

**WILDLIFE
CONSERVATION BOARD
STREAM FLOW
ENHANCEMENT
PROGRAM FY 2015/16**



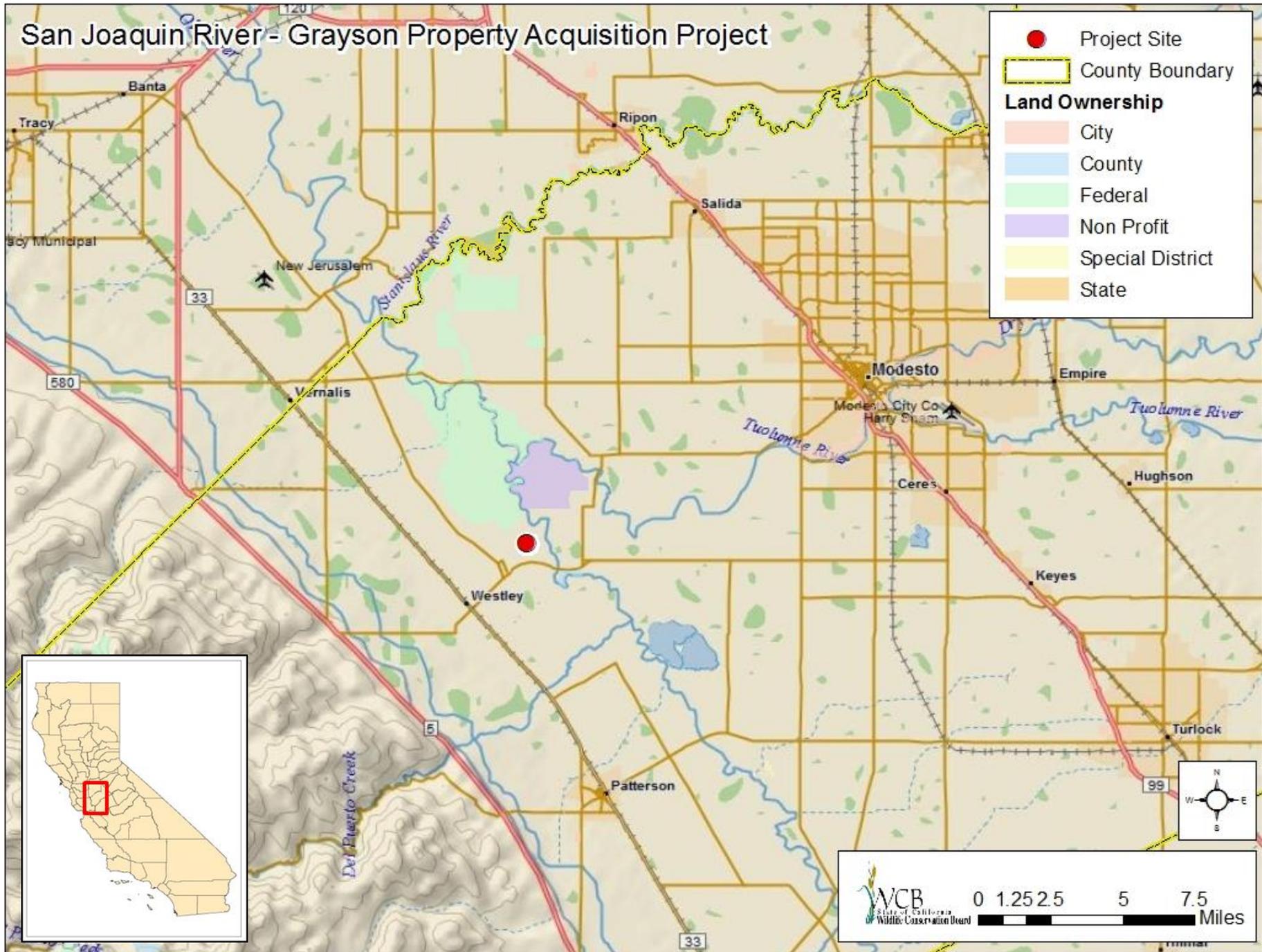
#1 San Joaquin River Grayson 072 Property Acquisition Project



Description

- Acquire 285 acres in Stanislaus County of primary floodplains.
- Property is adjacent to the San Joaquin River, between its confluence with its two largest tributaries, the Merced River and the Tuolumne River.

San Joaquin River - Grayson Property Acquisition Project



#1 San Joaquin River Grayson 072 Property Acquisition Project



Objective:

- Acquire the lands for future riparian and floodplain enhancement
- Permanently retire agricultural irrigation

#1 San Joaquin River Grayson 072 Property Acquisition Project



Outcomes:

- Immediate transition of agricultural practices
 - modification to irrigation
 - harvest scheduling to match life stages for wildlife

