

Glen Canyon Dam Technical Work Group Webinar/Conference Call
October 12, 2017

Date: October 12, 2017

Start Time: 2 p.m. MDT

Conducting: Seth Shanahan, TWG Chair
Vineetha Kartha, TWG Vice-Chair

Committee Members/Alternates Present:

Melinda Arviso-Ciocco, Navajo Nation
Jan Balsom, NPS/GRCA
Cliff Barrett, USAMPS
Carlee Brown, State of Colorado
Charley Bullets, Southern Paiute Consortium
Shane Capron, WAPA
Kerry Christensen, Hualapai Tribe
Kevin Dahl, National Parks Conservation Assn.
Bill Davis, CREDA
Craig Ellsworth, WAPA
Katrina Grantz, U.S. Bureau of Reclamation

Jessica Gwinn, U.S. Fish and Wildlife Service
Paul Harms, State of New Mexico
Ken Hyde, NPS/GLNRA
Robert King, State of Utah
Ryan Mann, Arizona Game & Fish Department
Joe Miller, Federation of Fly Fishers/TU
Jessica Neuwerth, State of California
Ben Reeder, Grand Canyon River Guides
Peggy Roefer, UCRC/Nevada
Michael Yeatts, the Hopi Tribe

Committee Members Absent:

Kurt Dongoske, Pueblo of Zuni
Chip Lewis, Bureau of Indian Affairs
Larry Stevens, Grand Canyon Wildlands Council

Steve Wolff, State of Wyoming
Kirk Young, U.S. Fish and Wildlife Service

Grand Canyon Monitoring and Research Center:

Helen Fairley, Program Manager
Mike Moran, Deputy Center Director

Scott VanderKooi, Center Director

Interested Persons

Rob Billerbeck, NPS
David Braun, Sound Science LLC
Bill Chada, U.S. Bureau of Reclamation
Marianne Crawford, U.S. Bureau of Reclamation
Craig Ellsworth, WAPA

Brent Esslin, Arizona Dept. of Water Resources
Leslie James, CREDA
John Jordan, Federation of Fly Fishers/TU
Sarah Rinkevich, DOI Joint Tribal Liaison
Randy Seaholm, State of Colorado

Meeting Recorder: Linda Whetton

Welcome and Administrative: Mr. Shanahan welcomed the members and the public. Introductions were made and a quorum determined.

- Approval of August 30-31, 2017, Meeting Minutes. Approval postponed until the January 2018 meeting.
- Next Meeting Dates: Annual Reporting Meeting on Jan. 23-24 and TWG Meeting on Jan. 25. Greater effort will be made to set the ARM/TWG meetings in advance to avoid scheduling conflicts.
- Cultural Resources Update – Ms. Grantz. Much of the function of this group has been subsumed into the PA Signatories Group. The CRAHG could be re-established to deal with specific issues that arise. Kurt Dongoske wants to step down as the chair. If anyone is interested in being the CRAHG chair, please let Seth know. This will be added for further discussion at upcoming TWG meetings.
- Update on Monitoring and Research Trips - Mr. VanderKooi. The current list (**Attachment 1**) will be posted on the meeting page. If there are other trips planned, provide that information to Linda.
 - Ms. Balsom - The Park will be looking at their Colorado River Management Plan issues, archeological sites and some other things. They're hoping to get on the water in November.
 - Mr. Mann – They just got off the river for their Diamond Creek fall monitoring trip and will be sending a few folks to help with the Little Colorado River monitoring that USFWS does.
- Update on Potential Rainbow Trout Stocking in Glen Canyon – Mr. Mann said there is no update at this time but AZGFD continues to take comments on the stocking and James deVos is the point of contact. Mr. Dahl said he wrote to the AZGFD and never got a response and wondered if there is a written stocking

proposal being solicited for comments. Mr. Mann will follow-up and get back to Mr. Dahl.

