LTEMP Experiments Update

AMWG Meeting May 13, 2026

LTEMP Experiments

"The overall approach attempts to strike a balance between identifying specific experiments and providing flexibility to implement those experiments when resource conditions are appropriate."

"...rather than proposing a prescriptive approach to experimentation, an adaptive management-based approach that is responsive and flexible will be used to adapt to changing environmental and resource conditions..."

--2016 LTEMP ROD, p. B-9

Potential LTEMP Flow Experiments

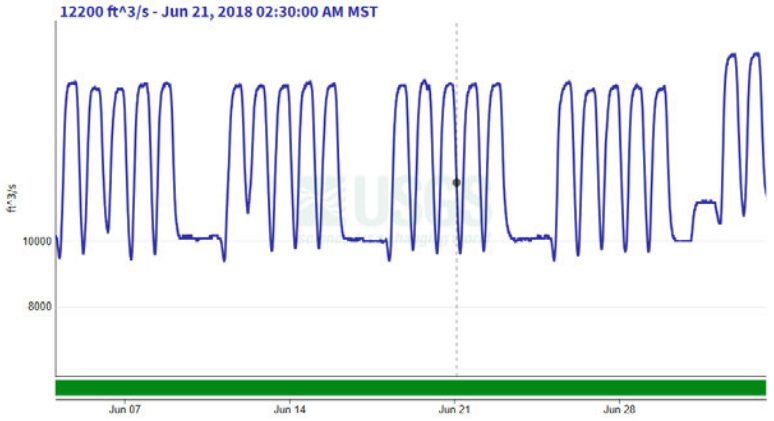
- **Sediment** (High Flow Experiments)
  - Spring HFE
  - Proactive spring HFE
  - Fall HFE
  - Fall HFE extended duration (up to 250 hr)

- **Aquatic Resources**
  - Macroinvertebrate Flow
  - Trout Management Flows
  - Low summer flows (2nd ten years of LTEMP)

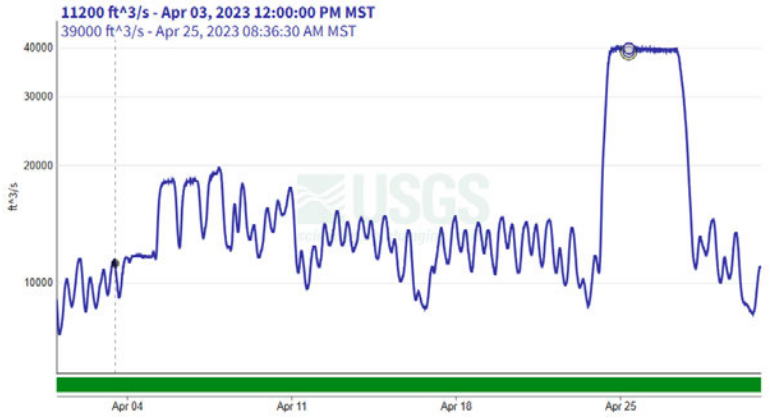
- **LTEMP SEIS**
  - Smallmouth Bass Flows (2024-2027)
  - HFE protocol revision (2024-2036)

LTEMP Experiments Since 2016

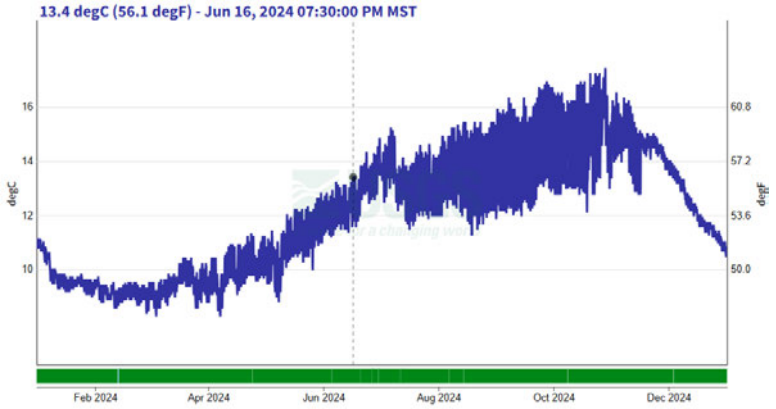
- Macroinvertebrate flows
  - 2018, 2019, 2020, 2022