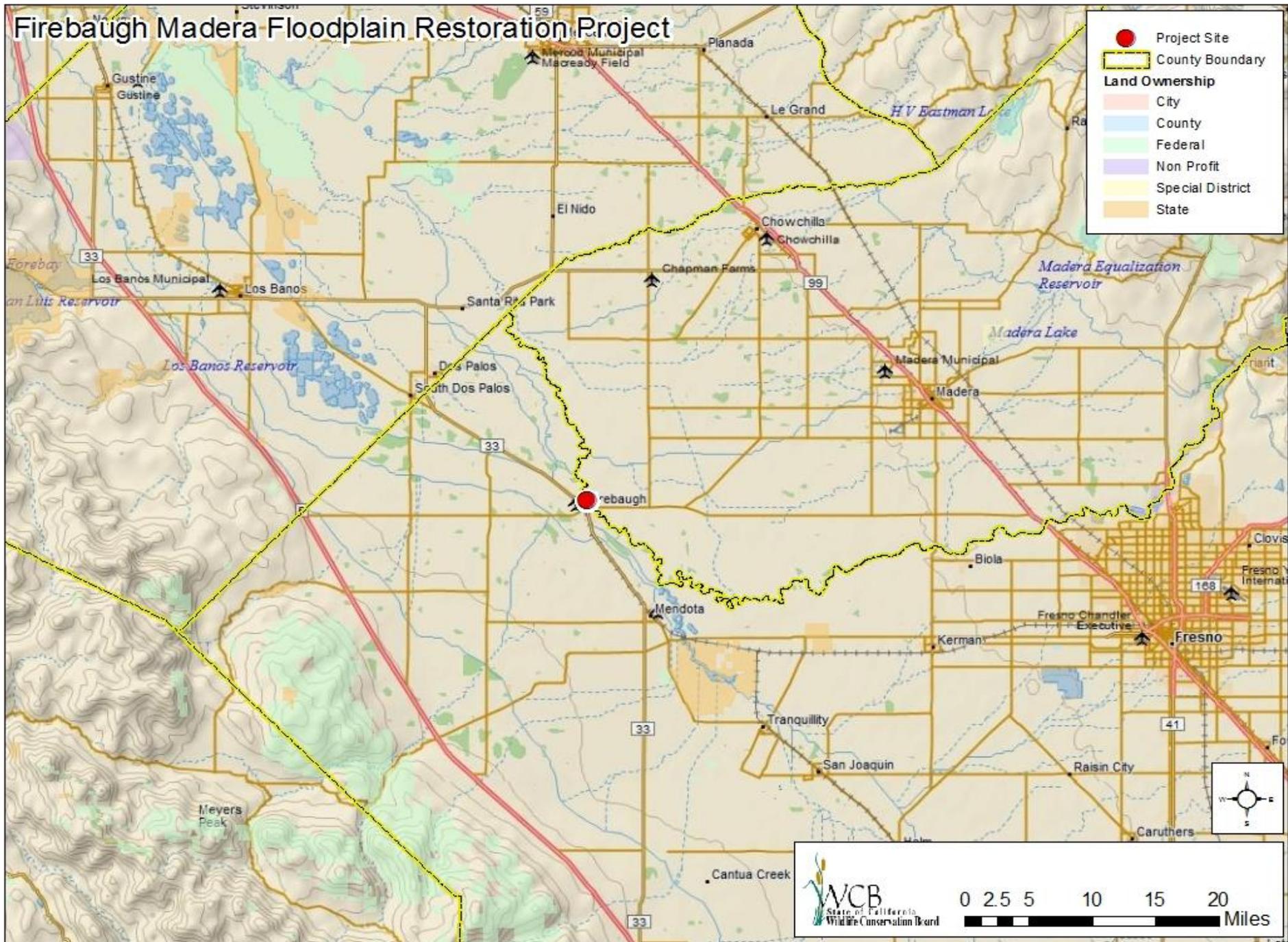
#2 Firebaugh Madera Floodplain 020 Restoration Project



Description

- Acquire fee simple interest in 290 on two properties north of Firebaugh
- Discontinue irrigation with shallow groundwater

Firebaugh Madera Floodplain Restoration Project



#2 Firebaugh Madera Floodplain 020 Restoration Project



Objective:

- Enable the project applicants to change existing irrigation and drainage practices
- Intend to permanently retire 230 acres of irrigated agricultural lands
- Permanently retire 1,000 acre-feet of annual irrigation demand

#2 Firebaugh Madera Floodplain 020 Restoration Project



Outcomes:

- Future floodplain restoration and changes in channel geomorphology
- The proposed project, in combination with the San Joaquin River Restoration Program, will help restore natural “flood-up and draw-down” hydrology and associated ecosystem processes.

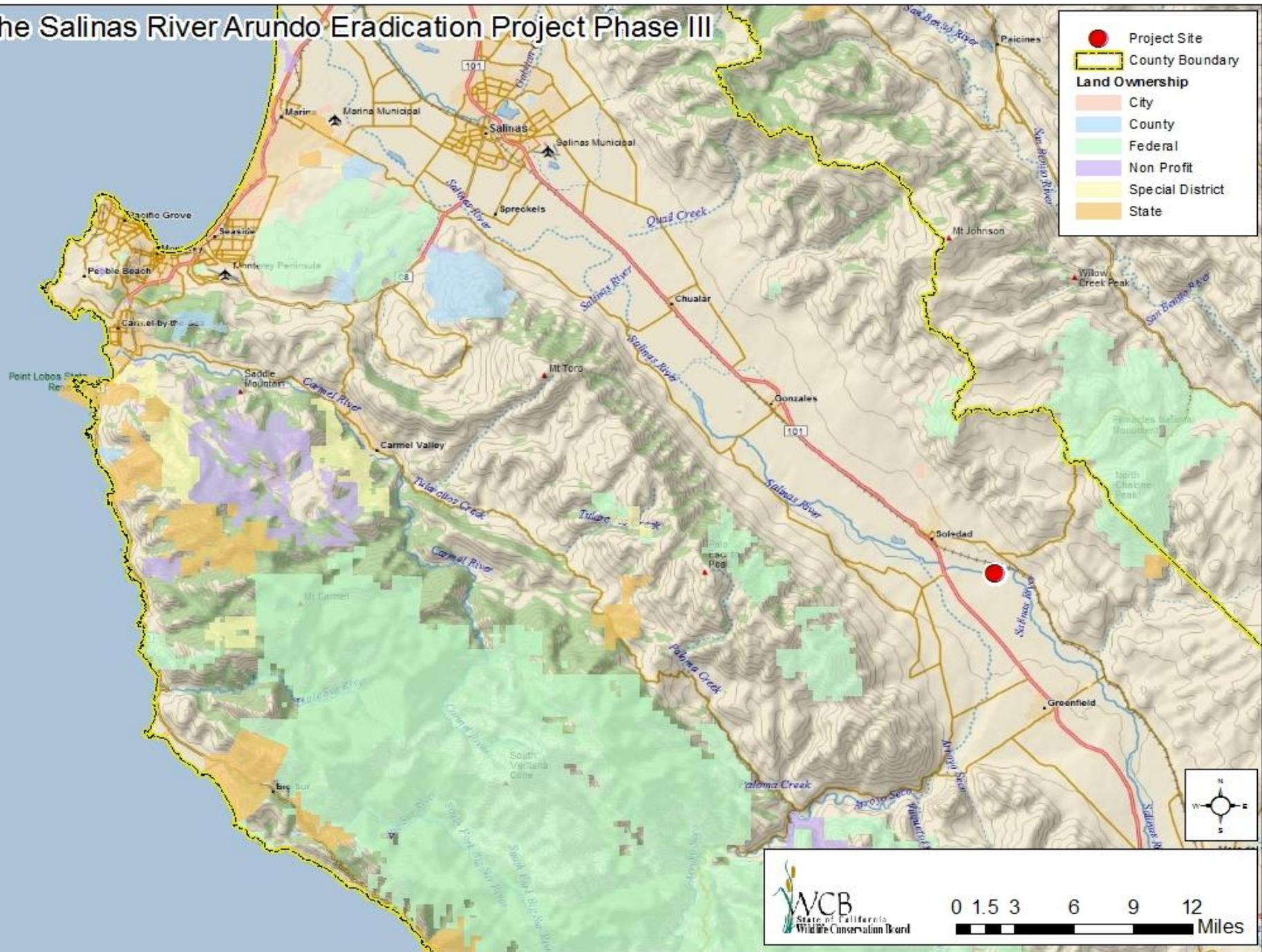
#3 The Salinas River Arundo 069 Eradication Project Phase III



