

RIVER
PARTNERS

SJ Audubon Program

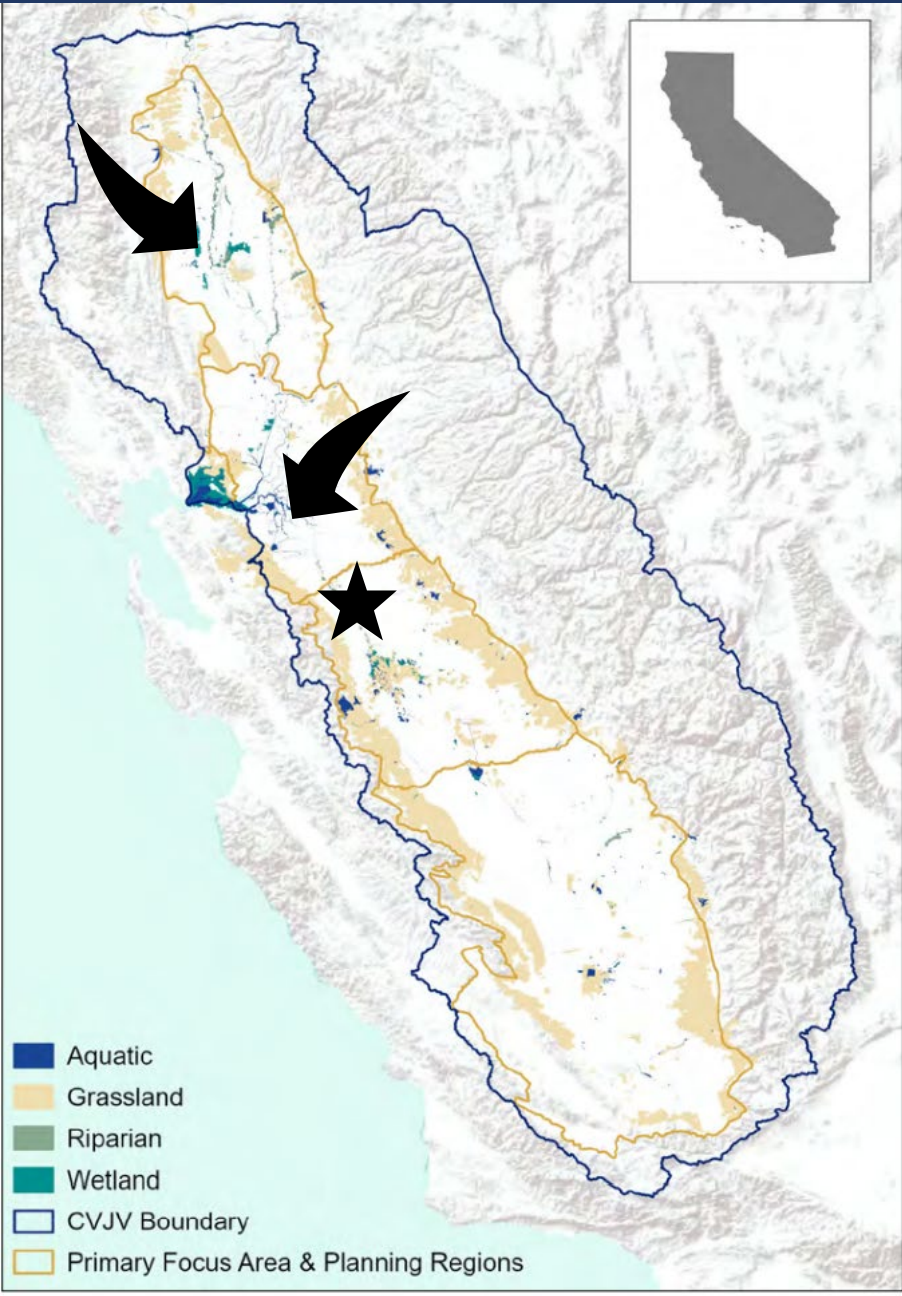
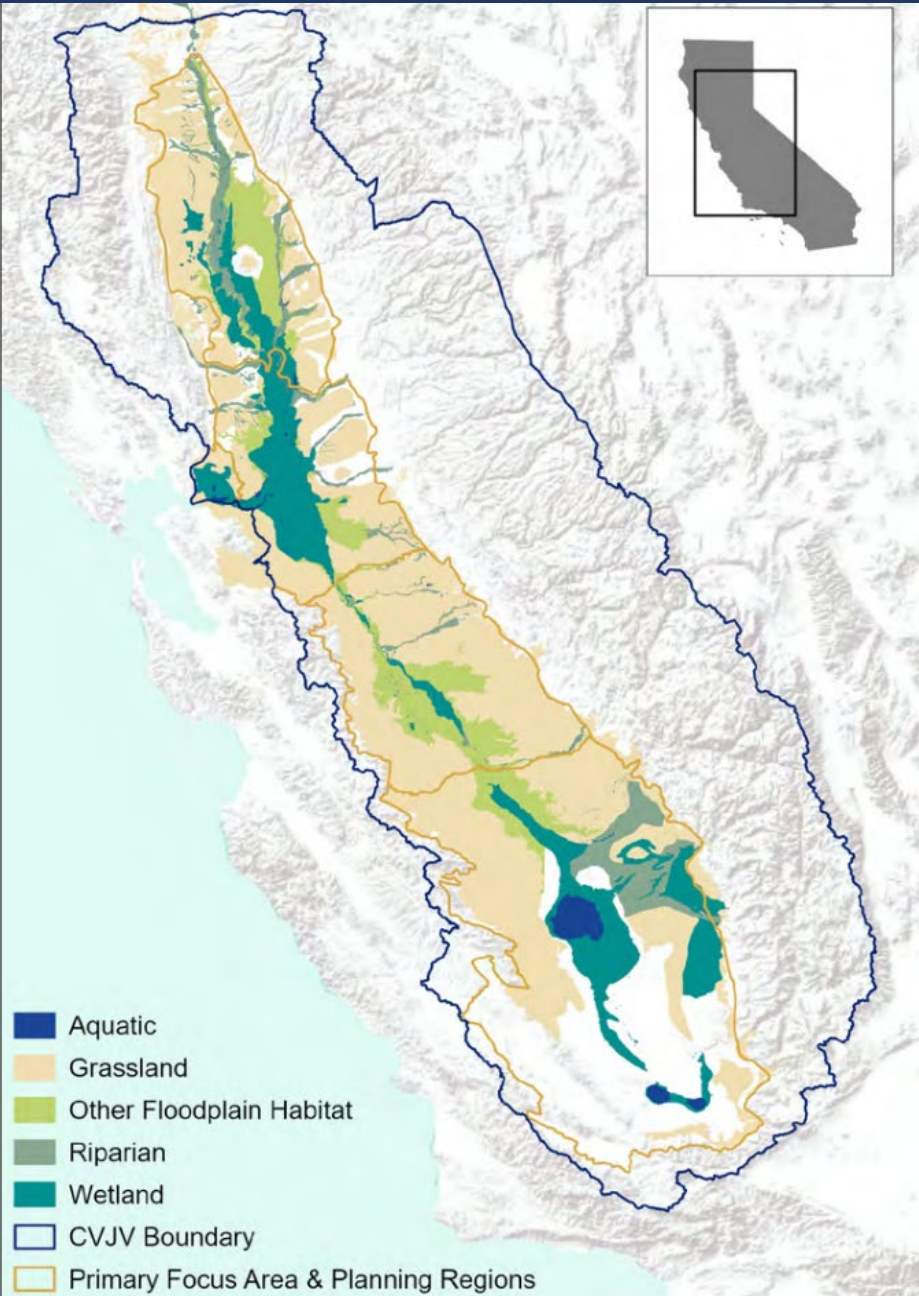
*Ecological Restoration at Dos Rios Ranch
October 11, 2022*

Can you attribute this quote?

It was among the strongest feelings of grief I have ever encountered. The contrast between the vicious coldness of space and the warm nurturing of Earth below filled me with overwhelming sadness. Every day, we are confronted with the knowledge of further destruction of Earth at our hands: the extinction of animal species, of flora and fauna... things that took five billion years to evolve, and suddenly we will never see them again because of the interference of mankind. It filled me with dread. My trip to space was supposed to be a celebration; instead, it felt like a funeral.

**~William Shattner
2022**

Central Valley Historical Ecology



A Different Kind of Conservation Organization



Over 18,000 acres revitalized in 20+ years – the largest restoration footprint in the Western U.S



1+

Billion gallons of
freshwater conserved.
10+ billion gallons
since 1998



2,000+

Acres of protected habitat
restored for endangered
and threatened species.
18,000+ since 1998



450,000+

Native trees & vegetation
planted. Nearly 4 million
since 1998



46,000+

Tons of greenhouse
gases captured.
1+ million tons
since 1998



\$15+

Million channeled directly to the
communities where we work.
\$100+ million since 1998



Our Mission

To create wildlife habitat for the benefit of people and the environment

Our Vision

We envision thriving rivers and floodplains that **enhance** surrounding communities, **sustain** abundant wildlife, **support** productive farmland, **preserve** freshwater resources, and serve as the first line of **ecological defense** in a changing climate.



Building the Restoration Sector, From the Ground Up

We do the work, on the ground

- 95% of expenses directed to project delivery

We deliver money and jobs to our neighbors in need

- \$160+ million in competitive grant funds to the local communities where we work.
- 60% of our staff are people of color from communities neighboring our projects; Projects designed for inclusion
- Socioeconomic need and access-to-nature data map directly to our project areas.

Culturally diverse and multi-skilled team

- Integrated science, operations and development teams are shaping CA restoration practice from the ground up.



Rewilding the Heart of California – Biodiversity Lifelines

Repair of physical river processes shown to support wildlife and healthy ecosystems

200+ miles of restored riverbanks and for an entire suite of listed and fragile native species.

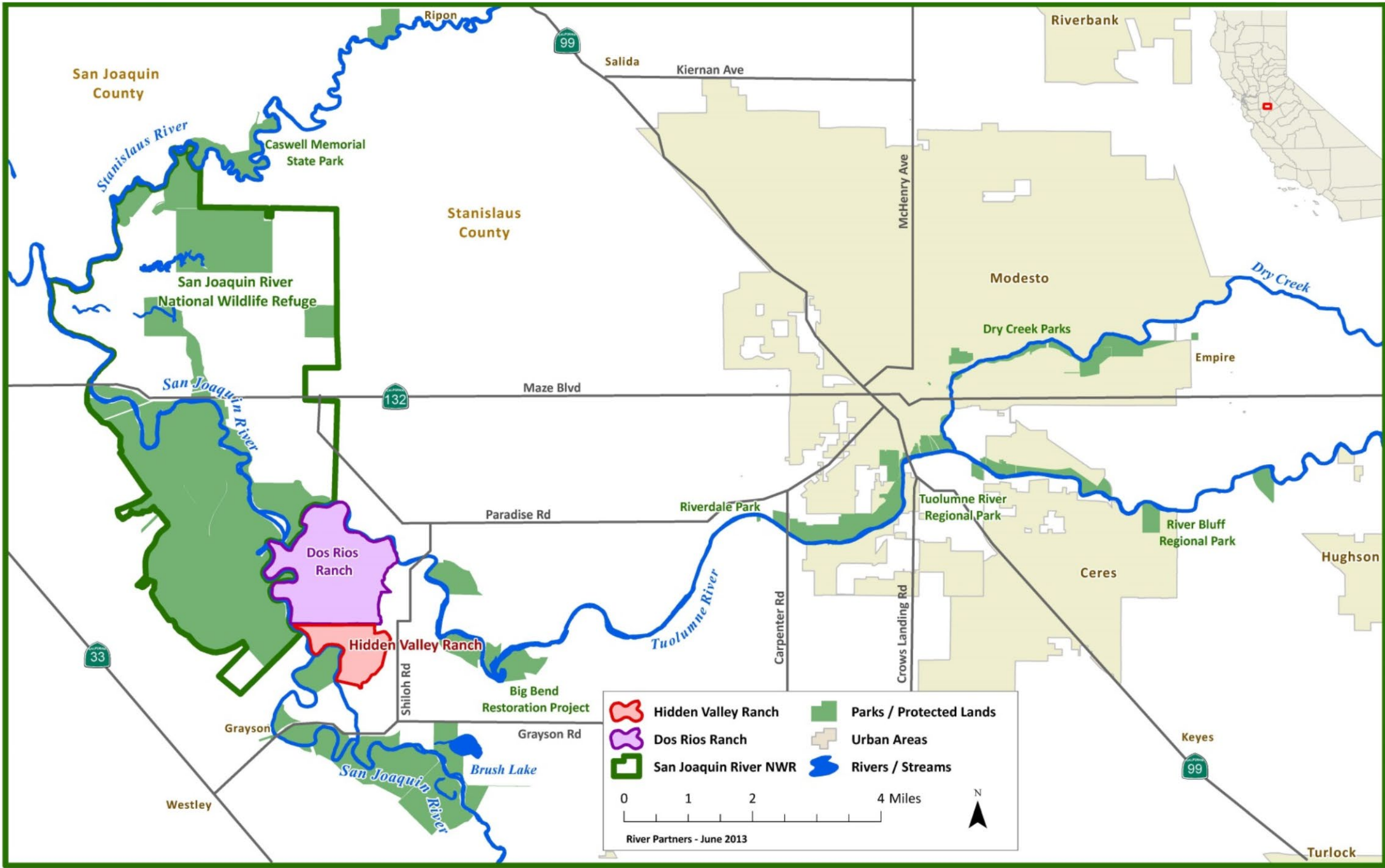
Expansion of restoration science: Field-tested innovations in wildlife monitoring, water detection, data management

