

Basin Report: Colorado River

The Colorado River Basin, located in the southwestern United States, occupies an area of approximately 250,000 square miles. The Colorado River is approximately 1,400 miles long and originates along the Continental Divide in Rocky Mountain National Park, Colorado, and ends where it meets the Gulf of California in Mexico. The Colorado River is a critical resource in the West, because seven basin states (Arizona, California, Colorado, Nevada, New Mexico, Utah and Wyoming) depend on it for water supply, hydropower production, recreation, fish and wildlife habitat, and other benefits. Although agricultural uses depend on 70 percent of Colorado River water, between 35 and 40 million people rely on the same water for some, if not all, of their municipal needs. Moreover, the United States also has a delivery obligation to Mexico for some of the Colorado River waters pursuant to a 1944 Treaty with Mexico.

Future Changes in Climate and Hydrology

Reclamation's 2016 SECURE Water Act Report identifies climate challenges the Colorado River Basin could likely face:

- On average, temperatures in the Colorado River Basin are projected to increase by 5–6 °F during the 21st century, with slightly larger increases projected in the upper Colorado Basin.
- In the Colorado River Basin precipitation is projected to remain variable with a slight increase in the Upper Basin.
- In high-altitude and high-latitude areas of the Colorado River Basin headwaters snowpack is projected to increase during the 21st century, but at lower elevations warmer conditions are projected to transition snowfall to rainfall, producing more December–March runoff and less April–July runoff.



Future Impacts for Water and Environmental Resources

Historical and projected climate changes have potential impacts for the basin:

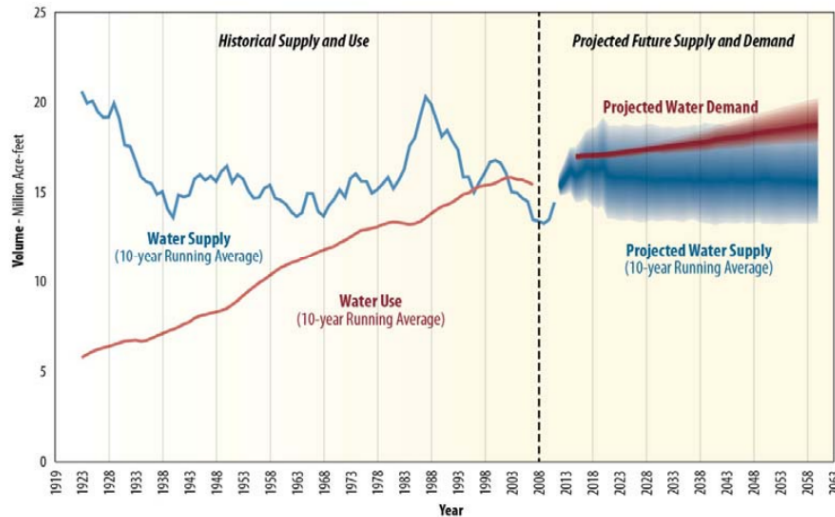
- Spring and early summer runoff reductions could translate into less water supply for meeting irrigation demands and adversely impact hydropower operations at reservoirs.
- Warming could also lead to significant reservoir evaporation, increased agricultural water demands and losses during water conveyance and irrigation
- Growing demands in the Colorado River system, coupled with the potential for reduced supplies due to climate change, may put water users and resources relying on the Colorado River at risk of prolonged water shortages in the future.

Colorado River Basin Water Supply and Demand Study

The Colorado River Basin Water Supply and Demand Study (Study), conducted over the three-year period from January 2010 through December 2012, was an unprecedented joint effort by Reclamation and the Basin States and is the most comprehensive basin-wide analysis ever undertaken within the Department of the Interior. Conducted in collaboration with a diverse range of stakeholders, the study defined current and future water supply and demand imbalances in the basin through the year 2060 and developed and analyzed options and strategies to resolve those imbalances.

The Basin Study confirmed, in the absence of timely action, there is likely to be significant shortfalls between projected water supplies and demands in the basin in coming decades, which is likely to affect each sector (for example,

agricultural, municipal, energy, and environmental) dependent on the Colorado River and its tributaries. The Basin Study also confirmed a wide range of solutions are needed to mitigate and adapt to such shortfalls.



Moving Forward to Address the Challenges Identified in the Colorado River Basin Water Supply and Demand Study

Addressing such imbalances will require diligent planning and collaboration that applies various ideas at local, state, regional, and basin-wide levels. With this in mind a process has been designed to pursue the categories of next steps identified in the study. These categories are:

- Water Use Efficiency and Reuse
- Water Banks, Water Transfers
- Water Supply Augmentation
- Watershed Management
- Tribal Water
- Environmental Flows
- Data and Tool Development
- Climate Science Research

The *Moving Forward* effort builds upon and enhances the inclusive stakeholder process demonstrated in the study with an ultimate goal of identifying actionable steps to address the projected water supply and demand imbalances that have broad-based support and provide a wide range of benefits. The first phase of the *Moving Forward* effort began with the formation of three multi-stakeholder workgroups that focused on water conservation, reuse, and environmental and recreational flows.

Separate from the *Moving Forward* effort, Reclamation, the basin states, and others are simultaneously pursuing next step categories. For example, jointly with the Ten Tribes Partnership¹, Reclamation is conducting a study to further assess water supplies and demands for the tribes in the partnership and identify tribal opportunities and challenges associated with the development of tribal water.

This fact sheet contains partial information from the SECURE Water Act Section 9503(c) - Reclamation Climate Change and Water 2016, Colorado River Basin Detailed Summary Report.