

Glen Canyon Dam Adaptive Management Program Adaptive Management Work Group (AMWG) Meeting Summary Dates: February 25-26, 2026

Note: Meeting Summary was produced by AI and subject to errors.

Meeting Start Time: 9:30 am PST

Location: Hilton Garden Inn, Tempe, Arizona

Welcome and Administrative

The meeting began with logistical announcements and a welcome from Becky Bryant Bureau of Reclamation (Reclamation), who facilitated the session and introduced Assistant Secretary for Water and Science (ASWS) and the Secretary's Designee, Andrea Travnicek. A quorum was met with XX AMWG members and alternates in attendance either in person or on the phone.

Andrea Travnicek expressed her appreciation for the group's work and her personal connection with the Adaptive Management Work Group (AMWG), referencing her experiences with tribal members and her ongoing commitment to the program. She highlighted the importance of collaboration among federal agencies, states, and tribes, especially in light of current challenges such as persistent drought, invasive species management, and the need to balance hydropower production with ecological concerns. Andrea Travnicek noted that the seven basin states had not yet reached agreement on post-2026 operations, but consultations with tribes and Mexico were ongoing, and the public comment period for the Record of Decision was closing soon.

Bill Stewart (Reclamation) provided administrative updates including introductions of new and continuing members, recognition of recent staffing changes, action item tracking (with a focus on monitoring metrics and evaluation of experimental flows under low water conditions), the launch of a new SharePoint site for document management, and a schedule of upcoming meetings and workshops. The group was reminded of the importance of adaptive management and the need to operate within current resource and budget constraints.

Basin Hydrology and Operations

Alex Pivarnik (Reclamation) presented a comprehensive overview of current basin hydrology and operations. As of late February, Lake Powell was at 25% capacity, with the Upper Basin at 36% and the total system at 37%. The region had experienced below-average precipitation and snowpack, with February 2026 marking the lowest snowpack in the 30-year record for that date. Forecasts indicated continued dry and warm conditions, raising concerns about water availability. Operationally, Lake Powell was projected to drop below minimum power pool by the

end of 2026, with all model scenarios showing Powell falling below 3525 feet at some point during the year. Management strategies included adjusting monthly releases to maintain higher reservoir elevations through spring, potential draw releases from upstream units, and possible modifications to water delivery volumes under Section 6E. The goal was to keep Powell above 3500 feet, with decisions on draw releases and Section 6E modifications expected in April or May, contingent on updated hydrology. Water quality updates from Matt O’Neill (Reclamation) indicated that record warm releases from Glen Canyon Dam were likely, with potential impacts on downstream ecosystems. Wind events had caused mixing in Lake Powell, affecting water temperature and dissolved oxygen at Lees Ferry. The presentations underscored the complexity of managing water resources under increasingly variable and challenging conditions.

LTEMP Experiments Updates

Bill Stewart, Charles Yackulic (Grand Canyon Monitoring and Research Center [GCMRC]), and Jerry Wilhite (Western Area Power Administration [WAPA]) provided updates on Long Term Experimental and Management Plan (LTEMP) experiments, focusing on the adaptive management framework and recent experimental flows. The LTEMP framework includes sediment management experiments (high flow experiments, or HFEs), aquatic resource experiments (such as bug flows and trout management flows), and the recent addition of smallmouth bass flows (cool mix). The cool mix experiment, implemented in 2024 and 2025, aimed to prevent smallmouth bass spawning by manipulating water temperatures through a mix of penstock and river outlet releases. Evidence suggested that cool mix had reduced smallmouth bass recruitment, though the risk of entrainment remained. The experiment also supported the trout fishery by mitigating high water temperatures. Hydropower impacts were significant, with cool mix flows resulting in replacement power costs of \$6.5 million in 2025 and \$19 million in 2024. Operational strategies were employed to minimize costs during peak demand hours. The group engaged in robust debate about the efficacy and necessity of cool mix, weighing ecological benefits against hydropower and economic impacts. There was consensus on the need for additional management options and ongoing scientific evaluation to guide future decisions.

