

RECLAMATION

Managing Water in the West

Possible LTEMP Experiment: Fall 2018 HFE

Technical Work Group Webinar
October 10, 2018

Katrina Grantz
Bureau of Reclamation
Upper Colorado Region



Scott VanderKooi
Southwest Biological Science Center
Grand Canyon Monitoring and
Research Center



U.S. Department of the Interior
Bureau of Reclamation



LTEMP Process for Experiments

- **LTEMP ROD outlines a specific process for planning for and implementing experiments**
 - **GCDAMP Annual Reporting meeting** (March 7-9, 2018)
 - **TWG meeting to discuss possible upcoming experiments** (Jan, Mar, Jun, Oct 2018)
 - **Tribal consultation** (initial letters sent on Sep 6, 2018)
 - **Implementation / planning group- strive to develop a consensus recommendation to DOI** (Aug-Oct, 2018)
 - **DOI decision** (week of Oct 15, 2018) and **possible implementation** (week of Nov 5, 2018)

LTEMP HFE Protocol Process

1. Planning and Budgeting Component

- Annual resource status assessment
 - Annual Agency Reporting
 - GCDAMP Budget and Work Plan Process

2. Modeling Component

3. Decision and Implementation Component

- Review Modeling Component
- Review Status of Resources
- Consultation with agencies and tribes, TWG / AMWG input
- Staff recommendation / GCD Leadership Team Recommendation
- DOI Decision

2018 Possible Experiment High Flow Experiment (HFE) Why?



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

Paria River

pre-dam

Colorado River
at Lees Ferry

Paria River

Little Colorado River

Colorado River
near Grand Canyon

post-dam

Colorado River
at Lees Ferry

Paria River

Little Colorado River

Colorado River
near Grand Canyon

USGS



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



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

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 HFE Protocol Parameters

Timing

- **Fall: October-November**
- **Spring (beginning in 2020)**
 - March-April (sediment)
 - Apr-Jun (proactive)

Duration

- **1 hr – 96 hrs**
- **Fall extended duration: up to 192 hrs (first test), up to 250 hrs (thereafter)**
- **Spring proactive: 24 hrs (first test), up to 24 hrs (thereafter)**

Magnitude

- **31,500 cfs – 45,000 cfs (depends on maintenance)**

Ramp rates

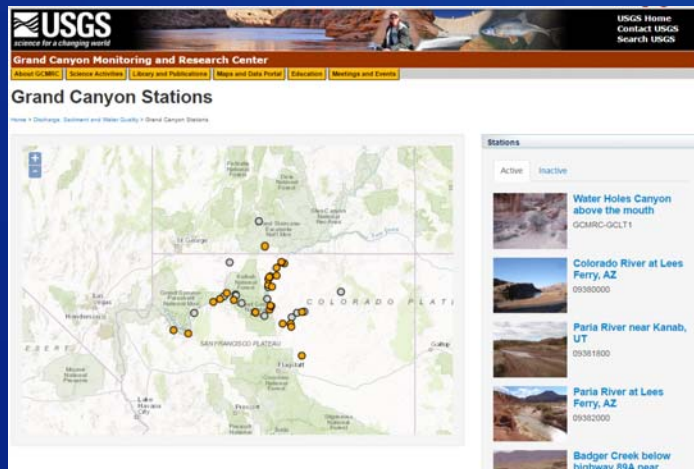
- **4,000 cfs up and 2,500 cfs down (2016 LTEMP ROD)**



