BUREAU OF RECLAMATION

Glen Canyon Monthly Operations Call

Basin Hydrology and Operations

May 21, 2025

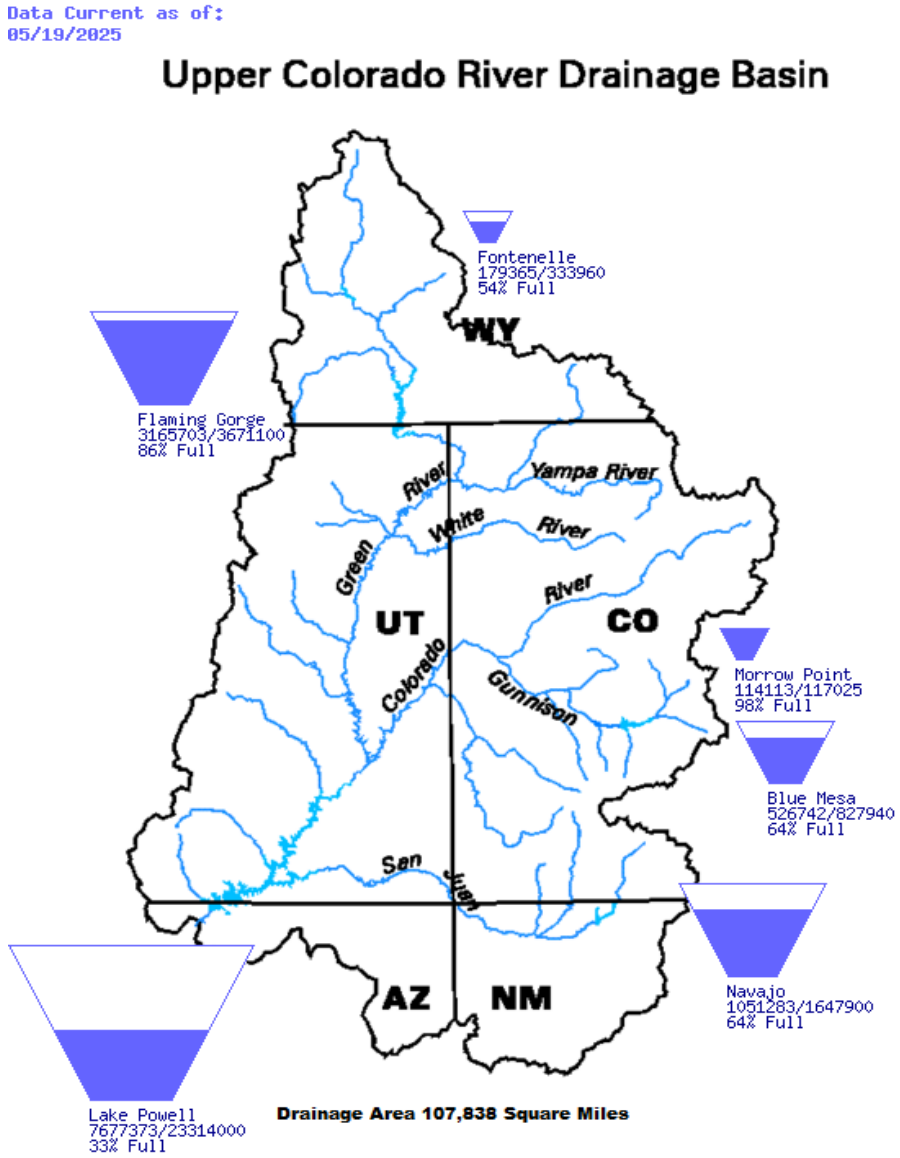
Background

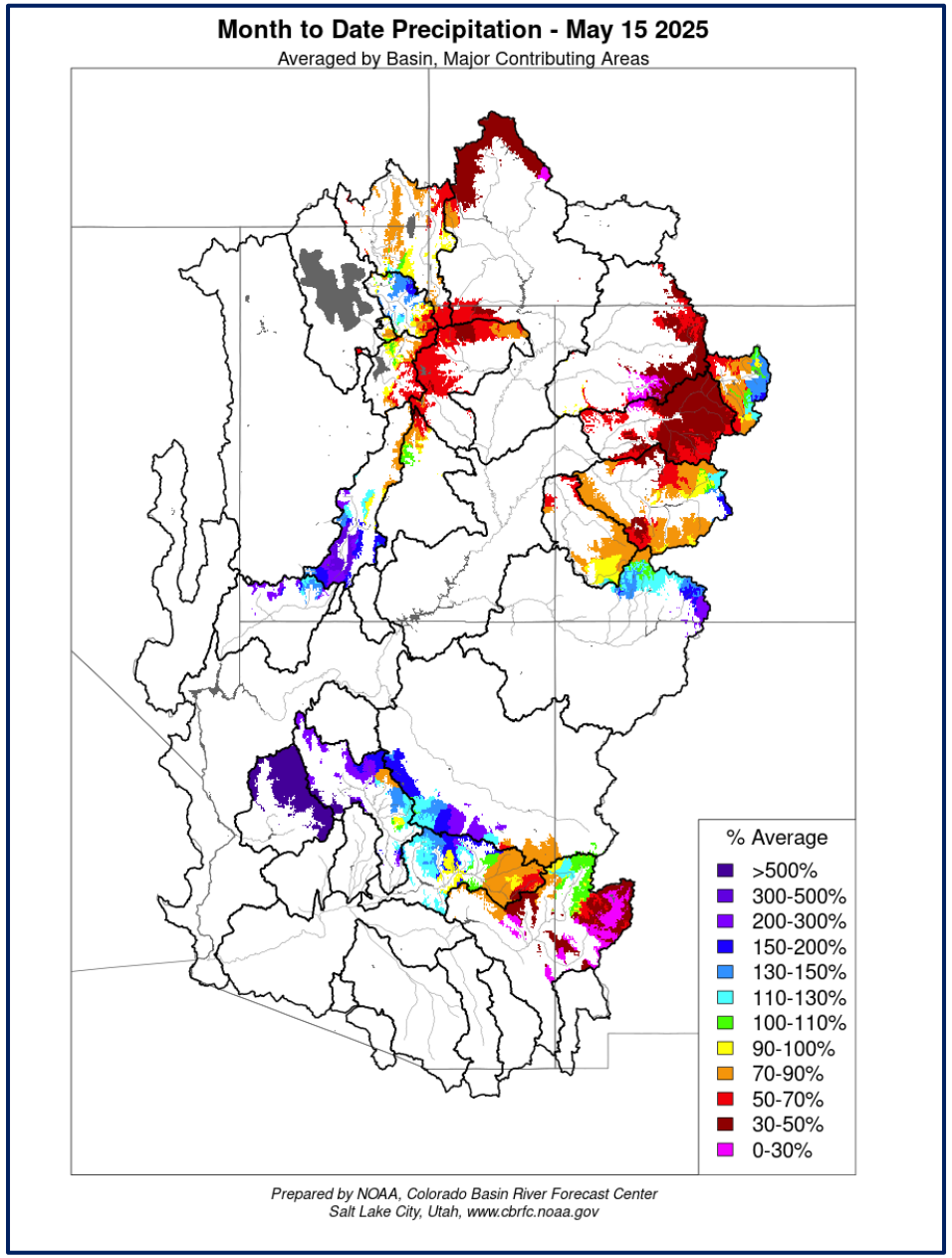
This briefing is being provided consistent with the provision in Attachment B - Section 1.1 of the LTEMP ROD which states:

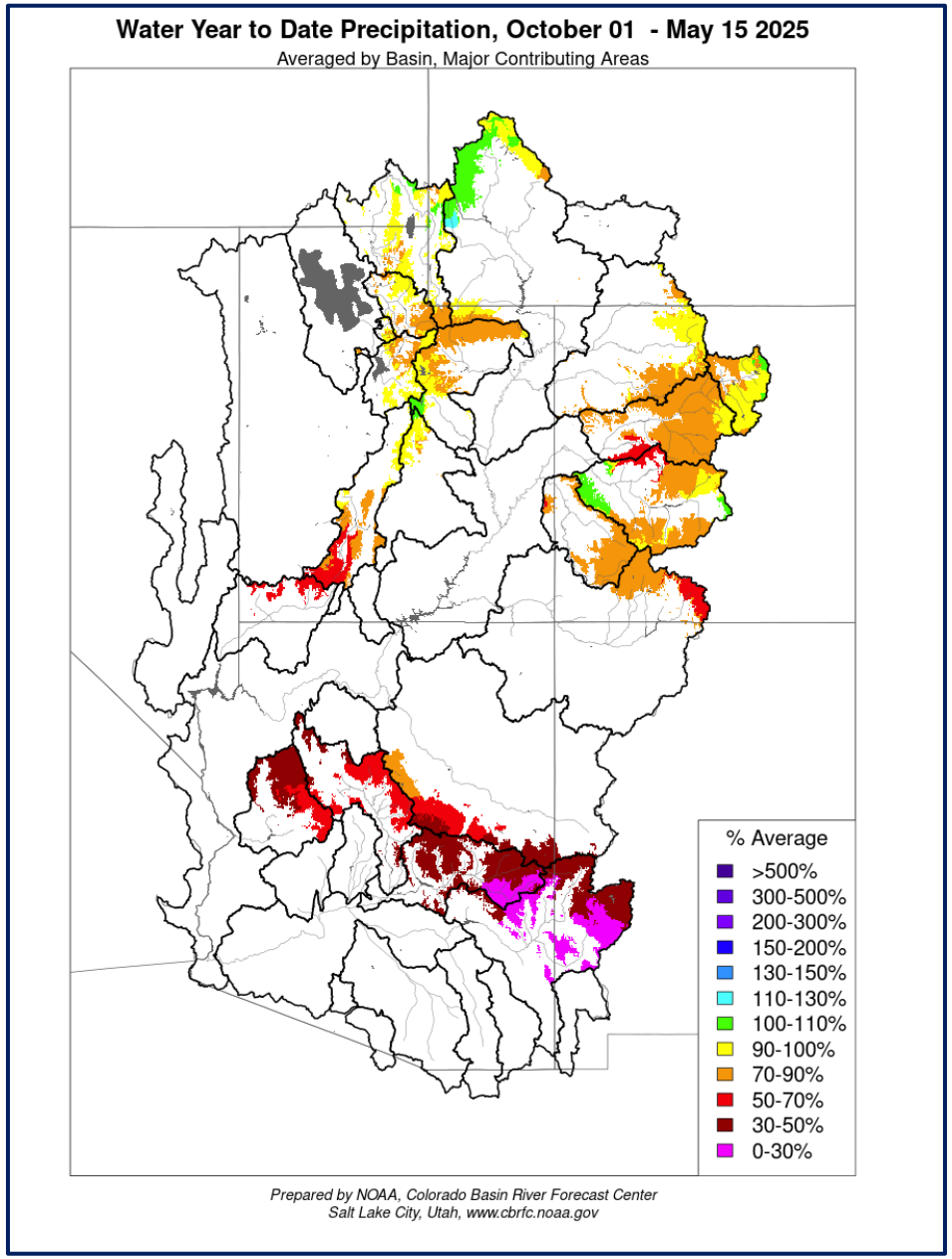
"Annually, Reclamation will develop a hydrograph based on the characteristics above. Reclamation will seek consensus on the annual hydrograph through monthly operational coordination calls with governmental entities, and regular meetings of the GCDAMP Technical Working Group (TWG) and AMWG. Reclamation will conduct monthly Glen Canyon Dam operational coordination meetings or calls with the DOI bureaus (USGS, NPS, FWS, and BIA), WAPA, and representatives from the Basin States and UCRC. The purpose of these meetings or calls is for the participants to share and seek information on Glen Canyon Dam operations. One liaison from each Basin State and from the UCRC may participate in the monthly operational coordination meetings or calls."

