



— BUREAU OF —
RECLAMATION

Potential LTEMP Experiments, Water Year 2021, Fall 2020

October 14, 2020

Agenda

1. Background info
2. Current resource conditions
3. Timeline and next steps
4. Questions & discussion

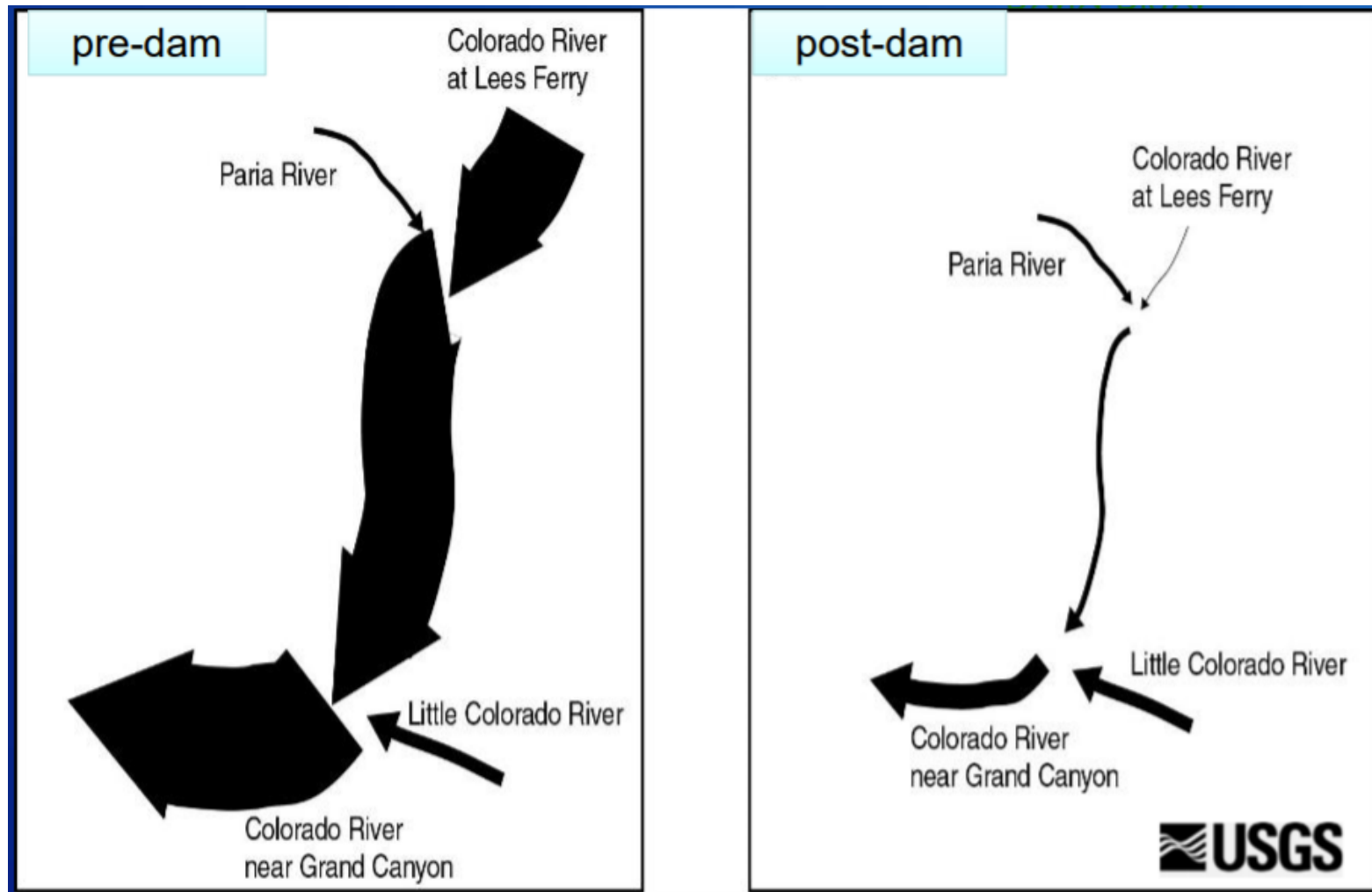


2020 Possible Fall HFE: Why?



Review of Problem:

