

## River Partners Plants its One Millionth Tree at Levee Setback Project



### *Habitat Restoration Area Honored as a Flagship Project*

*Restoration Specialist Jessica Gibbs assists Barry Elementary students at River Partners' One Millionth Tree Planting event.*

On Wednesday, December 3, 2008, 25 guests and 75 students joined River Partners as it planted its one millionth tree at the Bear River Levee

Setback Restoration Area, 30 miles north of Sacramento. Geoff Geupel, on behalf of the Riparian Habitat Joint Venture (a 15 year old coalition of nonprofit organizations and government agencies responsible for management the state's floodplain habitat resources) presented River Partners, its collaborators, and the Bear River project with the "Flagship Award," in recognition of the outstanding riparian habitat management and restoration activities on this 639- acre site.

As part of the ceremony, John Carlon, River Partners' president, welcomed guest speakers Ted Frink of the California Department of Water Resources, and Paul Brunner, Executive Director of the Three Rivers Levee Improvement Authority. Both speakers acknowledged the multiple partnerships that made the restoration and levee setback possible. Two students from Barry Elementary School helped plant the millionth tree, which was grown by students from Las Plumas High School.

Continued on page 3.

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*Cover photo: An Arroyo Willow's first growth, Bidwell Park, Chico. Photo by Tempira Board*



*Wilson's Warbler. Photo by Michael Woodruff.*

## In This Issue

**San Joaquin Office Hosts First Planting Event** \_\_\_\_\_ **3**

**FLOODING: What's a Rabbit to Do?** \_\_\_\_\_ **4**

**Mossy Creek to Play River Partners' 11th Annual Dinner and Silent Auction** \_\_\_\_\_ **7**

**California State Budget Crisis Impacts River Partners** \_\_\_\_\_ **8**

580 Vallombrosa Ave.

Chico, CA 95926

Ph: 530.894.5401

Fx: 530.894.2970

Modesto, CA 95354

Ph: 209.521.1700

Fx: 209.521.7327

info@riverpartners.org • www.riverpartners.org

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# Message from the Board Chair

By Irv Schiffman

As I write this column, California appears to be heading into its third year of drought, although a rainy February may be a harbinger of good things to come. However, after two back-to-back extremely dry years, even an extremely wet winter might not end California's water shortage.

A drought in California has most serious effects on the Central Valley, California's agricultural heartland, and the region of the state where virtually all of River Partner's restoration activities take place. The rivers and groundwater of the Central Valley provide irrigation for thousands of acres of farmland and drinking water for millions of Valley residents. In addition, a sufficient supply of river water keeps aquatic wildlife from going extinct. A continued drought has the consequence of reducing the volume of water in both the region's rivers and underground reservoirs.

A drought is a natural phenomenon caused by changes in weather patterns resulting in less than normal rainfall. While we cannot manufacture more rain, we can manage our floodplains to help mitigate some of the consequences of drought.

Such mitigation includes maintaining the cleanliness of waterways and groundwater. Our restoration areas are frequently adjacent to working farmlands and the vegetation that we plant forms a natural buffer that filters agricultural runoff and keeps non-point source pollutants, particularly nitrogen, out of the river and the subsurface water supply.

When delivery of river water decreases as the result of drought, groundwater becomes that much more important. An increased recharge of subsurface water takes place when levees are moved back from the river, thus enlarging the flood plain and allowing floodwaters to wash over the newly restored acreage. River Partners fully supports levee setbacks as a means to reduce flood dangers and to reinstate the natural functions of the floodplain. We have restored or are restoring hundreds of acres of floodplain land at the confluence of the Feather and Bear Rivers and along the Feather River south of Marysville where levees have been set back 600 feet in the first instance and almost a half mile in the second.

Water conservation is, of course, essential during drought periods (and otherwise) and the replacement of flood threatened agricultural fields and orchards with riparian vegetation reduces the need for pumping groundwater. By retiring such crop or orchard land we are retiring agricultural irrigation on that property. In most areas of California, for example, a mature walnut orchard has the potential to use about 42 inches of water per acre or about 290 gallons of water for each pound of nuts produced in a 2-ton orchard.\* We irrigate our plantings only in the first three years and then they are on their own.

