

Water Education Foundation

October 2, 2019



NCWA
Northern California Water Association

Sacramento Valley

A truly unique and exceptional place



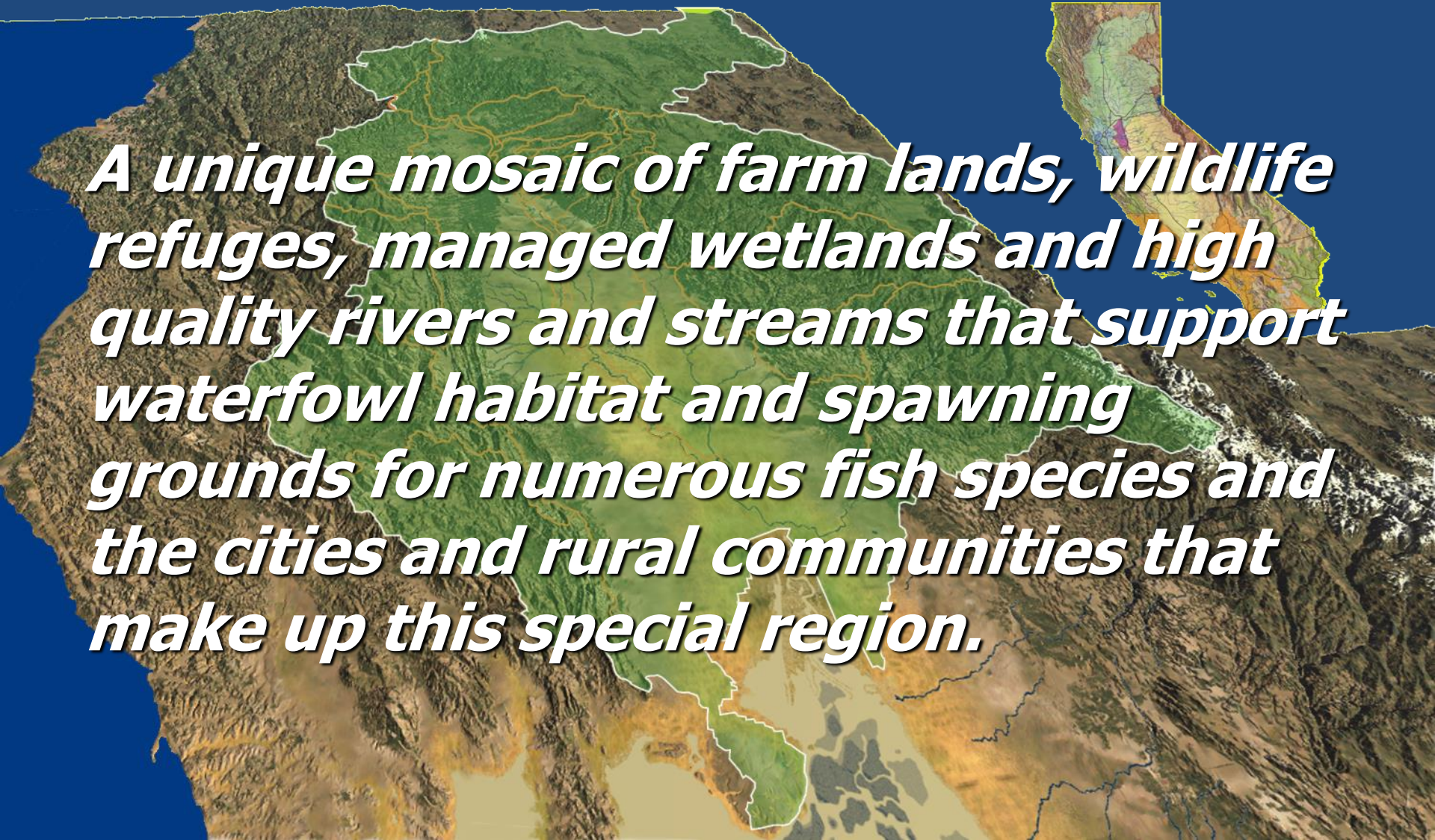
Sacramento Valley

What do you think about?



The Sacramento Valley

A unique mosaic of farm lands, wildlife refuges, managed wetlands and high quality rivers and streams that support waterfowl habitat and spawning grounds for numerous fish species and the cities and rural communities that make up this special region.





CALIFORNIA Water



The California Water Plan is a blueprint for the state's water future. It provides a framework for water policy and a set of goals and objectives for the state's water system. The plan is based on the state's water resources and the needs of its people. It is a living document that will be updated as the state's water needs and resources change.



Water Quality
 The California Water Plan includes a goal to protect and improve the state's water quality. This goal is based on the state's water resources and the needs of its people. The plan includes a set of goals and objectives for water quality, including the goal to protect and improve the state's water quality.



Water Quantity
 The California Water Plan includes a goal to ensure the state's water quantity. This goal is based on the state's water resources and the needs of its people. The plan includes a set of goals and objectives for water quantity, including the goal to ensure the state's water quantity.



Water Infrastructure
 The California Water Plan includes a goal to improve the state's water infrastructure. This goal is based on the state's water resources and the needs of its people. The plan includes a set of goals and objectives for water infrastructure, including the goal to improve the state's water infrastructure.



Water Access
 The California Water Plan includes a goal to ensure the state's water access. This goal is based on the state's water resources and the needs of its people. The plan includes a set of goals and objectives for water access, including the goal to ensure the state's water access.

Water Conservation
 The California Water Plan includes a goal to promote water conservation. This goal is based on the state's water resources and the needs of its people. The plan includes a set of goals and objectives for water conservation, including the goal to promote water conservation.

Water Efficiency
 The California Water Plan includes a goal to improve water efficiency. This goal is based on the state's water resources and the needs of its people. The plan includes a set of goals and objectives for water efficiency, including the goal to improve water efficiency.

Water Security
 The California Water Plan includes a goal to ensure water security. This goal is based on the state's water resources and the needs of its people. The plan includes a set of goals and objectives for water security, including the goal to ensure water security.

Water Equity
 The California Water Plan includes a goal to promote water equity. This goal is based on the state's water resources and the needs of its people. The plan includes a set of goals and objectives for water equity, including the goal to promote water equity.

Water Sustainability
 The California Water Plan includes a goal to ensure water sustainability. This goal is based on the state's water resources and the needs of its people. The plan includes a set of goals and objectives for water sustainability, including the goal to ensure water sustainability.

Water Resilience
 The California Water Plan includes a goal to improve water resilience. This goal is based on the state's water resources and the needs of its people. The plan includes a set of goals and objectives for water resilience, including the goal to improve water resilience.

Water Stewardship
 The California Water Plan includes a goal to promote water stewardship. This goal is based on the state's water resources and the needs of its people. The plan includes a set of goals and objectives for water stewardship, including the goal to promote water stewardship.

