

Technical Work Group Chair Report

Adaptive Management Work Group Meeting

May 19, 2021

Seth Shanahan

TWG Chairperson

Meetings

- Past
 - April 13-14, 2021
- Future
 - June 16-17, 2021
 - October 13-14, 2021 (in-person?)

Items Reported Elsewhere on AMWG Agenda

Version 1

Updated: March 26, 2021

- Monitoring metrics (!)
- Chub trigger status
- Budget and work plan
- Program funding
- Basin hydrology and operations
- Potential experimental and management actions in the next 12 months and recent actions
- Brown trout IH program

**GLEN CANYON DAM ADAPTIVE MANAGEMENT PROGRAM
ADAPTIVE MANAGEMENT WORK GROUP MEETING
MAY 19, 2021**

WebEx URL: <https://rec.webex.com/rec/j.php?MTID=m40f0350e107ceb29f50f9ecaf1b19afd>

WebEx Password: AMP1

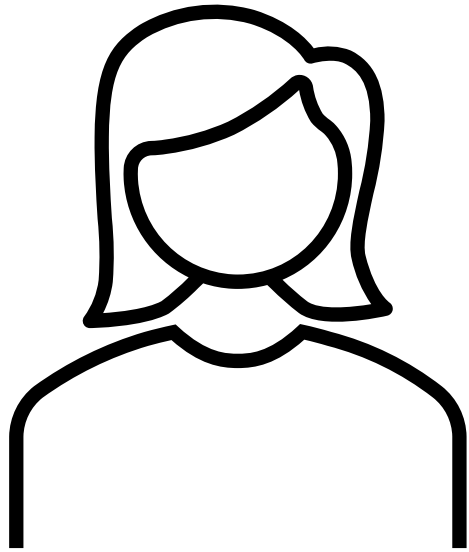
Note: If you plan to use your phone for audio, please log into the webinar **FIRST** to obtain your unique audio PIN for “call-in” OR to use the “call me” feature.

Phone #: 415-527-5035 Participant Passcode: 199 404 2631

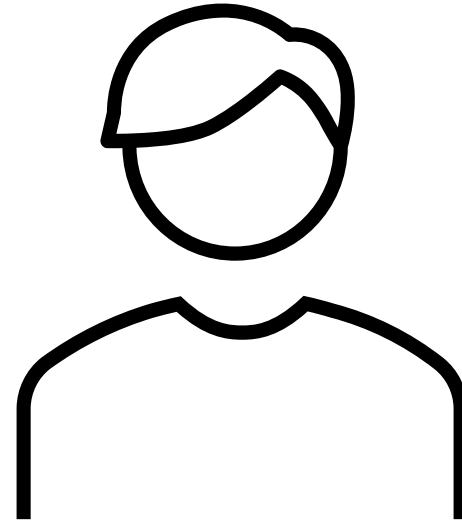
DRAFT AGENDA

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 Mike Harty, Facilitator to the AMWG <ul style="list-style-type: none">▪ Webinar Protocols▪ Introductions and Determination of Quorum (13 members)▪ Opening Remarks▪ Approval of February 10-11, 2021 meeting minutes▪ Nominations and Appointments
8:30 PDT/AZ 9:30 MDT 11:30 EDT	FY 2021 Program Priorities Update: Lee Traynham, Adaptive Management Group Chief, Bureau of Reclamation <ul style="list-style-type: none">▪ Presentation (10 minutes)

Congratulations, Vice-Chairpersons!!