- Other Updates.
 - Green Sunfish Treatment – Mr. Hyde. A GCMRC crew went out yesterday to do one last look at the ponds and the upper slough. The treatment is 100% complete and they're starting fresh again. Exclusion barriers are in place. Since there will not be an HFE this fall, they're not anticipating fish getting back into the slough. They will monitoring but won't do weekly treatments. Another crew will go out next month to take water samples until conditions return to pre-treatment levels for ammonia, nitrates, and nitrides. A report will be distributed later this year related to using the dry formulation of ammonia to include their observations for the black plastic treatment.
 - BT Workshop – Ms. Grantz. The workshop was held Sept. 21-22, 2017, in Tempe, Arizona. There was a great presentation by the Pueblo of Zuni related to their perspectives of the Canyon along with great scientific discussion on possible causes and risks and potential management actions. A draft white paper was sent out prior to the workshop and will be revised to include more detail about management options. Notes from the BT Workshop will also be part of the BT Workshop Report.
 - Non-Native Fish Update – Mr. Billerbeck. NPS is working on agreements with cooperating agencies The first meeting will be either on Oct 23 or 27. A request for public comments will tentatively be announced for mid-late November with scoping meetings to be held in December in Flagstaff and Page and one public webinar.

Potential Fall High Flow Experiment (HFE) (Attachment 2) –The fall sediment accounting period is July 1 – Nov 30. The LTEMP HFE process includes an assessment of the status of resources prior to each possible HFE to incorporate new information and monitoring into decision making for that HFE. The status of resources information is gathered as part of the baseline research and monitoring done in the Adaptive Management Program. The sand budget model simulates 13 specific HFE hydrographs, however these hydrographs can be modified for implementation based on scientific recommendation. Resource status information is provided to the HFE Technical Team. The HFE Technical Team solicits input from the TWG and develops a recommendation to the HFE Leadership Team. The Leadership Team recommendation is presented to the AS-WS for a final decision on the HFE.

Update on the Science Advisors Program (Attachment 3) – Dr. Braun.

- BT Independent Review Panel (IRP). The IRP will focus on two items (1) set of reports from the BT Workshop and revisions to the white paper. The focus is on scientific soundness of the reports and the workshop report. It will also evaluate responsiveness to tribal concerns. (2) The NPS Bright Angel Creek (BAC) BT Removal Project. This is an evaluation of the effectiveness of BT removal in BAC and recommendation to Reclamation on translocating HBC into BAC. The final report should be completed in eight weeks.
- A Science Adviser Standing Panel. The standing panel will be comprised of five members who will be on-call for immediate review of products, i.e., Annual Reporting Meeting findings, annual work plans, Knowledge Assessment 3-year cycle and the Draft TWP. The standing panel cannot address matters on policy. The first IRP topic will be identified and presented to the AMWG in February. TWG will also review the topics at the January 2018 meeting and make a recommendation from the TWG to the AMWG and Reclamation. The proposed topic for the first IRP is: Effects of dam operations, including experiments and routine operations, and mitigation actions on upland sediment erosion and deposition, including cultural sites.
 - Mr. Davis suggested the IRP look at things which are time-critical, i.e., foodbase issues.
 - Ms. Fairley advised it would be good to review the questions that will guide the panel and make them more specific in hopes of getting more specific answers.

Update on the GCMRC Water Quality Review (Attachment 4)–Mr. Moran. The GCMRC Water-Quality Review will be held on October 24-26, 2017, in Page, Arizona. An agenda has been distributed. A field trip is planned for the second day to visit the Wahweap Station; another field trip is planned on Wednesday the 25th to visit the dam in the morning and to take a blue-boat tour from the dam to Horseshoe Bend and back in the afternoon. Thursday morning will be a summary of key questions to be addressed in the review and then a panel discussion in the afternoon.

