

# RECLAMATION

*Managing Water in the West*

## Colorado River Basin Current Conditions and Operational Update

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U.S. Department of the Interior  
Bureau of Reclamation

# Colorado River Basin Current Conditions and Operational Update

- Basin Overview
- Basin Current Conditions
- Lake Powell and Lake Mead 2014 Projected Operations

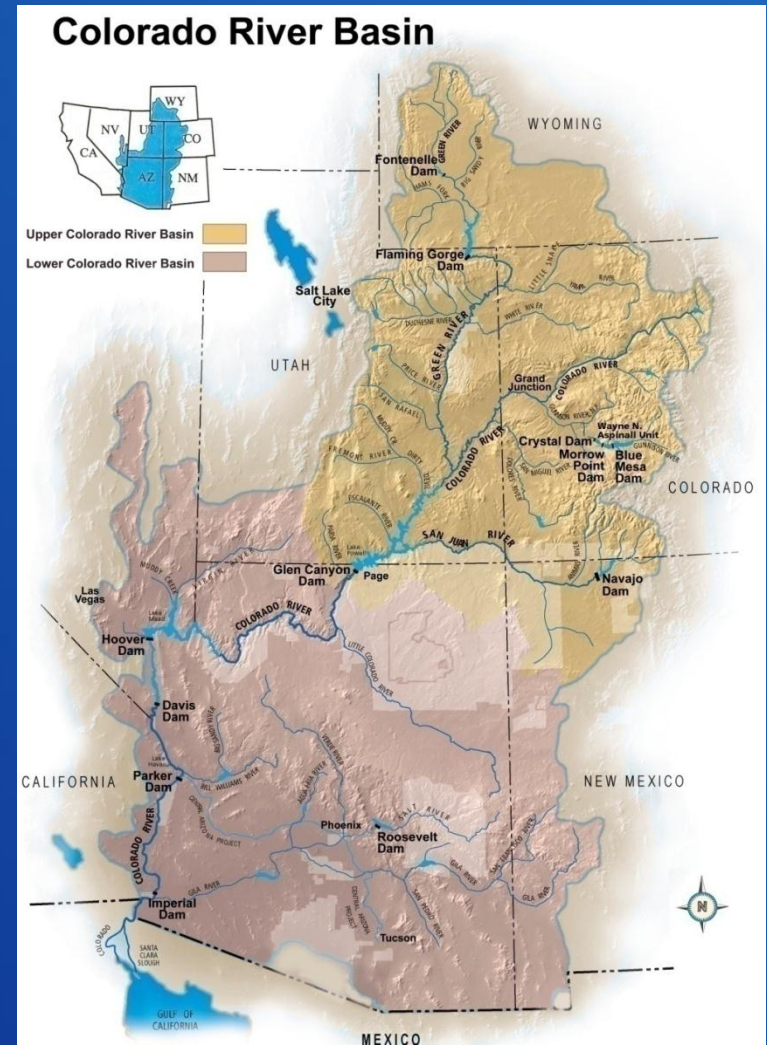


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# Overview of the Colorado River System

## Basin Hydrology

- 16.5 million acre-feet (maf) allocated annually
- 13 to 14.5 maf of consumptive use annually
- 60 maf of storage
- 14.9 maf average annual “natural” inflow into Lake Powell over past 100 years
- 1.3 maf average annual inflow in the Lower Basin
- Inflows are highly variable year-to-year

