

RECLAMATION

Managing Water in the West

Basin Hydrology, Reservoir Operations 2018 and 2019 Hydrograph

Adaptive Management Work Group

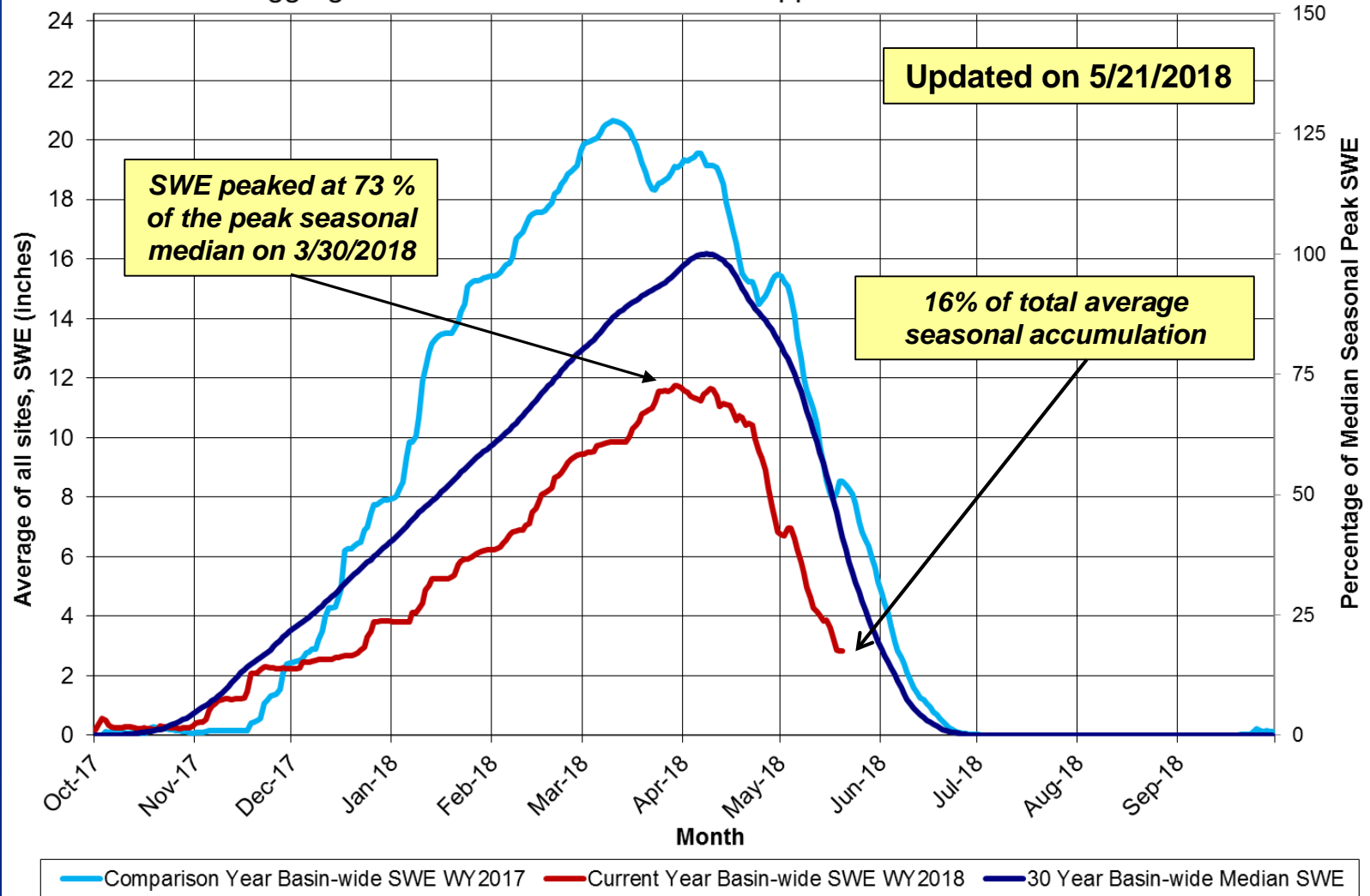
May 22, 2018



U.S. Department of the Interior
Bureau of Reclamation

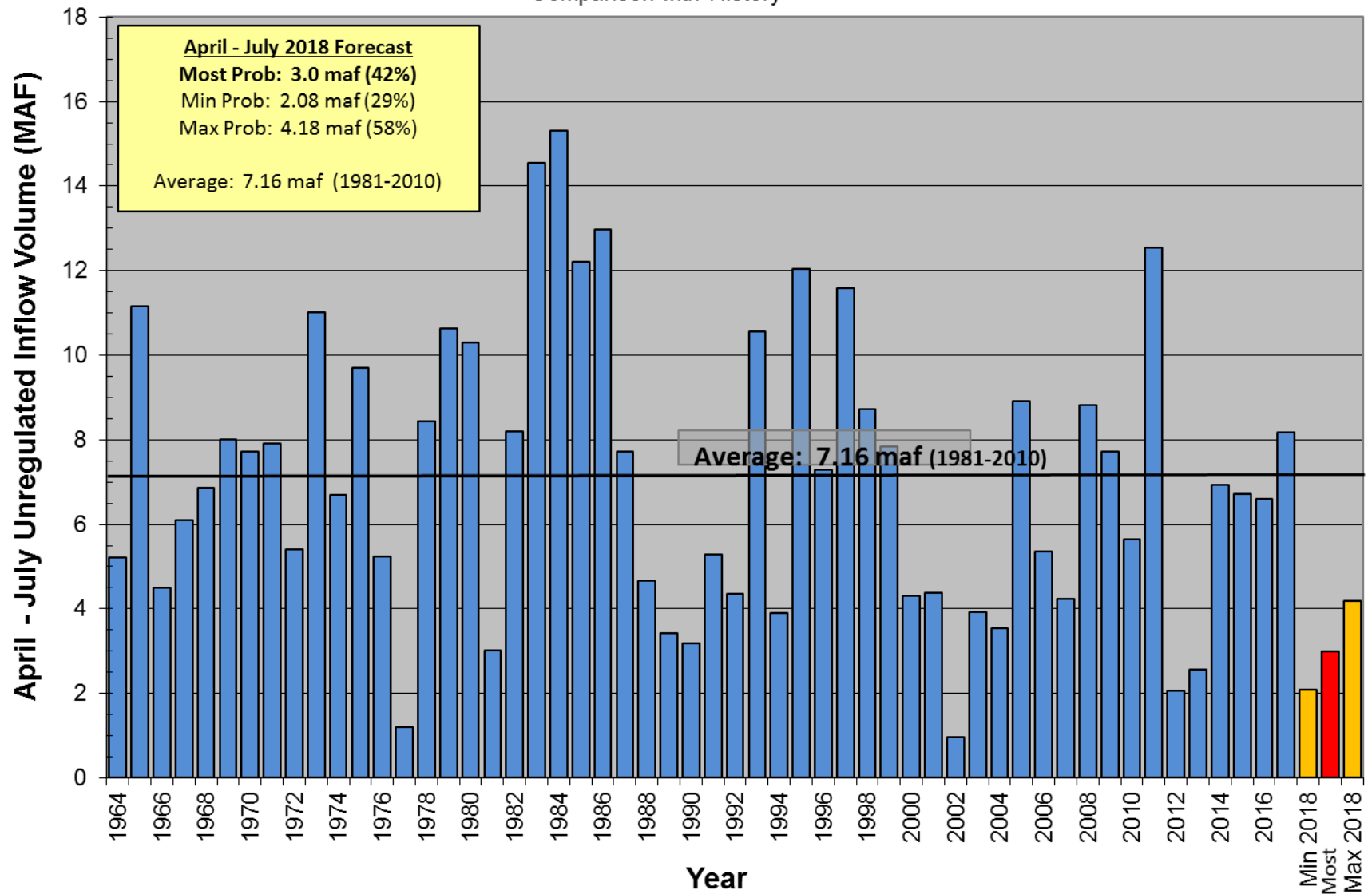
Snow Conditions

Upper Colorado River Basin Snotel Tracking
Aggregate of 104 Snotel Sites in the Upper Colorado River Basin



Data Provided by the Natural Resource Conservation Service (NRCS)

Lake Powell Unregulated Inflow
April - July 2018 Forecast
Issued May 2nd
 Comparison with History