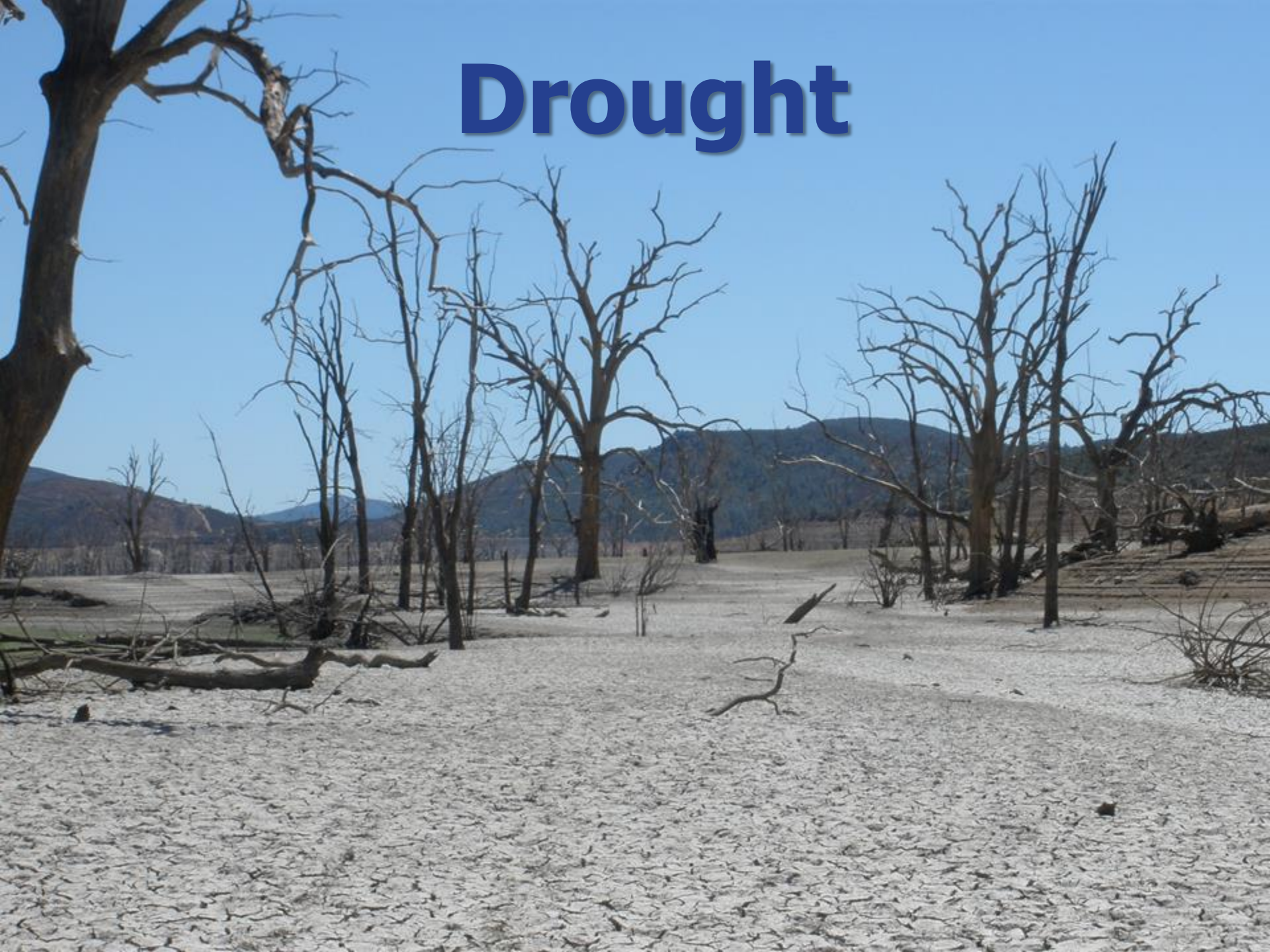
Water Governance
 The California Water Plan includes a goal to improve water governance. This goal is based on the state's water resources and the needs of its people. The plan includes a set of goals and objectives for water governance, including the goal to improve water governance.



