Colorado River System Overview and Current Status

Salton Sea Summit
UC Riverside/Palm Desert Campus
October 17, 2019
Presentation Outline

• Overview of the Colorado River Basin
• Colorado River Drought
• Drought Contingency Plans
• Projected Future Conditions
Overview of the Colorado River System

• 16.5 million acre-feet (maf) allocated annually
  - 7.5 maf each to Upper and Lower Basins and 1.5 maf to Mexico

• 16 maf average annual “natural flow” (from historical record)
  - 14.8 maf in the Upper Basin and 1.3 maf in the Lower Basin

• Year-to-year inflows are highly variable

• 60 maf of storage (about 4 times the annual average inflow)

• Operations and water deliveries governed by the “Law of the River”
  - Secretary of the Interior is the Water Master in the Lower Basin
Lake Powell and Lake Mead Combined Storage

Combined maximum capacity

Reservoir Storage (million acre-feet)

Lake Mead Storage
Lake Powell Storage

Combined maximum capacity
Overview of the 2007 Interim Guidelines

- In place for an interim period from 2007 through 2026
- Provide for coordinated operations of Lake Powell and Lake Mead at the full range of reservoir conditions
- Establish the Intentionally Created Surplus (ICS) mechanism
- Establish guidelines for determining a shortage condition in the Lower Basin
- Does not include provisions for Mexico
  - Operational agreements with Mexico are established through “Minutes” by the International Boundary and Water Commission (i.e., Minute 323)
Lake Mead – Key Elevations

**Flood Control or Surplus Conditions**

- 1,229 ft (27.6 maf)
- 1,145 ft (16.2 maf)
- 1,083 ft* (10.3 maf (39% Full)*)

**Normal or ICS Surplus Conditions**

- 1,075 ft
- 1,050 ft
- 1,025 ft

**Level 1 Shortage Conditions**

- U.S. Lower Basin Shortage = 333 kaf
- Mexico Reduction = 50 kaf

**Level 2 Shortage Conditions**

- U.S. Lower Basin Shortage = 417 kaf
- Mexico Reduction = 70 kaf

**Level 3 Shortage Conditions**

- U.S. Lower Basin Shortage = 500 kaf
- Mexico Reduction = 125 kaf

**Minimum Power Pool**

- 950 ft (2.0 maf)

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2. Mexico reductions based on Minute 323 (in place 2017-2026).

*As of October 15, 2019*
Lake Mead near Hoover Dam in 2000

Lake Mead near Hoover Dam in 2016
Drought Contingency Planning

• Actions are in addition to the 2007 Interim Guidelines

• Goals:
  • Reduce risk of Lake Mead and Lake Powell reaching critically low elevations (1,020 feet and 3,490/3,525 feet, respectively)

• Key Elements:
  • Additional contributions of water by Lower Basin States
  • Additional flexibility for water storage and recovery to incentivize conservation
  • Drought operations and demand management in Upper Basin
### Total Lower Basin Volumes (in KAF)

#### 2007 Interim Guidelines, Minute 323, Lower Basin Drought Contingency Plan & Binational Water Scarcity Contingency Plan

<table>
<thead>
<tr>
<th>Lake Mead Elevation (ft msl)</th>
<th>2007 Interim Guidelines Shortages</th>
<th>Minute 323 Delivery Reductions</th>
<th>Total Combined Reductions</th>
<th>DCP Contributions</th>
<th>Binational Water Scarcity Contingency Plan Savings</th>
<th>Combined Volumes by Country</th>
<th>Total Combined Volumes</th>
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The US will work to create or conserve 100,000 af or more of Colorado River system water on an annual basis to contribute to conservation of water supplies in Lake Mead and other Colorado River reservoirs. All actions taken by the United States shall be subject to applicable federal law, including availability of appropriations.
End of calendar year 2019 balances of U.S. ICS and Mexico’s Water Reserve, system conservation water, and other voluntary contributions to Lake Mead are provisional and subject to change.
Average Risk Through 2026

Average Risk of Reaching Critical Elevations Through 2026
(Lake Powell < 3,525' & Lake Mead < 1,025')

Note: Modeled “DCP” includes LB DCP, UB Drought Response Ops and Mexico’s BSWCP
For further information:

www.usbr.gov/lc/riverops.html

www.usbr.gov/dcp