More frequent floods and droughts are likely consequence of climate change, requiring greater attention to be paid to the complex of problems that arise when rivers are disconnected from their floodplains. California does not have a statewide riparian policy regarding floodplains and to a great extent local governments decide how land next to rivers shall be used. It is time for the state to formulate a plan to preserve and restore the numerous and beneficial functions of Central Valley floodplains.

\*University of California, Division of Agriculture and Natural Resources, *Walnut Production Manual* (1997)



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# The One Millionth Tree

# Project Updates



*Las Plumas High School students assisting River Partners at the planting at the One Millionth Tree planting event. Photo by River Partners staff.*

Continued from front page.

“Though the millionth tree is the culmination of our 10 year history, we chose this site because it represents the future of floodplain management,” said John Carlon, River Partners President. “By moving a levee back and widening the floodplain, the project has reduced the flood risk to Yuba County. By planting the larger floodplain with native plants, we’ve created critical habitat for wildlife and shown that riparian areas can be an effective floodplain management tool.”

## About the Bear River Levee Setback Restoration:

The Bear River Levee Setback restoration project showcases River Partners’ large scale restoration efforts as well as the critical work that benefits public safety and the environment. River Partners planted over 100,000 trees and shrubs and more than 50,000 grass plugs on this 639-acre habitat restoration project.

Bear River project is designed to meet multiple objectives (hydraulic and ecological):

- Improves floodwater conveyance in the expanded floodway
- Restores fish, wildlife, and riparian habitat in the project area
- Minimizes long-term operation and maintenance costs

## About the Students:

Seventy-five students visited the project to learn about restoration and help re-plant the footprint of the old levee. Schools participating in One Millionth Tree Field Day were Colusa High School, Marysville High School FFA students, Las Plumas High School ROP students, Barry Elementary school 6<sup>th</sup> and 8<sup>th</sup> graders. These schools participated in River Partners’ Great Acorn Grow Out program. That means since February 2008, they’ve been growing valley oak acorns into viable trees for River Partners’ restoration projects. The One Millionth Tree was a Valley Oak grown by Las Plumas High School.

The Bidwell Ranch Conservation and Mitigation Bank development is well underway. The public notice announcing the final Prospectus for the Bank was released by the United States Army Corps of Engineers (USACE) on January 16, 2009. The public notice has a 30-day review period where concerned citizens and agencies may submit comments to USACE regarding the potential bank. Once feedback is received from agencies and citizens, the final project documents will be developed and reviewed by the Interagency Review Team. The final Prospectus may be reviewed at [www.riverpartners.org/where-we-work/bidwell/documents.html](http://www.riverpartners.org/where-we-work/bidwell/documents.html).

**River Partners is a Climate Action Leader:** River Partners has been recognized as a Climate Action Leader by the California Climate Action Registry, whose mission is to protect, encourage, and promote early actions on climate change. River Partners has voluntarily calculated and reported our organization’s carbon footprint for 2006 and 2007 and are currently working on determining our 2008 emissions.



## San Joaquin’s 1st Planting Event



*Grace and Kaitlyn Sheppard help plant native oak saplings at the San Joaquin River National Wildlife Refuge.*

A huge success, River Partners’ San Joaquin office hosted its first tree planting day on February 21, 2009. Using trees grown out from acorns by

student volunteers at Patterson High School, we planted 325 valley oak saplings on the newly restored Arambel Unit at the San Joaquin River National Wildlife Refuge. Hard-working volunteers included students from CSU Stanislaus, Modesto Junior College, and Patterson High School as well as members of the Northern San Joaquin chapter of the California Native Plant Society. After the planting, we walked down to the edge of the San Joaquin River

where we talked about riparian habitat ecology and how River Partners’ work contributes to the conservation of riparian habitats for people and wildlife.