Sediment budget affected by disruption of sand supply and change in flow regime



Sandbars and the sand mass balance on the Colorado River in Grand Canyon

Sand accumulates on the bed and in eddies during low flows

Sandbars and the sand mass balance on the Colorado River in Grand Canyon

Floods build sandbars and export sand downstream



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Floods build sandbars and export sand downstream

Sandbars and the sand mass balance on the Colorado River in Grand Canyon

Following floods, sandbars erode, and the cycle can repeat...
... as long as there is enough sand.

In order for the cycle to be sustainable, there must be an approximate balance between what comes in and what goes out.

LTEMP Process for Experiments

- Annual Reporting and TWG meetings to discuss potential experimental actions for the year
- Tribal consultation
 - Notification issued to Parties to the PA 9/24
- Work with Implementation / Planning Team to develop a consensus recommendation to DOI
 - AMWG / TWG webinar
 - GCD Leadership Team
- DOI decision and possible implementation



Potential LTEMP Flow Experiments

Water Year 2021

GCD Experimental Flow	Duration	Implementation Window
Fall HFE	up to 96 hours	October - November
Extended Duration Fall HFE	97- 192* or 97-250 hours***	October - November
Spring HFE ^Δ	up to 96 hours	March – April
Proactive Spring HFE ^{Δ◇}	24 hours**	April – June
Trout Management Flows	up to 3 cycles/month for 4 months	May – August
Macroinvertebrate Flows	target 2-3 replicates	May – August

