

Climate change may not dramatically affect California's precipitation or runoff

April 26 2011, By Bettina Boxall

Precipitation and runoff in California's major river basin will not fall dramatically with climate change, according to a new federal study that shows rising temperatures will have an uneven effect on the West's water supplies.

A Department of Interior report released Monday agrees with other analyses that have found [climate models](#) are better at predicting temperature rises and an accompanying decline in spring snowpack than they are in projecting future precipitation and stream flow levels.

Temperatures could rise 5 degrees to 7 degrees this century, increasing evaporation, and the spring snow pack will drop sharply in much of the West, changing the timing of peak runoff, which is crucial for the state's irrigated agriculture.

Some regions, such as the Columbia River Basin in the Pacific Northwest and the Missouri [River Basin](#), are expected to grow wetter. The Southwest will probably become drier, while California is a bit of a question mark.

Precipitation and runoff on the Sacramento River - a vital source of water for much of the state, including Southern California - may increase a bit by mid-century and then decline somewhat. Average annual runoff, which is key to filling reservoirs, could drop 3.6 percent in the century's final decades, while annual precipitation may decline 2.7 percent.

The report suggests that the San Joaquin River, a big source of [irrigation water](#) on the east side of the San Joaquin Valley, will be more affected. Runoff in the river's upper reach could drop by nearly 11 percent and precipitation by 8.6 percent.

Flow in the Klamath River on the Oregon border, on the other hand, could increase or remain stable.

Global warming's effects will vary along the Colorado River, which stretches from the Northern Rockies to the Mexican border and is an important source of water for Imperial Valley agriculture and Southern California cities.

The report predicts that precipitation in the river's upper reaches will increase by a few percentage points in the mid- and late century, although that would be offset by a slight drop in runoff associated with warmer temperatures and more water consumption by plants.

Farther down the river, at Lee's Ferry, [runoff](#) could decline by 8.5 percent in the 2050s, the report suggests.

The greatest drop is predicted for the Rio Grande in New Mexico, where stream flow could shrink by nearly a fifth by the last quarter of the century.

"The status quo is going to change," U.S. Bureau of Reclamation Commissioner Michael L. Connor said. "We need to take action now to plan for those changes that are occurring."

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