

SECURE Reservoir Operations Pilots

Upper Colorado: *Upper Colorado River Drought Contingency Plan, Climate and Operations Assessment Methodology*



Photo: Lake Powell, Courtesy of Reclamation.

Background: In 2013, Secretary of Interior tasked the Upper and Lower Colorado River Basin States to develop drought contingency plans. The Upper Colorado Region pilot study will leverage the efforts in the Upper Colorado Basin targeted at protecting power generation at Glen Canyon Dam and storage at Lake Powell. Compact deliveries from the Upper Colorado Region to the Lower Colorado Region and Mexico are ensured with the storage capacity in Lake Powell. Additionally, 6 million people depend upon the hydropower produced at Glen Canyon Dam. Lake Powell storage was at 100 percent capacity in 2000 and is current at 50 percent of capacity after 16 years of continued drought. Impacts from climate change may further exacerbate storage capability in the future to provide both water and power contractual deliveries.

Study Area: The Upper Colorado River Basin watershed encompasses 108,335 square miles in and includes the Green, San Juan, and Colorado Rivers culminating into Lake Powell Reservoir. The 1956 Upper Colorado River Storage Project Act (CRSP) initial units include Flaming Gorge Reservoir on the Green River, the Aspinall Unit on the Gunnison River, and Navajo Reservoir on the San Juan River.

Pilot Objectives: This pilot will document aspects of the drought contingency planning effort to use in developing guidance, including documenting using the Colorado River Simulation System model in determining climate change impacts and identifying risks to meeting power generation and water delivery requirements under prolonged drought conditions. The pilot will also evaluate scenarios identified in the drought contingency plan as examples for using CRSP initial unit operations to mitigate long-term drought conditions.

Coordination: The pilot study will include coordination with multiple stakeholders including the Upper Basin States of Wyoming, Utah, Colorado and New Mexico; and federal agencies including Reclamation, the National Park Service, U.S. Fish and Wildlife Service and Western Area Power Administration.