Michelle Garrison



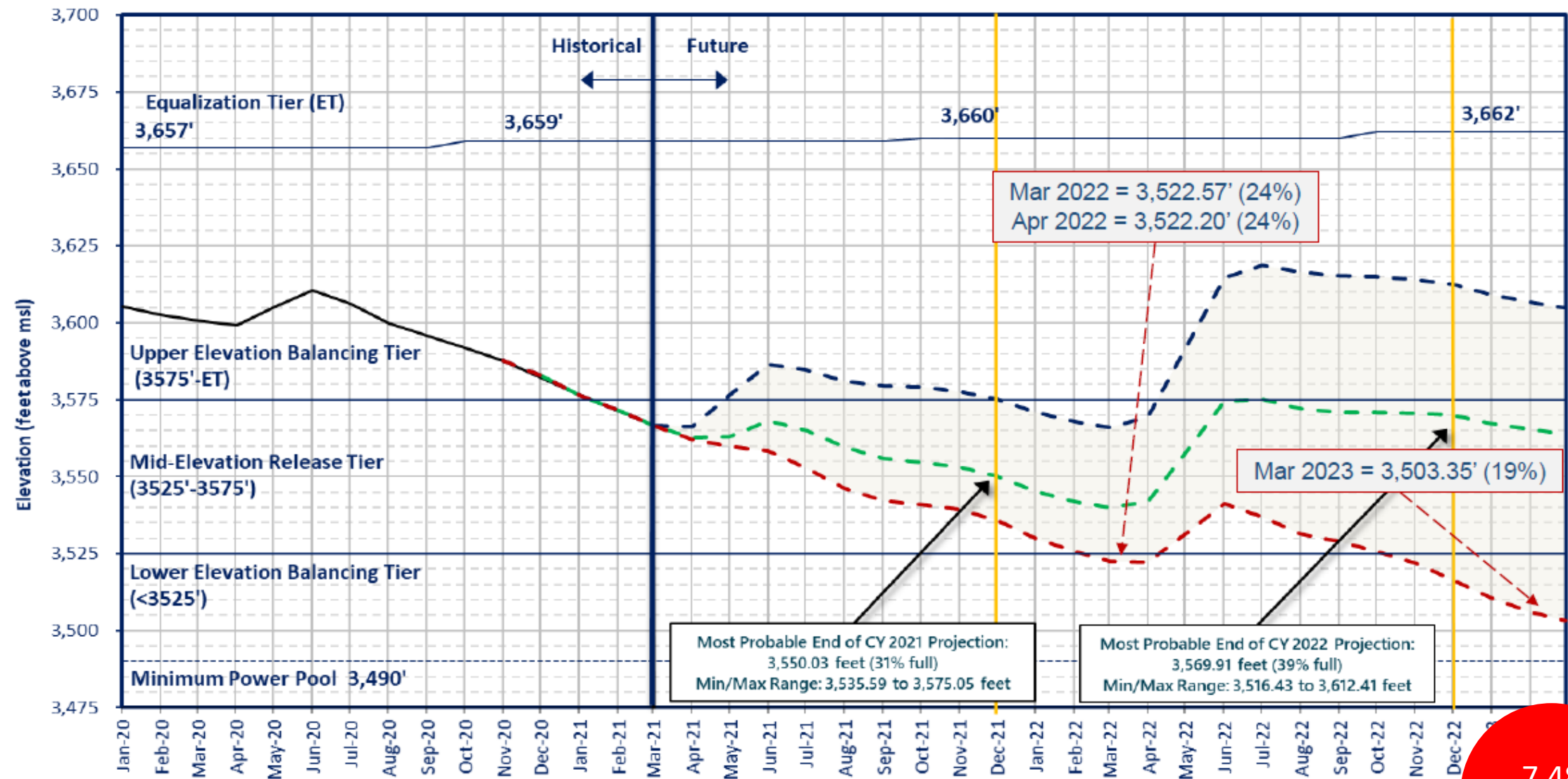
Clarence Fullard

Budget Ad Hoc Group

- Develop budget prioritization criteria for consideration

Lake Powell End of Month Elevations

Historical and Projected based on April 2021 24-Month Study Inflow Scenarios



BUREAU OF
RECLAMATION

Historical Elevations

Apr 2021 Most Probable - Lake Powell release of 8.23 maf in WY2021 and 7.48 maf in WY2022

Apr 2021 Max Probable - Lake Powell release of 8.23 maf in WY2021 and 9.0 maf in WY2022

