

WATER WORKING *for California*

HEALTHY
RIVERS &
LANDSCAPES

Healthy Rivers and Landscapes (HRL) is a collaborative approach based on modern science to restore river health, floodplains, and natural landscapes in the Bay-Delta, while supporting fish, farms, wildlife, communities, recreation and hydropower.

The actions outlined through Healthy Rivers and Landscapes will increase river flows and expand habitat in the Sacramento and San Joaquin Rivers, their tributaries, and the Bay-Delta.

HEALTHY RIVERS & LANDSCAPES MEANS...



**Better Habitat for
Salmon Returning
to Rivers**



**Robust Bird & Wildlife
Populations along the
Pacific Flyway**



**Productive Ricelands,
Orchards & Field Crops**



**Cleaner Water
& Healthier Soil**



**Stronger Urban &
Rural Communities**

Through scientific monitoring and collaborative decision making, Healthy Rivers and Landscapes will allow water managers to adapt statewide operations based on real-time conditions and enable broad coordination across watersheds to manage flows that interact with critical habitat for maximal benefits. This holistic approach paves the way for more robust fish and wildlife populations, while creating sustainable water access for farms, recreation, hydropower, and 32 million Californians living in rural and urban communities.

By **Advancing a Comprehensive Program**, we can provide the balance necessary to protect all beneficial uses of water.

By **Reconnecting Our Rivers and Floodplains**, we can mimic natural flows onto the landscape, and through the marriage of the sun, land, and water, we can create robust habitat for fish and wildlife, while protecting communities from floods.

By **Supporting Diverse Landscapes**, we can integrate our rivers with wetlands, ricelands, and wildlife refuges to ensure multi-beneficial uses by people and wildlife.

By **Developing Partnerships**, we can bring together state and local agencies, conservation organizations, tribes, water districts, and landowners to best serve California and produce long-term, collaborative solutions.

CREATING ESSENTIAL HABITAT

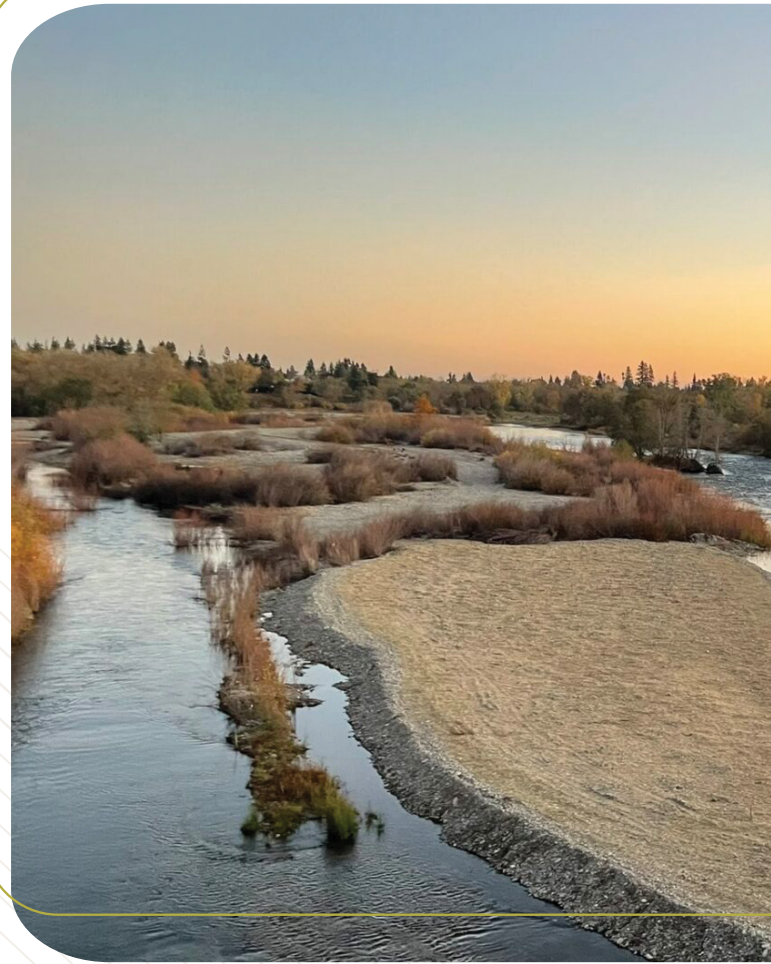
across the Bay-Delta Watershed

The Healthy Rivers and Landscapes program is transforming California's waterways by restoring habitat across the Sacramento River Basin and Delta. 58 Early Implementation projects have been completed, are under construction, or will complete final design by the end of 2026.

