

# Re-managing the Flow



The major rivers and streams of the Sacramento Valley provide essential pathways for spawning salmon and steelhead. Flow agreements to benefit these fish are on every major watercourse in the Sacramento Valley.

**Trinity** and **Shasta Lakes** are important sources of cold water storage. Timing the release of this cold water into the rivers is vital if spawning fish are to thrive.

Trinity Lake

Shasta Lake

Whiskeytown Reservoir

Keswick Reservoir

## Sacramento River Tributaries

Various flow agreements benefit spring run salmon.

## Clear Creek

In May and June, water is pulsed into Clear Creek to attract Spring-run salmon from the Sacramento River. From June through October, water released from Whiskeytown Reservoir keeps water temperatures cool.

## Feather River

A water quality certification adopted in 2010 provides for specific flow and temperature requirements to accommodate spawning salmon and steelhead.

## Sacramento River below Keswick Dam

In 1960, flow objectives were established for the protection of fish and wildlife. In 1990 and 1991 this policy was modified requiring more cold water when warmer temperatures would be harmful to fish.

Lake Oroville

Sutter Buttes

New Bullards Bar Reservoir

## Sacramento River at Wilkins Slough

The Rivers and Harbors Act of 1935 mandated a specific flow rate at Wilkins Slough be maintained. The primary goals at that time were navigation and flood control. In 1992, Congress made protection of fish and wildlife a secondary goal and this requirement was updated in 2009.

## Yuba River

In 2008, the Yuba River Accord increased the streamflow requirements over previous levels, which benefits fish while insuring sufficient water supplies for irrigation and municipal uses.

Folsom Lake

## American River below Nimbus Dam

In 2000, the Flow Management Standard was developed, which established minimum flow standards to improve the conditions for fall-run Chinook salmon and steelhead. Additionally, releases are adjusted to maintain sufficiently low water temperatures for steelhead rearing in summer and Chinook spawning in the fall.

**NCWA**  
Northern California Water Association

For more details visit [www.norcalwater.org/efficient-water-management/instream-flows/](http://www.norcalwater.org/efficient-water-management/instream-flows/)

# Pacific Flyway Habitat in the Sacramento Valley.

Considerable progress has been made to enhance habitat for migratory waterfowl, wintering shorebirds, raptors, riparian songbirds and other wetland dependent species in the Sacramento Valley.

During the winter, reliable water supplies in the Sacramento Valley flood harvested rice fields, provide habitat, irrigate managed wetlands and deliver water to refuges and wildlife areas.

Flooded rice fields, National Wildlife Refuges and State Wildlife Management Areas and intensively managed private wetlands help compensate for the 95% of Central Valley wetlands lost over the years.

National Wildlife Refuges and State Wildlife Areas in the Sacramento Valley provide nearly 27,000 acres of wetland habitats, while privately-managed wetlands provide another 43,000 acres.

Up to 350,000 acres of rice are flooded each winter to provide bird habitats. An additional 43,000 acres of Sacramento Valley wetlands rely on the water drained off rice fields for fall flooding.

The amazing array of bird habitat in the Sacramento Valley receives surface water directly from irrigation water suppliers or indirectly from the return flow of surface water.

Nearly seven million waterfowl and 300,000 shorebirds rely on the Sacramento Valley for food and habitat. Other species which benefit include raptors, riparian songbirds and additional wetland dependent species.

Active management of the Sacramento Valley's flow-through system ensures that the water needed for birds and their habitats will continue to be available.

Information compiled by  
Northern California Water Association  
[www.norcalwater.org/](http://www.norcalwater.org/)  
California Rice Commission  
[www.calrice.org/](http://www.calrice.org/)



# Restoring the Salmon Runs - a Time for Action

Sacramento Valley water resources managers are partnering with federal and state agencies and conservation organizations to improve migratory corridors and habitat for salmon. The measures taken and the money spent – more than \$1 billion over the past two decades – have been helpful but there is still more work ahead to restore the salmon runs.

**Fish screens** More than 80 percent of the water diverted from the Sacramento River system for wildlife refuges, farms, cities and rural communities is pumped through state-of-the-art fish screens, while the fish stay safe, healthy and in the river.

**Spawning gravel** is reintroduced to rivers and streams to improve spawning habitat. Over 200,000 tons of gravel has been added to the Sacramento River since 1997.

**Flow agreements** to benefit salmon and other fish are on every major watercourse in the Sacramento Valley. Get the details at [www.norcalwater.org/efficient-watermanagement/instream-flows/](http://www.norcalwater.org/efficient-watermanagement/instream-flows/)

**Migration corridors** are important to help young salmon [smolts] avoid predators in their migration from the Valley to the ocean. Water managers in the Sacramento Valley are currently building a Salmon Smolt Escapement Plan to time pulses of water with fish releases.

Our thanks to California Fisheries biologist Dave Vogel, who made these recommendations as part of his report, *Insights into the Problems, Progress and Potential Solutions for Sacramento River Basin Native Anadromous Fish Restoration*  
[www.norcalwater.org/efficient-water-management/fisheries-enhancements/](http://www.norcalwater.org/efficient-water-management/fisheries-enhancements/)



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