



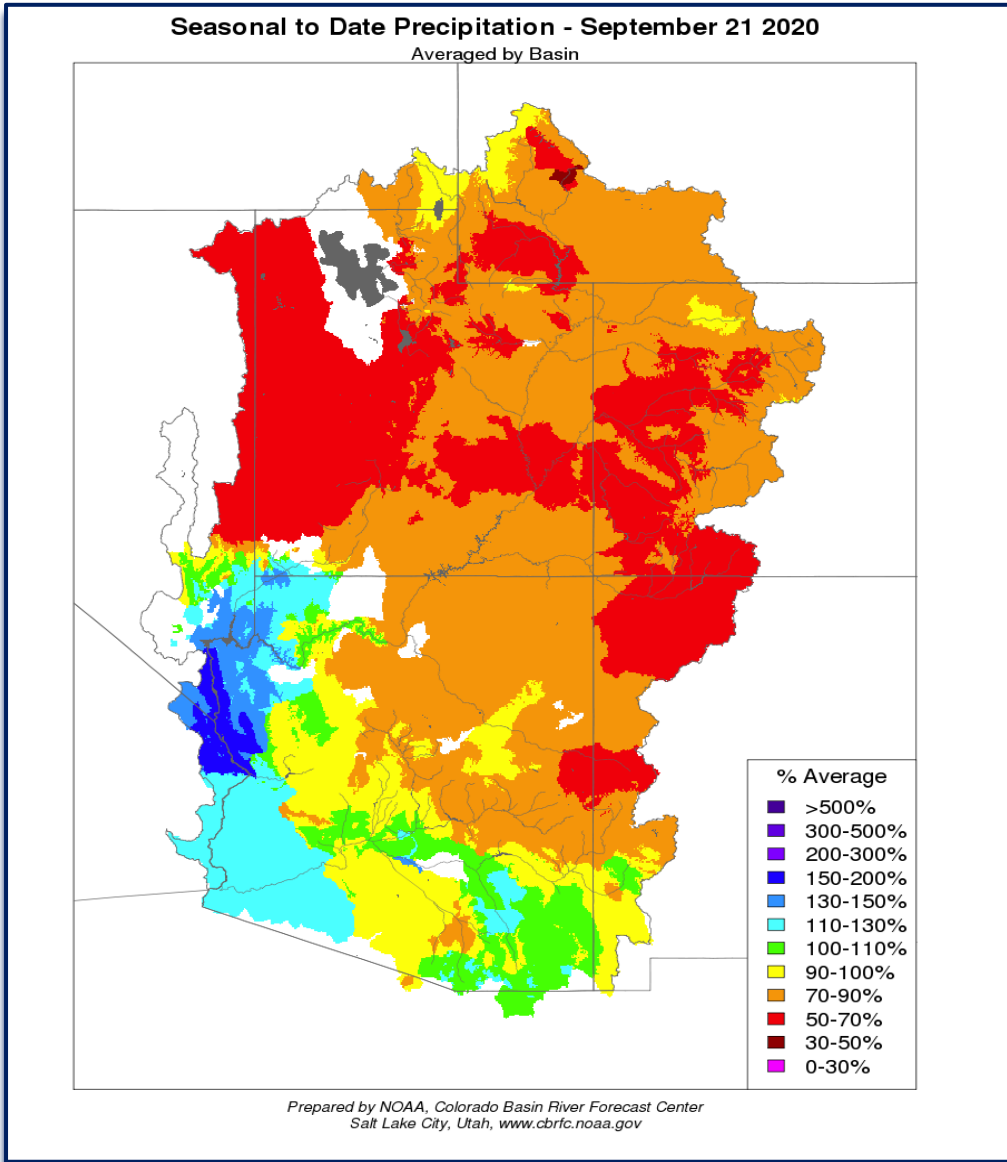
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Glen Canyon Monthly Operations Call

Basin Hydrology and Operations

September 23, 2020

Seasonal Precipitation and WY2021 Forecast



Water Year 2021 Forecasted Unregulated Inflow as of September 1, 2020

Reservoir	Unregulated Inflow (kaf)	Percent of Average ¹
Fontenelle	945	87
Flaming Gorge	1,230	85
Blue Mesa	805	84
Navajo	785	73
Powell	8,500	78

¹ Percent of average based on the period of record from 1981-2010.

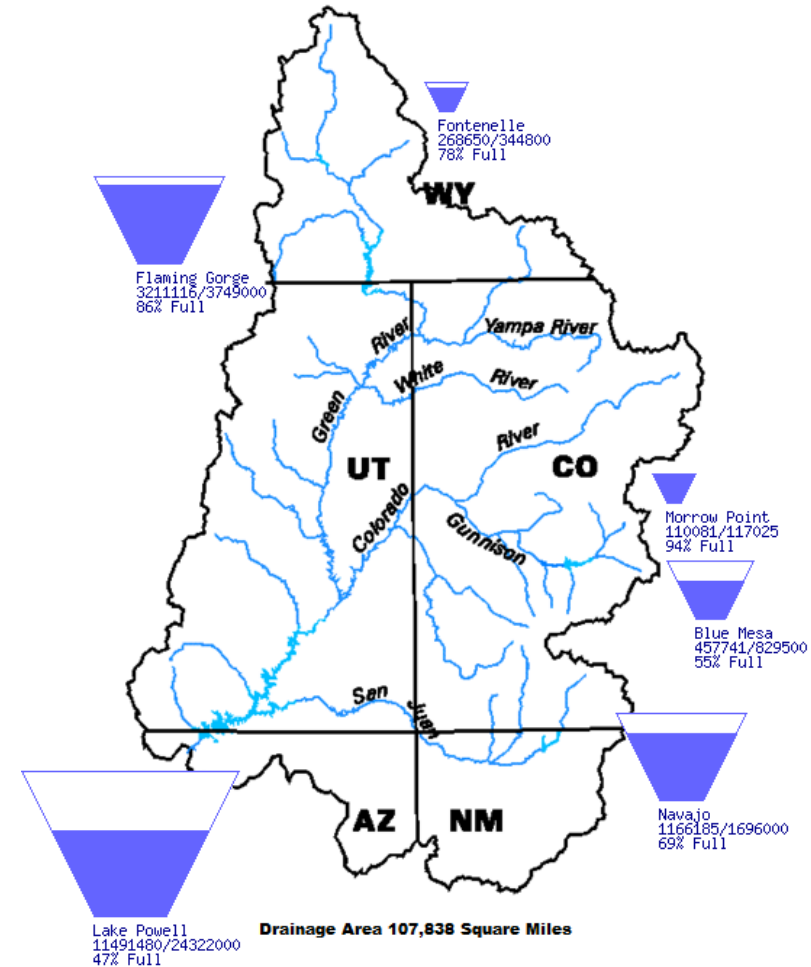


Upper Basin Storage (as of September 20, 2020)

Reservoir	Percent Full	Storage (maf)	Elevation (feet)
Lake Powell	47	11.49	3,597.27
Fontenelle	78	0.269	6,495.99
Flaming Gorge	86	3.21	6,026.37
Blue Mesa	55	0.458	7,473.21
Navajo	69	1.17	6,044.84

