

# Glen Canyon Dam Adaptive Management Program Adaptive Management Work Group Meeting May 17, 2023

Wednesday, May 17, 2023

**Start Time:** 8:00 AM Pacific Standard Time (PST)

**Conducting:** Wayne Pullan, Secretary's Designee to the Adaptive Management Work Group (AMWG) and AMWG Chair.

**Recorder:** David McIntyre, SeaJay Environmental, LLC.

**Facilitator:** Terra Alpaugh, Kearns & West, Inc.

## Welcome and Administrative

- Introductions and Determination of Quorum [Terra Alpaugh, Kearns & West] Quorum reached with 19 members represented.
- Opening Remarks [Wayne Pullan, AMWG Chair] Provided opening remarks.
  - The Acting Secretary's Designee to the AMWG provided a welcome introducing Annalise Blum, Deputy Assistant Secretary for Water and Science, U.S. Department of the Interior, Daniel Picard, my Deputy Regional Director and the acting Designated Federal Officer to the AMWG and Christina Kalavritinos, Senior Advisor to the Assistant Secretary for Water and Science.
  - A lot has happened since we last met in February including the highest forecasted runoff since 2011. At the February AMWG meeting a motion was passed to adopt the nonnative fish strategic plan to serve as a framework to prevent, detect, and respond to invasive fish establishment below Glen Canyon Dam. TWG was tasked with development of a proposal to address the sediment accounting window. In March, Reclamation released a draft EA to that evaluated flow options to address smallmouth bass. Reclamation received nearly 7,000 comments during the public comment period ([comment report](#)). In April, Reclamation published a draft SEIS for Near-term Colorado River Operations. Four public webinars were held with written comments due by the end of May. In April, a smallmouth bass rapid response charter was finalized and signed by DOI agencies to ensure a unified DOI response to the threat of smallmouth bass and other high risk invasive fish species establishment downstream of Glen Canyon Dam. At the end of April Reclamation initiated a 72 hour high flow event. This event was made possible by the unique conditions in the river and more importantly the dedication of the many researchers who assembled to study the effects of the event on the various resources.
- Approval of February 16-17, 2023, Meeting Minutes [Terra Alpaugh, Kearns & West] Draft minutes released May 9 for review. Minor copy edits and corrections received were on pages 3, 4, 5, 8, 10 and 14 from Leslie James, Colorado River Energy Distributors Association (CREDA), and Kristin Johnson of Arizona Department of Water Resources (ADWR). [February minutes](#)

**approval moved by:** Larry Stevens, Grand Canyon Wildlife Council (GCWC); **Seconded by:** Matt Rice (American Rivers). The February meeting minutes were approved by consensus.

- Review of February Meeting Evaluation [Terra Alpaugh, Kearns & West] February meeting evaluation was based on 31 respondents.

## Administrative Updates

- Nominations and Appointments [Bill Stewart, Reclamation] Call for nominations closed in February. These are currently being vetted and hope to have a final decision before the August AMWG meeting.
- Action Item Tracking Report [Bill Stewart, Reclamation] Provided updates on the following:
  - Monitoring Metrics: the Grand Canyon Monitoring and Research Center (GCMRC) worked with stakeholders and scientists to develop monitoring metrics that were identified in the Long-term Experimental and Management Plan (LTEMP). Expect to roll out those metrics towards the end of this year.
  - Identification of high priority projects: looked at projects identified in the current Triennial Work Plan (TWP) and assessed their priority based on their contribution to compliance with the Grand Canyon Protection Act, National Historic Preservation Act, Endangered Species Act (ESA), and the National Environmental Policy Act (NEPA). The intent is to use that exercise to identify priority projects for the next TWP.
  - Updates on the five actions identified at last August's AMWG meeting: 1) some of the work related to low flow/low elevation is being done in the Supplemental Environmental Impact Statement (SEIS), 2) the Non-Native Fish Strategic Plan was approved at the February AMWG meeting, 3) there will be a discussion later about the smallmouth bass draft Environmental Assessment (EA), 4) the transition into an EIS, and 5) looking at exclusion devices, particularly a thermal curtain, that is being investigated to prevent fish in the forebay from moving downstream. An engineering team had a field visit to determine the feasibility of a thermal curtain.
- Charter Renewal The charter needs to be renewed every two years. Hope to have this signed by the Department of the Interior (DOI) Secretary by September.
- Process timeline for SEIS Comments on the draft interim guidelines SEIS are due at the end of May. The TWG will discuss transition of smallmouth bass EA into an EIS at their June meeting, then a Notice of Intent (NOI) would be released late summer. Anticipating the smallmouth bass draft EIS release this fall/winter and finalization by next summer.