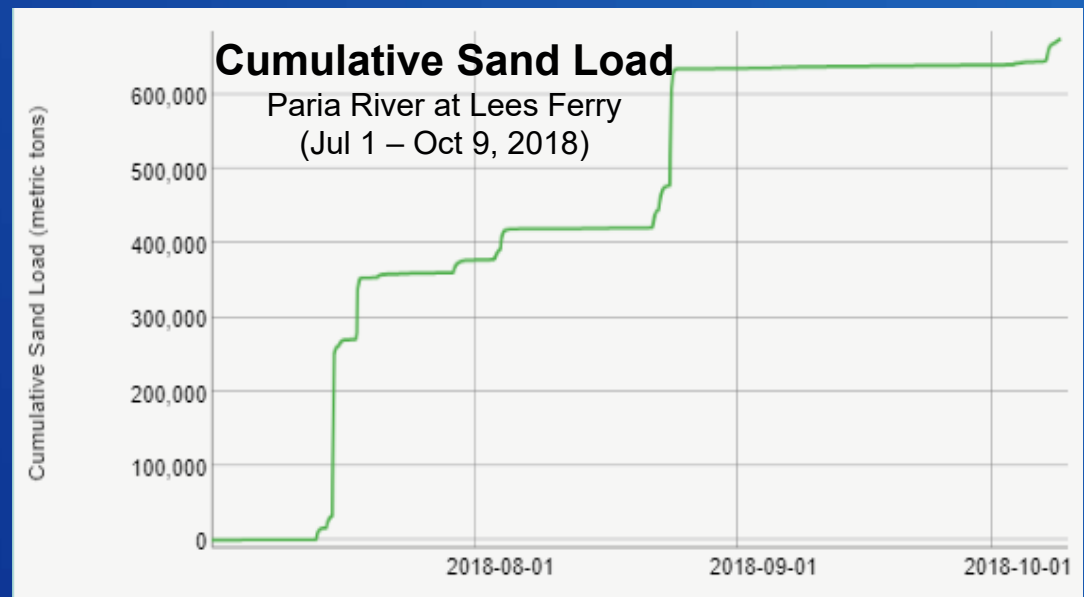
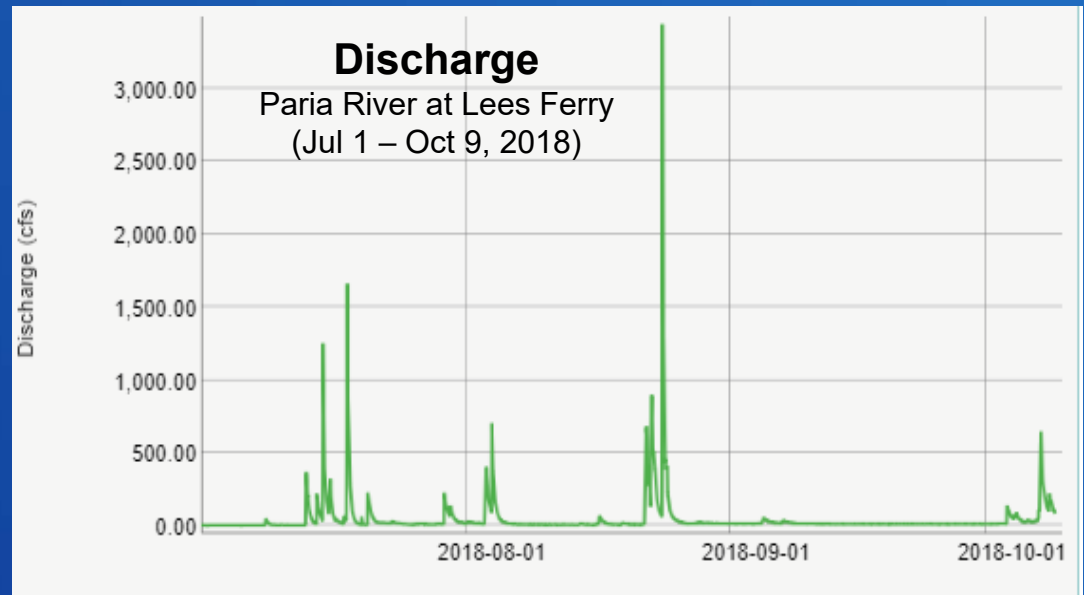
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Current conditions

from the GCMRC
web page as of
Oct 9, 2018



[http://cida.usgs.gov/gcmrc/
discharge_qw_sediment/station/GCDAMP/
09382000](http://cida.usgs.gov/gcmrc/discharge_qw_sediment/station/GCDAMP/09382000)



