Technical Work Group Chair Report

Adaptive Management Work Group Meeting

August 17, 2023

Seth Shanahan

TWG Chairperson

Meetings

- Past
  - June 14-15, 2023 (June 16 tour)
  - August 9, 2023 (special meeting)
- Future
  - October 11-12, 2023 (in person)

Items Reported Elsewhere on AMWG Agenda

- Basin hydrology, operations, and water quality
- Basin Fund and hydropower customer impacts
- HFE Protocol
- Trout fishery impacts
- April 2023 HFE
- Budget and work plan
- SMB and other invasive fish planning
- SMB EIS and 07G SEIS

Updated: August 1, 2023
DRAFT

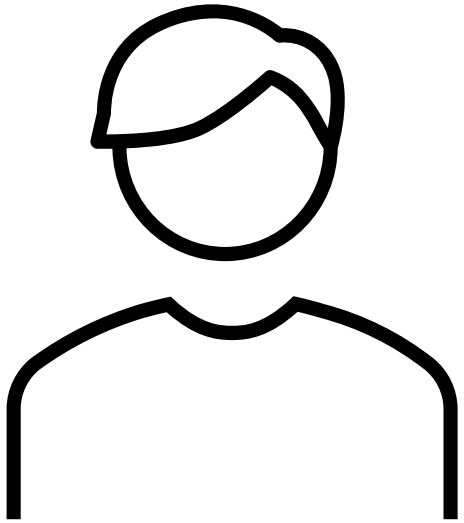
Glen Canyon Dam Adaptive Management Program
Adaptive Management Work Group Meeting, August 16-17, 2023
Little America, 2515 East Butler Ave
Flagstaff, AZ 86004

Wednesday, August 16, 2023
Day 1 Webinar Information:
https://rec.webex.com/rec/j.php?MTID=m67fef4d2de6569962b5cf3f6100b20ca
Telephone: 415-527-5035 Passcode: 2762 308 0111

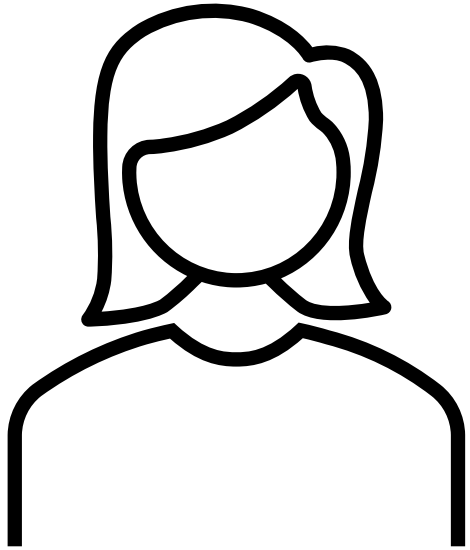
Draft Agenda

START TIME [1] (Duration)	Wednesday, August 16, 2023 Topic, Presenter, and Purpose[2]
9:30 PDT/MST 10:30 MDT (:45)	**Welcome and Administrative:** Wayne Pullan, Acting Secretary's Designee to the Adaptive Management Work Group ▪ Introductions and Determination of Quorum (13 members) o Facilitator: Terra Alpaugh, Kearns & West ▪ Approval of May meeting minutes ▪ Review May meeting evaluation ▪ Administrative Updates ▪ AMWG Charter