## Basin Hydrology and Operations, Water Quality, and Drought Response

[Heather Patno, Reclamation] **PRESENTATION** Provided the status of the Upper Basin storage as of May 14. Navajo is performing a spring peak this season; that water will be going into Lake Powell, which is rising one foot per day and currently around 3,540 feet, which was the highest elevation last year. Expect above average runoff through May. Based on operational modeling, expect Lake Powell to peak in July. There is the possibility of dropping below 3,525 feet but not in the minimum probable forecast. With the additional water from Lake Powell, Lake Mead is no longer looking at Level 2 and 3 shortage conditions; and instead is expected to have Level 1 or normal conditions. The High Flow Experiment (HFE) in April released 38,800 cubic feet per second (cfs); this lower-than-expected flow rate was the result of decreased hydrologic pressure due to low reservoir elevations, . [Robert Radke, Reclamation] Warmer water has been pulled down in the reservoir due to the HFE, but some of this could be the normal beginning of stratification. The 10-degree Celsius (°C) line is closer to the penstock. Dissolved

Oxygen (D.O.) has also changed due to the HFE. The latest hydrologic model run forecasts temperatures about 2 to 2.5 °C cooler as compared to April's most probable forecast. Maximum temperature being discharged at the dam is just below 16 °C. Lees Ferry and Diamond Creek also show a drop of 2 to 2.5 °C compared to the April forecast due to the HFE and warming.

#### **Q&A and discussion**

**[Jim Strogen, FFI/TU]** Do the forecasts that show increased lake levels assume the same amount of snowpack that is being experienced now? Is that a realistic assumption given recent low-level years and possible return to those lean years? **[Heather Patno, Reclamation]** Current May minimum and most probable forecasts use the current snowpack. Most probable is using the assumption of average conditions into the future and the minimum probable is using the assumption of dryer conditions. Even under the minimum probable, approximately 60 feet of elevation gain is expected. A lot of the soil deficits have been filled with the current runoff. The levels of uncertainty continue to be reduced. We have a realistic assumption of what will happen with reservoir levels. Median hydrology (i.e., 50% above and 50% below) is always assumed under future scenarios. That is why there is greater uncertainty in those elevations in the future.

#### **Interim Guidelines SEIS**

**[Wayne Pullan, Reclamation]** Katrina Grantz is one of Reclamation's Deputy Regional Directors in the Upper Colorado River (UCR) and is in charge of UCR Operations Office. She is deeply involved in the SEIS, which is designed to look at lower elevations at Lake Powell and Lake Mead.

**[Katrina Grantz, Reclamation] PRESENTATION** Four public webinars have been hosted on the draft SEIS with comments posted to the Reclamation website. The biggest issue is concern over declining lake elevations and that Lake Powell could drop below elevation 3,490 feet before new guidelines are set in 2026. Dropping below 3,490 feet means that water can be released only through the four bypass tubes. This limits the ability to move water and generate electricity. The intent of the SEIS is to modify operating guidelines to inform water operations from 2024 to 2026. Post 2026 guidelines will be in parallel to the SEIS process. Looking at a range of possible inflow scenarios. The NOI was published November 2022, and the draft SEIS was published April 14 with a public comment period closing on May 30. Reclamation hopes to finalize the SEIS this summer with a ROD. The schedule has been incredibly fast to address potential low water levels in the next two years. Alternatives are focused on managing the reservoir at lower elevations. There is no preferred alternative currently and want to hear feedback.

#### **Q&A and discussion**

**[Sinjin Eberle, American Rivers]** Can comment period be extended past the May 30 deadline? **[Rodney Smith, Reclamation]** The comment deadline remains May 30. If that changes, we will get the word out.

**[Larry Stevens, GCWC]** To what extent has dam maintenance scheduling been incorporated into the analysis? **[Katrina Grantz, Reclamation]** The modeling assumed taking one bypass tube offline for one year. Also looked at maintenance of generators.

**[Christina Noftsker, New Mexico Interstate Stream Commission (NMISC)]** If it is a 6 maf year, is that contrary to LTEMP flows or is that allowed in an emergency? **[Katrina Grantz, Reclamation]** What is being modelled under a 6-maf year is the monthly release distribution that is proportional to what was analyzed under LTEMP. **[Rodney Smith, Reclamation]** That is what this process is for. There is currently

NEPA coverage for 7 maf and above, but the SEIS is applying LTEMP principals to annual volumes less than that and analyzing impacts.

### LTEMP Flow Experiments:

**ITEM 1: April HFE [Clarence Fullard, Reclamation]** There are sediment triggered HFEs and proactive HFEs. This was a tremendous snowpack year and projections for the whole basin changed from 7 maf to more than 10 maf in release volumes. The sand budget model under LTEMP normally works by considering flow volumes coming out of the dam after an HFE and outputs whether enough sediment is in the system to trigger a sediment-based HFE. However, using the existing sediment accounting windows there was not enough sediment in the system to trigger an HFE. Additionally, a proactive HFE trigger was not met because conditions require a 10 maf release year and highest possible release under the current elevation tier is 9.5 maf. There was a lot of sediment going back to 2021 when the fall HFE was triggered but not performed. The Planning & Implementation Team (P&I Team) instead looked at a one-year sediment accounting window. Considering all that sediment that was left in the system and the opportunity to release a lot of water this year – combined with all eight hydropower units available at the dam, it was determined that a 72 hours HFE ~40,000 cfs HFE could be conducted. A supplemental information report that tiered off LTEMP allowed for a one-off opportunity to do an HFE. **[Andrew Schultz, GCMRC] PRESENTATION** GCMRC is still gathering data and evaluating over 1,000 samples from the HFE. The sampling equipment functioned across the entire longitudinal aspect of the Grand Canyon. Observations were made that normal riparian plants were uprooted; however, plants that are more adapted to dryer conditions in the uplands will be affected the most.

