

CRFS 2019 Spring Meeting

LC Region Operations Update

Boulder Canyon Operations Office

March 28, 2019



Overview

- **Current Conditions**
- **2019 Operations Summary**
- **2020 Projections**

Lower Colorado River Basin Current Conditions



Colorado River Basin Storage

(as of March 26, 2019)

Reservoir	Percent Full	Storage (maf)	Elevation (feet)
Lake Powell	37	9.10	3,569.9
Lake Mead	42	10.85	1,090.0
Lake Mohave	95	1.72	643.6
Lake Havasu	92	0.57	447.4
Total System Storage	45	26.80	-
Total System Storage <i>(at this time last year)</i>	52	31.20	-

Lower Basin Intervening Flows

Intervening Flow from Glen Canyon to Hoover Dam

Month	2013-2017 (Old)	2014-2018 (New)	Change (New - Old)
January	78,194	82,575	4,382
February	92,983	91,399	-1,584
March	56,490	56,751	261
April	47,969	49,071	1,102
May	31,154	29,792	-1,362
June	11,744	16,790	5,046
July	81,066	79,699	-1,367
August	111,940	100,270	-11,670
September	105,095	90,875	-14,220
October	69,072	81,601	12,529
November	60,628	53,976	-6,652
December	49,623	51,487	1,865
Total	795,957	784,288	-11,670

WY Total	90th Percentile	75th Percentile	25th Percentile	10th Percentile
2013-2017	877,918	841,177	755,731	700,658
2014-2018	868,041	816,523	755,731	700,658
Change (New – Old)	-9,877	-24,653	0	0

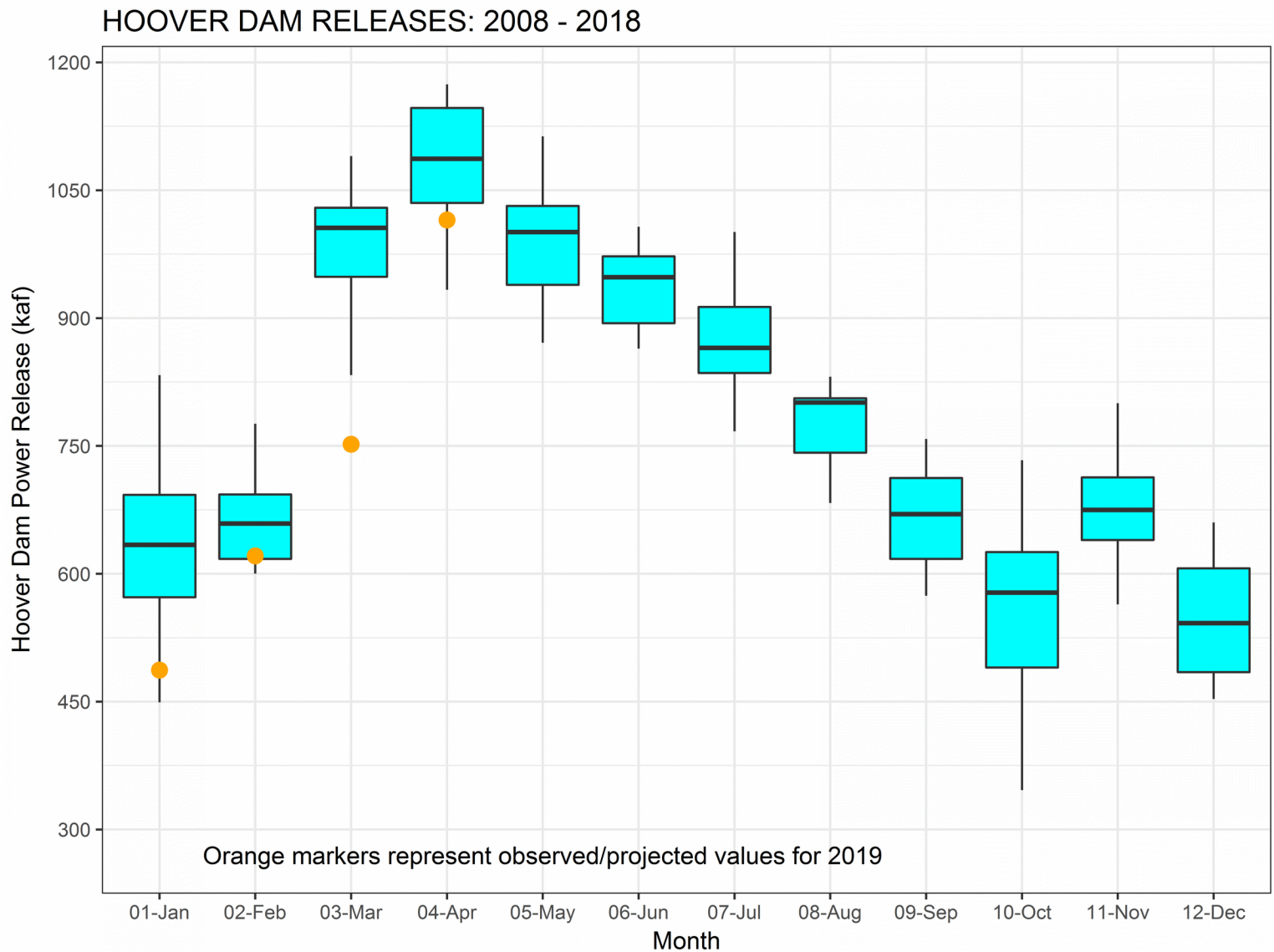
Lower Basin Side Inflows – WY/CY 2019^{1,2}

