

Agenda and notes 05/29/2024 Rapid Response Tech Team

Purpose- biweekly technical call including management agencies & GCMRC to relay recent findings and discuss future sampling efforts, needs, and potential actions.

Participants

Trammell, Melissa
Blake, Tara A
Billerbeck, Rob P
Hammen, Jeremy J
Gibney, Nicole D
Hines, Brian A
Emily Young
Leavitt, Daniel J
Dibble, Kimberly L
Ryan Mann, AZGFD
Stewart, William T
Scott Rogers, AZGFD
Hedwall, Shaula
Fazio, Buddy B

I. Recent trips and findings

Last meeting/report out was 05/15/2024.

GLCA – Tara Blake

May 16-17, Block net installed. 150' in 3 panels. Placed to block ingress at high point of daily flows. Since installation, captured and moved 51 carp from inside net to outside. Carp were PIT tagged to see if they can move back inside. Also set hoops, minnow, fyke nets last week. Mostly GSF. Still no SMB in the sloughs. Fish are stacking up just below net, but none recaptured inside. Electrofishing in main channel this week. 25 sites fished, 4 SMB. Last night crew caught 7 SMB near -11, -12.3, -10. Also 1 Black Crappie. Two more nights of EF planned this week. 4 days next week too. Installed wildlife camera to observe net movement as it is expected to move with hydropeaking flows. Artificial spawning substrates should be installed in a few weeks, in Slough and in main channel. Current water temperature of the slough is shown in Figure 1.

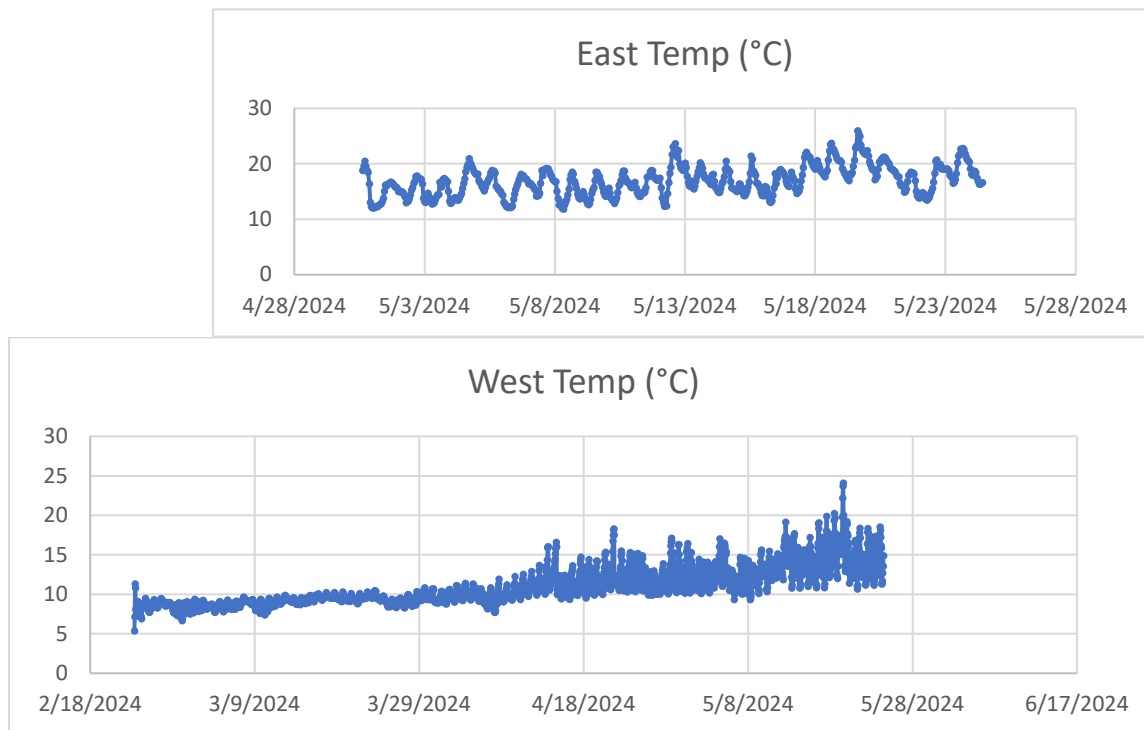


Figure 1. Lower Slough temperatures 2024. ‘East’ is the upper end of lower slough (April 30-May 24), ‘West’ is closer to the mainstem river (Feb 18 – May 24).