Data Current as of:
09/20/2020

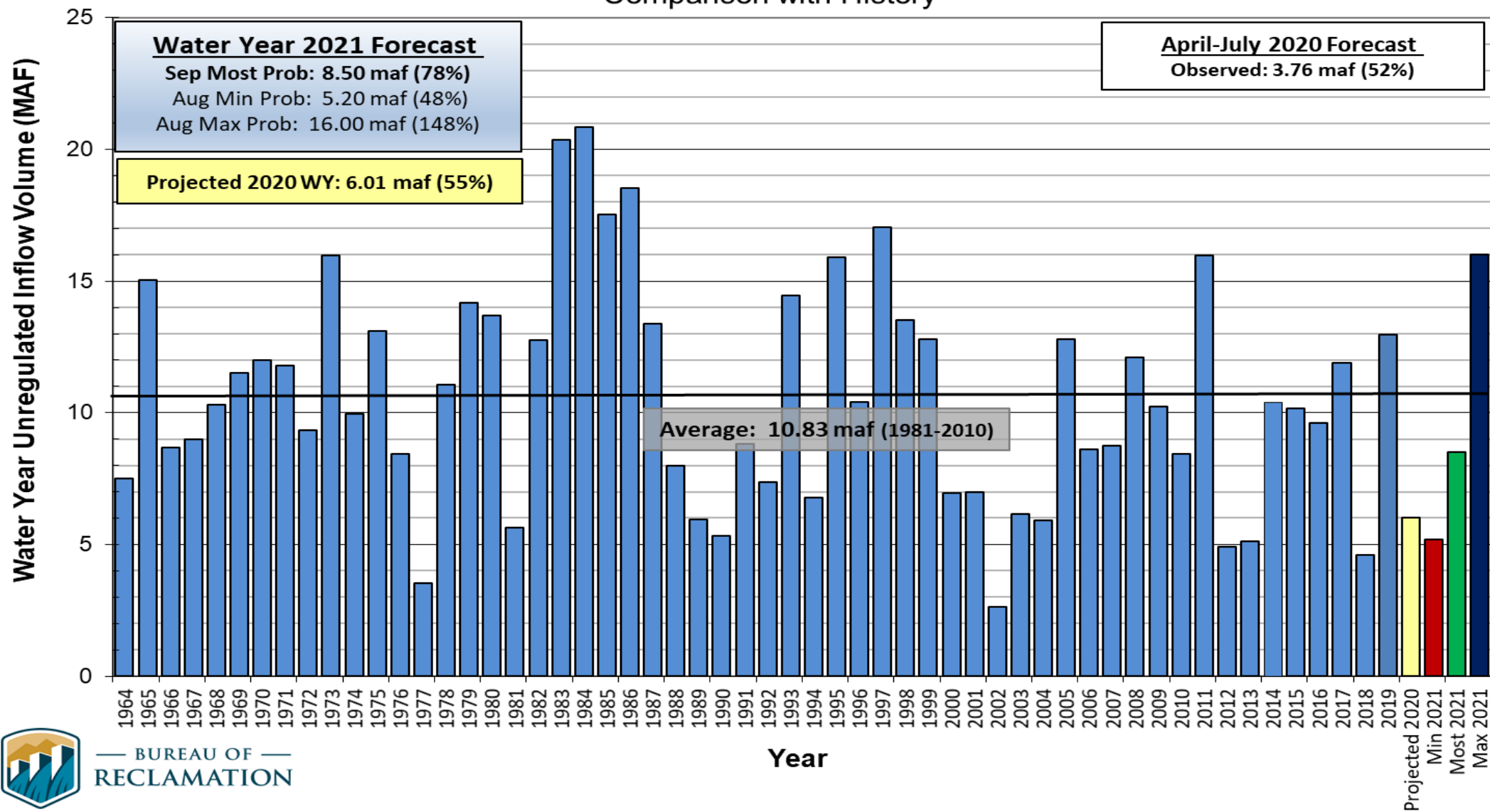
Upper Colorado River Drainage Basin



Lake Powell Unregulated Inflow

Water Year 2021 Forecast (issued September 1)

Comparison with History



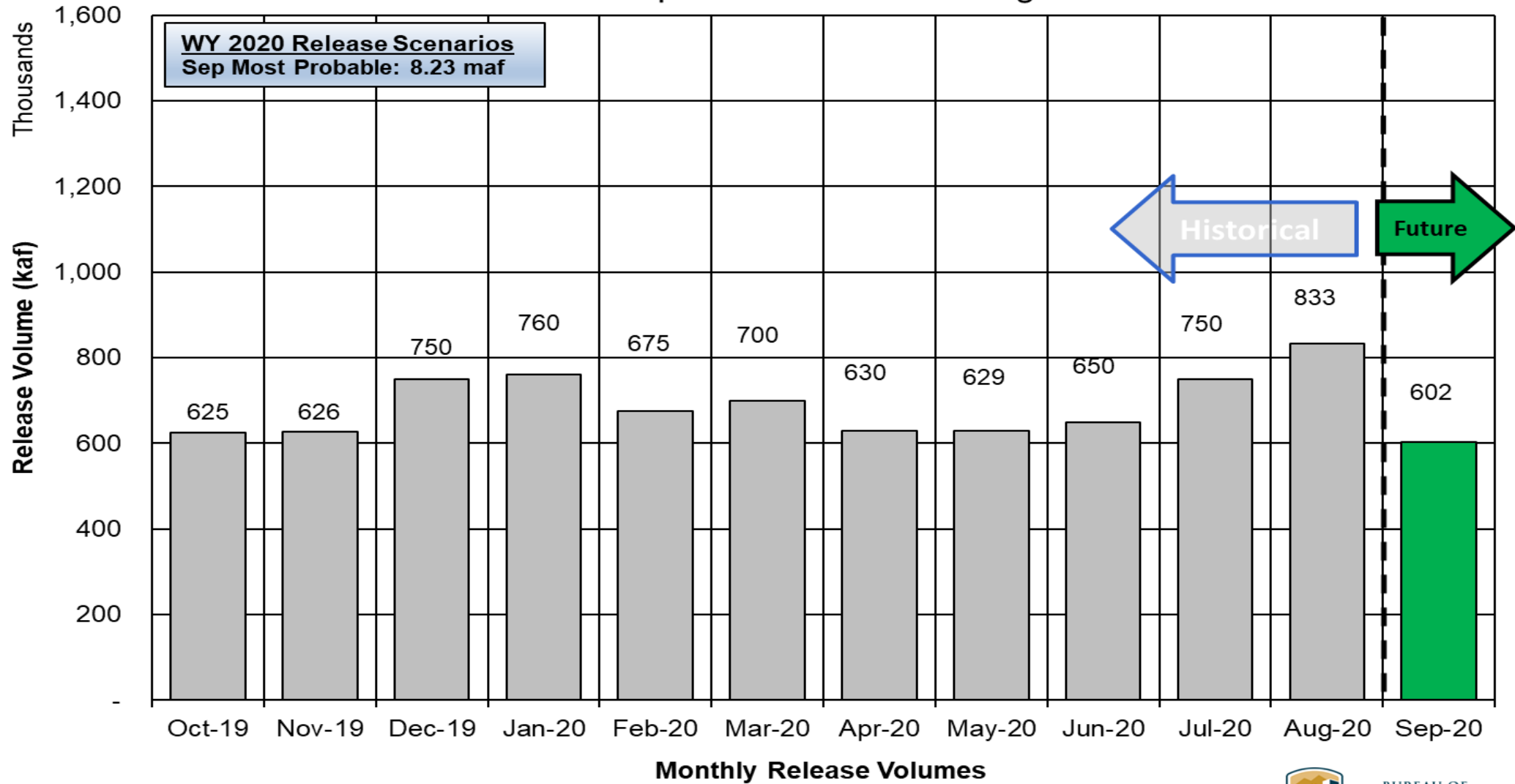
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Potential Lake Powell Monthly Release Volume Distribution

Release Scenarios for Water Year 2020

Based on September 2020 Modeling

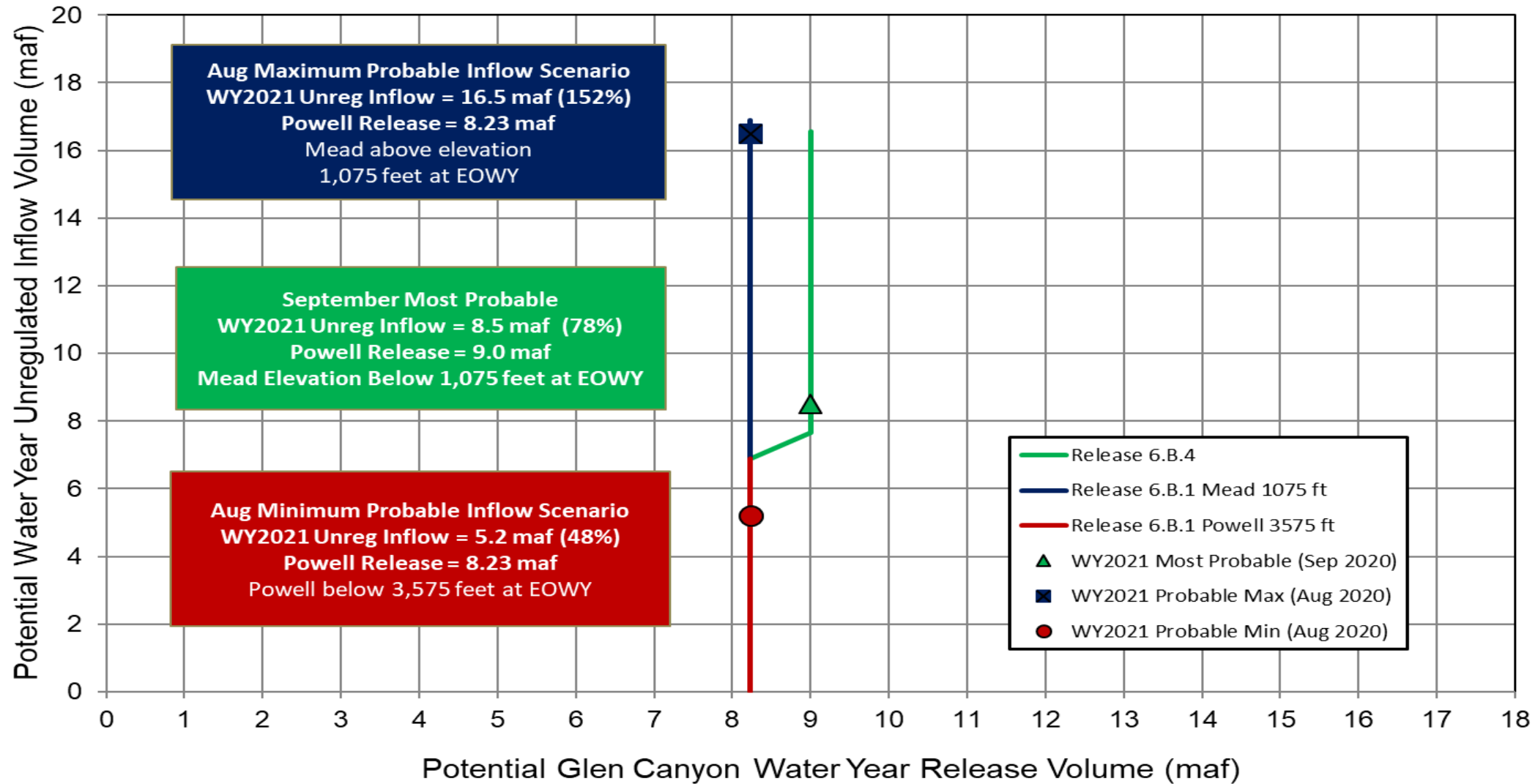


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Lake Powell Release Scenarios under Section 6.B

