U.S. Department of the Interior

Bureau of Reclamation

August 2021

# Colorado River Fact Sheet

## OVERVIEW OF THE COLORADO RIVER

Today, nearly 40 million people in the seven Colorado River Basin States—Arizona, California, Colorado, Nevada, New Mexico, Utah, Wyoming, and Mexico—rely on the Colorado River and its tributaries for some, if not all, of their municipal water needs. These same sources irrigate nearly 4.5 million acres of land in the Colorado River Basin and the adjacent areas that receive Colorado River water, generating many billions of dollars a year in agricultural and economic benefits. Hydropower facilities in the basin can supply more than 4,200 megawatts of vitally important electrical power to assist in meeting the power needs of Western States, reducing the use of fossil fuels. Within the basin, 29 federally recognized tribes consider the Colorado River and its tributaries an essential physical, economic, and cultural resource.

The Colorado River system is operated in accordance with the "Law of the River." Apportioned water in the basin, including both the United States and Mexico apportionments, exceeds the average long-term (1906 through 2018) historical natural flow of about 16.0 million acre-feet (maf). To date, the imbalance has been managed, and demands are largely met as a result of the considerable amount of reservoir storage capacity in the Colorado River system (approximately 60 maf, or nearly 4 years of average natural flow of the river). The basin is in its 22nd year of drought.

## RESERVOIR CAPACITY

### Lake Powell

- At full pool, the reservoir stretches 186 miles with 1,960 miles of shoreline and surface elevation of 3,700 feet.
- Live water storage volume capacity is 24.3 maf.
- The reservoir was last near capacity in 1999.

### Lake Mead

- At full pool, the reservoir is 112 miles long with 759 miles of shoreline, and surface elevation of 1,229 feet.
- Live water storage volume capacity is 27.6 maf of water, the largest reservoir in the U.S.
- The reservoir was last near capacity in 1999.

### Combined Capacity of Lake Powell and Lake Mead

- As of August 10, 2021, Lake Powell and Lake Mead's combined storage was 16.78 maf (32% of live capacity). The last time the combined storage of Lakes Powell and Mead was this low was in May 1965 when Lake Powell was initially filling and recorded May 16, 1964, at 15.17 maf (30%).

## CURRENT HYDROLOGY

### Lake Powell

- The operating tier for water year (WY) 2021 (October 2020 through September 2021) is the Upper Elevation Balancing Tier.
  - The April 2021 24-Month Study determined water releases for WY 2021 to be set at 8.23 maf for the year.

- As of August 10, 2021, Lake Powell's elevation was 3,552.30 feet above mean sea level.
  - The most probable forecasted WY 2021 inflow into Lake Powell is 3.44 maf, or 32% of average.
- Lake Powell declined below elevation 3,555.1 feet on July 23, 2021, which was the lowest elevation on record since initially filling in the 1960s.

### Lake Mead

- Lake Mead is operating in the intentionally created surplus or Normal Condition in 2021.
  - Water deliveries to Lower Basin water users will total 7.5 maf, less required Drought Contingency Plan water savings contributions and less delivery reductions resulting from system conservation agreements.
  - Water delivery to Mexico will total 1.5 maf, less required Binational Water Scarcity Contingency Plan water savings contributions, and plus or minus any creation or delivery of water for Mexico's Water Reserve.
  - The required water savings contributions are as follows:
    - Arizona with 192 thousand acre-feet (kaf), Nevada with 8 kaf, and Mexico with 41 kaf.
- As of August 10, 2021, Lake Mead's elevation was 1,067.8 feet (35% of live capacity).
  - Lake Mead declined below elevation 1,071.6 feet on June 8, 2021, which was the lowest elevation on record since initially filling in the late 1930s.

## PROJECTED HYDROLOGY

- Final determinations for 2022 operations made in August 2021 are based on the 24-Month Study projections.
- Lake Powell will operate in a Mid-Elevation Release Tier in WY 2022 and release 7.48 maf without the potential for a mid-year adjustment in April.
- Lake Mead will operate in a Level 1 Shortage Condition in calendar year 2022. This is the first-ever shortage condition in the Lower Basin.
  - The required shortage reductions under the 2007 Interim Guidelines and Minute 323 are:
    - Arizona with 320 kaf, Nevada with 13 kaf, and Mexico with 50 kaf
  - In addition, the Lower Basin Drought Contingency Plan (DCP) and Mexico water saving contributions will be in effect for the third year. The required DCP water savings contributions are:
    - Arizona with 192 kaf, Nevada with 8 kaf, and Mexico with 30 kaf
- Reclamation's models estimate that it would take at least four **consecutive** years of above average inflow for Lakes Powell and Mead to fill to their upper elevation bands.
  - Over the last 22 years, there have only been five non-consecutive years of above average inflow (2005, 2008, 2011, 2017, and 2019).