GRCA –

Table 1. Individual data for Smallmouth Bass captures in PBR reach in May 2024.

| Date | River Mile | Side | Gear | Species Code | TL (mm) | Disposition |
|-----------|------------|------|------|--------------|---------|-------------|
| 5/22/2024 | 1.21 | L | EF | SMB | 157 | DP |
| 5/22/2024 | 1.95 | R | EF | SMB | 56 | DP |
| 5/23/2024 | 5.33 | R | EF | SMB | 62 | DP |

Table 2. Capture totals from electrofishing efforts in PBR reach in May 2024.

| Date | Reach | SMB | GSF | BGS | BNT | RBT |
|--------------|-------|----------|------------|----------|-----------|----------|
| 5/21/2024 | I | 0 | 52 | 1 | 3 | 2 |
| 5/22/2024 | I* | 2 | 45 | 0 | 7 | 0 |
| 5/23/2024 | K | 1 | 36 | 1 | 9 | 0 |
| Total | | 3 | 133 | 2 | 19 | 2 |

*Depletion passes on 10 sites based on night 1 captures

Table 3. Capture summary by side of river from depletion efforts in PBR reach I in May 2024.

| Pass # | SMB | | GSF | |
|--------------|----------|----------|-----------|-----------|
| | Left | Right | Left | Right |
| 1 | 0 | 0 | 23 | 23 |
| 2 | 1 | 1 | 18 | 15 |
| 3 | 0 | 0 | 4 | 8 |
| Total | 1 | 1 | 45 | 46 |

*Pass 1 was completed on 5/21 and passes 2 & 3 were completed on 5/22.

The other exciting update from Grand Canyon is related to our November 2023 eDNA samples. We received the results, and it is sort of a mixed-bag. The good news is that we only had two positive detections out of 63 sites at RM -0.1R and 4.0L. I was concerned that we would have positives throughout our sampling and possibly beyond the current downstream detection record. Unfortunately, these data do not line up with our electrofishing captures on the same trip so eDNA sampling may not be as sensitive as we need at this point when SMB densities are seemingly low. The tests did not detect eDNA from upstream sources (Lake Powell or Lees Ferry).

As a refresher, we collected eDNA samples from both sides of the river every mile from RM 0 - RM 20. We then collected samples every 5 miles from 25 – 65 and collected a sample 100m upstream in the LCR. In combination with the eDNA sampling, we also electrofished 6 nights and captured SMB at locations 2.27L, 6.47R, 10.49R, 15.83R, 16.1R, and 16.38R. I was very curious to see if the eDNA samples we collected during the day would line up with the captures that we encountered at night, but they did not. I will be putting together a more formal report of these results and will distribute that once it is finalized.

Kim - were samples taken in triplicate? When samples are taken in triplicate, eDNA does not always turn up in all 3 samples.

GCMRC. Update Shared by Kim Dibble, 5/28. Data were QA/QC. No SMB.

Included here are summaries of fish catch for the two separate portions of our May 2024 JCM trip: JCM East (downstream of the LCR confluence) and JCM West (Fall Canyon).

Warmwater invasives species of concern are highlighted. We did not catch any smallmouth bass, but did catch striped bass, walleye, green sunfish and bluegill. Ben has uploaded the non-native catch to the shared non-native spreadsheet. In the tables below, NFC refers to hoop nets in which no fish were caught.

Next trip in Lees Ferry TRGD – followed by another JCM trip.