Upper Basin Storage (as of May 19, 2025)

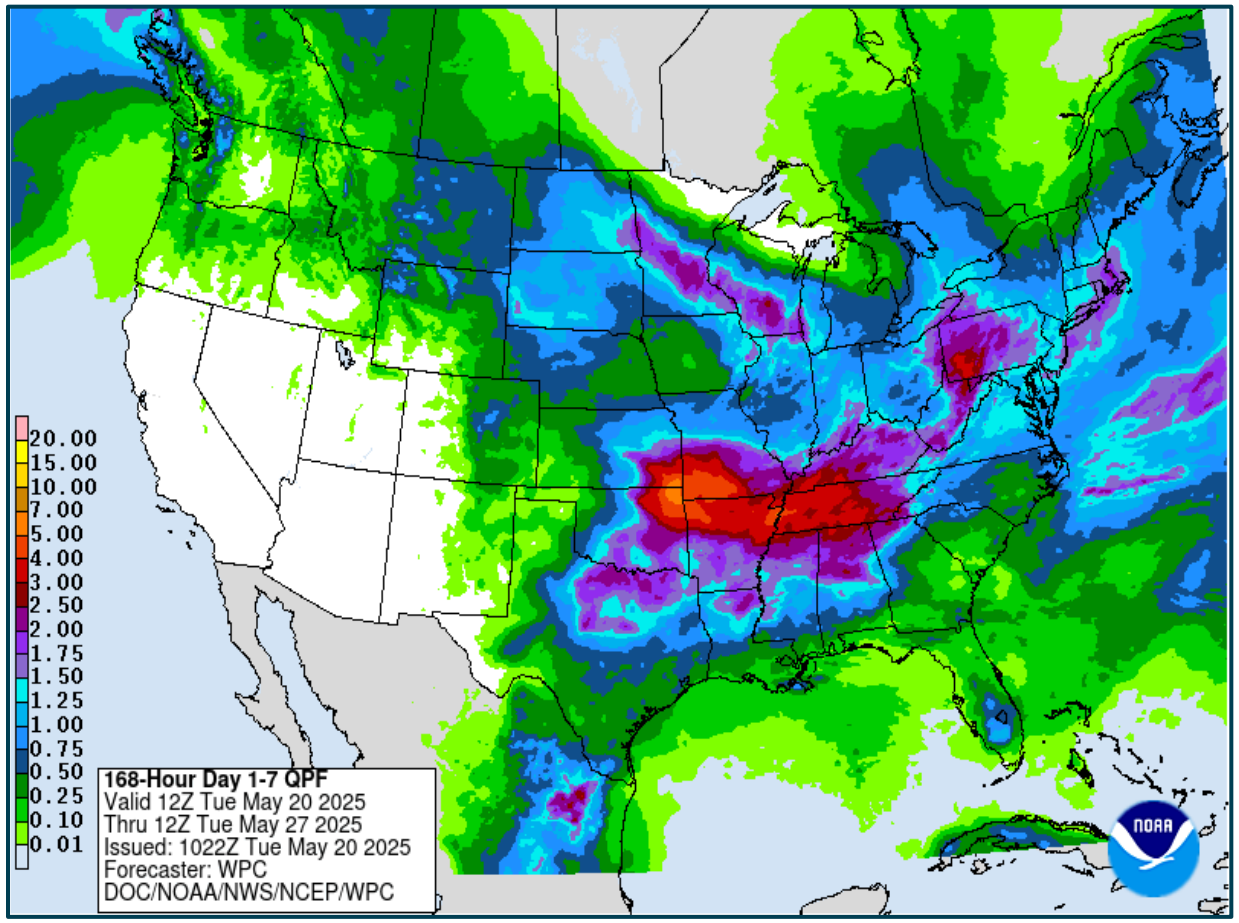
Reservoir	Percent Current Live Storage	Current Live Storage (maf)	Live Storage Capacity (maf)	Elevation (feet)
Fontenelle	54	0.18	0.33	6,483.75
Flaming Gorge	86	3.17	3.67	6,027.33
Blue Mesa	64	0.53	0.83	7,483.34
Navajo	64	1.05	1.65	6,039.11
Lake Powell	33	7.68	23.31	3,558.45
UC System Storage	43	12.73	29.93	
Total System Storage	40	23.38	58.48	

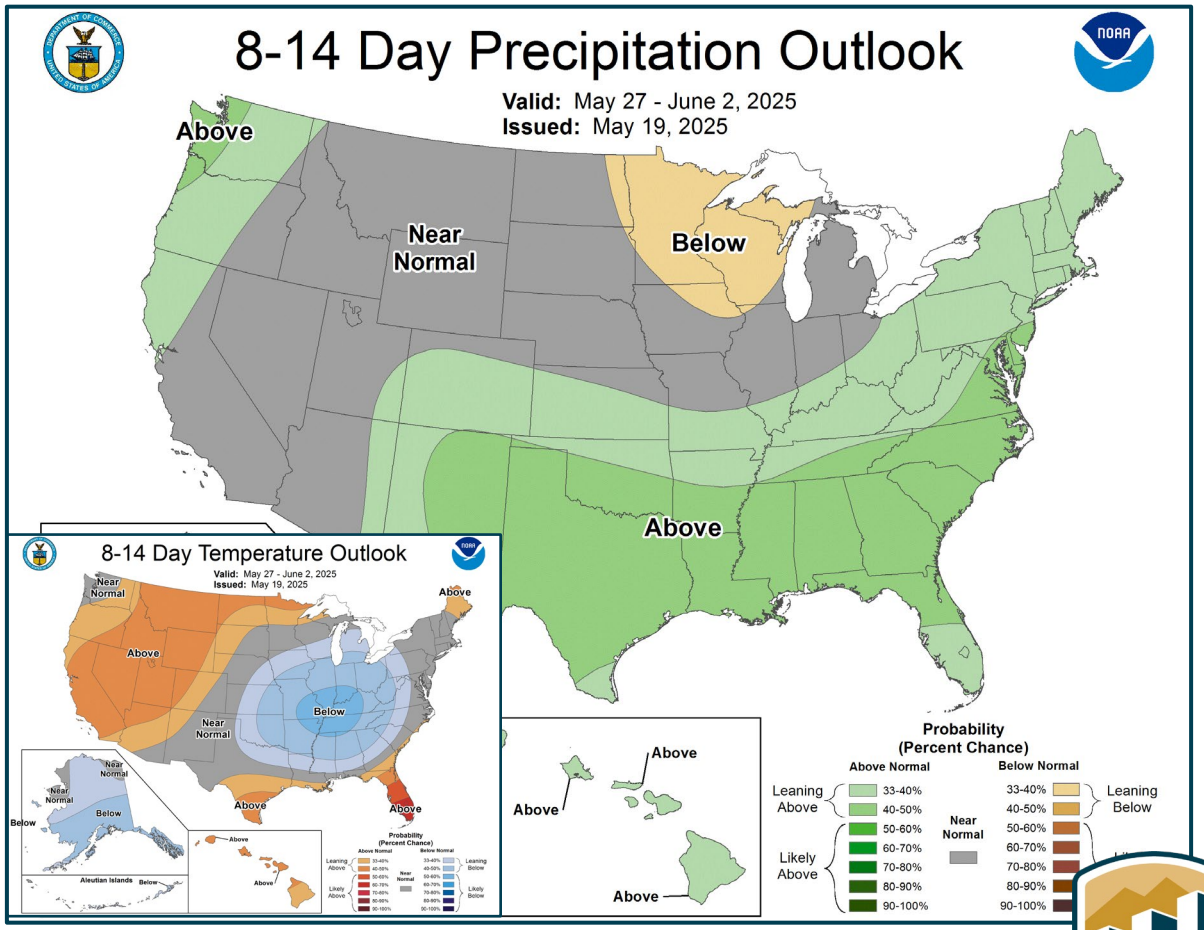



Month to Date Precipitation - May 15 2025
Averaged by Basin, Major Contributing Areas
% Average
>500%
300-500%
200-300%
150-200%
130-150%
110-130%
100-110%
90-100%
70-90%
50-70%
30-50%
0-30%
Prepared by NOAA, Colorado Basin River Forecast Center
Salt Lake City, Utah, www.cbrfc.noaa.gov

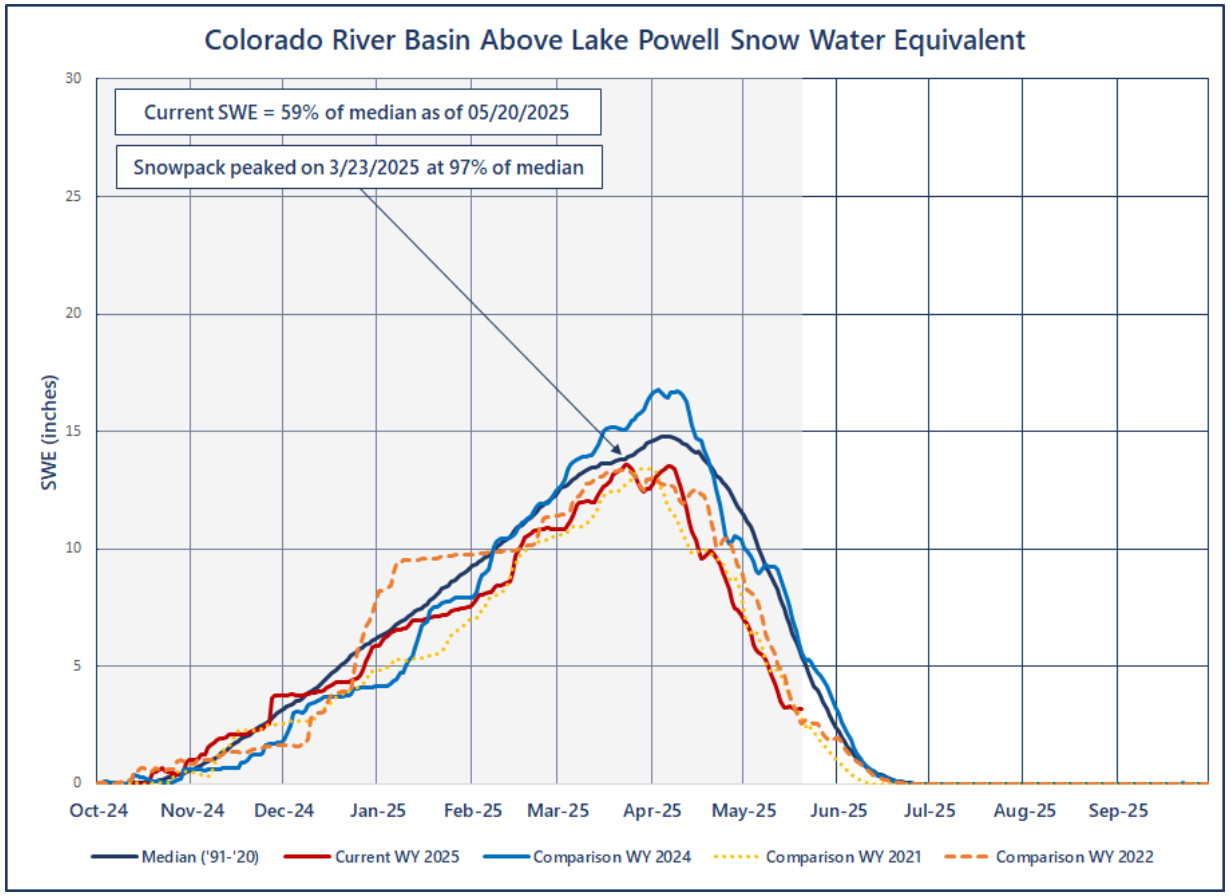

Water Year to Date Precipitation, October 01 - May 15 2025
Averaged by Basin, Major Contributing Areas
% Average
>500%
300-500%
200-300%
150-200%
130-150%
110-130%
100-110%
90-100%
70-90%
50-70%
30-50%
0-30%
Prepared by NOAA, Colorado Basin River Forecast Center
Salt Lake City, Utah, www.cbrfc.noaa.gov

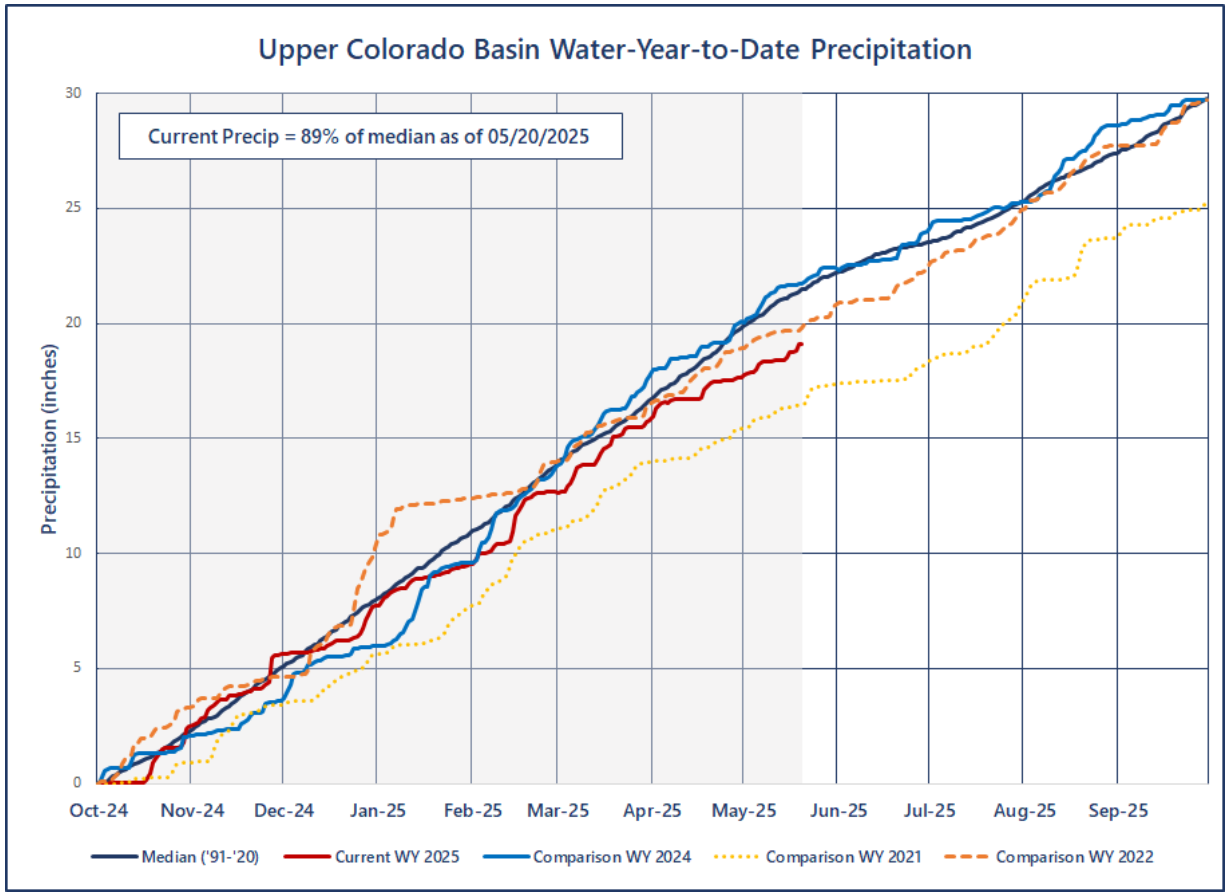
Weather Prediction Center and Climate Prediction Center Precipitation Forecasts





Upper Colorado Precipitation and SWE[1]





[1]Statistics are based on the 30-year period of record from 1991-2020.