## HYDROPOWER

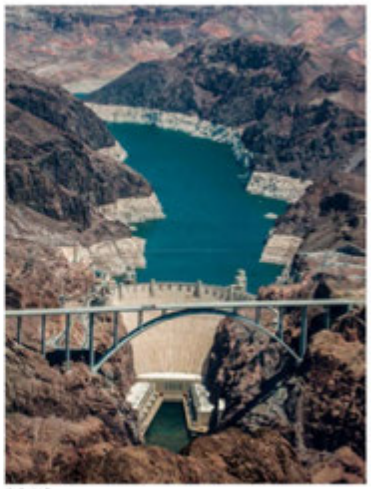
- Hydropower production efficiency could be impacted at both the Glen Canyon Dam and Hoover Dam powerplants if poor hydrology persists without action under the **Drought Response Operations Agreement (DROA)**.
  - Glen Canyon Dam cannot generate power when water is below elevations of 3,490 feet.
  - Hoover Dam cannot generate power when water is below elevations of 950 feet.
    - Since 2007, five generating units at Hoover Dam have been replaced with a wide-head turbine design which is more efficient at varied water levels.

## MOVING FORWARD DURING DROUGHT

- Congress passed the **Colorado River Drought Contingency Plan Act** on April 16, 2019.
  - This bill requires the Department of the Interior to carry out the Colorado River Drought Contingency Plan, which was submitted to Congress on March 19, 2019, by the seven Colorado River basin states: Arizona, California, Colorado, Nevada, New Mexico, Utah, and Wyoming. Interior must execute the plan without delay and operate applicable Colorado River System reservoirs accordingly
- Reclamation worked with the basin states and signed the **Drought Contingency Plan** May 20, 2019. These documents reduce the risk of Colorado River reservoirs declining to critically low levels and extend through 2026 to coincide with the sunset of the 2007 Interim Guidelines Record of Decision.
- Reclamation released the final report of the **7.D. Review** December 18, 2020.
  - Through the review, Reclamation intended to bring partners, stakeholders, and the public to a common understanding of past operations under the 2007 Interim Guidelines and their effectiveness.
  - The 7.D. Review Report will be one of many references and sources of input considered when work begins to determine Lake Powell and Mead operations after 2026.
- Reclamation continues to closely monitor hydrologic conditions and projects while working with the Colorado Basin states to have a new **Drought Response Operations Plan** in place by January 2022.
- **DROA** is part of DCP in the Upper Basin and aims to protect critical elevations at Lake Powell.
- Formal notification that the January 2021 Minimum Probable 24-Month Study run projected Powell to fall below 3,525 feet in 2022 was provided pursuant to the Upper Basin's DROA.
  - The 24-Month Study is a monthly study that looks two years out. These minimum projections initiated enhanced monitoring, coordination, and monthly analysis of min/most/max with the parties specified in DROA.
  - Consistent with the Upper Basin DROA provisions to protect a target elevation at Lake Powell, releases from the upstream initial units of the Colorado River Storage Project will deliver an additional 181 kaf of water. Releases from Flaming Gorge, Blue Mesa, and Navajo are planned from July through December 2021. This is equivalent to approximately 3 feet of elevation at Lake Powell.
- Reclamation is using 2021 to develop an internal structure and a robust public involvement approach that will appropriately include meaningful and timely engagement with the basin states, tribes, partners, and stakeholders to ensure their objectives and priorities are considered.

Hoover Dam

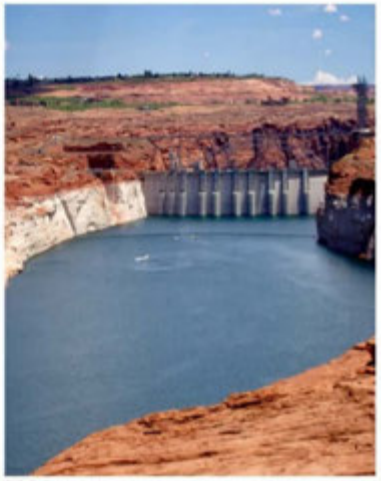
2000



2016

Glen Canyon Dam

1980



2004