

Large-scale, Multi-benefit Riparian Restoration at Dos Rios Ranch

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San Joaquin Valley*



RIVER
PARTNERS

Riparian Summit 2017

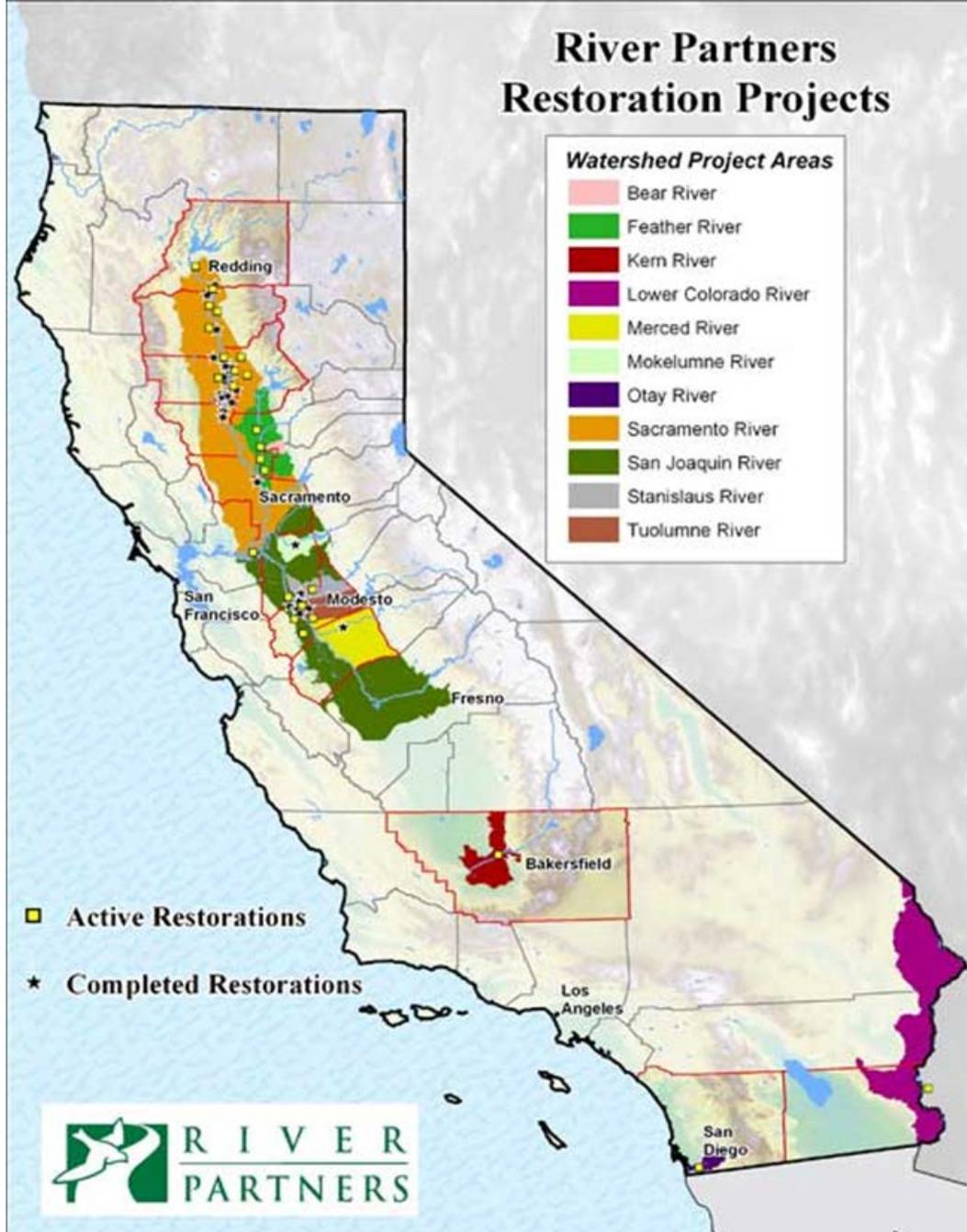
River Partners

- Founded in 1998, our mission is: *creating wildlife habitat for the benefit of people and the environment*
- State-wide nonprofit specializing in ecological restoration
- 11,000+ ac. restored, 2 million trees and shrubs planted, and demonstrated success recovering T/E species
- www.riverpartners.org