Most Probable April Forecast
Water Year 2025

April – July 2025
Forecasted Unregulated Inflow

as of May 5, 2025

Reservoir	Inflow (kaf)	Change from Apr	Percent of Avg[1]
Fontenelle	655	0	89
Flaming Gorge	750	-20	78
Blue Mesa	460	-80	72
Navajo	275	-25	44
Powell	3,500	-800	55

Water Year 2025
Unregulated Inflow Forecast

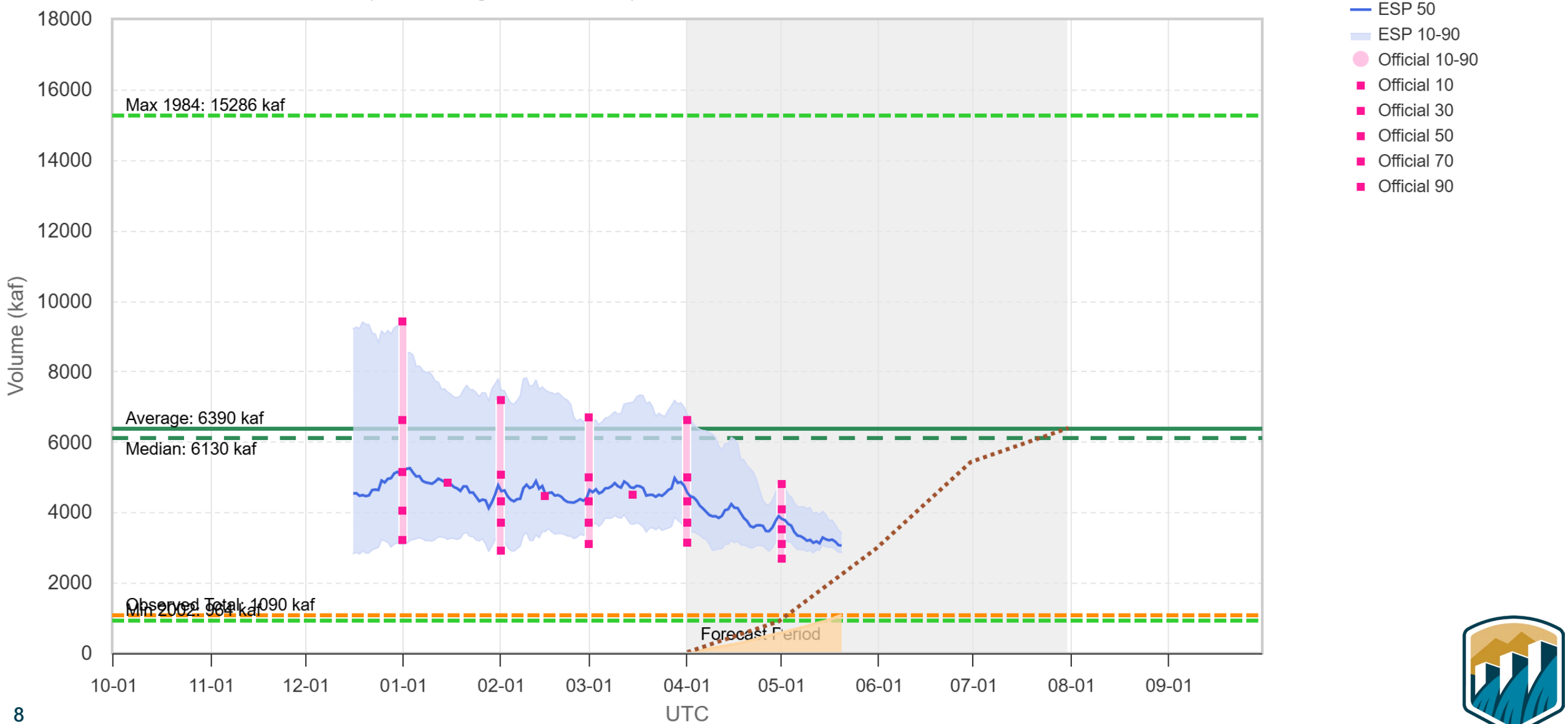
as of May 5, 2025

Reservoir	Inflow (kaf)	Change from Apr	Percent of Avg[1]
Fontenelle	936	-1	87
Flaming Gorge	1,114	-19	79
Blue Mesa	723	-85	80
Navajo	428	-26	47
Powell	5,909	-867	62

[1]Averages are based on the 1991 through 2020 period of record.

2025 Water Supply Forecast - Colorado - Lake Powell, Glen Cyn Dam, At (GLDA3)

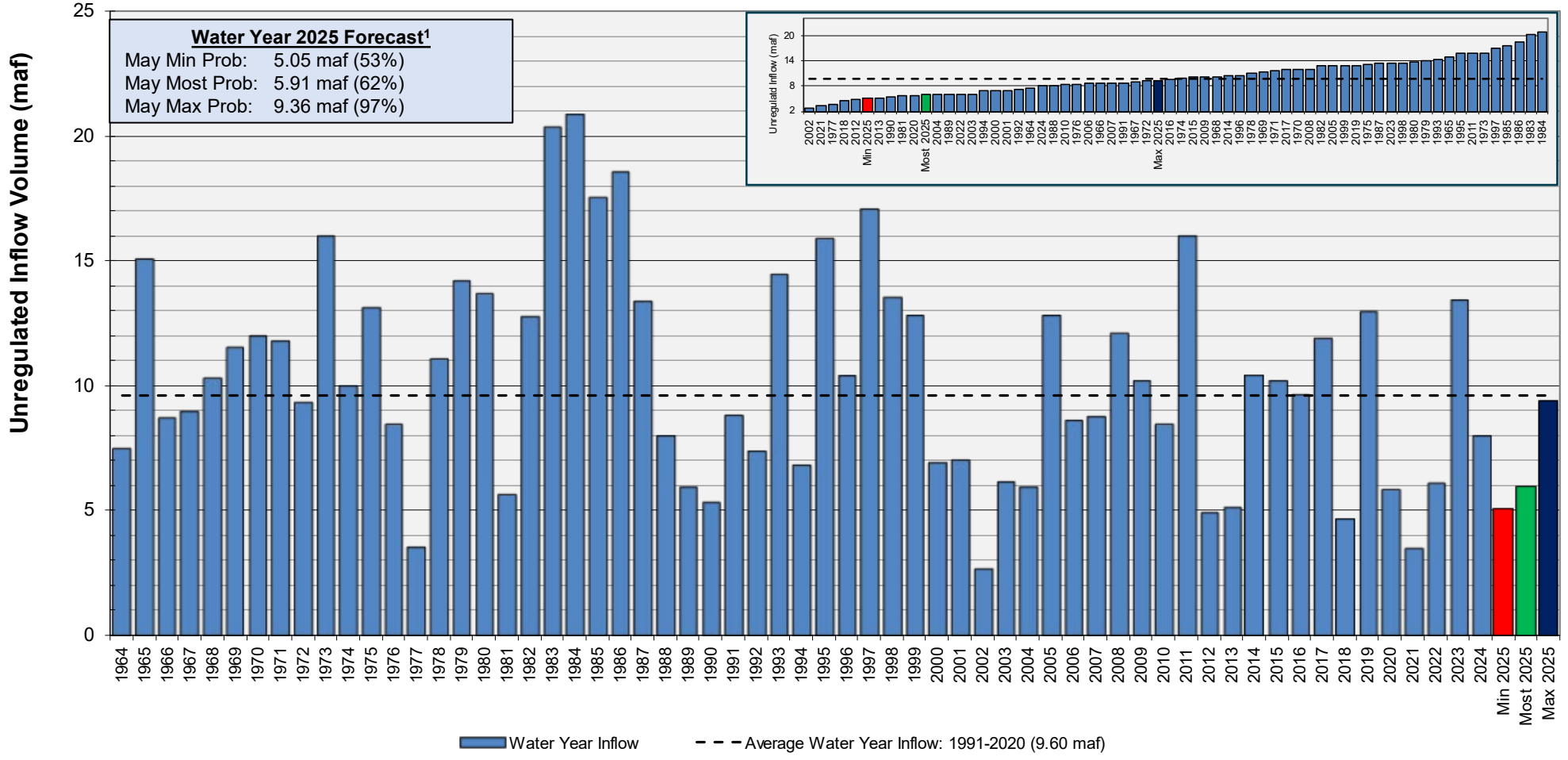
ESP is Unregulated and Includes 7 Day Precipitation Forecast
Official 50% Fcst (2025-05-01): 3500 kaf (55% Avg, 57% Med), (14% of Yrs Below Fcst, 53 Highest Flow / 61 Tot Yrs)
ESP 50% Fcst (2025-05-20): 3056 kaf (48% Avg, 50% Med), (11% of Yrs Below Fcst, 55 Highest Flow / 61 Tot Yrs)
Observed Volume: 1090 kaf (17% Average, 18% Median)



Lake Powell Water Year Unregulated Inflow

as of May 5, 2025

Comparison with History



[1]*Water Year statistics are based on the 30-year period of record from 1991-2020.*

Upper Colorado Basin

Hydrology and Operations Projections Based on April and May 2025 24-Month Studies

Upper Basin Reservoir Operations
Water Year 2025

- Lake Powell will be operated consistent with the 2007 Interim Guidelines, the Upper Basin Drought Response Operations Agreement and Upper Basin Records of Decision
- Lake Powell WY 2025 will operate in the Mid-Elevation Release Tier where Lake Powell will release 7.48 maf
- Includes the Supplemental Environmental Impact Statement for Near-term Colorado River Operations Record of Decision (2024 Near-term SEIS, signed May 6, 2024)
  https://www.usbr.gov/ColoradoRiverBasin/interimguidelines/seis/index.html
- Includes the Glen Canyon Dam Long-Term Experimental and Management Plan Final Supplemental Environmental Impact Statement (2024 LTEMP SEIS ROD, signed July 3, 2024)
  https://www.usbr.gov/uc/DocLibrary/EnvironmentalImpactStatements/GlenCanyonDamLong-TermExperimentalManagementPlan/20240703-GCDLTEMP-FinalSEIS-RecordofDecision-508-AMWD.pdf
- Reclamation will also ensure all appropriate consultation with Basin Tribes, the Republic of Mexico, other federal agencies, water users and non-governmental organizations with respect to implementation of these monthly and annual operations.

Lake Powell & Lake Mead Operational Table

Lake Powell Operational Tier Determination Run (aka "Exhibit Run") with an 8.23 maf Release[1]

Lake Powell

Elevation (feet)	Operation According to the Interim Guidelines	Live Storage (maf)
3,700	**Equilization Tier** Equalize, avoid spills, or release 8.23 maf	23.31
3,636-3,666 (2008-2026)	**Upper Elevation Balancing Tier** Release 8.23 maf If Lake Mead < 1,075 feet, balance contents with a min/max release of 7.0 and 9.0 maf	14.65-18.36 (2008-2026)
3,575	**Mid-Elevation Release Tier** Release 7.48 maf; if Lake Mead < 1,025 feet; release 8.23 maf If any minimum probable Lake Powell elevation projection shows Lake Powell <3,500 feet, begin planning to reduce releases to no less than 6.0 maf	8.90
3,525	**Lower Elevation Balancing Tier** Balance contents with a min/max release of 7.0 and 9.5 maf If any minimum probable Lake Powell elevation projection shows Lake Powell <3,500 feet, begin planning to reduce releases to no less than 6.0 maf	5.55
3,500	The Secretary reserves the right to operate Reclamation facilities to protect the Colorado River system if hydrologic conditions require such action as described in Sections 6 and 7(D) in the 2007 Interim Guidelines ROD	4.22
3,370		0