Intervening Flow from Glen Canyon to Hoover Dam

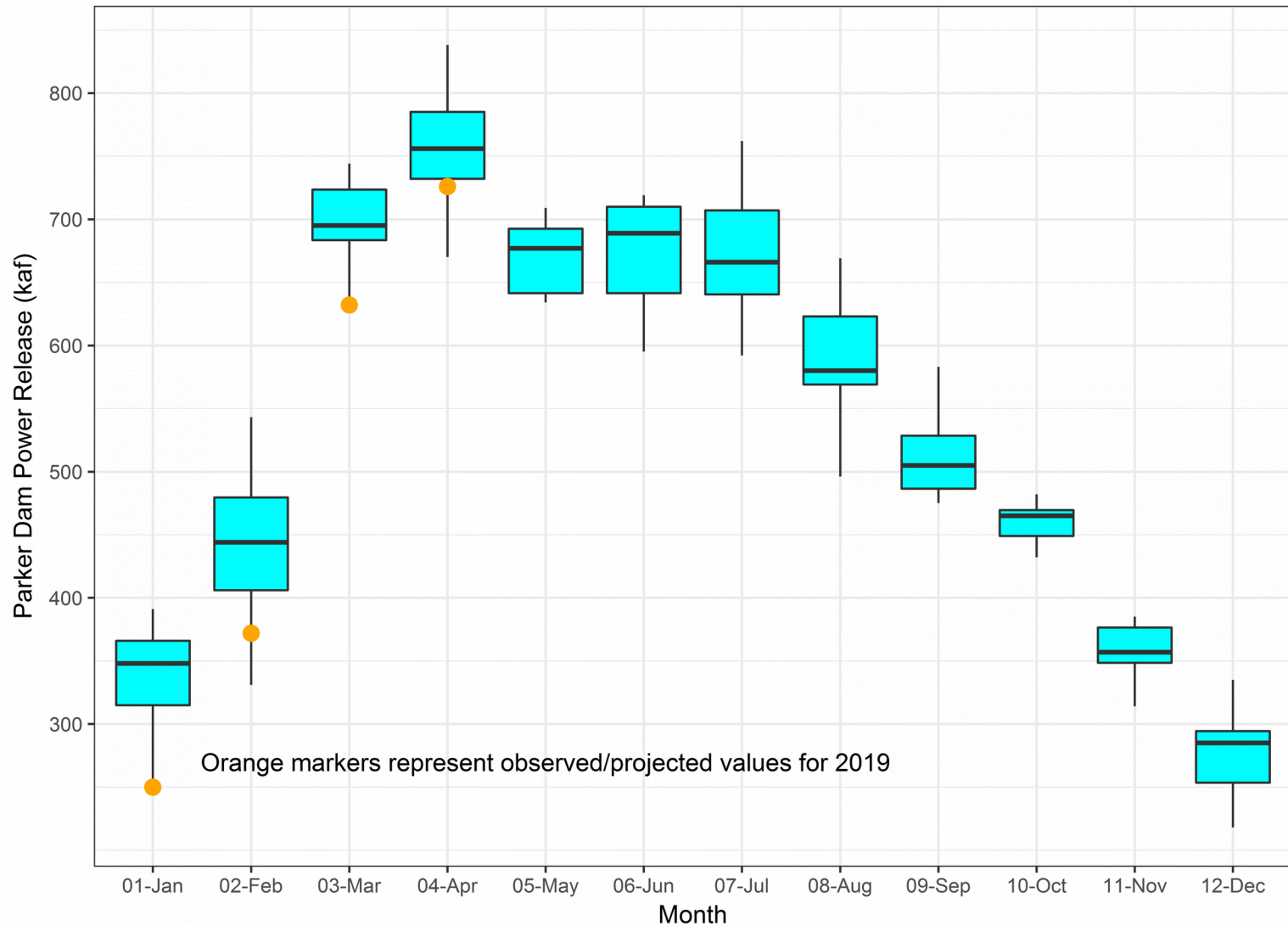
Month in WY/CY 2019		5-Year Average Intervening Flow (KAF)	Observed Intervening Flow (KAF)	Observed Intervening Flow (% of Average)	Difference From 5-Year Average (KAF)
HI	October 2018	82	100	123%	19
	November 2018	54	67	125%	13
	December 2018	51	52	101%	0
	January 2019	83	105	127%	23
	February 2019	91	127	139%	36
P	March 2019	57			
	April 2019	49			
	May 2019	30			
	June 2019	17			
	July 2019	80			
	August 2019	100			
	September 2019	91			
	October 2019	82			
	November 2019	54			
	December 2019	51			
	WY 2019 Totals	784	875	112%	91
	CY 2019 Totals	784	843	107%	58

