Colorado. So what you're looking at if you're going to do something like this, however, you define it, is federal legislation which will define the economic participation requirements, focus of the effort, and it will have associated with it one or more agreements among the participants. I think there have been a lot of good questions raised that square with the adaptive management program and that is something you all can debate but this group is a Federal Advisory Committee and unless you're going to ask Congress to amend the Federal Advisory Committee Act to allow it to be something else, the prior models which Congress has seen don't do things like that. I think if you're going to talk about institutional arrangements for an action plan or a recovery plan, you need to keep in mind the ways Congress has already reacted to these situations and what is likely to expect if you have some proposal for legislation. (Bob Lynch)

**New AMWG Business:**

1. Tribal Consultation Plan. Pam Hyde said she was asked to present an item from the TWG meeting held yesterday. The Hualapai Tribe, on behalf of themselves and five other tribes, have developed a draft Tribal Consultation Plan. This is intended to be part of the Strategic Plan and so the TWG decided it probably wasn't in their purview to provide comments because the Strategic Plan has traditionally been under the purview of the AMWG. She suggested the AMWG charge the Strategic Plan Ad Hoc Group (SPAHG) to review the Draft TCP and make a recommendation back to them on how the TCP should be included in the Strategic Plan.

Mary Orton advised that the AMWG Operating Procedures state subgroup reports be given back to the AMWG. They should come back to AMWG at their next (July or August) meeting. Loretta said the final Tribal Consultation Plan would be ready for presentation to the AMWG at their January 2004 meeting.

**MOTION:** Charge the Strategic Plan Ad Hoc Group to review and comment on the Tribal Consultation Plan and report to the AMWG on the inclusion of that plan in the AMP Strategic Plan.

**ACTION ITEM:** Linda will send out the web page address for the Tribal Consultation Plan.

**ACTION ITEM:** AMWG and TWG will send comments on the Tribal Consultation Plan to Loretta Jackson by June 29, 2003.

2. Update from Grand Canyon Trust. Nikolai Ramsey announced that Geoffrey Barnard has retired. Bill Hedden is the new director. Nikolai is being appointed the AMWG and TWG member while Rick Johnson will serve as the new AMWG and TWG alternate.

**Humpback Chub AHG Report** – Sam Spiller presented the HBC AHG Report (**Attachment 6**) and said the most current version is dated May 22, 2003. He referenced Appendix B prepared by Steve Gloss, the 21 projects prepared by the HBC AHG, and a timeline document. The AHG was formed on January 29, 2003 in response to concern for status of the humpback chub Grand Canyon population. The AHG was directed to consider actions to implement a comprehensive research and management program. They stressed comprehensiveness of that as well as the research and management aspects of that with regard to the proposals. He said the HBC AHG Report is still in draft form because the HBC AHG still has some additional work to do. It is being submitted today as a means for discussion. The HBC AHG spent a lot of time on the proposals and would like to spend some time discussing where the group is headed and is seeking further guidance from the AMWG.

He referenced GCMRC's report on the status of the humpback chub and feels the AHG needs to come to some closure on that. He referred the members to page 3 in the report where it mentions the AMP, RIP, and the Lower Colorado River MSCP and said the group needs to look at the parameters they're working under in regard to this group and the GCPA as far as those responsibilities, look at the parameters that the MSCP program is going to be working under, seek their advice, and have them tell us what that program is going to look like. He feels the upper basin effort is a mixture of compliance and appropriation from congressional sources. In the lower basin was a need for Section 7 compliance with regard to power several years ago that has been paying for a lot of the work. There is a need in the MSCP for compliance with regard to water management by the USBR and water deliveries by several states. One of the MSCP objectives for the array of species it represents is to support recovery but that does not mean attain recovery at all. That would be an unbelievable price tag. He asked Perri Benemelis if she wanted to comment on that.