2026 GCDAMP Annual Reporting Meeting Update – Part 1: Tribal Resources

This session featured a presentation from the Navajo Nation, including a cultural competency video and discussion led by Eric Stanfield (Navajo) and Richard Begay (Navajo). The presentation emphasized the deep cultural and spiritual connections of tribes to the Grand Canyon and Colorado River, highlighting the importance of water as life and the role of traditional narratives

and ceremonies in guiding stewardship. Tribal perspectives were shared, illustrating how the river and canyon serve as teachers and sources of collective memory. The presentation aimed to foster understanding of tribal values among AMWG participants and underscored the need to respect and protect natural and cultural resources as integral components of adaptive management.

2026 GCDAMP Annual Reporting Meeting Update – Part 2

Ted Kennedy (GCMRC) and others from the Grand Canyon Monitoring and Research Center (GCMRC) team presented science updates covering five resource areas: natural processes, native fish (humpback chub), rainbow trout fishery, non-native species, and sediment. Metrics indicated that river flows were closer to natural conditions due to drought and management actions, and bug flow experiments had increased caddisfly abundance while midges had declined. Humpback chub populations were strong in both the Little Colorado River and Western Grand Canyon, with recent years showing high abundance and distribution. Warm water temperatures had accelerated growth and recruitment. The rainbow trout fishery was in poor condition, with low catch rates and recruitment attributed to warm water, low dissolved oxygen, and competition/predation. Non-native species such as smallmouth bass and brown trout were present, but reproduction was limited; research was ongoing to understand entrainment and population dynamics. Sediment management was a key focus, with sandbar deposition from HFEs generally positive, but overall high-elevation sand declining due to infrequent HFEs and ongoing erosion. Management strategies included timing HFEs to maximize sediment retention and learning from past experiments to improve future outcomes.

2026 GCDAMP Annual Reporting Meeting Update – Part 3

Joel Sankey (GCMRC) summarized interdisciplinary work on riparian vegetation, archaeological, and cultural resource preservation. Long-term expansion of riparian vegetation had narrowed the river channel, and management needed to balance plant cover with habitat and recreational needs. Many archaeological sites were eroding and becoming more vulnerable, with ongoing monitoring and management (including vegetation removal and HFEs) required to preserve cultural resources. Experimental vegetation management, such as removal of riparian vegetation on sandbars, was shown to increase wind-driven sand transport to archaeological sites, aiding preservation. Hydropower and recreation were also discussed, with Lucas Bair (GCMRC) presenting metrics for hydropower (generation, economic value, firm capacity) and recreational experience (beach quality, minimum flows for boating safety). Poor hydrology has reduced generation and increased costs, impacting the Basin Fund and utility customers. The

session highlighted the need for integrated management approaches that consider ecological, cultural, recreational, and economic values in decision-making.

PUBLIC COMMENT

Public comment was invited at the end of the day. Lynn Hamilton (Grand Canyon River Guides) and others expressed appreciation for the presentations, especially the tribal resources session, and emphasized the importance of continued learning, experimentation, and adaptive management. Comments highlighted the need for more frequent high flow experiments, creative solutions to sediment management, and the value of engaging the public and river community in stewardship efforts. There was a call for optimism and for recognizing the ability to make positive changes, even in small ways, to support the Grand Canyon ecosystem.

Closing Remarks/ADJOURN FOR THE DAY

The meeting concluded with reflections from leadership and participants, emphasizing the challenges ahead due to drought, budget constraints, and ecological pressures, but also the strength of collaboration and adaptive management. There was a call to focus on priorities, celebrating successes, and continue to seek creative, science-based solutions. Participants were reminded of the next day's agenda and encouraged to attend the evening social event. The meeting was then adjourned for the day.

Meeting adjourned at:

Glen Canyon Dam Adaptive Management Program

Adaptive Management Work Group (AMWG) Meeting Summary

Dates: February 26, 2026

Note: Meeting Summary was produced by AI and subject to errors.

Start Time: 8:31 am PST

Location: Hilton Garden Inn, Tempe Arizona

Welcome and Administrative

The meeting opened with a welcome from the facilitation team, noting the absence of Tara Ashby (Reclamation) due to illness and expressing appreciation for her work. The group confirmed a quorum and reviewed ground rules, emphasizing that both AMWG members and their designated alternates could participate fully. The facilitator reminded participants to state their name and affiliation before speaking and to use the chat only for technical issues. The group was reminded of a hard stop at 3:00 PM due to room scheduling.