Lake Powell 2018 Operating Tier

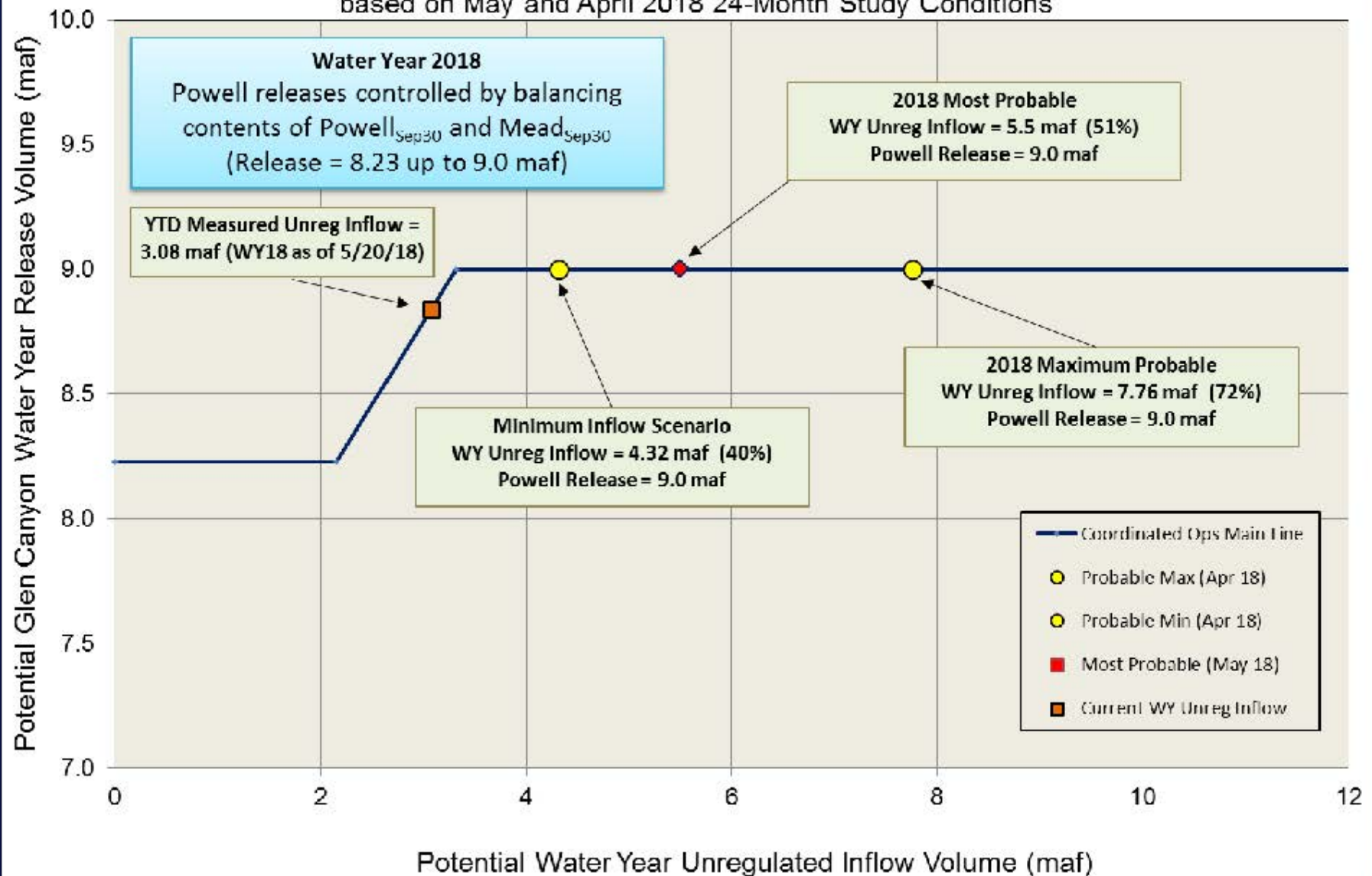
Upper Elevation Balancing

- Tier was set in August 2017
 - Start with 8.23 maf release
- Use April 24-Month Study projections of end of water year storage to potentially adjust
 1. Stay with 8.23 maf
 2. Balancing: 8.23 - 9.0 maf
 3. Equalization: > 8.23 maf

Lake Powell		
Elevation (feet)	Operation According to the Interim Guidelines	Live Storage (maf) ¹
3,700	Equalization Tier Equalize, avoid spills or release 8.23 maf	24.3