* First test not to exceed 192 hours

** First test 24 hours

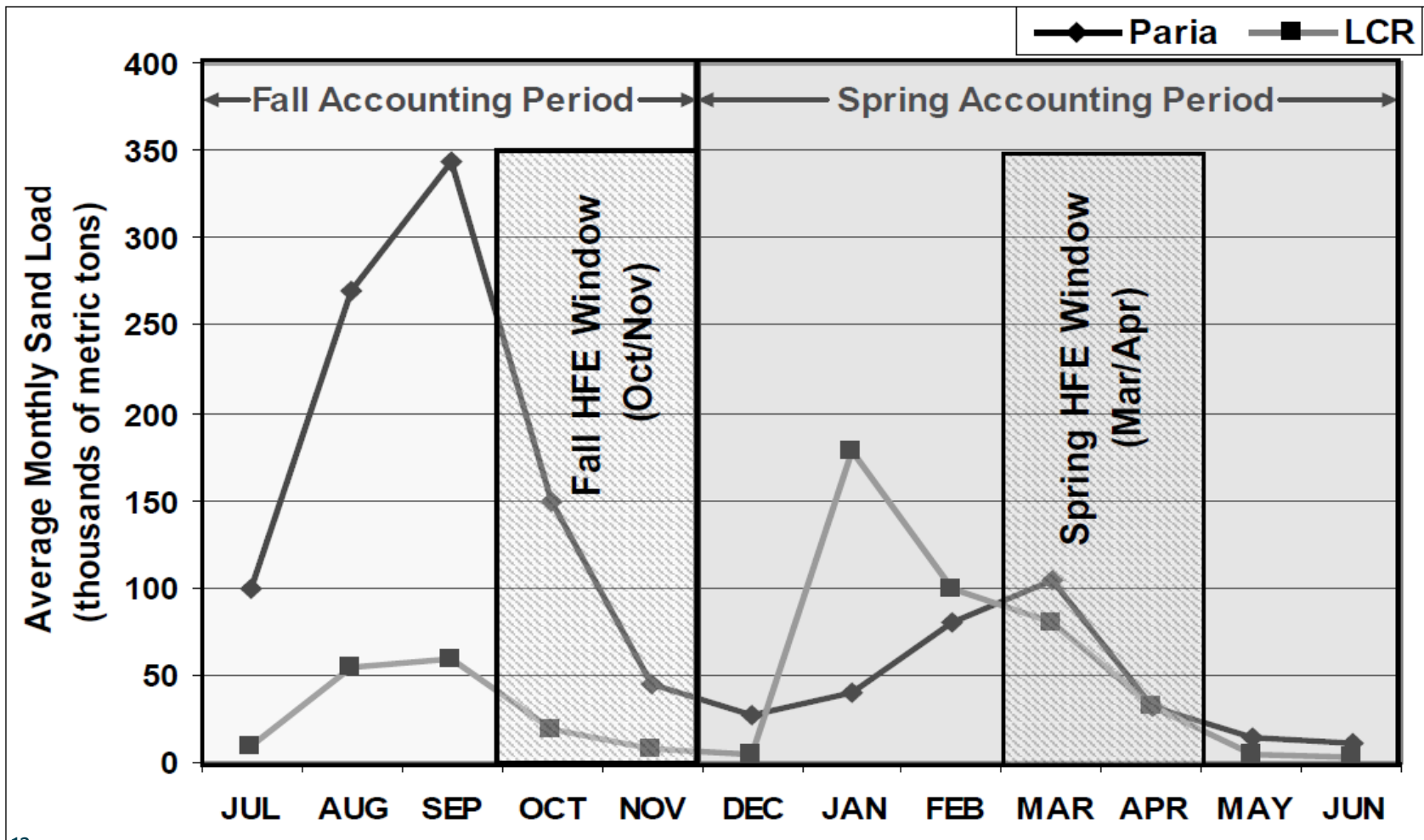
*** After first test, up to 250 hours

Δ no Spring