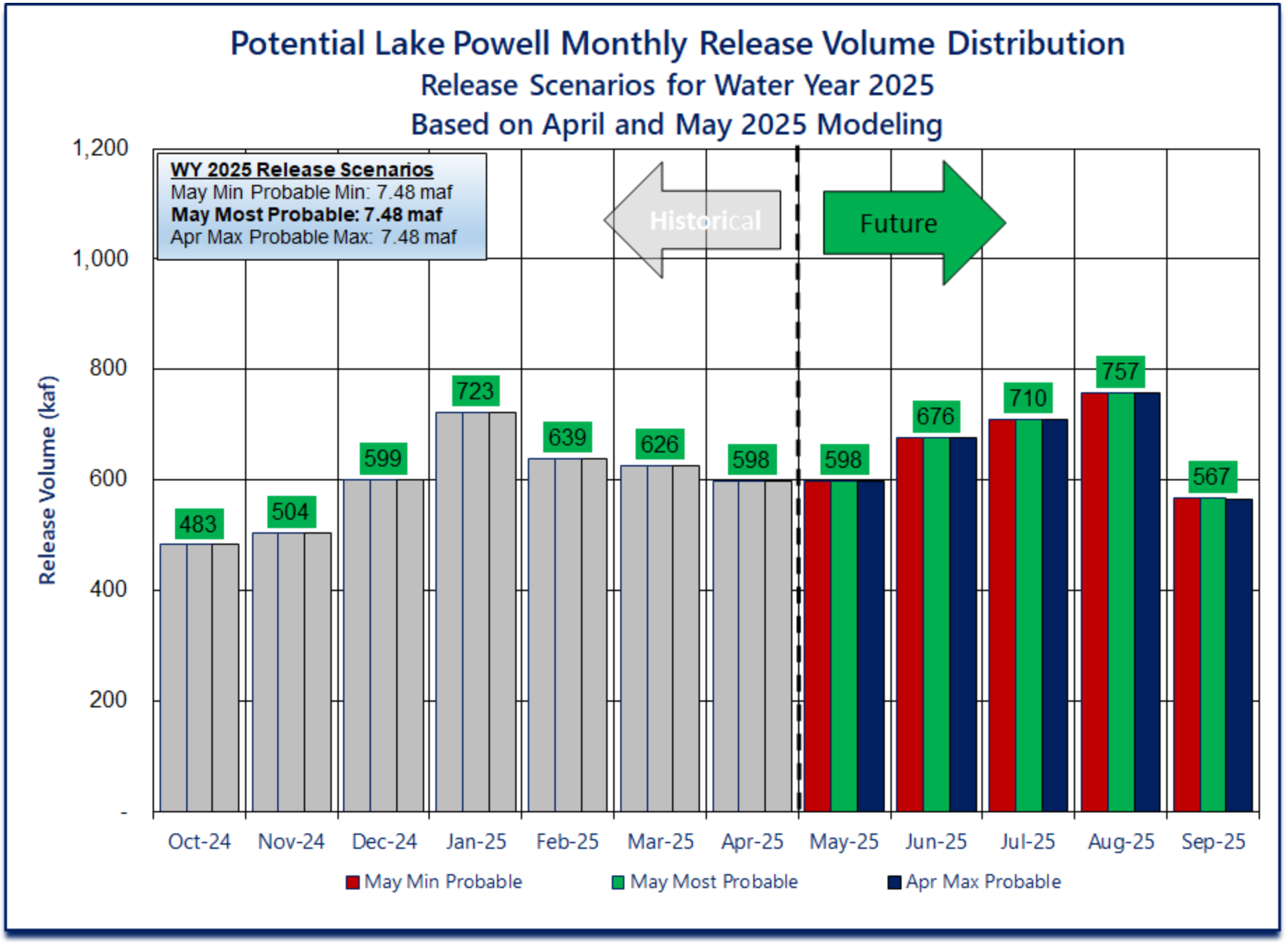
3,568.99 ft Jan 1, 2025 Projection

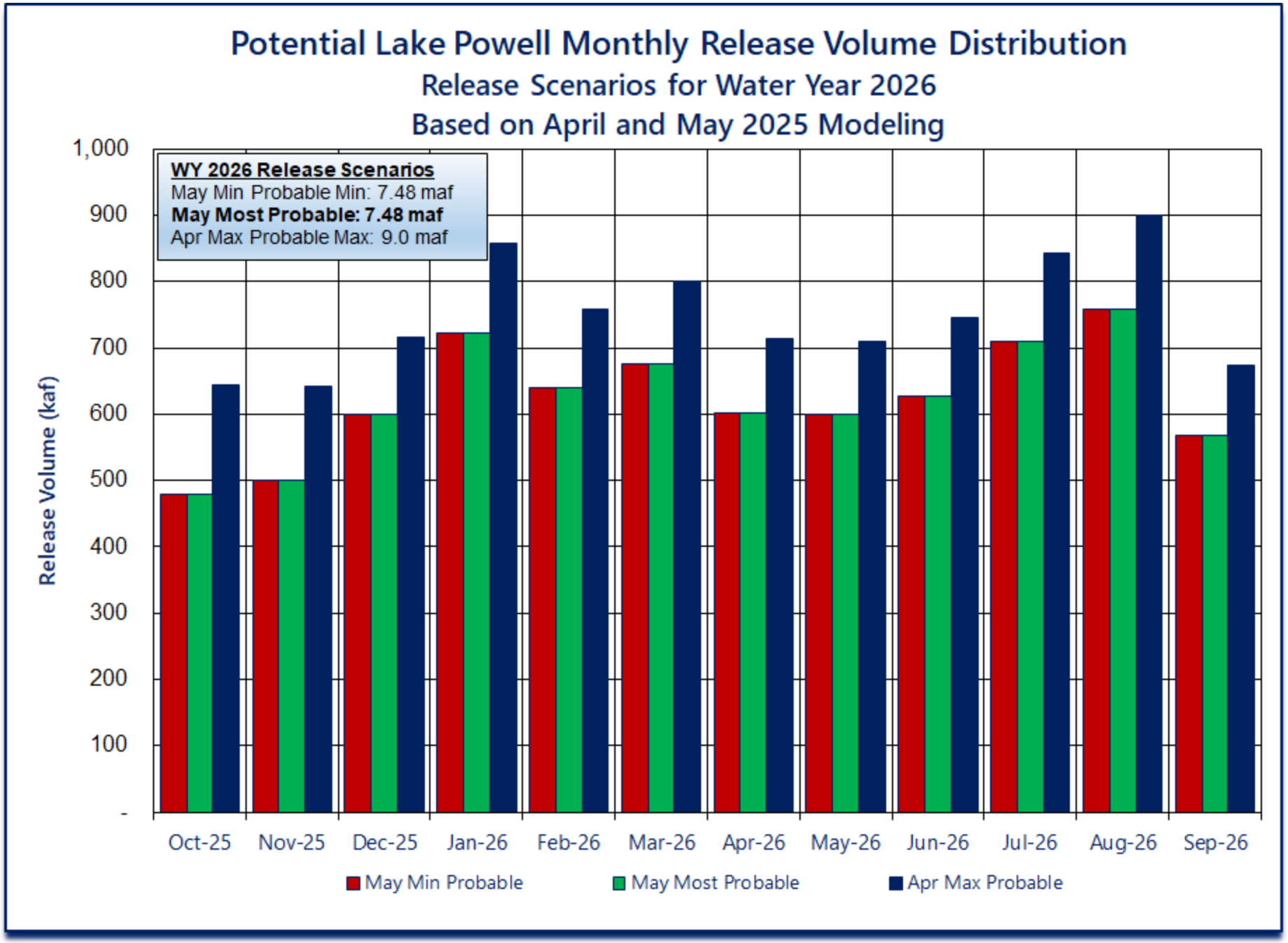
Lake Mead

Elevation (feet)	Operation According to the Interim Guidelines	Live Storage (maf)
1,220	**Flood Control Surplus or Quantified Surplus Condition** Deliver > 7.5 maf	26.18
1,200 (approx.)	**Domestic Surplus or ICS Surplus Condition** Deliver > 7.5 maf	23.14 (approx.)
1,145	**Normal or ICS Surplus Condition** Deliver ≥ 7.5 maf	16.18
1,075	**Shortage Condition** Deliver 7.167 maf	
1,050	**Shortage Condition** Deliver 7.083 maf	
1,025	**Shortage Condition** Deliver 7.0 maf Further measures may be undertaken	5.98
1,000		4.48
895		0

1,062.32 ft Jan 1, 2025 Projection

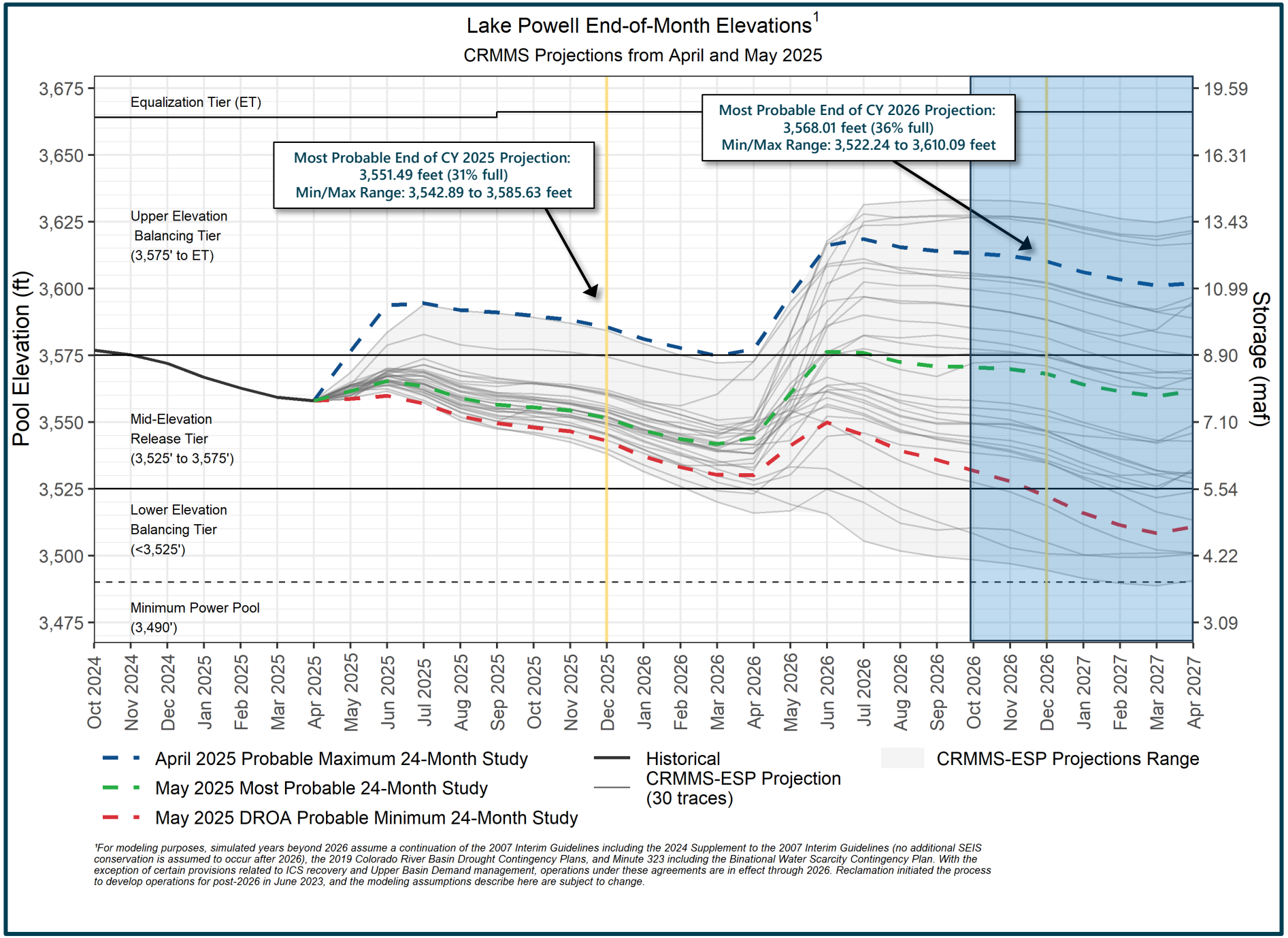
[1] Lake Powell and Lake Mead operational tier determinations will be documented in the draft 2025 AOP.


Potential Lake Powell Monthly Release Volume Distribution
Release Scenarios for Water Year 2025
Based on April and May 2025 Modeling
WY 2025 Release Scenarios
May Min Probable Min: 7.48 maf
May Most Probable: 7.48 maf
Apr Max Probable Max: 7.48 maf
Historical
Future
Release Volume (kaf)
1,200
1,000
800
600
400
200
-
483
504
599
723
639
626
598
598
676
710
757
567
Oct-24
Nov-24
Dec-24
Jan-25
Feb-25
Mar-25
Apr-25
May-25
Jun-25
Jul-25
Aug-25
Sep-25
May Min Probable
May Most Probable
Apr Max Probable