Our data underlies research, wildlife recovery plans, and policies



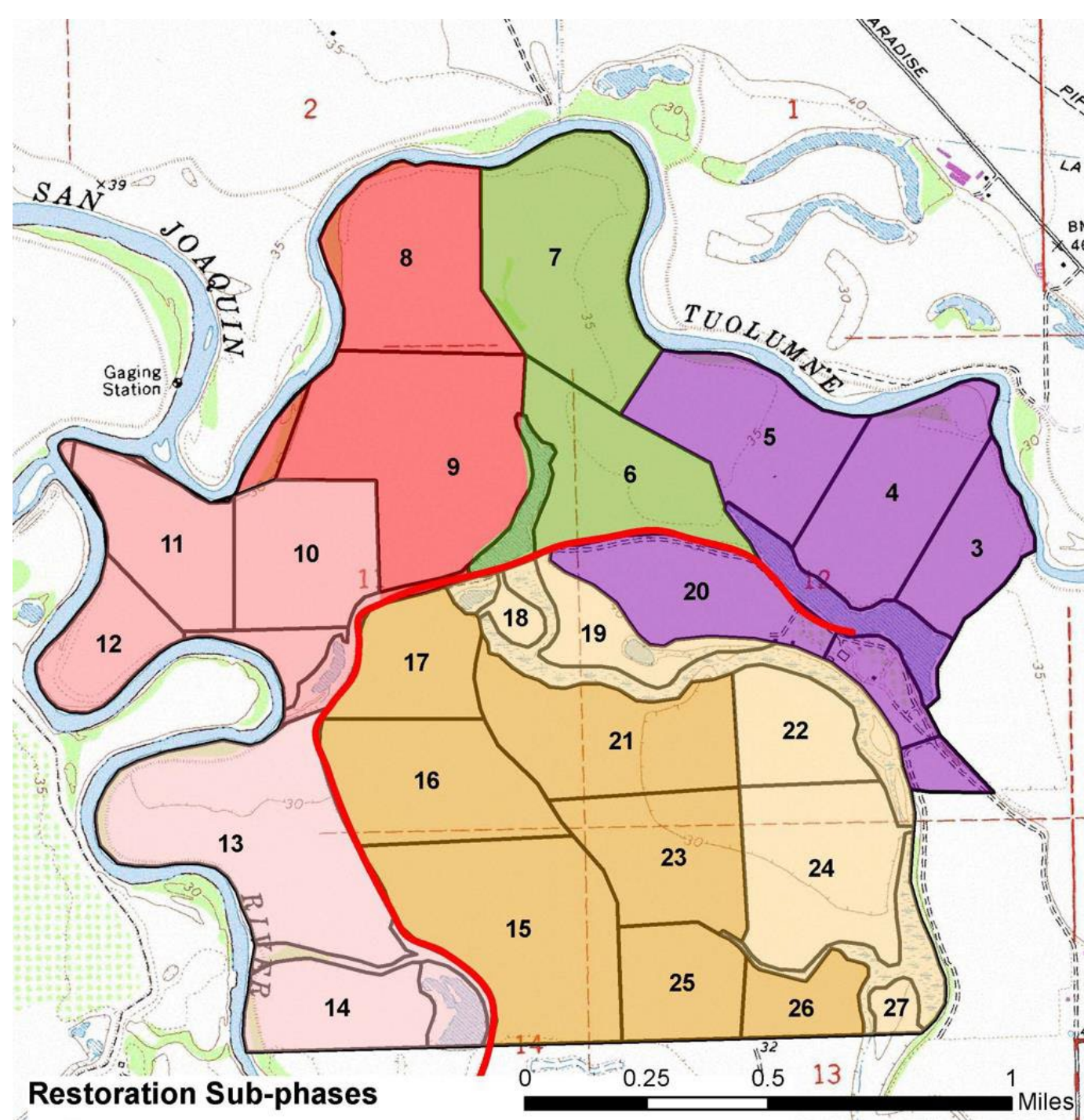
Our Partnership with the USFWS – SJRNWR 1997 Flood







[Welcome to Dos Rios Ranch Preserve \(vimeo.com\)](https://vimeo.com)

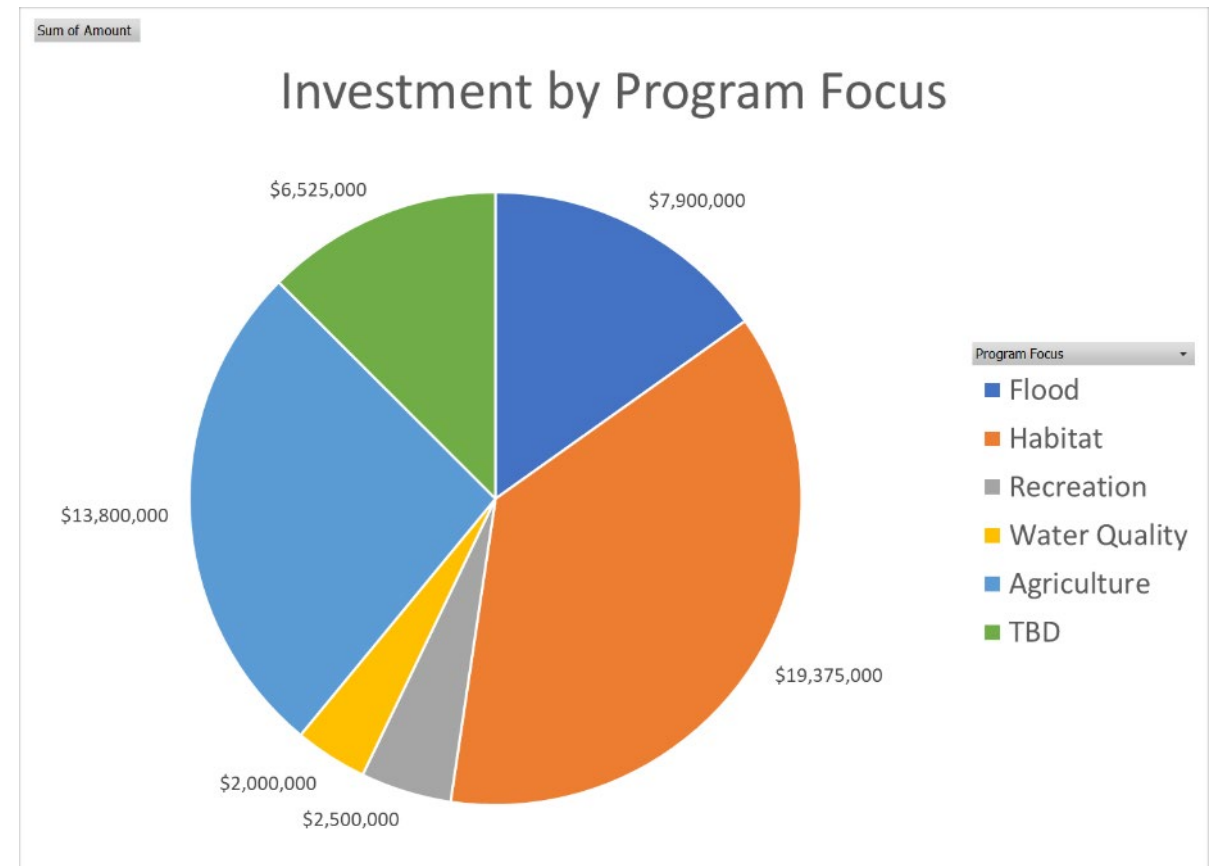
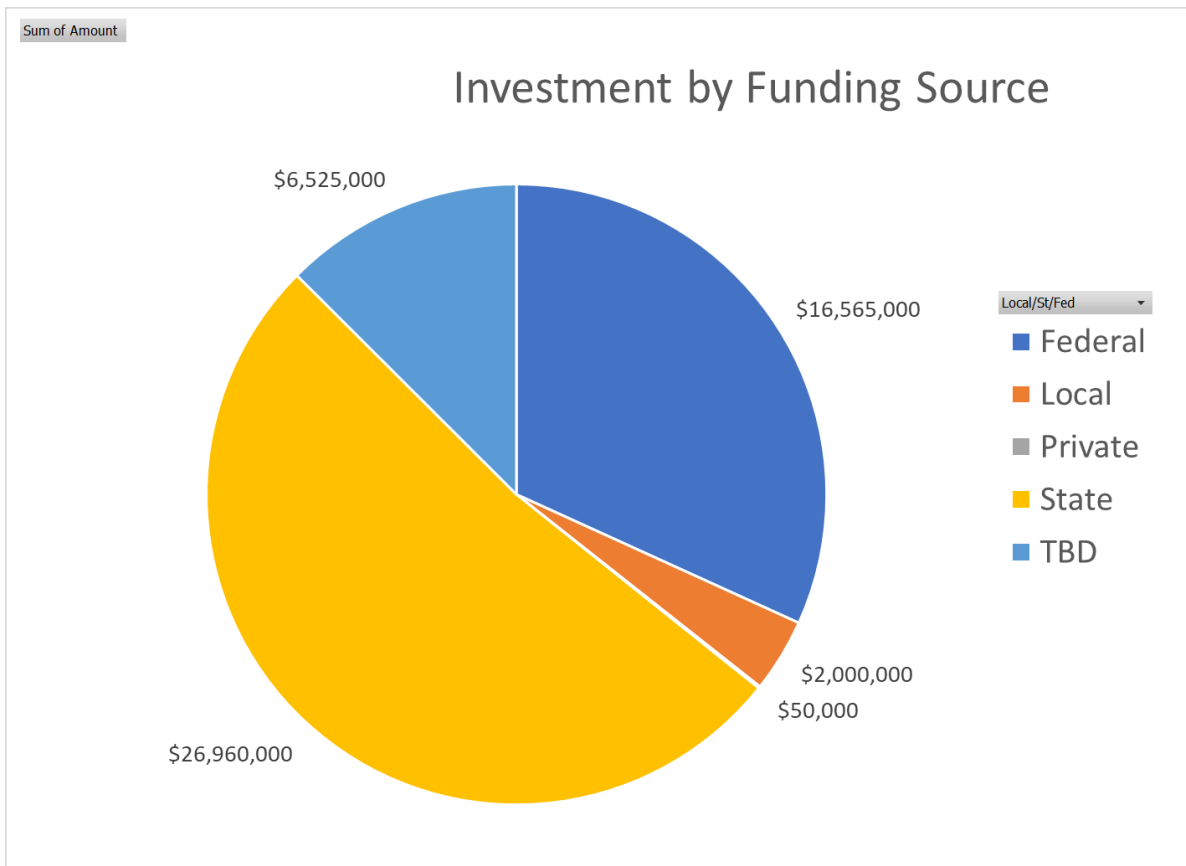