JCM East (6 hoopnet passes, 3 electrofishing passes):

| Row Labels | Count of SPECIES |
|--------------------|------------------|
| BBH | 3 |
| BGS | 1 |
| BHS | 31 |
| BNT | 2 |
| CCF | 4 |
| CRP | 23 |
| FHM | 4202 |
| FMS | 593 |
| GSF | 13 |
| HBC | 1164 |
| NFC | 253 |
| PKF | 24 |
| RBT | 53 |
| RSH | 18 |
| SPD | 84 |
| STB | 2 |
| WAL | 1 |
| YBH | 2 |
| Grand Total | 6473 |

JCM West (6 hoopnet passes, 3 electrofishing passes):

| Row Labels | Count of SPECIES |
|--------------------|-------------------------|
| BHS | 154 |
| CRP | 2 |
| FHM | 253 |
| FMS | 1249 |
| GSF | 8 |
| HBC | 1346 |
| NFC | 343 |
| PKF | 2 |
| RBT | 4 |
| SPD | 1404 |
| STB | 1 |
| WAL | 3 |
| FRH | 1 |
| RBS | 1 |
| Grand Total | 4771 |

*We took DNA samples and photographs of the FRH and RBS. Both were previously untagged and were administered new PIT tags.

[3:51 PM] Dibble, Kimberly L

The 1 walleye at JCM-east was 217mm, the 3 walleye at JCM-west ranged from 261-350mm.

AGFD – Ryan – Flagstaff group is on the river, will return on May 31st. This is the 2nd downstream monitoring trip. Will submit trip report soon thereafter. First Trip began in turbid conditions and may have affected catch.

FWS – Still on the river. Will report on LCR sampling next time.

II. DISCUSSION OF NEW FINDINGS

See above.

III. Upcoming trips and other future plans –

2024 sampling and monitoring

No changes to schedules are expected or mentioned. Schedules may be shared with anyone.

GRCA – See Table 1. on track with schedule below – BW sampling May 7-8, PBR EF on May 20

GLCA – See Table 2.

GCMRC – see Table 3 of GCMRC and cooperator trips

AGFD – see Table 3

FWS – see Table 3

Reclamation –hydroacoustics study? – transducers on penstocks to monitor what’s going through – in January, should be operational by next spring.

Temperature projections provided by Bryce Mihalevich (Figures 2 and 3, below)

- IV. Old Business –
 - a. Concerns from anglers – trout fishery in GLCA.
 - i. dates and locations of electrofishing – Jeff will work with Scott
 - ii. need for more outreach
 - iii. new – angler asking about the funding for all this work. Not an official request. Jeremy will reply on behalf of Reclamation. Most of the funding is NPS from a variety of sources.
 - b. GLCA, Jeff needs help Probably in June. Jeff in contact with Emily (FWS).
 - c. Report out on slough channelization discussion. – NPS and Reclamation are proceeding with EA.
 - i. On track. Park will lead compliance with Reclamation. Intent is to have it done this calendar year. Anticipate entire project complete before next summer.
 - d. Jen Pelz from Grand Canyon Trust asking for data They would like data to create their own graphs/prepare background materials to educate people on smallmouth bass
 - i. Matt and Melissa will meet with Jen to explain. Scheduled June 4th call to discuss.
 - ii. Tom Gushue developed a graph, interactive public facing with recent data, based on NNF spreadsheet. Graph shared by Kim. Trips by month and River Mile beginning in 2022. Species can be turned off and on and highlighted. Is looking for suggestions on formatting. Should update in real time. Need more staff to dedicate time. Will be getting a detailee to help.
 - iii. Need to correct inconsistencies in spp codes when final code list complete. Individual PIs or GCMRC – better to be the PIs. Or at least tell GCMRC which codes need to be changed.
 - e. Coordinated effort between NPS and GCMRC regarding sampling protocols for both GLCA and GRCA – effort ongoing
 - i. Kurt, Jeff, Drew working on standardizing – no updates 5/29/24
 - ii. In PBR hoping to include some depletion passes. Will select sites dynamically each week depending on results of first pass. Will do 2 of 4 PBR reaches in entirety. Then choose 10 sites to do 3 pass depletions based on highest capture of SMB and then GSF, on the next night. Any concerns about timing? Should we spread them out more evenly? This works logistically, but timing is not standard among passes. Drew, Kim and Charles will discuss and share with Kurt.
 - 1. Brian and Maria provided some guidance on the depletion passes.
Check to see if resolved.
 - f. New Business –
 - i. Emily Young (TWG Member from Arizona) is the chair of our Smallmouth Bass Ad Hoc Group for the TWG, she discussed the upcoming Smallmouth Bass Ad Hoc Group meetings and discussions.
 - 1. June 3, 11 am first meeting. Based on Strategic Plan.
 - 2. June 17 week for 2nd meeting (Tues the 18th, or 20th, TBD). Will discuss SMB panel report. Planning to have some of the authors available. Also,

