

San Joaquin River National Wildlife Refuge and Dos Rios Ranch Stanislaus County, California

Clients: US Fish and Wildlife Service, US Bureau of Reclamation, California Department of Water Resources, California Department of Fish and Wildlife

Services: Planning, Design, Restoration, Land Acquisition

Acres: 7,100

Ecotype: Riparian Woodland, Seasonal and Perennial Wetlands, Native Grassland

River(s): San Joaquin River (*River Mile 80-87*) and Tuolumne River (*River Mile 0-3*)

Location: 10 miles east of Modesto



The San Joaquin River National Wildlife Refuge encompasses more than 5,000 acres of active floodplain at the confluence of the San Joaquin River and its largest tributary, the Tuolumne River. The Refuge is managed by the US Fish and Wildlife Service for the benefit of multiple migratory birds, anadromous fish species, and endangered small mammals. Since 2002, River Partners and the US Fish and Wildlife Service have worked collaboratively to restore native ecosystems to frequently-flooded lands once degraded by intensive land clearing for agriculture. In 2012, River Partners and the Tuolumne River Trust acquired 2,100 acres opposite the San Joaquin River from the Refuge, permanently protecting the confluence of the San Joaquin and Tuolumne Rivers for three miles up and downstream. Restoration of native habitats on these floodplain lands has provided numerous benefits to the client, the ecosystem, and the local community and economy.

- **Entrepreneurial conservation approach**
 Agricultural leases are managed on acquired lands for a short term during the restoration planning and permitting process. Revenues from these leases are used to cover funding shortfalls for grant-funded restoration work across California.
- **Land Acquisition totaling \$35MM partnering funds from 6 public agencies**
 US Fish and Wildlife Service, US Bureau of Reclamation, US Department of Agriculture, California Department of Fish and Wildlife, California Department of Water Resources, San Francisco Public Utilities Commission (the Tuolumne River provides drinking water for San Francisco)
- **17,500 acre-feet (5.7billion gallons) of irrigation water deliveries retired annually**
 Converting lands out of irrigated agriculture and permanently retiring riparian diversions leaves more water in the river for downstream users and the environment.
- **7 miles of riparian filter strips help to remove harmful toxins from the watershed**
 Restored floodplain vegetation serves as a natural filtration system that improves water quality by reducing erosion, trapping sediments and catching pollutants. This project also retired over 40 acres of dairy lagoons located immediately adjacent to the river.
- **4 miles of public hiking trails and river access for boating and fishing**
 The San Joaquin River NWR hosts the longest public hiking trail in the County and Dos Rios Ranch is a keystone access point to the Lower Tuolumne River Parkway.
- **8 Endangered Species on the road to recovery**
 Riparian Brush Rabbit, Riparian Woodrat, least Bell's vireo, Central Valley Steelhead, spring-run Chinook Salmon, Western Yellow-billed Cuckoo, Valley Elderberry Longhorn Beetle, and Yellow Warbler
- **220 young adults (ages 18-24) hired and trained in green-tech**
 In collaboration with the California Conservation Corps and San Joaquin Regional Conservation Corps, this project employs at-risk youth from disadvantaged communities, some of whom have gone on to work for River Partners.
- **30,000 acre-feet transient floodwater storage**
 When operated for flood management, these properties attenuate flood flow peaks, benefitting regional and downstream residents by delaying the arrival of high water and providing better warning and response time for emergency managers.
- **Chipping away at Climate Change**
 The project is projected to sequester over 1 million tons of CO₂. Additionally, the restored river corridors provide migration pathways for wildlife as habitat suitability migrates as a result of changing climatic conditions.
- **Investment in Local Communities**
 \$70MM from competitive government grants invested in local communities to purchase supplies, equipment, and services from small businesses.

Panorama Vista Preserve Kern County, California

Clients: Kern River Corridor Endowment and Holding Company, California Department of Fish and Wildlife, California Natural Resources Agency

Services: Planning, Design, Restoration

Acres: 1,000

Ecotype: Cottonwood-Sycamore Riparian Forest, Willow Scrub, Elderberry Savanna, and Valley Saltbush Scrub

River(s): Kern River (*River Mile 13-16*)

Location: Bakersfield



Panorama Vista Preserve straddles 2.75 miles of the Kern River in Bakersfield. The Kern River Corridor Endowment and Holding Company (KRCE) manages the Preserve for plant and wildlife conservation, outdoor education and recreation. Since 2010, River Partners has been working with KRCE to complete site assessments, secure and transfer water rights, and install ecosystem restoration in phases on floodplain lands that were degraded by land clearing for oil extraction. River Partners prepared a Conceptual Restoration Plan for Panorama Vista Preserve in 2009 including a detailed site assessment and review of historic accounts of land disturbance, wildlife usage, and water management. Since then, more than 300 acres have been restored providing multiple benefits to the greater Kern River basin.