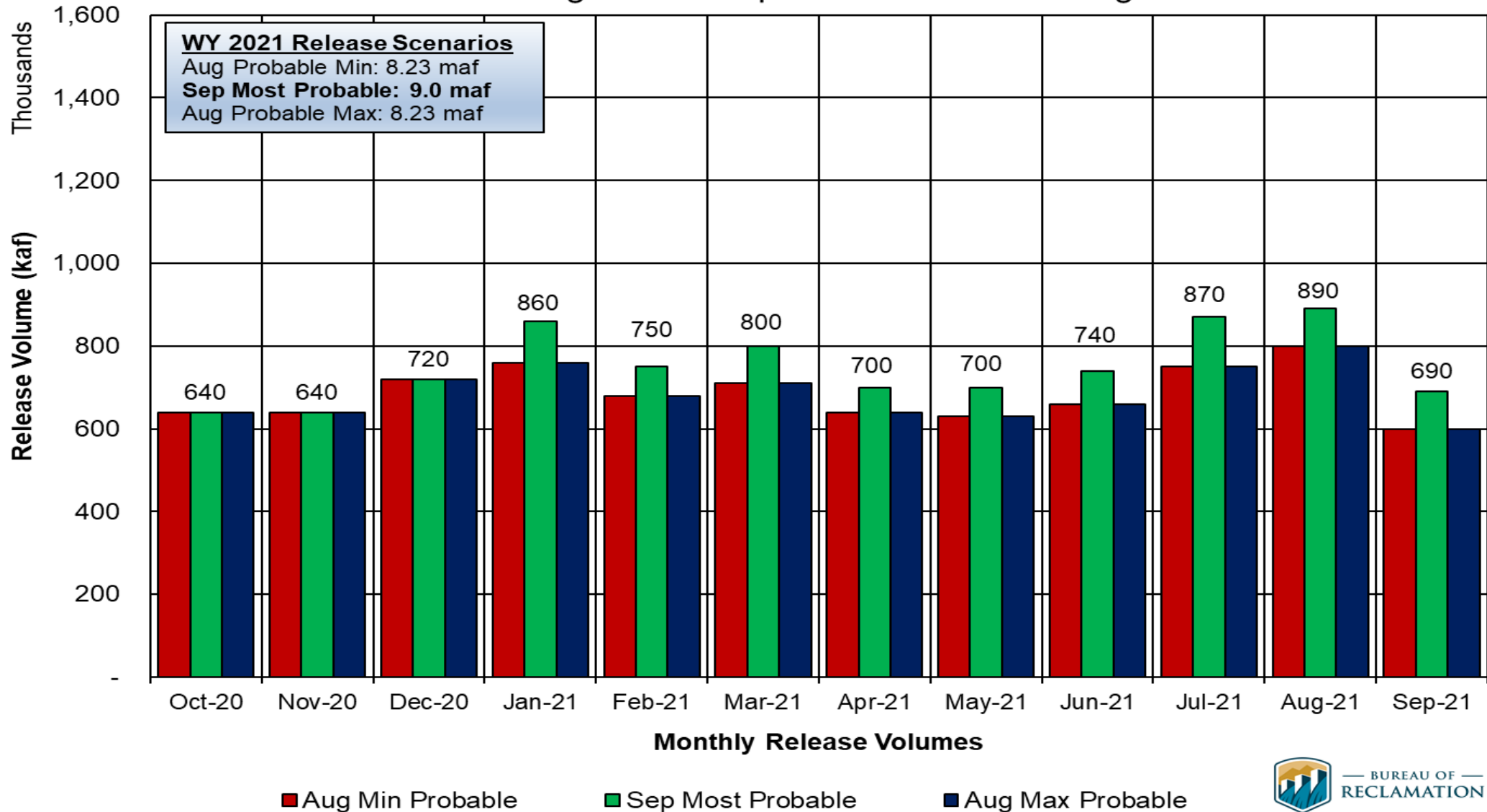
Water Year 2021 Release Volume as a Function of Upper Elevation Balancing Tier based on August and September 2020 24-Month Study Conditions