researchers from Upper Basin. Please let Emily know if you want to attend and have schedule conflicts. Can also submit written comments to agency rep, or to Brian Hines or Emily Y.

3. TWG meeting in July – would like another RRTT update, with more info on artificial spawning substrates. SBAHG is here to help, please feel free to reach out with concerns.
- ii. Rescheduling several future meetings. Several of us have conflicts with meetings currently scheduled for June 12, June 26, July 10 and July 24. I'd like to suggest the following changes, but if it doesn't work out for many of you we'll make an attempt to schedule other times. *Thanks for being flexible and confirming changes.*

| Old date | New Date |
|---------------|--|
| 12-Jun | June 21, combine June 12 and 26 into one mtg on 21st |
| 26-Jun | June 21 - confirmed |
| 10-Jul (TWG) | 2-Jul - confirmed |
| 24-Jul | keep date but get alternate call leader |
| Aug 7 | keep |
| Aug 21 (AMWG) | Cancel |
| Sept 4 | keep |

- V. Anything else?
 - a. June is when SMB spawned in 2022 and 2023, with first YOY detected in sloughs in early July. So everyone be on the alert for SMB reproductive activity, particularly in hot spots.
 - b. Let Melissa know if there is anything you'd like to see on next agenda.

Adjourn 4:27

**May 28 outflow temp 11.1
Lees Ferry avg 11.5**

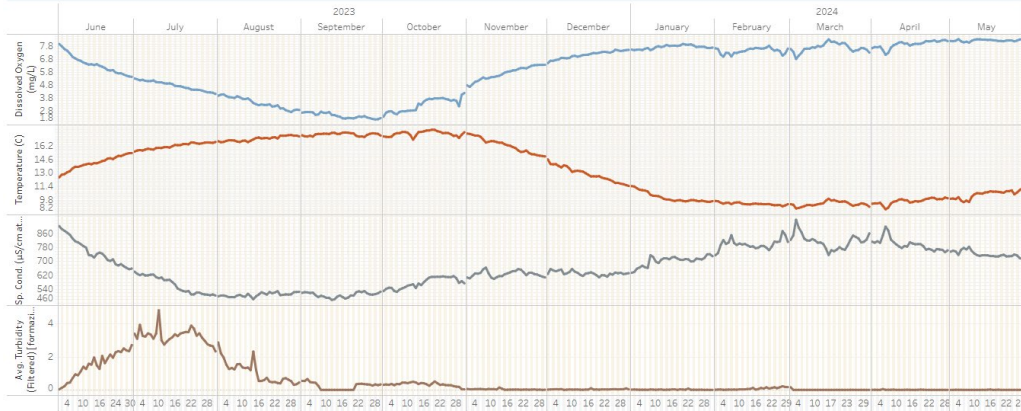
Glen Canyon Dam Site: Daily Averages

Select Date Range
6/1/2023 - 5/28/2024

See Hourly Averages

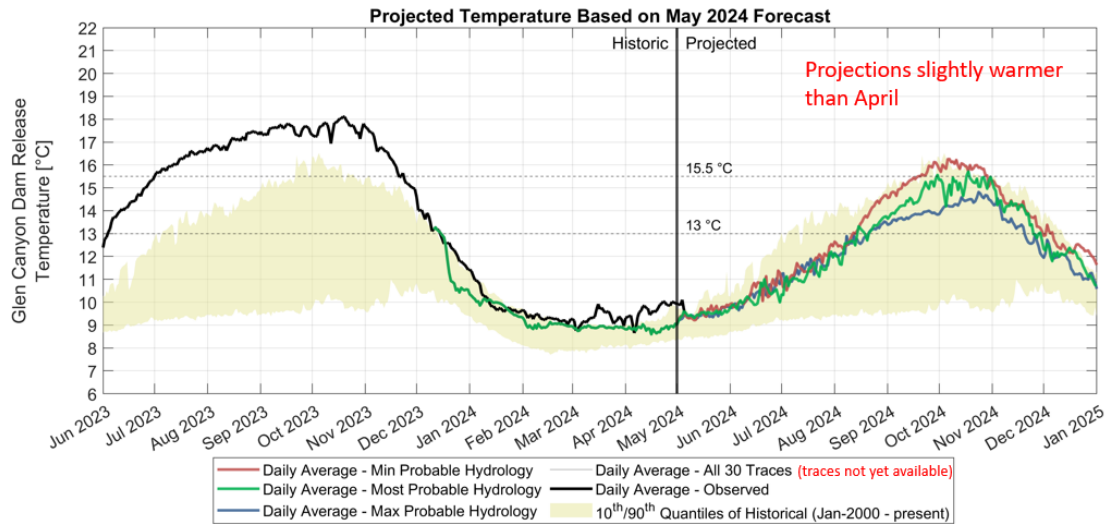


Daily Average Dissolved Oxygen, Temperature, Specific Conductance, and Turbidity Values