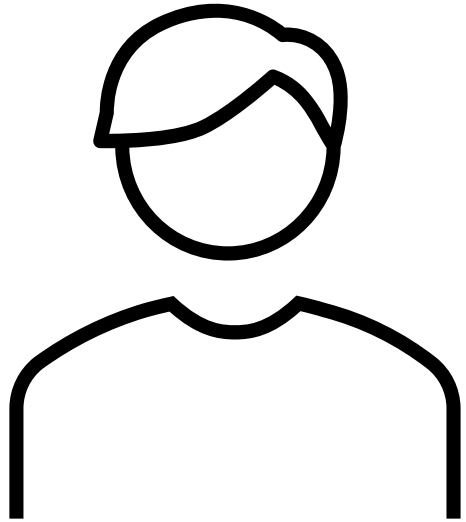
Elections/Appointments



Seth Shanahan,
TWG Chairperson



Michelle Garrison,
TWG Vice-Chairperson



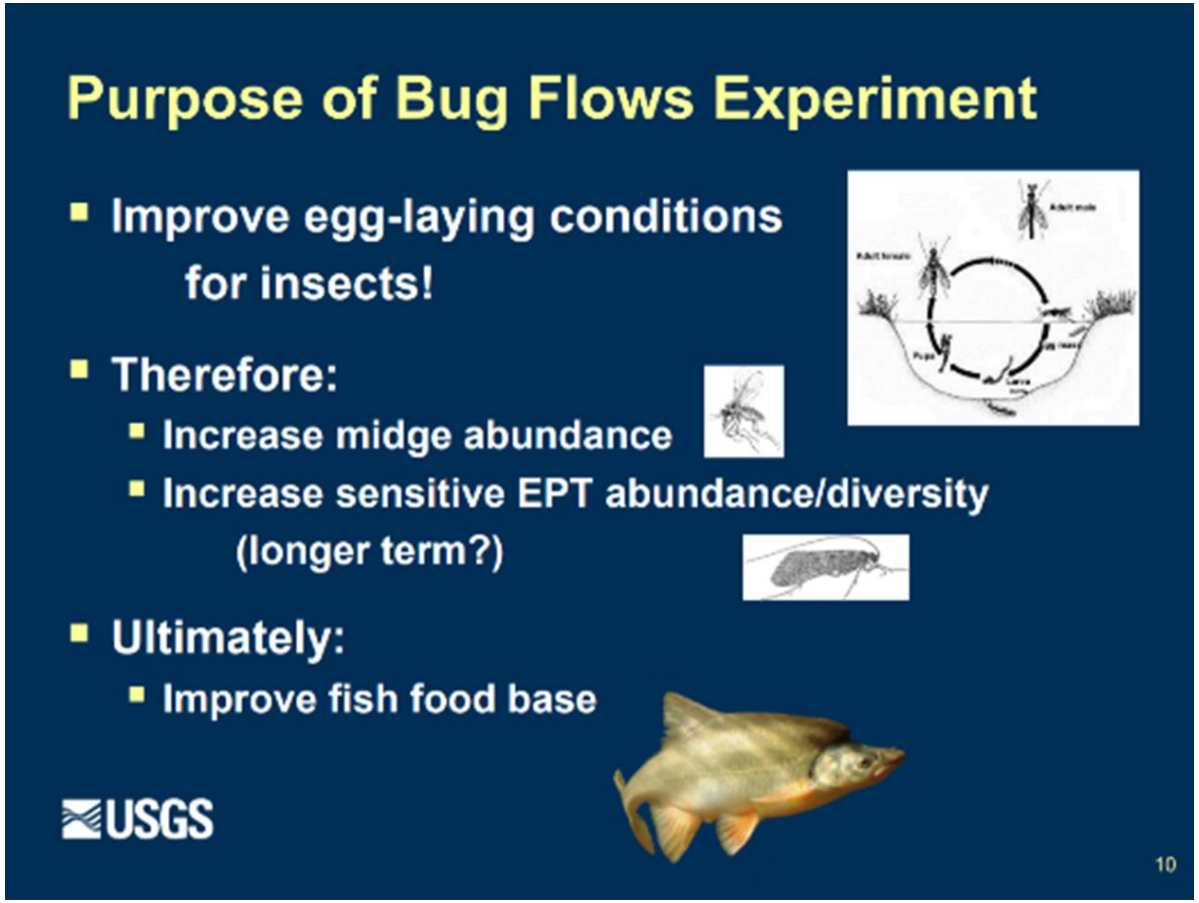
Jeremy Hammen,
Reclamation Vice-Chairperson

What was the purpose of the Bug Flows Experiment?