HFE in same WY as extended duration Fall HFE

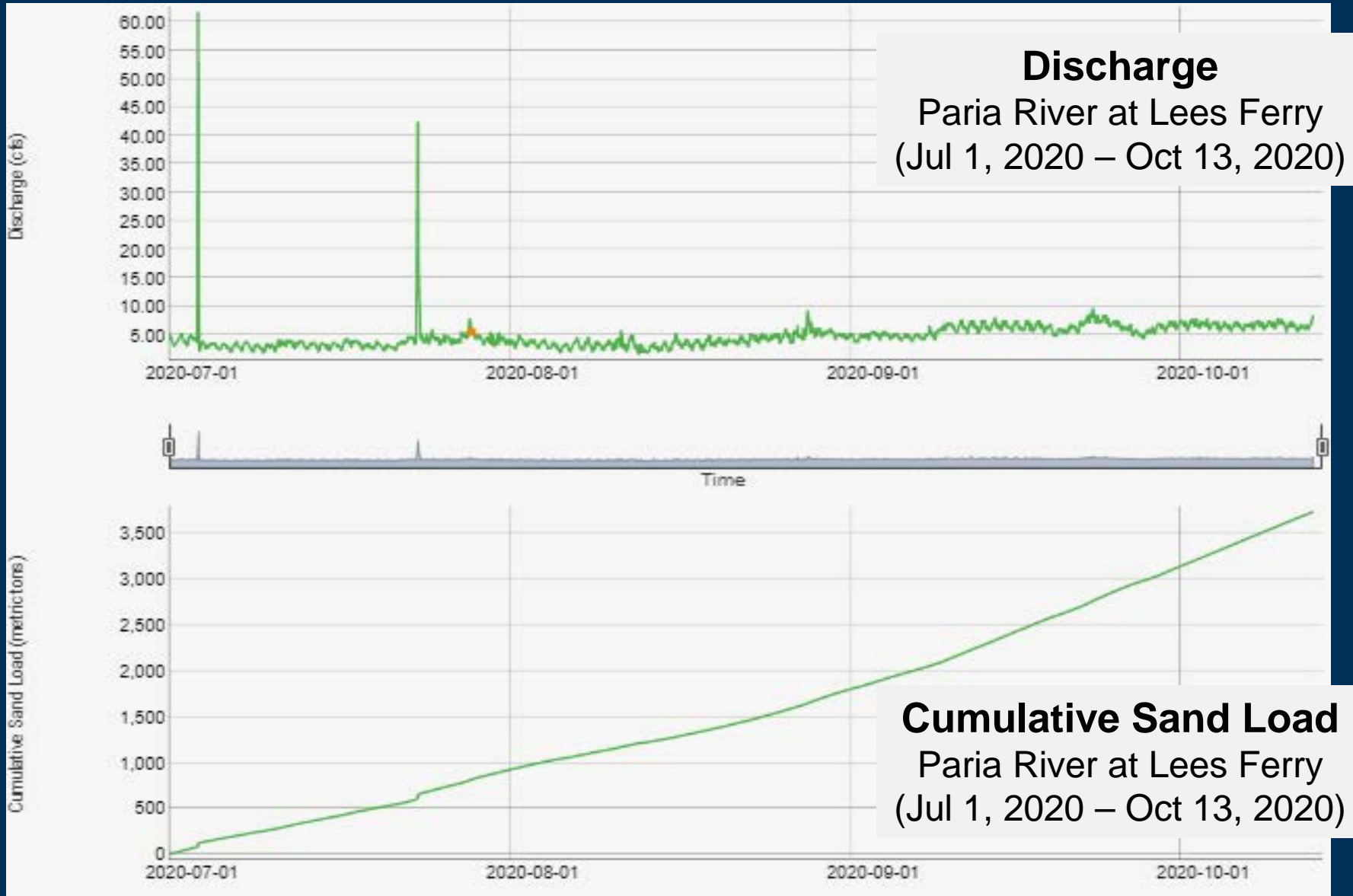
◇ no proactive Spring HFE in same WY as sediment-driven Spring HFE