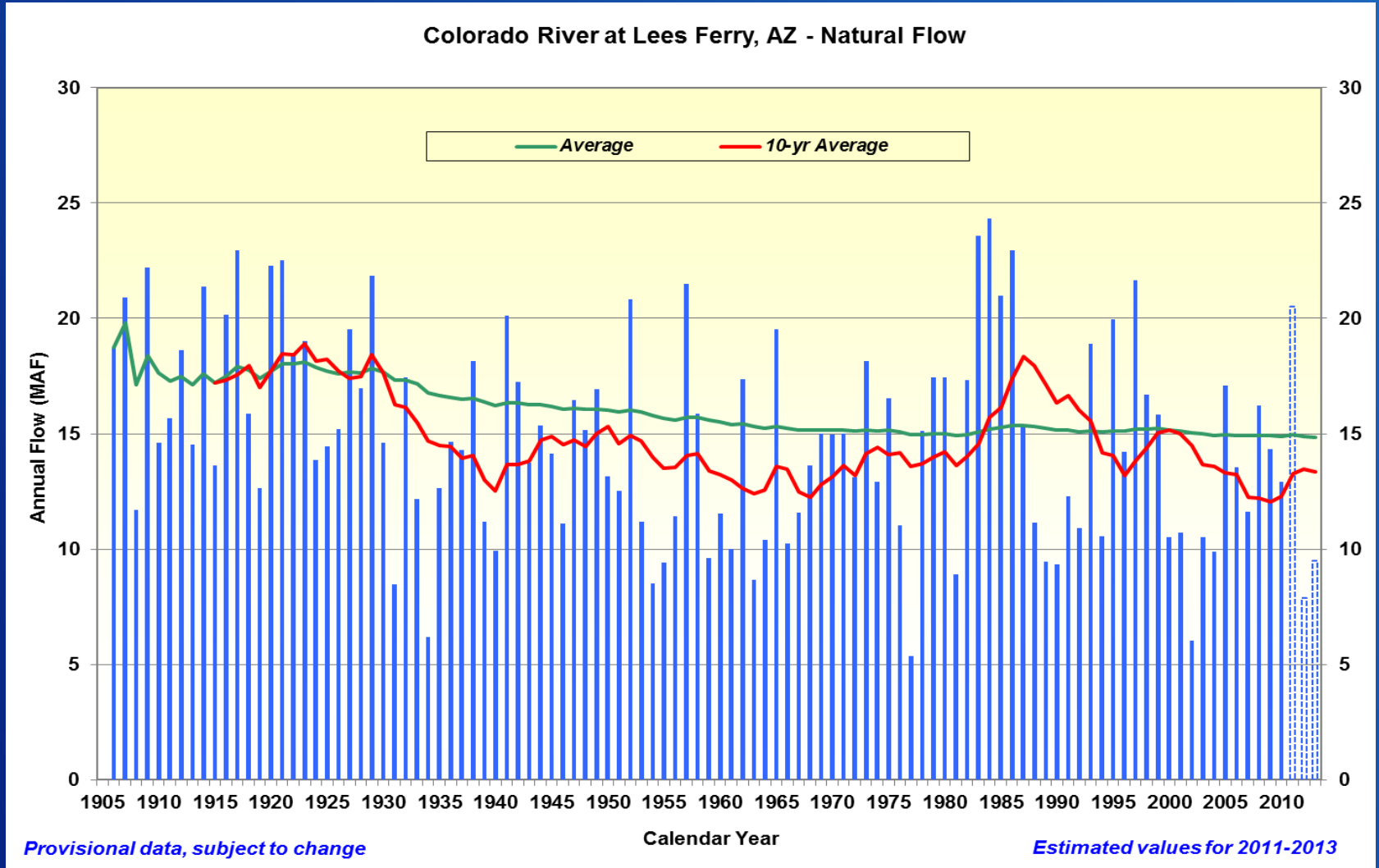


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# Natural Flow

## Colorado River at Lees Ferry Gaging Station, Arizona

### Water Year 1906 to 2013

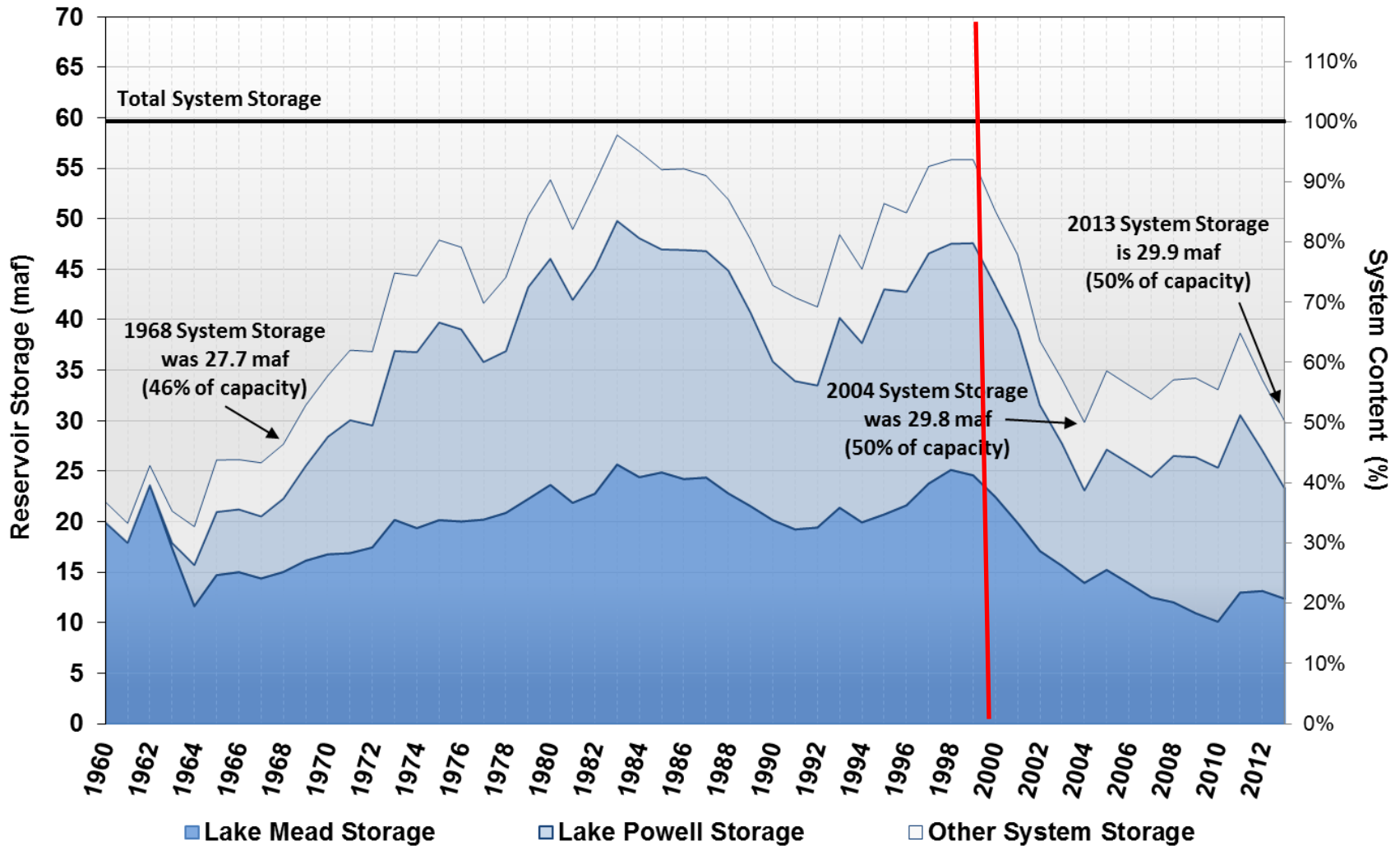


# Colorado River Drought

- Inflow into Lake Powell has been below average 11 of the past 14 years (2000-2013)
- The period from 2000-2013 was the driest 14-year period in over 100 years of historical record
- Tree-ring reconstructions show more severe droughts have occurred over the past 1200 years (e.g., drought in the mid 1100s)
- However, based on the paleo-record, only four 14-year periods were drier than the current period from 2000-2013

# System Storage - End of Water Year Total Volumes

Water Years 1960 - 2013



# Overview of the 2007 Interim Guidelines



- In place for an interim period
  - 2007 through 2026
- Coordinated operations for Lake Powell and Lake Mead specified through the full range of reservoir levels
- Encourage efficient use and management of Colorado River water through the ICS mechanism
- Establish guidelines for determining shortages in the Lower Basin

# Colorado River Basin Storage (as of February 25, 2014)

Current Storage	Percent Full	MAF	Elevation (Feet)
Lake Powell	39%	9.6	3,576
Lake Mead	48%	12.5	1,108
Total System Storage*	48%	28.8	NA