These efforts benefit critical freshwater life stages, addressing spawning gravels, rearing habitats, predator mitigation, and pulse flow timing, to advance regulatory and environmental standards set by modern science. This public and private collaboration ensures that water quantity and quality coupled with habitat infrastructure will support the recovery of our native fish, birds and wildlife.

MARRYING FUNCTIONAL FLOWS WITH HABITAT NEEDS

The HRL program will improve environmental conditions by pairing strategically timed river flow with habitat creation – the two critical actions needed to support fish and wildlife recovery. Modern science shows fish populations have adapted to the environmental benefits created by land and water interaction that was experienced under historic conditions. When flows and habitat are paired together, we are able to provide better access to habitat, reduce predation, and increase food supply – all critical factors in the long-term health of our fish and wildlife.



MOMENTUM ALREADY UNDERWAY IN HABITAT CREATION

The Bay-Delta Watershed has seen significant progress through the early implementation of the Healthy Rivers and Landscapes program. Since December 2018, collaborative efforts have resulted in 58 Early Implementation projects designed to restore and enhance the region's vital ecosystems.

These habitat improvements are already yielding results across the American, Feather, Mokelumne, Sacramento, and Yuba rivers, as well as Putah Creek, the Delta and the broader Sacramento Valley floodplains. The success of these initiatives relies on a dedicated partnership between local water management entities, conservation organizations, and state and federal fish and wildlife agencies.

PROVIDING FUNCTIONAL FLOWS

from the Sacramento River & Delta

The Healthy Rivers and Landscapes Program provides targeted flow contributions (up to 825,000 acre-feet in many years) paired with essential habitat to improve ecosystem function in the various rivers, creeks, and floodplains that support the Bay-Delta watershed.

af = Flow Contribution in Acre-Feet



WHAT ARE FUNCTIONAL FLOWS?

Adopting Healthy Rivers and Landscapes means managing the allocation of up to 825,000 a/f of water in a way that supports fish and wildlife through a practice known as functional flows.

Functional Flows means managing water resources to produce a flow of water, paired with essential habitat, **when and where** fish species rely on it the most. This practice is critical during inward and outward migrations, but for maximum benefits, that pulse of additional water also needs to interact with in-river and river-adjacent habitat sites.

In addition to directing more water resources, the HRL program also creates a flow accounting team comprised of state, federal and local agencies that will work together to address reporting needs as well as ensure appropriate and efficient flows are sent to the Delta.



RECORD-SETTING SALMON RUN IN PUTAH CREEK

Cornerstones of the Healthy Rivers and Landscapes program - functional flows, habitat restoration, floodplain connectivity and improved passage - helped bring salmon into Putah Creek.

While Putah Creek had received consistent flows for almost a decade, adult salmon did not routinely seek out the creek until the additional actions occurred: passage improved to the base of Lake Solano, gravel beds were restored to suit spawning needs, access to food was made available from the floodplains for juvenile salmon, and improved rearing habitat was created with trees and shrubs planted along the banks.



**IN 2025, A RECORD
2,150 SALMON
RETURNED TO THE
CREEK TO SPAWN.**

More on Putah Creek's Success [READ MORE](#)

SUSTAINING OUR RURAL AND URBAN COMMUNITIES

HEALTHY RIVERS & LANDSCAPES MEANS RELIABLE WATER FOR PEOPLE AND WILDLIFE.

The Healthy Rivers and Landscapes program strengthens water security for both rural and urban communities by advancing a balanced, science-based approach to river management. In rural areas, HRL reconnects rivers and floodplains, supports groundwater recharge, and aligns habitat restoration with functional flows to sustain productive ricelands, orchards, and field crops while reducing flood risk and buffering climate extremes. This multi-benefit strategy is especially critical for disadvantaged rural communities, where reliable, locally managed water systems underpin agriculture, economic stability, and long-term resilience.

In urban regions, HRL improves long-term water supply reliability by managing flows, storage, and ecosystem needs together. More predictable water systems support sustainable housing, business investment, and economic growth, while helping agencies manage costs and infrastructure challenges. This reliability is vital for disadvantaged urban communities, where access to safe, affordable water directly affects public health and cost of living.

Through collaboration and long-term investment, HRL can restore fish and wildlife habitat while safeguarding dependable water deliveries, ensuring every community has access to clean, safe, and reliable water.



Report Highlights






ADVANTAGES OF HEALTHY RIVERS & LANDSCAPES

MBK Engineers conducted a technical review of California's Draft Staff Report/Substitute Environmental Document, focusing on potential updates to the Water Quality Control Plan for the San Francisco Bay/Sacramento-San Joaquin Delta Estuary. The report addresses key issues related to water management and highlights crucial considerations for government officials.