- HFE
  - 2016, 2018, 2023
  - Sediment Trigger met but no HFE 2021, 2022, 2024, 2025



- Smallmouth bass flows
  - 2024 and 2025



LTEMP Process for Experiments

- Annual Reporting and TWG meetings
- Notification and Consultation to Tribes & PA Parties
- Implementation / Planning Team Recommendation
- DOI decision

1.4 COMMUNICATION AND CONSULTATION PROCESS FOR ALTERNATIVE D

To determine whether conditions are suitable for implementing or discontinuing experimental treatments or management actions, the DOI will schedule implementation/planning meetings or calls with the DOI bureaus (USGS, NPS, FWS, BIA, and Reclamation), WAPA, AZGFD, and one liaison from each Basin State and from the UCRC, as needed or requested by the participants. The implementation/planning group will strive to develop a consensus recommendation to bring forth to the DOI regarding resource issues as detailed at the beginning of this section, as well as including WAPA's assessment of the status of the Basin Fund. The Secretary of the Interior will consider the consensus recommendations of the implementation/planning group, but retains sole discretion to decide how best to accomplish operations and experiments in any given year pursuant to the ROD and other binding obligations.

Process

- PI Technical Team met weekly starting Feb 19th
- March 3rd – Notification to tribes
- March - Sand Mass Balance Model for HFE
- March - Screening tool for SMB flows
  - 33 scenarios (cool mix, non-bypass, and no action)
  - 13 scenarios modeled
  - Smallmouth bass population growth (excluding entrainment)
  - Cost
- April 24 – PI Technical Team Recommendation
- April 30 – PI Leadership Team Recommendation

HFE History

TABLE 1 | High-flow experiments (HFEs) implemented from March 1996 to April 2023.

Start date of HFE peak at Lees Ferry	Peak discharge[a] (ft^3/s)	Duration[a] (h)	Marble Canyon sand mass balance[b] (Mg)			Paria River sand input[b] (Mg)
March 26, 1996	45,000	182	—		—	3,80,000
November 4, 1997	30,800	40	—		—	1,700,000
May 2, 2000	30,500	72	—		—	920,000
September 5, 2000	31,000	72	—		—	3700
November 21, 2004	41,700	79	570,000	±	130,000	620,000
March 6, 2008	42,800	80	480,000	±	170,000	860,000
November 19, 2012	44,500	85	710,000	±	120,000	690,000
November 11, 2013	37,000	99	2,000,000	±	320,000	1,900,000
November 10, 2014	38,000	104	1,300,000	±	200,000	1,200,000
November 7, 2016	36,500	99	640,000	±	160,000	840,000
November 5, 2018	39,500	65	560,000	±	150,000	750,000
April 24, 2023	40,000	78	1,700,000	±	290,000	1,700,000

[a]Duration computed as period of discharge at or above power plant capacity (this is the period at the indicated peak discharge for the 1997 and 2000 events and the period above 892 m^3/s for all other events). Peak discharge and duration for Lees Ferry gage from U.S. Geological Survey (2024a).
[b]The mass balance and Paria River sand inputs reflect the sand supplied to Marble Canyon during the preceding thunderstorm season and are computed for the period from July 1 to the beginning of the ramp up to the HFE peak (1–2 days before the start of the HFE peak at Lees Ferry). Marble Canyon sand mass balance and Paria River sand input from U.S. Geological Survey (2024a) and for 1996 only, from Topping et al. (2010).

Proposed LTEMP Experiments (HFE)

- HFE
  - 32,400 cfs
  - 12-hour
  - Timing – June 23rd
  - Fits within projected June release volume
  - Cost
    - $189k-$1.098 million (23hr duration)