3,636 - 3,666 (2008-2026)	Upper Elevation Balancing Tier ³ Release 8.23 maf; if Lake Mead < 1,075 feet, balance contents with a min/max release of 7.0 and 9.0 maf	15.5 - 19.3 (2008-2026)
3,575	Mid-Elevation Release Tier Release 7.48 maf; if Lake Mead < 1,025 feet, release 8.23 maf	9.5
3,525	Lower Elevation Balancing Tier Balance contents with a min/max release of 7.0 and 9.5 maf	5.9
3,490		4.0
3,370		0

Potential Lake Powell Release Scenarios

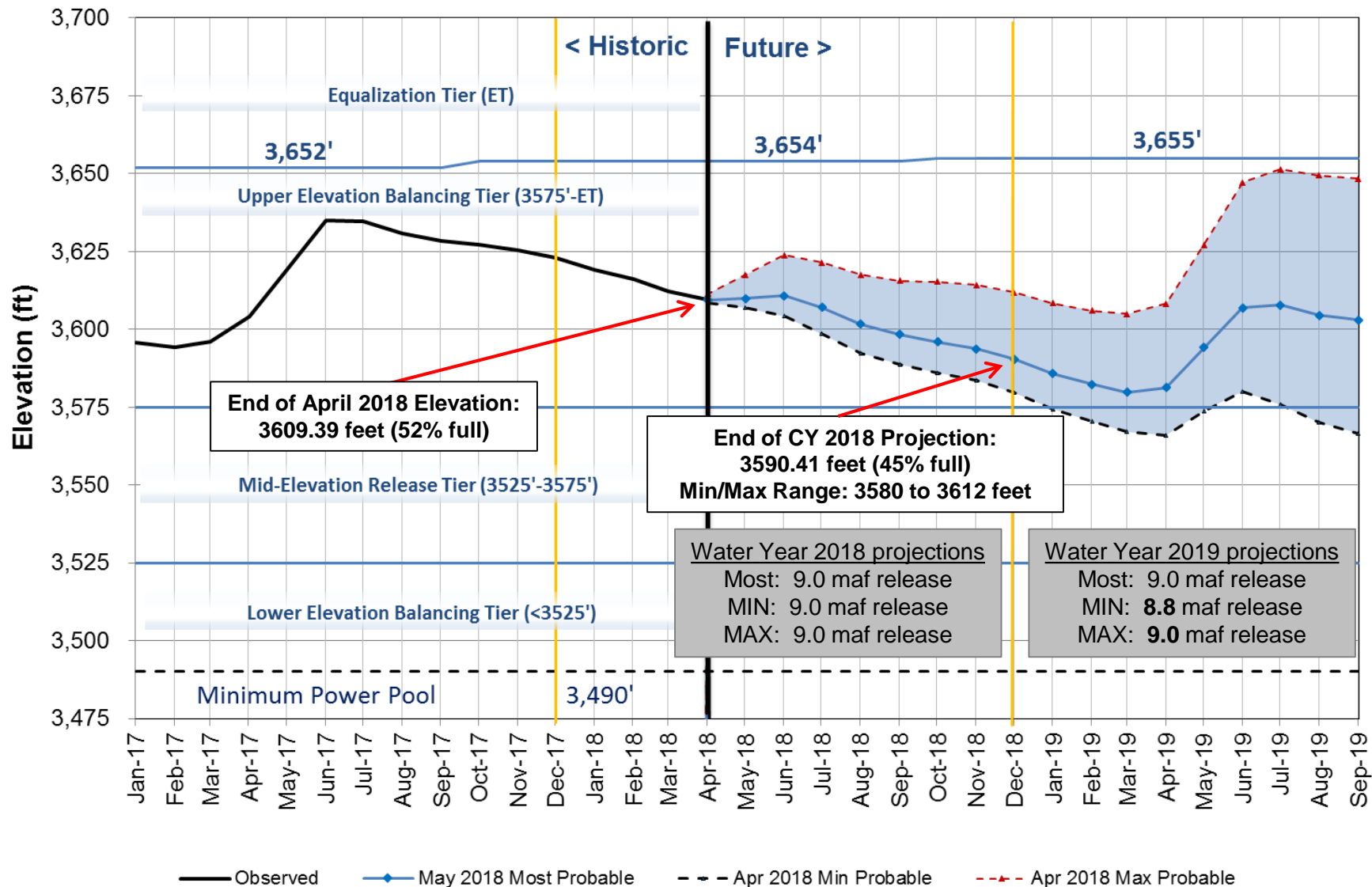
Water Year 2018 Release Volume as a Function of Unregulated Inflow Volume
based on May and April 2018 24-Month Study Conditions