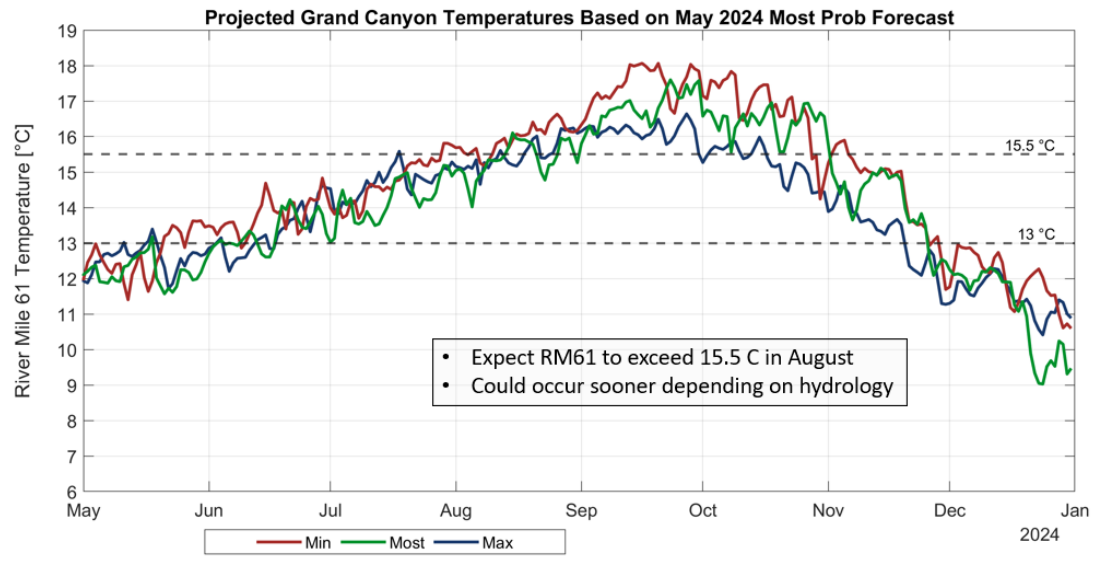


The water quality data shown here are filtered raw values and are subject to revision through quality control / quality assurance procedures. These data are being provided to meet the need for timely best science. The data have not received final approval by the U.S. Geological Survey (USGS) and are provided on the condition that neither the USGS nor the U.S. Government shall be held liable for any damages resulting from the authorized or unauthorized use of the data. Please visit GCRC's Discharge, Sediment and Water Quality web site to plot or download the processed measurements from this station: https://www.gcrc.gov/discharge_qw_sediment/station/GCDAMP/09379901

CE-QUAL-W2 Modeled Temperature



Dibble et al. Grand Canyon Modeled Temperature



Figures 2 and 3. Provided by Bryce Mihalevich, Reclamation, presentation to AMWG May 15.

Table 1. Grand Canyon NP Sampling Schedule 2024

| Dates | Trip | Location |
|----------------|---------------------------------------|-----------------------------|
| April 9-10 | PBR-BW | Paria to Badger |
| April 15-19 | PBR-EF | Paria to Badger |
| May 7-8 | PBR-BW | Paria to Badger |
| May 20-24 | PBR-EF | Paria to Badger |
| June 4-5 | PBR-BW | Paria to Badger |
| June 10-13 | PBR-EF | Paria to Badger |
| June 19-30 | HBC AGG/NN Surveillance Downstream | Lees Ferry to Diamond Creek |
| July 8-12 | PBR-EF | Paria to Badger |
| July 23-24 | PBR-BW | Paria to Badger |
| July 29- Aug 2 | PBR-EF | Paria to Badger |
| Aug 13-14 | PBR-BW | Paria to Badger |
| Aug 19-23 | PBR-EF | Paria to Badger |
| Sept 9-12 | PBR-EF | Paria to Badger |

| | | |
|--------------|---------------------------------------|-------------------|
| Sept 23-30 | NN Surveillance SN/eDNA Downstream | Lees Ferry to LCR |
| Oct 7-10 | PBR-EF | Paria to Badger |