Preliminary Data – Do not cite or distribute

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Sand Budget Model Results

09-24-2018

**As of 09/24/18,
sufficient
sediment to
support a 60-hr
HFE.**

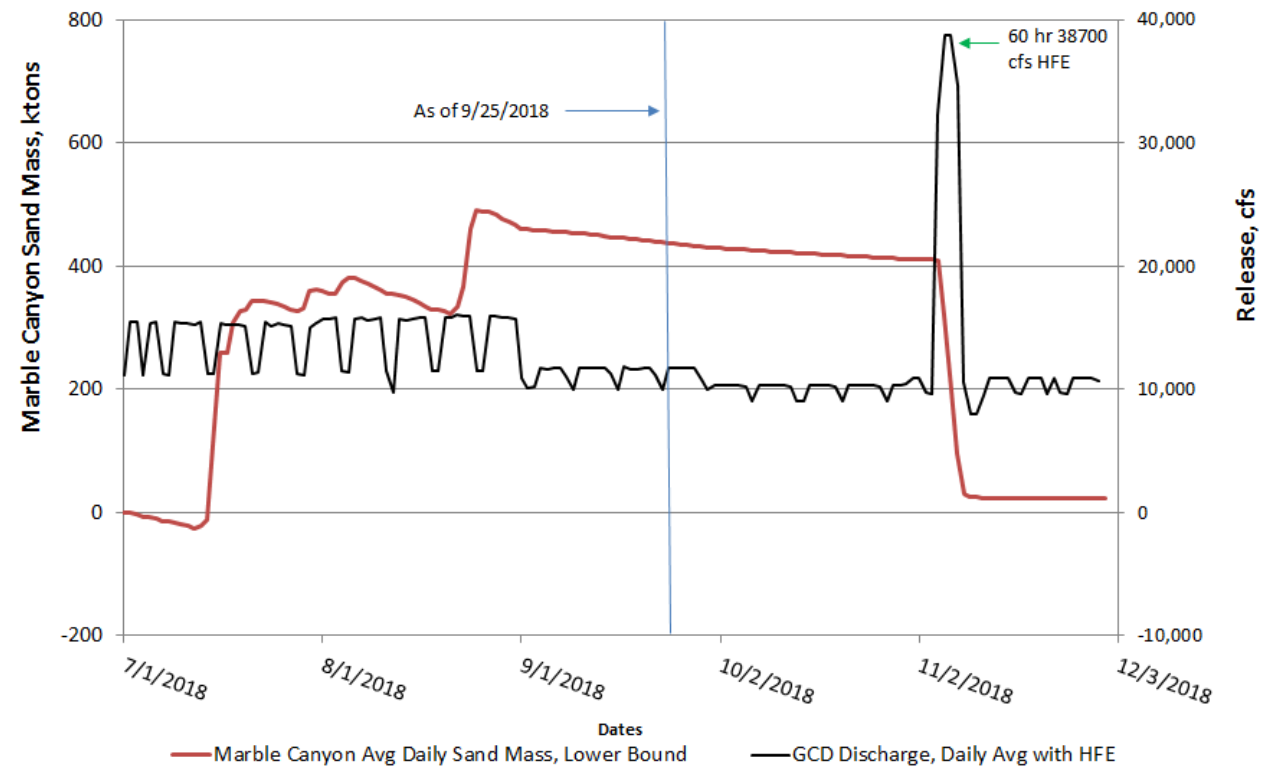
*Minimal inputs
over the past few
weeks.*

*Final model runs
later today*

Actual flow as of 9/23/2018 23:00
Actual Sediment data as of 9/24/2018 4:00
Graph updated 9/24/2018 7:30
GCMRC's most recent Lab Results of Suspended
Sediment as of 8/25/2018

Sand Budget Model Results, Jul 2018-Nov 30 2018 Release and Calculated Sediment Load in Colorado River