Flooding

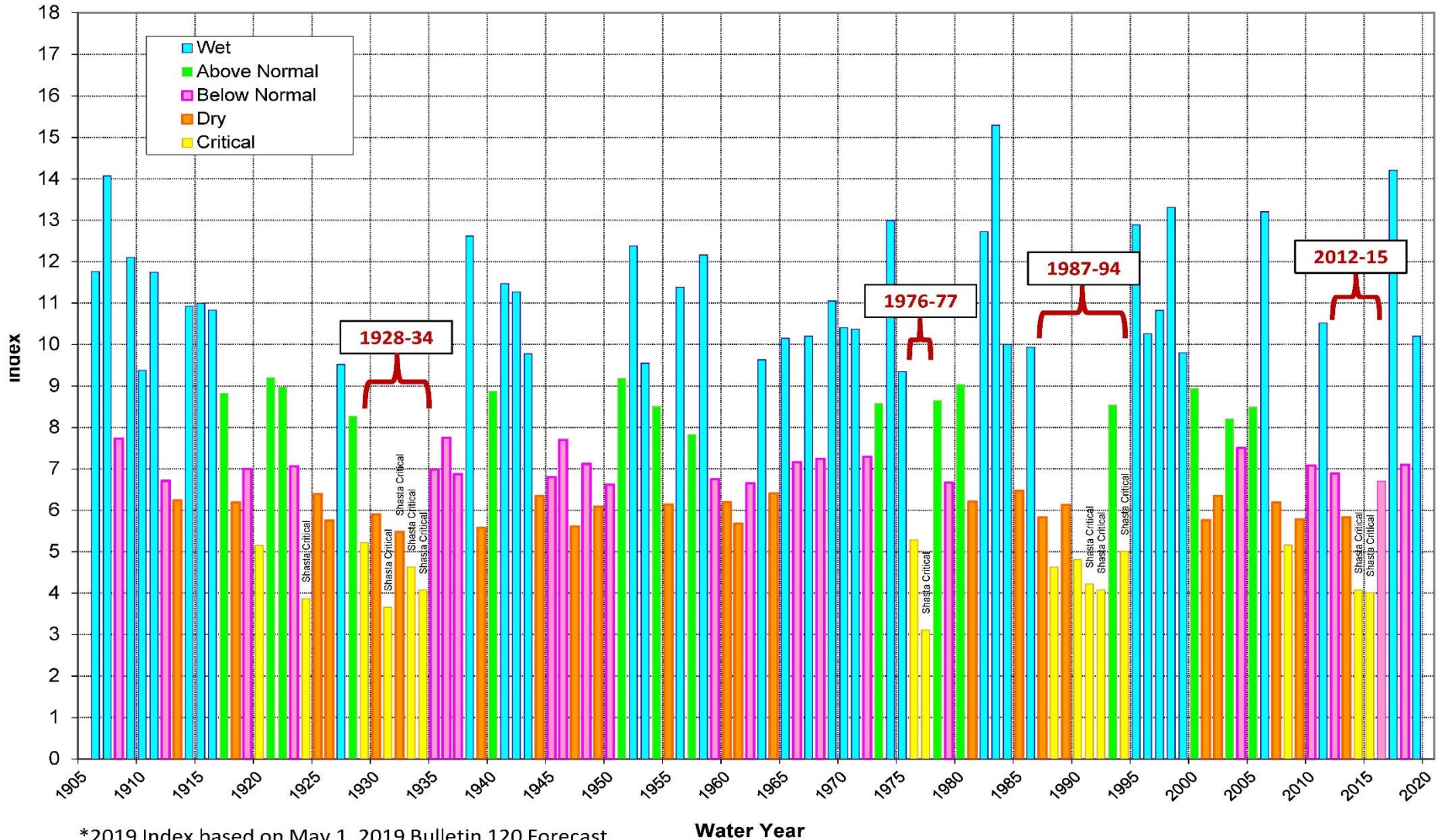


Drought



Sacramento Valley Water Year Type Index (40-30-30) 1906 - 2019*

Based on Observed Unimpaired Runoff

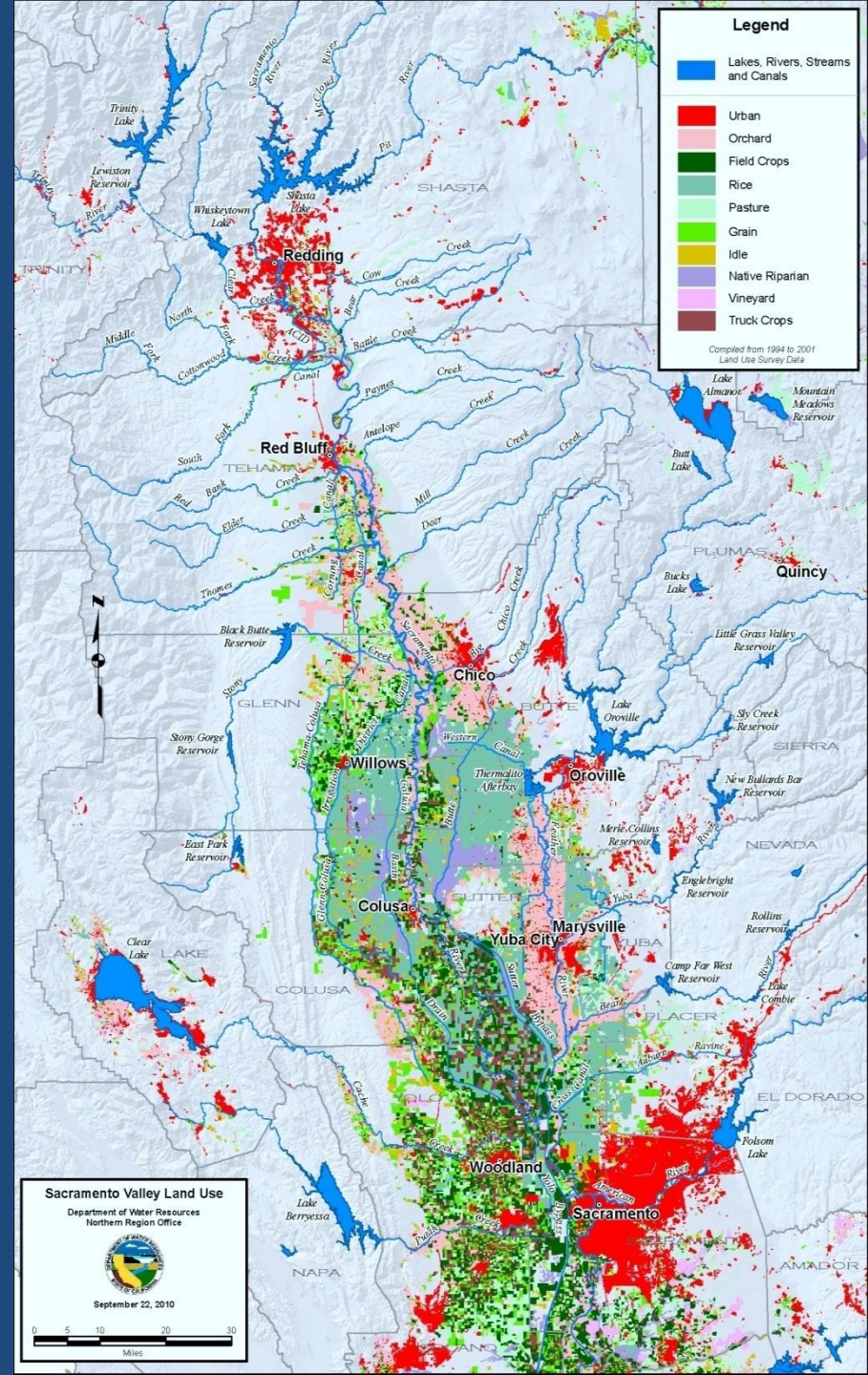


*2019 Index based on May 1, 2019 Bulletin 120 Forecast

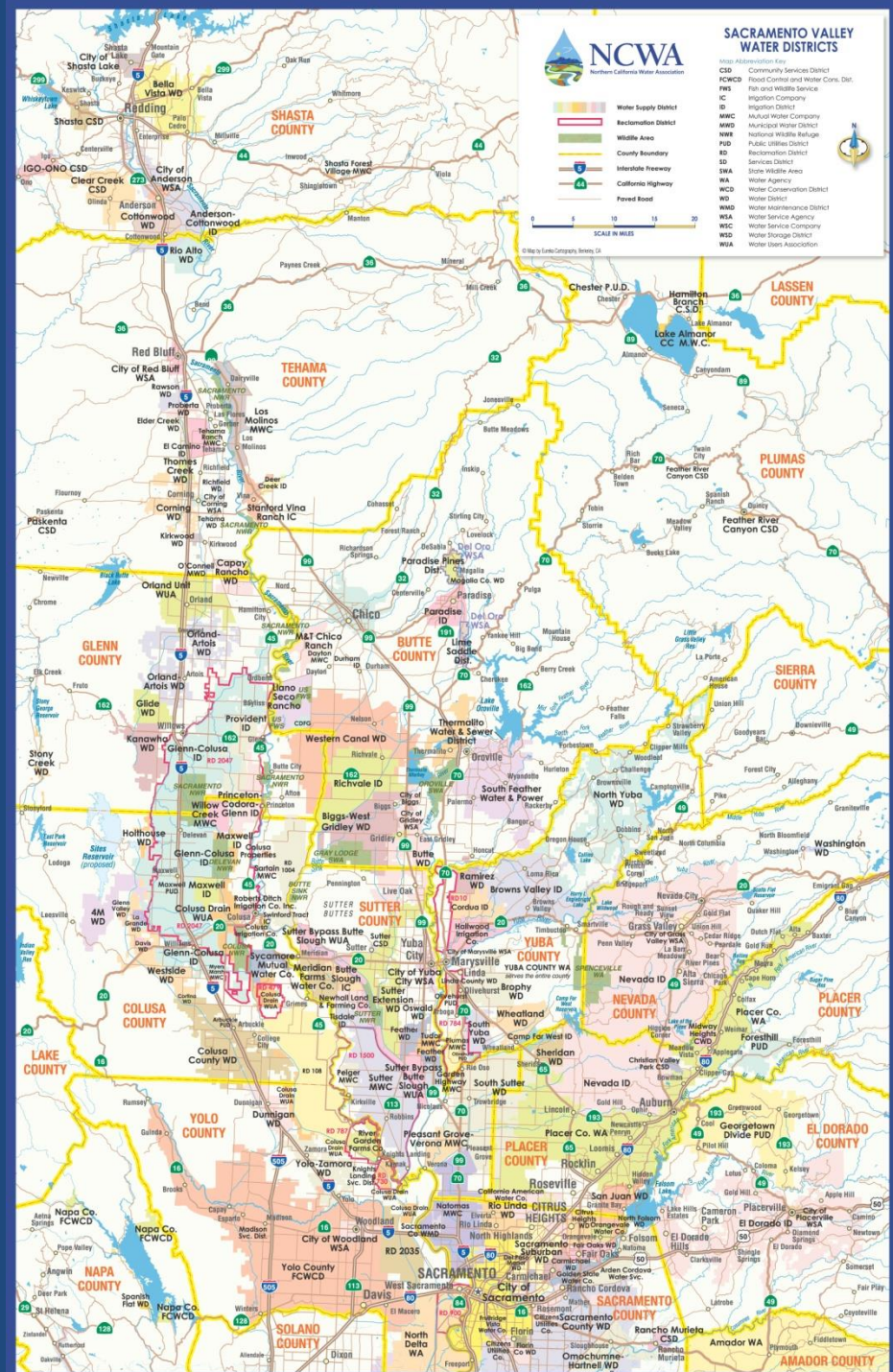
Water Year

Sacramento Valley Land Uses

- **Urban**
- **Agriculture**
- **Wetlands**



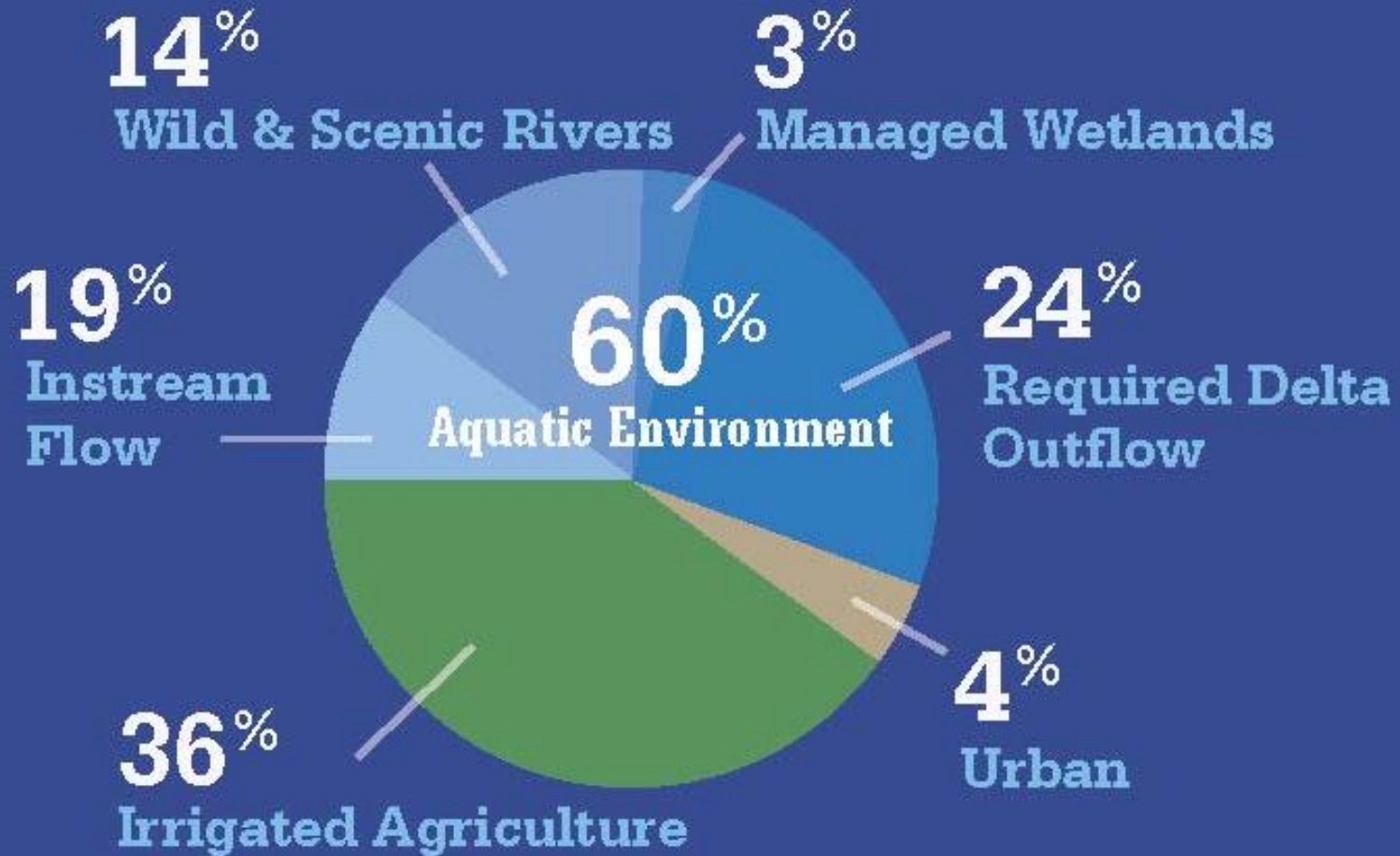
Water Resources Management Entities



Cornerstone for Central Valley/ State Water Projects



Sacramento Valley Applied Water Use



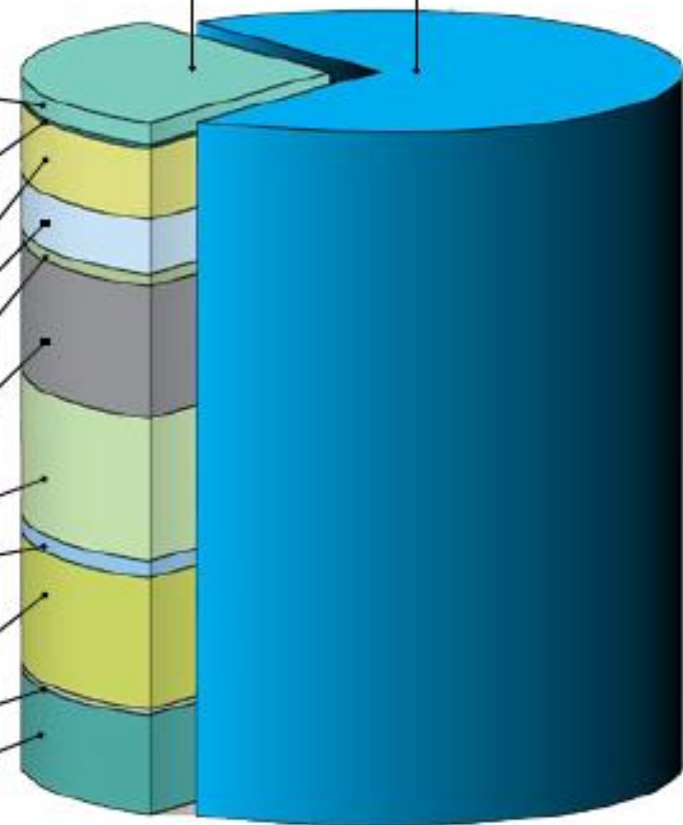
Sacramento Valley Water Supplies

Use met by other water sources:
6,265 TAF 70% of total

Use met by Groundwater:
2,743 TAF 30% of total

Planning Area:

- Shasta-Pit 3%
- Upper Northwest Valley <1%
- Lower Northwest Valley 10%
- Northeast Valley 8%
- Southwest 2%
- Colusa Basin 19%
- Butte-Sutter-Yuba 21%
- Southeast 2%
- Central Basin West 19%
- Sacramento Delta 1%
- Central Basin East 14%



Active Groundwater Management

FACT SHEET: The State of Sacramento Valley Groundwater



July 1, 2017



Sacramento Valley Hallmark

Managing Water for Multiple Benefits



Sacramento Valley