- **Public-Private partnerships for larger conservation outcomes**
Partners in funding for this project include area residents, corporations such as Pacific Gas & Electric, Arco and Chevron, the California Department of Fish and Wildlife, the California Natural Resources Agency, the US Fish and Wildlife Service, and the US Bureau of reclamation. Sustaining gifts from the private sector help to offset funding gaps from government grants.
- **500 + Recreational visitors daily**
The Preserve hosts trail systems for bikers, hikers, equestrians, and walkers/joggers as an integrated component of the Kern River Parkway. Annual community events including fun-runs and horse riding competitions engage community groups and attract tourists.
- **1,000+ schoolchildren experience river camp annually**
In partnership with the Superintendent of Schools, children from disadvantaged communities in Bakersfield and Oildale attend week-long river camps learning about the natural history, cultural history, and natural science of the Preserve.
- **7 Endangered Species headed toward recovery**
San Joaquin kit fox, Tipton's Kangaroo Rat, Blunt-nosed Leopard Lizard, Buena Vista Lake Shrew, Yellow-billed Cuckoo, Least Bell's Vireo, Southwestern Willow Flycatcher
- **Protection and propagation of endangered cactus**
The endangered Bakersfield Cactus occurs on the Preserve, and has been propagated and planted in protected locations to support species recovery and research
- **3 miles of riparian filter strips help to remove harmful toxins from the watershed**
Restored floodplain vegetation serves as a natural filtration system that improves water quality by reducing erosion, trapping sediments and catching pollutants.
- **Climate Change effects**
The project is projected to sequester over 200,000 tons of CO₂. Additionally, the restored river corridor provides a cool and watered migration pathway for wildlife travelling across the Kern River Valley.
- **Citizen science to engage and inform community members**
Kern Audubon Society and the California Native Plant Society document plant and wildlife species occurrences on the Preserve
- **65 young adults (ages 18-24) hired and trained in green-tech**
In collaboration with the California Conservation Corps and San Bernardino Regional Conservation Corps, this project employs at-risk youth from disadvantaged communities, some of whom have gone on to attain college degrees in restoration science and ecology.
- **Investment in Local Communities**
\$5.3MM from competitive government grants invested in local communities to purchase supplies, equipment, and services from small businesses.

Bear River Levee Setback Project Yuba County, California

Client: Three Rivers Levee Improvement Authority
Services: Planning, Design, Restoration, and Mitigation
Acres: 640
Ecotype: Riparian Woodland, Seasonal and Perennial Wetlands
River(s): Bear River (*River Mile 0.5-3.5R*) and Feather River (*River Mile 12.5-13.5L*)
Location: 13 miles South of Marysville, Yuba County, California



River Partners designed, constructed, maintained and monitored the riparian ecosystem restoration and mitigation components of the Bear River Setback Levee Project as a contractor to Three Rivers Levee Improvement Authority (TRLIA). After levees upstream on the Feather and Bear Rivers both failed during the winter of 1997, TRLIA chose a non-structural approach to flood control when they repaired the levee system in southwestern Yuba County. Flood control and public safety in the area was improved by constructing a setback levee on the lower Bear River, which gave the river more room during times of high flow. The setback levee also provided significant opportunities to enhance the ecological values of the project area through restoration of native habitats.

- **Contracting to leverage conservation outcomes**
Working as a landscaping contractor and consultant, revenues were collected at fair market value. These revenues were then used to cover funding shortfalls for grant-funded restoration projects across River Partners' portfolio.
- **325 acres of habitat added to the floodplain**
By degrading the existing levee and constructing a setback levee along 2.4 miles of the Bear River, this project reconnected critical foraging habitat for out-migrating salmonids
- **120,000 native trees, 250 acres of native grasses**
Through the marriage of agricultural techniques and sound restoration ecology, the native plant community was efficiently restored to lands that were previously degraded by land clearing for agriculture.
- **Improved floodplain access for fish**
A 3,000 linear foot floodplain swale was constructed to provide flood regress and ample velocity to promote fish escapement from the restored and reconnected floodplain
- **Protecting indigenous values**
We worked with local Native American tribes to develop a "living protective cover" of native blackberry, California rose, and poison oak to protect sensitive archeological sites. This novel approach has since been replicated in California and more accurately reflects the values of the tribes over more traditional internment approaches.
- **Improved flood management**
Levee setbacks provide more room for the river to roam, and for floodwaters to slow and spread across the landscape. This project provides direct flood management benefits to thousands of downstream residents.
- **5+ endangered species benefitted**
spring-run Chinook salmon, fall-run Chinook salmon, and Central Valley steelhead, valley elderberry longhorn beetle, Swainson's hawk and neo-tropical migratory birds
- **2.3 miles of riparian filter strips help to remove harmful toxins from the watershed**
Restored floodplain vegetation serves as a natural filtration system that improves water quality by reducing erosion, trapping sediments and catching pollutants.
- **Responding to Climate Change**
The project will sequester over 400,000 tons of CO₂. Additionally, the restored river corridor provides a migration pathway for wildlife travelling from the Central Valley to the Sierra Nevada foothills.
- **300+ seasonally unemployed agricultural laborers hired and trained in green-tech**
In collaboration with agricultural labor suppliers, this project was able to hire and train laborers during the off-season when harvests and planting are not occurring, providing supplemental income for families from several disadvantaged communities. Some of these laborers have gone on to work for River Partners full time.
- **Investment in Local Communities**
\$10MM from government grants and contracts was invested in local communities to purchase supplies, equipment, and services from small businesses