



— BUREAU OF —  
RECLAMATION

# Flood protection for Northern California and its Central Valley

## Introduction

The Bureau of Reclamation's California-Great Basin region is responsible for operating the Central Valley Project (CVP) – a system of 20 dams and reservoirs, 500 miles of major canals, and other facilities located mainly in California's Sacramento and San Joaquin Valleys. The CVP provides an average of 5 million acre-feet of water for urban, industrial, agricultural, and environmental uses.

Another important role for the CVP is providing flood protection for California's Northern and Central Valley. For example, during the 1997 New Year's floods, CVP dams held back more than 2 million acre-feet of water that could have caused more than \$1 billion in property damage. During the 2005 flood season, Shasta and Folsom dams held back more than 1 million acre-feet of water in December 2005 and January 2006 to help prevent damage from winter storms.

## Preparing for flood control season

Prior to the flood control season, generally from early October through mid-June, reservoir operators review the operational flood control requirements. Most CVP reservoirs are governed by flood control requirements determined by the U.S. Army Corps of Engineers (Corps). Preparations for the flood season may begin in mid-summer when consideration is given to gradually reducing reservoir storage to provide room for winter rains. These flood storage levels are set by the Corps and must be met throughout the season.



Flood operations may require 24-hour staffing, and each operator understands the flood operational requirements in the CVP. In addition, operators attend pre-flood season operational coordination meetings with the National Weather Service's California-Nevada River Forecast Center, the California Department of Water Resources, the Corps, and local agencies.

## Controlling flows during flood control season

During the flood control season, operators monitor reservoir inflows and storage as well as rainfall and runoff forecasts, and conditions elsewhere in the system. Reservoir releases are then managed to meet flood control objectives for the area.

## Completing the Cycle

Generally, reservoirs offer flexibility by temporarily storing runoff that would have been damaging to the valley if not captured. Gradual releases to downstream areas allow for easier absorption. This process also partially empties the reservoirs so the cycle can be repeated for upcoming storms.

As the flood season transitions into spring and summer, Reclamation operators are permitted to slowly fill the reservoirs again for summer operational purposes such as water supply, salinity control, fish and wildlife protection, and power production. As a secondary benefit, many CVP reservoirs provide substantial summer recreation opportunities to local communities.