

Study: Farms, hydropower at risk in West's changing climate (Update)

March 22 2016, by Dan Elliott

Climate change could upset the complex interplay of rain, snow and temperature in the West, hurting food production, the environment and electrical generation at dams, the federal government warned Tuesday.

Some areas could get more rain and less snow, reducing the snowmelt flowing into reservoirs in the summer when farmers need it to irrigate, the U.S. Bureau of Reclamation report said.

Higher temperatures would mean more evaporation from reservoirs, particularly in California's Sacramento and San Joaquin river basins. The delta of the Sacramento and San Joaquin provides water for two-thirds of Californians and irrigation for nearly a million acres of farmland.

Hotter summers would also mean more demand for hydroelectric power in the summer, but reservoirs may have less water to run their generators then because of changes in precipitation patterns, the bureau said.

The report, "Reclamation Climate Change and Water 2016," looked at eight rivers from Washington state to Texas, including the Columbia, the Missouri, the Colorado and the Rio Grande as well as the Sacramento and San Joaquin.

The Bureau of Reclamation is the largest wholesaler of water in the U.S. and the largest hydropower provider in the West.

The report was based on the bureau's research and peer-reviewed studies

by others, the agency said. But it acknowledged uncertainties in the projections and said the impacts would be different because of varying terrain and weather.

The agency suggested a variety of tactics to deal with the potential changes, including conserving and recycling water, building desalinization plants and erecting new dams or expanding existing ones.

Other suggestions included updating hydropower plants to operate when reservoirs have less water, repairing leaking irrigation canals and refilling underground aquifers, which supply farm and city wells.

Jack Schmidt, a professor of watershed sciences at Utah State University who wasn't involved in the study, said solutions have to be tailored to specific river basins. On the Colorado River, the biggest users are near the downstream end, and water flows along nearly the entire length of the waterway to get to them, he said. On the Rio Grande, the big users are at the upper end, leaving less water to flow downstream.

"We have to be very intelligent about how we adjust and modify human uses and how we choose which river segment to aggressively attempt to rehabilitate," he said.

Among the other potential effects of climate change, the reported said:

— Streamflow could drop by 8 percent in several river basins, including the San Joaquin in California; the Colorado, which runs from the Colorado Rockies to Southern California; and the Rio Grande, which flows from Colorado through New Mexico and along the Texas-Mexico border.

— In the Columbia River, a projected increase in winter flooding and decrease in summer flows would affect Coho and Chinook salmon and

steelhead.

— A warmer climate could mean less water seeping into aquifers just as farms and cities pump more water out of them to make up for shortfalls in rivers.

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