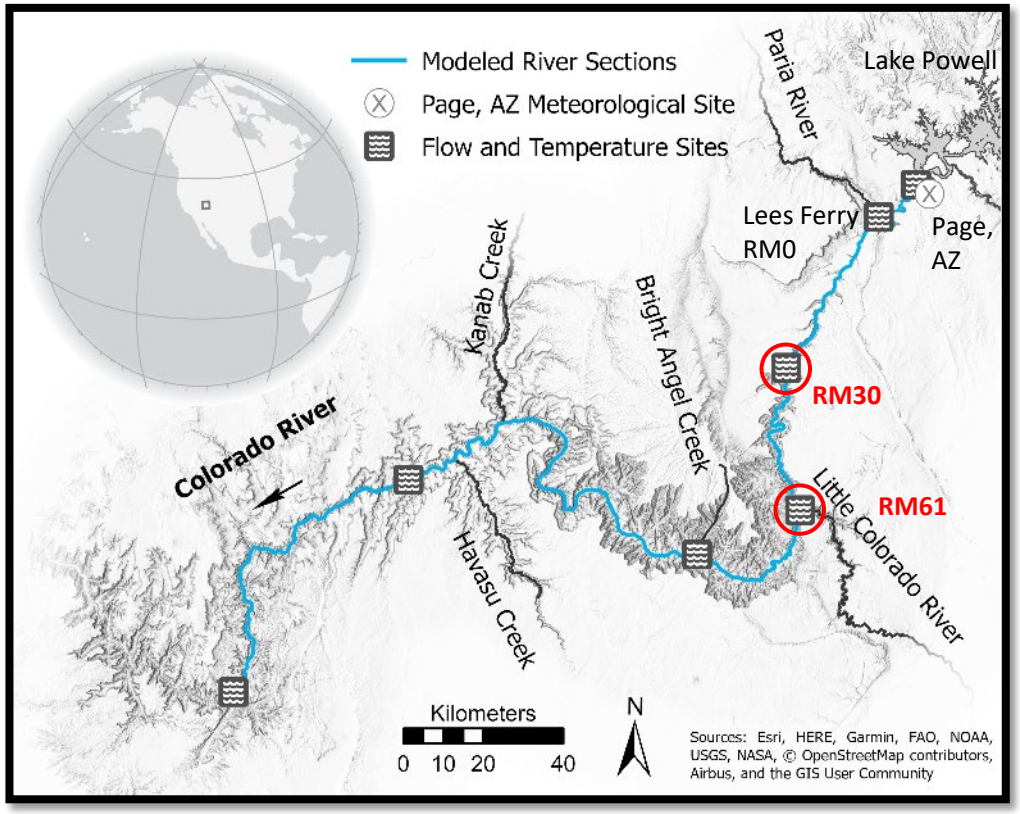
- Mixed support for this recommendation from the PI Team

Proposed LTEMP Experiments (HFE)

- Benefits
  - Rebuilds sand bars and resupplies sediment to help protect arch sites and build beaches for rafters.
  - Mimics a more natural timing of floods
  - Learning Opportunity - low magnitude and low duration HFE.

- Concerns
  - Concerns about the timing of HFEs given the low flow forecast
  - Concerns about justifying two experiments (preference for cool mix over HFE)
  - Public messaging – communicating that an HFE does not increase total water releases

Smallmouth Bass Flows



	2024	2025
Target Temperature	≤ 15.5 °C	≤ 15.5 °C
Target River Mile	RM61 (76 miles)	RM30 (45 miles)
On-Ramp	July 9	Aug 3
Off-Ramp	Nov 18	Oct 20th
Cost	$19 million	$6.5 million

No young of year smallmouth bass in 2024 and 2025

Proposed LTEMP Experiments (SMB Flows)

- Smallmouth Bass Flow
  - Cool Mix Flow
  - On Ramp = average daily temp at river mile 15 exceeds 15.5C for 3 consecutive days (early/mid-June)
  - Off Ramp = Oct 20th, 2026
  - Estimated cost = ~$24-25 million

- Most of PI Team supported this recommendation.

Proposed LTEMP Experiments (SMB Flows)

- Benefits
  - Has shown success suppressing SMB in 2024 and 2025.
  - Protects Humpback chub and other native fish.
  - Improves water quality (temp and DO) which is good for the rainbow trout fishery and aquatic food base.

- Concerns
  - High hydropower cost and basin fund sustainability – desire to find funding to offset costs.
  - Does not address entrainment.
  - Desire for a long-term solution.

Questions/Discussion

BUREAU OF
RECLAMATION