**[Paul Grams, GCMRC]** Refer to the website for more images. Also surveyed the Columbine Reach before and after the HFE. Flow was more than 45,000 cfs at Diamond Creek before the HFE. All the pre-HFE photographs are at 10-14,000 cfs while the flows are steady at 18,000 cfs in the photos after May 1. Because of this change in flows, a lot of the sand bars look smaller despite successful deposition. The HFE resulted in widespread deposition from Upper Marble Canyon to Diamond Creek.

### Q&A and discussion

**[Jim Strogon, Fly Fishers International (FFI)/Trout Unlimited (TU)]** While there appears to be great value to the beaches below the Paria, what is the assessment of the beaches above Lees Ferry and benefits to that section of the river? **[Paul Grams, GCMRC]** Have not looked at that yet. **[Shana Rapoport, Colorado River Board of California (CRBC)]** Why will there be accelerated rates of erosion? **[Paul Grams, GCMRC]** The HFE inundates a greater portion of the sand bar and subjects more of it to erosion as well as higher velocities.

**[Larry Stevens, GCWC]** How fast will erosion take place on the beaches? Will there be a net gain by the end of summer, or will it erode faster and be gone by mid-summer? **[Paul Grams, GCMRC]** Likely to see bits of redeposition because of erosion of sand at and just above the bank. Will survey these sites again in October and anticipate net gains but how much is not clear.

**[Rod Billerbeck, National Park Service (NPS)]** The relationship of erosion to flow is non-linear. So, when base flows go up from 10,000 cfs to 20,000 cfs, there is a lot more than twice the amount of erosion.

**[Paul Grams, GCMRC]** Correct. It is a non-linear relationship with the threshold right around 9-10,000 cfs. Sand accumulates below that threshold, and accelerated rates of erosion occur above that.

**ITEM 2: Sediment Accounting Window – Flow Ad Hoc Group (FLAHG) Update [Sinjin Eberle, American Rivers and FLAHG chair]** The FLAHG is investigating amending the HFE protocol and the accounting periods for an HFE. The kickoff call occurred just before April's TWG meeting. A Google Docs folder has been set up. The proposal outline went to TWG in April. The target is to have a full proposal for TWG in June then to AMWG in August.

**[Seth Shanahan, Southern Nevada Water Authority (SNWA) and TWG chair]** The FLAHG was charged in early March. The TWG received the FLAHG's preliminary proposal outline in April, which contained a problem statement, objectives, background information, some proposed changes to the HFE protocol, the path forward, and any obstacles. The TWG live edited the FLAHG proposal and intend to try to come to consensus to forward it to the AMWG for consideration in August.

#### **Q&A and discussion**

**[Charlie Ferrantelli, State of Wyoming]** What are the next steps with respect to NEPA after the proposal is developed? **[Seth Shanahan, TWG Chair]** Expects that FLAHG will identify that the NEPA pathway once they have some sense if the federal agencies will have the necessary information to consider for their guidance. The intent is to identify the path ahead and the obstacles.

#### **Strategic Plan for Invasive Fish Species Update:**

**ITEM 1: Short-term rapid response [Melissa Trammell, NPS] PRESENTATION** on non-native fish captured in Grand Canyon National Park. NPS was not anticipating large impacts or changes to the distribution of smallmouth bass as a result of the HFE. No smallmouth bass were found immediately below dam after the HFE, but they were in the next reach down along with five walleye. HFE sampling occurred in the reach below the Paria River, now referred to as the Paria to Badger Rapid (PBR) Reach. This sampling targeted backwater areas and flooded inlets. No smallmouth bass were caught. Mainstem temperatures were 10 °C, but some back waters were 15 °C and the Paria River was 26 °C. The PBR Reach will be sampled one week per month from June to November using nighttime electrofishing and daytime electrofishing and seining; If caught, rainbow trout will be released and brown trout removed. Still not fully staffed and still seeking funding for fast response below the PBR Reach where temperatures were expected to be over 15 °C last year, which is spawning temperature for smallmouth bass.

**Monitoring and Surveillance for Smallmouth Bass in Glen Canyon (GLCA) [Jeff Arnold, NPS] PRESENTATION** NPS-GLCA plans to monitor invasive species from the dam to Paria River this summer using a variety of techniques. Want to look at distribution of fish and the efficiency of catching non-native fish in nets. The good thing about using nets is that the fish don't usually die, so native fish can be released. Also doing electro fishing and snorkeling surveys.

#### **Q&A and discussion**

**[Shana Rapoport, CRBC]** Will details of the funding gaps be presented at the upcoming Budget Ad Hoc Group (BAHG) meeting? **[Rob Billerbeck, NPS]** NPS is still working on getting funding including with Reclamation and other sources for this summer. Don't know if there will be requests to BAHG or not. **[Michelle Kerns, NPS-GLCA]** Only known funding at this time is the one-year contingency that has been received. There is still a great need for planning for future funding.

