

Projecting Climate Change Impacts on our Watershed

The American River Basin Study is a comprehensive watershed-level look at projected climate change impacts on the Sacramento region. One of the most sophisticated evaluations of climate change impacts on water supplies in California to date, the study uses the best available science and latest modeling tools to forecast potential impacts on water supply, water quality and critical habitat within the American River Basin.

Developed in partnership with the U.S. Bureau of Reclamation as part of its WaterSMART Program, the Regional Water Authority and several local water providers, the study's ultimate goal is to define water management strategies to enhance the Sacramento region's water supply reliability while improving Reclamation's flexibility in operating Folsom Reservoir to meet flow and water quality standards and protect endangered fishery species in the lower American River.

The impacts of climate change are predicted to year 2100 using results normalized from 64 global climate model simulations consistently used by Reclamation's Technical Service Center in Denver, Colorado.

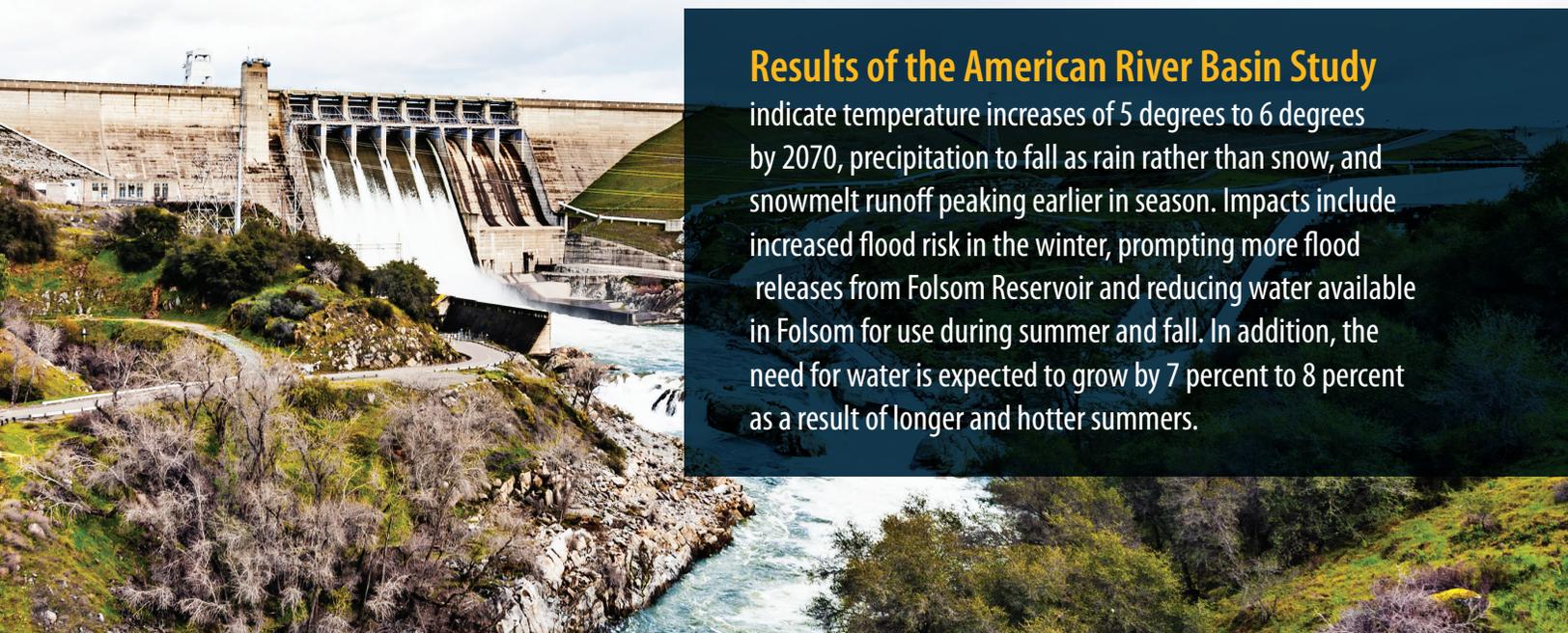
For the American River Basin, **results of simulations were refined using statistical methods developed at Scripps Institution of Oceanography** and made publically available. This methodology spatially refines results from 8,000 square miles to 14 square miles, enhancing results to account for differences in weather process based on geography and elevation.

