



— BUREAU OF —
RECLAMATION

Glen Canyon Dam Long-term Experimental and Management Plan (LTEMP) SEIS

AMWG Meeting

May 3, 2024

Kathleen Callister

Bureau of Reclamation Upper Colorado Basin Region

How does the LTEMP SEIS differ from other current Colorado River planning activities?

PLANNING EFFORT	NEAR-TERM COLORADO RIVER OPERATIONS <i>(Interim Guidelines SEIS)</i>	GLEN CANYON DAM LONG-TERM EXPERIMENTAL AND MANAGEMENT PLAN <i>(LTEMP SEIS)</i>	LONG-TERM COLORADO RIVER OPERATIONS <i>(Post-2026 Process)</i>
RANGE OF OPERATIONS	Limited sections of the 2007 Interim Guidelines Focus on annual releases	Limited sections of the 2016 LTEMP ROD; Sub-annual flows - timing of hourly, daily, monthly and experimental releases from Glen Canyon Dam	Revisit all sections of the 2007 Interim Guidelines and other operating agreements that expire in 2026. Focus on annual releases
DURATION	2024 – 2026 (3 YEARS)	2024 – 2027 (Flow Alternatives) 2024 – 2036 (HFE protocol)	2026 AND BEYOND



LTEMP Supplemental Environmental Impact Statement Milestones

- **February 24-March 10, 2023** – Small Mouth Bass Flow Options Environmental Assessment public comment period. Approximately 7,000 submissions were received.
- **June 19, 2023** – Reclamation was directed to prepare a **Supplemental Environmental Impact Statement** (SEIS) to the December 2016 Record of Decision for the Glen Canyon Dam Long-Term Experimental and Management Plan (LTEMP) Final Environmental Impact Statement
- **October 4, 2023** - **Notice of Intent** was published in the *Federal Register* announcing the LTEMP SEIS and requesting scoping input
- **February 9, 2024** – **Notice of Availability** was published in the *Federal Register* announcing the availability of the draft LTEMP SEIS and starting 45-day public comment period



Purpose and Need

- The **purpose** of the LTEMP SEIS is to analyze additional flow options at Glen Canyon Dam in response to nonnative, invasive smallmouth bass and other warmwater nonnative species recently detected directly below the dam.
- The **need** is to disrupt the establishment of smallmouth bass below Glen Canyon Dam by limiting additional recruitment, which could threaten populations of threatened humpback chub below the dam.
- The LTEMP SEIS also considers the High Flow Experimental (HFE) protocol to improve Reclamation's ability to implement HFE releases. Specifically, adjusting sediment accounting periods and HFE implementation windows.



Alternatives Considered and Analyzed

- No Action – Glen Canyon Dam operations will continue as defined in the 2016 LTEMP ROD.