To see if a modified release pattern would:

- Increase midge abundance
- Increase EPT abundance/diversity

Mechanism: improved egg-laying conditions



https://www.usbr.gov/uc/progact/amp/amwg/2018-08-22-amwg-meeting/Attach_04.pdf

Outline

- Background
- Lees Ferry fishery
- Grand Canyon

My talk will also cover

From Ellsworth 2023, 3 minutes ago…

Conclusions

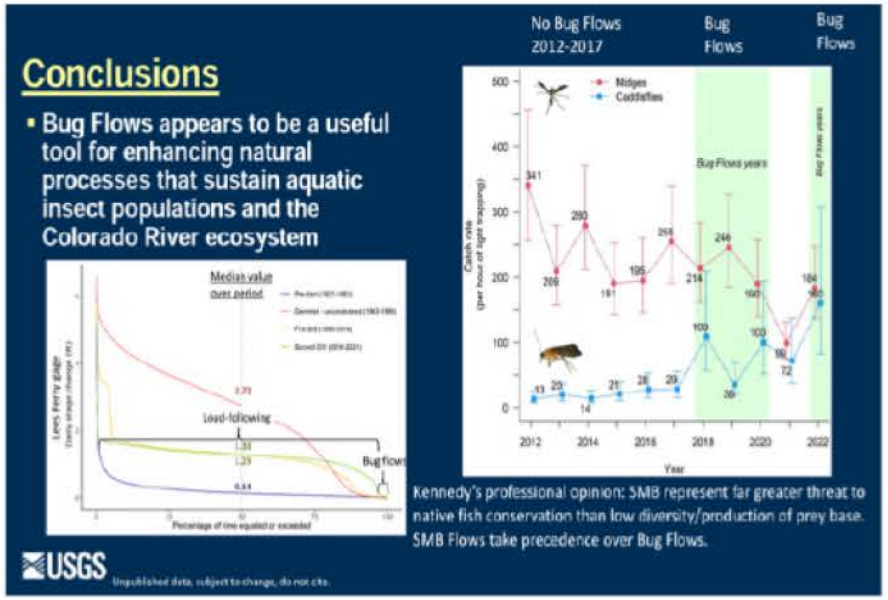
"Enhances natural processes" by reducing flow fluctuations?

But does the data indicate a statistically significant increase in:

- Midge abundance, or
- EPT abundance/diversity

Did we see:

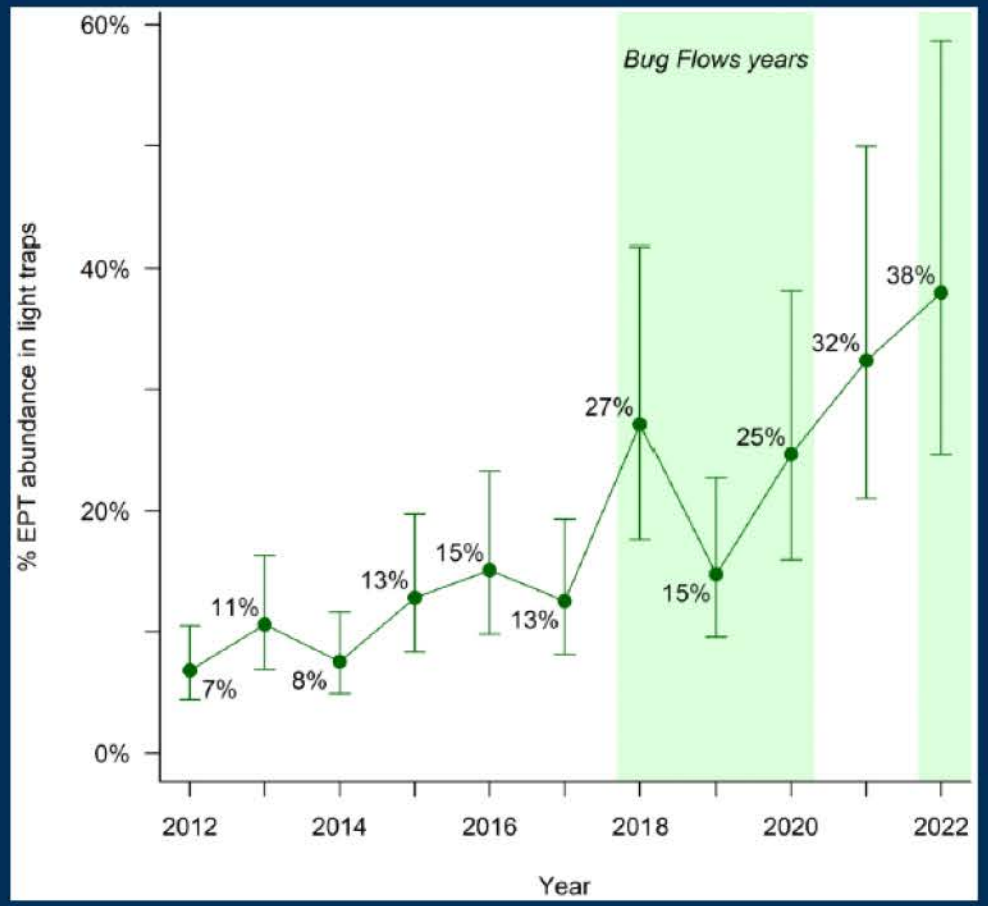
- Smoothing in midge distribution?
- Caddis distribute away from tributaries?