Two million acres of **family farms** that provide the economic engine for the region through the production of rice, trees, and various row crops that serve as a working landscape and pastoral setting and provide valuable habitat for waterfowl along the Pacific Flyway.



Sacramento Valley

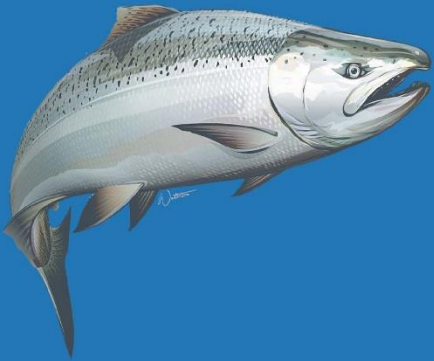


**Four runs of
salmon,
including the
endangered
winter-run,
spring-run, and
steelhead.**

Sacramento Valley Salmon Recovery

There has been a concerted effort to implement the following types of programs and projects to improve salmon recovery in the Sacramento River Basin:

- flow arrangements;
- habitat enhancements;
- fish passage improvements;
- fish-food production projects; and
- studies to advance the science that informs management decisions



BUTTE CREEK SALMON RECOVERY

A Lesson in Functional Flows

The Butte Creek Fish Passage Improvement projects are located along the middle reach of Butte Creek, a tributary of the Sacramento River in California's Central Valley. The various projects together comprise one of the nation's most significant fisheries restoration efforts, with 90 miles of Butte Creek restored for the benefit of spring-run salmon. These projects also divert water for the benefit of farms, birds and other species along the Pacific Flyway.

BUTTE CREEK FISH PASSAGE IMPROVEMENT PROJECTS:

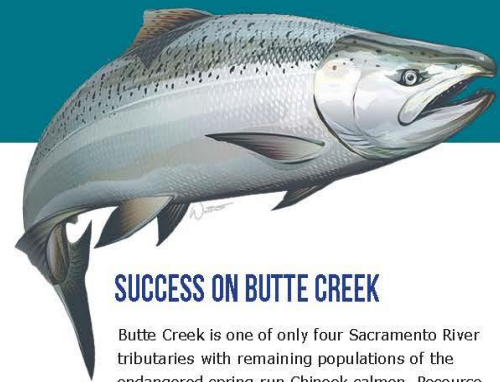


Photo: Ken "Creekman" Da...