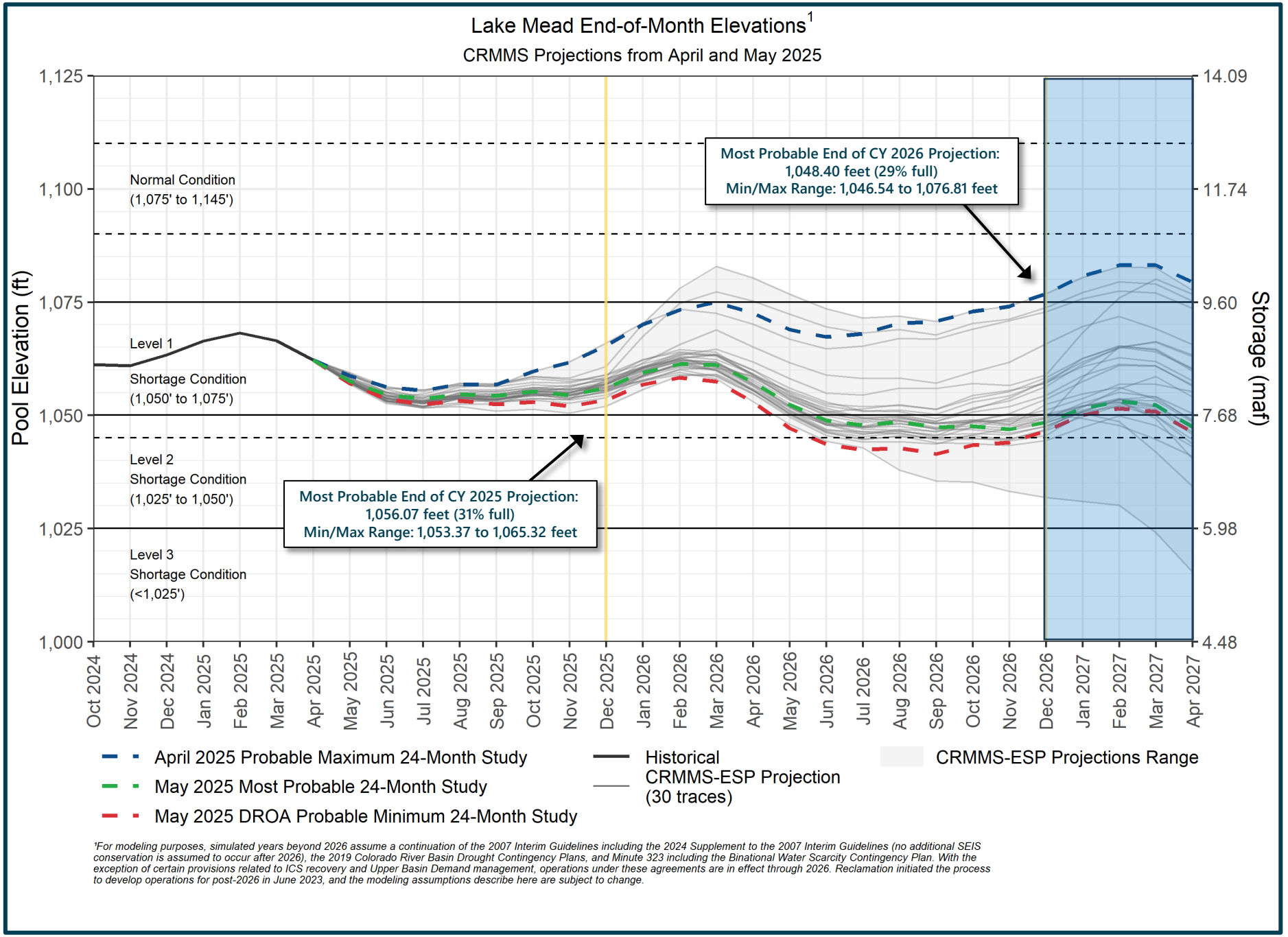

Potential Lake Powell Monthly Release Volume Distribution
Release Scenarios for Water Year 2026
Based on April and May 2025 Modeling
WY 2026 Release Scenarios
May Min Probable Min: 7.48 maf
May Most Probable: 7.48 maf
Apr Max Probable Max: 9.0 maf
Release Volume (kaf)
1,000
900
800
700
600
500
400
300
200
100
-
Oct-25
Nov-25
Dec-25
Jan-26
Feb-26
Mar-26
Apr-26
May-26
Jun-26
Jul-26
Aug-26
Sep-26
May Min Probable
May Most Probable
Apr Max Probable

Reclamation Operational Modeling
Model Comparison

	Colorado River Mid-term Modeling System (CRMMS)		CRSS
	24-Month Study Mode (Manual Mode)	Ensemble Mode (Rule-based Mode)	
Primary Use	AOP tier determinations and projections of current conditions	Risk-based operational planning and analysis	Long-term planning, comparison of alternatives
Simulated Reservoir Operations	Operations input manually	Rule-driven operations	
Probabilistic or Deterministic	Deterministic – single hydrologic trace	Deterministic OR Probabilistic 30 (or more) hydrologic traces	Probabilistic – 100+ traces
Time Horizon (years)	1 - 2	1 - 5	1 - 50
Upper Basin Inflow	Unregulated forecast, 1 trace	Unregulated ESP forecast, 30 traces	Natural flow; historical, paleo, or climate change hydrology
Upper Basin Demands	Implicit, in unregulated inflow forecast		Explicit, 2016 UCRC assumptions
Lower Basin Demands	Official approved or operational		Developed with LB users



[1]For modeling purposes, simulated years beyond 2026 assume a continuation of the 2007 Interim Guidelines including the 2024 Supplement to the 2007 Interim Guidelines (no additional SEIS conservation is assumed to occur after 2026), the 2019 Colorado River Basin Drought Contingency Plans, and Minute 323 including the Binational Water Scarcity Contingency Plan. With the exception of certain provisions related to ICS recovery and Upper Basin Demand management, operations under these agreements are in effect through 2026. Reclamation initiated the process to develop operations for post-2026 in June 2023, and the modeling assumptions describe here are subject to change.



[1]For modeling purposes, simulated years beyond 2026 assume a continuation of the 2007 Interim Guidelines including the 2024 Supplement to the 2007 Interim Guidelines (no additional SEIS conservation is assumed to occur after 2026), the 2019 Colorado River Basin Drought Contingency Plans, and Minute 323 including the Binational Water Scarcity Contingency Plan. With the exception of certain provisions related to ICS recovery and Upper Basin Demand management, operations under these agreements are in effect through 2026. Reclamation initiated the process to develop operations for post-2026 in June 2023, and the modeling assumptions describe here are subject to change.

Upper Colorado Basin

Hydropower Maintenance

Glen Canyon Power Plant Planned Unit Outage Schedule for Water Year 2025

Unit Number	Oct 2024	Nov 2024	Dec 2024	Jan 2025	Feb 2025	Mar 2025	Apr 2025	May 2025	Jun 2025	Jul 2025	Aug 2025	Sep 2025	
1													
2													
3													
4													
5													
6													
7													
8													
ROW 1													
ROW 2													
ROW 3													
ROW 4													
Units Available	6	6	7	5	5	6	7	7	8	8	8	6	
Penstock Capacity (cfs)	19,650	19,700	23,350	16,100	16,100	19,700	22,600	26,300	26,400	26,300	26,200	19,100	MAY MOST[2]
Penstock Capacity (kaf/month)	1,200	1,500	1,550	1,360	910	1,240	1,430	1,610	1,570	1,620	1,610	1,150	MAY MOST
Max (kaf) [1]	483	504	599	723	639	626	598	598	676	710	757	567	7.48 maf
Most (kaf) [1]	483	504	599	723	639	626	598	598	676	710	757	567	7.48 maf
Min (kaf) [1]	483	504	599	723	639	626	600	598	676	710	757	565	7.48 maf
										(updated 05-15-2025)			

1 Projected release based on May 2025 24-Month Study for the most and minimum probable scenarios and April 2025 24-Month Study for the maximum probable scenario.

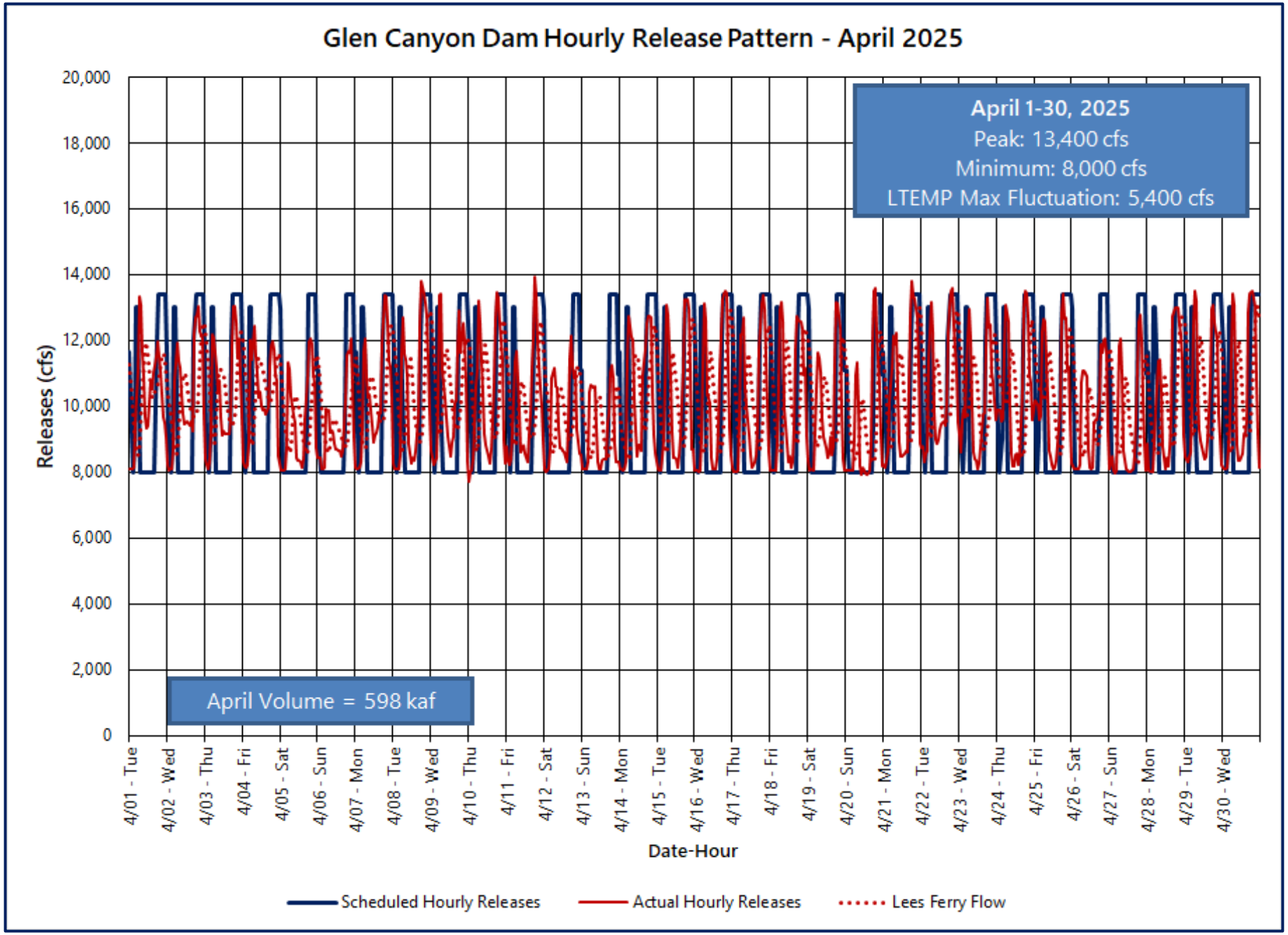
2 Dependent upon availability to shift contingency regulation, which will increase capacity by 30-40MW (3%) at current efficiency.

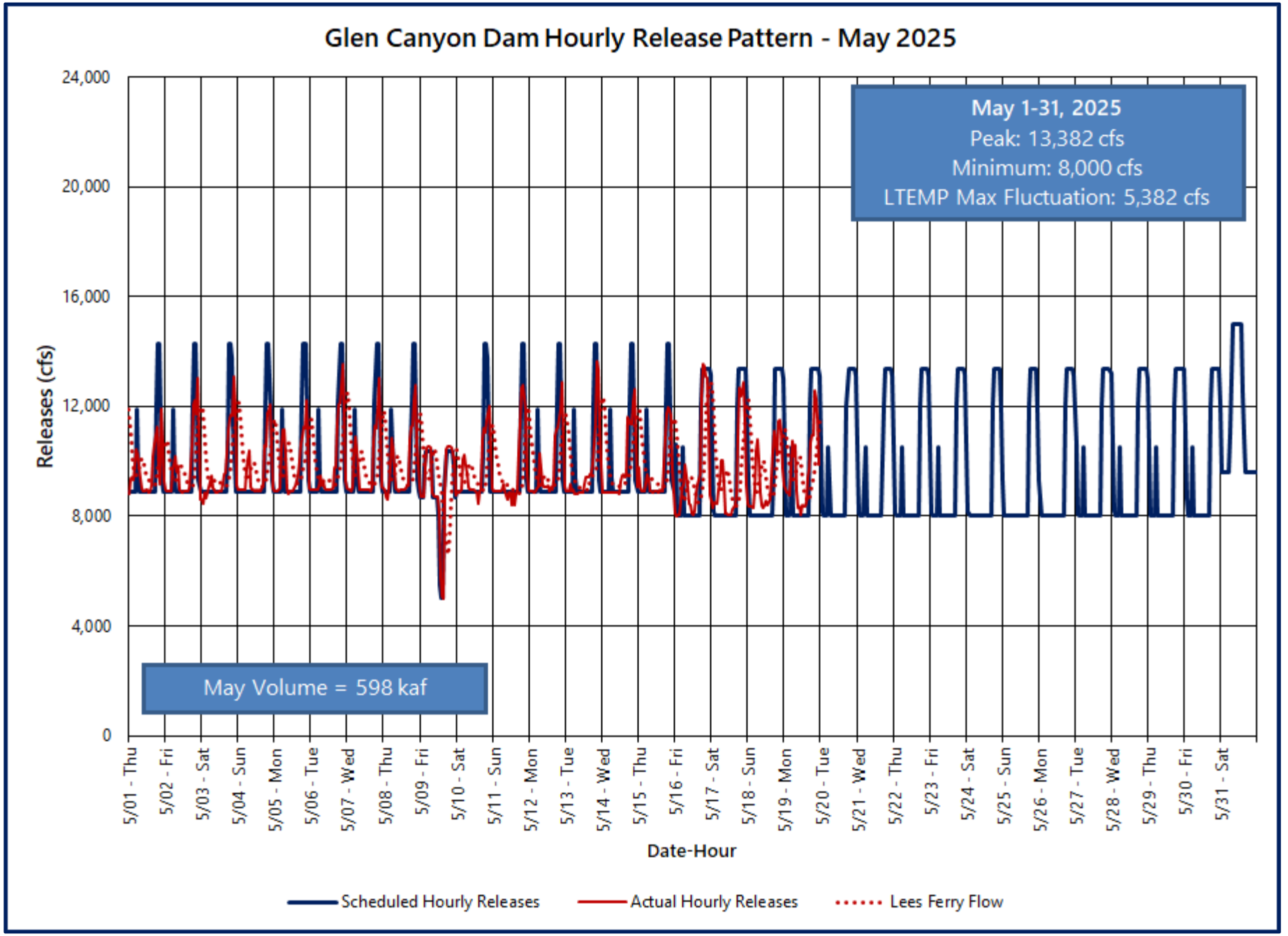
Glen Canyon Power Plant Planned Unit Outage Schedule for Water Year 2026