Perri said that when the MSCP was evaluating whether the humpback chub was a covered species, they had a great deal of discussion about whether there was any take associated with their covered activities, those things they were trying to seek coverage under ESA. The FWS advised them they could not identify a mechanism for take for that species. After a lot of discussion amongst themselves and then with the FWS, they recognized some area of overlap between the MSCP and the AMP. The geographic area includes the full pool elevation of Mead up to an elevation of 1229 feet and there is also some area of overlap in the lower canyon. It's possible humpback chub could appear within the geographic area and under a "minimal component" of their program, they will make a financial contribution to the AMWG or to whichever program is developing measures to conserve or recover that species.

Sam advised that the HBC AHG hasn't reached consensus on the proposals. One concern is putting fish back in the river. There was consensus that a genetics management plan is needed to drive the production of fish. There is a concern within the program of taking fish out, young-of-year, and hopefully bypassing a physical zone of predation and putting them right back.

He said the group identified specific threats to the HBC (page 6) and linked them to various actions.

Comments:

- Need to have the HBC AHG be more specific on flow regimes and dam releases. (Cross)
- In the threats list, don't see competition from non-native species. (Kaplinski)
- At some point in time we need to determine how to get input other than from just the ad hoc groups and AMWG. The science advisors should look at the report. This report needs to fit into other reports. We also need advice from other individuals on the necessity to do some of the things. (Taubert)

Sam stressed the need to reach some common ground and the urgency of the work will also impact work that has been scheduled for the next 2-3 years and how that work may have to be re-prioritized. He also said it would be important to look at other programs and how their work is being accomplished.

Randy Peterson said the HBC AHG initially developed a list of 24 different projects. They prioritized them but realized some links were missing which posed additional questions: What came before what? What were the funding implications? Could the work be done? They spent time thinking about a strategy and then revised the report. They have not reviewed or revised the project proposals so they should be viewed as very draft and reflect the group's thinking back in February. The next step for the HBC AHG is to receive comments from today's meeting and review the projects again. Randy proceeded with a PowerPoint presentation (**Attachment 7a**) and passed out copies of the "Comprehensive Strategy" (**Attachment 7b**).

Comments:

- There is no concurrence on the timeline nor is there concurrence on the genetics issue. Thought FWS was going to have a feasibility study accomplished in Aug/Sep this year which would allow us to do captive broodstock to get them out of the water into some facility at the end of this year or beginning of next year. AMWG needs to provide direction. (Taubert)
- A genetics management plan may be necessary but it wouldn't be a large effort. (Palmer)

Bruce Taubert said he brought Larry Riley to make a brief presentation on public outreach. He asked when Larry could make that presentation. The chairman advised he could address the AMWG following Randy's comments on HBC funding.

**Funding for HBC Activities & Timeline Discussion** - Randy said he wanted to talk about money because it feeds into the TWG's Budget Ad Hoc Group's discussion about what to do with the FY04 budget. In general, the FY 2006 cost will be about \$800,000 a year and does not include the NPS appropriations for non-native fish control nor does it include Reclamation's appropriations for the TCD, but it does include all the rest. The primary thing that drives that is going to be the mainstem mechanical removal effort which is about \$600,000 a year. From FY06 out and exclusive of mechanical removal, it's about \$250,000 a year. For FY04, the total cost is about \$1.5M for all the activities. For just the critical ones (outlined in yellow), exclusive of the NPS and USBR's contributions, the cost is around \$300-400K. It's a little more than \$2M in FY05 depending on whether or not the mainstem population estimates are important or not. Randy said the HBC AHG thought it was important to talk about the concept of a strategy and actions that should be taken first and then identify the costs associated with those and make some proposal as to how they might be funded.