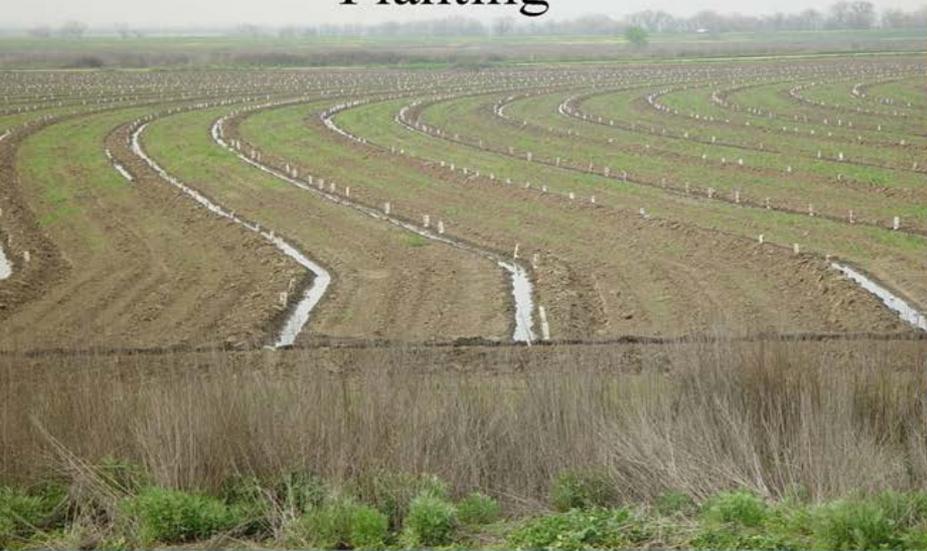


FWS.gov

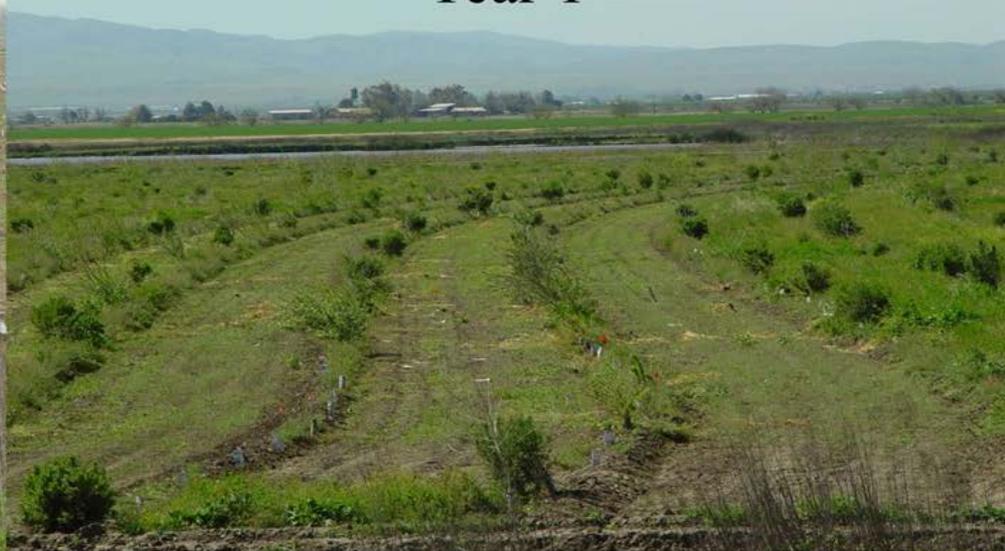
River Partners Restoration Projects



Planting



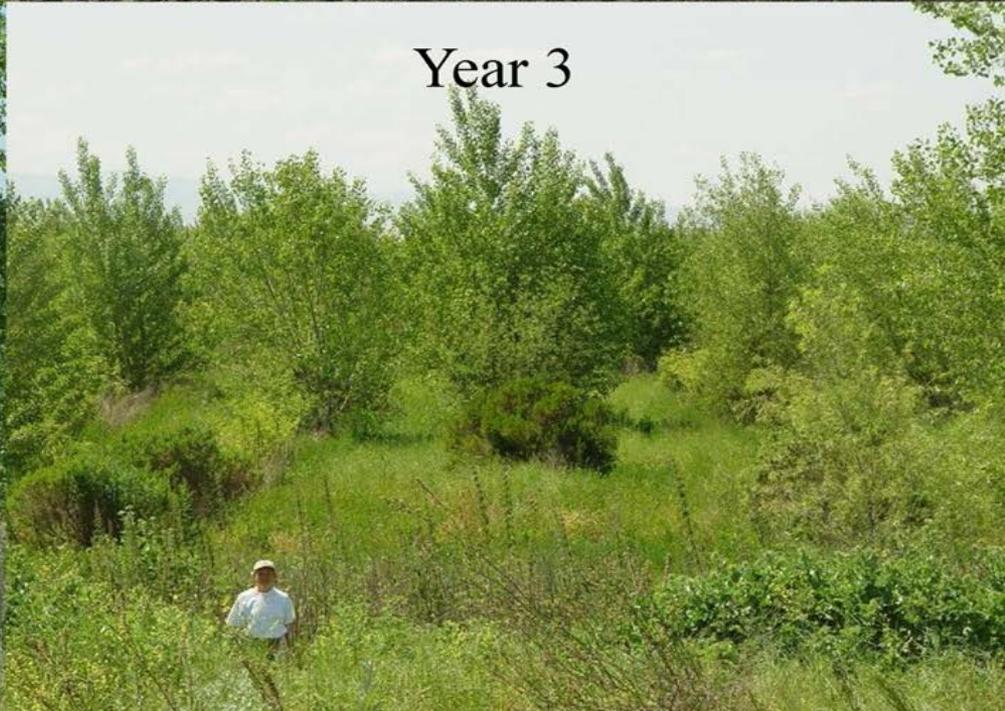
Year 1



Year 2



Year 3

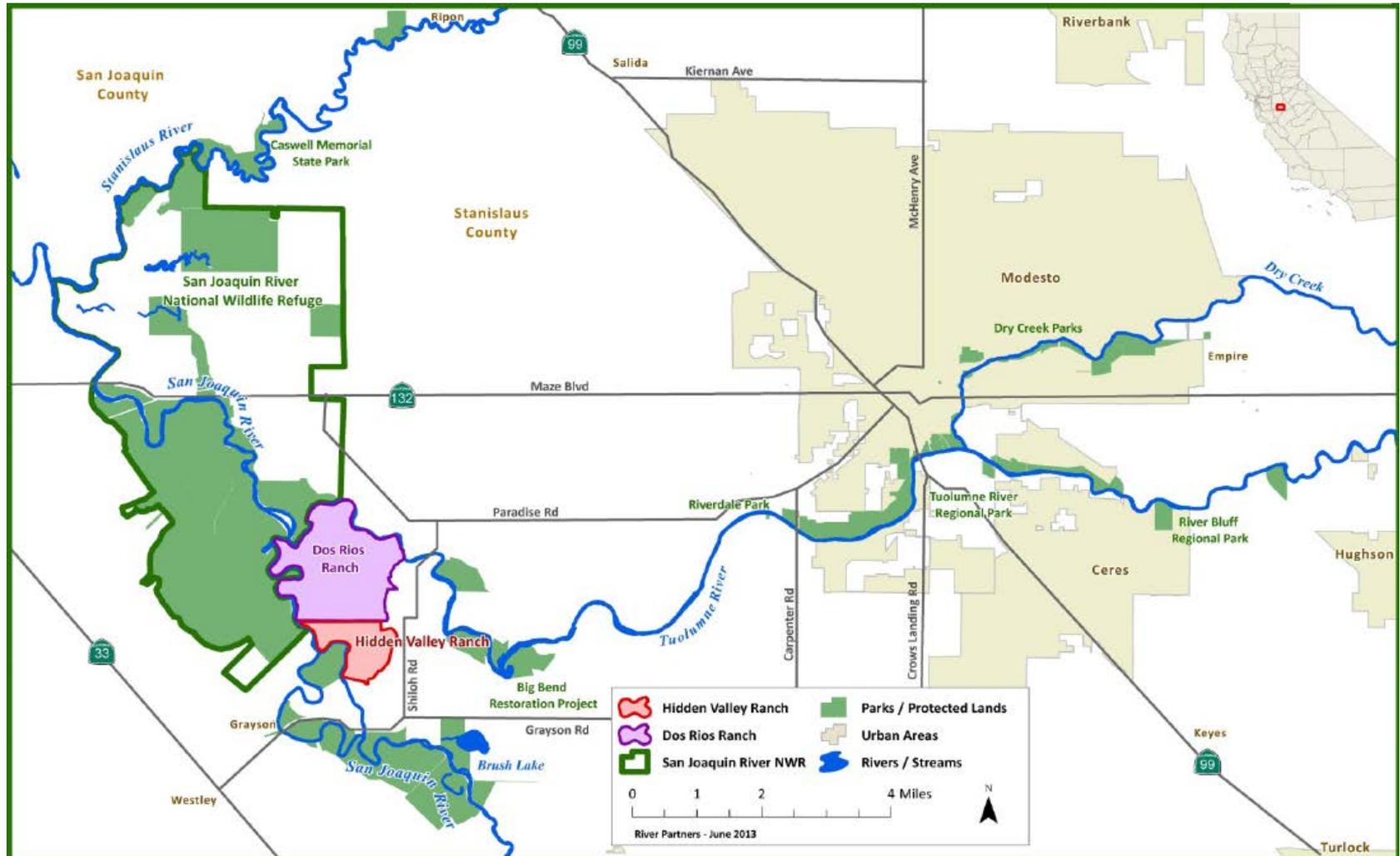


Multi-benefit Riparian Restoration

- Habitat for plants, wildlife, and insects
- Improved water quality and supply
- Improved flood safety
- Potential flood attenuation
- Increased landscape connectivity
- Climate-smart conservation
- Research opportunities
- Employment and recreation



