



— BUREAU OF —
RECLAMATION

Glen Canyon Dam Adaptive Management Program Overview

William Stewart
Bureau of Reclamation

3-day high-flow experiment begins at Glen Canyon Dam

Arizona Republic

Published 1:23 p.m. MT April 24, 2023 | Updated 4:59 p.m. MT April 29, 2023



Billions of gallons of water from Lake Powell are being dumped into the Grand Canyon

The water will eventually make its way to Lake Mead.

By [Julia Jacobo](#)

April 27, 2023, 11:10 AM



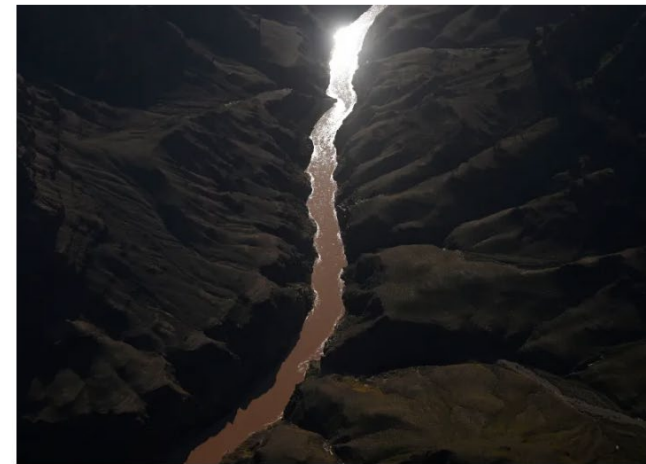
Why water from Lake Powell is being dumped into Grand Canyon

Releasing water from Glen Canyon Dam at Lake Powell to supply Lake Mead typically happens in the fall.

NEWS > ENVIRONMENT • News

Colorado's big snowpack powers massive "pulse" of water being shot through Grand Canyon

Simulated spring flood through Colorado River will use almost as much water as Denver uses in a year



Morning sunlight cuts through haze and shines on the Colorado River as it runs through Grand Canyon National Park in Arizona on April 18, 2023. The flight for aerial photography was provided by LightHawk. (Photo by RJ Sargosi/The Denver Post)



By [BRUCE FINLEY](#) | bfinley@denverpost.com | The Denver Post
PUBLISHED: April 26, 2023 at 6:00 a.m. | UPDATED: April 26, 2023 at 10:51 a.m.

We expect experimental release will add more water to Lake Mead this week

by News 3 Staff | Tue, April 25th 2023 at 8:20 AM
Updated Tue, April 25th 2023 at 10:14 AM



