

Glen Canyon Dam Adaptive Management Work Group
Agenda Item Information
May 18, 2011

Agenda Item

Secure Water Act Section 9503 (c) – Water and Climate Change

Action Requested

This is an information item.

Presenter

Dave Trueman, Resources Management Division Manager, Upper Colorado Region, Bureau of Reclamation

Previous Action Taken

N/A

Relevant Science

N/A

Background Information

Reclamation will present an overview of its report to Congress on the effects of climate change on the water supply of the Colorado River.

Public Law 111-11, Subtitle F (SECURE Water Act), section (§) 9503 authorizes the U.S. Department of Interior's Bureau of Reclamation (Reclamation) to assess climate change risks for water and environmental resources in major Reclamation river basins. Section 9503 also includes the authorities to evaluate potential climate change impacts on water resource management and development of strategies to either mitigate or adapt to impacts. The major Reclamation river basins listed within the SECURE Water Act are the Colorado, Columbia, Klamath, Missouri, Rio Grande, Sacramento, San Joaquin, and Truckee River basins. Reclamation is accomplishing the SECURE Water Act authorities through activities within its WaterSMART Basin Study Program.

This technical assessment report provides:

- (1) an analysis of changes in hydroclimate variables—namely, precipitation, temperature, snow water equivalent, and streamflow across the major Reclamation river basins—and the technical foundation for the SECURE report and
- (2) documentation for this new hydrologic projections dataset that will be made publicly available over the Western United States.

The analysis involves developing hydrologic projections associated with World Climate Research Programme Coupled Model Intercomparison Project3 (WCRP CMIP3) climate projections that have been bias-corrected and spatially downscaled and served at the following Web site: http://gdo-dcp.ucllnl.org/downscaled_cmip3_projections. In total, 112 hydrologic projections were developed,

relying on watershed applications of the Variable Infiltration Capacity (VIC) macroscale hydrology model. From these time-series climate and hydrologic projections (or hydroclimate projections), changes in hydroclimate variables were computed for three future decades: 2020s (water years 2020–2029), 2050s (water years 2050–2059) and 2070 (water years 2070–2079) from the reference 1990s’ decade (water years 1990–1999). The reference 1990s are from the ensemble of simulated historical hydroclimates, not from the observed 1990s.