| Oct 21-Nov 1 | NN Surveillance EF Downstream | Lees Ferry to LCR |
| Nov 11-15 | PBR-EF | Paria to Badger |
| Nov 25-29 | PBR-EF | Paria to Badger |

Occurred, Canceled due to low water temperature

Table 2. Glen Canyon NRA Sampling Schedule 2024. Electrofishing occurs mostly at night. Dates and locations may change in response to monitoring results to focus on high density areas. Trip length is 3 to 4 days/nights. Netting trips focus on the sloughs. Nets are set overnight. Undesired warmwater fishes are removed for beneficial use (except for carp). Rainbow trout are not captured or handled during electrofishing. Brown trout are removed for beneficial use.

| WEEK OF: | Description |
|----------|--|
| March 5 | GLCA electrofishing |
| April 1 | GLCA electrofishing |
| April 8 | GLCA Netting |
| April 15 | GLCA electrofishing |
| April 22 | GLCA Netting |
| April 29 | GLCA electrofishing |
| May 6 | GLCA Netting |
| May 13 | GLCA electrofishing |
| May 20 | GLCA Netting and Slough Block Net Installation |
| May 27 | GLCA electrofishing |

| | |
|-----------|--|
| June 3 | GLCA Electrofishing |
| June 10 | GLCA Netting |
| June 17 | GLCA Netting |
| June 24 | GLCA electrofishing/Maybe only one boat |
| July 1 | GLCA Electrofishing |
| July 8 | GLCA Netting |
| July 15 | GLCA Electrofishing |
| July 22 | GLCA electrofishing/Maybe only one boat |
| July 29 | GLCA Netting |
| Aug 5 | GLCA electrofishing |
| Aug 12 | GLCA Electrofishing/maybe only one boat |
| Aug 16-19 | Potential chemical treatment of slough if needed |
| Aug 19 | GLCA Netting |
| Aug 26 | GLCA Netting |
| Sept 3 | GLCA electrofishing |
| Sept 9 | GLCA Netting |
| Sept 16 | GLCA electrofishing |
| Sept 23 | GLCA Netting |
| Sept 30 | GLCA electrofishing |
| Oct 15 | GLCA electrofishing |
| Oct 28 | GLCA electrofishing |
| Nov 18 | GLCA electrofishing |