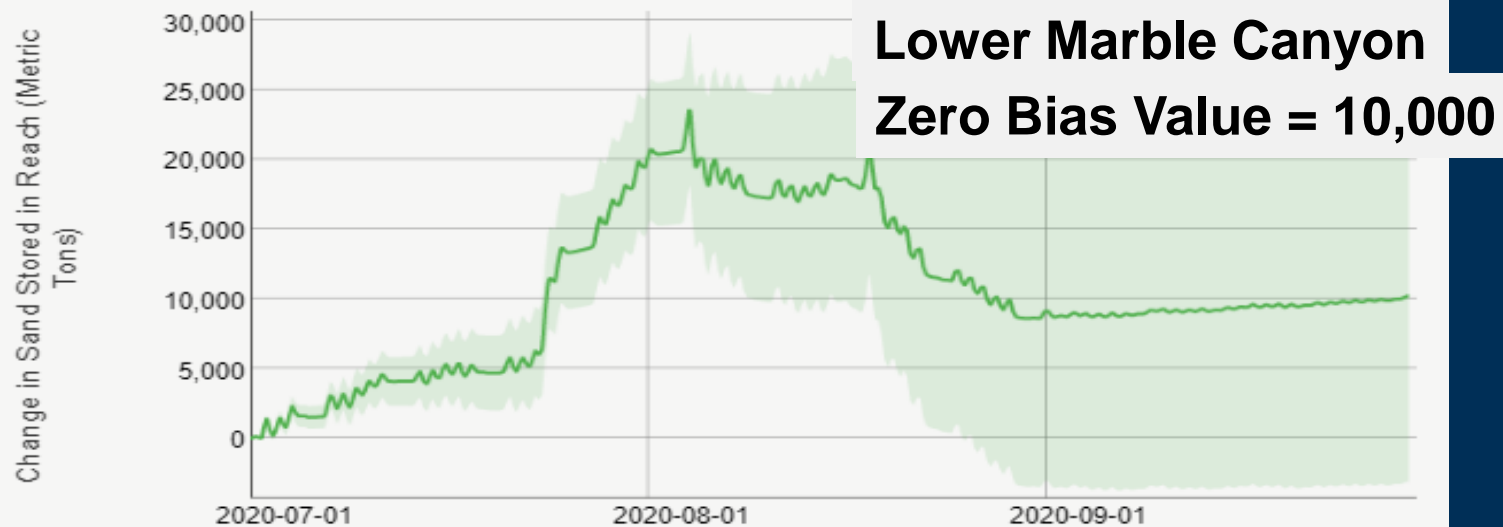
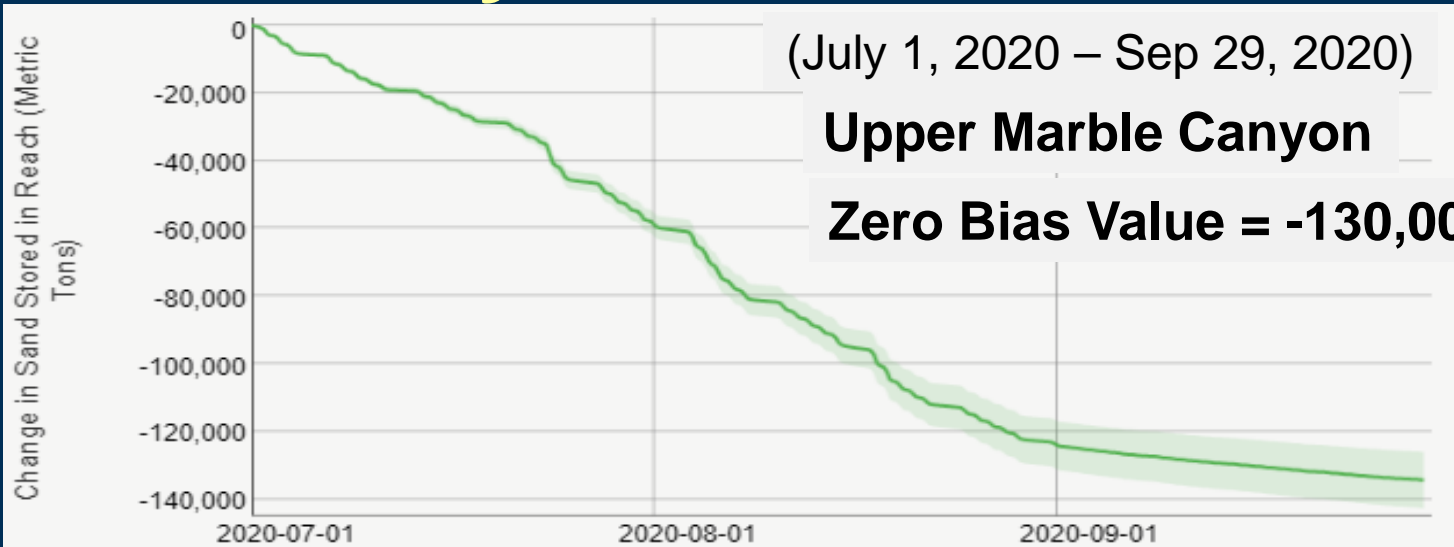
HFE Accounting & Implementation Windows