Dos Rios Ranch



San Joaquin River NWR

San Joaquin River

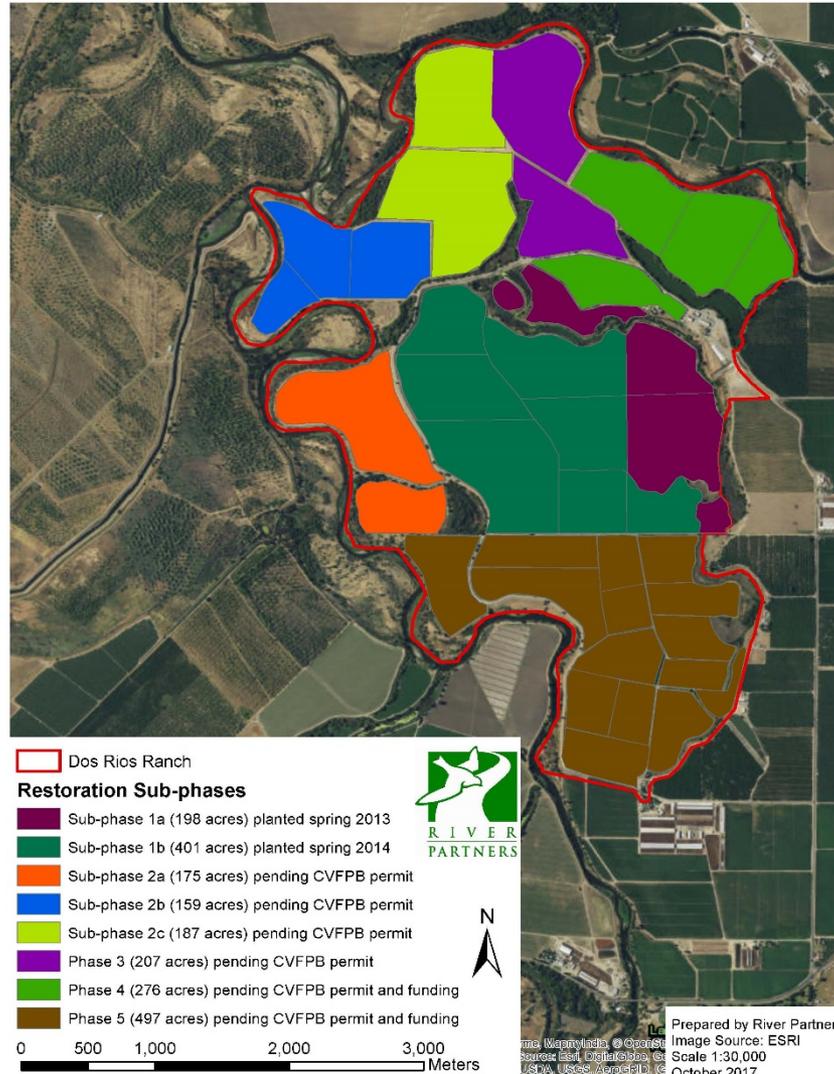
Dos Rios Ranch

Tuolumne River



Dos Rios Ranch

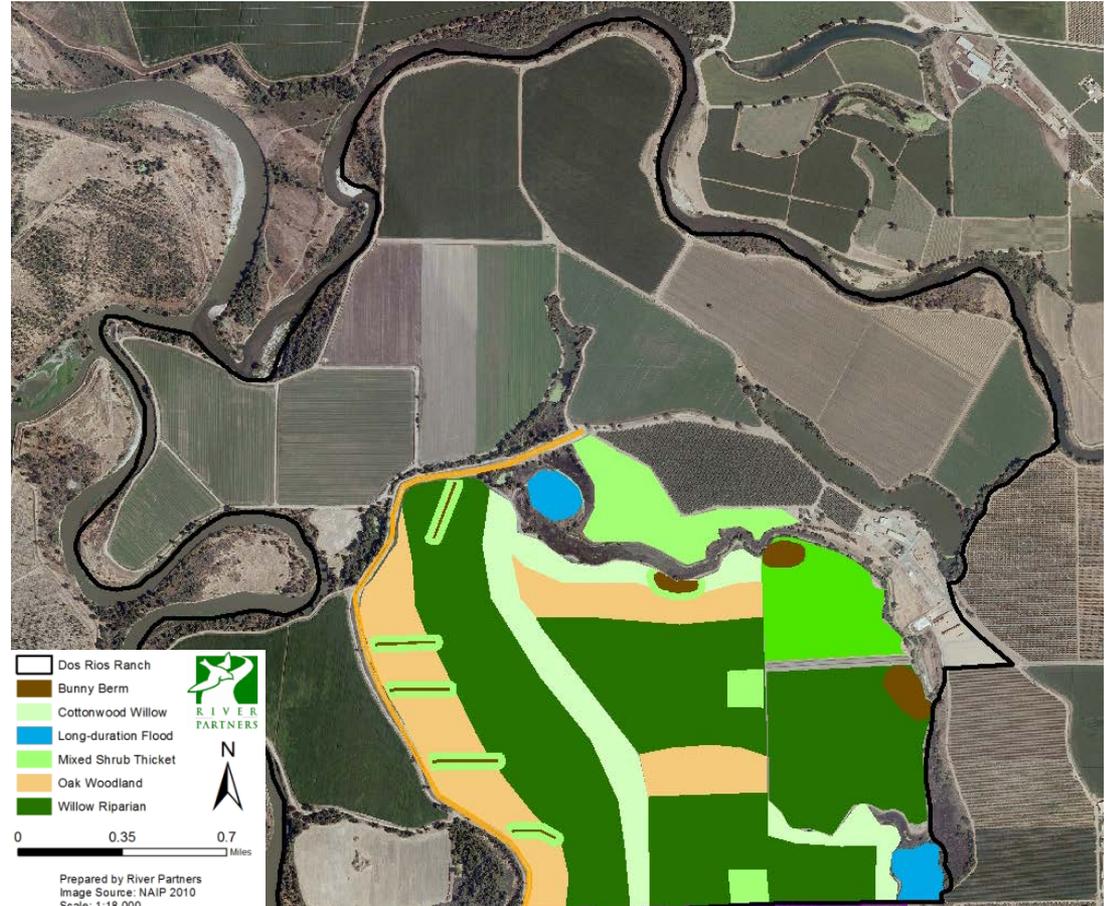
Restoration Phases



Dos Rios Restoration Phase 1

Spring 2013 – Spring 2014

- 600 ac. planted with 160,000 trees and shrubs
- Understory species planted in 2015
- 20 ac. of densely planted flood refugia for RBR
- 5 ac. of ephemeral swales for other species
- All fields protected by USACE levee