Description

- Control 350 acres of the invasive non-native plant Arundo donax (giant reed) on 15 river miles of the Salinas River

The Salinas River Arundo Eradication Project Phase III



#3 The Salinas River Arundo 069 Eradication Project Phase III



Objective:

- Restore fluvial process and riparian habitat
- Reduce negative ecological impact as a result of Arundo invasion

#3 The Salinas River Arundo 069 Eradication Project Phase III



Outcomes:

- Build upon first two phases
- Save 7,000 acre feet of water per year by eliminating Arundo from the project area

#4 Reconnecting Stream Flow in the 054 Lower Eel River Delta



Description

- Restore the natural processes in the Salt River Watershed

#4 Reconnecting Stream Flow in the 054 Lower Eel River Delta



Objective:

- Substantial sediment removal
- Reconnect Francis Creek and Williams Creek with the Salt River

#4 Reconnecting Stream Flow in the 054 Lower Eel River Delta



Outcomes:

- The excavation and restoration of 2.5 miles of Salt River channel between the two tributary creeks
- The two sub-watersheds represents over 60% of the water supply to the Salt River system

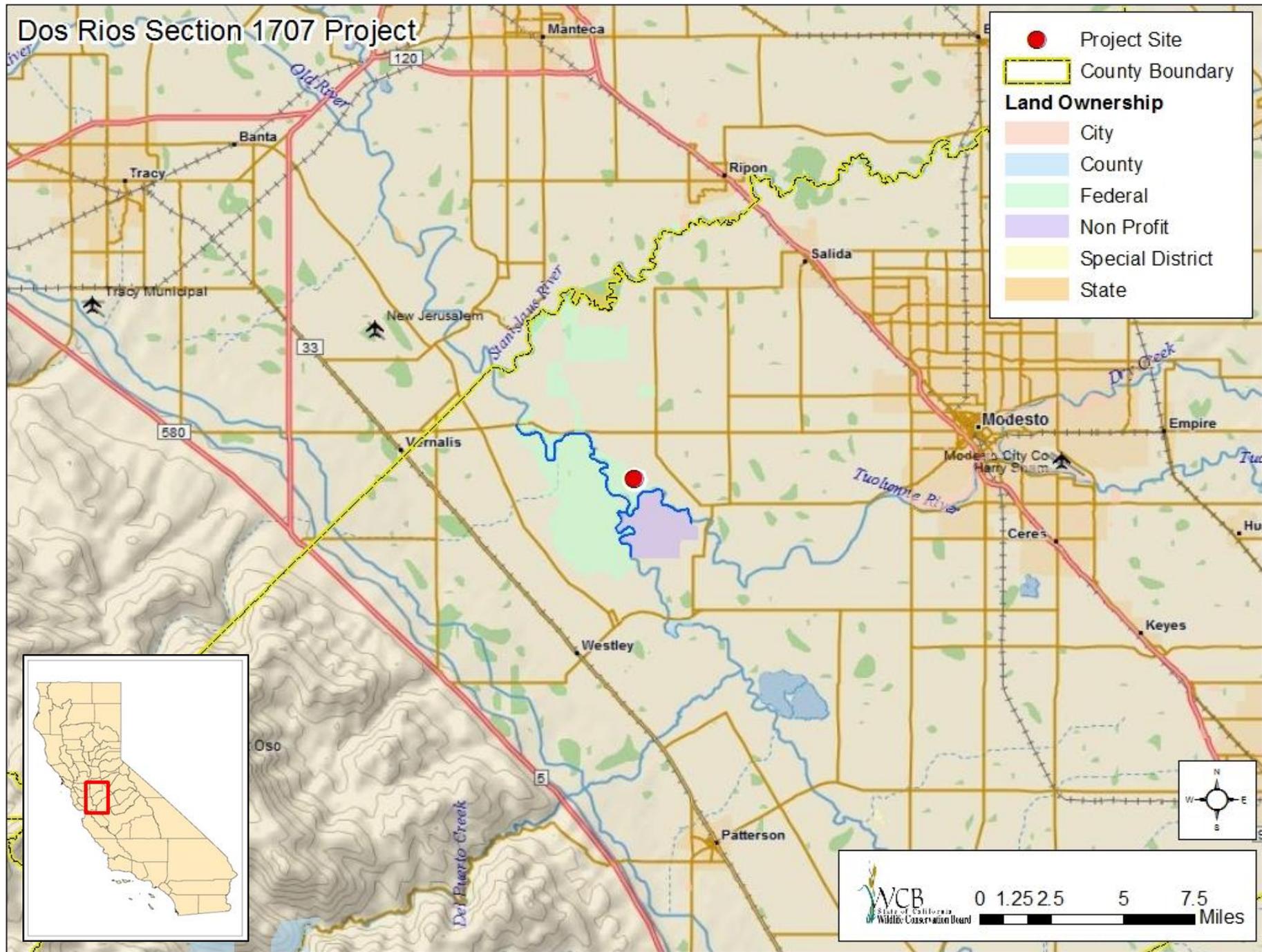
#5 Dos Rios Section 1707 Project 018



Description

- Petition the State Water Board to dedicate between 2,000 and 5,400 acre/feet of riparian water rights

Dos Rios Section 1707 Project



WCB
State of California
Wildlife Conservation Board

0 1.25 2.5 5 7.5 Miles

#5 Dos Rios Section 1707 Project 018



Objective:

- Obtain the legal funding to manage the Section 1707 petition to dedicate between 2,000 and 5,400 acre/feet

#5 Dos Rios Section 1707 Project 018



Outcomes:

- Ensure a successful Section 1707 dedication
- Assert a defensible right to protect an instream flow as it passes downstream