# FLOODING

## What's a Rabbit to Do?

By Chris Stevenson, Restoration Biologist, San Joaquin Valley

The riparian brush rabbit (*Sylvilagus bachmani riparius*), which was once numerous in riparian areas along the San Joaquin and Stanislaus Rivers, is now considered one of the most endangered species in California. As with many other endangered species, habitat loss is the major culprit in the decline of the brush rabbit. By the late 20<sup>th</sup> century, the only known population of riparian brush rabbits was located in remnant riparian forest at Caswell Memorial State Park, along the Stanislaus River. At one point, following catastrophic flooding and the threat of wild fires, the species was considered on the brink of extinction. However, brush rabbits were subsequently captured during post-flood surveys at Caswell. In 1998, the second known population was discovered in degraded habitat in the Sacramento-San Joaquin Delta.

In 2001, the Endangered Species Recovery Program (ESRP) initiated a captive propagation and reintroduction

program using Delta breeding stock, and releases began the following year on the San Joaquin River National Wildlife Refuge (Refuge). These releases coincided with the initiation of River Partners and the U.S. Fish and Wildlife Service (USFWS) joint efforts to restore and enhance riparian habitat on the Refuge. As we learned more about the

ecology of the brush rabbit, River Partners began incorporating suitable habitat features into our restoration projects. Riparian brush rabbits favor brushy habitat characterized by dense thickets of California rose (*Rosa californica*), California blackberry (*Rubus ursinus*), willows (*Salix* spp.), and coyote brush (*Baccharis pilularis*).

Although brush rabbits live in riparian areas, they also need access to higher ground in times of flooding. The 2006 flood on the Refuge was critical in demonstrating the need for integrating high ground refugia into restoration design. Post-flood surveys by the ESRP found high

mortality of riparian brush rabbits and other wildlife. These surveys also included flood depth monitoring and a GIS analysis to identify critical habitat areas which had low impacts from flooding combined with good brush rabbit habitat. These data were used by USFWS to identify areas that would be suitable for the placement of high-ground refugia ("bunny mounds"). This led to the construction of a network of protected flood refugia consisting of bunny mounds' and vegetated levees for the brush rabbit and other wildlife.

To date, River Partners and USFWS personnel have constructed 32 bunny mounds of which 27 have been planted with native riparian vegetation favored by riparian brush rabbits (the remaining five mounds will be planted in 2009, pending available funds).

The bunny mounds are planted with dense, low growing vegetation to provide the rabbits with cover while they're seeking escape from the flood waters. Typical plantings include California rose, California blackberry, mulefat (*Baccharis salicifolia*), coyote brush, and blue elderberry (*Sambucus mexicana*). A dense band of sandbar willow (*Salix exigua*) was planted around the base of the mounds as natural rip-rap to provide protection from scouring during floods.



Vegetated Bunny Mounds as part of the restored landscape with vegetated levees in the foreground. Photo by Chris Stevenson, River Partners.

Riparian Brush Rabbit Release at the Buffington Unit. Photo by River Partners Staff.



In addition to the construction of bunny mounds, River Partners has vegetated 23,000 linear feet of levees within the Refuge to provide additional protected flood refugia. Funding is pending for an additional 6,400 linear feet of levee revegetation, which would extend the levee plantings to a total of 5.5 miles. Vegetating levees to create high water refugia, while practical from a wildlife management perspective, can have substantial obstacles in implementation. The primary issue is that many levee districts do not allow trees and shrubs on levees, as it can make them more difficult to survey for maintenance issues, and some argue that plant growth compromises levee strength and reduces its ability to withstand the energy of floods. Studies surveying post-flood effects on levees however, have shown that vegetation can protect levees by slowing floodwater velocities, reducing scouring by dissipating flood energy and increasing soil shear strength.

In some cases, areas of natural high ground can be incorporated into riparian restoration projects to provide cover for wildlife that require refugia during flood

events. In 2009, River Partners began restoration on a parcel in the southeastern part of the Refuge known as the Arambel Unit. This unit contains areas of natural high ground that did not flood during the 2006 flood. River Partner's planting design for the Arambel Unit has integrated small thickets comprised of high density plantings, twice that of the surrounding fields within the higher elevation zones.

The development of riparian brush rabbit refugia within River Partners' riparian restoration projects is just one example of how River Partners develops restoration plantings targeting specific wildlife objectives. Bunny mounds are integrated into a larger planting mosaic, which has been designed to provide multiple niches for wildlife. Although

it is not possible to integrate the needs of all species into a restoration planting, developing multi-purpose plantings can ensure that the needs of many species are met. In the next major flood event you can bet that our bunny mounds will be providing refuge for this endangered species.