Red line is the
FEDERAL FLOOD CONTROL LEVEE

Restoration Phases

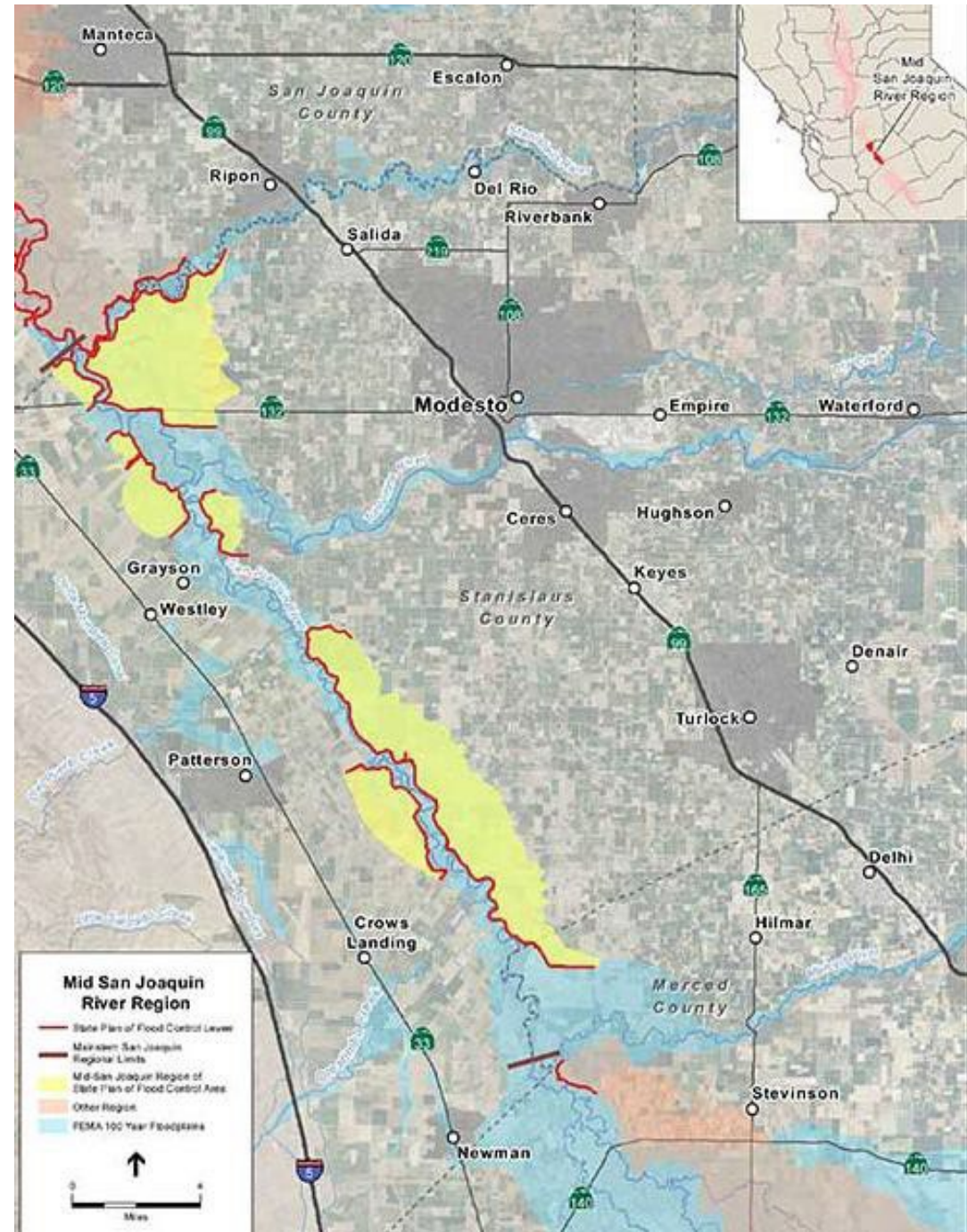
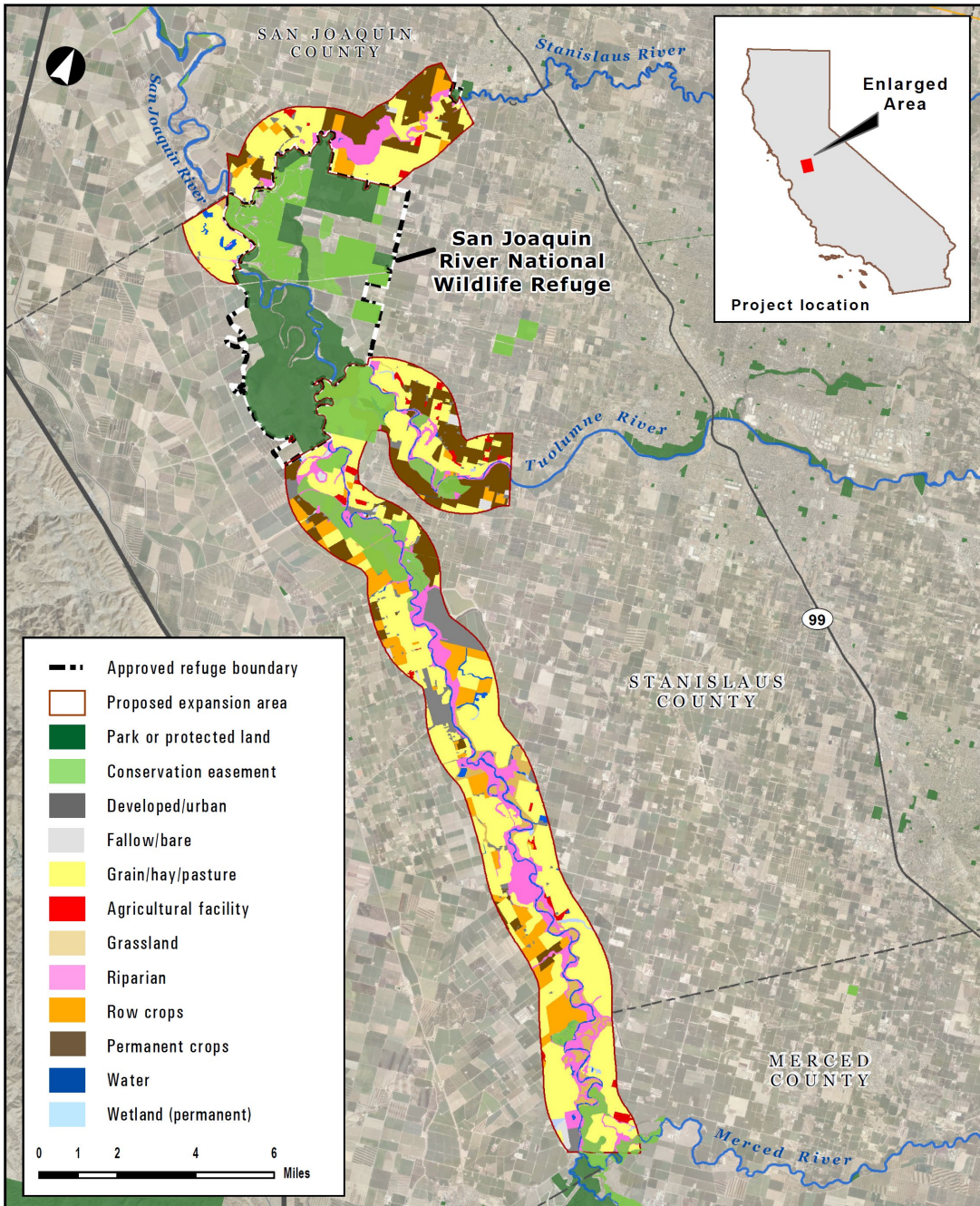
- Yellows 2013
- Red/green 2018
- Purple 2021 (excl field 20+)

Dos Rios Project Multi-benefit Public Investment



San Joaquin River National Wildlife Refuge - Proposed Southern Expansion Area

Landcover



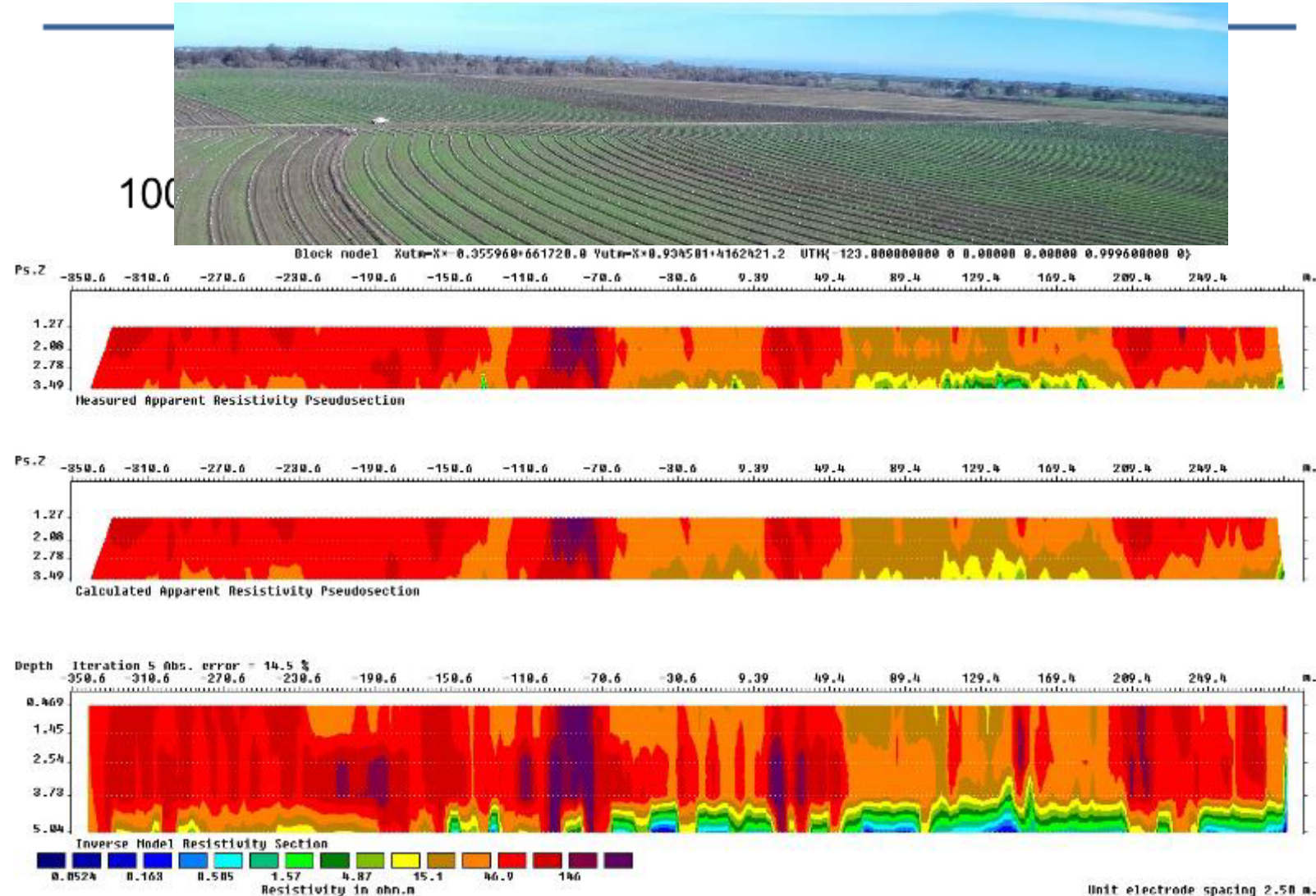
Dos Rios Project – Flood Management

- Reduced flood damages on property and levee maintenance obligations
- Reduced local flood stage
- Reduced peak flows downstream >12 miles
- Regional Flood Management Planning
- + Reclamation District 2092 and Stanislaus County



Dos Rios Project – Groundwater Recharge

- SGMA (2014) & SAGBI
- River Recharge Analysis
- Invitation to Lawrence Livermore Scientists
- Scoping with FloodMAR and NGO community
- **Fundraising**
- Research outcomes??
- Concurrent research in the GSA?