SUCCESS ON BUTTE CREEK

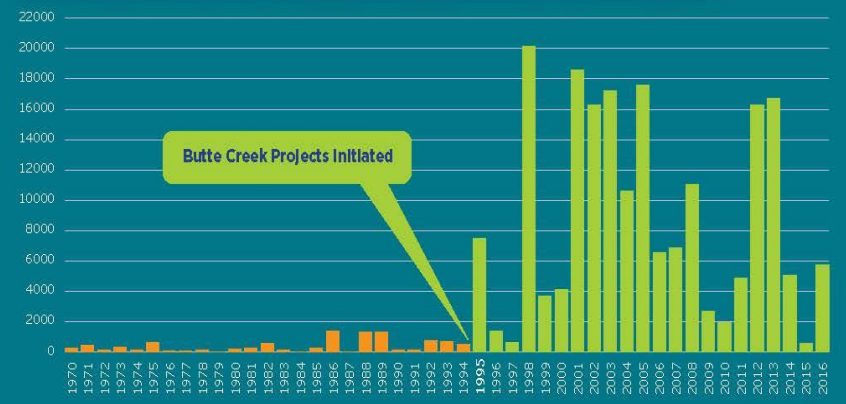
Butte Creek is one of only four Sacramento River tributaries with remaining populations of the endangered spring-run Chinook salmon. Resource agencies and conservation groups value Butte Creek as a keystone in preserving and recovering spring-run salmon, which in some years had dwindled to less than a 100 returning adults from 1970 to the early 1990s. Today, as a result of the Butte Creek Fish Passage Improvement projects, in tandem with a valuable food supply and safe rearing habitat in the Sutter Bypass wetlands, more than 10,000 spring-run salmon return on average to Butte Creek. These projects all provide multiple beneficial uses, serving water for fish, farms, birds and various other species.



Secretary of Interior Bruce Babbitt tearing down McPherrin Dam in 1998.

Pictured above: Central Valley Spring-Run Chinook Salmon Illustration by Paul Waters, courtesy of Cal Trout (Oncorhynchus tshawytscha).