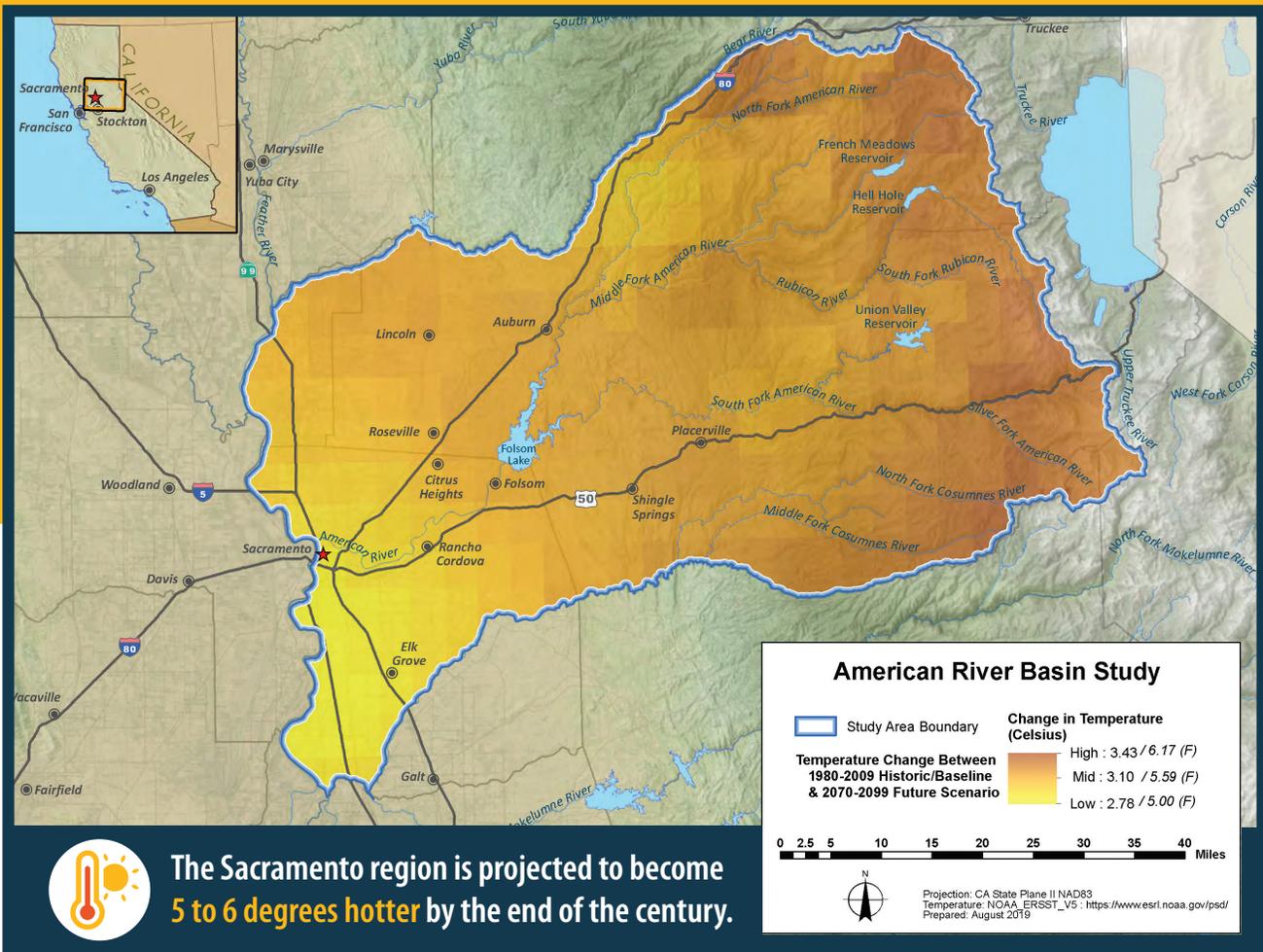
The American River Basin Study also refined **long-range modeling** tools to include greater detail in the basin, including models for analyzing effects on river flows, storage in reservoirs and groundwater basins, and river temperature effects on ecosystems.

The American River Basin Study has identified **seven project portfolios as possible adaptation strategies**. These will be evaluated and pursued by regional water managers in the years to come to maintain our environment, economy, and quality of life.

Results of the American River Basin Study

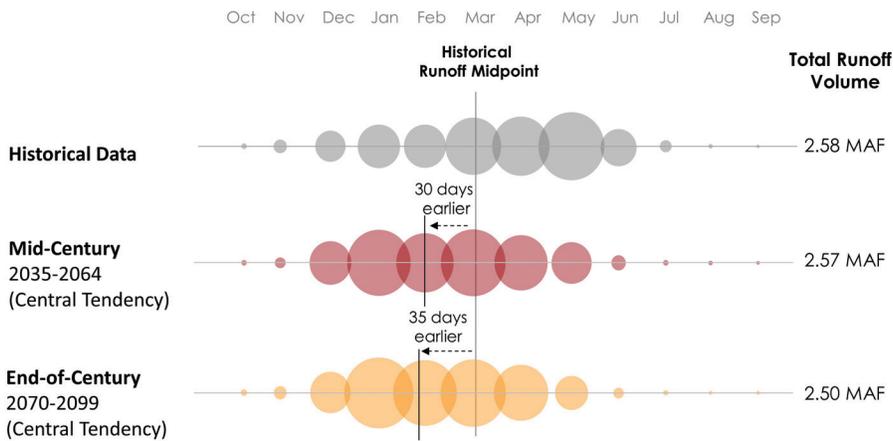
indicate temperature increases of 5 degrees to 6 degrees by 2070, precipitation to fall as rain rather than snow, and snowmelt runoff peaking earlier in season. Impacts include increased flood risk in the winter, prompting more flood releases from Folsom Reservoir and reducing water available in Folsom for use during summer and fall. In addition, the need for water is expected to grow by 7 percent to 8 percent as a result of longer and hotter summers.





The Sacramento region is projected to become **5 to 6 degrees hotter** by the end of the century.

Changes in Timing of Inflow to Folsom



MAF = million acre-feet

Inflow to Folsom could occur **30 to 40 days earlier** on average.

Runoff from snowmelt is expected to peak earlier in the season, prompting more flood releases from Folsom Reservoir and reducing water available in Folsom for use during summer and fall.

The American River Basin Study is made possible by:



More information about the study is available at www.pcwa.net/planning/arb5