¹ Values were computed with the LC's gain-loss model for the most recent 24-month study.

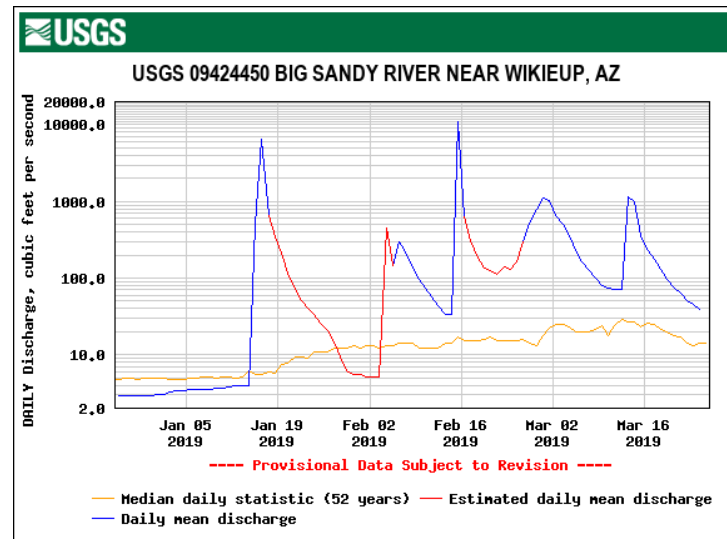
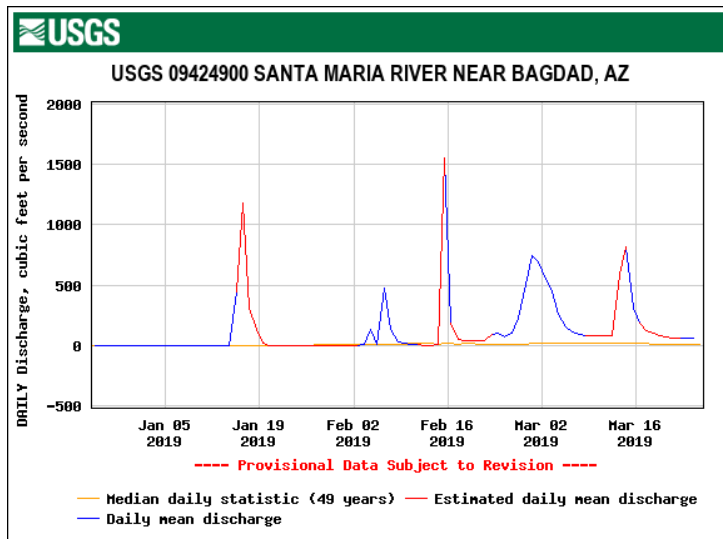
² Percents of average are based on the 5-year mean from 2014-2018.