Potential Lake Powell Monthly Release Volume Distribution

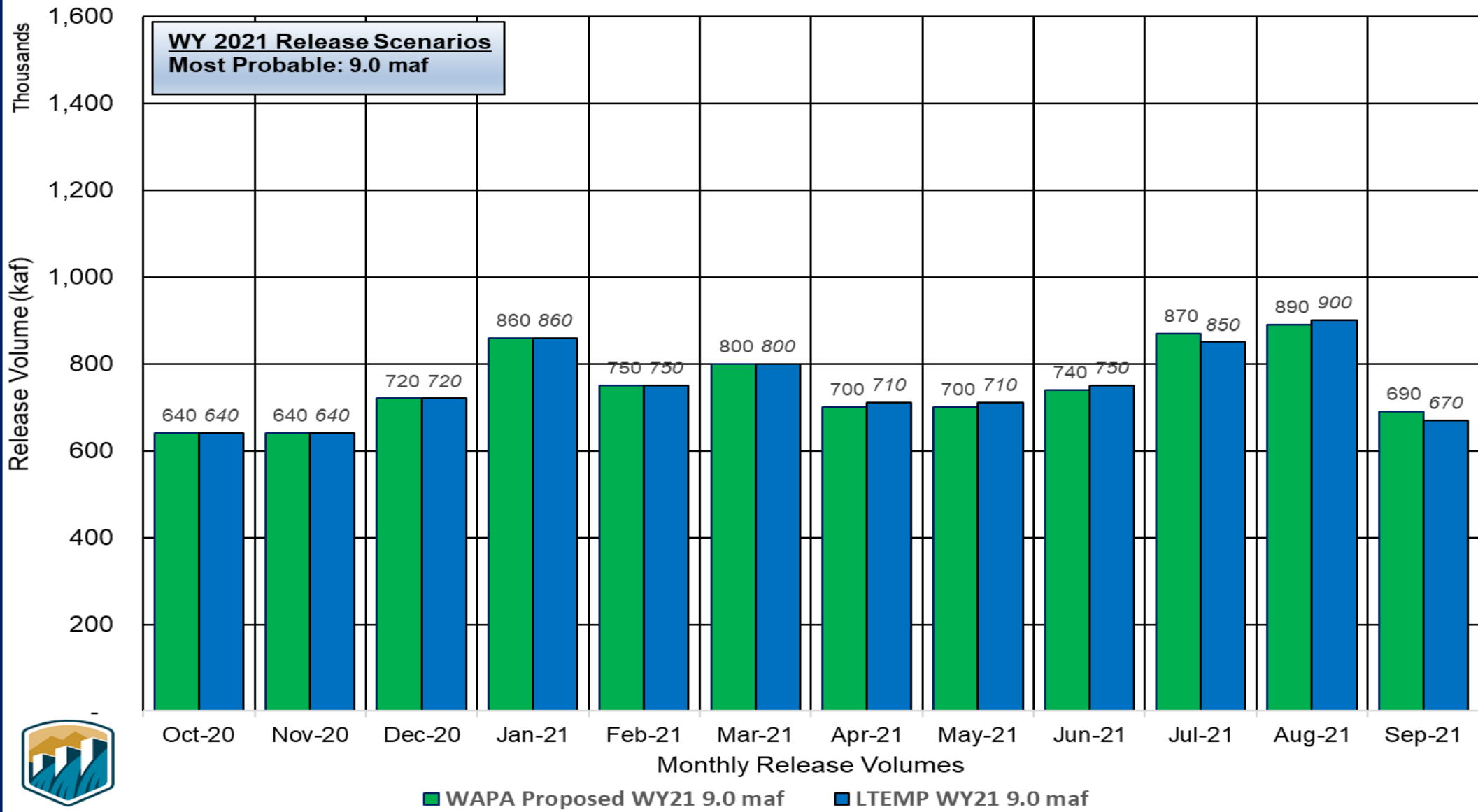
Release Scenarios for Water Year 2021

Based on August and September 2020 Modeling



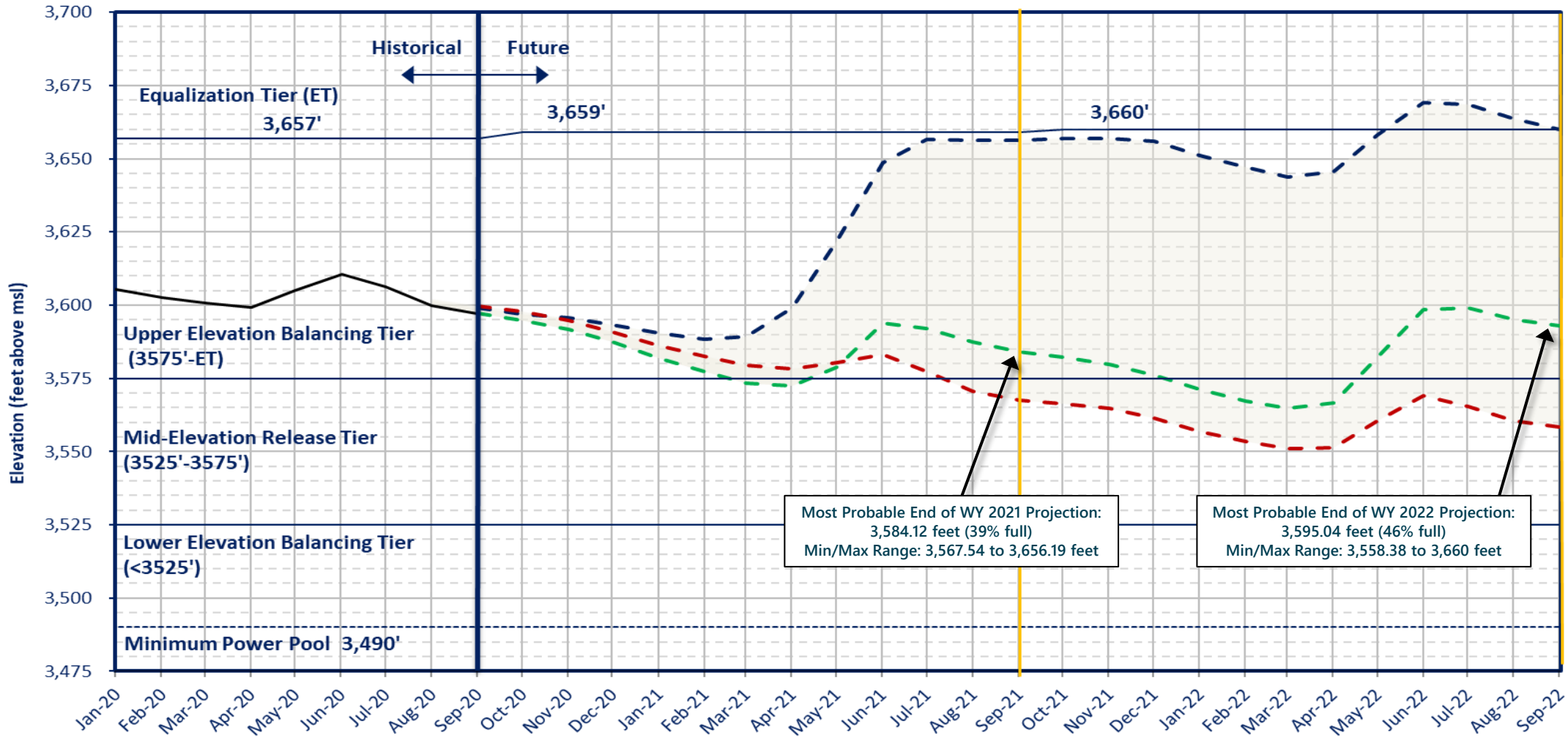
Lake Powell Monthly Release Volume Distribution

WAPA Proposed 9.0 maf Pattern for Water Year 2021



Lake Powell End of Month Elevations

Historic and Projected based on August and September 2020 24-Month Study Inflow Scenarios



- Sep 2020 Most Probable - Lake Powell release of 8.23 maf in WY2020, 9.0 maf in WY2021 and 9.0 maf in WY2022
- Aug 2020 Max Probable - Lake Powell release of 8.23 maf in WY2020, 8.23 maf in WY2021 and 12.55 maf in WY2022
- Aug 2020 Min Probable - Lake Powell release of 8.23 maf in WY2020, 8.23 maf in WY2021 and 7.48 maf in WY2022
- Historical Elevations

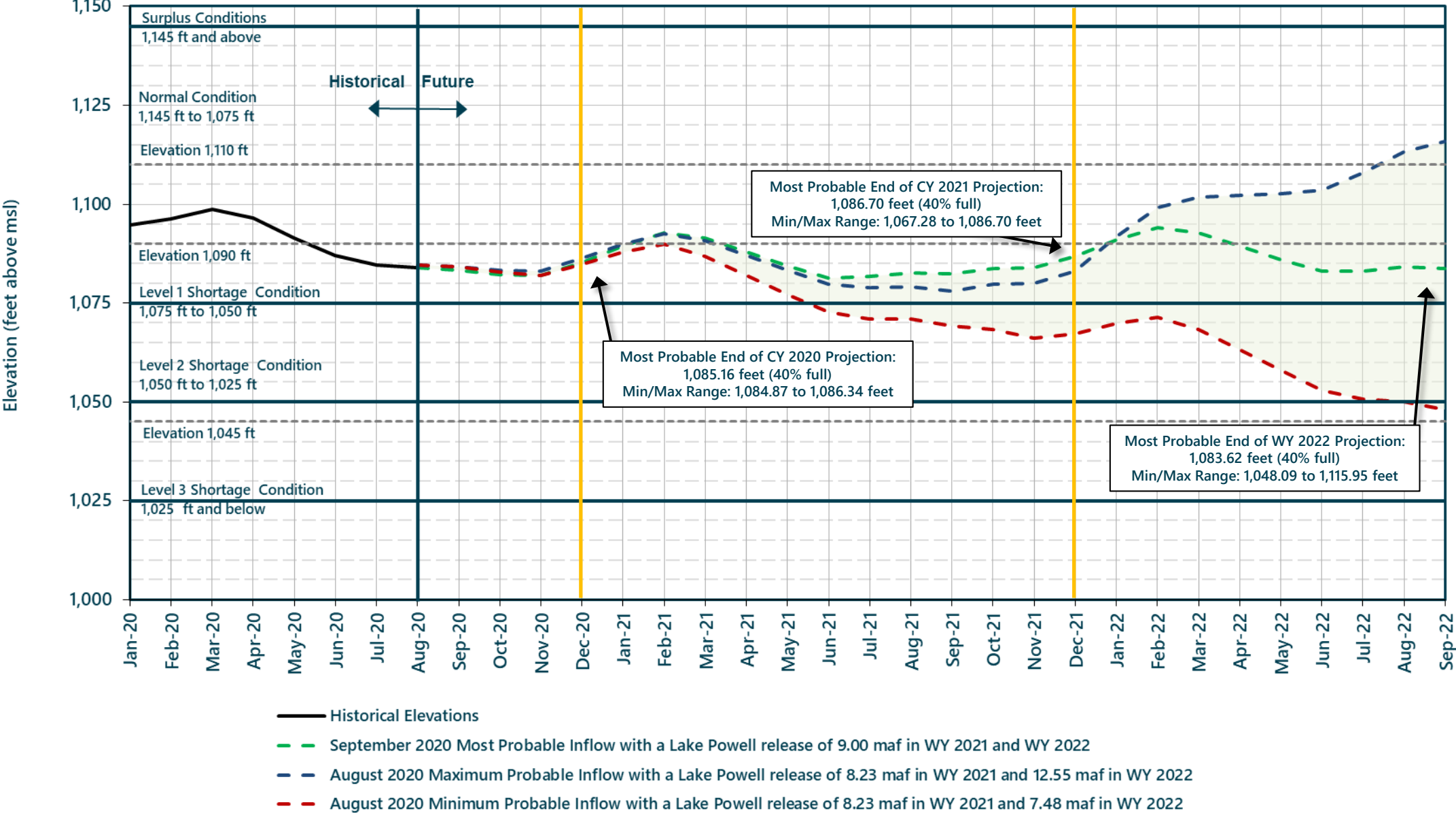


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Lake Mead End of Month Elevations