Comments/Questions:

- Given the information we received today that the genetics structure information probably won't yield very much, that we're going to have a test of the TCD, and the fact that AMWG made a recommendation to the Secretary one or two meetings ago that we go ahead and start a captive population, I think it's ridiculous to put off developing a captive population. It should be moved up a year. (Taubert)
- We have two genetics issues here: 1) There are differences in genetics between the LCR population and some of the mainstem aggregations and, 2) that if we're going to talk about captive breeding population that could be used to augment, replace, or somehow reintroduce individuals taken from the river back into the river, we want to make sure we're doing the genetics management plan before we go too far down the road in taking actions on some kind of captive breeding/rearing type of a plan.
- If there is a risk of catastrophic failure, it makes sense to have a captive population that we can fall back on. The question is: What is that risk of catastrophic failure and is it with the TCD or with something else? (Johnson)
- The TCD concerns me. I'm asking specifically the assessment of impacts by channels or other piscivorous fish and then what kind of capability management-wise do we have as resource agencies or the Park Service has as far as a land manager to abate that concern if we have an effect that definitely improves the capabilities of non-natives to prey on fish? What do we have? What have we got so far? Or what do we expect when it's done. (Spiller)
- One of the problems that we've consistently faced is that this is a change in the system whose effects cannot be determined until you make the change and the best example that we have is Flaming Gorge Dam on the Green River, which is close but not the same. You can't draw a real close parallel. That's about as good as I can do in terms of answering the questions. (Kubly)
- Just a reminder the TCD will be made of concrete and steel and its operation can be controlled. The critical issue is whether enough monitoring has been done in order to detect change. (Cook)

Randy asked the AMWG to focus on how the projects interact and consider the timing issues. He asked if the strategy was right and whether there were things missing.

#### Comments:

- Captive breeding and rearing is not a risk free activity and if we're going to engage in that in order to respond to what is a perceived risk by warming the water, then we need to assess the risks of a captive breeding approach. We need to consider developing a genetics management plan and perhaps a risk assessment plan. (Hyde)
- You've got a short-term grow out plan. On your timeline you don't have remove and grow out until the end of FY 2005. I suggest that be moved up. (Palmer)
- I sent a letter to the Fish and Wildlife Service asking them how the biological opinion and the new guidelines for recovery mesh or don't mesh and haven't received a response yet. I would like the Bureau to also look into that because we're talking about paying money to establish a second population. (Taubert)
- We're essentially talking about one species of fish in an ecosystem level. At some point it needs to come out of its hatchery and get integrated into the rest of the program. We're also talking about moving a lot of these programs into the 2004 slot and still haven't approved the 2004 budget. (Kaplinski)
- There are projects that are meritorious and others that are not. It would be useful to have the AHG do some kind of "bang for the buck" analysis. How much of a benefit to humpback chub do you get from this project and what does it cost? (Palmer)
- We received a document as the Budget AHG Conference Call dated May 23, 2003. It talks about priorities with associated costs and it talks about concur with mainstream



population for \$250,000. I didn't see that up here unless I missed it. We've done a good job of killing trout and so we don't have to expend \$200-300,000 this year so that money could be carried forward in other projects. Right? (Taubert)

Public Outreach. Larry Riley said it's essential to communicate to the public about the activities that are being undertaken by the Glen Canyon Dam Adaptive Management Program. One of the things that AGFD has discovered is there is a fair degree of confusion among the public and agencies need to respond fairly frequently to concerns and requests for information. In fact over the past 10 months AGFD has responded to quite a number of folks, whether it's been a personal meeting with groups or responding to letters or directly to the Governor's Office, etc. Public outreach is more than press releases. Press releases are excellent tools but they're only one part of an outreach strategy. Inevitably, there will be things the adaptive management program will undertake that may be controversial. In those instances it is important that information be clearly communicated to the public so they can understand and comprehend what the risks or benefits might be to themselves or others. He urged the AMWG to consider ways to make public outreach more successful in the future

Bruce added that the reason many of the AMP stakeholders are allowed to do positive things for the humpback chub is because they have political support. Without political support, they're unable to support this effort and work is stalled.

Loretta Jackson reminded the AMWG that the tribes are part of the AMP process and should be included in the public outreach process as well. They do a lot of their own public outreach but also make recommendations to the Department of the Interior and the public should be aware of their involvement in AMP activities.

