



NCWA
Northern California Water Association

Modern Functional Flows for the Sacramento Valley

Sacramento Valley water suppliers are committed to the development of a comprehensive plan for the management of water resources that satisfies the co-equal goals of water supply reliability and ecosystem benefits. A priority for that plan is improving conditions for fish and birds, which is best achieved by providing functional and targeted flows that are designed and tailored to restore natural flow functions and the benefits of the interaction between water, sun and the landscape, while balancing the benefits of our flood control and water supply system. This includes existing instream flow arrangements for salmon, as well as spreading water out and slowing it down over the Sacramento Valley landscape for both economic purposes and for returning fish and birds to habitats that more closely match their natural history. This will ultimately benefit the Sacramento Valley and the Delta.

Leaders in the region are making a concerted effort to re-establish the natural connection between water, sun and the landscape. The following are examples of how functional flows that are purposely designed to benefit fish and birds have worked:



Credit: California Rice Commission/Leslie Morris

Birds

Water is spread throughout the region for ricelands and other farms, managed wetlands and wildlife refuges. These areas not only serve as the economic engine for the region, but also as a resting and food source for birds, endangered garter snakes and other water-dependent species along the Pacific Flyway. These managed lands help compensate for the 95 percent of Central Valley wetlands lost over the years.



Credit: Ken "Creekman" Davis

Salmon

Over the past decade, flows have been re-managed on nearly every watercourse in the Sacramento Valley, designed and tailored for the benefit of salmon. This includes pulse flows, which are being further explored to benefit migrating salmon. Additionally, knowing that food is a primary limiting factor for species recovery, water and farm managers are advancing programs for growing fish on ricelands or producing fish food on farmland by gently inundating lands within the traditional floodplain then returning the food-rich waters to the rivers at a time when it most benefits migrating juvenile salmon.



Delta Smelt

Water suppliers worked with state and federal agencies in 2016 and 2018 to re-route flows through the Colusa Drain and Yolo Bypass to provide the optimal conditions to create plankton, the critical food source for growing Delta smelt. Monitoring has indicated that the strategy is effective in boosting downstream food resources for smelt, which could improve ecosystem conditions so more young Delta smelt survive and reproduce.

The Sacramento Valley is a unique landscape where additional opportunities exist to use functional flows to further these benefits within a highly managed water system. The features of the Sacramento Valley landscape present exciting possibilities to re-establish the magical connection between water and landscape through functional flows.



Credit: California Rice Commission/Brian Bauer



Credit: California Rice Commission/Leslie Morris



Bypasses & Parkways

The Sacramento Valley has an ingenious system of bypasses and parkways that move water through the region during floods to protect the Sacramento Metropolitan area and rural communities. Strategically inundating the bypasses and parkways with shallow water shows great promise to provide a rich food source for fish and other species that mimics the natural floodplain processes in the Sacramento Valley.

Farmland & Refuges

Water is critical for two million acres of farmland, seven federal wildlife refuges, and more than 50 state wildlife areas. Farms and wildlife areas not only serve as the economic and cultural engine in the Sacramento Valley, but are being used further to provide important food for birds and fish through year-round innovative water management.

Aquifer Recharge

The Sacramento Valley is a flow-through system, where water not used by crops and wetlands returns to the river or percolates down to recharge valley aquifers, for use at a later time.

Offstream Storage

Water could be saved during wet periods in Sites Reservoir, a proposed off-stream reservoir on the west-side of the Sacramento Valley, to then provide more than 200,000 acre-feet of water dedicated to public benefits, including flows for the environment and an ecosystem water budget.

Delta Flows

The Sacramento Valley functions as a funnel, where more than 24 percent of managed water runs through the bottom of the funnel and is dedicated to Delta outflow under Biological Opinions and State Water Board decisions. This outflow, which has been increased by more than 1.3 million acre-feet of water during the past decade, can be repurposed to provide more functional flows in the Delta and for increases in floodplain habitat.

Partnerships between Sacramento Valley water suppliers, federal and state agencies, and solution-oriented conservation organizations have led to tremendous progress on projects that have had a positive impact on fish and other wildlife, yet more work is ahead.

Developing voluntary agreements, consistent with a functional flow approach, will ensure that this important work in the Sacramento Valley will continue to benefit fish and wildlife.