Projections from the August and September 2020 24-Month Study Inflow Scenarios



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

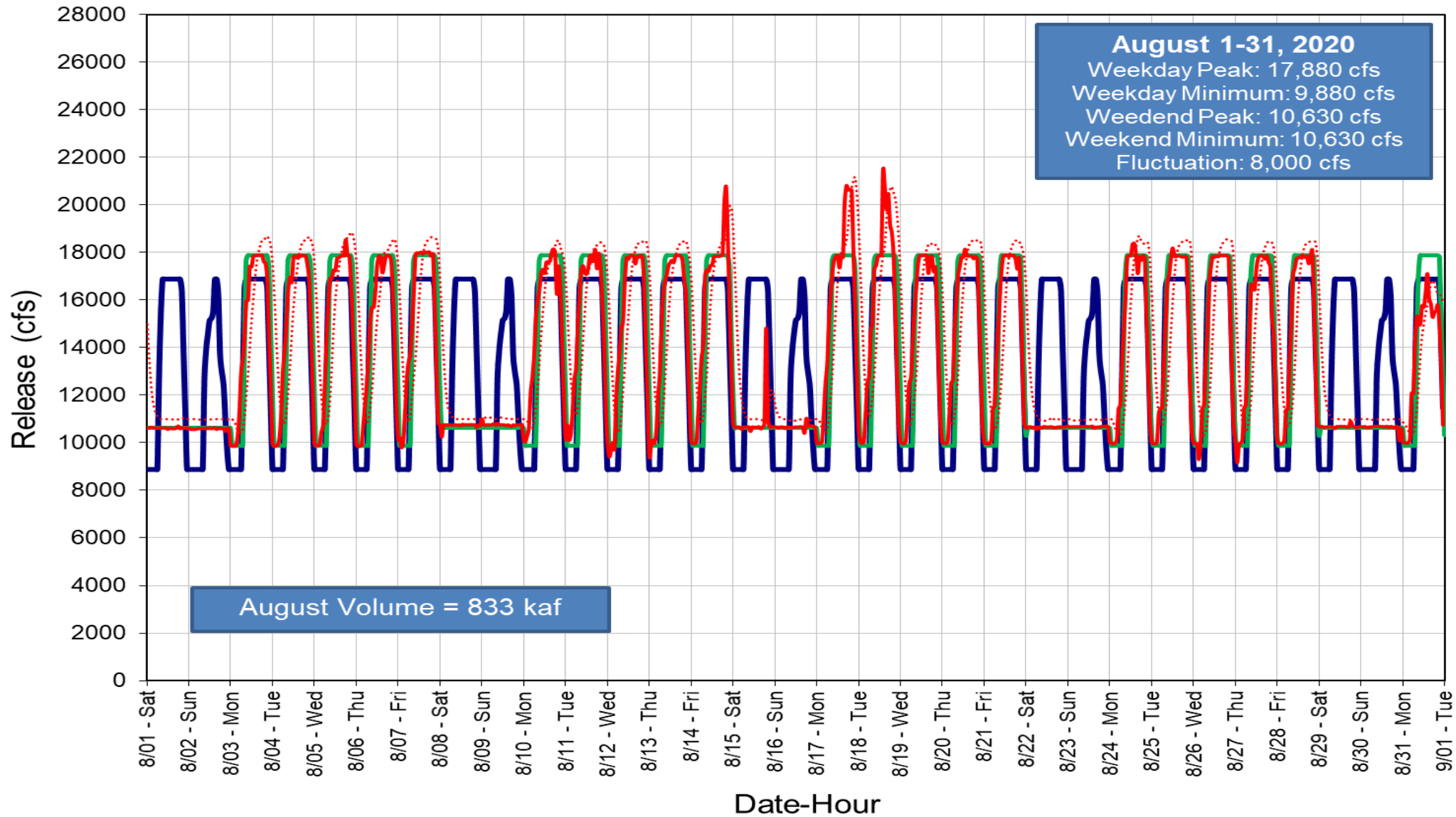
Unit Number	Oct 2020	Nov 2020	Dec 2020	Jan 2021	Feb 2021	Mar 2021	Apr 2021	May 2021	Jun 2021	Jul 2021	Aug 2021	Sep 2021
1	[Outage]											[Outage]
2	[Outage]											[Outage]
3	[Outage]							[Outage]				
4		[Outage]						[Outage]				
5	[Outage]										[Outage]	
6											[Outage]	
7				[Outage]								
8				[Outage]								
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)		

SEP MOST³
AUG MAX
8.23
9.0
8.23

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.



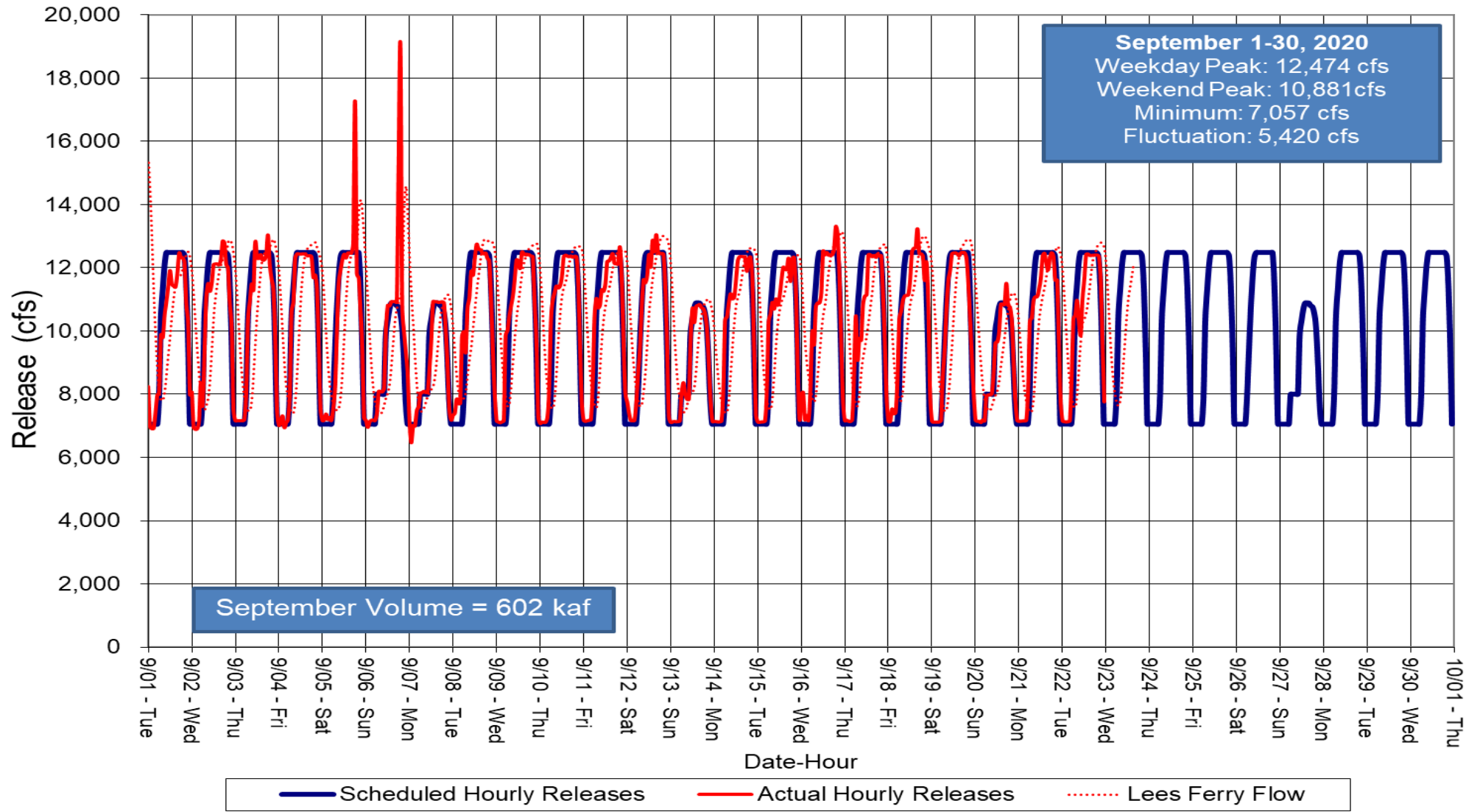
Glen Canyon Dam Hourly Release Pattern August 2020



