

Technical Work Group Chair Report

Adaptive Management Work Group Meeting

May 17, 2023

Seth Shanahan

TWG Chairperson

Meetings

- Past

- October 12-13, 2022
- January 24-26, 2022 - TWG and AR
- April 14-15, 2023

- Future

- June 14-15, 2023 (optional tour on June 16)

Items Reported Elsewhere on AMWG Agenda

Version 4

May 17, 2023 (Updated 5/15/23)

GLEN CANYON DAM ADAPTIVE MANAGEMENT PROGRAM ADAPTIVE MANAGEMENT WORK GROUP MEETING MAY 17, 2023

WebEx URL: <https://rec.webex.com/rec/j.php?MTID=m3f59cdd5688d1ef893eb87dceed50b2e>

WebEx Password: May17

Phone #: 415-527-5035 Participant Passcode: 2763 284 1693

- Basin hydrology, operations, and water quality
- April HFE
- FLAHG Charge
- SEIS and bass EA updates
- Invasive fish planning
- Budget and work plan

A G E N D A

START TIME ¹ (Duration)	Topic, Presenter, and Purpose
8:00 PDT/AZ 9:00 MDT 11:00 EDT (:30)	Welcome and Administrative Updates: Wayne Pullan, Secretary's Designee to the Adaptive Management Work Group (AMWG) and Terra Alpaugh, Facilitator to the AMWG <ul style="list-style-type: none">▪ Webinar Protocols▪ Introductions and Determination of Quorum (13 members)▪ Opening Remarks▪ Approval of February 15-16, 2023 meeting minutes▪ Review Feb AMWG Meeting Evaluation▪ Nominations and Appointments▪ Action Item Tracking▪ Charter renewal status▪ Process Timeline

Glen Canyon Dam Fish Escapement Options

REVIEW OF OPTIONS.....	4
In-Reservoir Barrier Options	4
Physical Barrier Screens.....	4
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Air Bubble Curtains and Underwater Acoustic Barriers	8
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prepared by

CONNIE SVOBODA Digitally signed by CONNIE SVOBODA
Date: 2022.10.11 14:27:33 -06'00'

Connie D. Svoboda, P.E.
Manager, Hydraulic Investigations and Laboratory Services, 86-68560

Low Dissolved Oxygen in Releases: Current State-of-Practice

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Effects of Frequent Use of Bypass at Glen Canyon Dam on Electrical Generation and Transmission

Craig Ellsworth, Fishery Biologist

Shane Messano, Sean Erickson, Peter Heiman

Western Area Power Administration

GCDAMP Technical Workgroup

October 12, 2022

What issues could arise
from toggling between
generation and bypass?

- Replacement energy and capacity
- Transmission
- Regulation
- Reserves
- Emergencies
- Black start
- Other

3 key takeaways

- In the winter when the reservoir is cold and mixed, gillnets yield only coolwater species in the forebay (Walleye, Striped Bass, Gizzard Shad)
- As the reservoir warms and stratifies, warmwater fish appear in the forebay epilimnion (Smallmouth Bass, Channel Catfish, Common Carp)
- Penstock position relative to epilimnion likely a major driving factor in entrainment risk of warmwater nonnatives (**lower water levels increase entrainment risk**)

Characterizing the fish assemblage of the Lake Powell forebay:
identifying the potential for nonnative fish escapement through
Glen Canyon Dam and into the lower Colorado River

Barrett Friesen, Phaedra Budy, Casey Pennock
Utah State University

Effects of drought-related low phosphorous concentrations on the aquatic ecosystem downstream of Glen Canyon Dam, and potential to improve productivity via nutrient fertilization

Josh Korman
Ecometric Research

Amy Ker
University of British Columbia

Ken Ashley
British Columbia Institute of Technology

with contributions from:

Bridget Deemer and Charles Yackulic
US Geological Survey
Grand Canyon Monitoring & Research Center

Potential next steps

- WAPA will distribute fertilization literature review to AMP
- GCMRC could include a fertilization component in their upcoming 3-year workplan
- Baby step: nutrient-algae bioassays to better evaluate P limitation
- Big-boy step: experimental fertilization in Glen Canyon
 - Simpler logistics/lower costs
 - Extensive baseline of drift, trout growth and recruitment
 - Might help offset current impacts of high temperature and low oxygen on rainbow trout
 - Could be implemented at downstream locations for native fish (near LCR)

HIGHLIGHTS OF:

Assessment of Potential Augmentation and Management Strategies for Razorback Sucker *Xyrauchen texanus* in Lake Mead and Grand Canyon: A 2021 Science Panel Summary

Dr. Phaedra Budy

Utah State University & USGS UCFWRU

Dr. Casey Pennock

Utah State University, Dept. of Water

TWG update
13 Oct 2022

Should augmentation occur in Grand Canyon?

- Near consensus, try experimental augmentation
- Where? Tributaries
- How many? What kind? What age/size?
 - Not less than 300/event
 - Mixture of Lake Mead and Lake Mohave
 - Include juveniles
- How often?
 - ~1 time per year for 3 years while assessed, then re-evaluate

Other Items Discussed

- Green sunfish
- Incentivized harvest
- Monitoring metrics
- Paria Beach restoration
- Lees Ferry herpetology study

Future TWG Agenda Items

- FLAHG plan to amend the HFE protocol
- BAHG adjustments to work plan and budget
- April HFE discussion
- 2008 Spring HFE lessons learned
- TMF concept origin
- Bug Flow discussion
- Hydropower customer impacts from experiments
- Smallmouth bass and other invasive fish status
- TWG chair/vice-chair elections