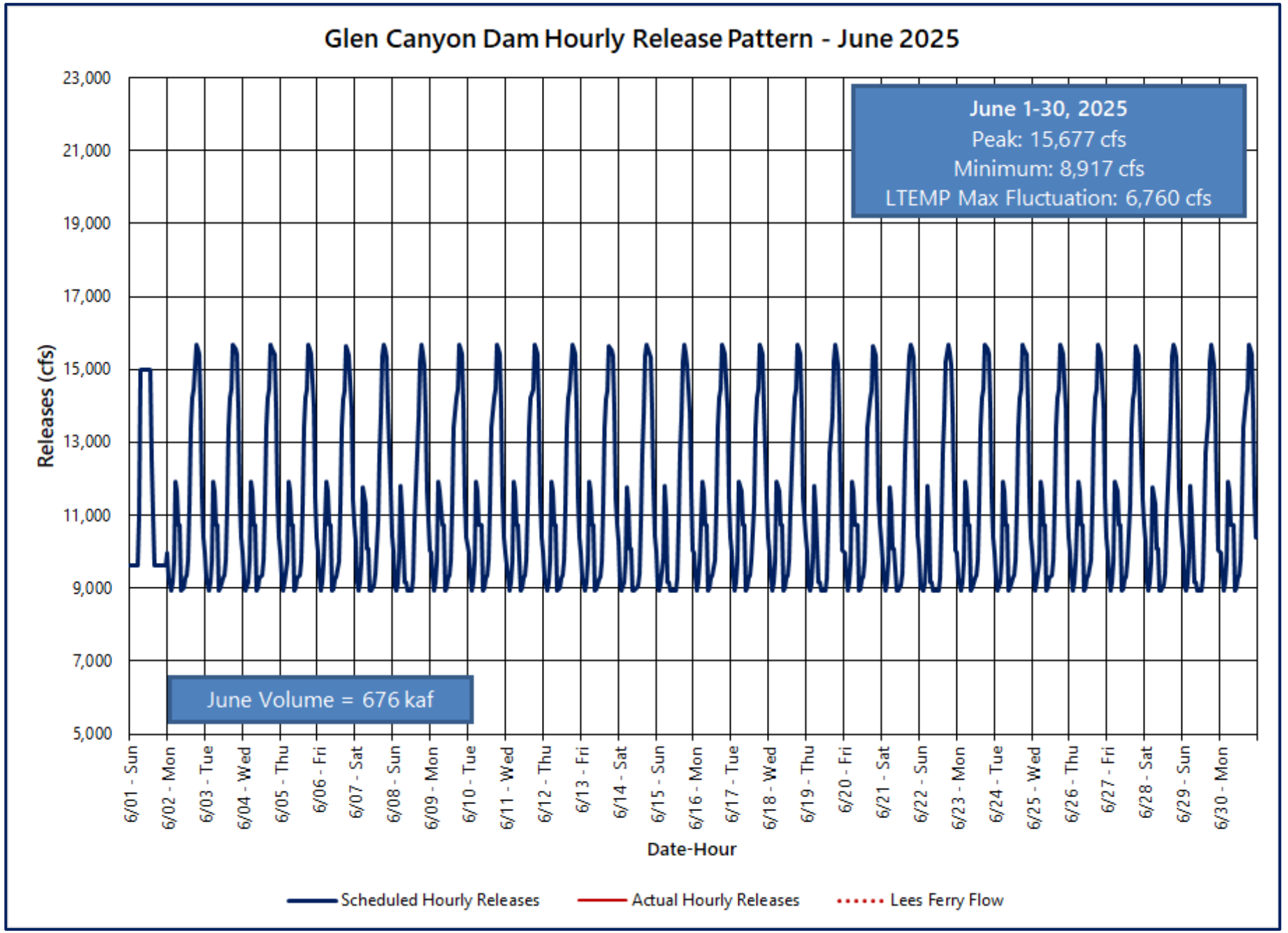
Unit Number	Oct 2025	Nov 2025	Dec 2025	Jan 2026	Feb 2026	Mar 2026	Apr 2026	May 2026	Jun 2026	Jul 2026	Aug 2026	Sep 2026	
1													
2													
3													
4													
5													
6													
7													
8													
Units Available	6	8	8	8	6	6	7	7	8	8	8	6	
Penstock Capacity (cfs)	19,000	24,600	25,900	24,300	18,700	18,600	23,000	24,600	26,800	26,800	26,700	19,500	MAY MOST[2]
Penstock Capacity (kaf/month)	1,210	1,460	1,590	1,500	1,060	1,160	1,370	1,510	1,590	1,650	1,620	1,160	MAY MOST
Max (kaf) [1]	643	642	715	857	758	801	713	710	745	842	900	674	9.0 maf
Most (kaf) [1]	480	500	600	723	639	675	601	599	628	709	758	567	7.48 maf
Min (kaf) [1]	480	500	600	723	639	675	601	599	628	709	758	567	7.48 maf
										(updated 05-15-2025)			

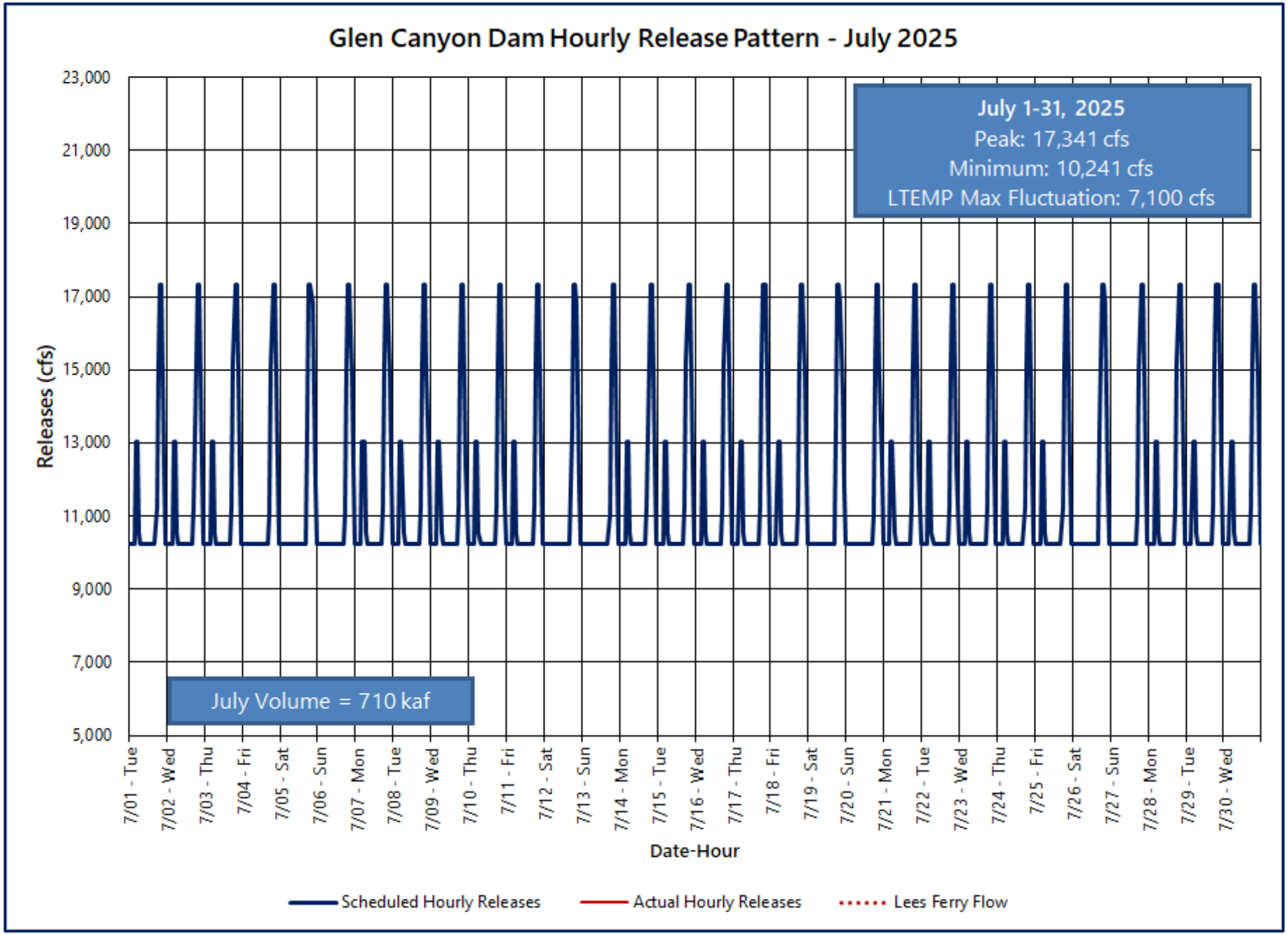
1 Projected release based on May 2025 24-Month Study for the most and minimum probable scenarios and April 2025 24-Month Study for the maximum probable scenario.

2 Dependent upon availability to shift contingency regulation, which will increase capacity by 30-40MW (3%) at current efficiency.


Glen Canyon Dam Hourly Release Pattern - April 2025
April 1-30, 2025
Peak: 13,400 cfs
Minimum: 8,000 cfs
LTEMP Max Fluctuation: 5,400 cfs
April Volume = 598 kaf
Releases (cfs)
20,000
18,000
16,000
14,000
12,000
10,000
8,000
6,000
4,000
2,000
0
4/01 - Tue
4/02 - Wed
4/03 - Thu
4/04 - Fri
4/05 - Sat
4/06 - Sun
4/07 - Mon
4/08 - Tue
4/09 - Wed
4/10 - Thu
4/11 - Fri
4/12 - Sat
4/13 - Sun
4/14 - Mon
4/15 - Tue
4/16 - Wed
4/17 - Thu
4/18 - Fri
4/19 - Sat
4/20 - Sun
4/21 - Mon
4/22 - Tue
4/23 - Wed
4/24 - Thu
4/25 - Fri
4/26 - Sat
4/27 - Sun
4/28 - Mon
4/29 - Tue
4/30 - Wed
Date-Hour
Scheduled Hourly Releases
Actual Hourly Releases
Lees Ferry Flow


Glen Canyon Dam Hourly Release Pattern - May 2025
May 1-31, 2025
Peak: 13,382 cfs
Minimum: 8,000 cfs
LTEMP Max Fluctuation: 5,382 cfs
May Volume = 598 kaf
Releases (cfs)
24,000
20,000
16,000
12,000
8,000
4,000
0
5/01 - Thu
5/02 - Fri
5/03 - Sat
5/04 - Sun
5/05 - Mon
5/06 - Tue
5/07 - Wed
5/08 - Thu
5/09 - Fri
5/10 - Sat
5/11 - Sun
5/12 - Mon
5/13 - Tue
5/14 - Wed
5/15 - Thu
5/16 - Fri
5/17 - Sat
5/18 - Sun
5/19 - Mon
5/20 - Tue
5/21 - Wed
5/22 - Thu
5/23 - Fri
5/24 - Sat
5/25 - Sun
5/26 - Mon
5/27 - Tue
5/28 - Wed
5/29 - Thu
5/30 - Fri
5/31 - Sat
Date-Hour
Scheduled Hourly Releases
Actual Hourly Releases
Lees Ferry Flow


Glen Canyon Dam Hourly Release Pattern - June 2025
June 1-30, 2025
Peak: 15,677 cfs
Minimum: 8,917 cfs
LTEMP Max Fluctuation: 6,760 cfs
June Volume = 676 kaf
Releases (cfs)
23,000
21,000
19,000
17,000
15,000
13,000
11,000
9,000
7,000
5,000
6/01 - Sun
6/02 - Mon
6/03 - Tue
6/04 - Wed
6/05 - Thu
6/06 - Fri
6/07 - Sat
6/08 - Sun
6/09 - Mon
6/10 - Tue
6/11 - Wed
6/12 - Thu
6/13 - Fri
6/14 - Sat
6/15 - Sun
6/16 - Mon
6/17 - Tue
6/18 - Wed
6/19 - Thu
6/20 - Fri
6/21 - Sat
6/22 - Sun
6/23 - Mon
6/24 - Tue
6/25 - Wed
6/26 - Thu
6/27 - Fri
6/28 - Sat
6/29 - Sun
6/30 - Mon
Date-Hour
Scheduled Hourly Releases
Actual Hourly Releases
Lees Ferry Flow