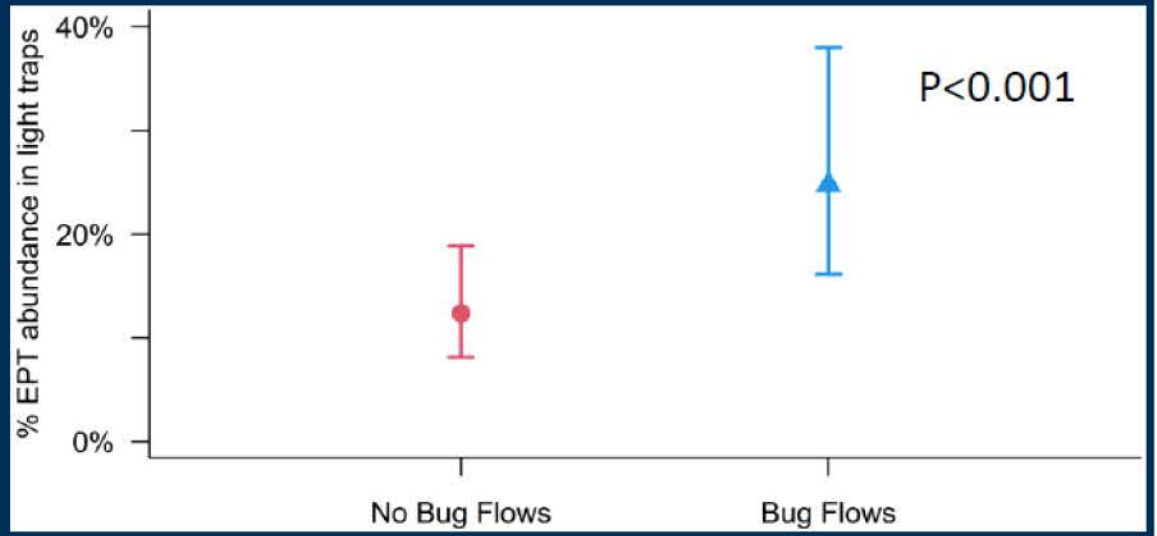
https://www.usbr.gov/uc/progact/amp/twg/2023-01-26-twg-meeting/20230126-AnnualReportingMeeting-BugFlowsFoodBaseUpdate-508-UCRO.pdf