Dragon Bravo Fire Update

The National Park Service (NPS) provided a comprehensive update on the Dragon Bravo Fire, which began as a lightning strike on July 4, 2025, and burned for nearly three months, affecting 145,000 acres across Grand Canyon National Park and Kaibab National Forest. The fire destroyed 106 structures, including significant operational facilities and the iconic North Rim Lodge. NPS is working to reopen the North Rim by May 15, 2026, prioritizing key trails and overlooks. The Bear (Burned Area Emergency Response) report, now public, found that most of the fire area was low burn severity, with 24% moderate and 1–2% high. The response included immediate stabilization, ongoing monitoring of vegetation, wildlife (notably bison), water quality, and archaeological sites. Water quality monitoring is focused on Roaring Springs and Bright Angel Creek, with concerns about post-fire contaminants, flash flooding, and debris flows. Early results show no concerning concentrations of heavy metals or PH in soil samples. Native fish monitoring continues, with some evidence that post-fire conditions may help native fish by reducing non-native trout populations in certain tributaries. The NPS is collaborating with United States Geological Survey (USGS) and other partners on long-term monitoring and adaptive management.

Budget Planning Overview

Kathy Callister (Reclamation) presented an overview of the federal budget process, explaining the distinction between authorization and appropriations. The Glen Canyon Dam Adaptive Management Program (GCDAMP) is authorized under Public Law 106-377, with a spending cap adjusted for inflation (currently about \$14.5

million, though actual appropriations are lower). For FY26, the program received \$10.6 million, a 15% reduction from the triennial work plan, split 80/20 between USGS and Reclamation. The FY27 planning process will begin with the same amount as FY26, but scenarios with an additional 5% and 10% reduction are being prepared. The group discussed the challenges of planning under uncertainty, the impact of inflation, and the need for prioritization. Questions were raised about the impact of cuts on specific projects and the process for determining priorities.

Technical Work Group (TWG) Chair Report and Fiscal Year (FY) 2027 Workplan Process

Seth Shanahan (State of Nevada, TWG Chair) reported on recent and upcoming TWG meetings, highlighting the group's concern about unprecedented hydrologic uncertainty, the difficulty of balancing resource trade-offs, and the importance of long-term solutions for non-native species management. The TWG is preparing for the FY2027 work plan and budget process, with Colorado leading the Budget Ad Hoc Group (BAHG). The process will use three criteria for budget changes: scientific merit, administrative necessity, and new initiatives (though the latter is unlikely given budget constraints). The group is seeking AMWG input on priorities and guidance for the BAHG. The TWG is also working on a trout ad hoc group to address the declining rainbow trout fishery, with recommendations forthcoming. The report emphasized the need for clear prioritization, potential deferral of lower-priority work, and the catastrophic impact of continued budget cuts on science capacity and monitoring.

Hydropower Workshop

The hydropower workshop, facilitated by the Udall Foundation (Udall), was summarized by Jeremy Hammen (Reclamation) and Seth Cohen (Udall). The workshop aimed to clarify hydropower goals, review current status and trends, and discuss experimental approaches and financial challenges. Participants appreciated the opportunity for in-depth discussion, especially on modeling, Basin Fund issues, and the need for updated hydropower goals in light of changing conditions. Feedback included requests for more advance reading materials and technical discussions, and for future workshops to focus on experimental design and stakeholder needs. The workshop also highlighted the importance of third-party facilitation and the need for creative solutions to maintain hydropower benefits while supporting downstream resources.

Knowledge Workshops/10-Year Review

Bill Stewart and Jeremy Hammen (Reclamation) outlined the upcoming series of knowledge workshops, designed to provide baseline information, identify knowledge gaps, and support the 10-year review of the LTEMP as well as the next triennial work plan. The workshops will cover topics such as fish, sediment,

vegetation, cultural resources, and recreation, with stakeholder-driven agendas and planning teams. The first fish workshop is scheduled for April, with surveys sent to TWG members to gather input on priorities and questions. The workshops aim to integrate lessons learned, celebrate successes, and ensure that future management is informed by the best available science and stakeholder perspectives.