Summary of the Programmatic Agreement Regarding GCD Operations and Non-Flow Actions Identified in the LTEMP EIS ROD– Mr. Chada. The PA was executed on Sept. 6, 2017, and copies of the signed PA were sent to all the TWG members. The PA stipulates that an HPP be written and completed one year from execution of the PA. The HPP is essentially a roadmap to ensure that Reclamation meets its Section 106 compliance. The first HPP meeting was held via webinar and the parties to the PA parties discussed how to approach writing the HPP. It was agreed that the process would be accomplished through which will be done through biweekly meetings as well as a few in-person meetings. The in-person writing meetings are currently being set up. The intent is to have a draft HPP done in May 2017 with a review process shortly after that.

Annual Reporting Meeting (ARM) Discussion – Mr. Shanahan. The following elements were provided to the scientists and others for preparing ARM presentations:

1. Identify the conceptual understanding of key drivers that affect resources.
2. Describe and assess how different management or experimental actions have affected the resource based on previous monitoring.
3. Present status and trends of the resource.
4. Other important findings.
5. Recommendations for future research or monitoring activities.

Mr. Shanahan asked for additional suggestions and the following were offered:

1. Include presentations from other stakeholders and projects being done outside the GCDAMP on Canyon resources, i.e., BioWest /RBS, etc.
2. Include recap on the foodbase activities.
3. Include results from the monitoring program as it pertains to achieving LTEMP ROD goals.
4. Identify the metrics and discuss how the gaps can be tracked.
5. Report on what the effects of LTEMP to GCD operations have on power production.
6. Establish a template of 2-3 key questions at the beginning of each presentation.
7. Identify the funding sources.
8. Prefer status of the resource rather than a project report.

Mr. Shanahan asked if the members would prefer having all the resource topics addressed in oral form or have some in a poster format. Mr. VanderKooi said the poster session is an opportunity to get into more detail on a longer list of elements of projects. This affords his staff, other cooperators, and stakeholders and partners a chance to highlight their work at a level of detail that doesn't come through oral presentations.

Ms. Balsom - The reporting meeting presentations provide new information from the full range of work that's being done in support of the GCDAMP. Sometimes there are real *aha* moments that come out of presentations versus less enlightenment from posters.

Ms. Arviso-Ciocco - It's important to have a variety of information, but she has sensed the same kind of questions coming up in terms of how things really contribute to different parts of the dynamics of the program. She finds it difficult to propose something when the agenda is already set.

Mr. Shanahan said it's easier to develop an agenda that meets everyone's needs three months in advance than it is if the topics don't come up until a week before. If there are items that haven't been touched upon, please send those to Linda.

Discussion of Emerging Issues and Request for Agenda Items for Next Meeting – Mr. Shanahan. At the suggestion of Larry Stevens, a recurring agenda item "Emerging issues" will be included on future TWG agendas. Mr. Shanahan asked if there were other emerging issues and/or agenda items for the next meeting.

- Ms. Grantz – Next agenda should include discussion of possible experiments to be contemplated in the upcoming year under LTEMP.

- Mr. VanderKooi - Following up on the earlier discussion on metrics, it might be a good topic to start thinking about those related to some of the resources where they don't exist.

Public Comment: None

Adjourned: 4:38 p.m.