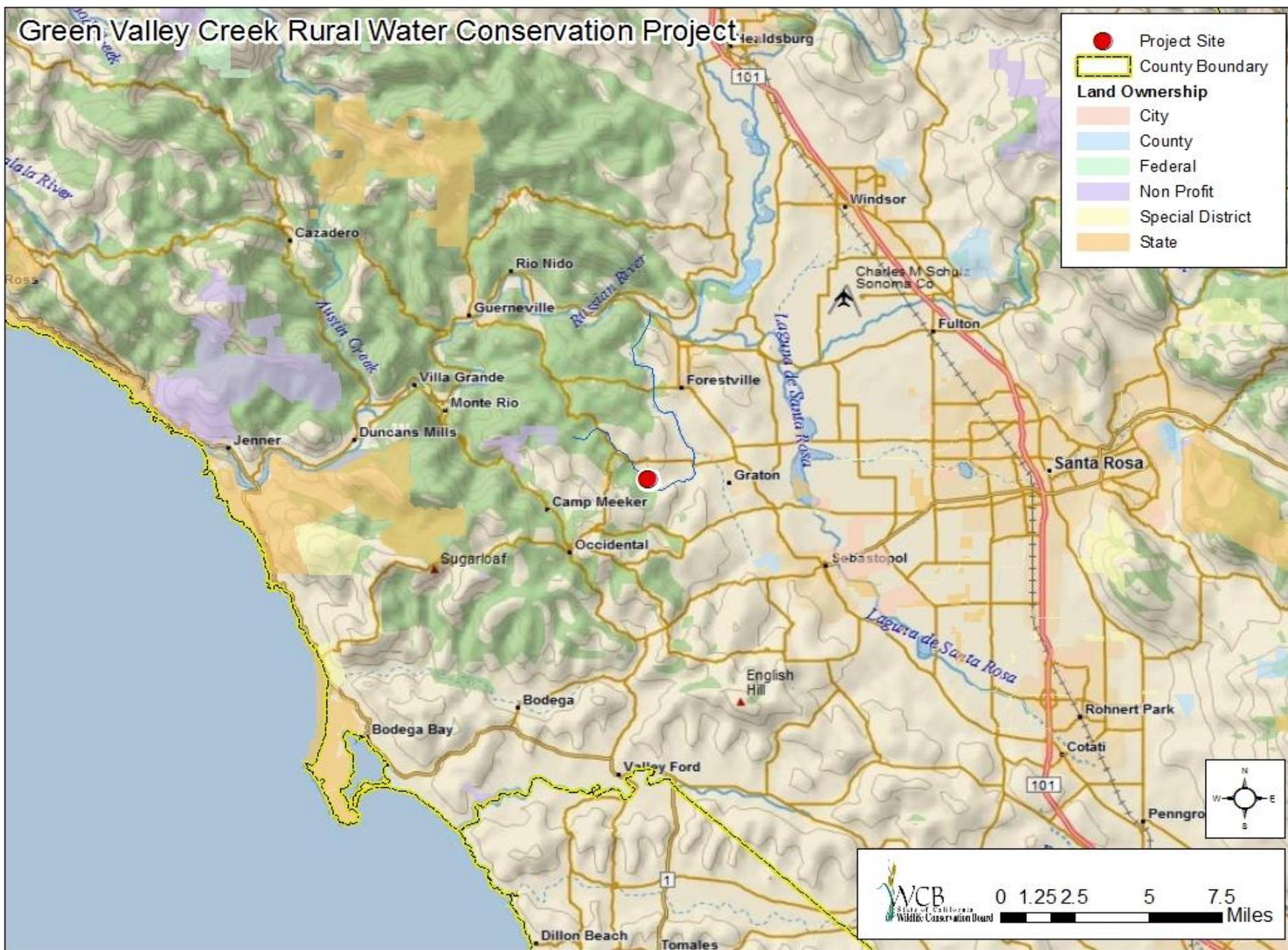
#6 Green Valley Creek Rural Water 028 Conservation Project



Description

- Develop project designs to enhance summer stream flows
- Implement four of these designs, consisting of agricultural and rural residential rainwater catchment and off-channel water storage systems, along a critical 2,000-foot reach of upper Green Valley Creek

Green Valley Creek Rural Water Conservation Project



#6 Green Valley Creek Rural Water 028 Conservation Project



Objective:

- Enhance critical rearing habitat for the endangered CCC coho salmon and the threatened steelhead trout

#6 Green Valley Creek Rural Water 028 Conservation Project



Outcomes:

- Eliminate 250,000 gallons of summer alluvial well extraction within a 2,000-foot critical stream reach in upper Green Valley Creek

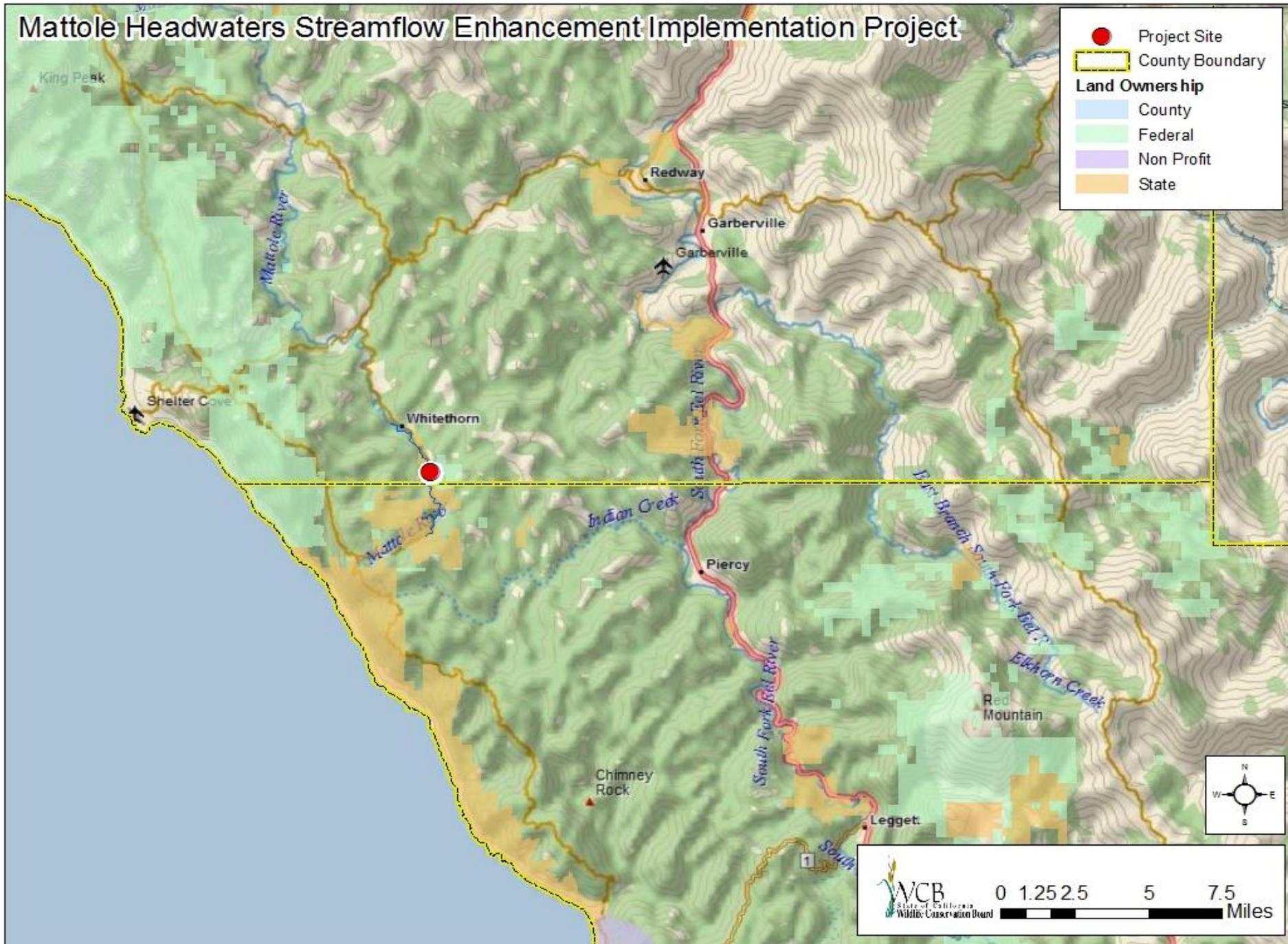
#7 Mattole Headwaters Streamflow 041 Enhancement Implementation Project