**Acknowledgements:** The author would like to thank Dr Patrick Kelly, and Mathew Lloyd at the Endangered Species Recovery Program and Kim Forrest at the US Fish and Wildlife Service for their comments, as well as the staff at River Partners.



Kim Forrest, USFWS with riparian brush rabbit. Photo by Heather Bell, USFWS.



# 11th

## Anniversary

# Dinner & Silent Auction

Featuring  
**Chico's Bluegrass Band**

# MOSSY CREEK

**Friday**  
**April 3, 2009**  
**6:00 pm**

**The Big Room**  
**Sierra Nevada**  
**Brewing Co.**  
**1075 E. 20th St.**  
**Chico, CA**

*River Partners is a 501(c)3 nonprofit organization, dedicated to creating wildlife habitat for the benefit of people and the environment. All proceeds benefit our work to protect the major river systems of California.*

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River Partners Development Dept., 580 Vallombrosa Ave., Chico, CA 95926

Or you may fax this form to (530) 894-2970

# Mossy Creek to Play at River Partners' 11<sup>th</sup> Annual Celebration and Fundraiser

As April 3<sup>rd</sup> nears, River Partners is busily preparing for our 11<sup>th</sup> Annual Dinner and Silent Auction. This year's event will take place at the Sierra Nevada Big Room and feature bluegrass band, Mossy Creek.

Every year, we hold this special community event to raise awareness about protecting rivers and floodplains and to raise money to support our efforts. Given the state budget crisis, River Partners' funding needs are for outreach programs (which involve students in planting habitat and conserving public land) and efforts to locate and develop new projects.

Last year our gala sold out, attracting our partners and members from throughout the Central Valley, from Butte County, Sacramento and Modesto.

This year we are very excited to have Mossy Creek perform after dinner. "With Mossy Creek's participation, we are hoping to attract the greater community to our event. Everyone will enjoy the trip-tip and mahi-mahi buffet and have fun with our silent auction. But it is an extra bonus to see Chico's famous bluegrass band" says Tad Alexander, River Partners' Chief Operations Officer.

For reservation or sponsorship information, please see opposite page or visit [www.RiverPartners.org](http://www.RiverPartners.org).



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## River Partners Impacted by State Budget

In December 2008, when the Pooled Money Investment Board (PMIB) halted bond sales for state infrastructure projects until lawmakers solved the \$42 million budget shortfall, River Partners felt the repercussions.

Already holding about \$800,000 in receivables for work completed for California, River Partners was ordered to suspend activity on \$2.7 million in projects throughout the Central Valley. Since this totaled about 33 percent of its funding base, River Partners had to downsize its staff, among taking other measures, to ensure its financial solvency and future.

“This has been a very frustrating time,” said John Carlon, River Partners president, “however we have been working together with our partners to get through this situation. We have several new agreements in place to allow us to move forward; we’ve renegotiated contracts with some state funders which will free up some of our working capital and pay our vendors.”

River Partners does business with more than 275 vendors throughout the Central Valley. “There are jobs that are associated

with River Partners that were threatened in addition to ours” Carlon said. “These are good jobs in our community that people could lose.” This budget crisis was a keen lesson that the public safety and environmental projects the organization implements truly affect and engage the local economies in the region.

**This budget crisis was a keen lesson that the public safety and environmental projects the organization implements truly affect and engage the local economies in the region.**

Now with the budget passed, River Partners is eager to resume work and anxious for state agencies to start reviewing proposals for voter-approved bond initiatives. The organization has invested time in developing new projects for the Feather, Sacramento, San Joaquin, Otay and Colorado rivers. These restoration projects will generate

“green-collar” jobs – the type of work that translates traditional agricultural skills into conservation and floodplain management work.

According to Carlon, “We have shovel-ready projects in the queue which fit perfectly with the Obama stimulus objectives. If we can endure the state crisis, River Partners potentially could serve as a conduit for the stimulus money, bringing additional improvements and jobs to the Central Valley.”