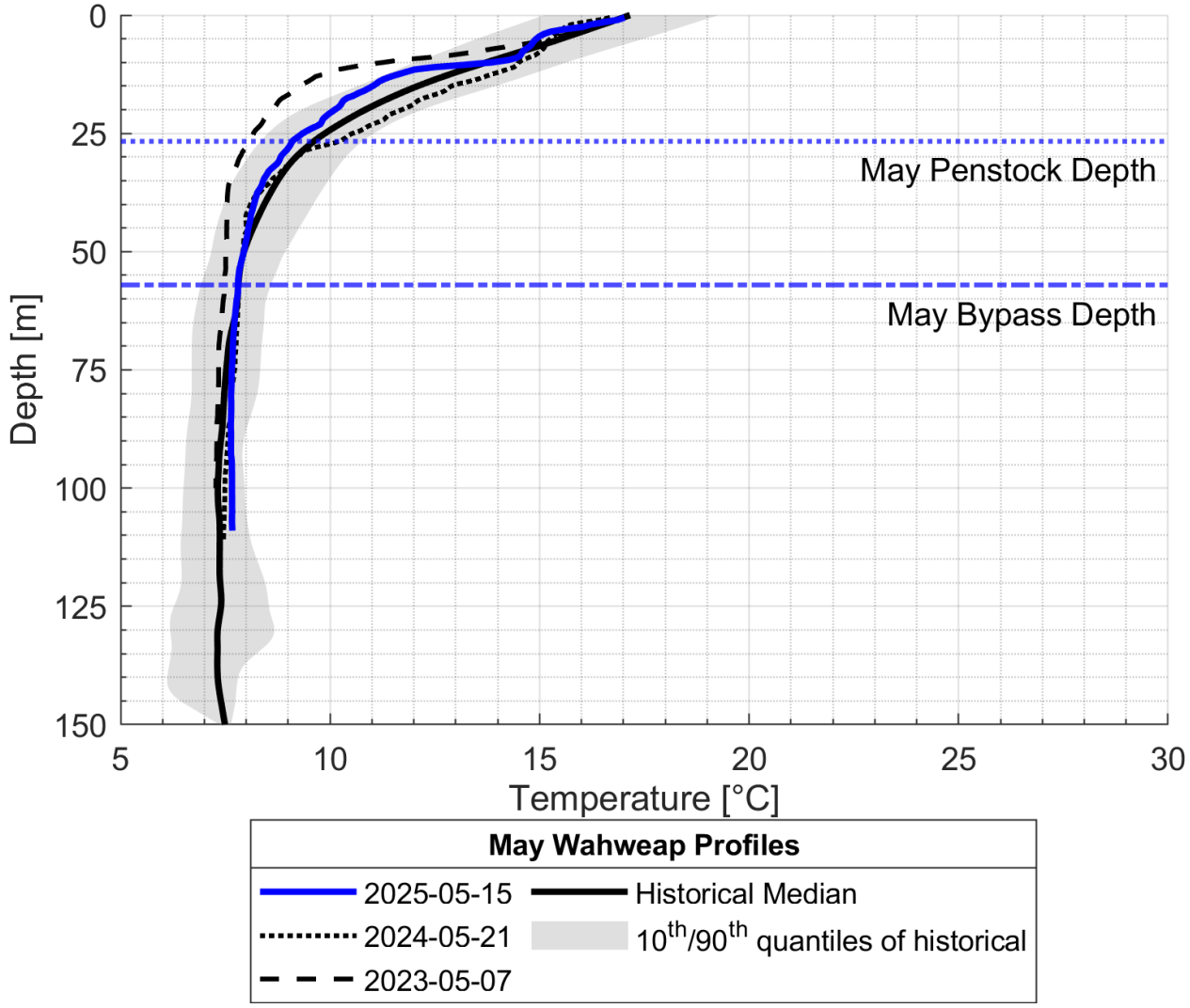

Glen Canyon Dam Hourly Release Pattern - July 2025
July 1-31, 2025
Peak: 17,341 cfs
Minimum: 10,241 cfs
LTEMP Max Fluctuation: 7,100 cfs
July Volume = 710 kaf
Releases (cfs)
23,000
21,000
19,000
17,000
15,000
13,000
11,000
9,000
7,000
5,000
7/01 - Tue
7/02 - Wed
7/03 - Thu
7/04 - Fri
7/05 - Sat
7/06 - Sun
7/07 - Mon
7/08 - Tue
7/09 - Wed
7/10 - Thu
7/11 - Fri
7/12 - Sat
7/13 - Sun
7/14 - Mon
7/15 - Tue
7/16 - Wed
7/17 - Thu
7/18 - Fri
7/19 - Sat
7/20 - Sun
7/21 - Mon
7/22 - Tue
7/23 - Wed
7/24 - Thu
7/25 - Fri
7/26 - Sat
7/27 - Sun
7/28 - Mon
7/29 - Tue
7/30 - Wed
Date-Hour
Scheduled Hourly Releases
Actual Hourly Releases
Lees Ferry Flow

BUREAU OF RECLAMATION

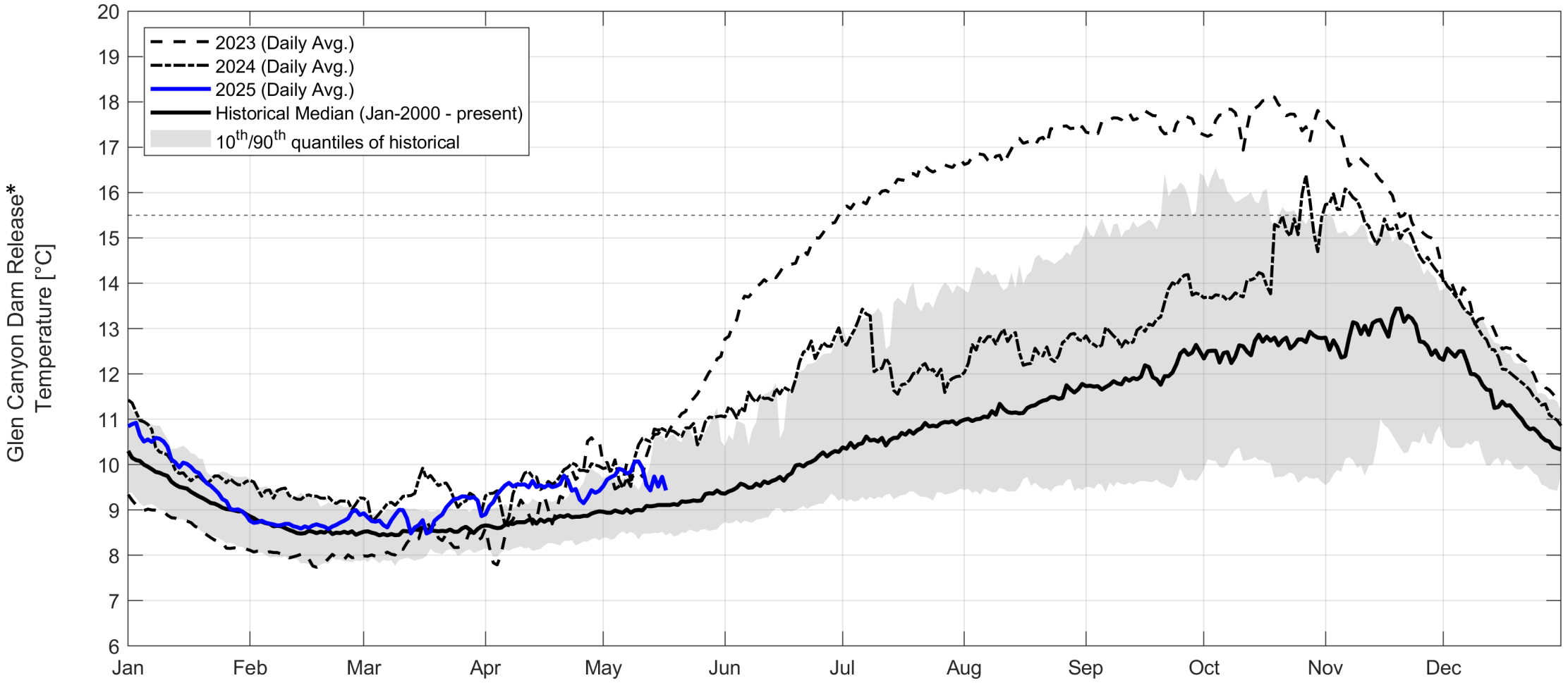
May 24MS Water Quality Update

05/21/2025

Wahweap Profiles
May Temperature

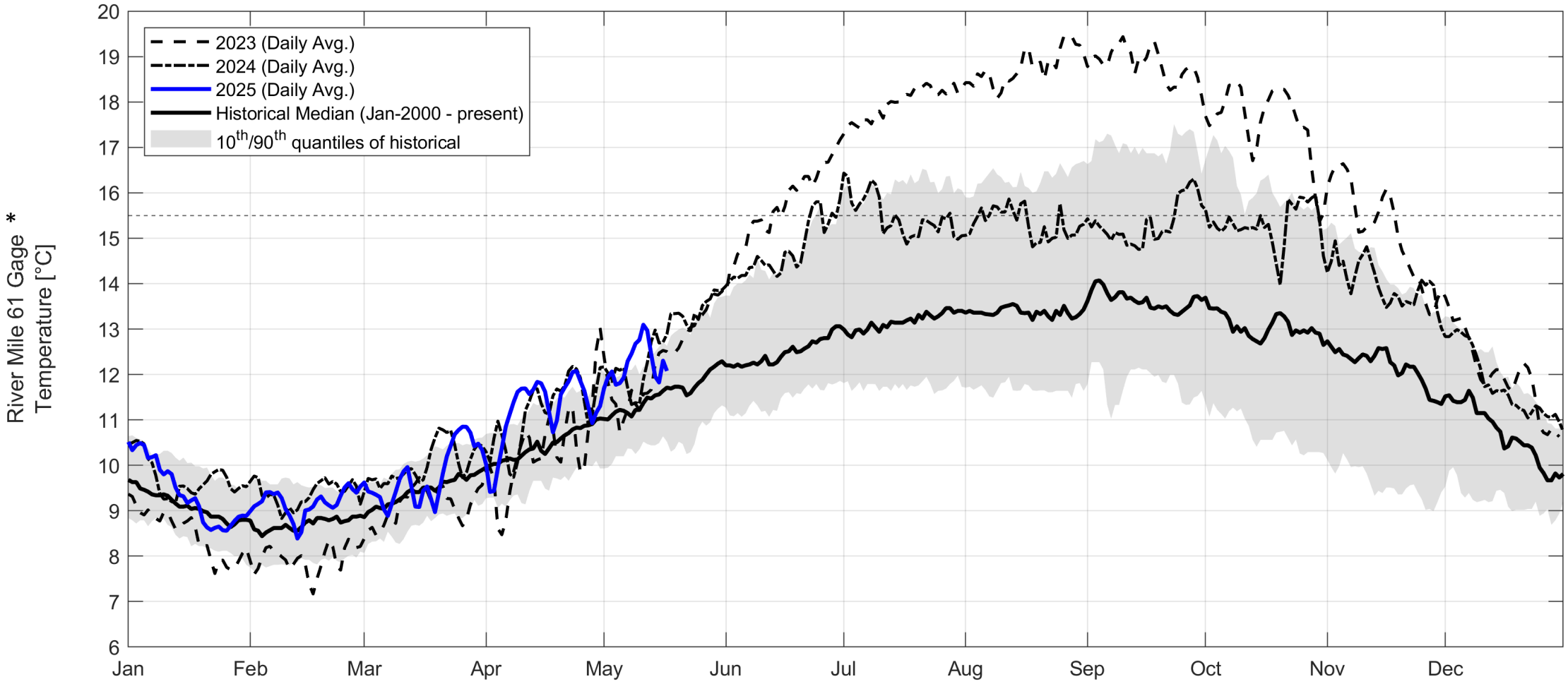


Glen Canyon Release Temperature



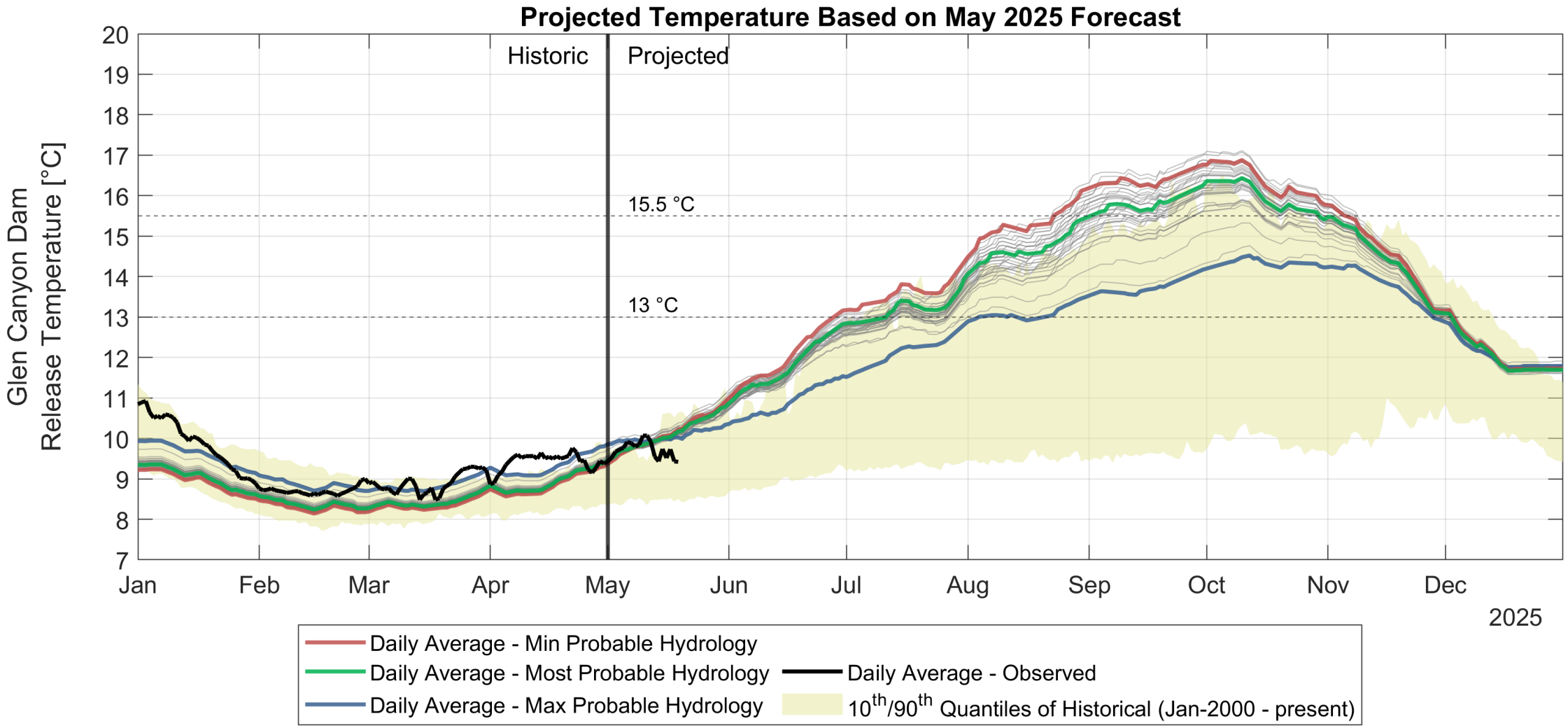
* Credit to USGS for data. Preliminary, not for citation.