RECLAMATION

Lake Powell End of Month Elevations

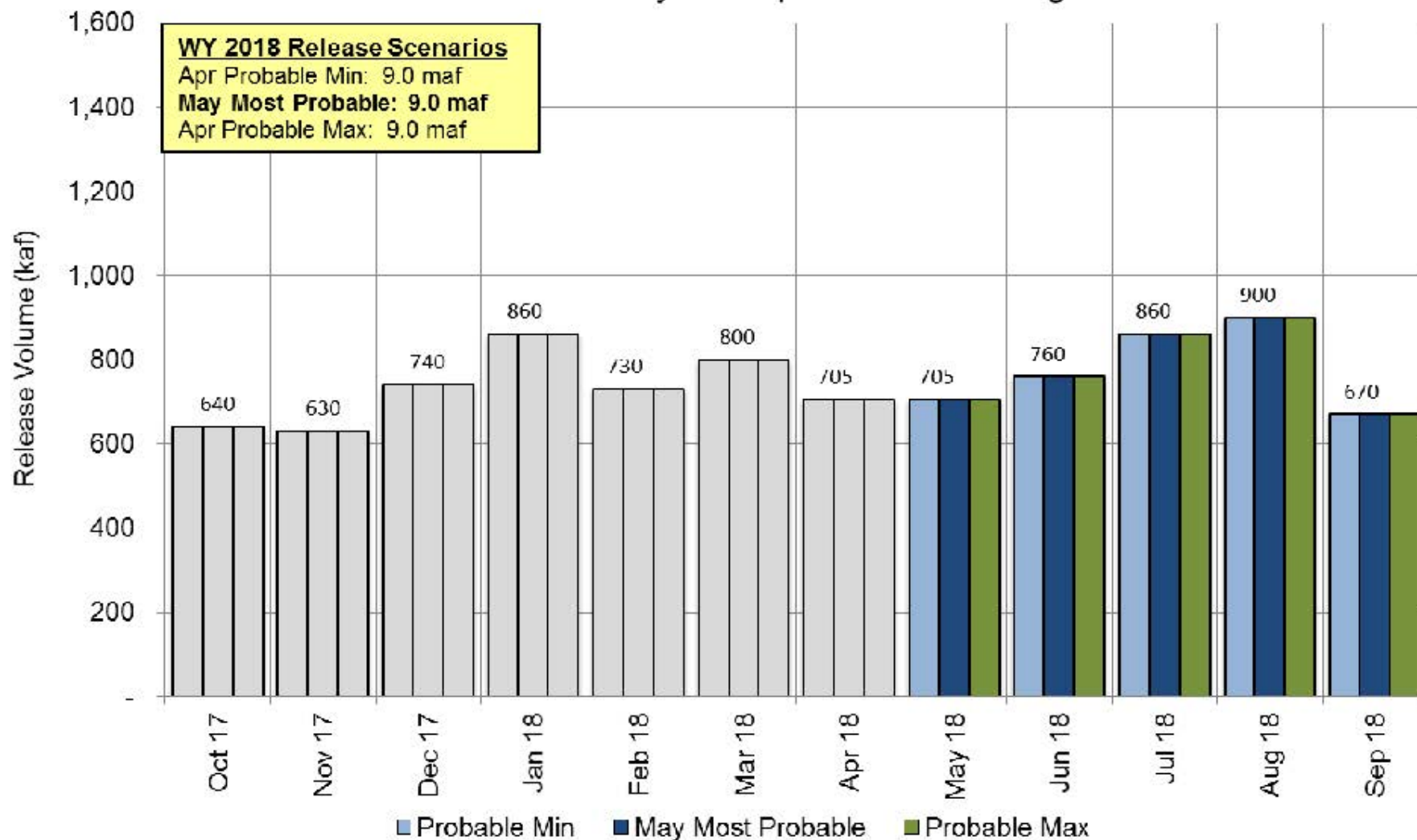
Historic and Projected based on May and April 2018 Modeling