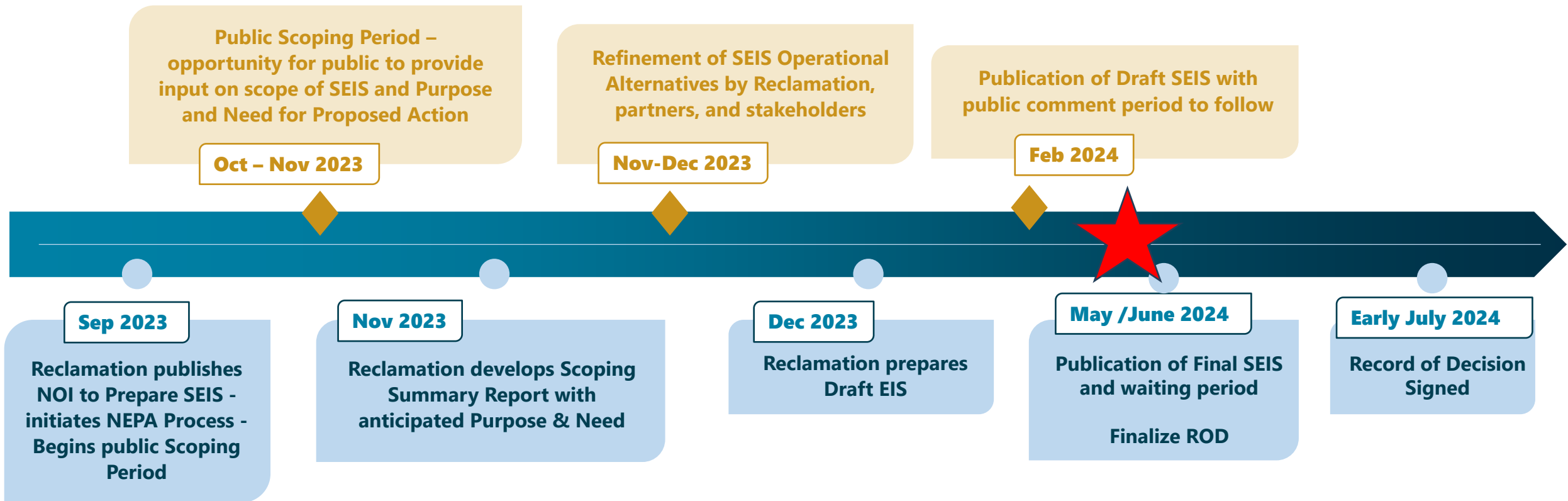
Cold Water
Alternatives

- Cool Mix Alternative
- Cool Mix with Flow Spike Alternative
- Cold Shock Alternative
- Cold Shock with Flow Spike Alternative
- Non-Bypass Alternative

HFE Protocol Update is Common to all Action Alternatives



LTEMP SEIS: Proposed Schedule



◆ Key NEPA Process milestones – Opportunities for Tribal, State, Partner, Stakeholder, and Public engagement