Paria River Discharge & Sediment Inputs



Marble Canyon Sand Mass Balance



USGS Preliminary Data, 2020. Do Not Cite.

(https://www.gcmrc.gov/discharge_qw_sediment/reach/GCDAMP/09380000/09383050,
https://www.gcmrc.gov/discharge_qw_sediment/reach/GCDAMP/09383050/09383100)

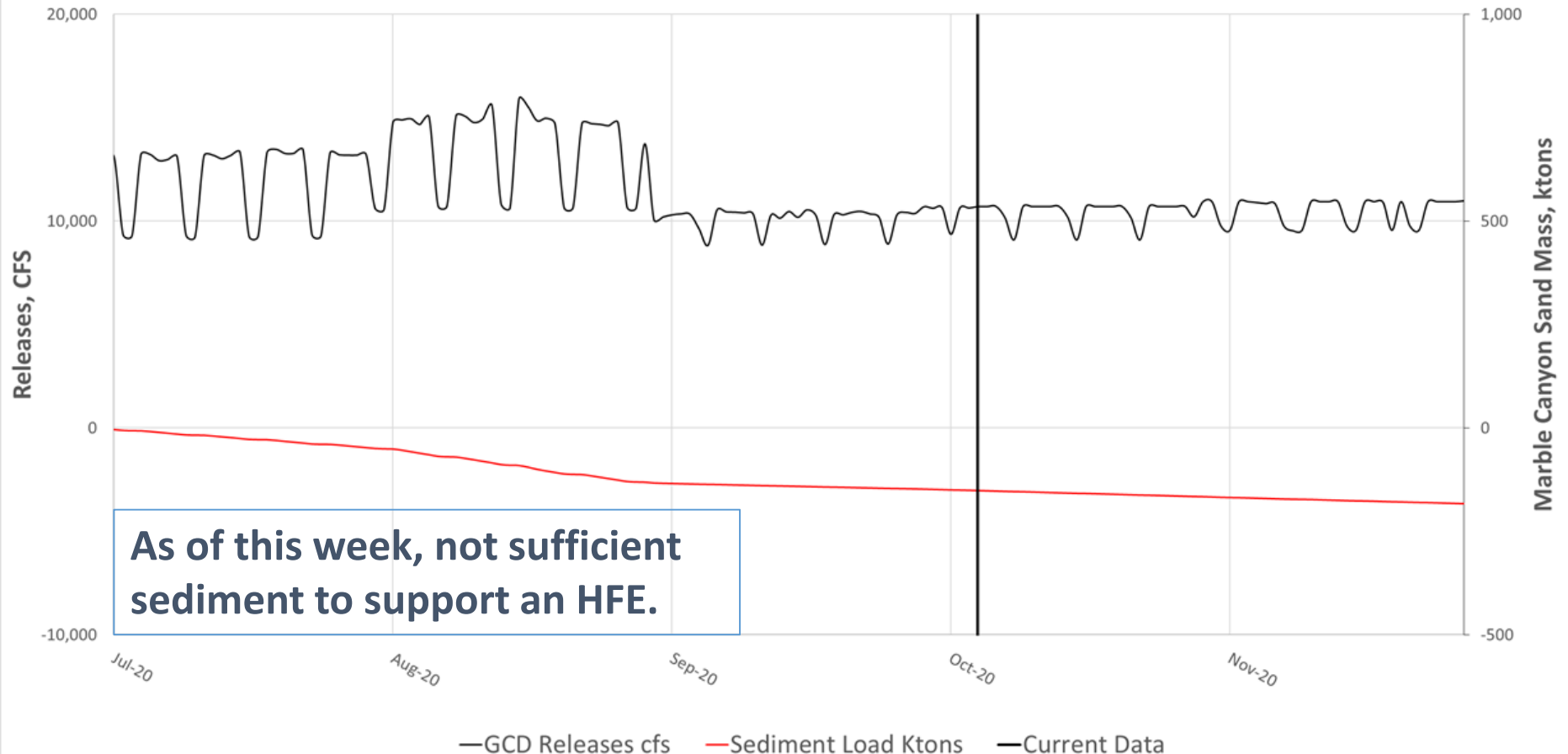
Oct. 7, 2020

Sand Budget Model Results

Actual Flow as of 10/07/2020 01:00
Actual Sediment data as of 10/07/2020 04:00
Graph Updated 10/07/2020 11:00
GCMRC's most recent Lab Results of
Suspended Sediment as of 12/03/2019

Sand Budget Model Results, Jul 1, 2020 - Nov 30, 2020 Release and Calculated Sediment Load in Colorado River, Marble Canyon

The model indicates that currently there is not sufficient sediment to support and HFE.



Fall HFE Considerations (WY 2021)