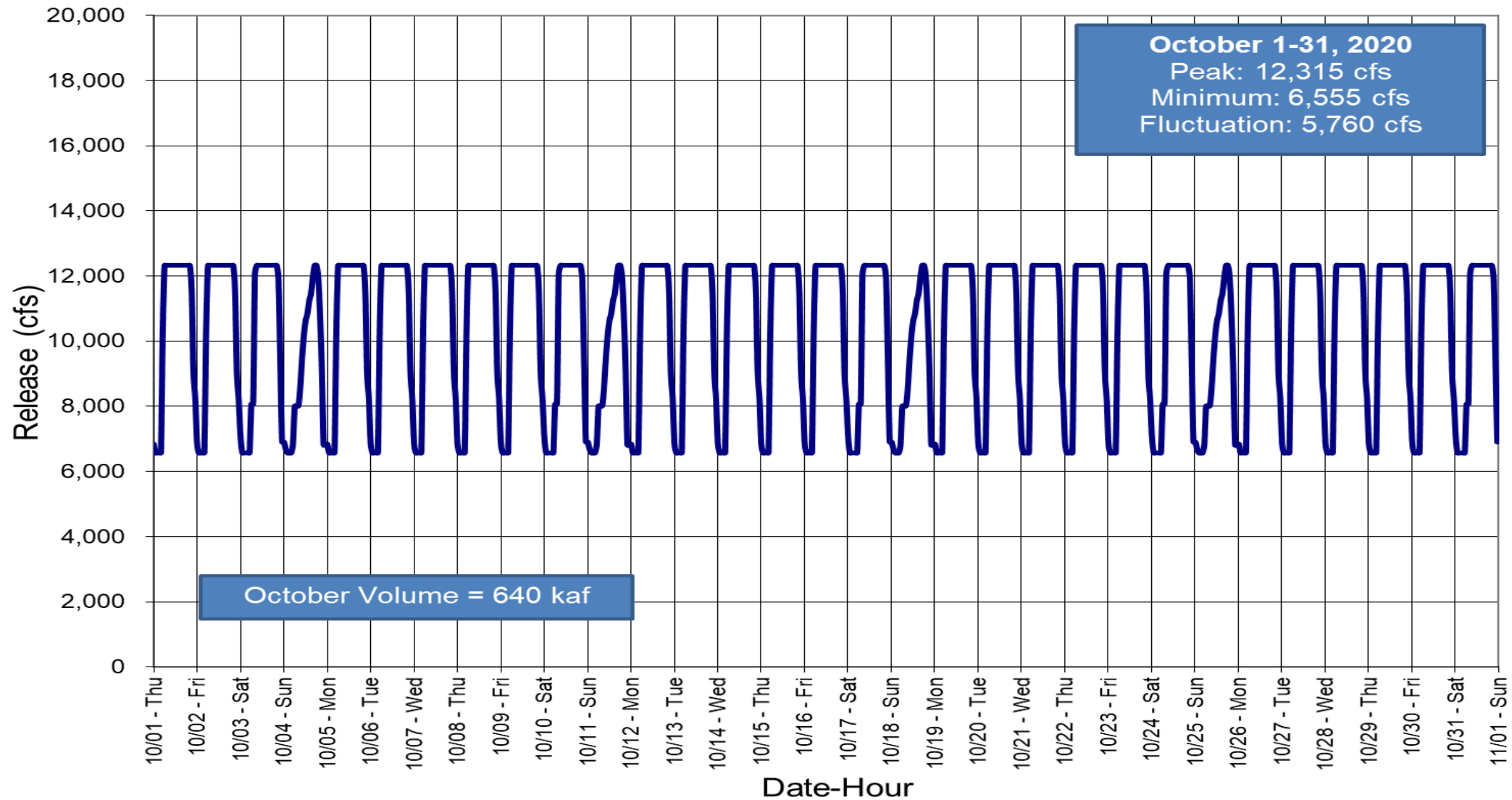
— Scheduled Hourly Releases
 — Macroinvertebrate Releases
 — Actual Hourly Releases
 ⋯ Lees Ferry Flow



Glen Canyon Dam Hourly Release Pattern September 2020



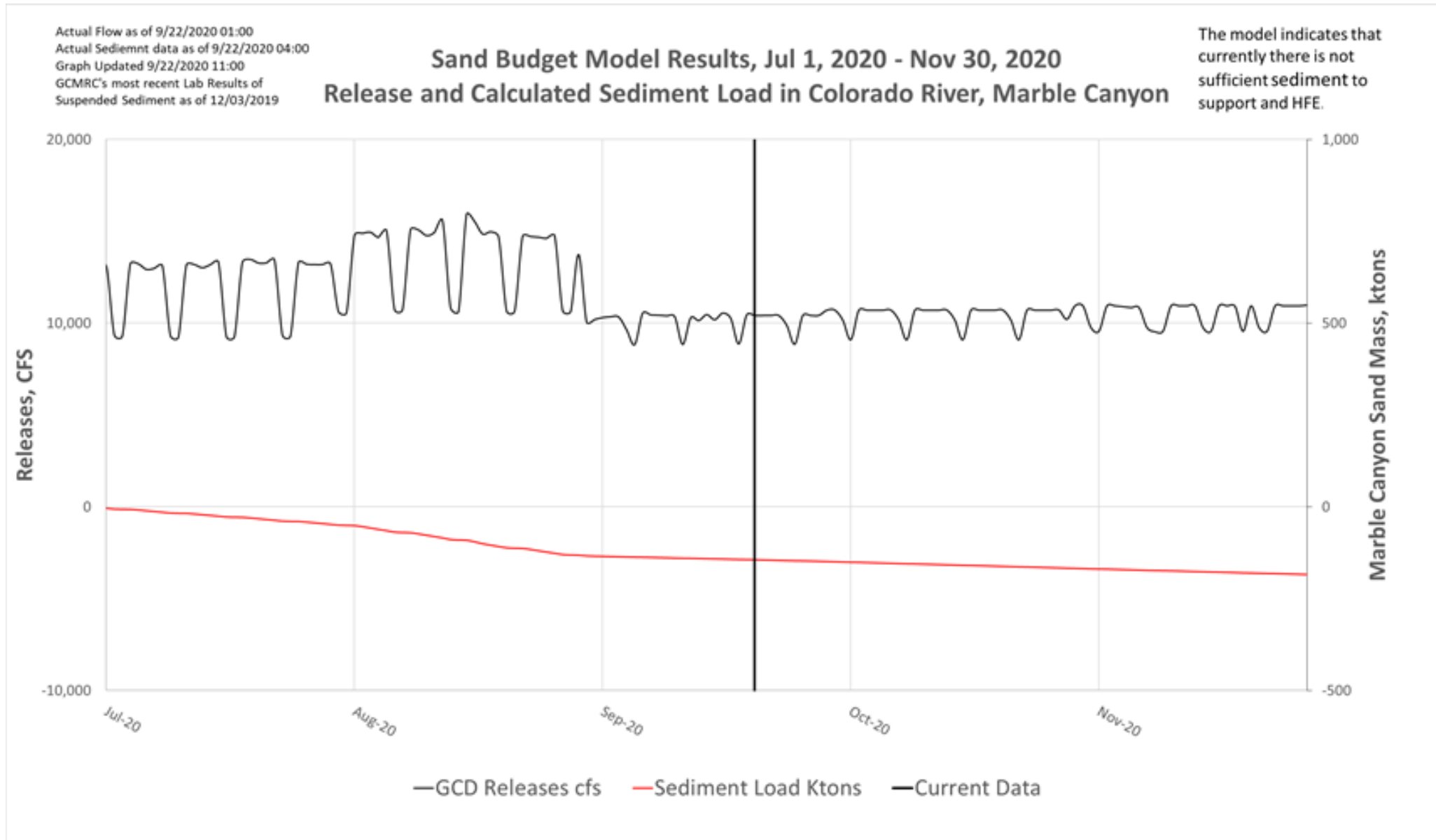
Glen Canyon Dam Hourly Release Pattern October 2020