QUESTIONS



— BUREAU OF —
RECLAMATION

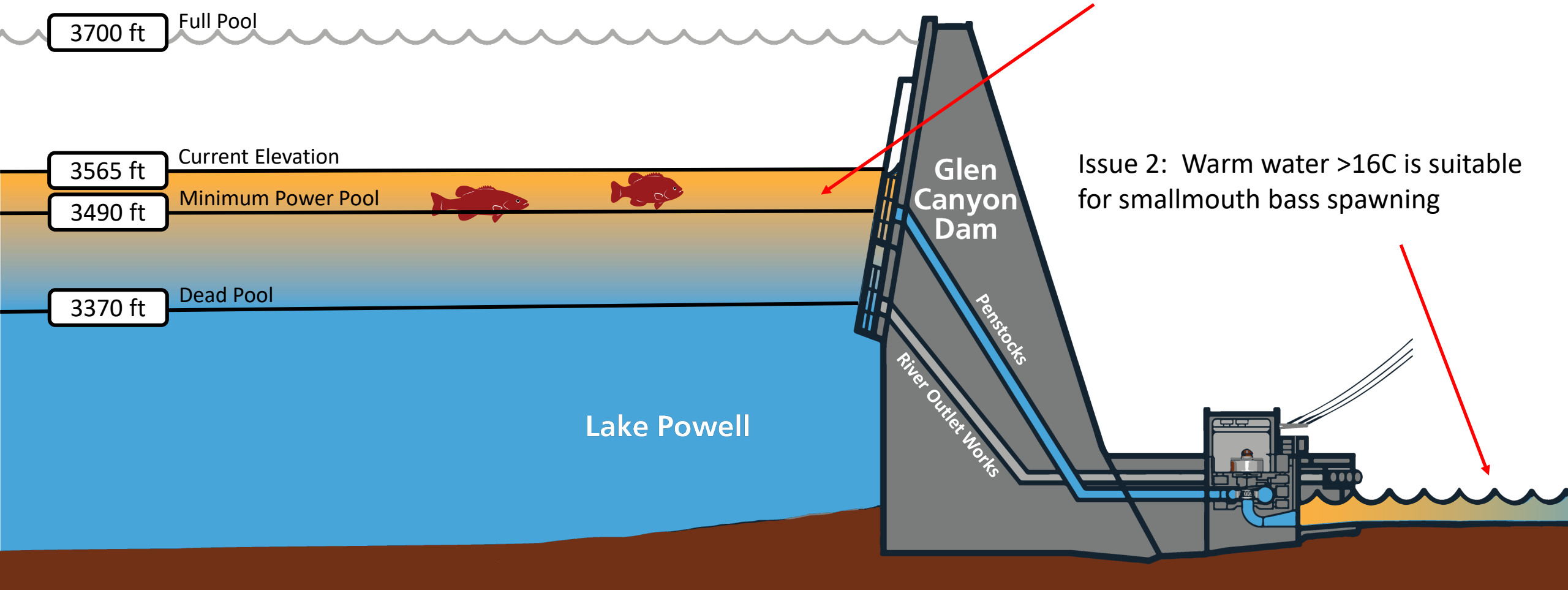
BACKUP SLIDES



— BUREAU OF —
RECLAMATION

Invasive Threat to Native Fish

Issue 1: Entrainment (~ <3540')



Issue 2: Warm water >16C is suitable for smallmouth bass spawning

LTEMP SEIS COOPERATING AGENCIES

- Bureau of Indian Affairs (BIA)
- U.S. Fish and Wildlife Service (FWS)
- National Parks Service (NPS)
- Western Area Power Administration (WAPA)
- Arizona Game and Fish Department (AZGFD)
- Colorado River Board of California
- Colorado River Commission of Nevada
- Upper Colorado River Commission
- Salt River Project
- Utah Associated Municipal Power Systems
- Havasupai Tribe
- Hopi Tribe
- Hualapai Tribe
- Kaibab Band of Paiute Indians
- Navajo Nation
- Pueblo of Zuni