Key Finding:

Healthy Rivers and Landscapes (HRL) Delivers More Benefits with Fewer Impacts than the Unimpaired Flow Scenario.

BENEFITS AND IMPACTS OF HRL VS UIF SCENARIO

	Healthy Rives & Landscapes	Unimpaired Flow Scenario
 River Salmonid Habitat	Benefits	Neutral
 Terrestrial Habitat	Neutral	Adverse Impacts
 River Temperatures	Neutral	Adverse Impacts
 Reservoir Storage	Neutral	Adverse Impacts
 Water Supply	Neutral*	Adverse Impacts

*The HRL Program has impacts to water supply to provide the flow assets, but the impacts are manageable as compared to impacts under the UIF scenario.

The HRL Program can be implemented significantly faster than a UIF requirement if agencies work together, including through a Flow Operations Team to ensure implementation and accountability. There are still significant technical challenges to implementing a UIF requirement.

[READ ENTIRE REPORT HERE](#)

BROAD & UNIFIED SUPPORT *throughout California*

“I am proud to see the Healthy Rivers and Landscapes Program represented in this plan update — it’s a testament to California’s commitment to a collaborative, science-driven approach to managing our water for the benefit of our communities, economy, and fish and wildlife. However, our work is not yet done — I have proposed legislation to create a CEQA exemption for all Water Quality Control Plans that would accelerate the time it takes to get these critical plans done by removing unnecessary and redundant process requirements. We’re done with barriers and obstacles to our state’s success. We must work together to protect our natural resources for the benefit of the habitats and people of our state.”

–GAVIN NEWSOM, GOVERNOR OF CALIFORNIA

“The Healthy Rivers and Landscapes Program is practical and collaborative, and it has bipartisan support from many legislators. HRL represents more than five years of collaboration between state agencies, public water agencies throughout California, and other stakeholders to develop a modern approach to protecting all beneficial uses of water in the Bay-Delta watershed. It’s a complicated and long proposal, but there are no easy answers when it comes to water.”

–CECILIA AGUIAR-CURRY, CALIFORNIA ASSEMBLY MAJORITY LEADER

“The Healthy Rivers and Landscapes Program represents a comprehensive, collaborative plan that is designed to contribute to the recovery of fish and wildlife species and provide an alternative to the one-size-fits-all requirements to release massive amounts of flows in an attempt to improve Bay-Delta fisheries. They bring us all to the table with the goal of developing comprehensive approaches, so instead of fighting in court, we can get busy implementing real solutions right away. They do include increased flows for the fish, but in a way that carefully balances potential impacts on our communities, and they also include real habitat improvements in the river, enhancing the functionality of the ecosystem that native species depend on.”

–JOINT STATEMENT BY DAURICE KALFSBEEK-SMITH, COLUSA COUNTY SUPERVISOR AND GARY BRADFORD, YUBA COUNTY SUPERVISOR

“With the health of our rivers challenged and our native fish in peril, we need real solutions now. The Healthy Rivers and Landscapes program meets this moment, it gets flows back into the river during critical times of the year and it restores a variety of habitat that is essential for the recovery of our fish and wildlife. The program is guided by science and decisions are made collaboratively and in a transparent manner. I’m proud of the work that we’ve done establishing the Healthy Rivers and Landscapes program and now it is time to implement.”

–WADE CROWFOOT, CALIFORNIA’S NATURAL RESOURCES SECRETARY

HRL IS THE BEST CHOICE FOR CALIFORNIA BECAUSE IT PROVIDES

HEALTHY RIVERS & LANDSCAPES



WATER SECURITY

Balances agricultural, urban, and environmental water needs.



CLIMATE RESILIENCE

Creates natural buffers against droughts and floods.



WILDLIFE HABITAT

Expands seasonal floodplains for salmon, waterfowl, shorebirds, reptiles and hundreds of other types of species.



SUSTAINABLE WORKING LANDS

Aligns farming with conservation for long-term prosperity.

THE BEST PATH FORWARD

for California

Advancing the Healthy Rivers and Landscapes Program means investing in multi-benefit water management strategies, habitat projects and state-wide policies that unite cities, communities, agriculture and conservationists. Together, we can build a resilient Bay-Delta where rivers, farms, refuges, and communities thrive. Our diverse coalition represents 32 million Californians from Redding to San Diego and will improve conditions for fish and wildlife that rely on healthy rivers and landscapes.

The following water agencies are MOU signatories and actively participating in the Healthy Rivers and Landscapes Program.