Projected Lake Powell Monthly Release Volume Distribution

Release Scenarios for Water Year 2018

Based on May and April 2018 modeling

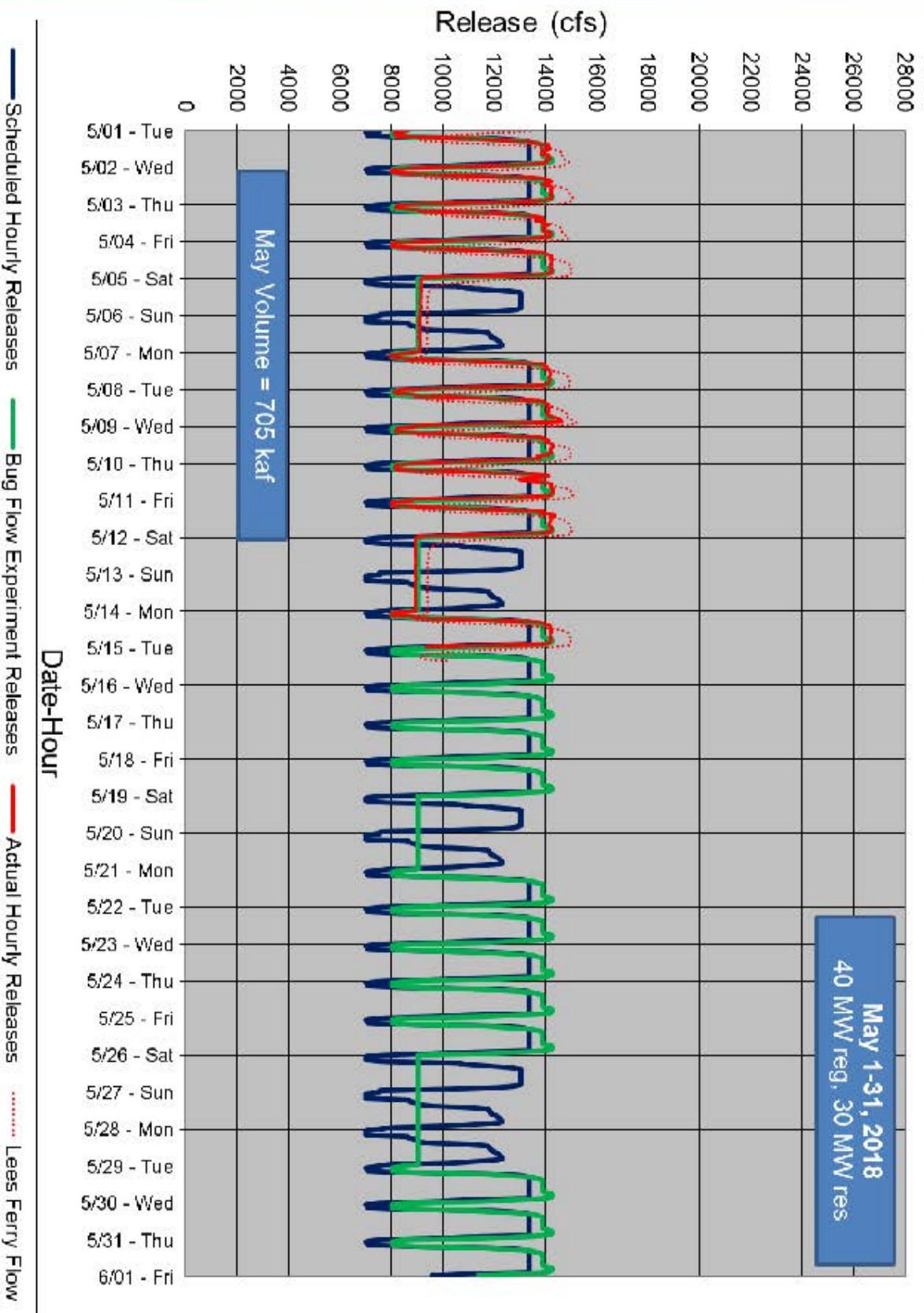


RECLAMATION

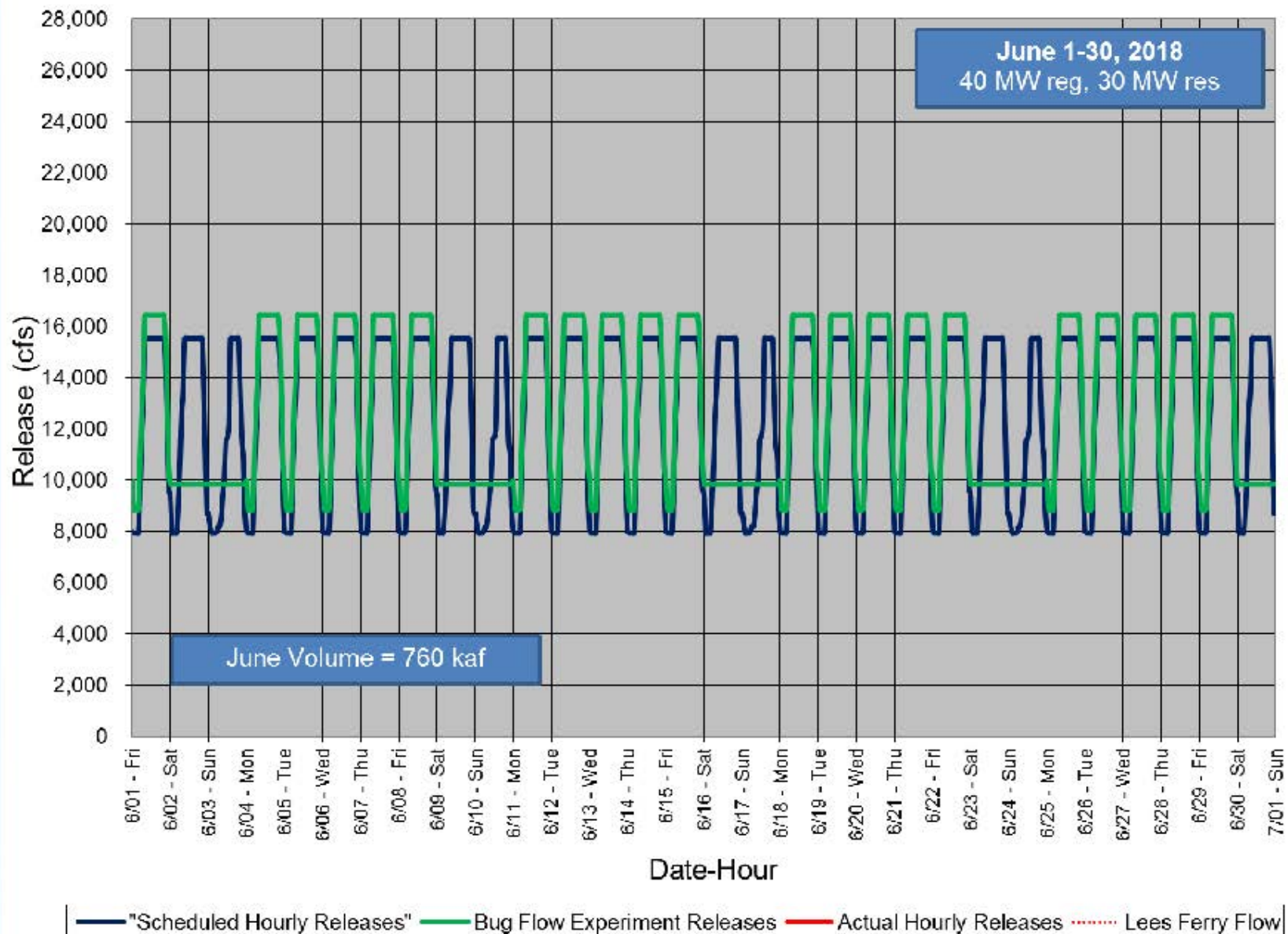
Experimental Macroinvertebrate Production Flow (Bug Flow)

- Approved by Assistant Sec. Water & Science on April 13.