Description

- Improve summer streamflows needed for juvenile salmonid rearing in the Mattole River headwaters

Mattole Headwaters Streamflow Enhancement Implementation Project



#7 Mattole Headwaters Streamflow 041 Enhancement Implementation Project



Objective:

- Restore a ~3 acres wetland on an upslope terrace along Baker Creek
- Conduct forest thinning on ~ 23 acres along two reaches of the Mattole headwaters mainstem and Mill Creek

#7 Mattole Headwaters Streamflow 041 Enhancement Implementation Project



Outcomes:

- Increase groundwater storage by approximately 10 million gallons
- Forest thinning component will address the impacts of overly dense forests in the Mattole headwaters

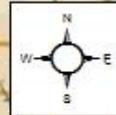
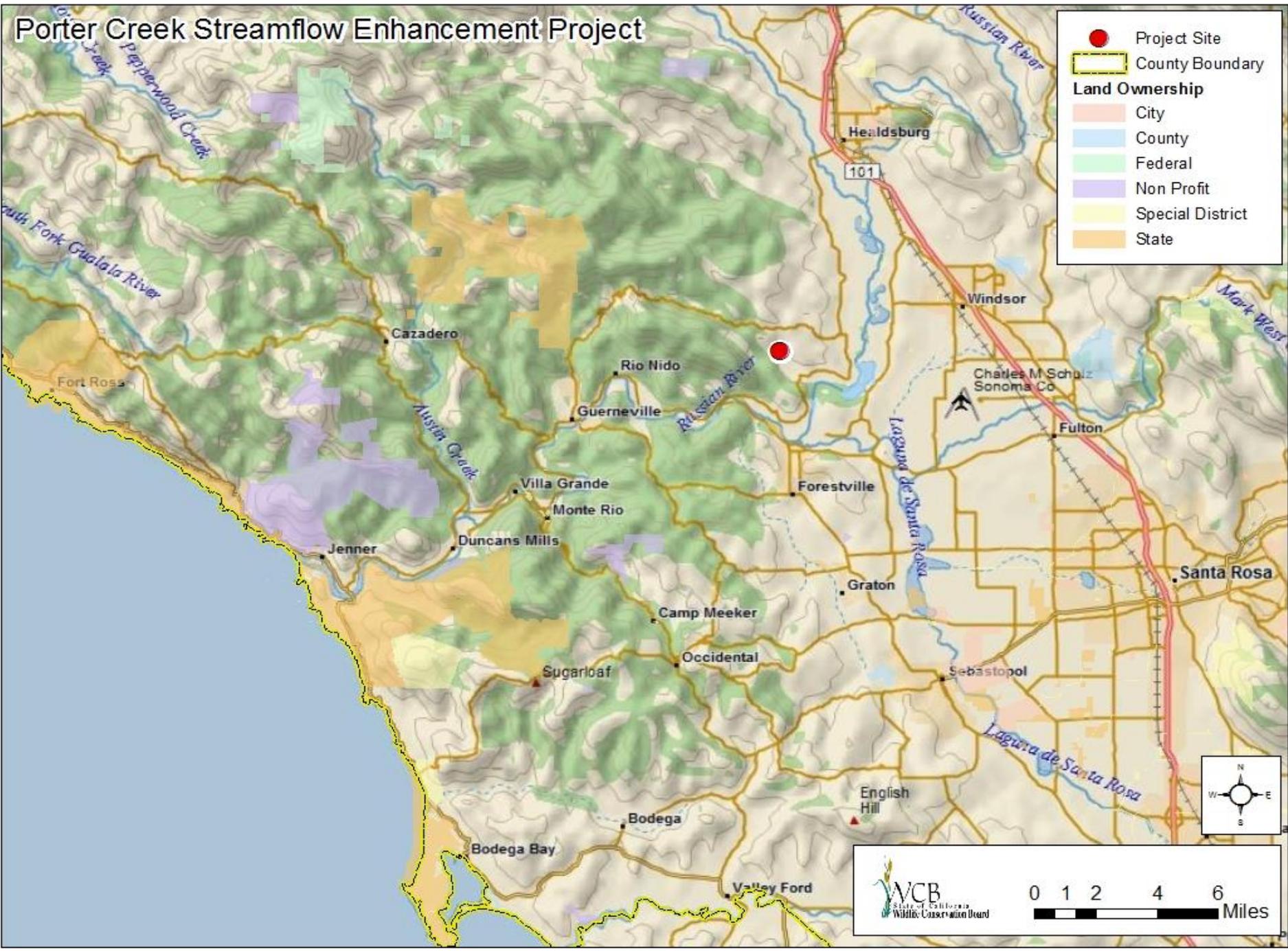
#8 Porter Creek Streamflow 052 Enhancement Project



Description

- Finalize design documents and constructing the permanent water release system from the reservoir

Porter Creek Streamflow Enhancement Project



#8 Porter Creek Streamflow 052 Enhancement Project



Objective:

- Sustain in-stream pool habitat for listed coho salmon in Porter Creek in the dry season and provide higher flow releases to allow coho smolt out-migration in the spring.