Rabbit Hemorrhagic Disease

Present in many counties across California
NOT detected in Stanislaus County

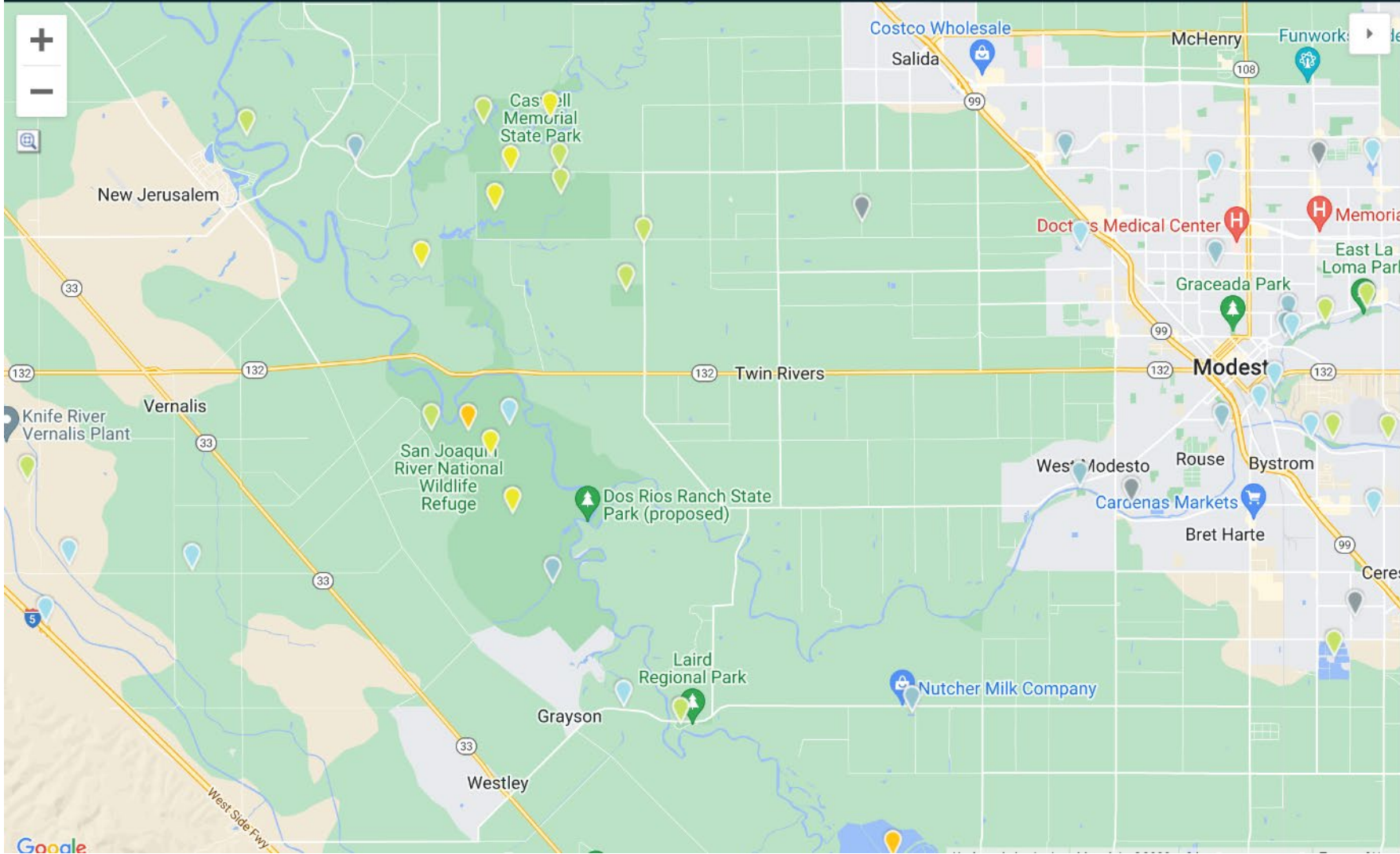
Virus travels in soil and can persist for years
(think PARVO)

Sterilizing tires and shoes is **REQUIRED**

Sterilize off-site and minimize vehicle traffic –
carpool if possible

Report to River Partners if you find any dead
rabbits on site

Hotspot: Enter hotspot name... DATE: Year-round, All years LOCATION: Enter place name or address...



Zoom Tool MAP TYPE: Terrain, Street, Satellite, Hybrid FILTER BY RECENT ACTIVITY: All Hotspots, Past Month, Past Week SPECIES OBSERVED: 500+, 400-500, 300-400, 250-300, 200-250, 150-200, 100-150, 50-100, 15-50, 1-15, 0

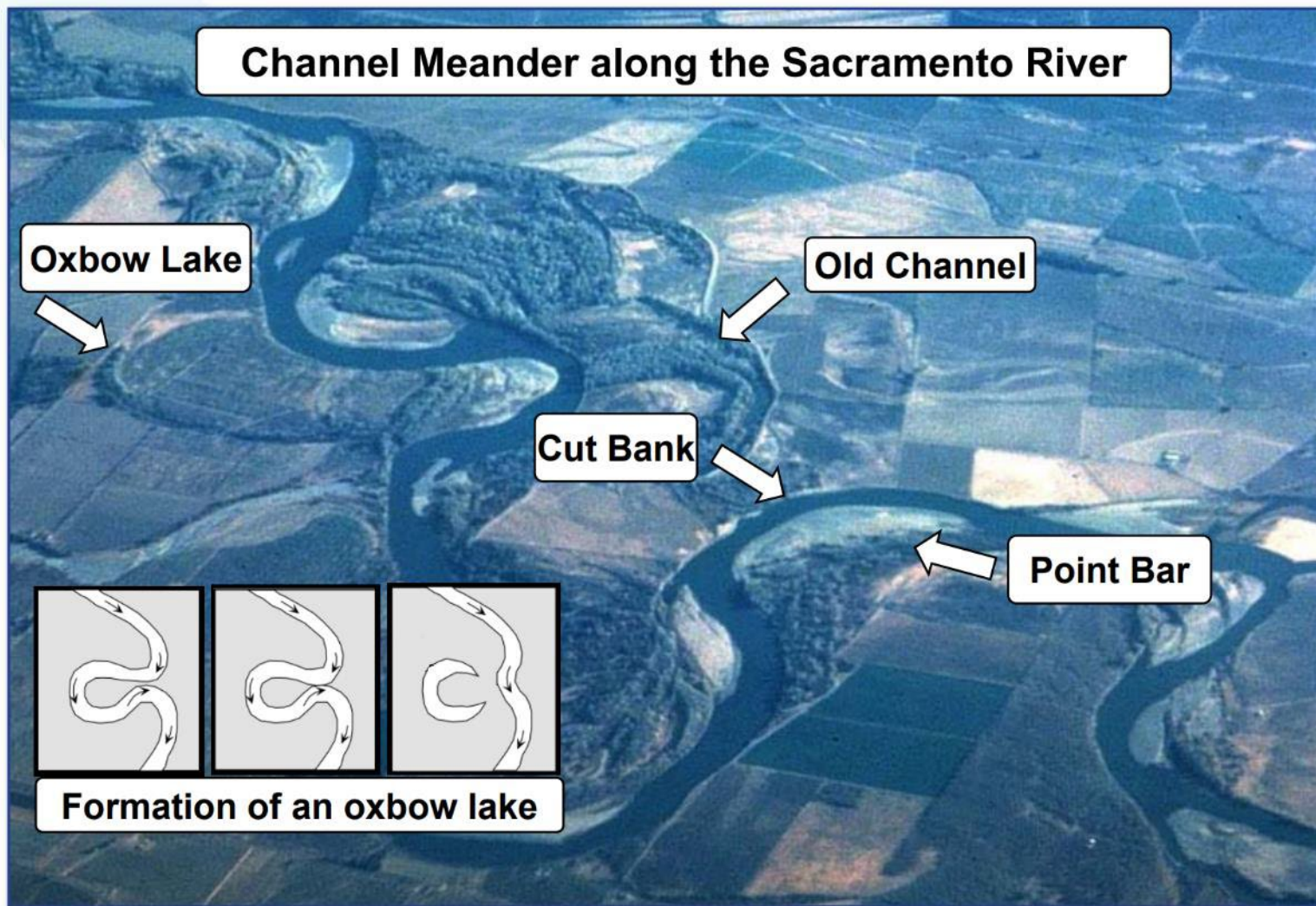
San Joaquin River NWR--south (restricted access), Stanislaus County, CA, US - eBird Hotspot

California Riparian Habitat Restoration Handbook

Second Edition
July 2009



Aerial view of riparian restoration in progress at the Drumheller Slough Unit of the Sacramento River National Wildlife Refuge. Photo by Tom Griggs, River Partners.



Some properties of channel meander exhibited by the Sacramento River. Where streams flow over low gradients through erodible banks, the velocity of the water causes the channel to meander. Erosion occurs on the outer bends where water moves fastest, and sediment is deposited on the inner bends (where water velocity is low) and forms point bars. If a meander bend is cut off from the rest of the channel, an oxbow lake is formed. Formation of an oxbow lake graphic adopted from Earth Science Australia.