 - Experiment is for May through August
 - Steady weekend flows.
 - Normal hydropower production flows during week days.
 - No monthly or weekly volumes flow changes.
 - Week day fluctuating flows follow LTEMP guide lines.

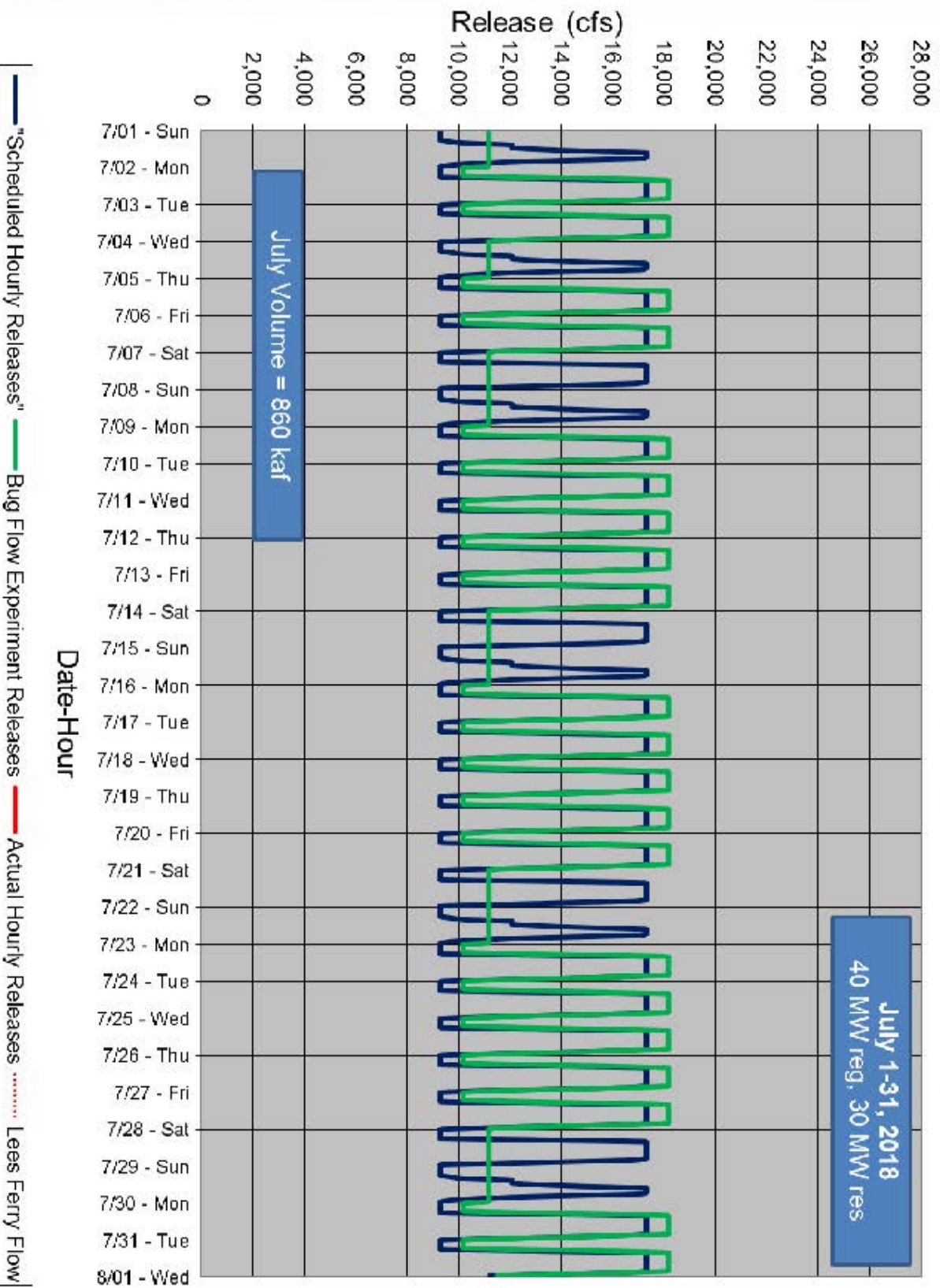
Glen Canyon Dam Hourly Bug Flow Pattern May 2018