PARKER DAM RELEASES: 2008 - 2018

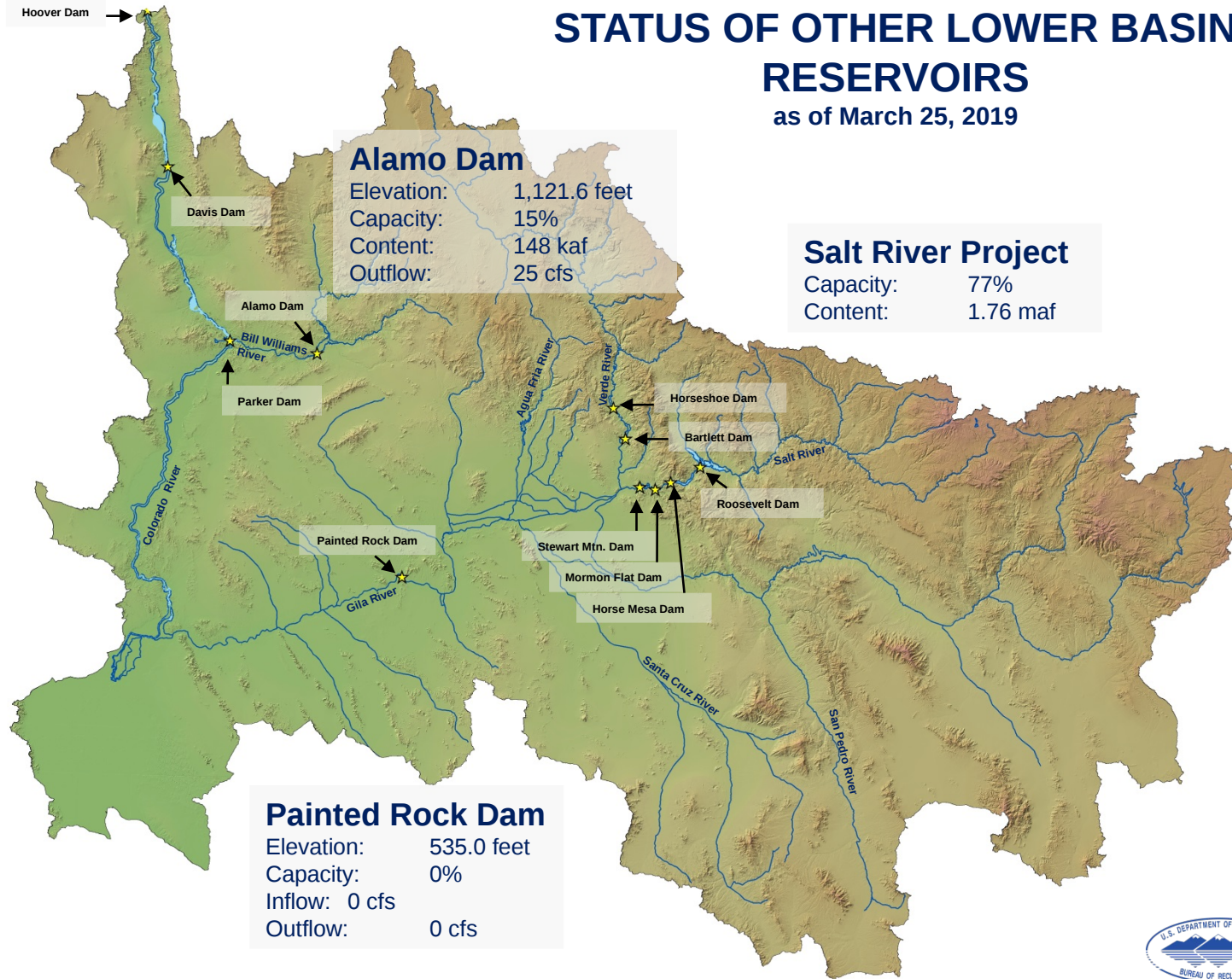


Bill Williams River/Alamo Dam



STATUS OF OTHER LOWER BASIN RESERVOIRS

as of March 25, 2019



Additional Operational Data

Year-to-Date Values

Mexico Excess Flows (af)	Brock Reservoir Stored (af)	Senator Wash Stored (af)
0	29,494	26,430
Through 3/24	Through 3/21	Through 3/21