USGS

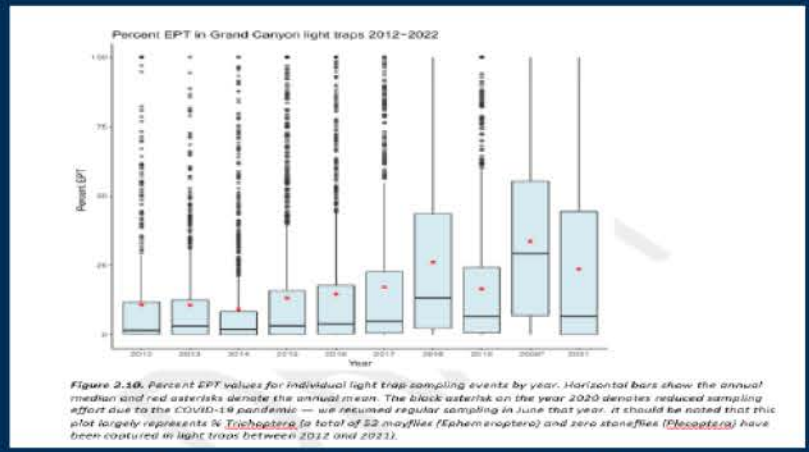
Bug Flows Increase EPT%



EPT% = EPT in sample/Total aquatic insects in sample



Significantly higher EPT% in Bug Flow years



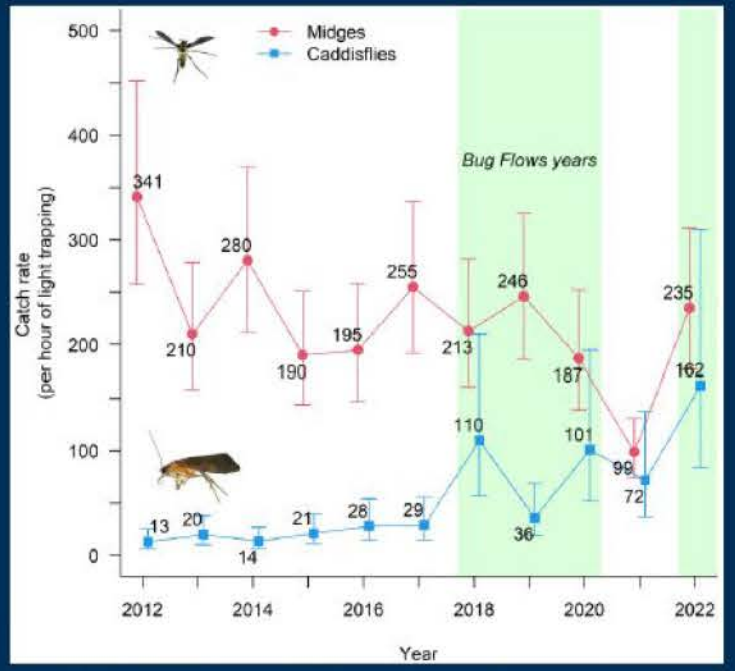
EPT% graph shown in June 2022 & March 2023 Metrics report

USGS

Unpublished data, subject to change,
do not cite.

Conclusions

- **Bug Flows temporarily restores discharge to natural range of variability (no tides) thereby enhancing natural processes that sustain aquatic insect populations and the Colorado River ecosystem**