**[Leslie James, CREDA]** What is NPS's plan to address the slough in a more permanent manner? Reclamation did some assessment about a year ago. There had been talk about dredging one end to prevent this ongoing issue. Where are discussions of physical treatment of slough at this point? **[Jeff Arnold, NPS]** Reclamation engineers did a site visit last fall and are writing an assessment of different ideas for how to make the slough inhospitable to warmwater, invasive fish. **[Bud Fazio, NPS]** That report is anticipated in 3 to 6 months and will discuss those recommendations.

**[David Ward, GCMRC]** Last year in that slough there were many thousands juvenile carp. Has there been much carp spawning seen this year? **[Jeff Arnold, NPS]** Noticed a large number but it is not warm enough to reproduce. Will be back there next week and for rest of the summer.

**[Jim Stroger, FFI/TU]** Didn't data last fall indicate electro fishing efforts were not a good management tool for controlling smallmouth bass in the river. Is the survey attempting to control or just determine smallmouth bass presence? **[Jeff Arnold, NPS]** Electro fishing is not 100% effective in control. The goal is to remove young-of-the-year (YOY) and capture adults before they spawn. It would be good to know their distribution. Last year, the focus was on the upper reach. NPS needs to know what is going on in the entire slough. The HFE created more backwaters and left woody debris, additional habitat for smallmouth bass.

**ITEM 2: Mid-term flow actions [Wayne Pullan, Reclamation] PRESENTATION** on the EA and next steps. Seven thousand public comments were received on the EA with a wide range of opinions on this topic: large-scale efforts are controversial, and shorter, small term efforts would have limited efficacy in terms of preventing establishment. Smallmouth bass found in river last year were mostly YOY and were not mature enough to reproduce for a couple more years. Based on these observations, Reclamation has decided additional analysis is warranted and plans to transition from the EA to an EIS for smallmouth bass response activities, implementing monitoring and rapid response in 2023 and aiming for a ROD by summer 2024. In addition, the April HFE gives credence to alternative accounting windows. As a result, two priorities have emerged that are of most concern for the EIS to address: the threat of smallmouth bass and the sediment accounting and implementation windows. There is concern about trying to roll in other LTEMP issues, since additional analysis would delay a ROD. Therefore, Reclamation wants to limit the analysis to the above two actions.

The Secretary's Designee requested that: 1) Reclamation and NPS engage to ensure no delay in the Interagency Funding Agreement. 2) Non-native fish that are taken should be put to beneficial use. 3) Staff exercise solemnity and a few moments at the beginning of each monitoring trip to acknowledge the taking of life. Native American representatives and partners have been clear about their concerns on the taking of life. 4) The costs associated with impacts to hydropower are quantified in NEPA documents because it is easier to measure, but hydropower revenues should not be pitted against other objectives in the EIS. Reclamation, Western Area Power Authority (WAPA) and CREDA are requested to look at hydropower alternatives that have not been previously considered to find ways to mitigate impacts to power users and revenues when Reclamation needs to make bypass releases for smallmouth bass.

## **QA and Discussion**

**[Sara Price, Colorado River Commission of Nevada (CRCN)]** When is the EIS expected to start? Will the new EIS include the longer-term, more permanent fix of a net? **[Wayne Pullan, AMWG Chair]** Don't expect the net option will be far enough along for this effort. The hope is that the net can be addressed

in a separate EA. **[Bill Stewart, Reclamation]** The NOI is anticipated to be released by mid to late summer. **[Wayne Pullan, AMWG Chair]** It is hoped the EIS will be far enough along to discuss at the August AMWG meeting. **[Sara Price, CRCN]** It is challenging to spend another year looking at short-term options and not considering long-term options given the significant impacts to hydropower. **[Wayne Pullan, AMWG Chair]** In the 1950s, Reclamation made assumptions about power, the amount that could be produced and its long-term viability. Those assumptions are being eroded by aridification and climate change and the need to address smallmouth bass.

**[Ali Effati, NMISC]** With respect to asking WAPA and CREDA to look at impacts to hydropower, how would this assessment happen? Would that be in the new SEIS or a stand-alone analysis that could inform the SEIS? **[Wayne Pullan, AMWG Chair]** Would not want to limit the scope of that discussion in any way. Because of the fundamental nature of hydropower and how it fits into the system, that may involve the need to look for alternative funding or some relief for those who rely on the power system. The hope is for that information to happen quickly enough to inform the SEIS.

**[Jim Strogon, FFI/TU]** Wasn't the plan for a fish pass-through device well underway with a target of 2024? If an EA is needed, implementation of that approach would be postponed another year. **[Wayne Pullan, AMWG Chair]** The need to proceed is being driven by the sexual maturity of YOY. This means having something in place to reduce/discourage propagation in the river downstream of the dam. The fish would mature long before a fish pass-through structure could be put in place. There are also issues with nets and their ability to be cleaned of Quagga mussels, which means probably two nets will be needed. That assessment is going to take longer than anticipated. **[Clarence Fullard, Reclamation]** There was a site visit a month ago at the dam and forebay by the subject matter experts. Reclamation is on a good design but it's a challenging engineering problem. The recent water level rise punctuates that problem.