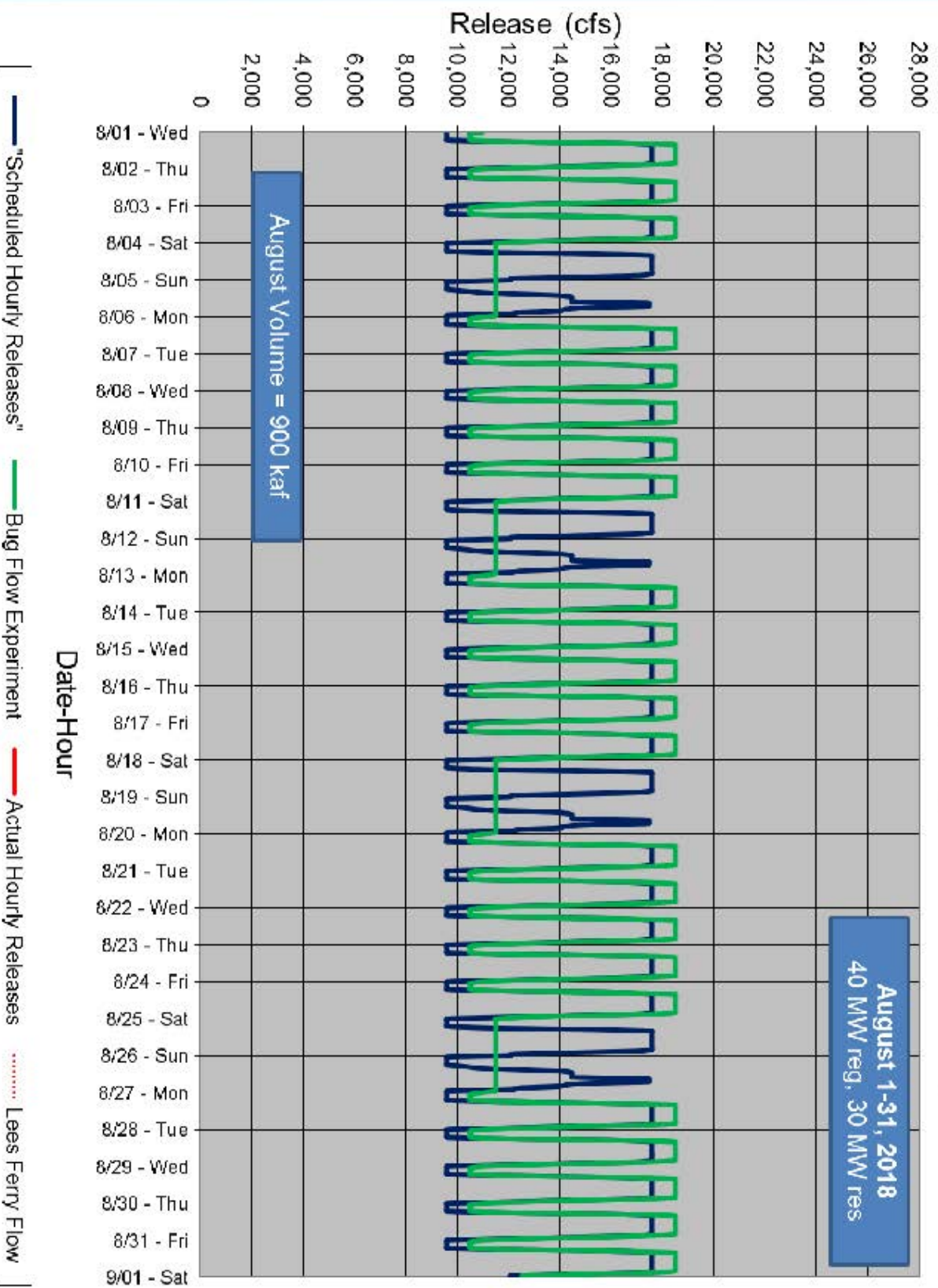
Potential Glen Canyon Dam Hourly Bug Flow Pattern June 2018