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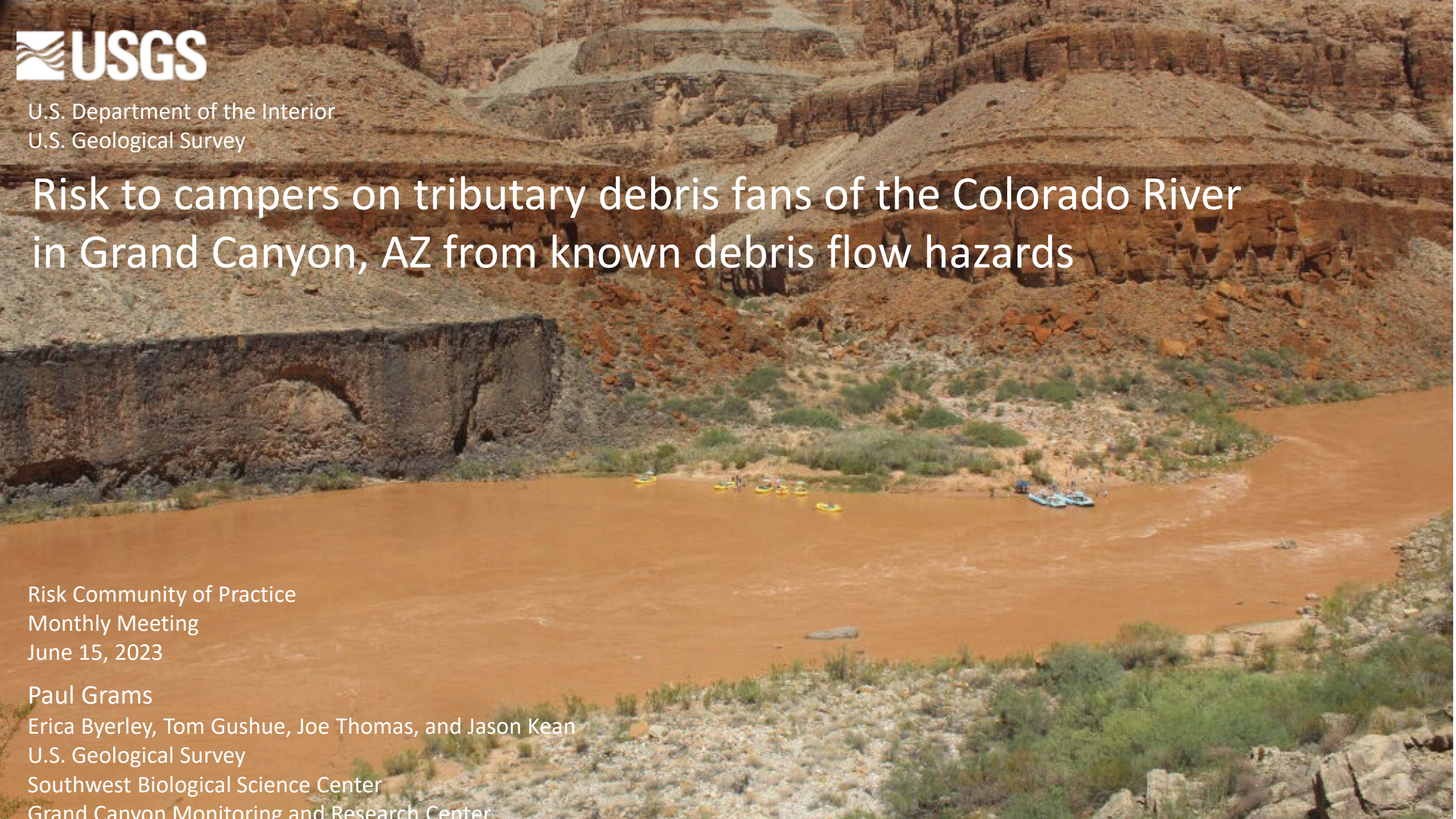
Conceptual model of select Natural Processes
at the Little Colorado River confluence
Figure courtesy of Diana Valentine



U.S. Department of the Interior
U.S. Geological Survey

Risk to campers on tributary debris fans of the Colorado River in Grand Canyon, AZ from known debris flow hazards

Risk Community of Practice
Monthly Meeting
June 15, 2023

Paul Grams
Erica Byerley, Tom Gushue, Joe Thomas, and Jason Kean
U.S. Geological Survey
Southwest Biological Science Center
Grand Canyon Monitoring and Research Center

Risk Project – Motivation and Goals

- Despite general awareness of the hazard, there is no formal warning system (remote location) or program to communicate the risk to visitors to Grand Canyon
- Purpose of this project:
  - Elevate the understanding of debris flow and flash flood risk to visitors to the river corridor in Grand Canyon
  - Create a risk assessment using existing data
  - Engage with stakeholders to describe the risk assessment and develop a plan for communicating the risk to the public

U.S. Department of the Interior
U.S. Geological Survey

Waterfalls in Reservoirs: Tracking the Development of Nickpoints in the Sediments of Declining Reservoirs

Paul Grams, Robert Tusso, and Matt Kaplinski
U.S. Geological Survey, Grand Canyon Monitoring and Research Center
Chris Wilkowske and Scott Hynek
U.S. Geological Survey, Utah Water Science Center
Jamie Macy
U.S. Geological Survey, Arizona Water Science Center
Mike DeHoff and Peter Lefebvre
Returning Rapids Project

Perched river channels and rapids/waterfalls on the San Juan arm of Lake Powell and the Colorado River at Lake Mead

Waterfall formation at a desert river–reservoir delta isolates endangered fishes

Charles N. Cathcart[1] | Casey A. Pennock[1] | Christopher A. Cheek[2] | Mark C. McKinstry[3] | Peter D. MacKinnon[4] | Mary M. Conner[5] | Keith B. Gido[1]