**[Jim Strogon, FFI/TU]** For some short solutions, an earlier report discussed that area near the dam that might be habitat for spawning. Can that small area be addressed in the meantime? **[Clarence Fullard, Reclamation]** There is no more shallow water with the rise in elevations. That was near the former concrete plant, which is now inundated. Currently fine-tuning monitoring with GCMRC to assess fish coming through the dam.

**[Jim Strogon, FFI/TU]** This is one of the fears about increasing water levels, which are great news but allow us to postpone long-term solutions, which are still years away. This needs to be addressed in a way that will eliminate the problem when the water level recedes. **[Wayne Pullan, AMWG Chair]** Reclamation can only treat one good water year as one good water year. Cannot take foot off the gas when it comes to concerns about lower elevations.

**[Shana Rapoport, CRBC]** Had not heard that idea before about two nets. Have heard there are places where constant cleaning occurs. Want to ensure that is still on the table. **[Clarence Fullard, Reclamation]** Biofouling and O&M are high priority research. Reclamation has a mussel research lab in Denver and is in discussions with them about biofouling issues on nets.

**[Wayne Pullan, AMWG Chair]** Because of the deep interest in the EA, it is best to proceed and address these near-term problems. The hope is to discourage propagation to such a degree that the effort can be controlled after the net is in place, and then larger actions would not be needed to protect native fish. The SEIS work may not be short term, and it may cover efforts for some years to come.

**[Kelly Burke, GCWC]** Recognizes this is one good water year that has allowed for flexibility. It is important to use this year to address the issues that have brought us to this point. It is important to have that deeper conversation on the economic costs to hydropower and to not pit that against other resources.

**[Kurt Dongoske, Pueblo of Zuni]** Reclamation and NPS both have Programmatic Agreements (PAs) that require Memorandums of Agreement (MOA) for resolving adverse effects to properties of traditional religious and cultural importance to Zuni and the other Glen Canyon Dam Adaptive Management Plan (GCDAMP) tribes. These MOAs need to be in place prior to any lethal management actions by Reclamation and NPS. Please keep that in mind because labelling it as an "emergency" response is not satisfactory. Both agencies need to comply with their compliance responsibilities.

### GCDAMP Tribal Liaison Report

**[Jamescita Peshlakai, Reclamation] PRESENTATION** reported on the Navajo Nation Cultural Resources 2023 river monitoring trip last month. Currently working on a cultural sensitivity training (CST) program for federal employees working on the river with the five tribes. This was elevated to a priority, but the effort is being restarted. Upcoming CST meetings will be held every third Monday of the month. The Zuni Pueblo River trip has been cancelled. The Hualapai trip will be next. Other tribes' river trips are still on schedule. Dr. Zachary Nelson (Reclamation) is working on an MOA regarding non-native fish. Reclamation is also working on an internship program with Indian youth. Hopes to have interns in some of DOI partner agencies by winter 2024.

### Q&A and discussion

**[Greg Mehojah, Navajo Nation]** Who attends river monitoring trips? **[Jamescita Peshlakai, Reclamation]** Tribal partners who are signatories to the LTEMP PA and tribal members from TWG and AMWG, along with other tribal members. Erik Stanfield and Richard Begay coordinate this.

**[Chip Lewis, Bureau of Indian Affairs (BIA)]** What is the effort to get the tribal share of funds increased? **[Tara Ashby, Reclamation]** Reclamation has received the approvals to increase the dollar amounts, which is slated to happen in Fiscal Year (FY) 2025; however, additional funds have been found for FY23. That money will be going out in a modification this year, and the hope is to also have funds in place for next fiscal year. This would be \$121,000 per tribe for their participation.

### Proposed FY 2024 Budget and Work Plan

**[Bill Stewart, Reclamation] PRESENTATION** on the FY24 budget process and work plan. Recall in February that AMWG had discussed continuing the existing TWP, which runs from FY21 to FY23, for another year to allow time to address smallmouth bass and other concerns. In the meantime, BAHG met to discuss tweaks to the budget and will meet again after today's meeting. The June TWG meeting will make recommendations to AMWG that will allow for recommendations to the Secretary at the August meeting. The TWP cycle will start back up next January for FY25 to FY27. The overall FY24 budget assumes the same amount as at the end of FY23 with 80% to GCMRC and 20% to Reclamation.

**[Andrew Schultz, GCMRC] PRESENTATION** on GCMRC's FY24 Draft Budget Overview, which is similar to FY23, but with some key adjustments. There is the potential for additional funds to become available at the end of 2023 and possibly in 2024.

### Q&A and discussion



**[Seth Shanahan, TWG Chair]** The BAHG will be having discussions to get TWG's feedback on the budget. Encourages AMWG members to have TWG members participate in developing those conversations and additional program funding.

**[Shana Rapoport, CRBC]** What are the other projects that GCMRC is considering? **[Andrew Schultz, GCMRC]** There is a channel mapping trip for Project B, and GCMRC is struggling to meet salary requirements of Project A. Other things include the Grand Canyon youth trip.

