WY 2023 LTEMP Experiments and Process Updates

Adaptive Management Work Group Meeting

Aug 17-18, 2022

Clarence Fullard, US Bureau of Reclamation

Michael Moran, US Geological Survey, Southwest Biological Science Center, Grand Canyon Monitoring & Research Center
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.
# Potential LTEMP Flow Experiments

## Water Year 2022

<table>
<thead>
<tr>
<th>GCD Experimental Flow</th>
<th>Duration</th>
<th>Implementation Window</th>
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<tbody>
<tr>
<td>Fall HFE</td>
<td>up to 96 hours</td>
<td>October - November</td>
</tr>
<tr>
<td>Extended Duration Fall HFE</td>
<td>97-192* or 97-250 hours***</td>
<td>October - November</td>
</tr>
<tr>
<td>Spring HFEΔ</td>
<td>up to 96 hours</td>
<td>March – April</td>
</tr>
<tr>
<td>Proactive Spring HFEΔ◊</td>
<td>24 hours**</td>
<td>April – June</td>
</tr>
<tr>
<td>Trout Management Flows</td>
<td>up to 3 cycles/month for 4 months</td>
<td>May – August</td>
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<tr>
<td>Macroinvertebrate Flows</td>
<td>target 2-3 replicates</td>
<td>May – August</td>
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* First test not to exceed 192 hours
** First test 24 hours
*** After first test, up to 250 hours

Δ no Spring HFE in same WY as extended duration Fall HFE
◊ no proactive Spring HFE in same WY as sediment-driven Spring HFE
2022 Bug Flows Implementation

- Implementation approved April 26, 2022
- H750 hydrograph
- PI Team meeting bi-weekly
- Off-ramps available, if warranted.
- Non-consensus recommendation from LT to offramp due to SMB.
- DOI decision was to continue with final three weeks.
Fall HFE 2022

- Currently within Fall HFE accounting period (July 1 – Dec. 1)

- Too early to know if there will be sufficient sand to trigger an HFE
Fall Accounting Period

Source: US Dept. of Interior, 2016
Paria River Discharge and Sand Inputs

July 1, 2022 – August 18, 2022

Cumulative sand load ~ 230,000

https://www.gcmrc.gov/discharge_qw_sediment/station/GCDAMP/09382000
Colorado River below Paria Mouth

Ron Griffiths, USGS
Upper Marble Canyon Sand Mass Balance

Change in Sand Stored in Reach (Metric Tons)

July 1, 2022 – July 31, 2022

Zero Bias Value: 58,000 Metric Tons
Upper Uncertainty Bound: 100,000 Metric Tons
Lower Uncertainty Bound: 15,000 Metric Tons

https://www.gcmrc.gov/discharge_qw_sediment/reach/GCDAMP/09380000/09383050
Lower Marble Canyon Sand Mass Balance

July 1, 2022 – July 31, 2022

Zero Bias Value: 28,000 Metric Tons
Upper Uncertainty Bound: 36,000 Metric Tons
Lower Uncertainty Bound: 19,000 Metric Tons

https://www.gcmrc.gov/discharge_qw_sediment/reach/GCDAMP/09383050/09383100
Little Colorado River Discharge

https://www.gcmrc.gov/discharge_qw_sediment/station/GCDAMP/09383100
Sand Budget Model Results

The model indicates that currently there is not sufficient sediment to support a HFE. The sediment balance at the end of the accounting period is approx. 59 ktons.
Basin Fund Status & Impacts

- Projected Basin Fund Decline
  - $83M by end of FY22
- Projected costs of FY22 Bug Flows: about $1.4M

Prior year costs
- FY18 – **actual $165K** (estimated $335K) (H1000)
- FY19 – **actual $327K** (estimated $332K) (H750)
- FY20 – actual TBD ($750K-$1M) (estimated $407K) (H750)