Respectfully submitted,

Linda Whetton
Upper Colorado Region
Bureau of Reclamation

Key to Glen Canyon Dam Adaptive Management Program Acronyms

ADWR – Arizona Dept. of Water Resources	HFE – High Flow Experiment
AF – Acre Feet	HMF – Habitat Maintenance Flow
AZGFD – Arizona Game and Fish Department	HPP – Historic Preservation Plan
AIF – Agenda Information Form	IG – Interim Guidelines
AMP – Adaptive Management Program	INs – Information Needs
AMWG – Adaptive Management Work Group	KA – Knowledge Assessment (workshop)
AOP – Annual Operating Plan	LCR – Little Colorado River
ARM – Annual Reporting Meeting	LCRMCP – Lower Colorado River Multi-Species Conservation Program
ASMR – Age-Structure Mark Recapture	LTEMP – Long-Term Experimental and Management Plan
BA – Biological Assessment	LTEP – Long Term Experimental Plan
BAHG – Budget Ad Hoc Group	MAF – Million Acre Feet
BCOM – Biological Conservation Measure	MA – Management Action
BE – Biological Evaluation	MATA – Multi-Attribute Trade-Off Analysis
BHBF – Beach/Habitat-Building Flow	MLFF – Modified Low Fluctuating Flow
BHMF – Beach/Habitat Maintenance Flow	MO – Management Objective
BIA – Bureau of Indian Affairs	MRP – Monitoring and Research Plan
BO – Biological Opinion	NAU – Northern Arizona University (Flagstaff, AZ)
BOR – Bureau of Reclamation	NEPA – National Environmental Policy Act
BWP – Budget and Work Plan	NHPA – National Historic Preservation Act
BT – Brown Trout	NNFC – Non-native Fish Control
CAHG – Charter Ad Hoc Group	NOI – Notice of Intent
CAP – Central Arizona Project	NPCA – National Parks Conservation Association
CESU – Cooperative Ecosystems Studies Unit	NPS – National Park Service
cfs – cubic feet per second	NRC – National Research Council
CFMP – Comprehensive Fisheries Management Plan	O&M – Operations & Maintenance (Reclamation Funding)
CMINS – Core Monitoring Information Needs	PA – Programmatic Agreement
CMP – Core Monitoring Plan	PBR – Paria to Badger Creek Reach
CRBC – Colorado River Board of California	PEP – Protocol Evaluation Panel
CRAHG – Cultural Resources Ad Hoc Group	POAHG – Public Outreach Ad Hoc Group
CRCN – Colorado River Commission of Nevada	Powerplant Capacity = 31,000 cfs
CRE – Colorado River Ecosystem	R&D – Research and Development
CREDA – Colorado River Energy Distributors Assn.	RBT – Rainbow Trout
CRSP – Colorado River Storage Project	RFP – Request for Proposal
CWCB – Colorado Water Conservation Board	RINs – Research Information Needs
DAHG – Desired Future Conditions Ad Hoc Group	ROD Flows – Record of Decision Flows
DASA – Data Acquisition, Storage, and Analysis	RPA – Reasonable and Prudent Alternative
DBMS – Data Base Management System	SA – Science Advisors
DOE – Department of Energy	SAEC – Science Advisors – Executive Coordinator
DOI – Department of the Interior	Secretary – Secretary of the Interior
DOIFF – Department of the Interior Federal Family	SCORE – State of the Colorado River Ecosystem
EA – Environmental Assessment	SHPO – State Historic Preservation Office
EIS – Environmental Impact Statement	SOW – Statement of Work
ESA – Endangered Species Act	SPG – Science Planning Group
FACA – Federal Advisory Committee Act	SSQs – Strategic Science Questions
FEIS – Final Environmental Impact Statement	SWCA – Steven W. Carothers Associates
FRN – Federal Register Notice	TCD – Temperature Control Device
FWS – United States Fish & Wildlife Service	TCP – Traditional Cultural Property
FY – Fiscal Year (October 1 – September 30)	TEK – Traditional Ecological Knowledge
GCD – Glen Canyon Dam	TES – Threatened and Endangered Species
GCES – Glen Canyon Environmental Studies	TMC – Taxa of Management Concern
GCT – Grand Canyon Trust	TMF – Trout Management Flows
GCMRC – Grand Canyon Monitoring & Research Center	TWG – Technical Work Group
GCNP – Grand Canyon National Park	UCRC – Upper Colorado River Commission
GCNRA – Glen Canyon Nat'l Recreation Area	UDWR – Utah Division of Water Resources
GCPA – Grand Canyon Protection Act	USBR – United States Bureau of Reclamation
GLCA – Glen Canyon Nat'l Recreation Area	USFWS – United States Fish & Wildlife Service
GRCA – Grand Canyon National Park	USGS – United States Geological Survey
GCRG – Grand Canyon River Guides	WAPA – Western Area Power Administration
GCWC – Grand Canyon Wildlands Council	WY – Water Year
GSF – Green Sunfish	
HBC – Humpback Chub (endangered native fish)	