## Stakeholder Updates

### States:

- **[Kristin Johnson, ADWR]** The new Governor's Council on Water Policy is having its first meeting today.
- **[Ryan Mann, AZGFD]** Flagstaff research office is currently conducting a Grand Canyon downstream monitoring trip. Had two detections of green sunfish and one striped bass. More updates will be available after the trip's completion on May 24.
- **[Shanna Rappaport, CRBC]** Actively engaged with other states on SEIS for potential 2024 adjustments.
- **[Alli Effati, NMISC]** New Mexico is also working with other states on the SEIS. In January 2022, NMISC entered into a lease agreement with the Apache Nation and in coordination with the Nature Conservancy (TNC) to place a portion of the Jicarilla Apache Nation's stored water into a Strategic Water Reserve. New Mexico is member state in the San Juan Recovery and Implementation Program. Apache Nation had previously leased water to power plant companies. There will be a spring peak release in late May/early June, which will be beneficial to Colorado pike minnow and razorback sucker in the San Juan basin.
- **[Sara Price, CRCN]** Nothing to report except for working on the SEIS comments.
- **[Scott McGettigan, Utah Division of Water Resources (DWR)]** Utah's water supply is full with statewide reservoir levels at 66%. Trying to keep enough space there for remaining runoff. Big item is the system conservation pilot program. Have 21 projects selected that would amount to 16,000 af of conserved consumptive use. Utah legislative appropriated \$500 million for water conservation, infrastructure, and cloud seeding. Scott and Candice will no longer be serving on AMWG. Amy Haas (lead) and Betsy Morgan (alternate) from the Colorado River Authority of Utah will be representing AMWG, but those nominations are still in progress.
- **[Charlie Ferrantelli, State of Wyoming]** Also working on the SEIS review and in the final contracting stages of Wyoming's system conservation pilot program with 25 projects selected, which equates to 16,000 af conserved.

### Tribes:

- **[Jakob Maase, Hopi Tribe]** Hopi River Trip is August 18-28. Will update on the herpetological project as it advances.
- **[Brent Powers, Navajo Nation]** Working to get comments on the SEIS. Reclamation came out to Window Rock for a consultation meeting. The river trip that Jamescita mentioned went well.
- **[Edward Wemytewa, Pueblo of Zuni]** Zuni river trip is at the end of this month. Zuni had concerns about certain issues and Zac Nelson (Reclamation) has reached out to discuss.
- **[Daniel Bullets, Southern Paiute Consortium]** River trip is in June 17-26.

## Non-Governmental Organizations (NGOs):

- **[Larry Stevens, GCWC]** GCWC is engaged in restoration projects at Paria Beach with the planting of 200 cottonwoods and willows last March. HFE did not take out any trees. There has been 80% planting success, which will be a robust stand in about five years. GCWC had recommended a scorecard for the annual reporting meeting to show where the program might be relative to GCDAMP goals. GCMRC wants to use the metric system to measure progress in meeting goals. This has not been resolved yet. More discussion to follow.
- **[Matt Rice, American Rivers]** In April, American Rivers listed the Colorado River through Grand Canyon as the most endangered River in the US. Also working on SEIS comments. American River's annual river trip is on the Yampa River and launches on Saturday.
- **[Leslie James, CREDA]** Nothing to report.
- **[Kevin Garlick, Utah Municipal Power Authority (UMPA)]** Will be submitting comments on the SEIS.
- **[Jim Strogon, FFI/TU]** Nothing to report.
- **[Dave Brown, Grand Canyon River Guides (GCRG)]** The ongoing Adopt-a-Beach program has been documenting changes to beaches before and after the HFE. Guides take photos of sites as they go down river. This is a long-term documentation of river trends. The Principal Investigator also created an entire dataset before the HFE. The documentation will continue this summer.

## Federal Agency Updates

- **[Andrew Schultz, USGS (new member and from USFWS in the Upper Basin)]** David Ward is moving on to become Assistant Project Leader for the Arizona Fish and Wildlife Conservation Office. Working on filling this position. GCMRC deputy chief position should be public soon. Trying to fill other permanent positions and getting staff into the fisheries office.
- **[Kathleen Callister, Reclamation (now in a new position in Upper Colorado operations office as the Adaptive Management and Water Quality Team Lead)]** Clarence is moving to a new position. Gale Hamilton is the new resource management officer.
- **[Heather Whitlaw, USFWS]** Kirk Young is still around as a retired annuitant. In discussions to identify alternates for TWG and AMWG. Entered into agreement with Lower Colorado Basin Office to support a Colorado Region Coordinator and will introduce that person soon. Jess Gwinn is detailed as the Lower Colorado Coordinator to assist on the SEIS. Did get two Biological Assessments from Reclamation to reinitiate consultation with USFWS on Biological Opinions.
- **[Ed Keable, NPS]** The North Rim of Grand Canyon got over 250 inches of snow, which is great for the system, but a series of avalanches have impacted Grand Canyon operations. North Kaibab Trail and others were heavily damaged. Avalanches took out over 100 yards of water line so cannot provide water to the North Rim, which is closed until June 2 and then it will only be open for day use through July 1. Laura Tennant was hired into the Fisheries Program and will be coordinating on rapid response. NPS continues to look at funding from the Bipartisan Infrastructure Law and the Inflation Reduction Act.
- **[Chip Lewis, BIA]** BIA's water rights specialist, hydrologist, and attorney have submitted SEIS comments to Reclamation. Garry Cantley is retiring at the end of May so BIA will not have a cultural component for AMWG until BIA has someone else onboard.
- **[Greg Mehojah, BIA (nomination still pending)]** Looking forward to working with everyone.