Apr 2021 Min Probable - Lake Powell release of 8.23 maf in WY2021 and 7.48 maf in WY2022

7.48
maf

Distribution and Impacts of Benthic and Hyporheic Anoxia on the Colorado River Ecosystem Downstream from Glen Canyon Dam, Arizona

Courtney McDaniel

Larry Stevens

Joseph Holway

Craig Ellsworth

Benthic & Hyporheic Anoxia (BHA)

- **Hyporheic zone** = river sediments where surface and groundwater are exchanged
- **Benthic zone** = shallowest portion of hyporheic zone
- **Anoxia** = lacking oxygen
- Characteristics:
 - Stinky!
 - Fine sand/organic particles
 - Just below the surface sediments
 - AKA “maenke”



Conclusions

- BHA most prevalent in dam tailwaters
- BHA development limited by:
 - Aeration
 - Turbidity
 - Lower temperature
 - Decreased aquatic vegetation
- Some aquatic invertebrates may be impaired by BHA

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MACROINVERTEBRATE OVIPOSITION HABITAT SELECTIVITY AND EGG-MASS DESICCATION TOLERANCES: IMPLICATIONS FOR POPULATION DYNAMICS IN LARGE REGULATED RIVERS

Freshwater Science. 2020

Scott Miller^{1,2}, Matt Schroer^{1,2}, Jesse Fleri²,
Theodore Kennedy³

¹BLM National Aquatic Monitoring Center

²Department of Watershed Sciences, Utah State University

³USGS, Grand Canyon Monitoring and Research Center



Conclusions

- Large river macroinvertebrates disproportionately use edge habitat for oviposition
 - Large emergent mineral substrates
- Load following can reduce the availability of optimal oviposition habitats
- During load following, high and low flows have the potential to reduce population recruitment, but by differing mechanisms
 - High: loss of emergent substrates
 - Low: egg desiccation
- Timing of load following, both seasonally and within day, could be managed to increase recruitment



National Park Service
U.S. Department of the Interior
Grand Canyon National Park and
Glen Canyon National Recreation Area

Long Term Experimental and Management Plan

Riparian Vegetation Project Plan

Phased implementation

- i. planning and developing pilot projects and experiments related to each objective through science-based prioritization of management locations and objectives;
- ii. implementation of pilot projects and experiments;
- iii. monitoring, evaluation, and dissemination of pilot project and experiment outcomes;
- iv. use of adaptive management principles to subsequently (iteratively) develop, implement, and evaluate site-specific riparian vegetation management projects throughout the program life.

Summary of Results

- Lowest spring CPUE for Rainbow Trout since monitoring was standardized in 1990
 - Few juvenile Rainbows in system
 - Lack of Spawning? Brown Trout predation? Displacement? Foodbase?
 - Adults in relatively good condition
- Small increase in relative abundance of Brown Trout
 - % of catch increase factor of low Rainbow Trout abundance
 - Large recruitment class from 2019
 - Lower recapture % observed
- No other rare non-natives



Lees Ferry Spring Monitoring —

Trip Report

Ryan Mann, David Rogowski, Jan Boyer
April TWG Meeting 2021

Other Items at the April TWG Meeting

- Colorado Pikeminnow reintroduction feasibility study
- Responding to low dissolved oxygen conditions
- Temperature control methods technology search
- Bug flows – evaluation document, Science Advisors Program role, etc.

Future TWG Agenda Items

- Monitoring metrics
- Temp. control and fish passage
- Western and indigenous world views
- Tier 1 conservation actions status
- Pearce Ferry Rapid
- Power purchase costs – bug flows
- System-wide native and nonnative fish monitoring
- Changes in the Little Colorado River
- Pikeminnow feasibility study report
- Nearby uranium mining
- Foodweb concentrations of mercury
- Admin. history project
- 7.D Review, 07G 2.0, Drought Response Operations, et al.
- Budget prioritization criteria