- *USGS is providing scientific and modelling support*



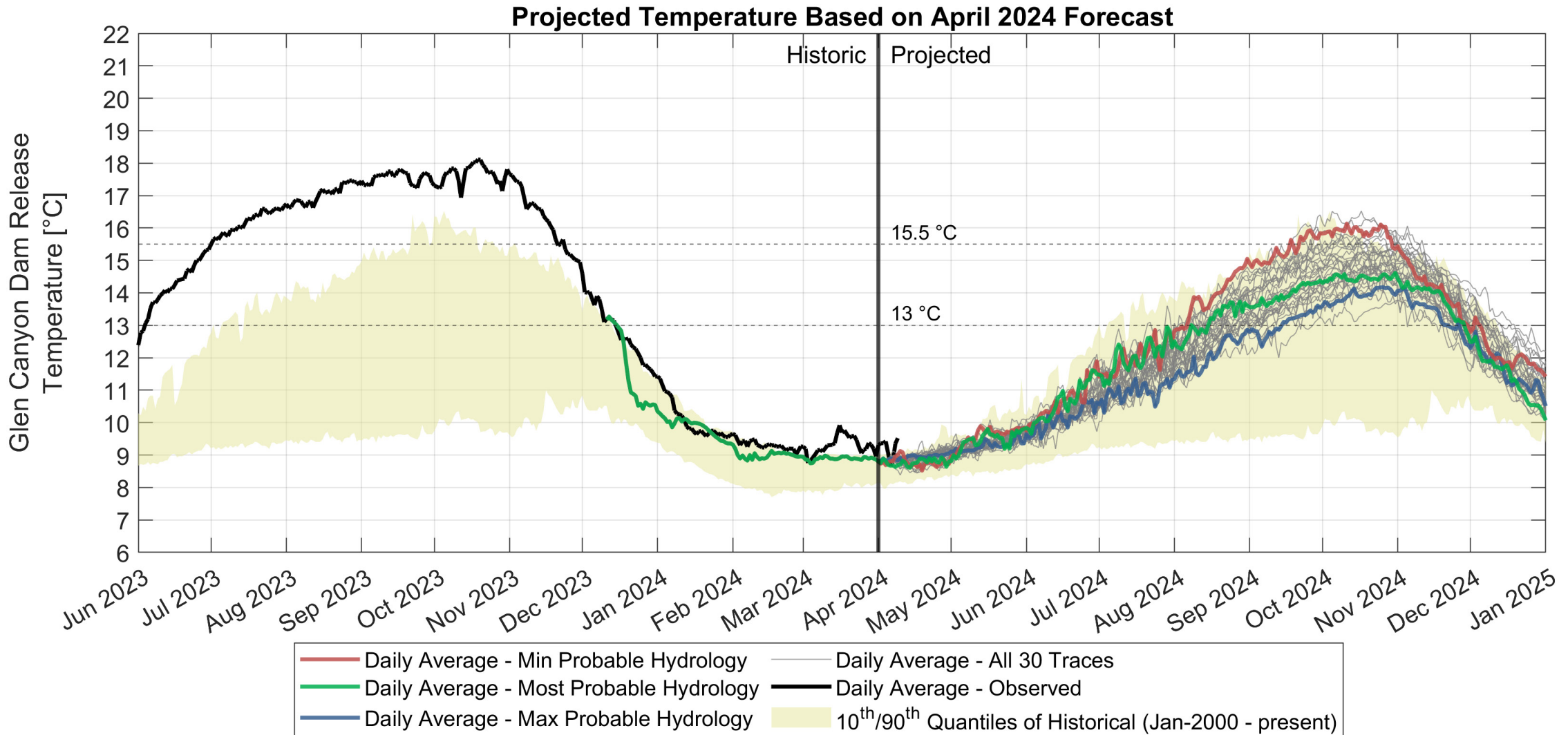
Potentially Impacted Tribes-Hydropower*

- Ak-Chin Indian Community
- Bureau of Indian Affairs Colorado River Agency
- San Carlos Irrigation Project
- Alamo Navajo Chapter
- Canoncito Navajo Chapter
- Cocopah Indian Tribe
- Colorado River Indian Tribes
- Confederated Tribes of the Goshute Reservation
- Duckwater Shoshone Tribe
- Ely Shoshone Tribe
- Fort Mojave Indian Tribe
- Ft. McDowell Mojave-Apache Indian Community
- Gila River Indian Community
- Havasupai Tribe
- Hopi Tribe
- Hualapai Tribe
- Jicarilla Apache Tribe
- Las Vegas Paiute Tribe
- Mescalero Apache Tribe
- Nambe Pueblo
- Navajo Agricultural Products Industries
- Navajo Tribal Utility Authority
- Paiute Indian Tribe of Utah
- Pascua Yaqui Tribe
- Picuris Pueblo
- Pueblo De Cochiti
- Pueblo of Acoma
- Pueblo of Isleta
- Pueblo of Jemez
- Pueblo of Laguna
- Pueblo of Pojoaque
- Pueblo of San Felipe
- Pueblo of San Ildefonso
- Pueblo of San Juan
- Pueblo of Sandia
- Pueblo of Santa Clara
- Pueblo of Santa Domingo
- Pueblo of Taos
- Pueblo of Tesuque
- Pueblo of Zia
- Pueblo of Zuni
- Quechan Indian Tribe
- Ramah Navajo Chapter
- Salt River Pima-Maricopa Indian Community
- San Carlos Apache Tribe
- Santa Ana Pueblo
- Skull Valley Band of Goshute Indians
- Southern Ute Indian Tribe
- Tohono O’odham Utility Authority
- Tonto Apache Tribe
- Ute Indian Tribe
- Ute Mountain Ute Tribe
- White Mountain Apache Tribe
- Wind River Reservation
- Yavapai Apache Nation
- Yavapai Prescott Indian Tribe
- Yomba Shoshone Tribe