F. Thomas Griggs, Ph.D.,
Senior Restoration Ecologist

River Partners
www.RiverPartners.org



Black-headed Grosbeak

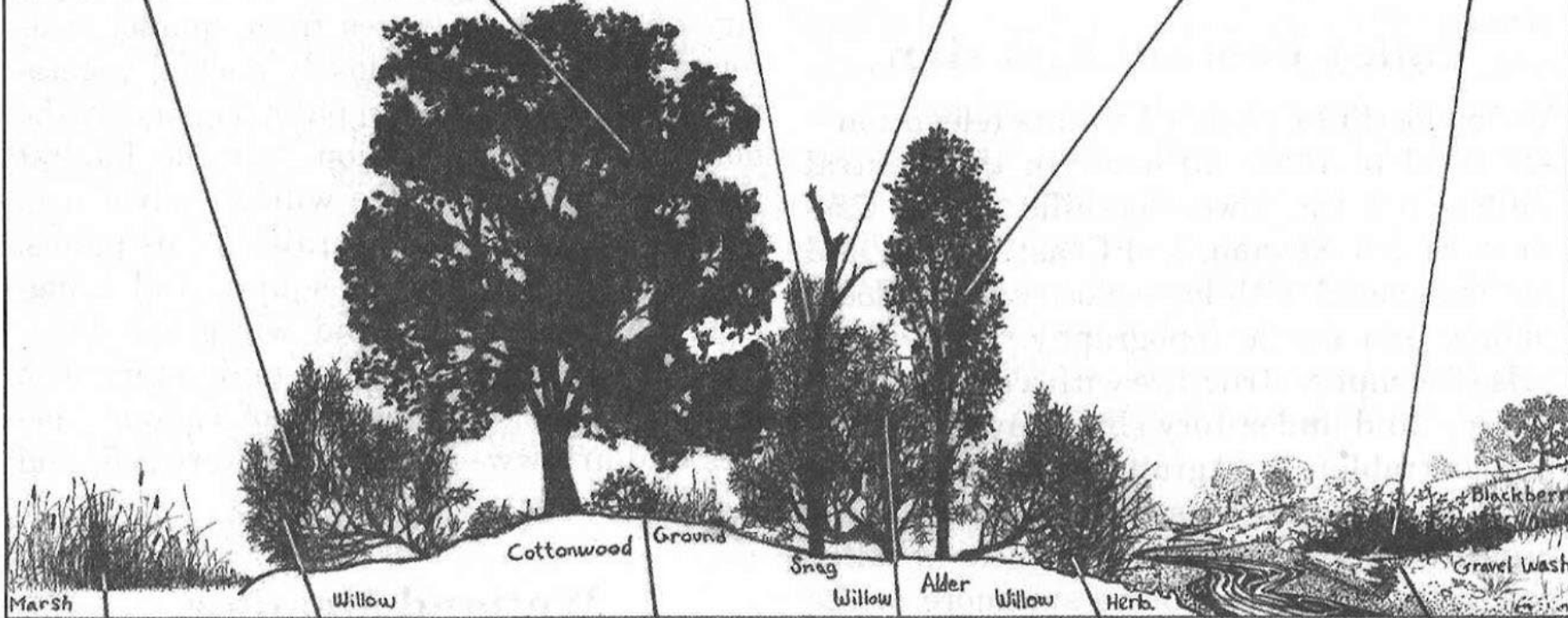
Swainson's Hawk

Yellow-billed Cuckoo

Nuttall's Woodpecker

Yellow Warbler

Song Sparrow



Marsh

Willow

Cottonwood

Ground

Snag

Willow

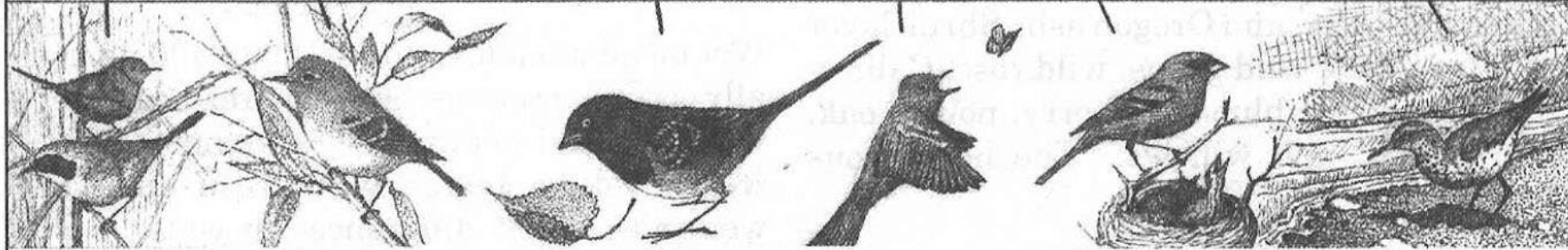
Alder

Willow

Herb.

Blackberry

Gravel Wash



Common Yellowthroat

Bell's Vireo

Spotted Towhee

Willow Flycatcher

Blue Grosbeak

Spotted Sandpiper

Dos Rios Outcomes: Living Rivers



**8+ miles of natural
riverbanks**

**Repair of physical
river processes:**

Erosion

Deposition

Channel Meander

Floodplain reconnection

Groundwater infiltration

Dos Rios Outcomes: Community Connections

Dos Rios State Park!
1yr – fee title transfer
1-2yrs – soft opening
5 yrs – campground?

Need community connections
Appetite for more river parks in the SJV

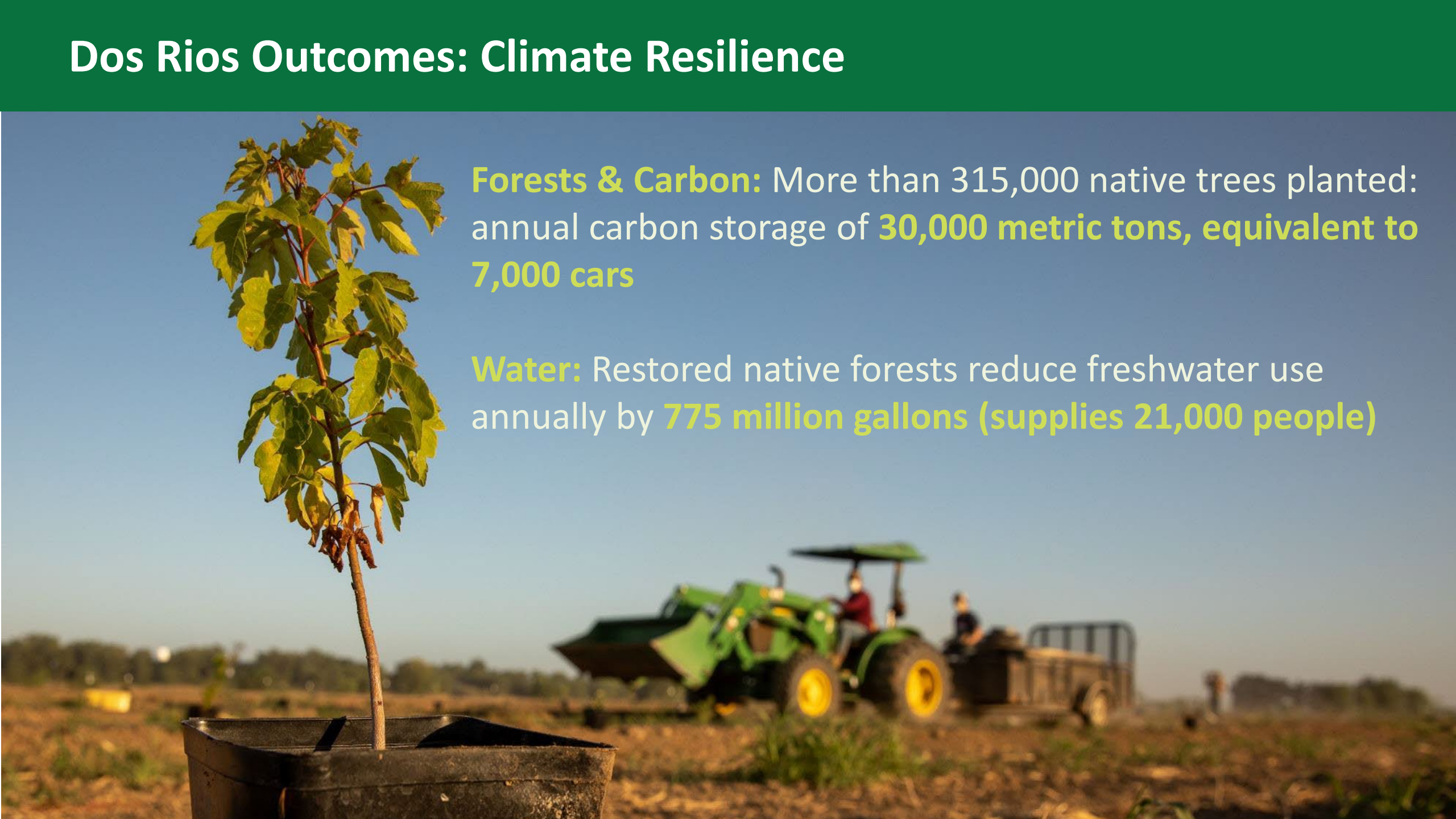


Dos Rios Outcomes: Climate Resilience

River and floodplain restoration is a flood safety move
On our projects, floodwaters slow down, spread out and sink in, reducing risk downstream



Dos Rios Outcomes: Climate Resilience

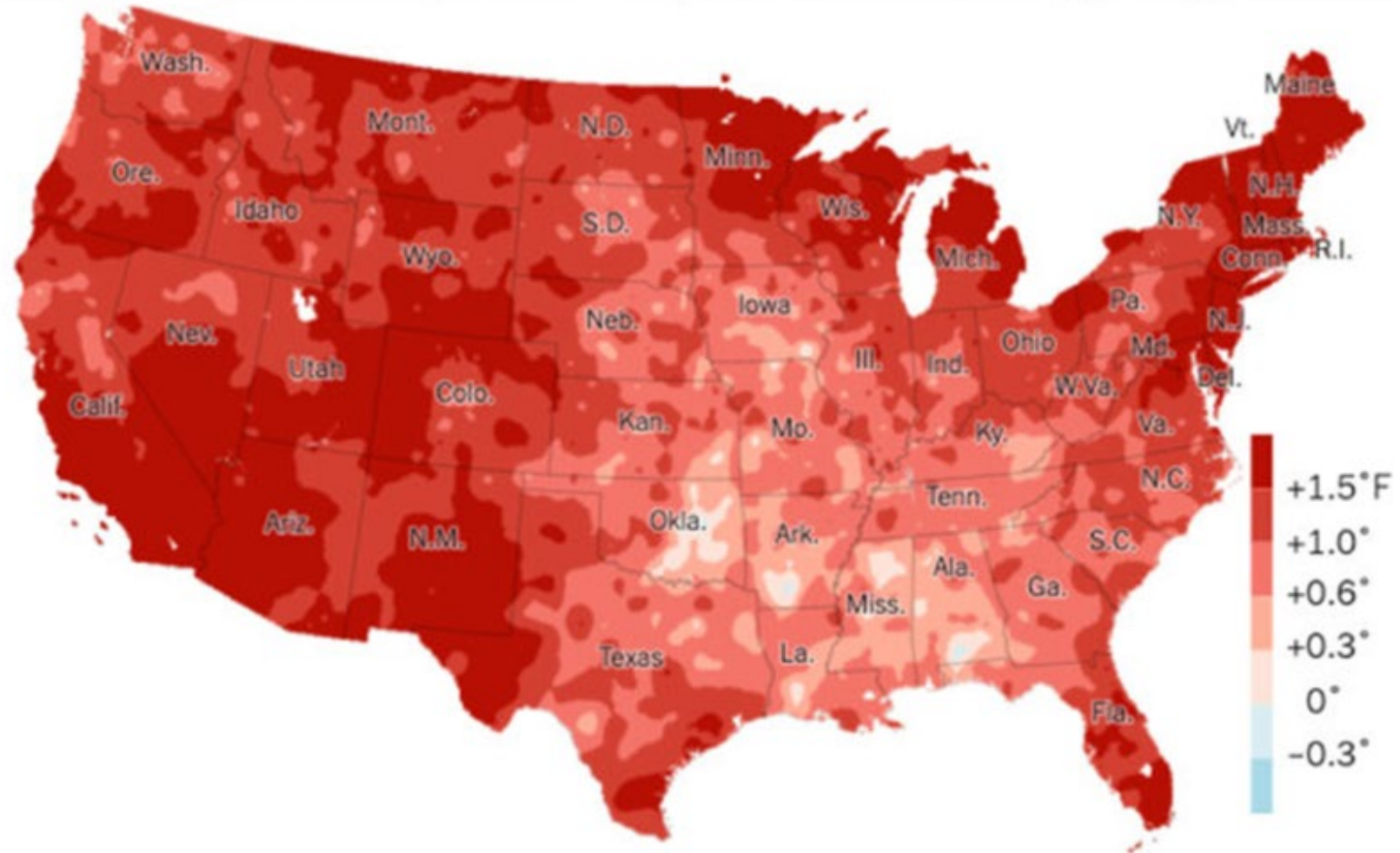


Forests & Carbon: More than 315,000 native trees planted: annual carbon storage of **30,000 metric tons, equivalent to 7,000 cars**

Water: Restored native forests reduce freshwater use annually by **775 million gallons (supplies 21,000 people)**