#8 Porter Creek Streamflow 052 Enhancement Project



Outcomes:

- Replacing the temporary above-ground piping with a permanent infrastructure that will facilitate release of water from an existing reservoir

#9 The Thacher School Instream Flow
070 Resiliency and Dormitory Conservation
Project

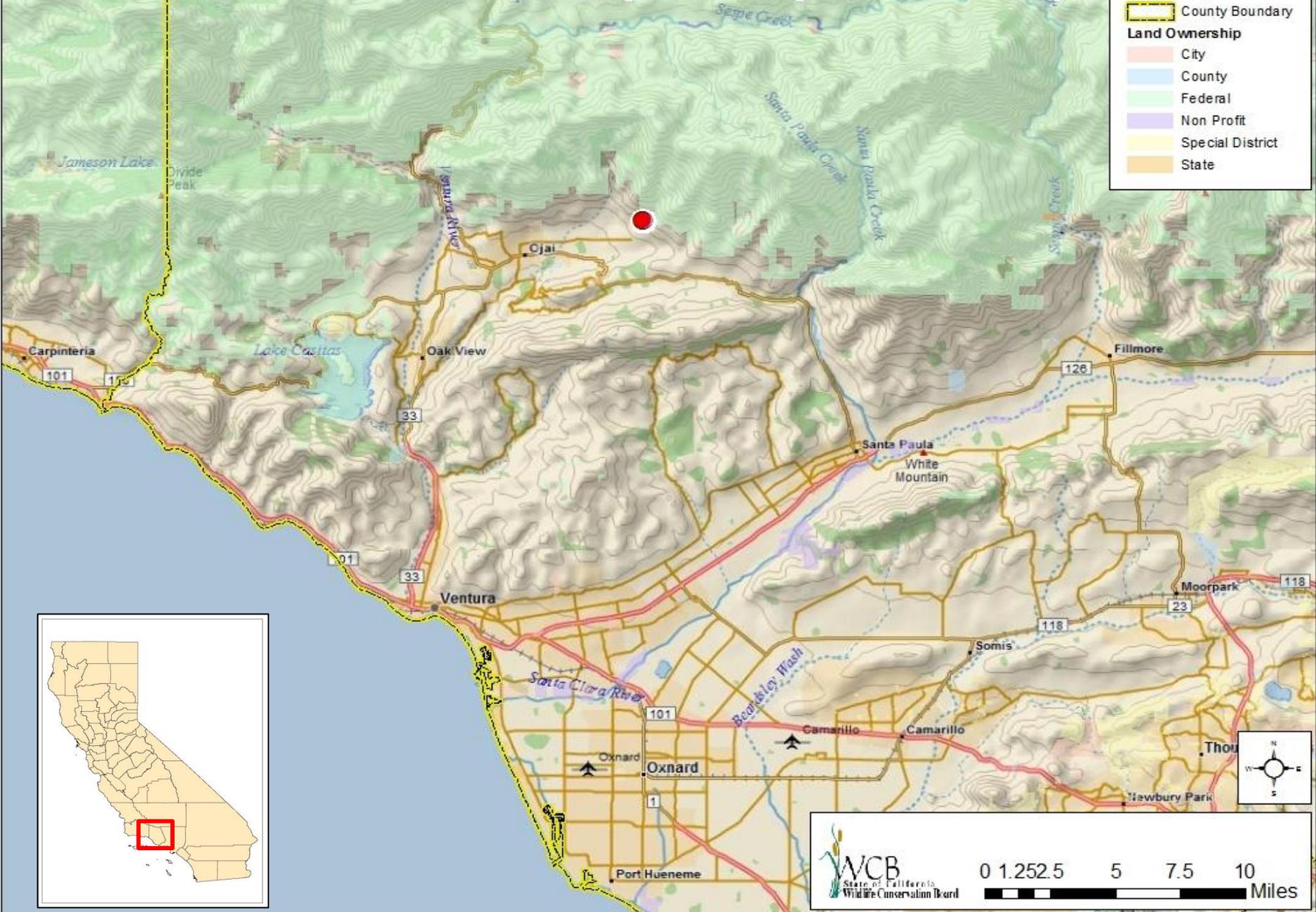


Description

- Implement storm-water management system and rainwater collection systems

The Thacher School Instream Flow Resiliency & Dormitory Conservation Project

- Project Site
- ▭ County Boundary
- Land Ownership**
 - City
 - County
 - Federal
 - Non Profit
 - Special District
 - State



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Wildlife Conservation Board

0 1.25 2.5 5 7.5 10 Miles

#9 The Thacher School Instream Flow
070 Resiliency and Dormitory Conservation
Project



Objective:

- Reduce channelization and help restore Thacher Creek stream flow and geomorphology

#9 The Thacher School Instream Flow
070 Resiliency and Dormitory Conservation
Project



Outcomes:

- Increase summer base flows
- Dedicate offset to instream flow
- Decrease peak storm event discharge
- Model successful best practices

#10 Mattole Headwaters Streamflow 042 Enhancement Planning Project

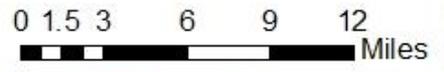
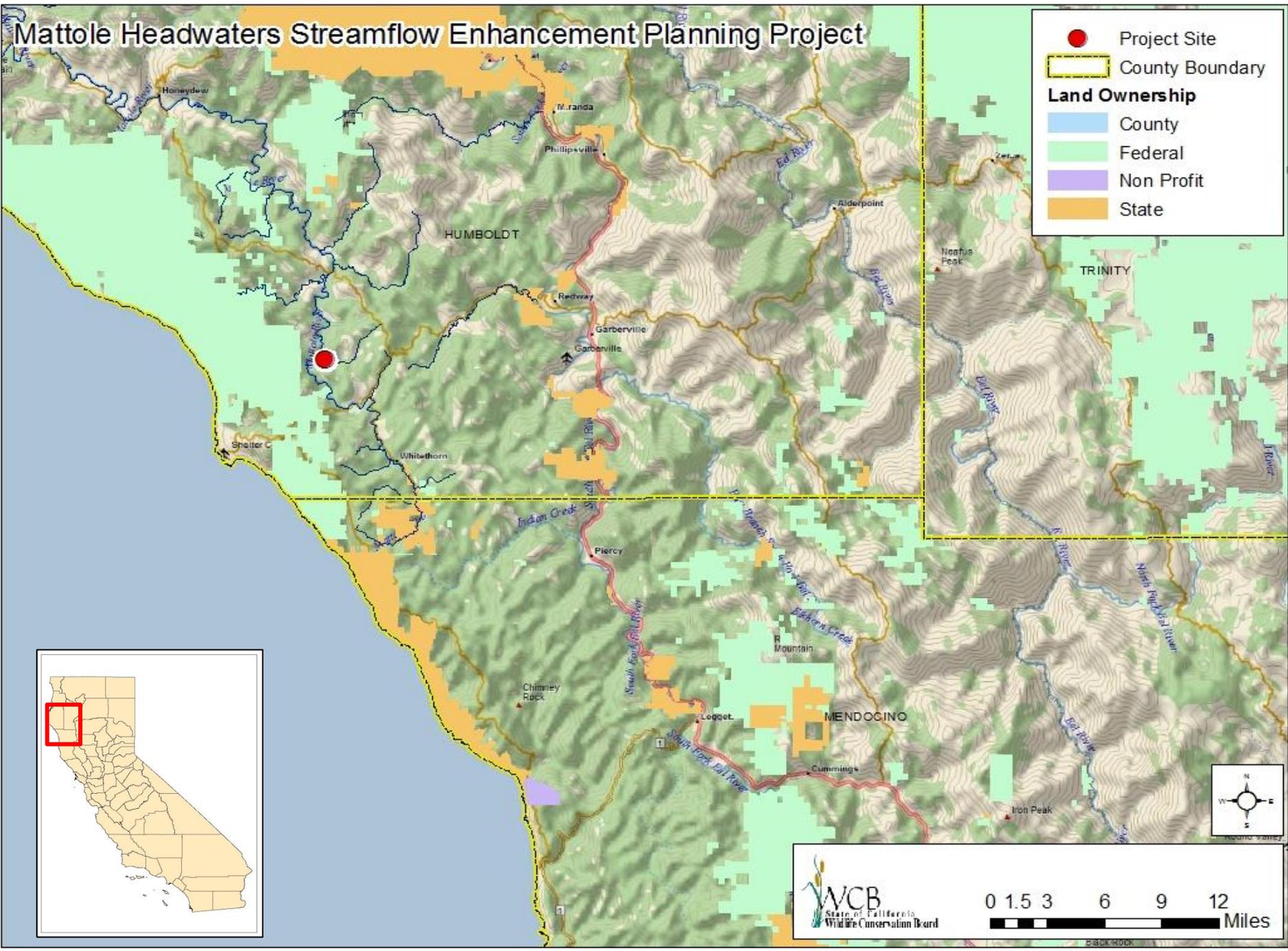