— Scheduled Hourly Releases
 — Actual Hourly Releases
 ⋯ Lees Ferry Flow

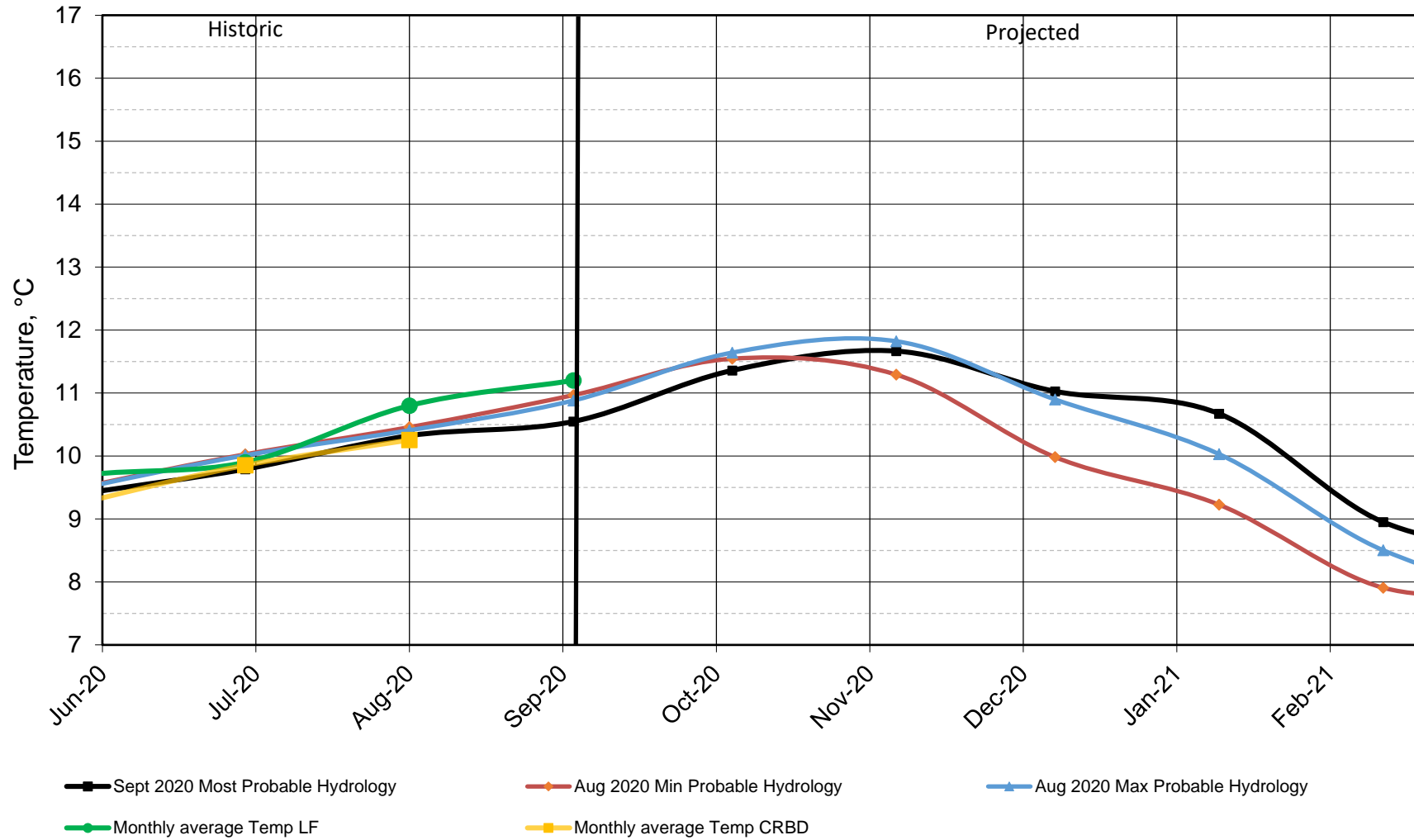


HFE Sand Budget Model Results



Lake Powell Release Temperature

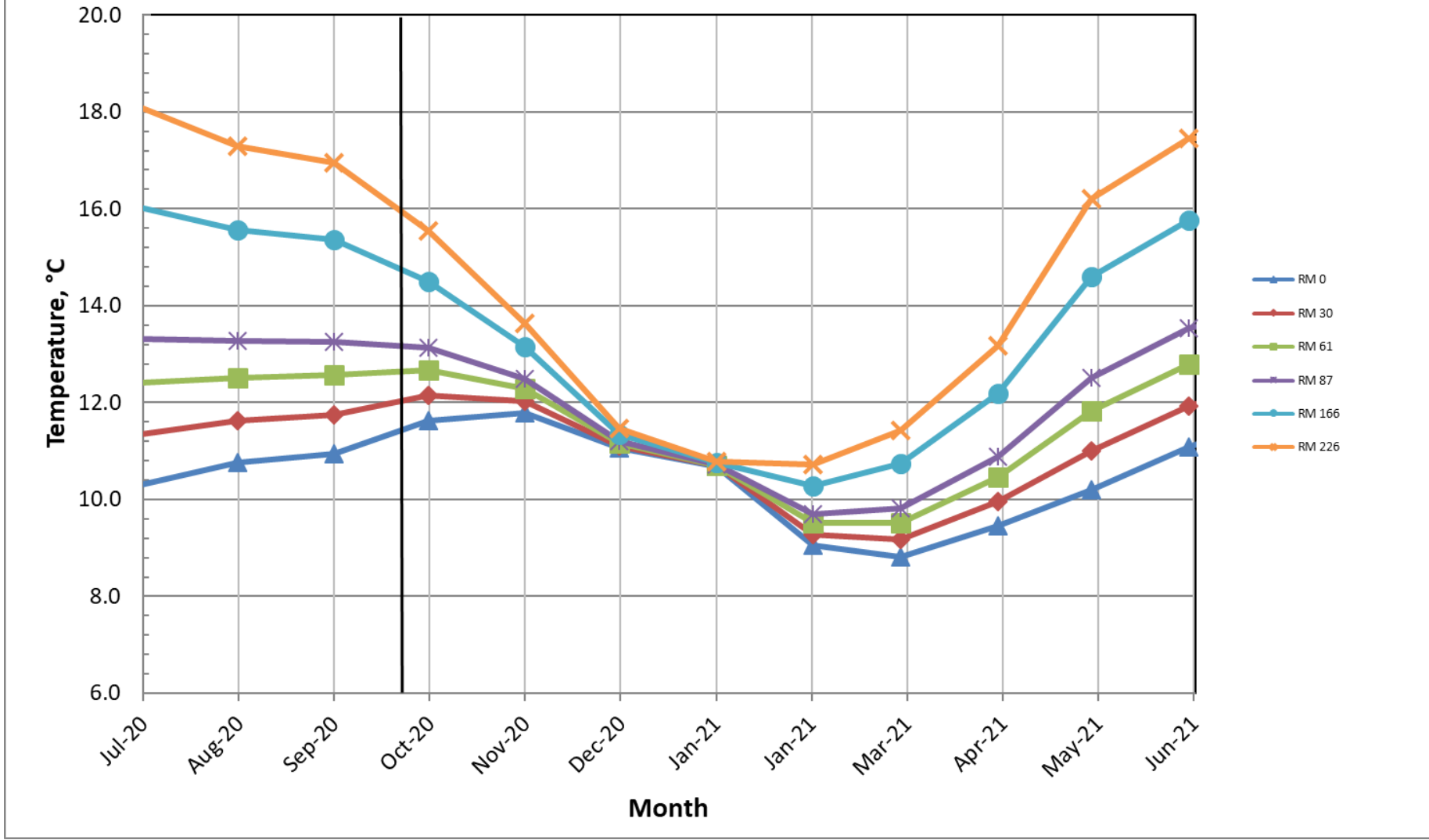
Projected Temperature based on September 2020 Forecast



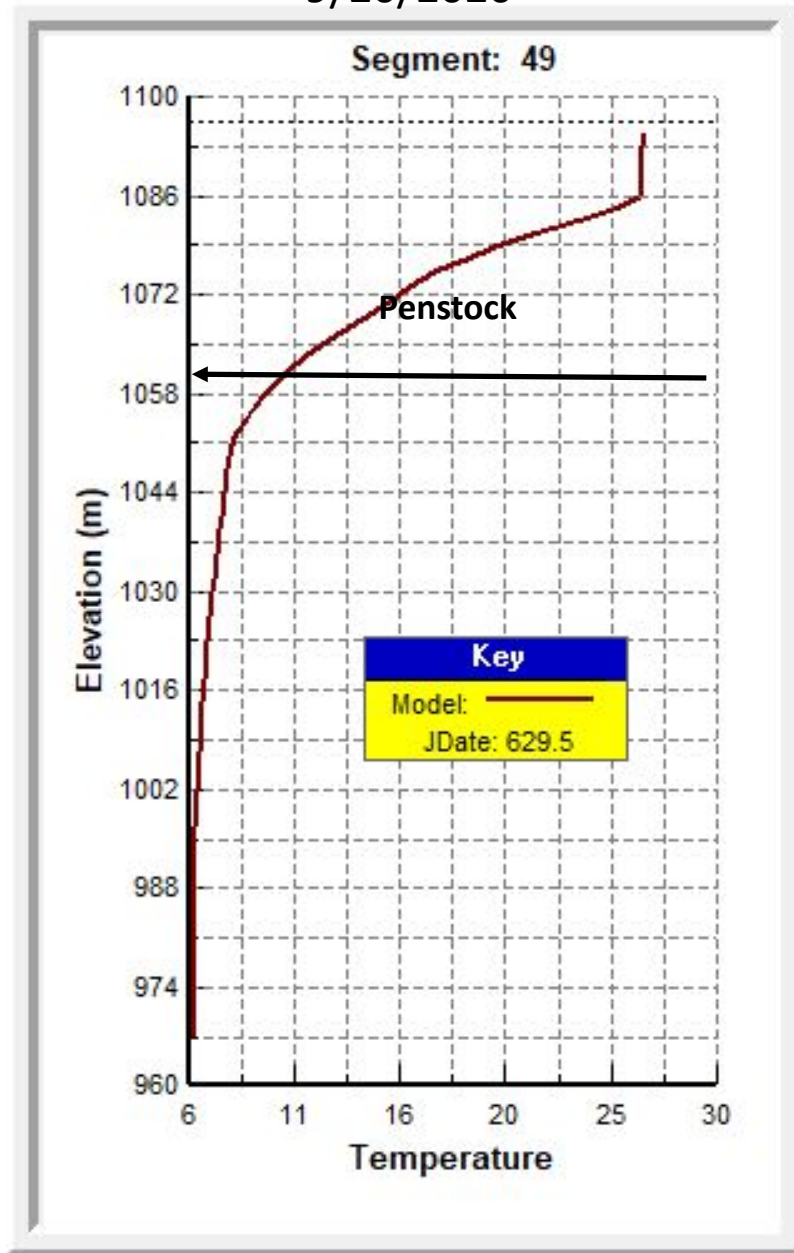
#Projection start date is based on initial conditions (Dec 2019)