Table 3. GCMRC, Cooperator, and Tribal River Trips and Field Activities

VI. **Occurred** or **Planned** 2024

| Launch | Take out | Description |
|--------|----------|---|
| 25-Jan | 30-Jan | Lees Ferry trout population monitoring |
| 14-Feb | 1-Mar | Quality of Water/fine sediment monitoring |
| 11-Mar | 14-Mar | Lees Ferry fish population monitoring |
| 3-Apr | 17-Apr | Mainstem Fish, non-native (electro shocking)-AZGFD |
| 4-Apr | 9-Apr | Lees Ferry trout population monitoring |
| 9-Apr | 26-Apr | Aquatic Foodbase monitoring (drift) |
| 16-Apr | 26-Apr | LCR HBC, camps at three locations on Little Colorado River |
| 20-Apr | 29-Apr | Hopi Cultural Monitoring |
| 23-Apr | 12-May | Juvenile HBC monitoring-April 27 Launch downstream Lees Ferry |
| 27-Apr | 6-May | Navajo Cultural Monitoring |
| 2-May | 21-May | Survey Control Network |

| 13-May | 30-May | Cultural Resource Monitoring |
|--------|--------|--|
| 17-May | 31-May | Mainstem Fish, non-native (electro shocking)-AZGFD |
| 21-May | 31-May | LCR HBC, camps at 4 locations on Little Colorado River |
| 25-May | 3-Jun | Zuni of Pueblo Cultural Monitoring |
| 6-Jun | 20-Jun | Grand Canyon Youth-"Partners in Science" |
| 8-Jun | 17-Jun | Southern Paiute Consortium Cultural Monitoring |
| 12-Jun | 21-Jun | Hualapai Cultural Monitoring |
| 26-Jun | 5-Jul | Grand Canyon Youth-"Partners in Science" |
| 27-Jun | 8-Jul | LCR Juvenile HBC monitoring (3 camps) |
| 3-Jul | 18-Jul | Grand Canyon Youth-"Partners in Science" |
| 3-Jul | 4-Jul | TRGD |
| 5-Jul | 24-Jul | Juvenile HBC monitoring |
| 8-Jul | 12-Jul | Lees Ferry trout population monitoring |
| 18-Jul | 30-Jul | Mainstem Fish, HBC-Seining |
| 13-Aug | 16-Aug | Lees Ferry-Terrestrial Vegetation Monitoring |
| 14-Aug | 30-Aug | Fine Grain sediment monitoring |
| 24-Aug | 9-Sep | Terrestrial Vegetation Monitoring |
| 9-Sep | 11-Sep | Terrestrial Vegetation Monitoring |
| 28-Aug | 16-Sep | Mainstem Fish, HBC-aggregations (netting) |
| 5-Sep | 10-Sep | TRGD (Cancelled due to likely high water temps and low DO) |

Yackulic, C.B., Bair, L.S., Eppehimer, D.E., Salter, G.L., Butterfield, B.J., Caster, J.J., Deemer, B.R., Fairley, H., Grams, P.E., Kasprak, A., Palmquist, E.C., and Sankey, J.B., 2024, Modeling the impacts of Glen Canyon Dam operations on Colorado River resources [presentation], LTEMP SEIS meeting (virtual), January 31, 2024: Flagstaff, Ariz., US Geological Survey, Southwest Biological Science Center, Grand Canyon Monitoring and Research Center, <https://www.usgs.gov/centers/southwest-biological-science-center/science/modeling-impacts-glen-canyon-dam-operations>