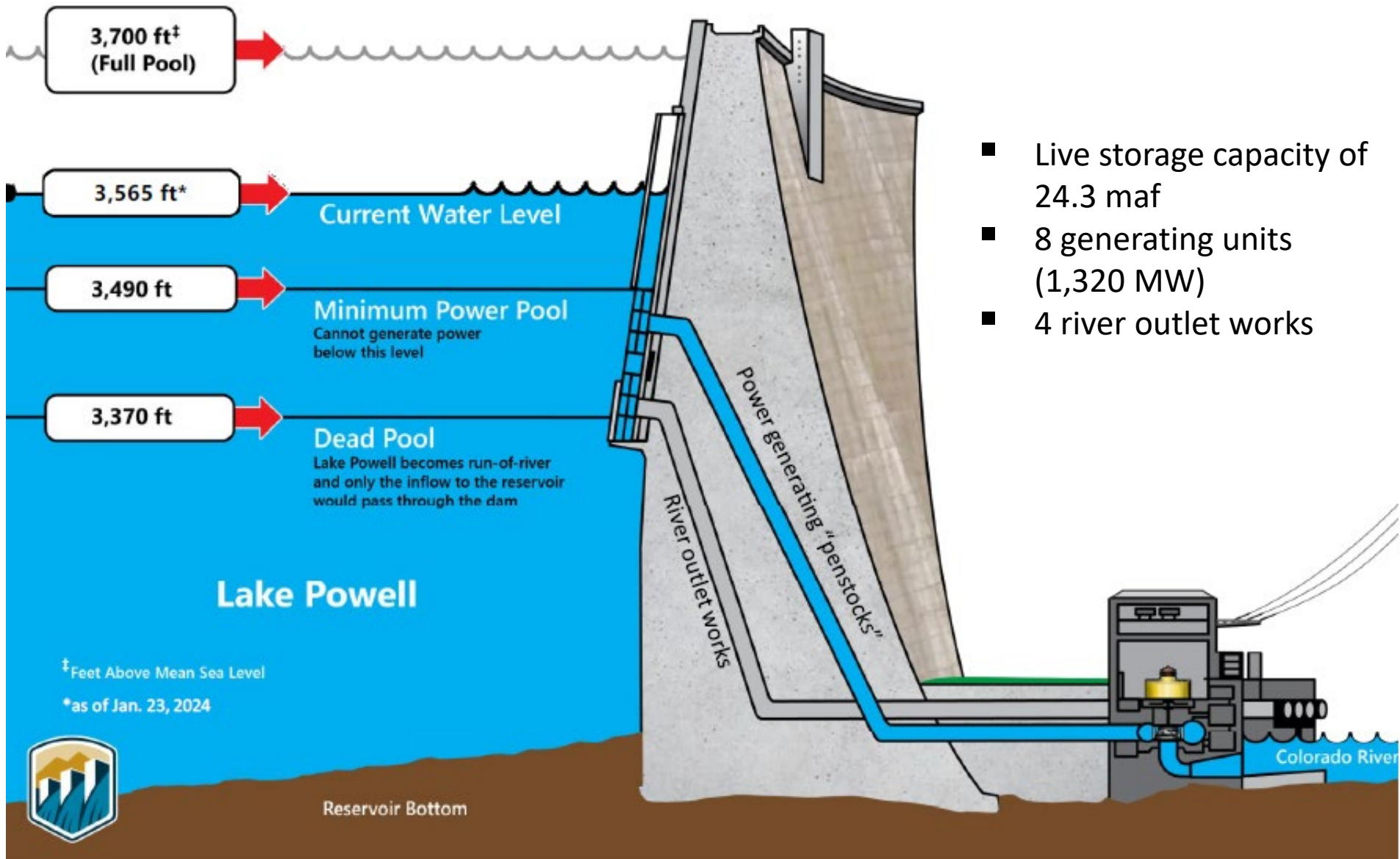
FILE: A High Flow Experiment release takes place at Glen Canyon Dam in November 2018. A similar release will take place this week to move sand stored in the river channel to Grand Canyon National Park. (Image via U.S. Department of Interior)

Water is being released from the dam on April 24, to simulate down the river of Glen Canyon



LAS VEGAS (KSNV) — Federal water managers will release more water than normal from Glen Canyon Dam this week, ultimately feeding more water into Lake Mead.





- Live storage capacity of 24.3 maf
- 8 generating units (1,320 MW)
- 4 river outlet works

**Colorado River Storage
Protection Act - 1956**

**National Historic
Preservation Act -
1966**

**Grand Canyon
Projection Act - 1992**



**Federal Advisory
Committee Act - 1972**

**Endangered Species
Act - 1973**

**National Environmental
Policy Act - 1970**



Guidance, Compliance & Other Considerations

- “Law of the River”

- Colorado River Compact of 1922
- 2007 Interim Guidelines (annual releases)

- **Other Statutory Obligations**

- Grand Canyon Protection Act (GCPA):
- National Environmental Policy Act (NEPA):
- Endangered Species Act (ESA):
- National Historic Preservation Act (NHPA):

- **DOI Policy Guidance (Aug 14, 2019 Memo)**

- Focus on implementing 2016 LTEMP ROD
- Monitoring Metrics
- Basin-wide efforts (Drought Contingency Plans, new Interim Guidelines)

- **LTEMP Litigation**



United States Department of the Interior
OFFICE OF THE SECRETARY
Washington, DC 20240

AUG 14 2019

MEMORANDUM

To: Brent Esplin, Designated Federal Officer, Bureau of Reclamation
Regional Director, Upper Colorado Region
Kathleen Callister, Resources Management Division Manager, Bureau of Reclamation
Upper Colorado Region
Scott VanderKooi, Chief, Grand Canyon Monitoring and Research Center (GCMRC)
U.S. Geological Survey (USGS)

From: Timothy R. Petty, Ph.D.
Secretary's Designee
Assistant Secretary for Water and Science

Subject: Glen Canyon Dam Adaptive Management Program Guidance

The Colorado River faces many challenges in the coming years, especially with an ongoing drought now in its 19th year. As such, it is important that the Glen Canyon Dam Adaptive Management Program (GCDAMP) is managed in such a way as to ensure consistency with the Grand Canyon Protection Act (GCPA) and the priorities of the Secretary of the Interior, and in accordance with the Law of the Colorado River and the Glen Canyon Dam Long Term Experimental and Management Plan (LTEMP) Record of Decision (ROD) and Final