BUTTE CREEK SPRING-RUN CHINOOK SALMON POPULATION ESTIMATES



Central Valley Salmon Habitat Partnership

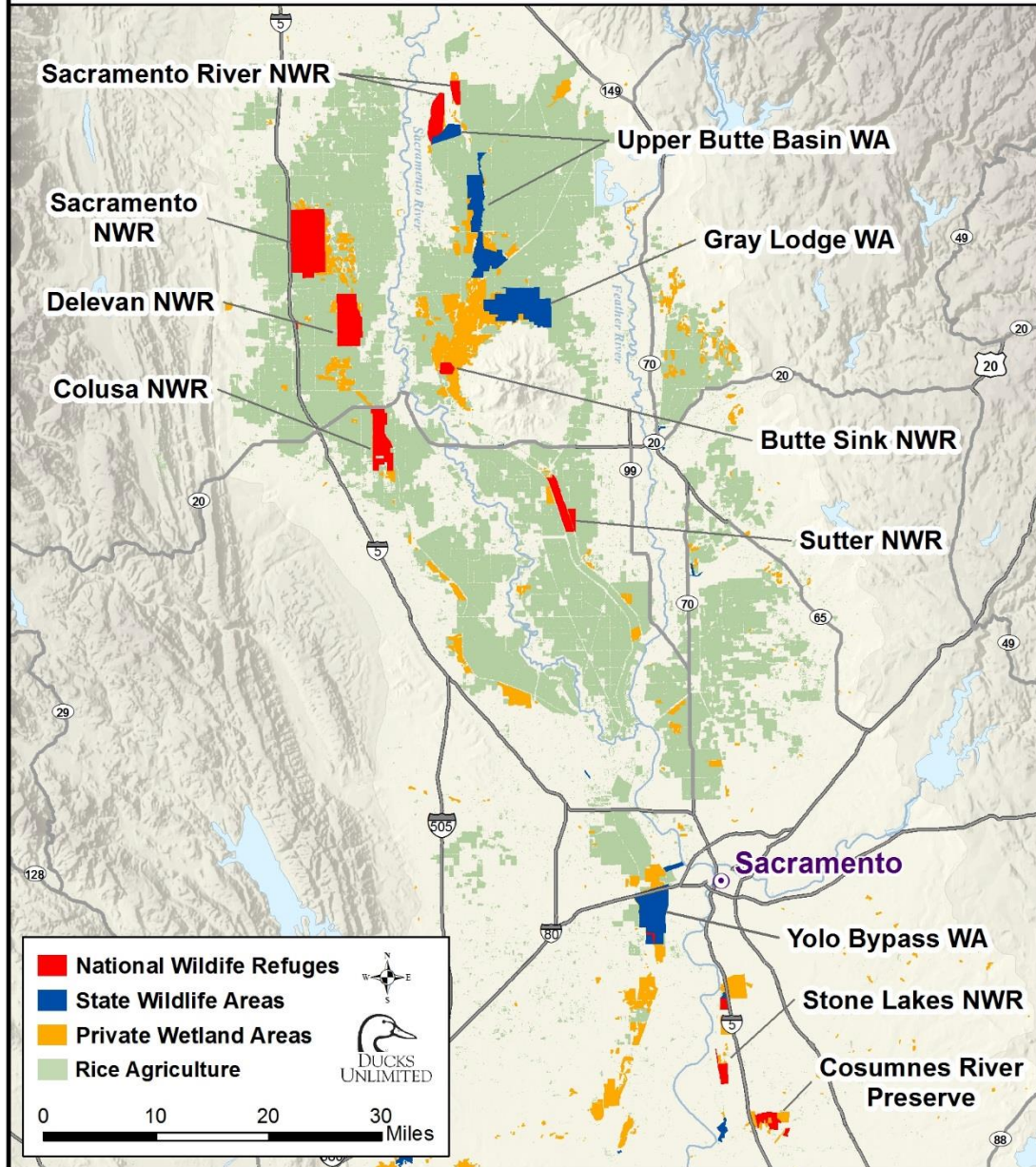


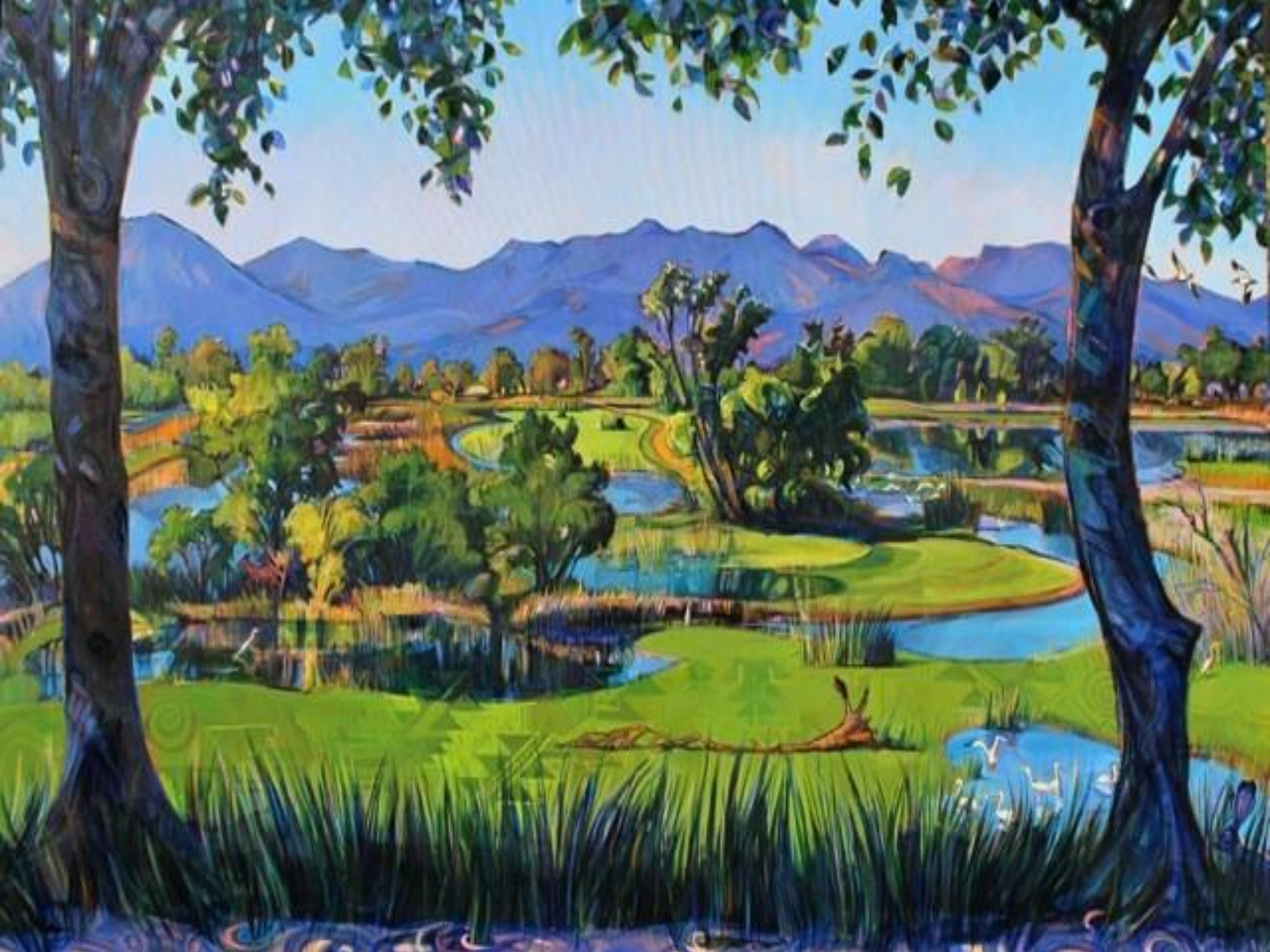
Sacramento Valley

Seven National Wildlife Refuges, more than fifty state Wildlife Areas and other privately managed wetlands that support the annual migration of waterfowl, geese and shore birds in the Pacific Flyway. These seasonal and permanent wetlands provide 65% of the North American Waterfowl Management Plan objectives;



Wetland Areas and Rice Fields in the Sacramento Valley of California





Pacific Flyway Partners



Sacramento Valley

The small towns and rural communities that form the backbone of the region, as well as the **State Capital** that serves as the center of government for the State of California.



Sacramento River Conservation Area

Established 1986 (SB1086)

A management plan to protect, restore and enhance the fisheries and riparian habitat along the Sacramento River from Keswick Dam down river to Verona. This effort is cooperative in nature and works to ensure that habitat restoration and management addresses not only the dynamics of riparian ecosystems, but also the realities of local agricultural and recreational issues associated with land use changes occurring along the river.



Sacramento Valley Headwaters

**The forests, meadows and canyons
in the **watersheds** of the
Sierra Nevada and Coast Range.**



Join me in reimagining our water system...



Safe Drinking Water



"Now let's talk honestly about clean drinking water. Just this morning more than a million Californians woke up without clean water to bathe in, let alone drink....Solving this crisis, it will require sustained funding, but more importantly than anything else, it will demand political will from each and every one of us."

(Governor `s State of State, February 2019)

Natural Infrastructure



The Sacramento Valley is fertile ground for developing a new path forward for holistic water management that incorporates best available science and practical know-how of farm and refuge managers to reactivate the floodplain.