- **[Brian Sadler, WAPA]** Working on SEIS and providing input as cooperation agent. Power marketing manager, Adam Arellano, is leaving. The acting Power Marketing Manager will be Brent Osiek. Will be recruiting for that position soon. Existing rate will be expiring, and plan to kick off that public process next month.
- **[Wayne Pullan, AMWG Chair]** Rod had to leave but he mentioned that briefings on the LTEMP litigation appeal will be due this summer. More information will be provided at the August meeting.

## Technical Work Group Chair Report

**[Seth Shanahan, TWG Chair] PRESENTATION** Three TWG meetings have been held since the last Chair's report. Next meeting will be in June in Flagstaff, which was due to interest by the TWG to tour 12-Mile slough, and the Glen Canyon/Lees Ferry area. The plan now is to organize a tour with a commercial boat operator, which will be at the expense of each member's organization. In the future, this should be programmed into the budget. TWG topics include hydrology, water quality, fish entrainment, and low DO. TWG continues to discuss what to do if these conditions present themselves. Also heard from WAPA about the use of the bypass at Glen Canyon and how that might affect power generation and transmission, including black starts capability. TWG has been focusing on fish assemblages in the forebay of Lake Powell and entrainment risk. Studying issues of nutrients and aquatic ecosystems effects downstream of Glen Canyon Dam. There are interesting tools to manage these resources that may not be considered very often. TWG had lots of dialogue on humpback chub as well as razorback sucker augmentation and whether it should occur. Have also discussed not taking our focus off green sunfish, trying to determine population impacts from the incentivized harvest program, and others.

## Public Comment

**[Lynn Hamilton, GCRG]** Youngest son got to lead a trip that launched the day before HFE. It was very exciting and gratifying. There was a huge sigh of relief from the river community that recreational resources, beaches, sand bars, and associated habitats were rejuvenated. Realizes the decision to do an HFE was tough but thinks this was a great step and exactly how this program should work. Moving forward, the overarching lesson is to capitalize on opportunities and work together for the future of the Grand Canyon.

**[Amanda Podmore, Grand Canyon Trust]** Thanks AMWG for following up on Grand Canyon Trust's comments at the February meeting about the HFE and sediment accounting.

## AMWG Next Steps

**[Wayne Pullan, AMWG Chair]** Important items covered at today's meeting included the sediment accounting protocols, evidence of beach building as shown in the HFE photos, discussion of the FY24 budget and workplan, hydrology and tribal liaison reports (among others), and discussions on expanding the smallmouth bass EA into an EIS. Next AMWG meeting is August 16 and 17. Please submit suggestions for agenda items to Terra Alpaugh (Kearns & West). The TWG meeting is June 14 and 15. The Annual Reporting Meeting will be January 26, 2024.

**[Christina Noftsker, NMISC]** Will the smallmouth bass EIS include sediment window? **[Wayne Pullan, AMWG Chair]** That is how Reclamation intends to proceed.

**Meeting adjourned at 3:00 PST**

### **AMWG Members, Alternates, and Leadership**

Christina Kalavritinos, DOI  
Annalise Blum, DOI  
Wayne Pullan, BOR, Acting Secretary's Designee  
Cliff Barrett, UMPA (Alternate)  
Richard Begay, Navajo Nation  
David Brown, GCRG  
Daniel Bulletts, Southern Paiute Consortium  
Kelly Burke, GCWC (Alternate)  
Kathy Callister, Reclamation (Alternate)  
Shane Capron, WAPA (Alternate)  
Julie Carter AZGFD  
Martina Dawley, Hualapai Tribe  
Laura Dye, CRCN (Alternate)  
Ali Effati, NMISC  
Charlie Ferrantelli, WY State Engineers Office  
Kevin Garlick, UMPA  
Michelle Garrison, CWCB (Alternate)  
Candice Hasenyager, Utah DWR  
Leslie James, CREDA

Edward Keable, NPS  
Heather Whitlaw, USFWS  
Rodney Smith, DOI Solicitor  
Kristin Johnson ADWR (Alternate)  
Charles "Chip" Lewis, BIA  
Jakob Maase, Hopi Tribe  
Scott McGettigan, Utah DWR (Alternate)  
Greg Mehojah, BIA (Alternate/Pending)  
Jessica Neuwirth, CRBC  
Christina Noftsker, NMISC (Alternate)  
Daniel Picard, Reclamation  
Sara Price, CRCN  
Jim Strogon, FFI/TU  
Shana Rapoport, CRBC (Alternate)  
Matt Rice, American Rivers  
Brian Sadler, WAPA  
Larry Stevens, GCWC  
Erik Stanfield, Navajo Nation (Alternate)