Consultation, Research, Monitoring
LTEMP FEIS and ROD
LTEMP Biological Opinion
LTEMP Programmatic Agreement and
Historic Preservation Plan

Grand Canyon Protection Act (1992)

- **REQUIRES** the operation of Glen Canyon Dam in a manner to:
 - Protect, mitigate adverse impacts to, and improve the values for which the Grand Canyon National Park and Glen Canyon National Recreation Area were established including natural and cultural resources and visitor use
 - Operations must remain in compliance with and subject to water delivery laws and requirements
- **REQUIRES** long-term scientific monitoring and research
- **REQUIRES** the Secretary of Interior consult with certain stakeholders on the operation of Glen Canyon Dam

Reference: [Public Law 102-575](#)



Glen Canyon Dam Adaptive Management Program (AMP)

- Implemented following 1996 Record of Decision (ROD) on Operation of Glen Canyon Dam
- Reaffirmed with 2016 ROD on Long-Term Experimental and Management Plan (LTEMP)
- Purpose: Adaptively manage Glen Canyon Dam to protect downstream resources
- Funding: \$12.5 million per year
- Geographic Scope: Colorado River ecosystem from Glen Canyon Dam to headwaters of Lake Mead



Upper Colorado River Endangered Fish Recovery Program

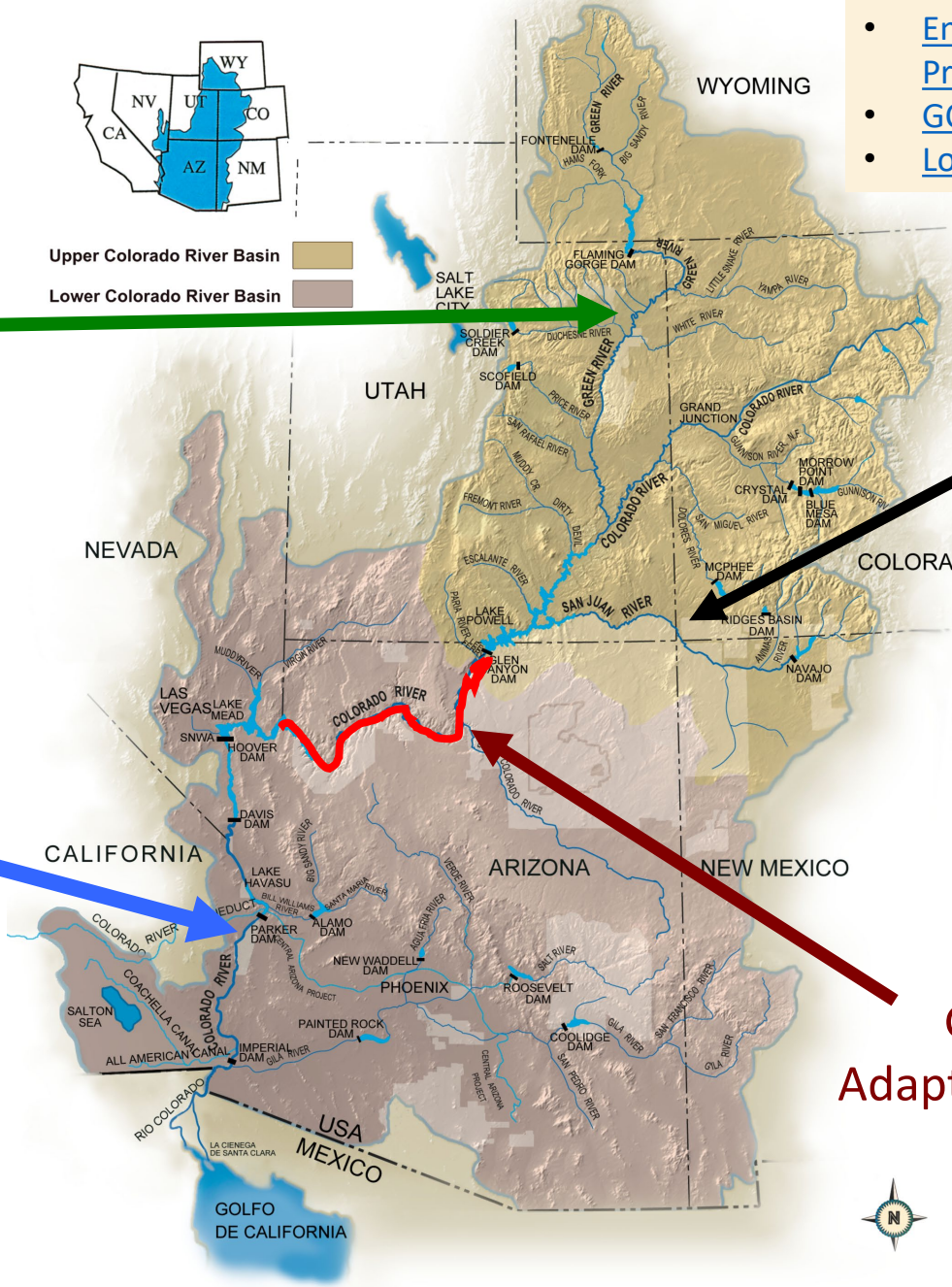
Upper Colorado River Basin
Lower Colorado River Basin