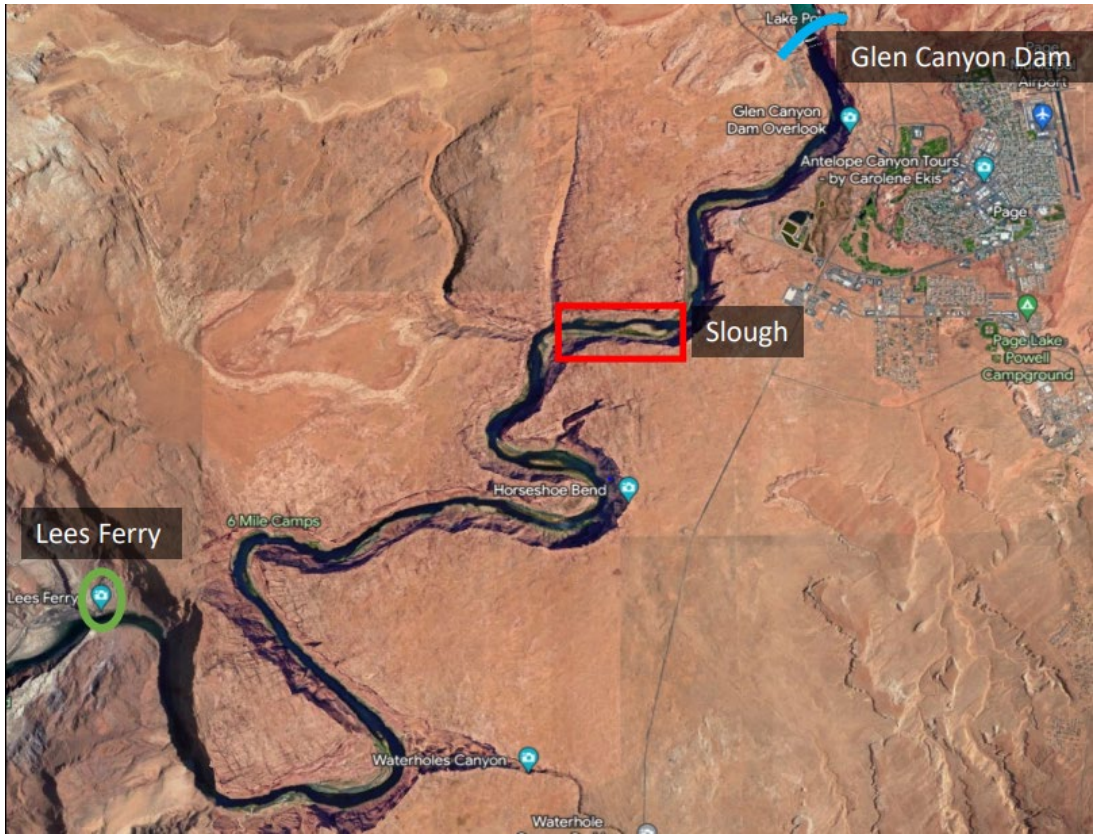
As Lake Powell shrinks, the Colorado River is coming back to life – | The Salt Lake Tribune (sltrib.com)

USGS

Willow flycatcher and clapper rail surveys

Burnt Springs (260 mile)

Tour of Glen Canyon Dam and -12 Mile Slough



- June 16
- Optional
- First come, first serve (20 max)
- Thanks to:
  - National Park Service
  - Bureau of Reclamation
  - Glen Canyon Conservancy
  - Grand Canyon Monitoring and Research Center