Description

- Address the impacts of climate change and drought in the Mattole River at a scale needed to restore summertime streamflows

Mattole Headwaters Streamflow Enhancement Planning Project

- Project Site
- ▭ County Boundary
- Land Ownership**
 - County
 - Federal
 - Non Profit
 - State



#10 Mattole Headwaters Streamflow 042 Enhancement Planning Project



Objective:

- Enhance summer streamflow through restoration of natural ground and surface water hydrologic functions

#10 Mattole Headwaters Streamflow 042 Enhancement Planning Project



Outcomes:

- Development and permitting of 6 streamflow enhancement projects located on 5 tributaries and the headwaters mainstem
 - wetland restoration
 - off channel recharge ponds
 - restoration of entrenched streams
 - restoration of instream habitat

#11 Navarro River Watershed – Plan for 045 Streamflow Optimization & Enhancement



Description

- Detailed plan with specific actions that should achieve water conservation measures benefiting listed fish species in the Navarro River Watershed
 - Storage and Forbearance projects
 - Coordinated water diversion management model
 - Large-Scale Groundwater Infiltration
 - LWD placement

#11 Navarro River Watershed – Plan for 045 Streamflow Optimization & Enhancement



Objective:

- Address some of the stresses on anadromous fish in the Navarro River Watershed.
 - Both coho salmon and steelhead fish populations are critically low and Central California Coast coho are close to extirpation in the Navarro

#11 Navarro River Watershed – Plan for 045 Streamflow Optimization & Enhancement



Outcomes:

- Project will lead to between 5 and 8 implementation projects resulting in Navarro River flow enhancement.

#12 Soquel Creek Stream Flow Stewardship 062 Project



Description

- Develop high-priority and technically and socially-feasible projects that yield benefits for fisheries and human populations.

Soquel Creek Stream Flow Stewardship Project



#12 Soquel Creek Stream Flow Stewardship 062 Project



Objective:

- Ideally this project will determine a pumping regime that is coordinated with other diverters and complimented by conceptual designs for future implementation projects replacing the reliance on streamside wells thereby improving streamflow in critical reaches of Soquel Creek.

#12 Soquel Creek Stream Flow Stewardship 062 Project



Outcomes:

- Set the stage for future rounds of instream flow funding by providing the basis needed to move forward
- The project will complement efforts by water districts who are actively working to recover the groundwater basin

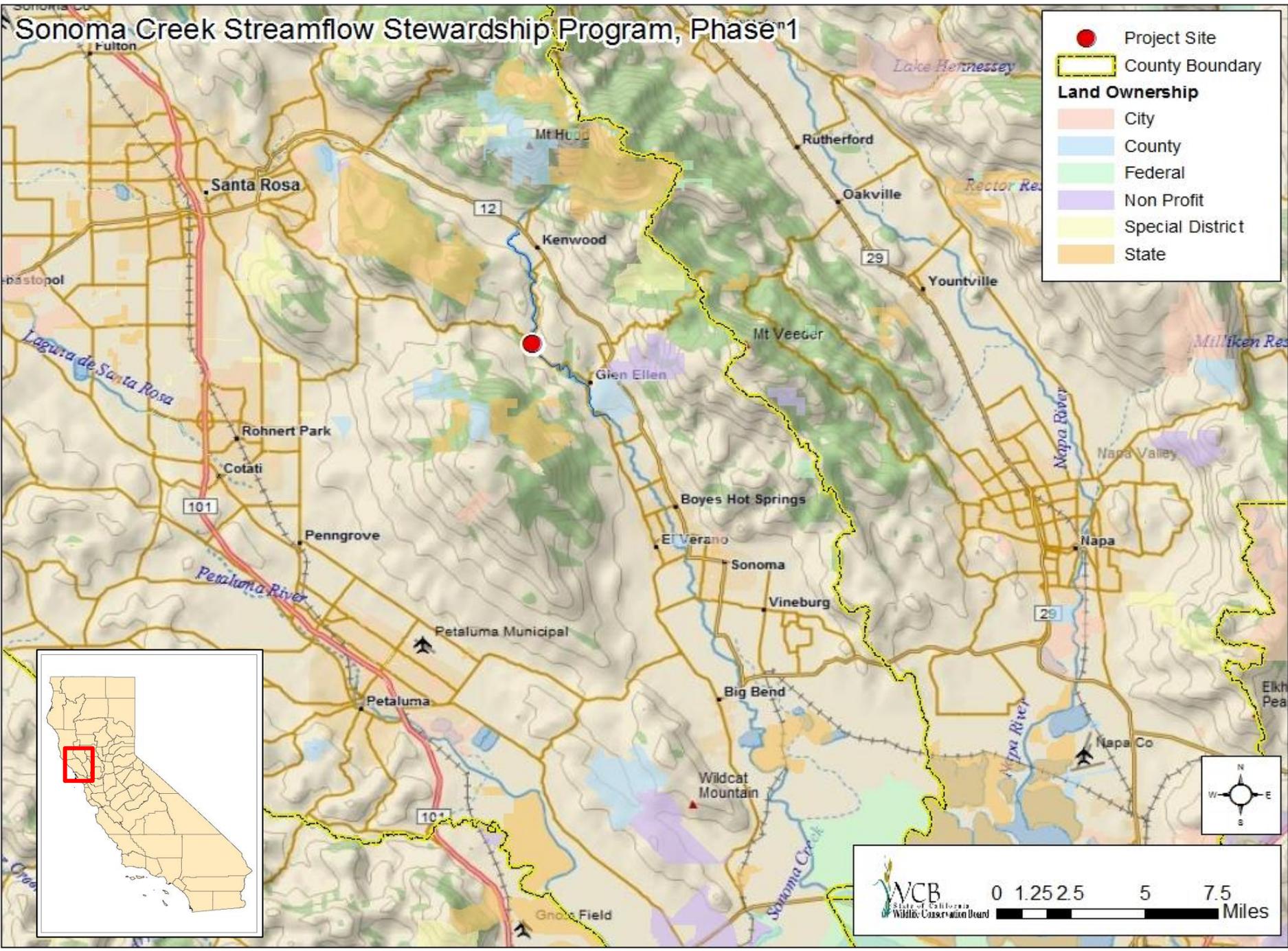
#13 Sonoma Creek Streamflow Stewardship 061 Program, Phase 1