Colorado River, Grand Canyon Water Temperatures

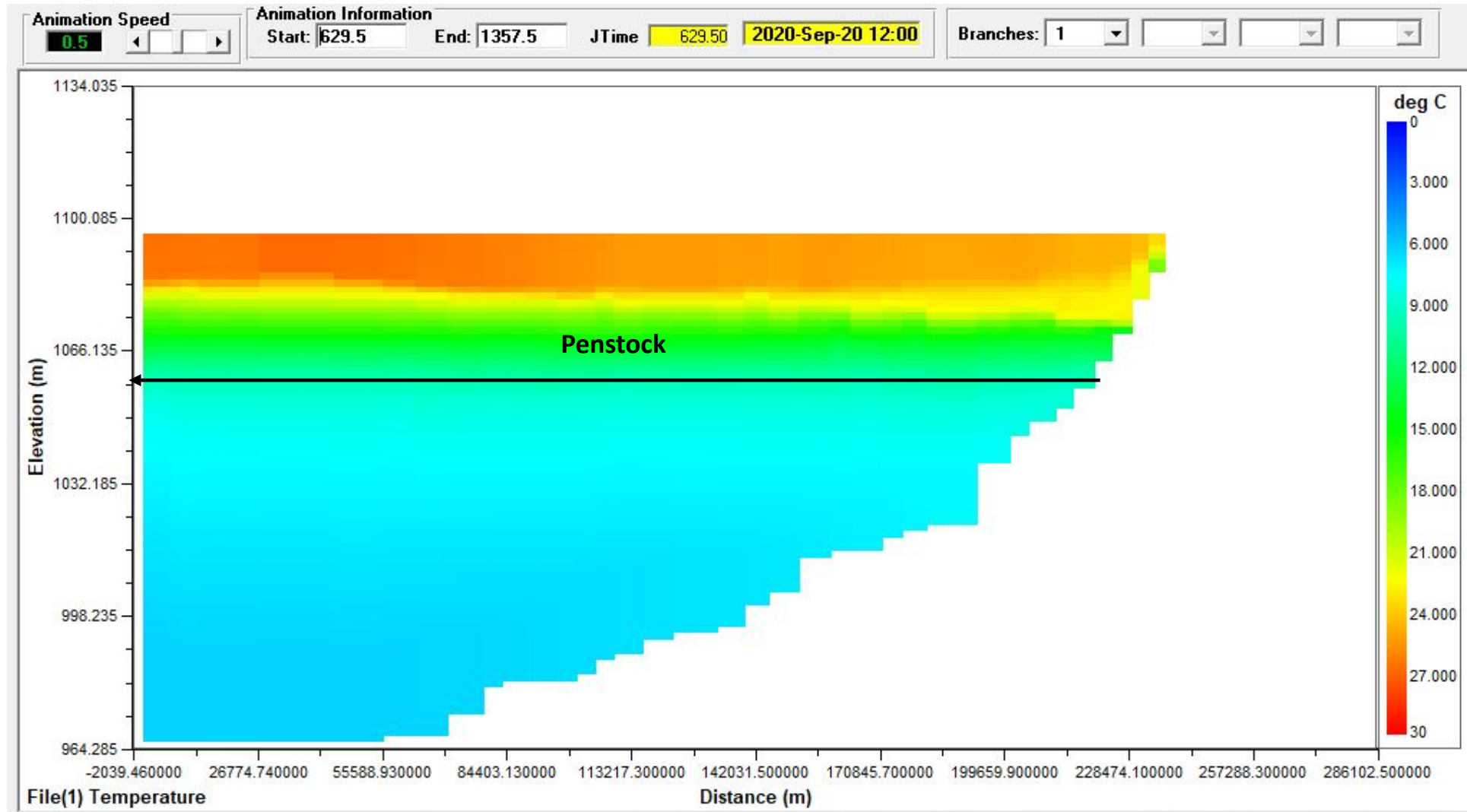
Projections based on September 2020, Most Probable Hydrology



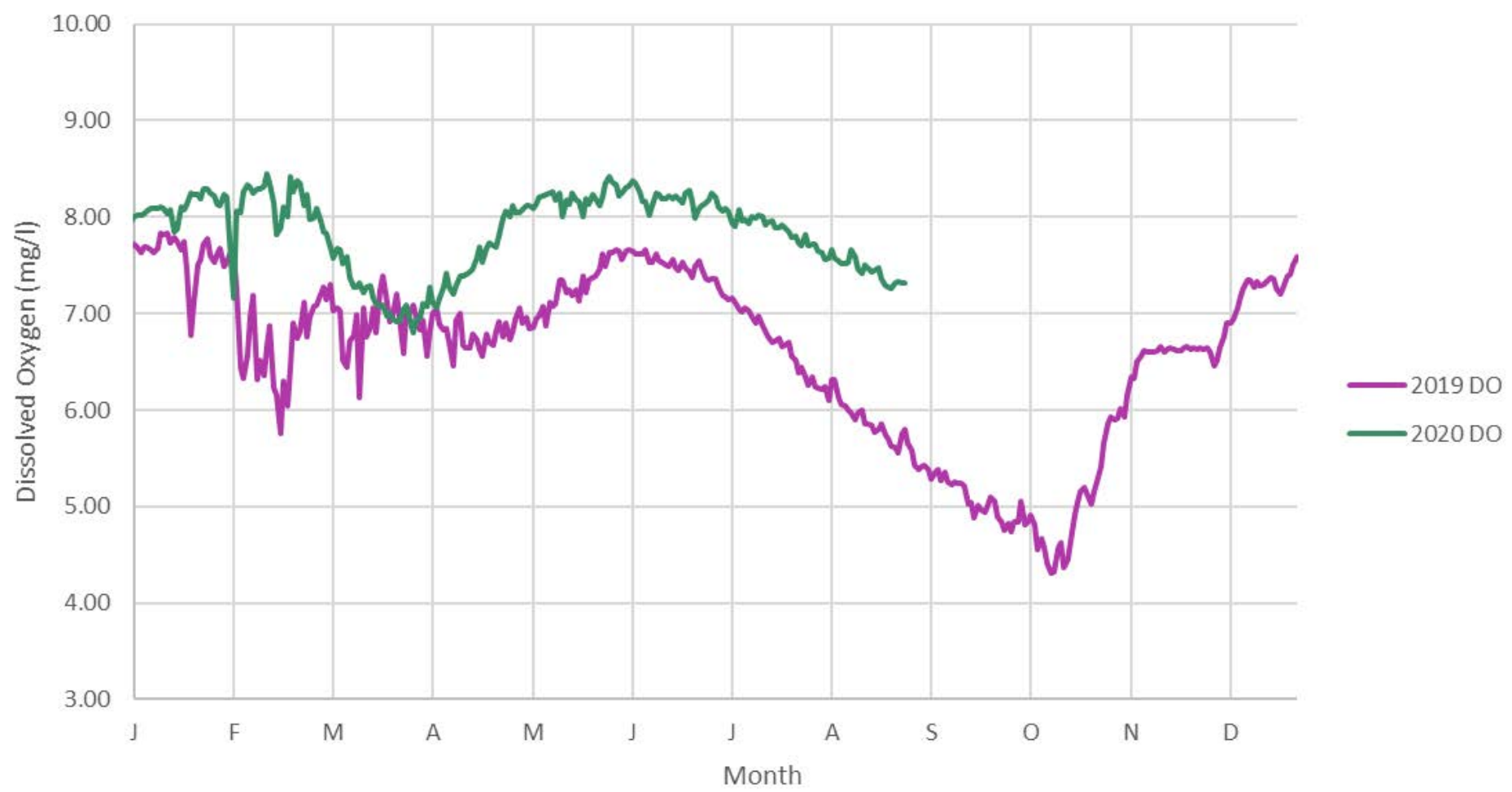
Temperature Profile of Lake Powell near GC Dam
9/20/2020



Cross Sectional Temperature Profile of Lake Powell 9/20/2020



DO Concentration at Glen Canyon Dam years 2019 and 2020



Questions/Discussion



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