\*Total system storage was 32.5 maf or 55% this time last year

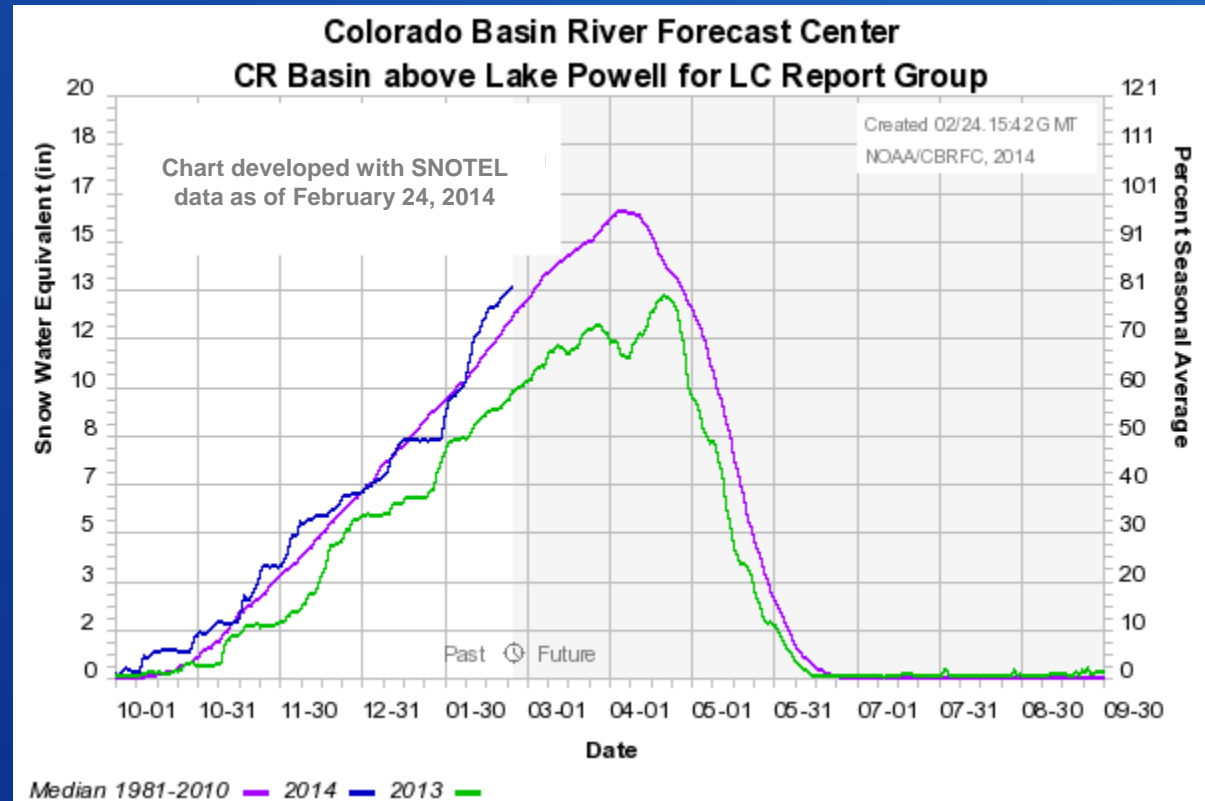


# Water Year Snowpack and Precipitation as of February 26, 2014

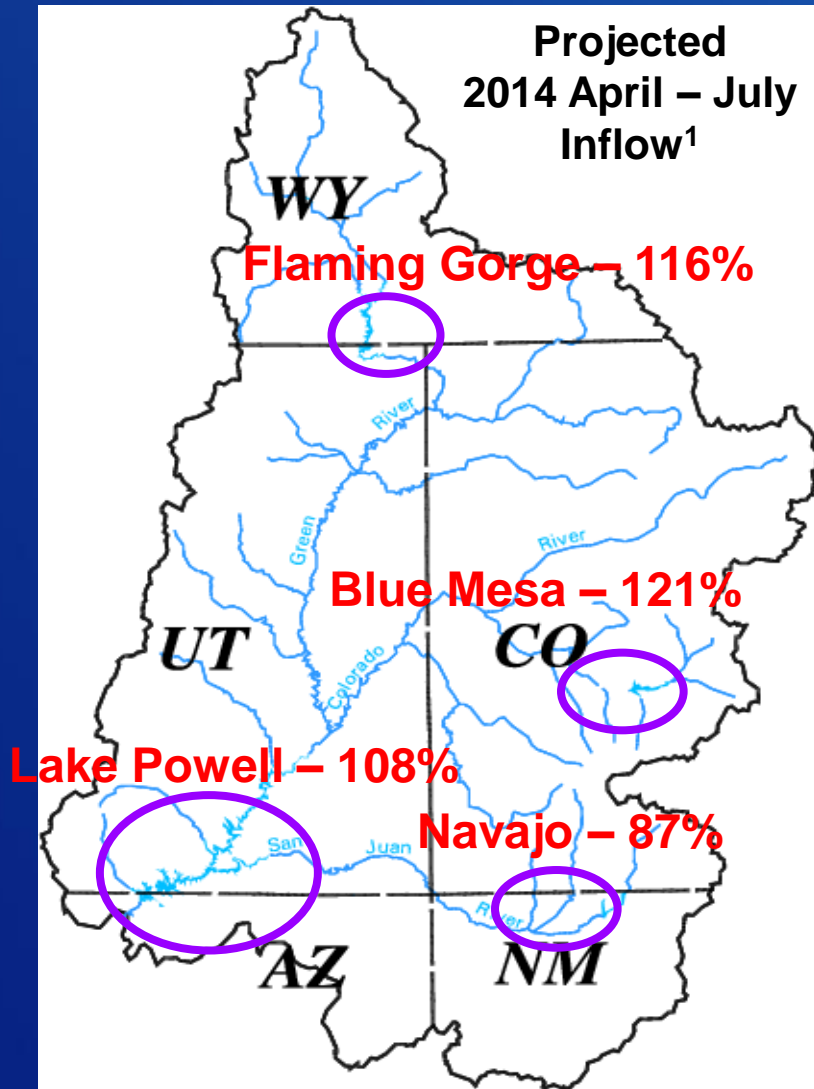
Colorado River  
Basin above  
Lake Powell

Water Year 2014  
Precipitation  
(year-to-date)  
100% of average

Current Snowpack  
109% of median



# CBRFC Unregulated Inflow Forecasts dated February 18, 2014



Month/Period in 2014	Inflow (KAF)	Percent of Average <sup>1</sup>
January 2014 (observed)	270	75
February 2014	320	81
March 2014	575	86
April 2014	1,100	104
2014 April - July	7,700	108
WY 2014	10,918	101

<sup>1</sup> Percentages and percent of average based on period of record from 1981-2010

# Lake Powell & Lake Mead Operational Table

## Operational Tier Determinations for Water Year/Calendar Year 2014

Lake Powell			Lake Mead		
Elevation (feet)	Operation According to the Interim Guidelines	Live Storage (maf) <sup>1</sup>	Elevation (feet)	Operation According to the Interim Guidelines	Live Storage (maf) <sup>1</sup>