Lower Colorado River Basin Operations Update

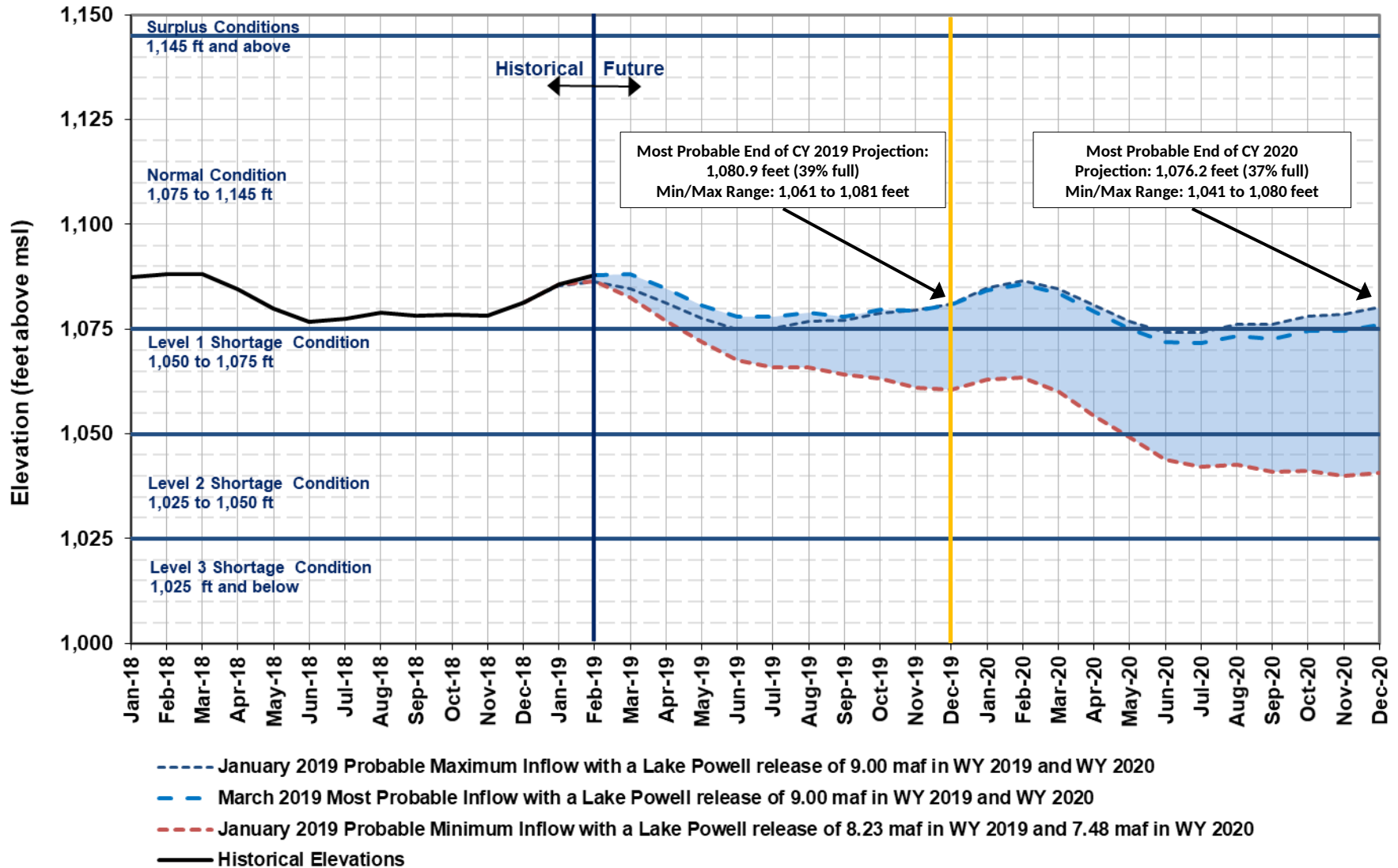
Lake Mead Operational Tiers

Based on January and March 2019 24-Month Study Inflow Scenarios

Inflow Scenario	CY 2019	CY 2020 Jan 1, 2020 - Projection
Jan Maximum Probable	Normal - ICS Surplus Condition	Normal - ICS Surplus Condition Elevation 1,081.08 ft
Mar Most Probable		Normal - ICS Surplus Condition Elevation 1,080.85 ft
Jan Minimum Probable		Level 1 Shortage Condition Elevation 1,060.65 ft

Lake Mead End of Month Elevations

Projections from the January and March 2019 24-Month Study Inflow Scenarios



Percent of Traces with Event or System Condition

Results from January 2019 MTOM/CRSS^{1,2,3,4} (values in percent)

	Event or System Condition	2019	2020	2021	2022	2023
Upper Basin – Lake Powell	Equalization Tier	0	1	10	13	17
	<i>Equalization – annual release > 8.23 maf</i>	0	1	10	13	17
	<i>Equalization – annual release = 8.23 maf</i>	0	0	0	0	0
	Upper Elevation Balancing Tier	100	31	42	48	46
	<i>Upper Elevation Balancing – annual release > 8.23 maf</i>	43	19	39	44	40
	<i>Upper Elevation Balancing – annual release = 8.23 maf</i>	57	11	3	4	6
	<i>Upper Elevation Balancing – annual release < 8.23 maf</i>	0	1	0	1	0
	Mid-Elevation Release Tier	0	66	42	24	22
	<i>Mid-Elevation Release – annual release = 8.23 maf</i>	0	0	0	3	4