Rising Temperatures

1991–2020 temperatures compared with 20th century average



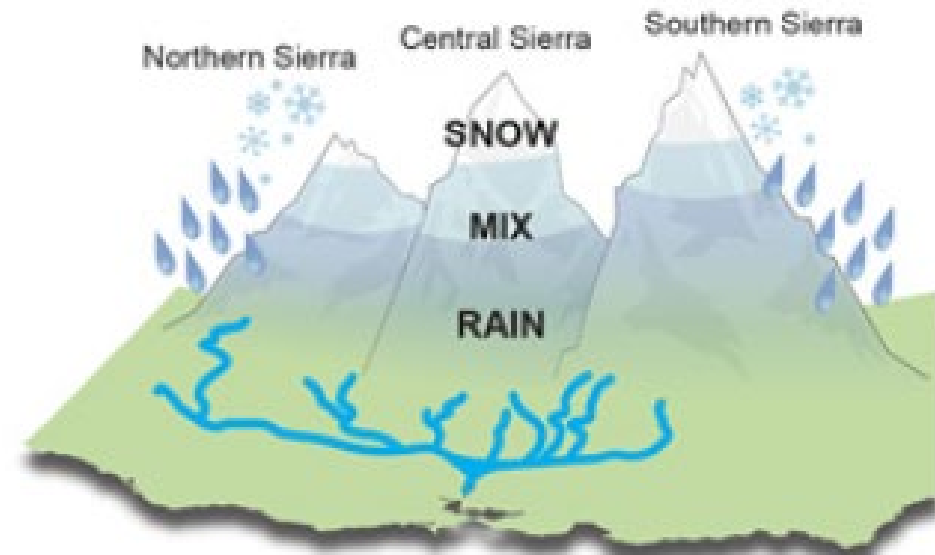
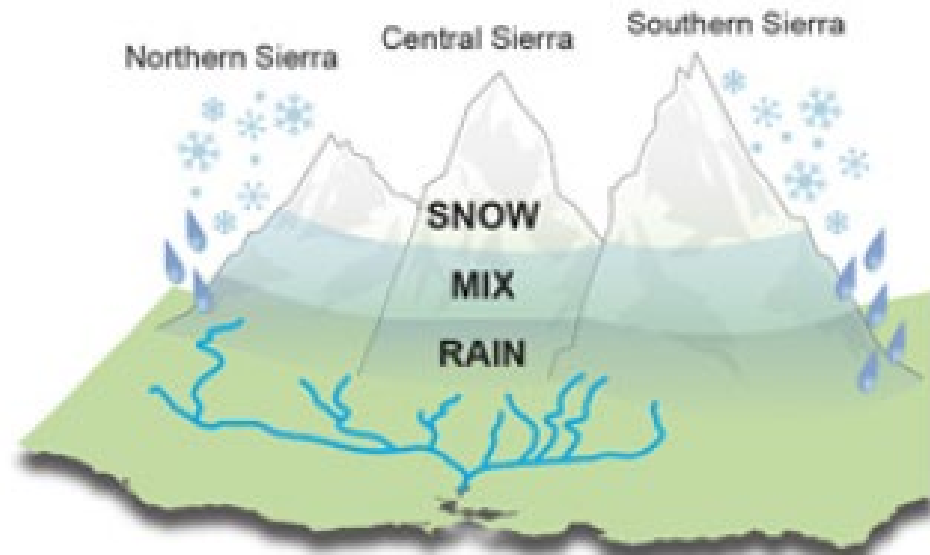
Changing Precipitation

PRECIPITATION PATTERNS AND FORM WILL CHANGE THROUGHOUT THE CENTRAL VALLEY WATERSHED

A temperature increase of 1°C moves the snow level elevation 500 feet higher.