3,700	<b>Equalization Tier</b> Equalize, avoid spills or release 8.23 maf	24.3	1,220	<b>Flood Control Surplus or Quantified Surplus Condition</b> Deliver > 7.5 maf	25.9
3,636 - 3,666 (2008-2026)	<b>Upper Elevation Balancing Tier<sup>3</sup></b> 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)	1,200 (approx.) <sup>2</sup>	<b>Domestic Surplus or ICS Surplus Condition</b> Deliver > 7.5 maf	22.9 (approx.) <sup>2</sup>
			1,145	<b>Normal or ICS Surplus Condition</b> Deliver ≥ 7.5 maf	15.9
3,575	<b>Mid-Elevation Release Tier</b> Release 7.48 maf; if Lake Mead < 1,025 feet, release 8.23 maf	9.5	1,105		11.9
3,525			1,075	9.4	
3,490	<b>Lower Elevation Balancing Tier</b> Balance contents with a min/max release of 7.0 and 9.5 maf	4.0	1,050	<b>Shortage Condition</b> Deliver 7.167 <sup>4</sup> maf	7.5
			1,025	<b>Shortage Condition</b> Deliver 7.083 <sup>5</sup> maf	5.8
3,370		0	1,000	<b>Shortage Condition</b> Deliver 7.0 <sup>6</sup> maf Further measures may be undertaken <sup>7</sup>	4.3
			895		0