Nonnative Strategic Plan Action Updates

A multi-agency panel (GCMRC, NPS, Reclamation, Arizona Game & Fish) provided updates on actions to address non-native fish, especially smallmouth bass. Kim Dibble (GCMRC) reported a dramatic reduction in smallmouth bass captures in 2025 compared to previous years, with no evidence of recruitment in 2024 or 2025, likely due to successful cool mix flows and removal efforts. Environmental DNA monitoring continues to track distribution. Bud Fazio (Glen Canyon National Recreation Area) described the successful channelization of the Slough, which has prevented smallmouth bass and green sunfish nesting, and ongoing native plant restoration and mitigation for amphibians and cultural resources. Jeremy Hammen (Reclamation) discussed long-term management tools under consideration, including thermal curtains, selective withdrawal devices, and deterrent barriers, with feasibility studies underway. Emily Young (Arizona) reviewed the strategic plan's guiding principles, the need for prevention and rapid response, and the importance of continued monitoring and adaptive management. The group discussed the need for creative funding solutions and the importance of maintaining rapid response capacity despite budget constraints.

Stakeholder Updates

State and stakeholder representatives provided brief updates:

- **Arizona, California, Colorado, Utah, Nevada, Wyoming:** All are focused on post-2026 EIS comments and ongoing water management programs. Utah and Wyoming reported on demand management and telemetry programs; Nevada highlighted progress on Hoover Dam turbine upgrades and legal challenges to conservation programs.
 - **Tribal and NGO Updates:** Hualapai, Navajo Nation, Southern Paiute Consortium, and others described ongoing monitoring trips, collaborative projects, and cultural initiatives. Grand Canyon Wildlands Council reported on new aquatic invertebrate research and post-fire studies. Recreational fishing and river guides emphasized the importance of monitoring water temperatures and maintaining trout habitat. Several groups noted the need for creative funding and collaboration to address budget shortfalls.
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Federal Agency Updates

- **GCMRC:** Mark Anderson reported on the impact of the 15% budget cut, including a hiring freeze, canceled monitoring trips (trout, sediment, cultural resources), and reduced capacity for data management and post-2026 analysis. The agency is prioritizing essential work but faces significant challenges.
 - **US Fish & Wildlife Service:** Jess Newton highlighted the upcoming humpback chub species status assessment and five-year review, the importance of cool mix as a management tool, and staffing constraints due to retirements and hiring freezes.
 - **Reclamation:** Katrina Grant noted ongoing tribal consultations, personnel changes, and the need to prepare for further budget reductions.
 - **National Park Service:** Ed Keeble emphasized the importance of celebrating program successes (e.g., the Slough project), supporting creative solutions, and maintaining capacity across park boundaries.
 - **WAPA:** Rodney Bailey reported on post-2026 EIS work, customer engagement regarding minimum power pool, and the need to address capital investment and budget cuts.
 - **Solicitor's Office:** Rod Smith offered no specific updates but acknowledged ongoing legal complexities.
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Public Comment

Several members of the public and stakeholder organizations provided comments. Lynn Hamilton (Grand Canyon River Guides) and Jen Pelz (Grand Canyon Trust) emphasized the critical importance of protecting humpback chub and the need to maintain cool mix flows as the only effective tool currently available. John Dillon (Grand Canyon River Outfitters Association) stressed the value of recreation as a core program objective, not an optional “luxury,” and encouraged continued advocacy and creative problem-solving. Public comments also highlighted the need for robust science, stakeholder engagement, and adaptive management in the face of unprecedented challenges.

Wrap-Up

Wayne Pullan (Reclamation) closed the meeting by reflecting on the importance of consensus, prioritization, and creative adaptation in the face of scarcity and uncertainty. He encouraged members to prepare for the next meeting in May, when more will be known about hydrology and the outcomes of the fish workshop. Poland emphasized the need for strong recommendations on high flow experiments and cool mix, further discussion on entrainment risks, and continued collaboration with tribal partners. He thanked all participants for their service and sacrifices and reminded the group to help with room cleanup as the meeting adjourn.