TODAY

FUTURE

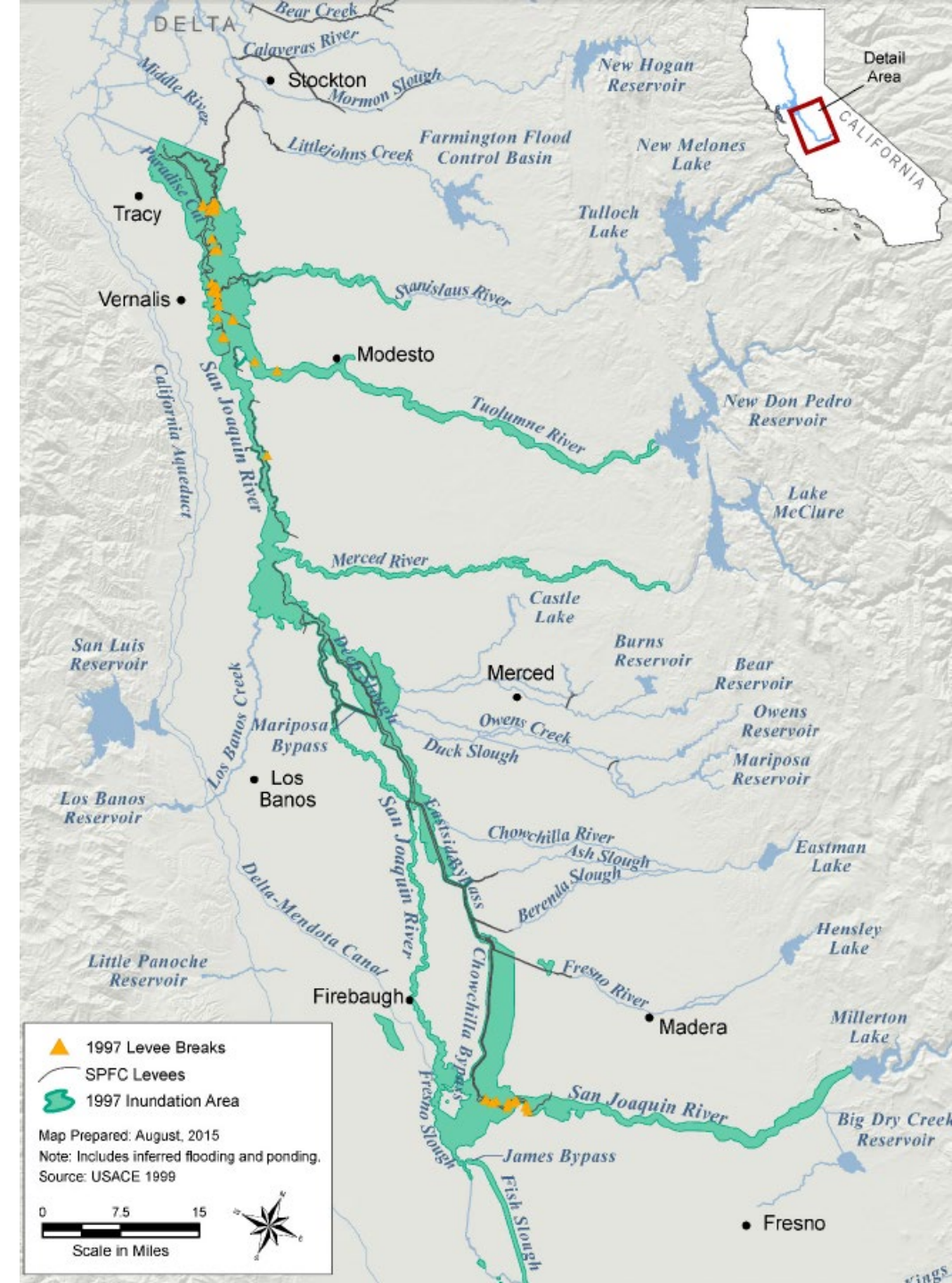


1997 Flood

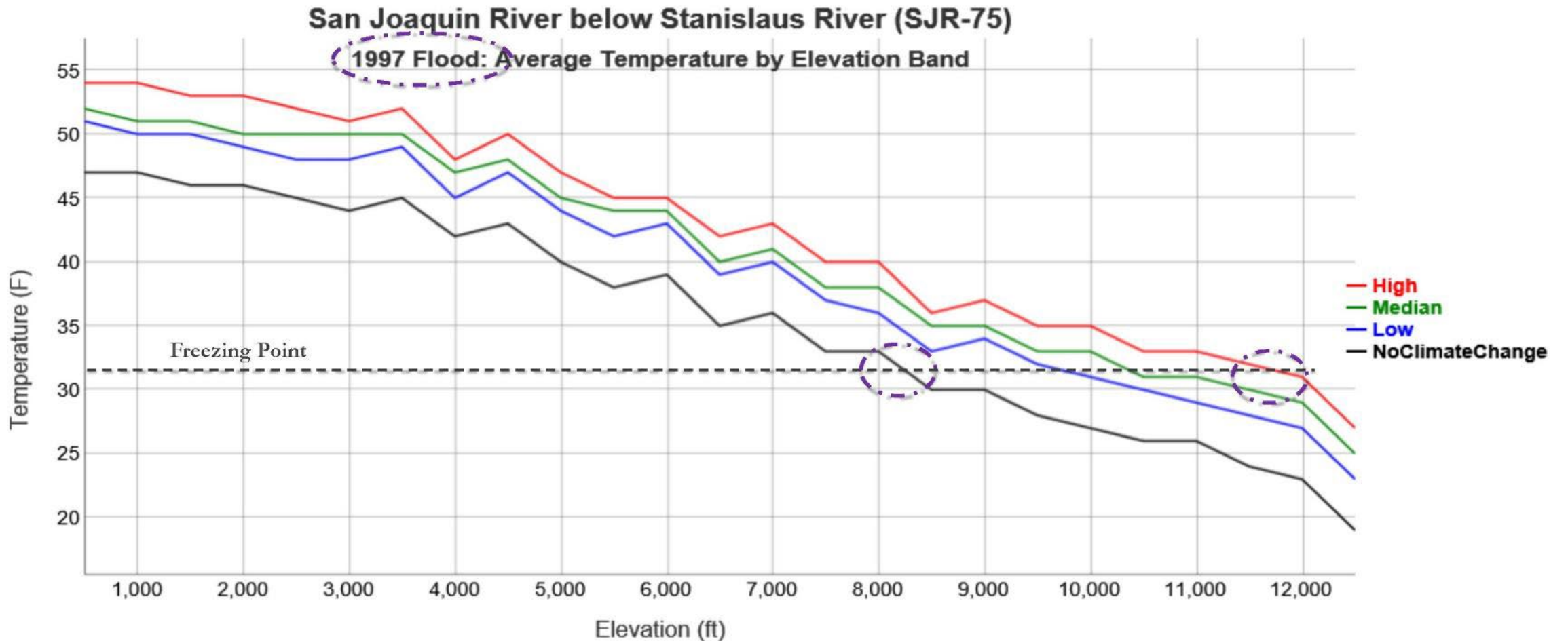
17 levee breaks

Deep inundation (>10 ft) in lower SJR floodplains

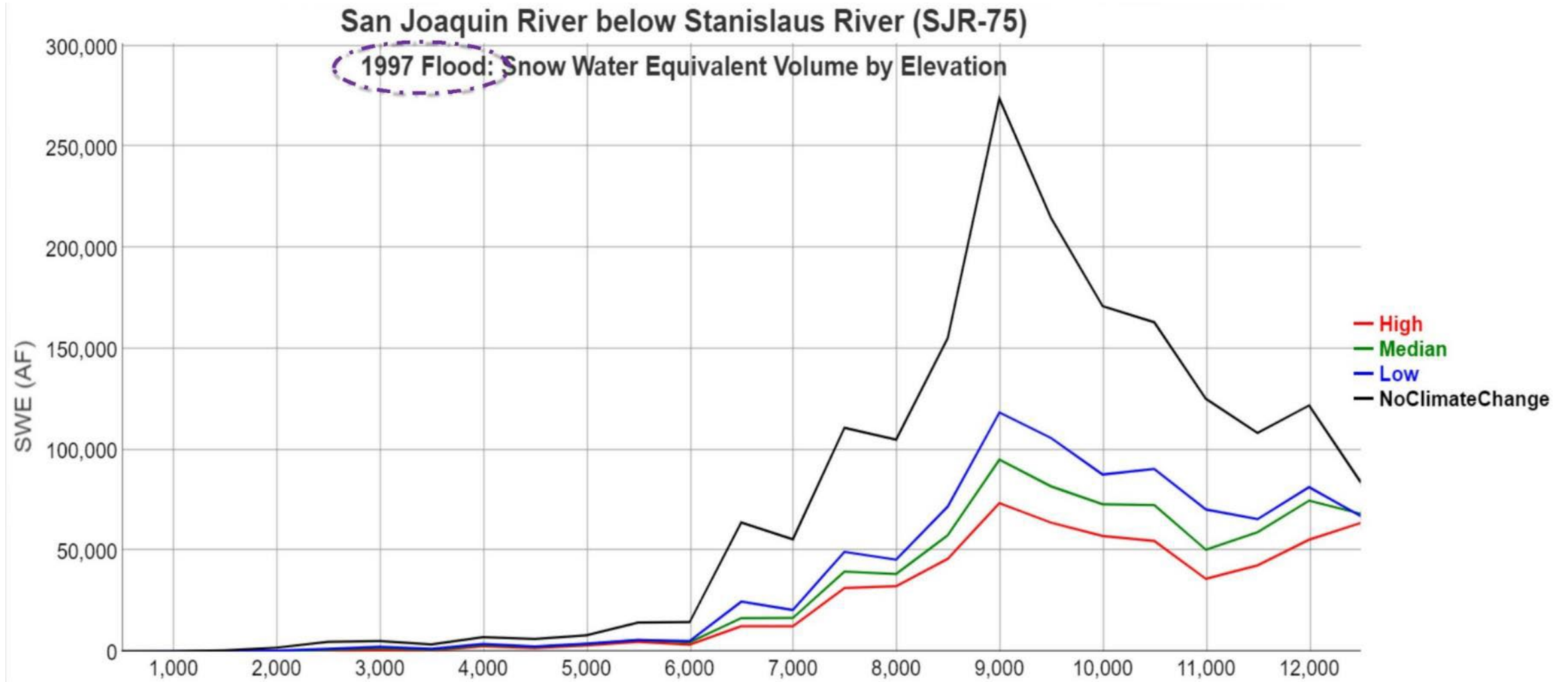
Was a 100-year (i.e. 1%) flood under existing hydrology



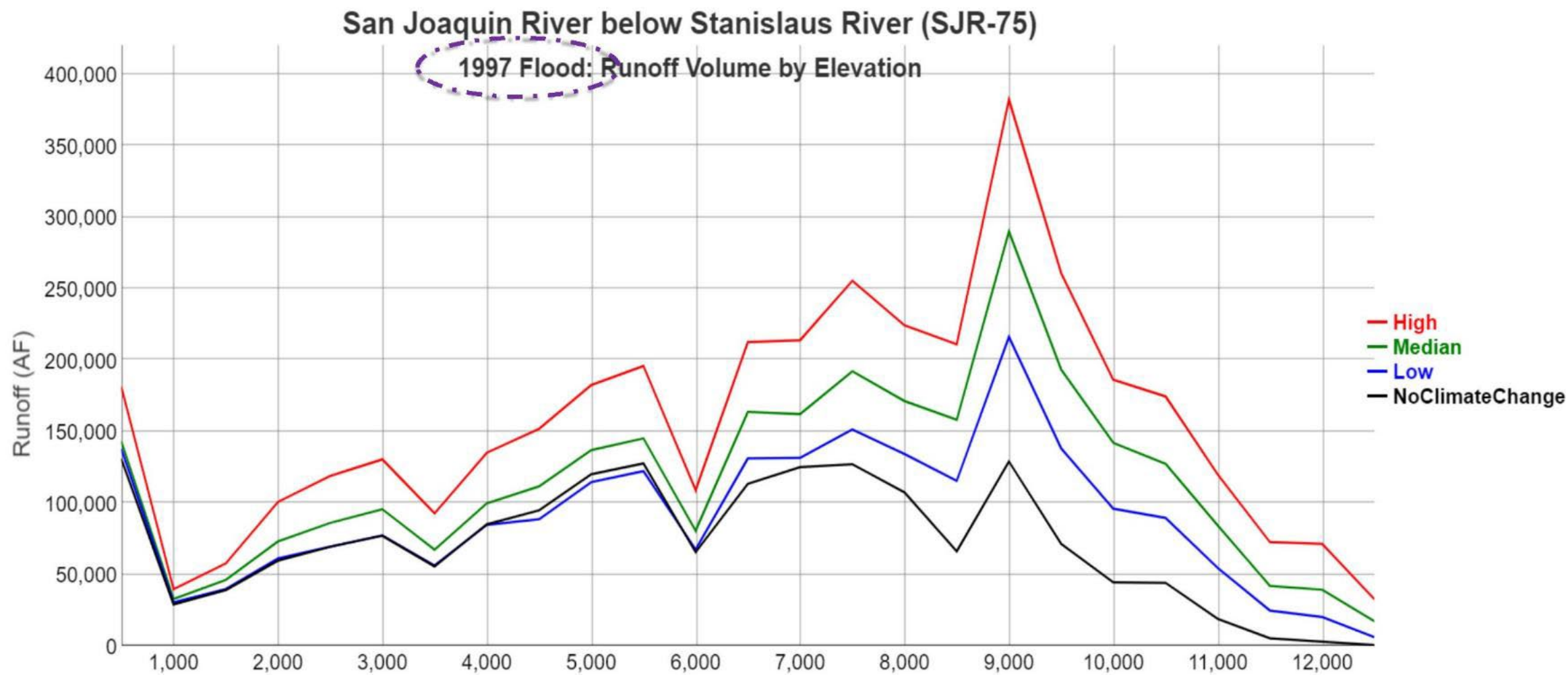
Temperature and Snowline Elevation



Snow Accumulation by Elevation



Runoff Quantity by Elevation





The New York Times

The Coming California Megastorm

A different ‘big one’ is approaching. Climate change is hastening its arrival.

*By Raymond Zhong | Graphics by Mira Rojanasakul Photographs by Erin Schaff
Aug. 12, 2022*

California, where earthquakes, droughts and wildfires have shaped life for generations, also faces the growing threat of another kind of calamity, one whose fury would be felt across the entire state.


This one will come from the sky.

According to new research, it will very likely take shape one winter in the Pacific, near Hawaii. No one knows exactly when, but from the vast expanse of tropical air around the Equator, atmospheric currents will pluck out a long tendril of water vapor and funnel it toward the West Coast.

This vapor plume will be enormous, hundreds of miles wide and more than 1,200 miles long, and seething with ferocious winds. It will be carrying so much water that if you converted it all to liquid, its flow would be about 26 times what the Mississippi River discharges into the Gulf of Mexico.

When this torpedo of moisture reaches California, it will crash into the mountains and be forced upward. This will cool its payload of vapor and kick off weeks and waves of rain and snow.

The superstorm that Californians have long feared will have begun.



NOTES ON A COLONY OF TRI-COLORED REDWINGS

By JOSEPH MAILLIARD

ALTHOUGH some years ago I described a breeding colony of Tri-colored Redwings (*Agelaius tricolor*) located near an artesian well in Madera County, California, I have been so much interested in another colony

Sept., 1914

NOTES ON A COLONY OF TRI-COLORED REDWINGS

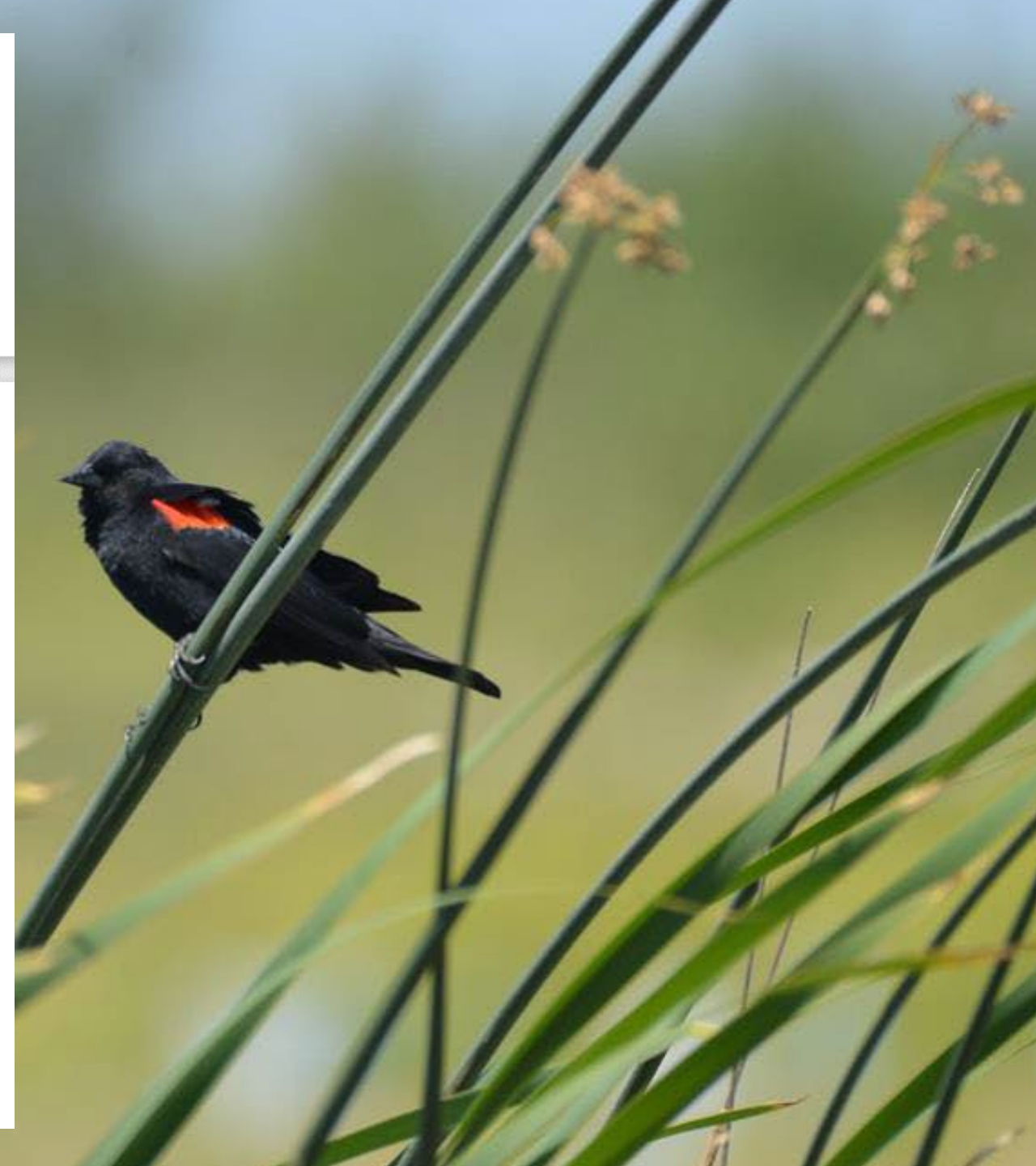
205

this year, with better opportunities for observation, that it seems pardonable to touch upon the subject once more.

The nesting ground before described (CONDOR II, November, 1900, page 122) was a remarkably crowded one. In a patch of tules of very limited extent beside a flowing well, the birds had built their nests in such numbers that many were abandoned when other nests were built above them, and the tules grew so high and thick as to make the lower tiers dark, dirty and inaccessible.

The colony breeding this year on the Rancho Dos Rios, Stanislaus County, California, was a much larger one than the above, but the breeding ground was acres instead of yards in extent. While there must have been several thousand birds in it there was plenty of room and no great crowding together of nests, though even with so much space there were many nests only a few feet, and in some instances only a few inches, apart. None, however, were built *over* others, notwithstanding the different heights above the water, varying from six inches to about three feet, the water itself being about knee deep.