Diagram not to scale

<sup>1</sup> Acronym for million acre-feet

<sup>2</sup> This elevation is shown as approximate as it is determined each year by considering several factors including Lake Powell and Lake Mead storage, projected Upper Basin and Lower Basin demands, and an assumed inflow.

<sup>3</sup> Subject to April adjustments which may result in a release according to the Equalization Tier

<sup>4</sup> Of which 2.48 maf is apportioned to Arizona, 4.4 maf to California, and 0.287 maf to Nevada

<sup>5</sup> Of which 2.40 maf is apportioned to Arizona, 4.4 maf to California, and 0.283 maf to Nevada

<sup>6</sup> Of which 2.32 maf is apportioned to Arizona, 4.4 maf to California, and 0.280 maf to Nevada

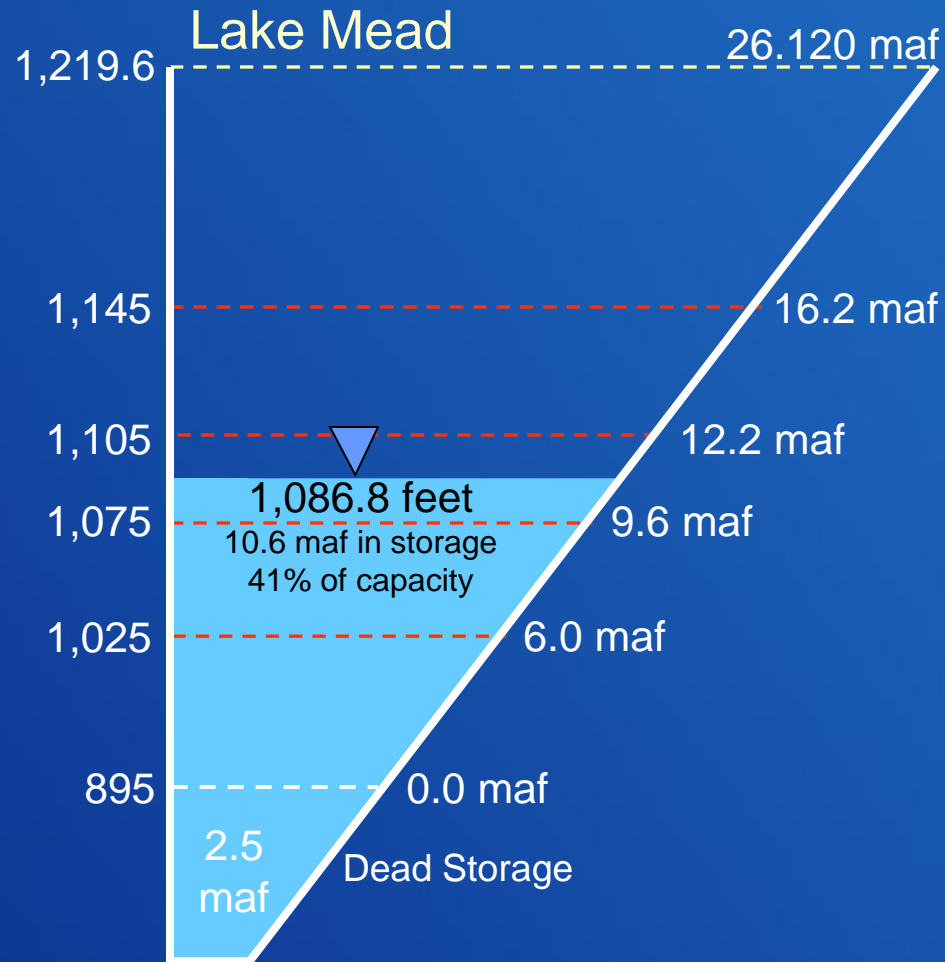
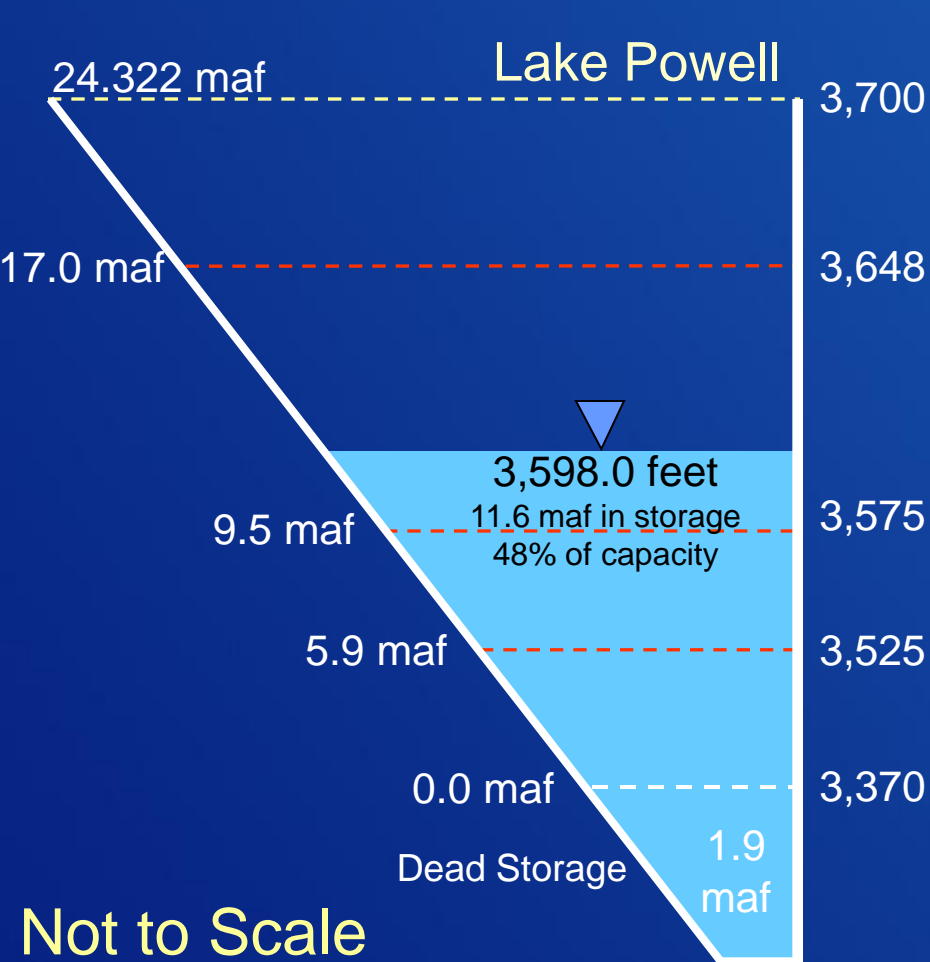
<sup>7</sup> Whenever Lake Mead is below elevation 1,025 feet, the Secretary shall consider whether hydrologic conditions together with anticipated deliveries to the Lower Division States and Mexico is likely to cause the elevation at Lake Mead to fall below 1,000 feet. Such consideration, in consultation with the Basin States, may result in the undertaking of further measures, consistent with applicable Federal law.

<sup>1</sup> Lake Powell and Lake Mead operational tier determinations were based on August 2014 24-Month Study projections and documented in the 2014 AOP.