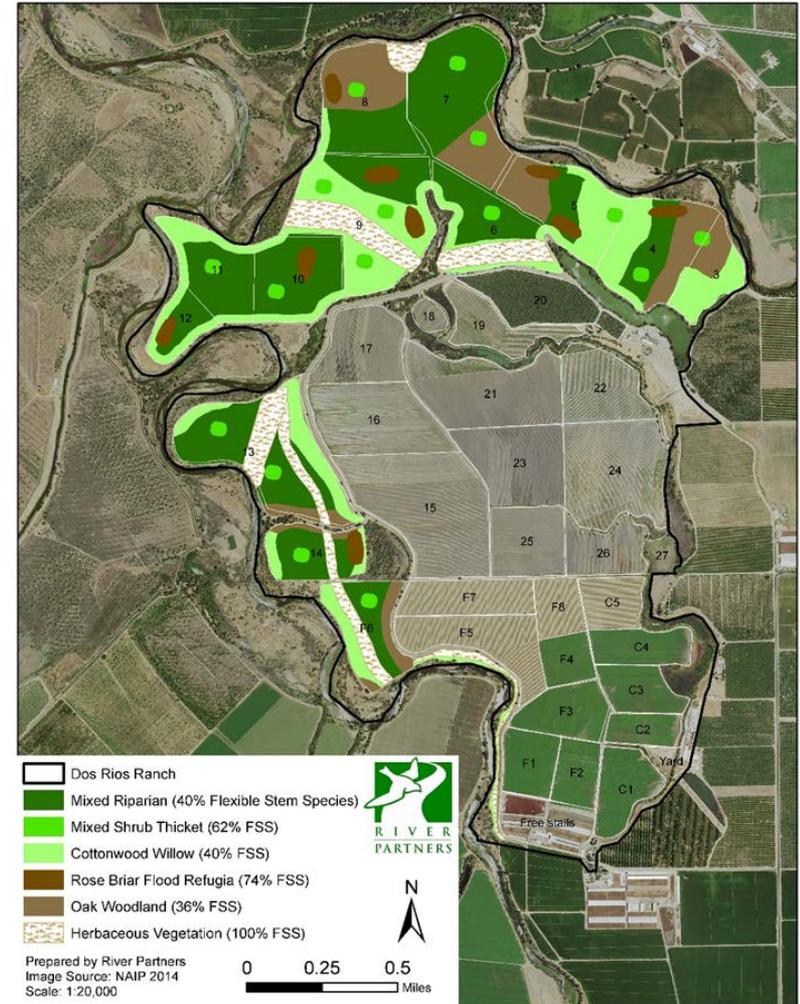
Dos Rios Restoration Phases 2-5

Fall 2017

Planning now completed for all fields river-side of federal levee

Objectives

- Wildlife habitat
- Floodplain reconnection
- Enhanced river processes
- Weed-resistant plant communities
- Climate-smart restoration
- Recreation and education



Dos Rios Ranch

Focal species drive restoration design

Common Name	Scientific Name	Listed Status
Riparian brush rabbit	<i>Sylvilagus bachmani riparius</i>	Endangered (State and Federal)
Riparian woodrat	<i>Neotoma fuscipes riparia</i>	Endangered (Federal)
Least Bell's vireo	<i>Vireo bellii pusillus</i>	Endangered (State and Federal)
Valley elderberry longhorn beetle	<i>Desmocerus californicus diamorphus</i>	Threatened (Federal)
Swainson's hawk	<i>Buteo swainsoni</i>	Threatened (State)
Western yellow-billed cuckoo	<i>Coccyzus americanus occidentalis</i>	Threatened (State and Federal)
Bank swallow	<i>Riparia riparia</i>	Threatened (State)
Little willow flycatcher	<i>Empidonax traillii brewsteri</i>	Endangered (State)
Northern harrier	<i>Circus cyaneus</i>	CA Species of Special Concern
Yellow warbler	<i>Dendroica petechia</i>	CA Species of Special Concern
Song sparrow	<i>Melospiza melodia</i>	CA Species of Special Concern
Tricolored blackbird	<i>Agelaius tricolor</i>	CA Species of Special Concern
Loggerheaded shrike	<i>Lanius ludovicianus</i>	CA Species of Special Concern
Chinook salmon	<i>Oncorhynchus tshawytscha</i>	Threatened (State and Federal)
Steelhead trout	<i>Oncorhynchus mykiss</i>	Threatened (Federal)
White sturgeon	<i>Acipenser transmontanus</i>	Threatened (Federal)



Dos Rios Ranch

Habitat for Riparian Brush Rabbits

- A small cottontail, one of eight brush rabbit subspecies native to CA
- Historically present in riparian forests on SJ River and tributaries
- Small home ranges; breeds Jan – May
- Prefers dense, shrubby habitat (rose, blackberry, willows) near foraging habitat (forbs and grasses)





7/18/2014 8:58 AM



Creating Wildlife Habitat for the Benefit of People and the Environment

Dos Rios Ranch *Historic Flooding*





Creating Wildlife Habitat for the Benefit of People and the Environment



A woman with red hair, wearing sunglasses and a light-colored jacket, stands in a field of tall grass and dense shrubs. The background is filled with various green plants and trees under a clear blue sky.