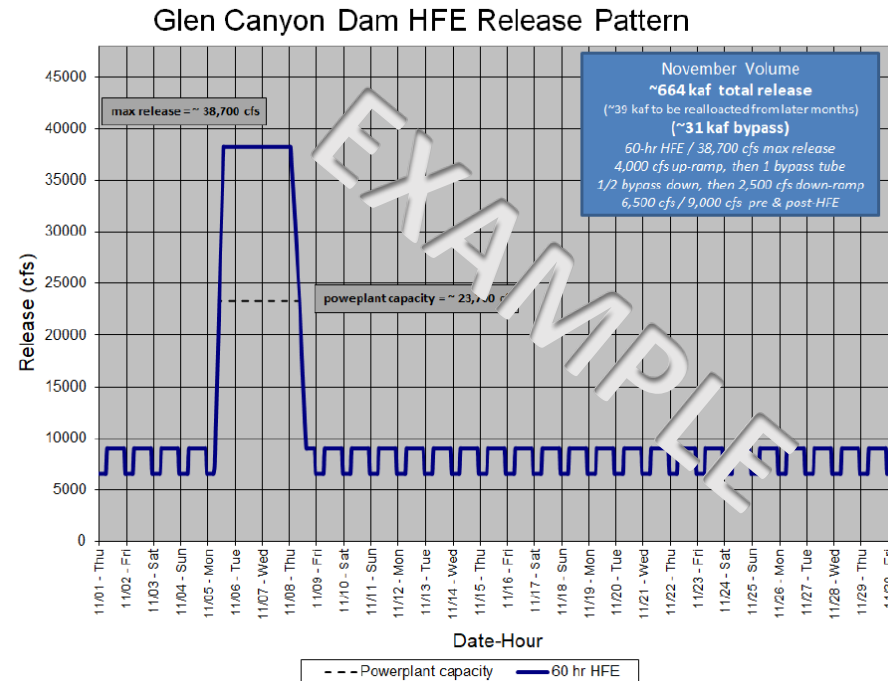
- Hydrograph characteristics:

- Implement in early to mid-November (11/9)
- Peak release capacity: ~35,000 cfs (6 hydro units, 4 bypass tubes)
- Peak release duration: from 1 hr up to 96 hrs (4 days)
- Ramp rates: 4,000 cfs/hr up; 2,500 cfs/hr down

- Resource Considerations

- Basin Fund Status
- Non-native Fish
 - Green Sunfish at RM -12, West GC
 - Brown Trout at Lees Ferry

- Proposed Monitoring



Upcoming meetings

- October 2020

- Tech team call #4: last call to implement HFE.
- Oct 19-21: HFE Leadership Team Meeting, Department of Interior decision (if recommended by Tech Team).
- October 22: Notify GCDAMP and public.
- November 9: possible HFE start (if recommended).



Summary and Next Steps

- **Current sediment conditions DO NOT support a Fall HFE**
- **Final HFE Technical Team Call: Friday, October 16**
 - Verbal report out on resource status
 - Sediment, Basin Fund, Green Sunfish, Brown Trout, Other
 - Public Affairs update re: notification strategy
- **Consultation meetings as needed (Basin States, Tribes)**
- **Additional steps if we move forward with an HFE**
- **Otherwise...**
 - 10/23 – Email AMWG/TWG w/ notification
 - 11/30 – Sediment modeling through accumulation period



Clarence Fullard
303-253-1042
cfullard@usbr.gov



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Glen Canyon Power Plant Planned Unit Outage Schedule for Water Year 2021

Unit Number	Oct 2020	Nov 2020	Dec 2020	Jan 2021	Feb 2021	Mar 2021	Apr 2021	May 2021	Jun 2021	Jul 2021	Aug 2021	Sep 2021
1												
2												
3												
4												
5												
6												
7												
8												
Units Available	5	6/5	6	6	6	6	6	6	6	6	6	6/4
Capacity (cfs)	16,500	20,100 /16,400	20,000	19,900	19,800	19,600	19,500	19,500	19,700	20,100	20,000	19,900 /12,600
Capacity (kaf/month)	1,110	1,200	1,260	1,230	1,110	1,230	1,230	1,270	1,270	1,320	1,350	1,110
Max (kaf) ²	640	640	720	760	680	710	640	630	660	750	800	600
Most (kaf) ¹	640	640	720	860	750	800	710	710	740	870	890	690
Min (kaf) ²	640	640	720	760	680	710	640	630	660	750	800	600
										(updated 09-21-2020)		

1 Projected release, based on August 2020 Most Probable Inflow Projections and 24-Month Study model runs

2 Projected release, based on August 2020 Min and Max Probable Inflow Projections and 24-Month Study model runs

3 Dependent upon availability to shift reserves, which will increase capacity by 40MW at current efficiency.