U.S. DEPARTMENT OF THE INTERIOR
BUREAU OF RECLAMATION
2


KEEP OFF WALL


THANK YOU FOR
VISITING
GLEN CANYON DAM
Bureau of Reclamation
Employees


NRS
NRS
NRS


HONDA
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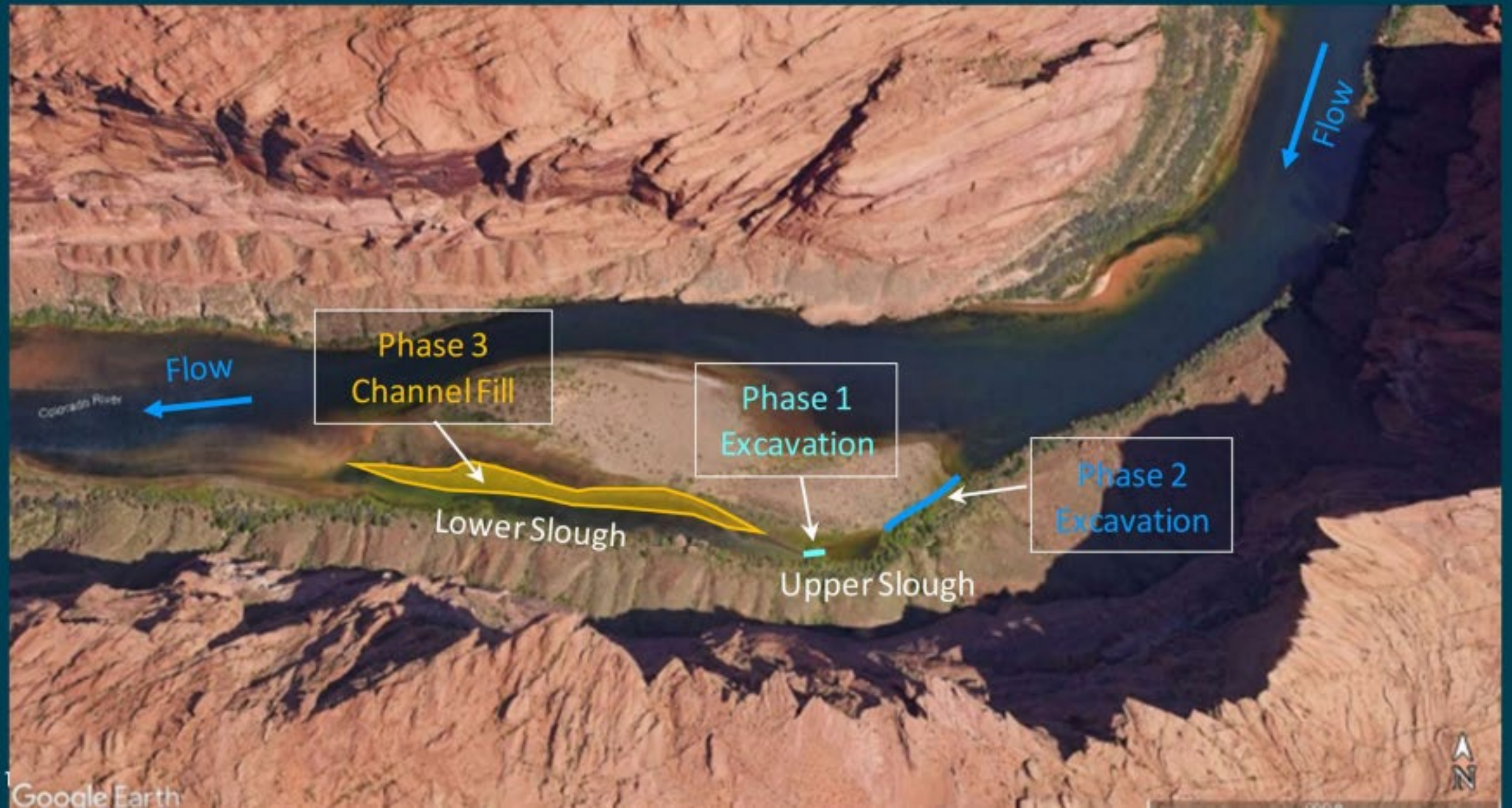
New Slough Alternative [2023]




Severe Trout Anglers
Know Your Trout Before You Go!


GLEN CANYON CONSERVANCY
AZ0622HM
2023
YAMAHA
200

Future TWG Agenda Items

- Monitoring metrics
- Lake Powell hydroacoustics and fish survey update
- Fish exclusion update
- Pre-dam invertebrate assemblages
- Natal origins of brown trout in Grand Canyon
- Fall HFE webinar
- Budget priorities
- Smallmouth bass response
- Incentivized harvest program