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# End of Calendar Year 2014 Projections

## February 24-Month Study Most Probable Inflow Scenario<sup>1</sup>

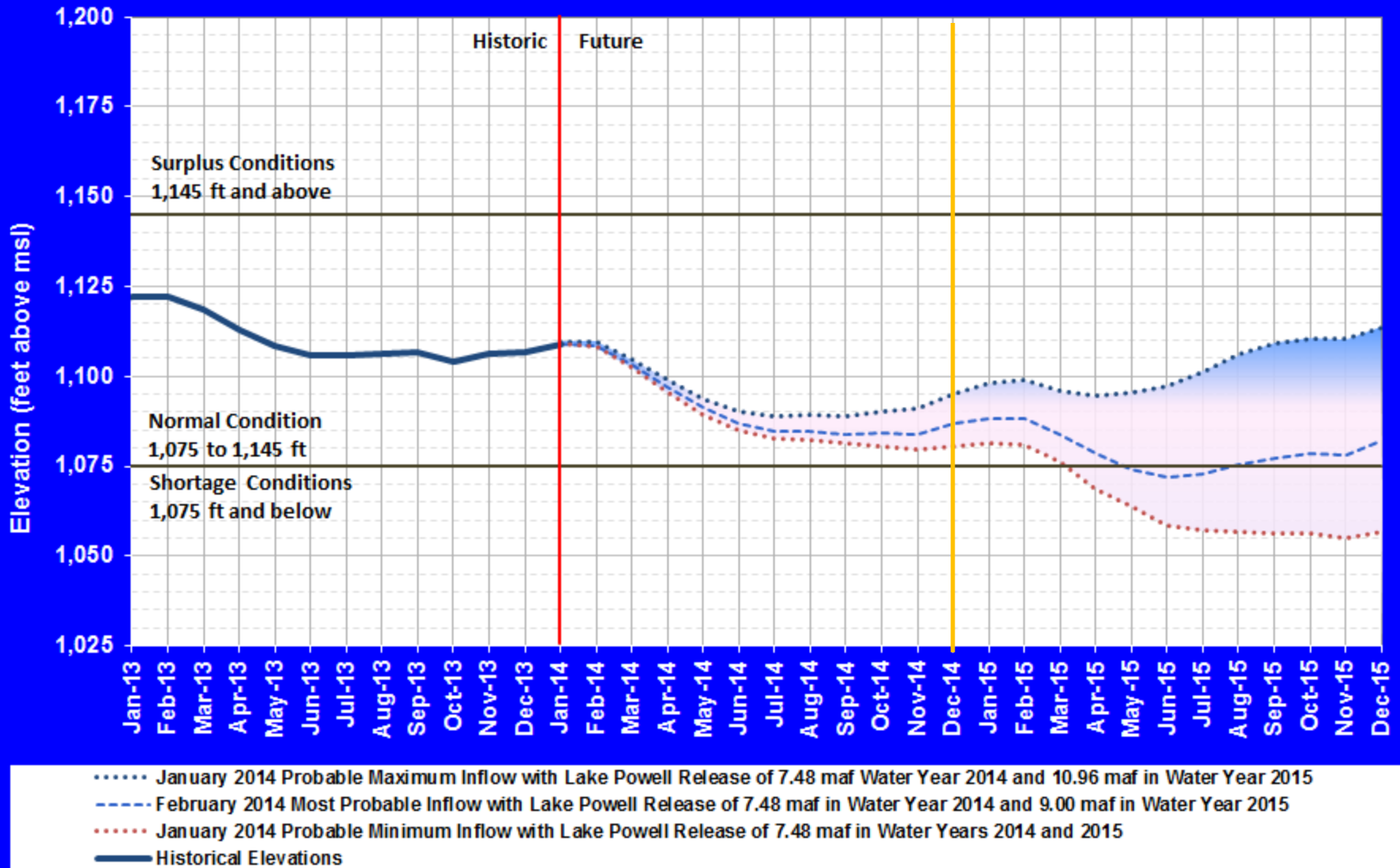


Not to Scale

<sup>1</sup> WY 2014 unregulated inflow into Lake Powell is based on the CBRFC outlook dated 2/4/14.

# Lake Mead End of Month Elevations

Projections from January and February 2014 24-Month Study Inflow Scenarios



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An aerial photograph of a large concrete dam with a reservoir behind it. The dam is a curved structure with several spillways. The water in the reservoir is a deep blue-green color. The surrounding landscape is rugged and mountainous, with some roads and buildings visible near the dam. The sky is clear and blue.

# The Colorado River Current Conditions and Operational Update

For further information:  
Contact LC River Operations

[BCOOWaterOps@usbr.gov](mailto:BCOOWaterOps@usbr.gov)

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