### HBC Final Comments

Mike asked the AMWG to provide specific comments and direction to the HBC AHG. The following comments were captured on flip charts:

- If no additional \$, what would fall off?
- Science Advisory Board : How do they feel about changes and how it affects their capacity to do a good scientific job.
- Review other plans: How it complicates or solves problems (population estimates, sediment trips, GCMRC plan)
- Look at combinations of proposals that might be effective
- Exp Flows: Project 7 – Task 6 is broad and open ended – sequence them well to take advantage of other flow programs
- Factor in cost of replacement power for experimental flows (cash outlay impacts – not profit impacts)
- Show costs of projects for HBC – prioritize within that – go no further
- Put list in priority order
- Which are within scope of AMP and which are outside (for funding and scope)
- PR Issue: Why not paying attention to other endangered species
- Figure flows that disadvantage trout and don't cost power generation
- Government-to-Government Consultation, RE: HBC management
- More activity in PA Group to discuss/address this plan
- What are social values of de-listing HBC?
- Use conceptual model to ascertain impacts.
- Factor in costs to recreation: rafting and fishing
- How urgent is the problem?

- ID WIN-WIN Strategy for all stakeholders – try return to load following (larger fish, more productive system, more power revenues, less need for mechanical removal) – disadvantages rafting)
- Good to address decline with comprehensive plan
- Walters and Gloss recommend not moving to crisis mode – evaluate projects based on merit – “Bang for the buck” review.
- River trip- late fall – develop program of experimentation
- Good direction to reverse downward trend of HBC numbers – need to continue
- Are we heading there fast enough?
- Trade-offs – HBC Plan will take a lot of resources. AMWG should discuss the trade-offs
- Budget is capped – we should come up with a realistic budget based on needs instead of accepting cap then produce those resources.
- Recovery program makes sense – let AMWG do what it is charged to do
- Cap is on power revenues, not on the budget
- Non-federal stakeholders need to lobby for increased appropriations.
- Before translocation above Chute Falls, briefing to several Navajo Departments by BOR or other agencies (concern about 9 projects)
- Input from tribal representatives would be useful early in the process
- Preliminary work with tribal councils
- Time may be a problem – may happen between July and January
- Consultation will occur!

**ACTION ITEM:** AMWG and TWG members can provide comments on the HBC AHG Report, projects, timeline, etc. to Sam Spiller and Randy Peterson. The HBC AHG will address at future meetings.

**AMWG River Trip.** Dennis Kubly said that earlier this spring an AMWG river was tentatively scheduled in conjunction with an AMWG meeting to be held in Flagstaff. The idea was to schedule the next AMWG meeting late in the week and then actually leave from Flagstaff to go to the river. There is an opportunity to schedule another river trip for August 31 – September 8 and he asked the AMWG if any of them could commit to going on it so the GCMRC could start making the necessary arrangements. He said it would be a working trip and if the AMWG member couldn't attend, he would encourage the TWG member to go.

**Comments:**

- Why do it over Labor Day weekend? (Steffen)
- I would benefit more from having the scientists make presentations. Also, have the tribes do updates since it's been awhile since we've had those. (Taubert)
- Heard several board members and members of the guiding community comment on previous plans for a river trip that it was another “boondoggle.” Would also support 2-day retreat in lieu of a river trip. (Kaplinski)
- Consider a multi-day retreat and schedule the multi-attribute evaluation process. (Hyde)
- Need to be sensitive to current budget crisis issues. Also, additional travel time to get to/from Flagstaff. Some people can't be gone that long. Would support a 1-2 day retreat. (Seaholm)
- Retreats need to be planned well in advance. Some agencies are struggling financially and reducing travel to save dollars. (Spiller)
- Due to FY04 budget resolution and HBC AHG recommended plan, it will be several months before a multi-attribute workshop could be planned.

Due to the comments received, it was decided to cancel the AMWG river trip. The planning of a retreat or multi-attribute workshop will be revisited at a later date.

**Next Meeting:** August 13-14, 2003

**Location:** Bureau of Indian Affairs, Phoenix, Arizona

**Adjourned:** 12:25 p.m.

Respectfully submitted,

Linda Whetton  
U.S. Bureau of Reclamation

### General Key to Adaptive Management Program Acronyms

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