River Mile 61 - Temperature



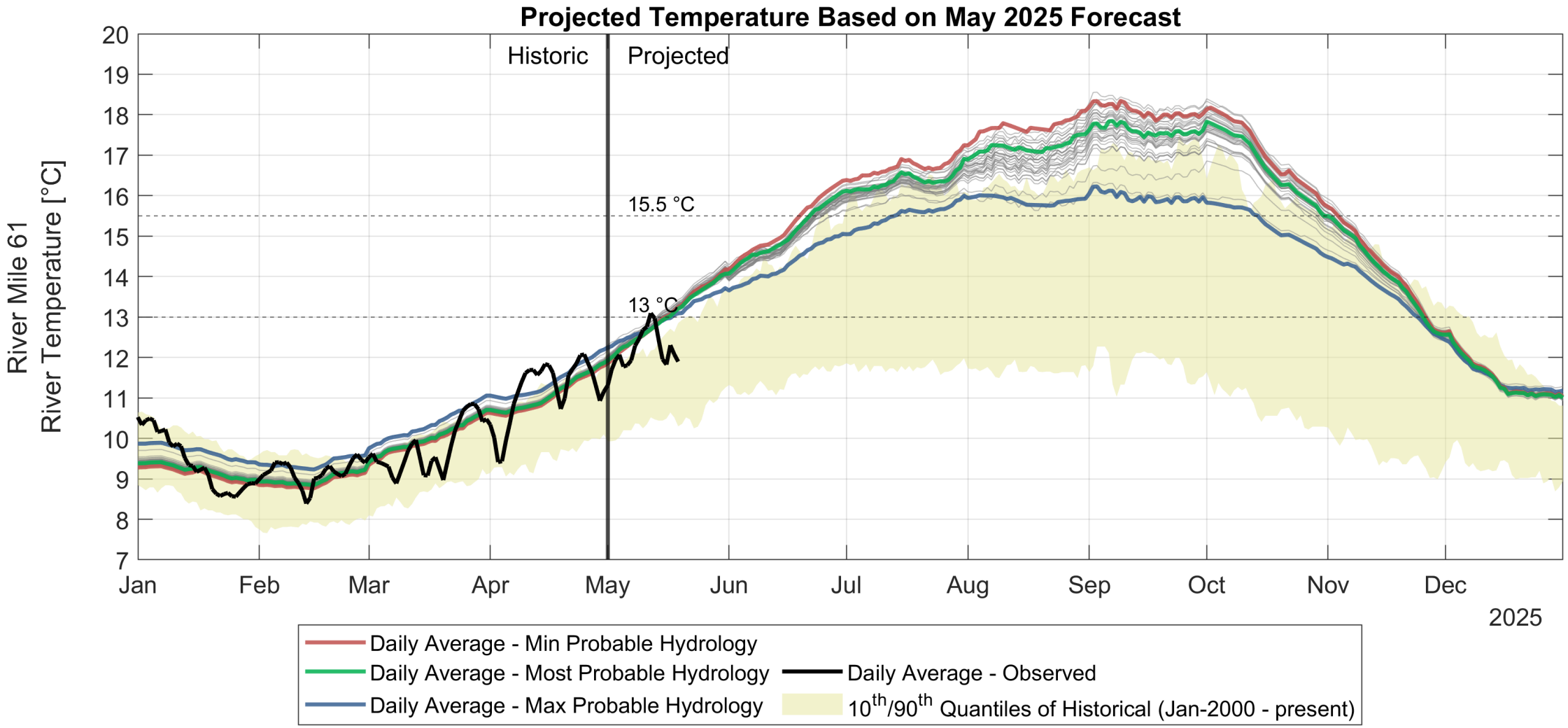
* Credit to USGS for data. Preliminary, not for citation.

Glen Canyon Dam Release Temperature (*Eppehimer et al, 2024 model)



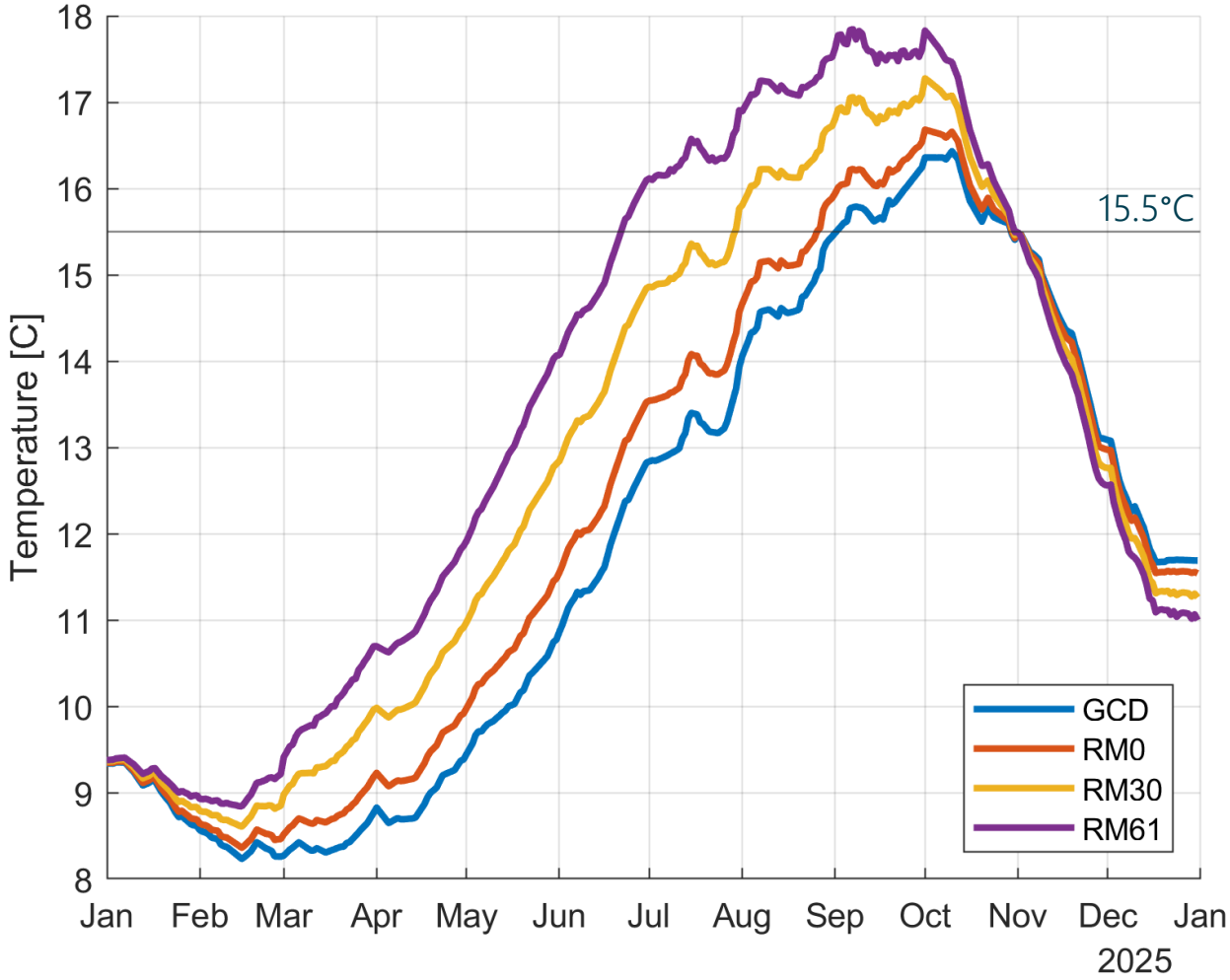
* https://doi.org/10.1101/2024.01.23.576966

River Mile 61 Temperature (*Dibble et al, 2020 model)

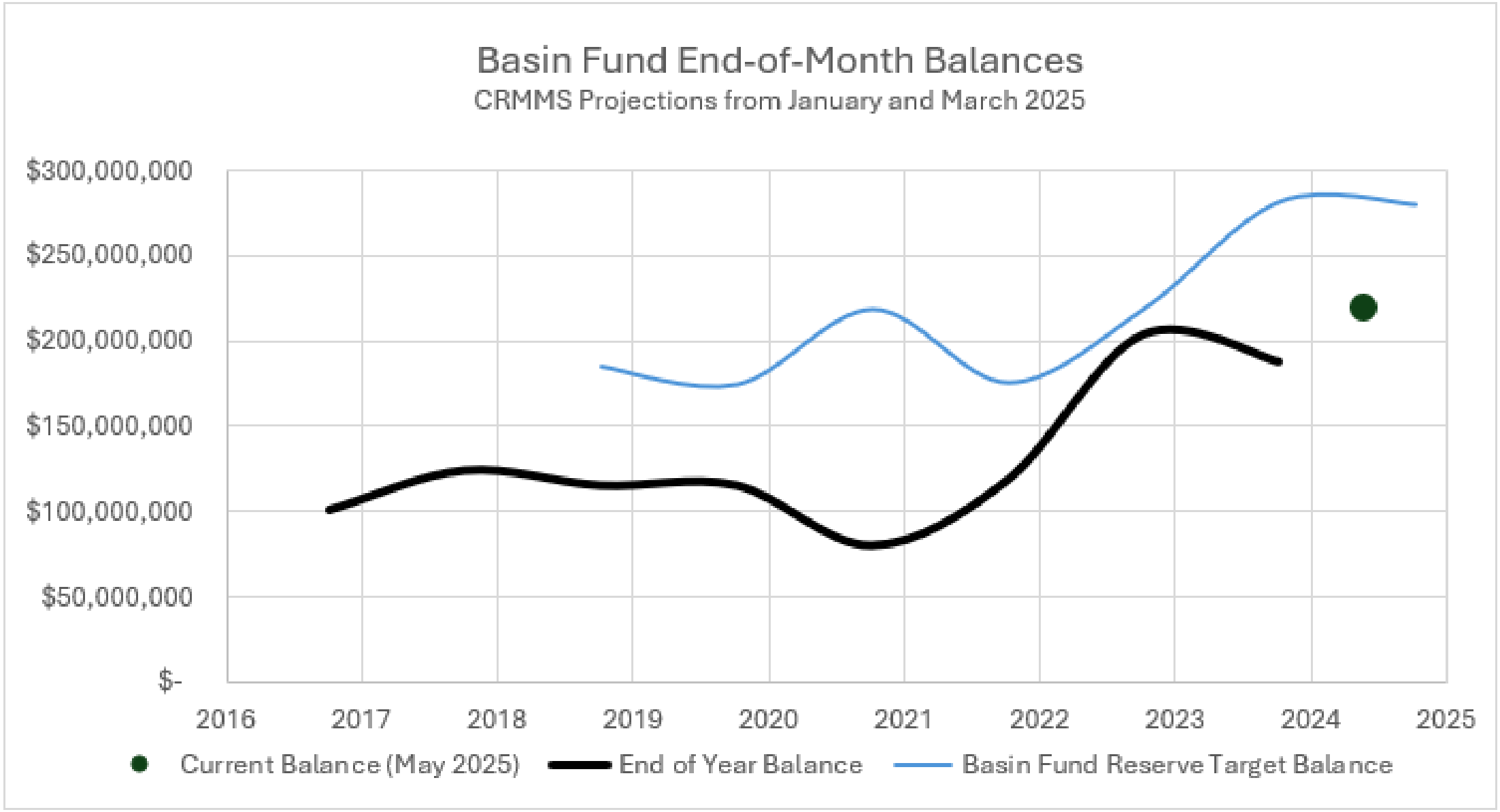


*https://doi.org/10.1002/eap.2279

Combined Temperature Predictions
May 2025 Most Probable Hydrology




Questions?
BUREAU OF
RECLAMATION


Basin Fund End-of-Month Balances
CRMMS Projections from January and March 2025
$300,000,000
$250,000,000
$200,000,000
$150,000,000
$100,000,000
$50,000,000
$-
2016
2017
2018
2019
2020
2021
2022
2023
2024
2025
Current Balance (May 2025)
End of Year Balance
Basin Fund Reserve Target Balance