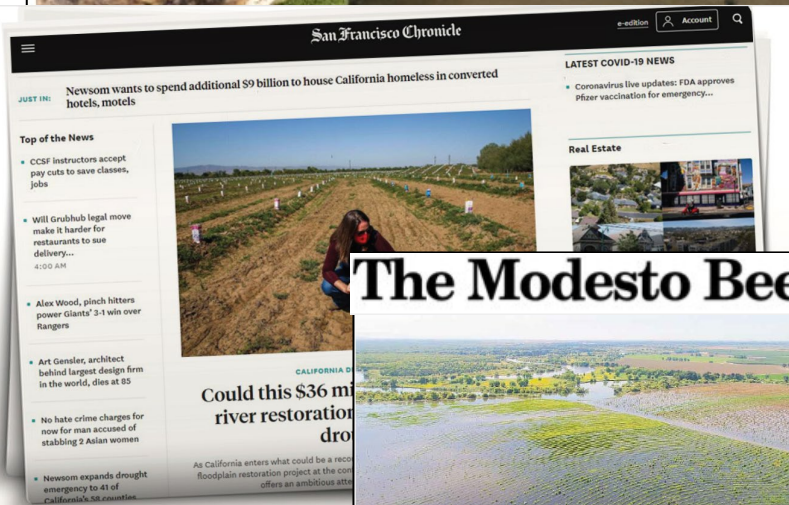
While the writer first noticed signs of building on April 14, 1914, it probably commenced shortly before that date, as the spot had not been visited for several days previously. On that day birds were noticed carrying building material, and upon further investigation a few beginnings of nests were found.



Building a Resilient California – Water & Climate Solutions

Los Angeles Times

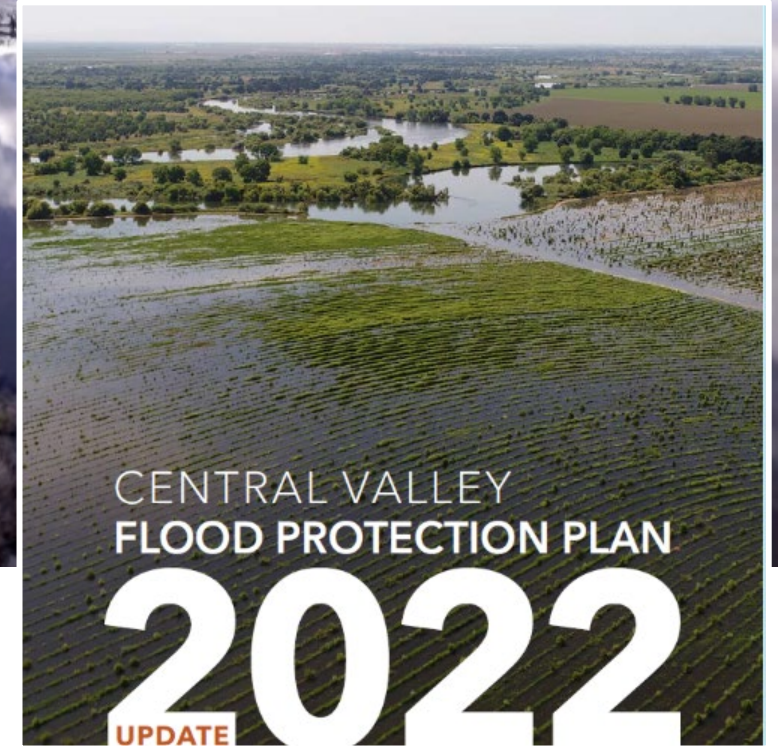
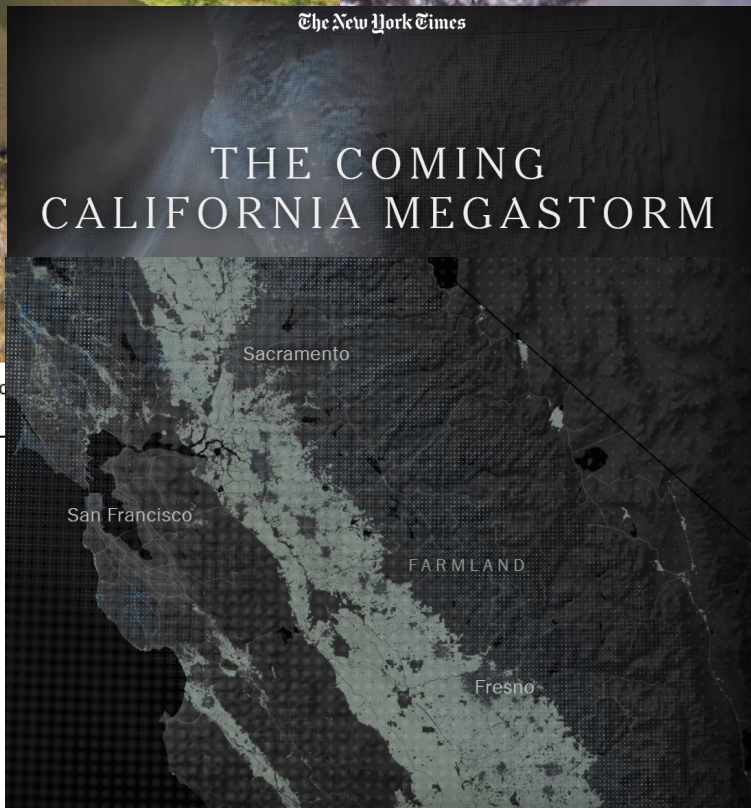
Column: California state government is admirably trying to address drought. It's a tough nut to crack



The Modesto Bee



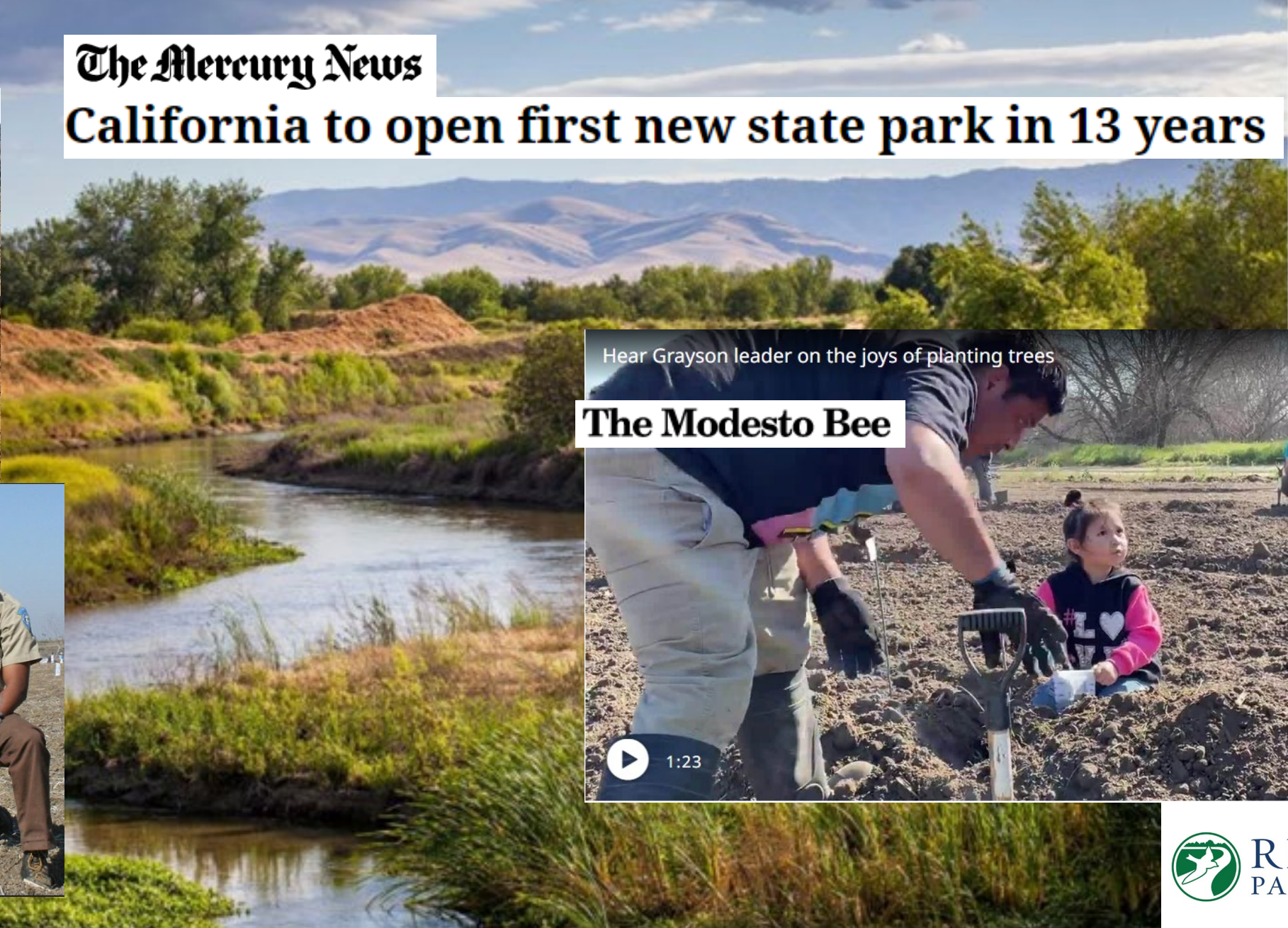
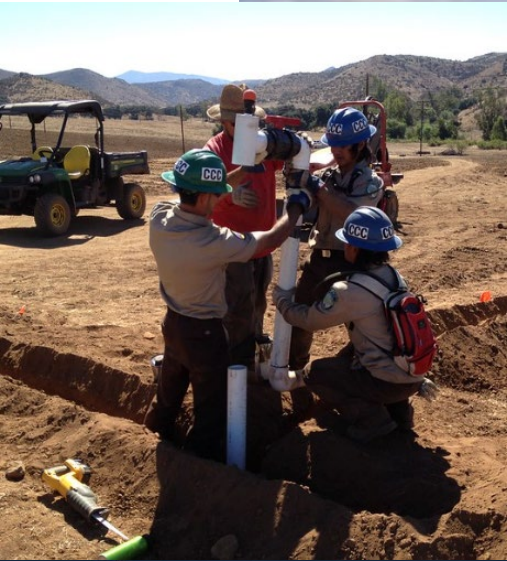
One way to help heal Central Valley while correcting political favoritism



Building Equity: Healthy Communities, Accessible Riverways

The Mercury News

California to open first new state park in 13 years



Hear Grayson leader on the joys of planting trees

The Modesto Bee



Protecting Land and Water Forever

Fee-title funding for Land and Water:

- In 2022, we have secured \$31.2M from state and federal funders to secure 1,600 acres
- In 2023, we are seeking **\$46M to secure 2,400 acres**

Water Dedication:

- Dos Rios 1707 Petition – public notice next month!
- Seeking support to develop similar petitions for streamflow in VOLUNTARY and ADDITIVE projects

Public Ownership and Stewardship:

- Transfer restored properties to State and Federal owners
- Work in partnership to secure funds and manage restoration projects
- Cultivate community involvement
- Support from legislature from demonstration projects



Restoration from the Ground Up: Native Seeds & Plants

Why Native Seeds?



Deep Root Systems

- Sequester carbon, enrich soil nutrients
- Improve water quality, quantity, and retention
- Reduce erosion and dust pollution



Drought Tolerant

- Fewer inputs (fertilizer, pesticides, water)
- Reduces GHG emissions, health risks, and energy use



Enhance Biodiversity

- Ensure healthy, resilient native ecosystems
- Support pollinators, beneficials, and coevolved wildlife

We must develop seed scale now to ensure quality/diversity of seed in 2-3 years

Meeting the Need: Heritage Growers