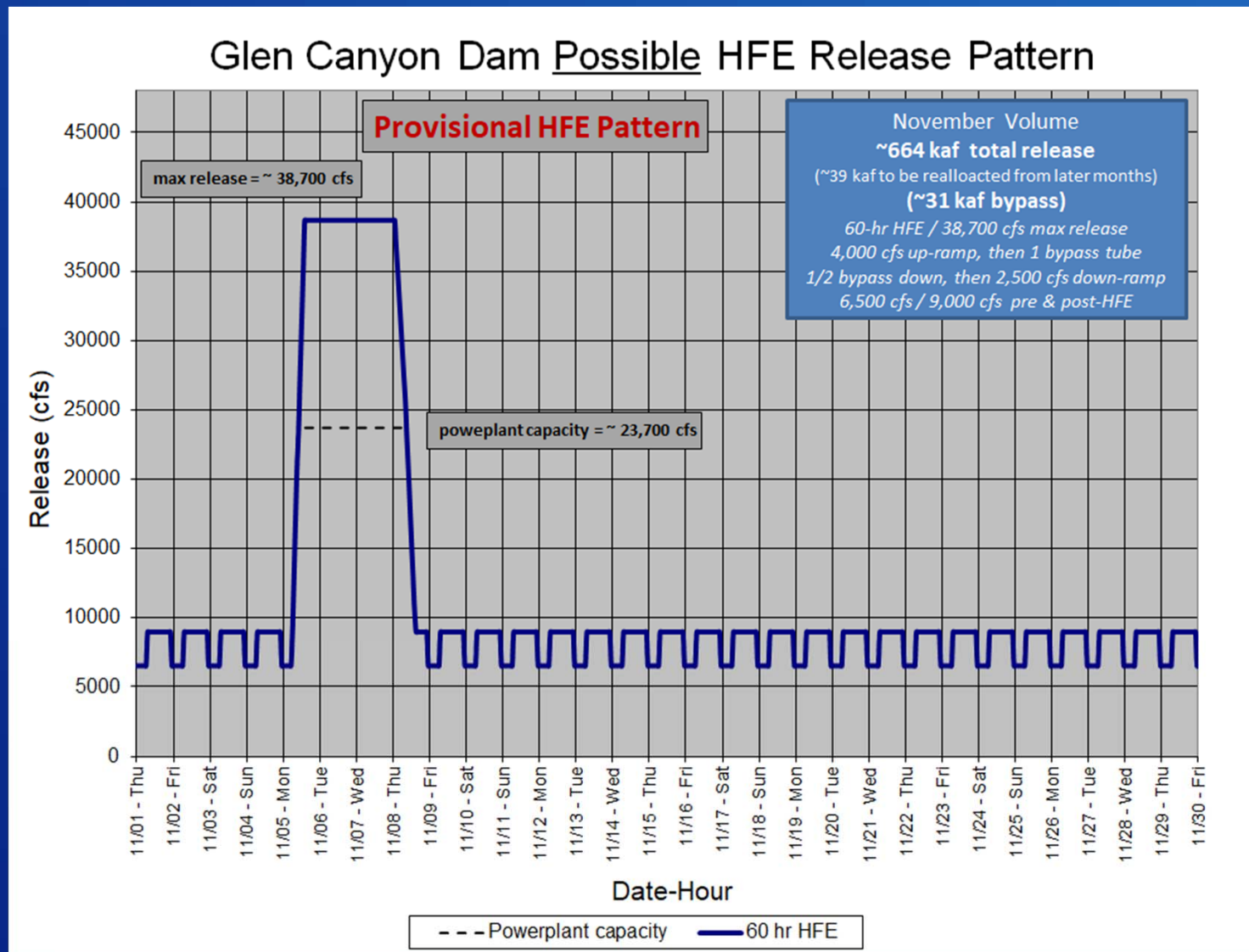
The model indicates that there is currently sufficient sediment to support an 60hr 38700cfs HFE. The data from the model will be compared to actual measured sediment for further decisions



Preliminary Data – Do not cite or distribute

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November 2018 GCD possible releases



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Resource Status Assessment

- Archaeological and cultural resources
- Natural processes (e.g., aquatic food base)
- Humpback chub
- Hydropower and energy
- Other native fish
- Recreational experience
- Sediment
- Tribal resources
- Rainbow trout fishery
- Nonnative invasive species
- Riparian vegetation

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SEPTEMBER 2018

Sun	Mon	Tue	Wed	Thu	Fri	Sat
26	27	28	29 Tech call	30	31	1
2	3	4	5 Tech call	6 <i>Tribes / PA parties notified via letter</i>	7	8
9	10	11	12 Tech call	13	14	15
16	17	18	19 Tech call	20 Subgroup call	21	22
23	24 Subgroup call	25	26 Tech call	27 <i>AMP Webinar</i>	28	29
30	1	2	3	4	5	6

Proposed / Tentative Planning Timeline

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OCTOBER 2018

Sun	Mon	Tue	Wed	Thu	Fri	Sat
30	1	2	3	4	5	6
	Final sediment inputs, lab samples, modeling					
7	8	9	10	11	12	13
Final modeling			TWG mtg		HFE Tech report –draft to DOI	
14	15	16	17	18	19	20
	Final HFE Tech recommend.	HFE Leadership Team mtg, DOI decision			Notify AMP partners, public	
21	22	23	24	25	26	27
28	29	30	31	1	2	3

Proposed / Tentative Planning Timeline

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NOVEMBER 2018

Sun	Mon	Tue	Wed	Thu	Fri	Sat
28	29	30	31	1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	1

Proposed / Tentative Planning Timeline

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Coordination / Monitoring During Implementation

- If DOI decides to do an HFE:
 - Implementation / planning group will continue to meet regularly (monthly operations coordination calls)
 - Report back on field data, adjust operations accordingly in the event of unexpected impacts
 - GCMRC HFE monitoring trip
 - Operational flexibility and emergency exception criteria will be maintained.

Next Steps

- **Discussion / Feedback with Technical Work Group: October 10**
- **Implementation / Planning Team written recommendation and presentation to DOI: October 16**
- **DOI Decision**
 - Memo from DOI
 - Notification to Tribes and parties to the PA
 - Notification to AMP partners
 - Public Affairs outreach
- **Possible Implementation: November 5-8, 2018**
- **Ongoing coordination during implementation**

Questions?