Lower Colorado River Multi-Species Conservation Program

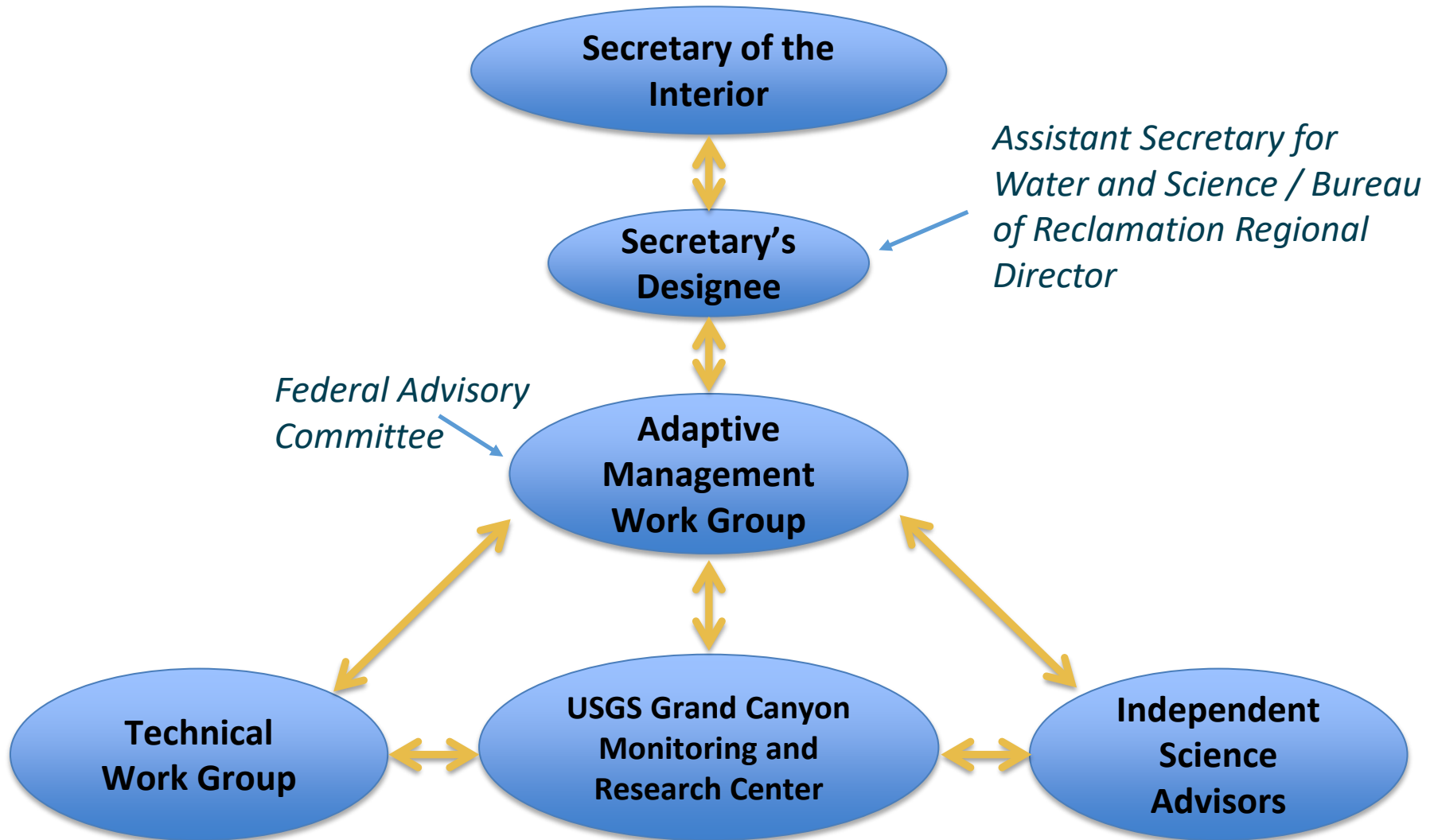
Glen Canyon Dam Adaptive Management Program