Mounds and additional high ground (levees, fields) densely vegetated with native shrubs and other species

Dos Rios Ranch

Habitat for Native Birds

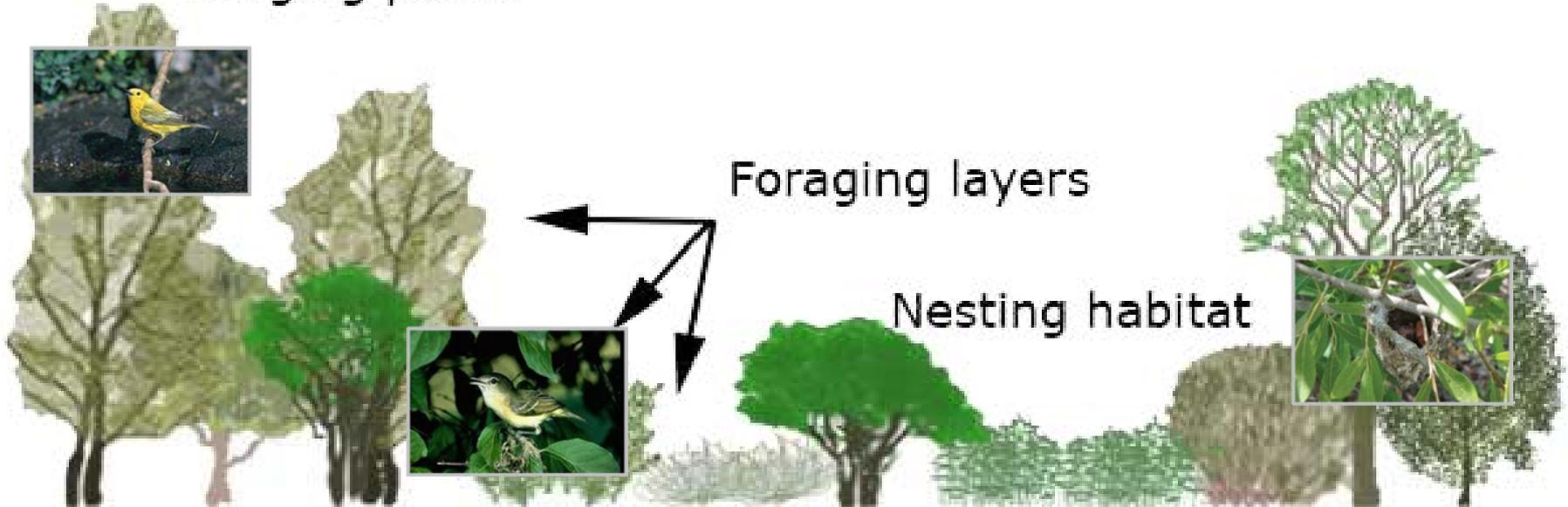
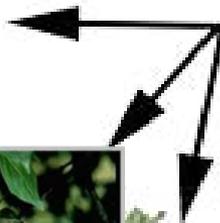
Overstory to Woody Understory Edge