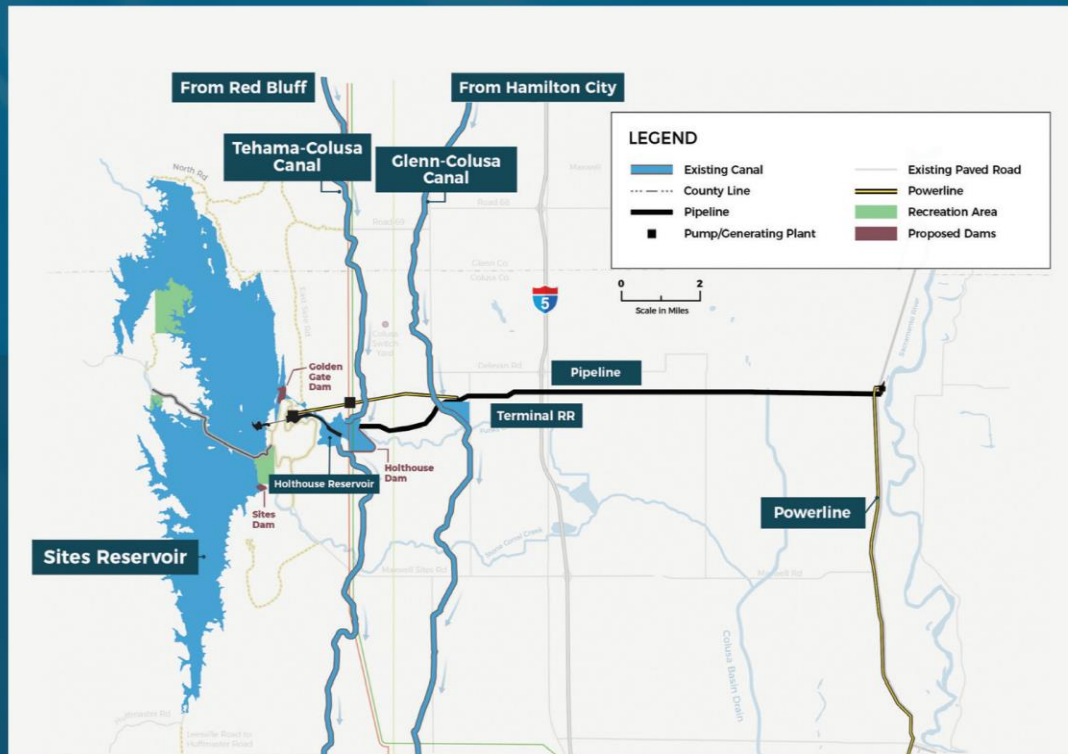
21st Century Water Infrastructure



SITES RESERVOIR

Increasing Dry Year Supplies

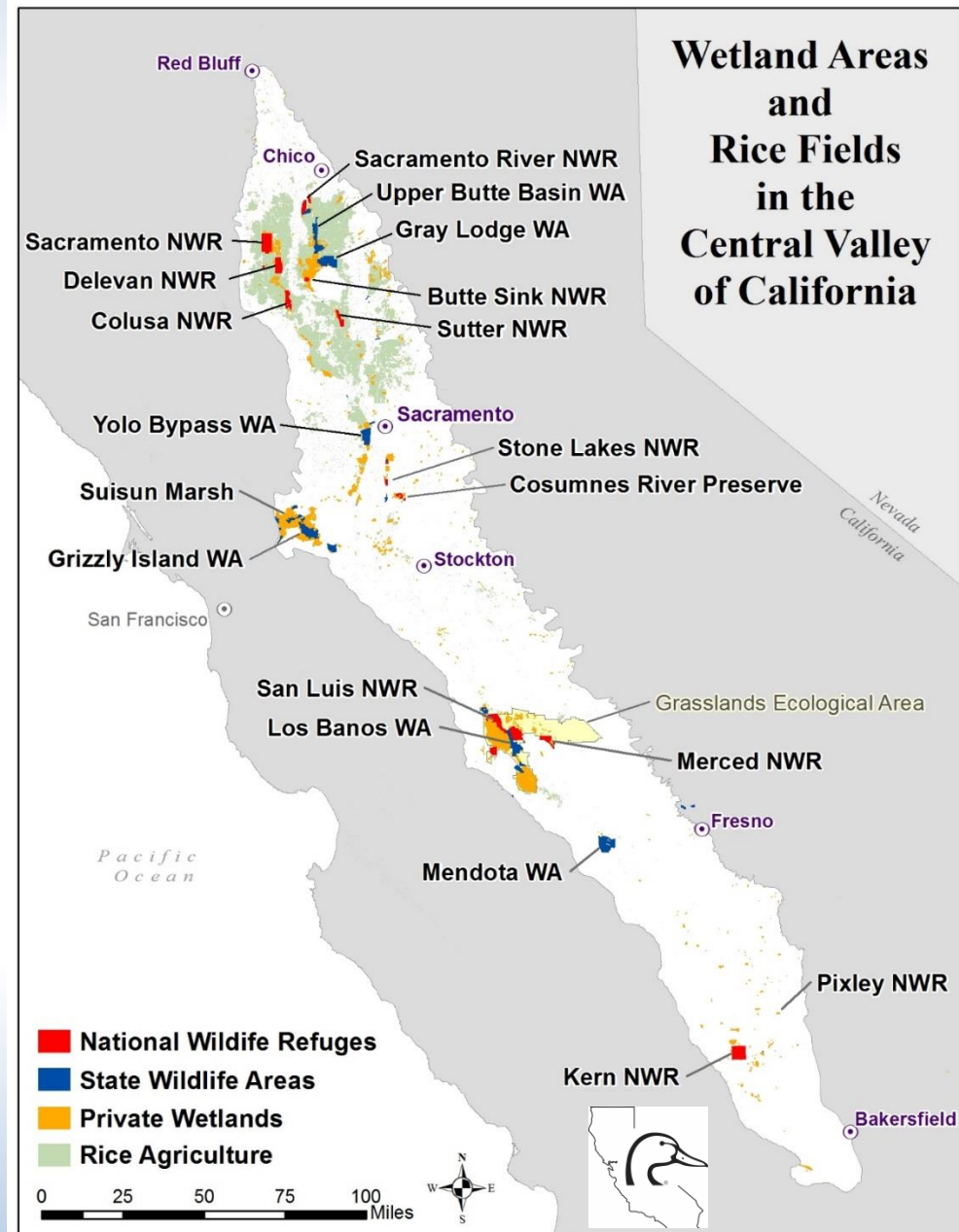
Sites Reservoir is unique in many ways, carefully balancing the needs of both people and the environment



A Budget for Freshwater Ecosystems



The reimagined water system integrates environmental water management into the water rights and water management system



Flexibility - Water Transfers



The Old Paradigm

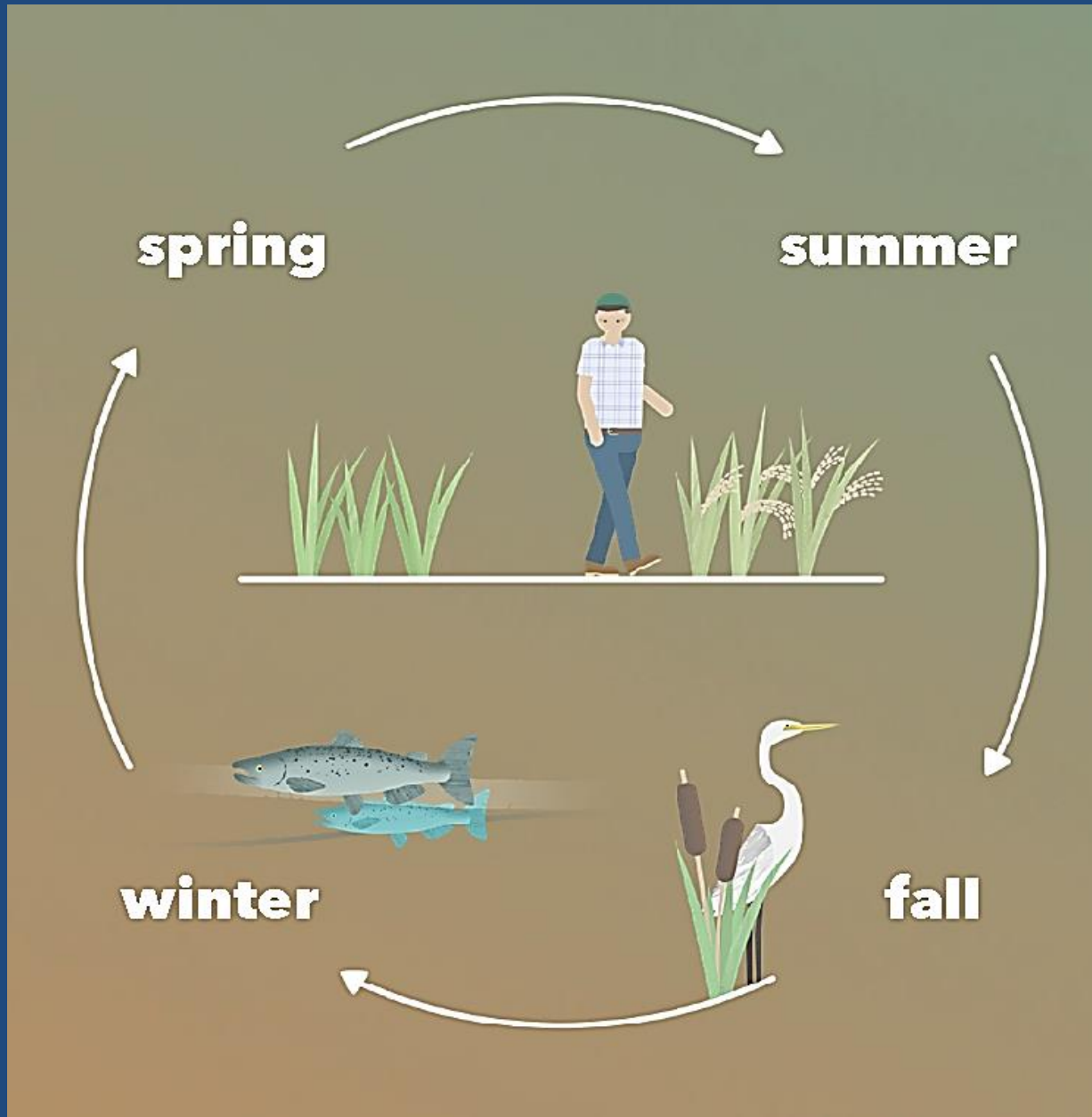
3/26/94

OTHER OPINIONS



'I do too know something about water! I drink Perrier!'

The Reimagined Water System



Voluntary Agreements

a better solution



Voluntary agreements

Introducing a better solution for native fish.

Water, Land & Sunlight: A Bountiful Life

The combination of water, land and sunlight has proven throughout time to be the equation for proper life support and healthy population numbers for all species. California's valley floor is a perfect testament to what is possible when all three work in harmony.

Our fish populations are in trouble

Fish populations (Chinook salmon, Delta Smelt) in California are on the decline and falling to historic lows.

Efforts to reverse the troubling trend by dedicating more water within the river channels has proven futile in many cases - leaving state and federal water managers to seek a variety of solutions.

One proposal involves flushing more water (1-million-acre-feet or the size of Folsom Lake) down the river channels into the Delta, but there is a better way. This alternative approach provides a new, innovative pathway for scientists, conservationists, farmers and water districts to work together.