San Juan River Basin Recovery Implementation Program

- ### References
- [Endangered Fish Recovery Programs](#)
 - [GCDAMP](#)
 - [Lower Basin MSCP](#)



GCDAMP Structure



AMWG Membership

Federal Agencies

Bureau of Indian Affairs
Bureau of Reclamation
National Park Service
Fish and Wildlife Service
Western Area Power Administration

Tribes

Hopi Tribe
Hualapai Tribe
Navajo Nation
Southern Paiute consortium
Pueblo of Zuni
San Juan Southern Paiute

State Agencies

Arizona
California
Colorado
New Mexico
Nevada
Utah
Wyoming
Arizona Game and Fish

Federal Power Contractors

Colorado River Energy Distributors Association
Utah Association of Municipal Power Systems

Recreation Interests

Federation of Fly Fishermen
Grand Canyon River Guides

Environmental Interests

Grand Canyon Wildlands Council
American Rivers



USGS Grand Canyon Monitoring and Research Center (GCMRC)

- Provides the research and monitoring necessary for AMP and AMWG to make informed recommendations to the Secretary
- Fulfills research and monitoring requirements of GCPA
- Supported w/ 80% of Program budget (~\$10M/yr)



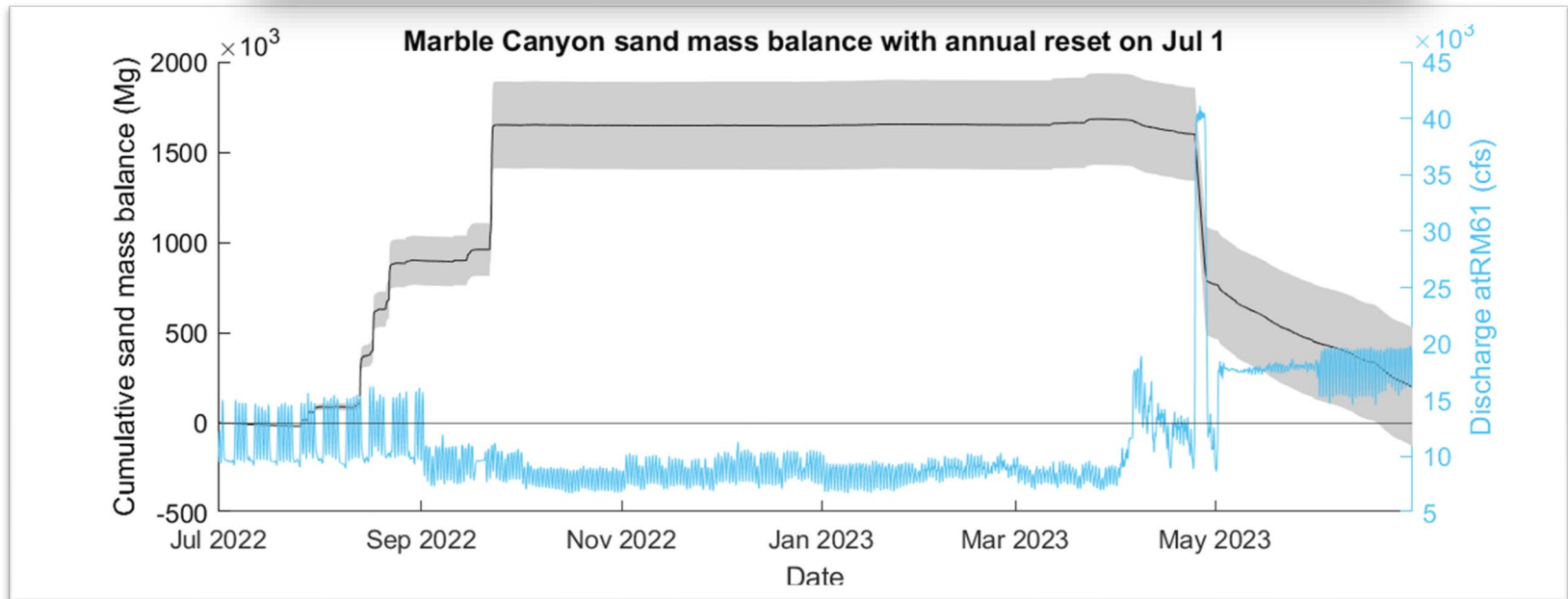
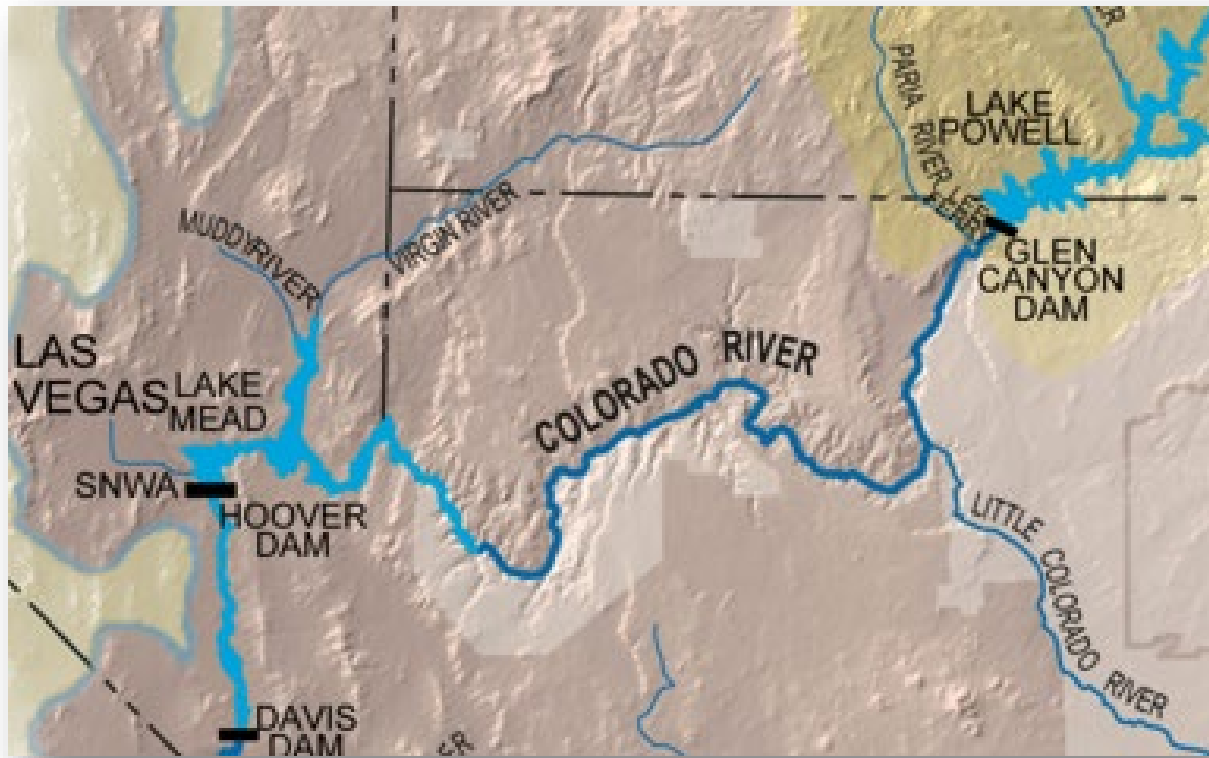
Resources considered in AMP

- Archeological and cultural
- Humpback chub
- Hydropower and energy
- Natural processes
- Nonnative invasive species
- Other native fish
- Sediment
- Rainbow trout fishery
- Recreational Experience
- Riparian vegetation
- Tribal resources





- Research
 - GCDAMP recommends work plans to study sediment and HFEs
 - Implementation protocols are developed
- Compliance
 - NEPA/ESA/NHPA documents are completed to ensure protocol address effect to the environment including endangered species and cultural resources.
- Monitoring
 - To measure sediment inputs that identify sediment triggers



Conclusions

- Long term monitoring and research is foundational to the success of the program. It is often the unanticipated resource responses to operations where learning takes place.
- The diversity in stakeholders provides for well balanced input into decision making, but at times consensus can be difficult.
- Support from Department of Interior leadership provides needed stability ensuring Program resources are available.



Questions



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RECLAMATION

William Stewart
Adaptive Management Group Chief
wstewart@usbr.gov