### **Reclamation Staff**

Tara Ashby  
Margaret Digiorno  
Clarence Fullard  
Katrina Grantz  
Dale Hamilton  
Zachary Nelson  
Heather Patno  
Nick Williams  
Dave Isleman

Jamescita Peshlakai  
Alex Pivarnik  
Robert Radtke  
Ernie Rheume  
Dave Speas  
William "Bill" Stewart  
Alex Walker  
Marcie Bainsou

### **USGS/GCMRC Staff**

Lucas Bair  
Helen Fairley  
Paul Grams  
Ted Kennedy  
Bryce Mihalevich

Joel Sankey  
Andrew Schultz  
Scott Vanderkooi  
David Ward  
Emily Palmquist

### **Other GCDAMP Members and Interested Persons**

Mathew Alinsod  
Terra Alpaugh, Kearns & West  
Jeff Arnold, NPS  
Rodney Bailey, WAPA  
Morgan Waggoner  
Eric Balken

Mark Lamb, USFWS  
James Langhenry  
Dan Leavitt, USFWS  
Ryan Mann, AZGFD  
Kevin McAbee, USFWS  
David McIntyre, SeaJay Environmental

Michelle Kerns, NPS  
Heather Banks, PRPA  
Rob Billerbeck, NPS-GLCA  
Kurt Dongoske, Pueblo of Zuni  
Kevin Bulletts, Southern Paiute Consortium  
Sinjin Eberle, American Rivers  
Katie Chapman  
Colleen Cunningham, NMISC  
David Dean  
Dennis Delaney  
John Dillon, Grand Canyon River Outfitters Assn  
Edward Wemytewa, Pueblo of Zuni  
Jennifer Yachnin  
Craig Ellsworth, WAPA  
Sheri Farag, Salt River Project  
Bud Fazio, NPS-GLCA  
Alicyn Gitlin, Sierra Club - Grand Canyon Chapter  
Simone Griffin  
Emily Halvorsen  
Lynn Hamilton, GCRG  
Rosemary Henry  
Emily Higuera, ADWR

Betsy Morgan, State of Utah  
Shannon Mullane  
David Newton  
Jess Newton, USFWS  
Jan Pelz, Grand Canyon Trust  
Brittany Peterson, AP News  
Amanda Podmore, Grand Canyon Trust  
Brent Powers, Navajo Nation  
Craig Pyper  
Ted Rampton, CREDA  
Josh Randall  
John Jordan, FFI/TU  
Elyssa Shalla, NPS  
Gerard Salter  
Shane Sanders  
Shannon Sartain  
Seth Shanahan, SNWA  
Erik Skeie, State of Colorado  
Emily Zmak, CWCB  
Melissa Trammell, NPS  
Robert Tusso

## Acronyms and Abbreviations

°C – degrees Celsius

ADWR – Arizona Department of Water Resources

af – acre-feet

AMWG – Adaptive Management Work Group

AZGFD – Arizona Game and Fish Department

BAHG – Budget Ad Hoc Group

BIA – Bureau of Indian Affairs

CFS – cubic feet per second

CRBC – Colorado River Board of California

CRCN – Colorado River Commission of Nevada

CREDA – Colorado River Energy Distributors Association

CWBC – Colorado Water Board of Colorado

CRMMS – Colorado River Mid-term Modeling System

CST – cultural sensitivity training

CWCB – Colorado Water Conservation Board

D.O. – dissolved oxygen

DOI – (U.S.) Department of the Interior

EA – environmental assessment

EIS – environmental impact statement

ESA – Endangered Species Act

FFI – Fly Fishers International

FLAHG – Flow Ad Hoc Group

FY – Fiscal Year

GCDAMP – Glen Canyon Dam Adaptive Management Program

GCMRC – Grand Canyon Monitoring & Research Center

GCRG – Grand Canyon River Guides

GCWC – Grand Canyon Wildlands Council

HFE – High Flow Experiment

LCR – Lower Colorado River

LTEMP – Long-term Experimental and Management Plan

maf -million-acre-feet

NEPA – National Environmental Policy Act

m/s – meters per second

MOA- memorandum of agreement

NEPA – National Environmental Policy Act

NGOs – non-governmental organizations

NMISC – NM Interstate Stream Commission

NOI – Notice of Intent

NPS – National Park Service

O&M – operations & maintenance

PA – Programmatic Agreement

PBR – Paria to Badger Rapid

PST – Pacific Standard Time

Reclamation – Bureau of Reclamation

ROD – Record of Decision

SEIS – supplemental EIS

TNC – The Nature Conservancy

TU – Trout Unlimited

TWG – (GCDAMP) Technical Work Group

TWP – Triennial Work Plan

UCR – Upper Colorado River

UDWR – Utah Division of Water Resources

UMPA – Utah Municipal Power Agency

USFWS – U.S. Fish & Wildlife Service

USGS – United States Geological Survey

WAPA – Western Area Power Administration