Meeting Adjourned at

Participants

AMWG Members, Alternates, and Leadership

Andrea Travnicsek (DOI-ASWS)	Amy Haas (State of Utah)
Wayne Pullan (Acting Secretary's Designee)	Betsy Morgan (State of Utah)
Kathleen Callister (Acting DFO)	Charlie Ferrantelli (State of Wyoming)
Katrina Grantz (BOR)	Mel Fegler (State of Wyoming)
Deborah Shirley (BIA)	Larry Stevens (Southwest Wildlands)
Heather Whitlaw (FWS)	Kelly Burke (Southwest Wildlands)
Jess Newton (FWS)	Jim Strogon (Trout Unlimited)
Jakob Maase (Hopi)	Leslie James (CREDA)
Stewart Koyiyumptewa (Hopi)	Ed Keable (NPS)
Ka-Voka Jackson (Hualapai)	Emily Young (State of Colorado)
Carrie Cannon (Hualapai)	Clay Crowder (AZGFD)
Richard Begay (Navajo Nation)	Ali Effati (State of New Mexico)
Erik Stanfield (Navajo Nation)	Sinjin Eberle (American Rivers)
Sheri Farag (Salt River Project)	Christina Noftsker (State of New Mexico)
Daniel Bulletts (SPC)	David Brown (GCRG)
Shana Rapoport (State of California)	Craig Ellsworth (WAPA)
Rod Buchanan (Trout Unlimited)	Rodney Bailey (WAPA)
Michelle Garrison (State of Colorado)	Jacob Ohlson (NPS-GLCA)
Sara Price (State of Nevada)	Emily Zmak (State of Colorado)
Warren Turkett (State of Nevada)	
Rod Smith (Solicitor, DOI)	

Other GCDAMP Members and Interested Persons

Tara Ashby (Reclamation)
Jeremy Hammen (Reclamation)
Bill Stewart (Reclamation)
Matt O'Neill (Reclamation)
Grace Rebling
Benjamin Simon
Kathrine Behn (GCMRC)
Tildon Jones (FWS)
Matthew Kaplinski (GCMRC)
Bill Persons (Trout Unlimited)
Matthew Boggie (FWS)
Stacey Stanford (FWS)
Jen Pelz
Craig McGinnis
Ted Rampton (UMPA)
Abigail Winrich (NPS-GRCA)
Danielle Collins (State of Nevada)
Kimberly Dibble (GCMRC)
David Dean (GCMRC)
Julie Stahli (FWS)
Trevor Updegraff
Hannah Chambless (NPS-GRCA)
Bridget Deemer (GCMRC)
Cassandra Reed (NPS)
Caroline Llanes
Amanda Nicodemus
Shaula Hedwall (FWS)
Lynn Hamilton (GCRG)
Joshua Grier
Shana Tighi
Andrew Colosimo (Colorado Springs Utilities)
Kerri Pedersen (Reclamation)
Becki Bryant (Reclamation)
Emily Palmquist (GCMRC)
Nicole Gibney (NPS)
Jenna Vonhofe
Colleen Cunningham (State of New Mexico)
John Dillon (GCROA)
Rudy Keedah (BIA)
Alyx Richards
Brooke Larsen (The Salt Lake Tribune)
Mark Anderson (GCMRC)
Thomas Gushue (GCMRC)
Erica Byerley
Joe Duncan (State of Wyoming)
Elyse Shalla (NPS-GRCA)
Brian Hines (Reclamation)
Isis Farmer (DOI)
Seth Shanahan (State of Nevada)
Amanda Becker (Reclamation)
Seth Cohen (Udall)
Deb Williams (FWS)
Emily Omana (NPS-GRCA)
Amanda Podmore
Bethany Hull
Jeff Arnold (NPS-GLCA)
Buddy Fazio (NPS-GLCA)
Alexander Pivarnik (Reclamation)
Scott McGettigan (State of Utah)
Meredith Hartwell (GCMRC)
Anya Metcalfe
Eric Balken
Brandon Loomis
Craig Dengel
Ron Kegerries
Ian Bishop
Brett Walton
Conor Clancy
Katherine Chapman
Kristin Hoelting
Brooke Larsen