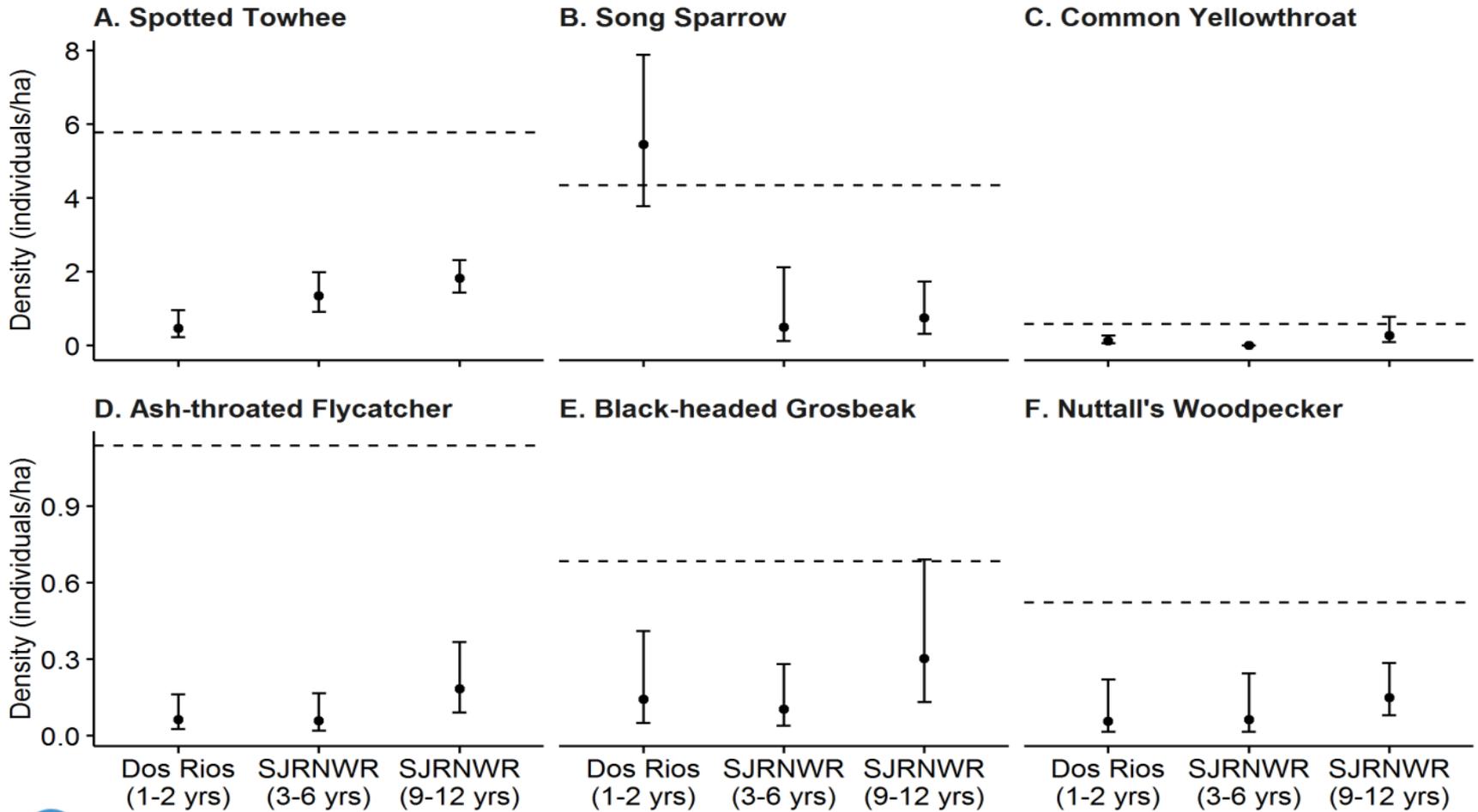
Singing perch



Foraging layers

Nesting habitat

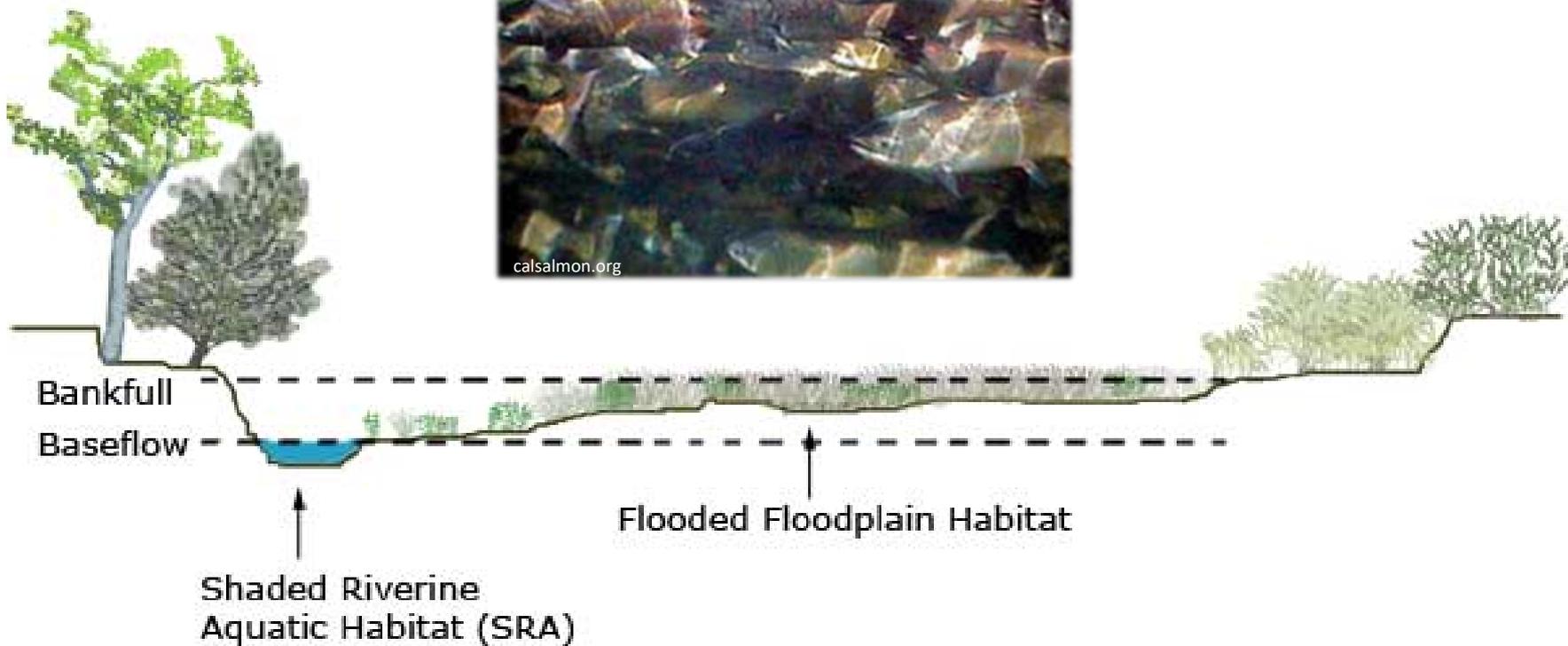




Densities of CVJV focal riparian species with 95% confidence intervals at the 1-2 year old Dos Rios restoration Phase 1, 3-6 year old restoration sites at SJRNWR, and 9-12 year old restoration sites at SJRNWR. Dashed lines represent Central Valley Joint Venture density objectives (Dybala et al. in press). Note the different ranges on the y-axis for the top row of species (associated with dense understory) and the bottom row of species (associated with mature riparian forest).