Trending downward

Today's dwindling numbers



The New Way Forward A global model

The Sacramento River Basin is participating in a new collaboration featuring science-based programs balancing human and wildlife needs while setting the course for 15 years of collaboration and commitment by local, regional, state and federal agencies. This is possible *only* through voluntary agreements, and offers a variety of benefits:

- Positively impacts entire lifecycle of native fish from spawning grounds to San Francisco Bay
- Safe, bountiful habitat for waterfowl and shorebirds
- Produces billions of water bugs to feed endangered fish
- Adds water to key points along the entire river system
- Recharges groundwater supplies
- Improves timely flow and temperature schedules to benefit fish and wildlife
- Enhances reservoir storage for critical times

Voluntary agreements ensure farm fields with current water allocations are used to benefit people, birds and fish year round.



**Same water.
Better results.**



A proven approach Successes in the Sacramento Valley



A few decades ago, only a few hundred fish returned to Butte Creek to spawn each year. Today that number has jumped to more than 10,000. The reason? Butte Creek water has been combined with land and sun to provide a safe and bountiful place for fish to thrive.

By flooding farm fields and historic wetlands with just a few inches of water, a safe haven for wild birds was created. Today, hundreds of thousands of waterfowl return to Northern California as part of the Pacific Flyway, the environmental success story of our generation.

Collaboration
+
Functional Flows
=
10,000 fish



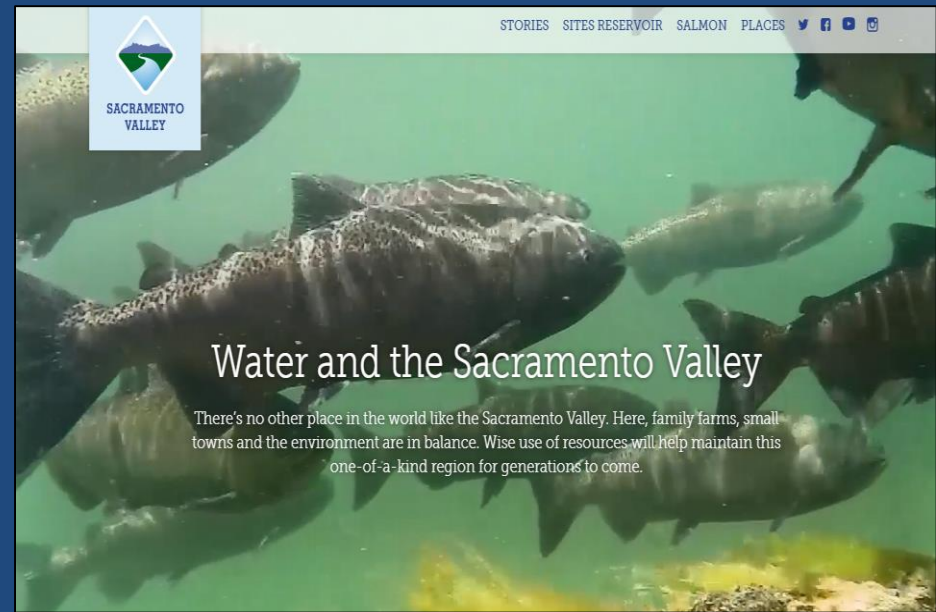
Provide a sustainable water supply for the unique mosaic of farm lands, wildlife refuges, managed wetlands and high quality rivers and streams that support waterfowl habitat and spawning grounds for numerous fish species and the cities and rural communities that make up this special region.



Voices from the Valley

norcalwater.org

sacramentovalley.org



Stories You Haven't Seen



Stories You Haven't Seen

Sacramento Valley Salmon Recovery Program

The Sacramento Valley Salmon Recovery Program (Recovery Program) is a comprehensive effort to address all salmon life-cycle stages that occur in fresh water by implementing projects and flows that serve [multiple benefits](#) throughout the region. The links to videos below help visualize the various projects that have been completed in the Sacramento Valley to advance salmon recovery in the region.

More than 140 projects have been completed in the Sacramento Valley to benefit salmon [since 2000](#). The Recovery Program continues to build on these efforts by targeting specific river reaches in the Sacramento River Basin to ensure that projects provide maximum benefit to the different life-cycle stages.

Butte Creek

Work in the 1990s to improve habitat for spring-run Chinook salmon on Butte Creek provides a good model for salmon recovery in the Sacramento Valley. The [comprehensive effort](#) on Butte Creek joined upstream functional flows for spawning and holding habitat with barrier removal in the middle river that improved connectivity with the Sutter Bypass floodplain in the lower river, which provided food and ideal rearing habitat for out-migrating juvenile fish.

Upper River

In the upper reaches of the Sacramento River and its tributaries, returning adult salmon “hold” while they wait to spawn. Once spawning occurs, egg incubation begins followed by fry and juvenile fish rearing. Projects implemented to benefit fish in the upper river include adding spawning gravel, beds and riffles, developing side channels, refugia projects and other safe habitat for fry and juvenile fish. Water resource managers carefully manage the associated flows and cold water to maximize the habitat value of the projects.

- › [Salmon Spawning Gravel Project](#)
- › [Saving the Salmon: Shelter Project](#)
- › [Salmon Shelters: Root Wads](#)
- › [Market Street Side Channel Project Overview](#)
- › [Market Street Side Channel Partnerships](#)
- › [Market Street Side Channel Construction](#)
- › [American River Salmonid Habitat Restoration Project Construction](#)
- › [American River Salmonid Habitat Restoration at Sacramento Bar](#)



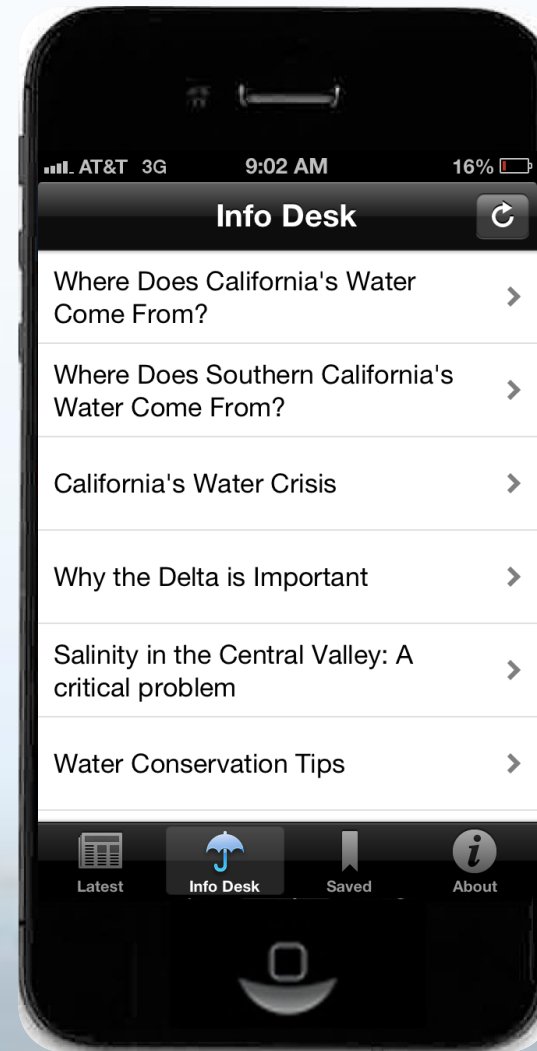
Aquafornia



AQUAFORNIA

The California Water News Blog

www.aquafornia.com



Info Desk

Where Does California's Water Come From? >

Where Does Southern California's Water Come From? >

California's Water Crisis >

Why the Delta is Important >

Salinity in the Central Valley: A critical problem >

Water Conservation Tips >



Latest



Info Desk



Saved



About

Think about...

- **Highly managed water system**
- **Importance of CVP/SWP in region**
- **Multi-benefit water management**
- **Reactivating the floodplain**
- **Innovative and modern flow strategies**
- **A region in balance**
- **Amazing partnerships**
- **Integration of human and natural dynamics**
- **Passion for the region**





Miles Hermann 07