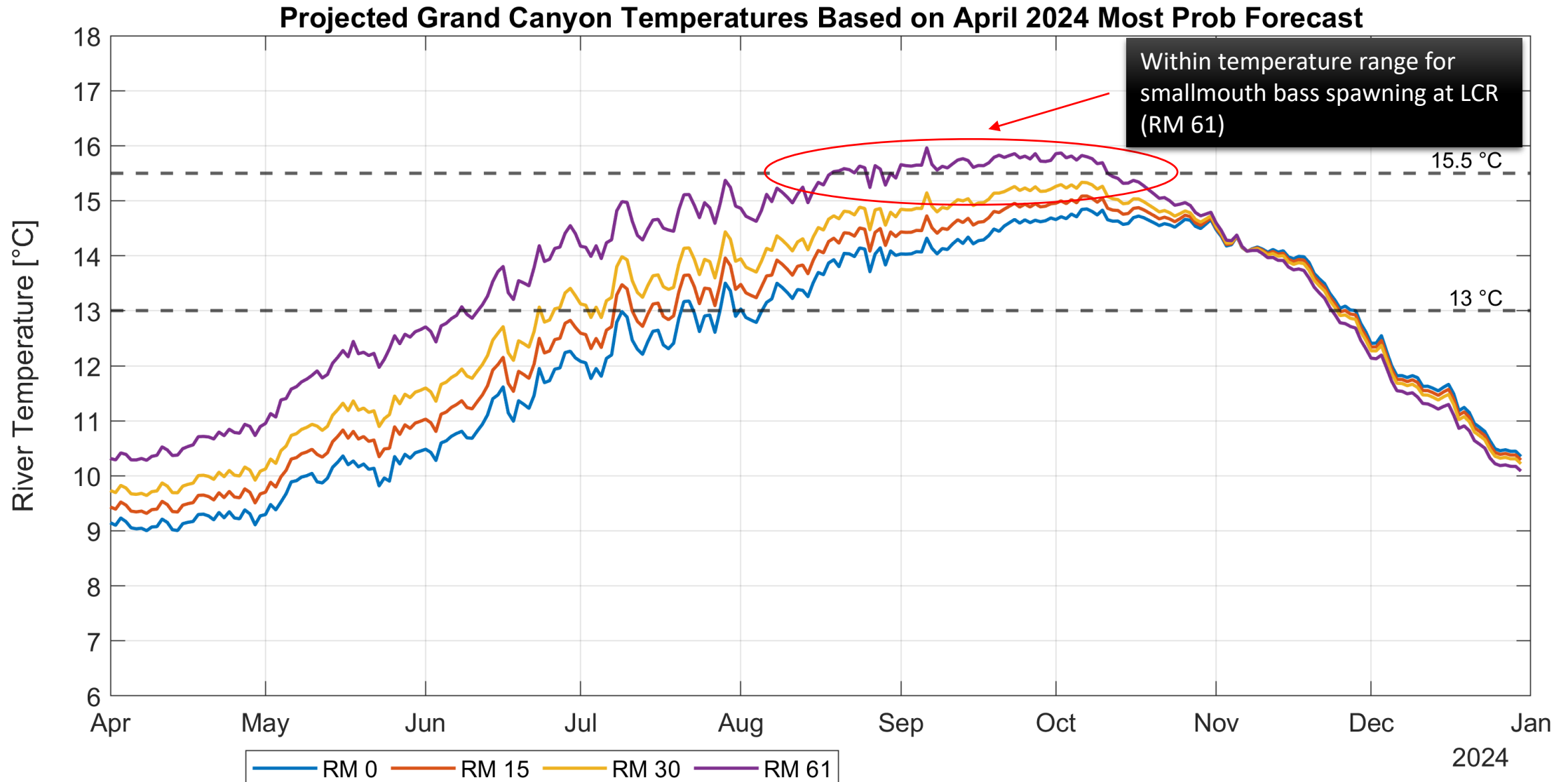
*As identified in the 2016 LTEMP Appendix K



CE-QUAL-W2 Modeled Glen Canyon Dam Release Temperature



Dibble et al. Grand Canyon Modeled Temperature



DRAFT Glen Canyon Dam Hourly Release Pattern - June 2024

Power & Bypass