	<i>Mid-Elevation Release – annual release = 7.48 maf</i>	0	66	42	21	18
	Lower Elevation Balancing Tier	0	3	6	15	16
Lower Basin – Lake Mead	Shortage Condition – any amount (Mead ≤ 1,075 ft)	0	69	82	81	79
	<i>Shortage – 1st level (Mead ≤ 1,075 and ≥ 1,050)</i>	0	69	50	33	26
	<i>Shortage – 2nd level (Mead < 1,050 and ≥ 1,025)</i>	0	0	31	39	31
	<i>Shortage – 3rd level (Mead < 1,025)</i>	0	0	0	9	21
	Surplus Condition – any amount (Mead ≥ 1,145 ft)	0	0	0	1	4
	<i>Surplus – Flood Control</i>	0	0	0	0	0
	Normal or ICS Surplus Condition	100	31	18	17	17

¹ Reservoir initial conditions based on December 31, 2019 conditions using the Mid-term Probabilistic Operations Model. MTOM uses the January 4, 2019 unregulated inflow forecast from the CBRFC.

² Each of the 35 initial conditions were coupled with 111 hydrologic inflow sequences based on resampling of the observed natural flow record from 1906-2016 for a total of 3,885 traces analyzed.

³ Percentages shown may not sum to 100% due to rounding to the nearest percent.

⁴ Percentages shown may not be representative of the full range of future possibilities that could occur with different modeling assumptions.

Lower Colorado River Operations

For further information: <https://www.usbr.gov/lc/riverops.html>

Email: bcoowaterops@usbr.gov



RECLAMATION
Managing Water in the West