Dos Rios Ranch

Habitat for Native Fish



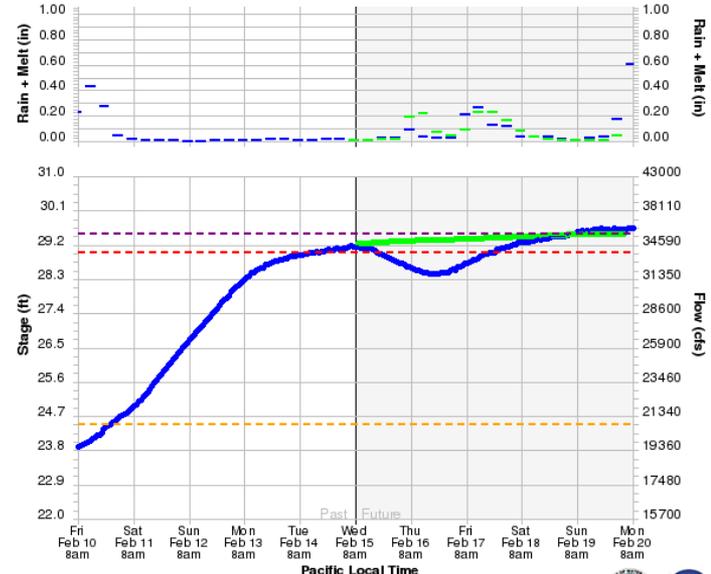


Flood Attenuation

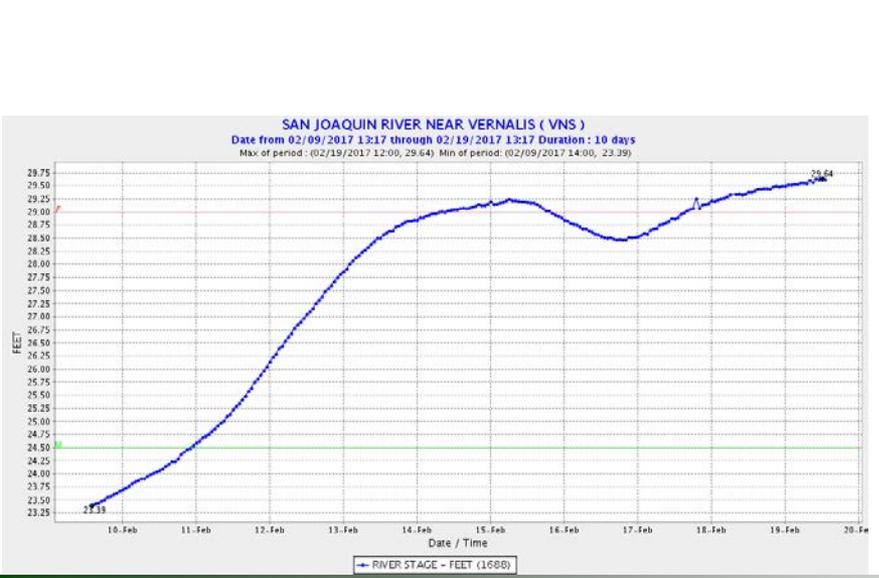


VNSC1 - SAN JOAQUIN - VERNALIS (MS: 24.5 / FS: 29.0 / DS: 29.5)

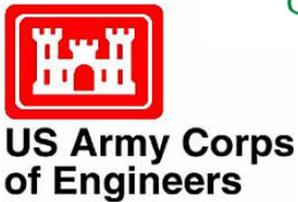
Forecast Issuance: February 15, 2017 at 08:41 AM PST



Observed: ● Forecast: ● Monitor: — Flood: — Danger: —
 FC Time: 1641 Z ID: VNSC1
 Created: 02/21/2017 at 1:04 AM PST (Source = C) NOAA / NWS / California Nevada River Forecast Center



Acknowledgments





Creating Wildlife Habitat for the Benefit of People and the Environment