Potential Glen Canyon Dam Hourly Bug Flow Pattern July 2018



Potential Glen Canyon Dam Hourly Bug Flow Pattern August 2018





Reservoir Operations for Water Year 2019

RECLAMATION

2019 Projected Release Scenarios

Based on April and May 2018 24-Month Study Inflow Scenarios

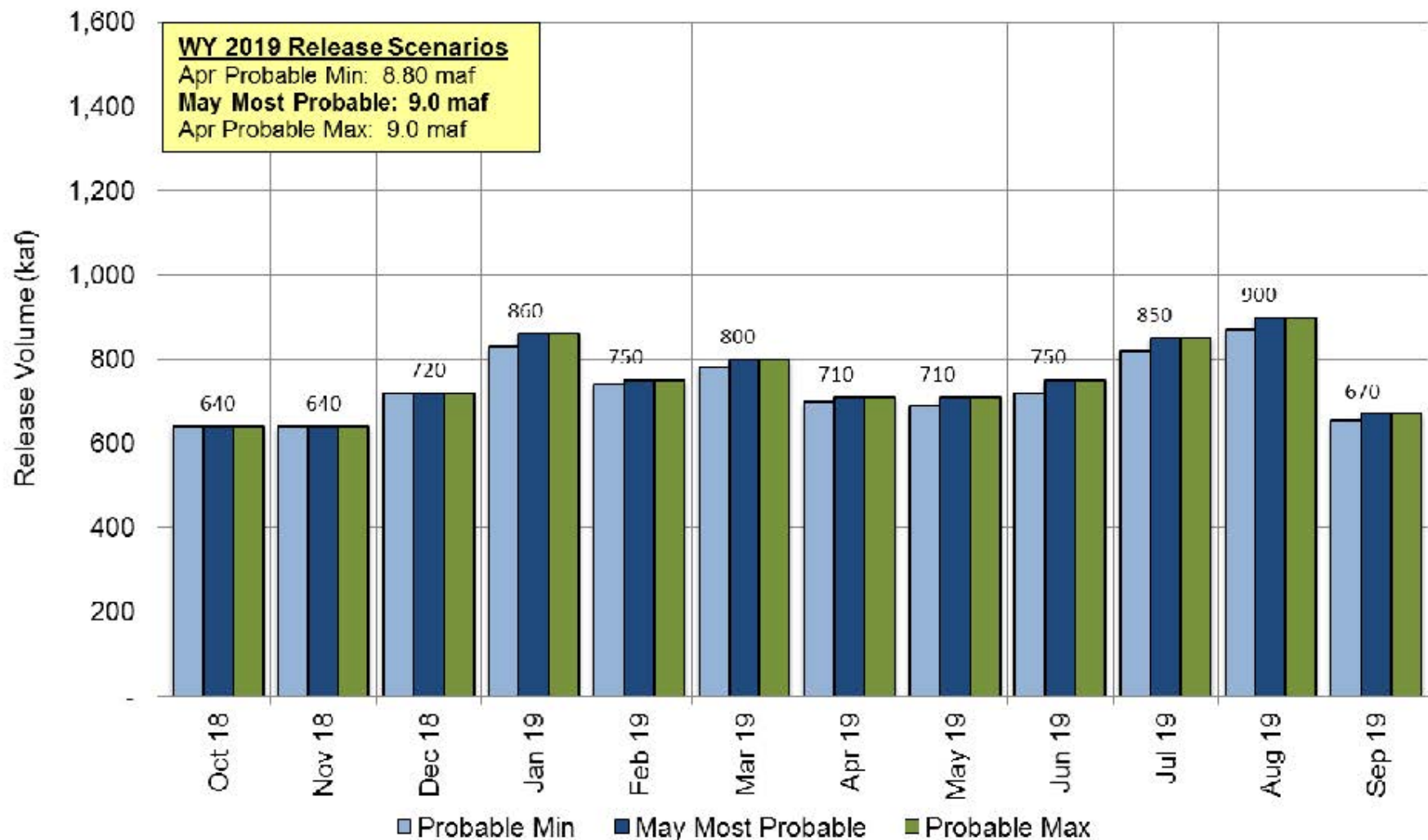
Powell Inflow Scenario	WY 2019 Release Projection
Probable Minimum	Upper Elevation Balancing Tier w/ Projected April shift to Balancing 8.8 maf release
Most Probable	Upper Elevation Balancing Tier w/ Projected April shift to Balancing 9.0 maf release
Probable Maximum	Upper Elevation Balancing Tier w/ Projected April shift to Balancing 9.0 maf release

RECLAMATION

Projected Lake Powell Monthly Release Volume Distribution

Release Scenarios for Water Year 2019

Based on May and April 2018 modeling



RECLAMATION

Questions?

Paul Davidson

801-524-3642

pdavidson@usbr.gov

Hydraulic Engineer, Glen Canyon
Reclamation, Upper Colorado Region
Resource Management Division
Water Resources Group

RECLAMATION