Description

- Essential first steps toward increasing dry-season streamflows to support steelhead and other aquatic species.
 - Data collection
 - Legal analysis
 - Landowner outreach

Sonoma Creek Streamflow Stewardship Program, Phase 1



- Project Site
- ▭ County Boundary
- Land Ownership**
- ▭ City
- ▭ County
- ▭ Federal
- ▭ Non Profit
- ▭ Special District
- ▭ State



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0 1.25 2.5 5 7.5 Miles

#13 Sonoma Creek Streamflow Stewardship 061 Program, Phase 1



Outcomes:

- Summer streamflow is a limiting factor for steelhead in Sonoma Valley streams. Project would create a plan and establish buy-in from landowners for enhancing streamflows

#13 Sonoma Creek Streamflow Stewardship
061 Program, Phase 1



Outcomes:

- Fund installing and monitoring streamflow gages
- Quantify and monitor influence to timing of streamflow enhancements

#14 Central Valley Arundo Mapping and 011 Impact Assessment Project

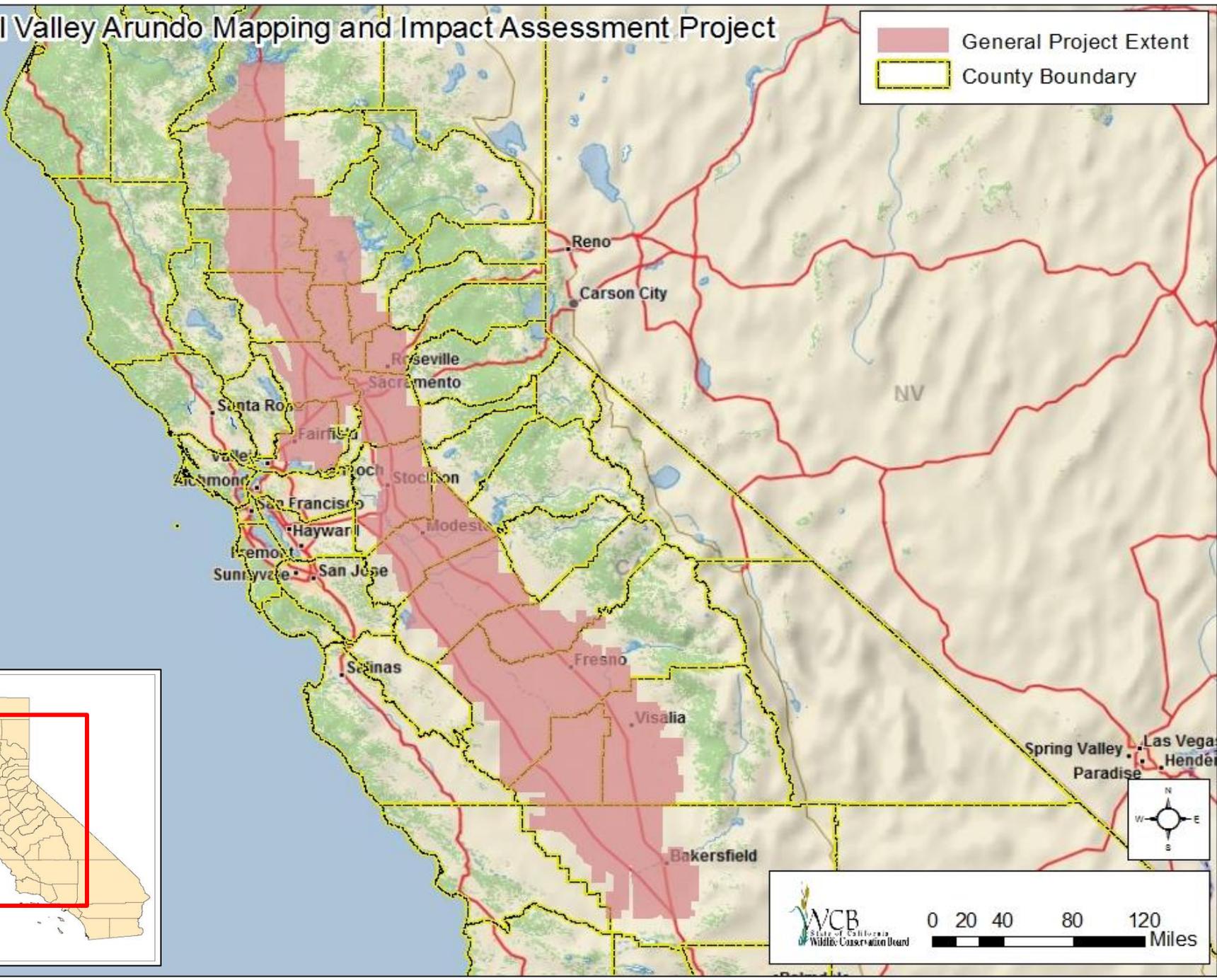


Description

- Map infestations, analyze impacts, prioritize sites and build partnerships to eradicate *Arundo donax* (giant reed) in Central Valley watersheds
- Project extent is in excess of 14 million acres in size.

Central Valley Arundo Mapping and Impact Assessment Project

General Project Extent
County Boundary



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Wildlife Conservation Board

0 20 40 80 120 Miles

#14 Central Valley Arundo Mapping and 011 Impact Assessment Project



Outcomes:

- Facilitate Arundo eradication program development to save significant water resources.
 - Restore fluvial/hydrologic functions
 - Normalize sedimentation transport
 - Reduce flood and fire risk
 - Restore native vegetation cover and successional processes.

#14 Central Valley Arundo Mapping and 011 Impact Assessment Project



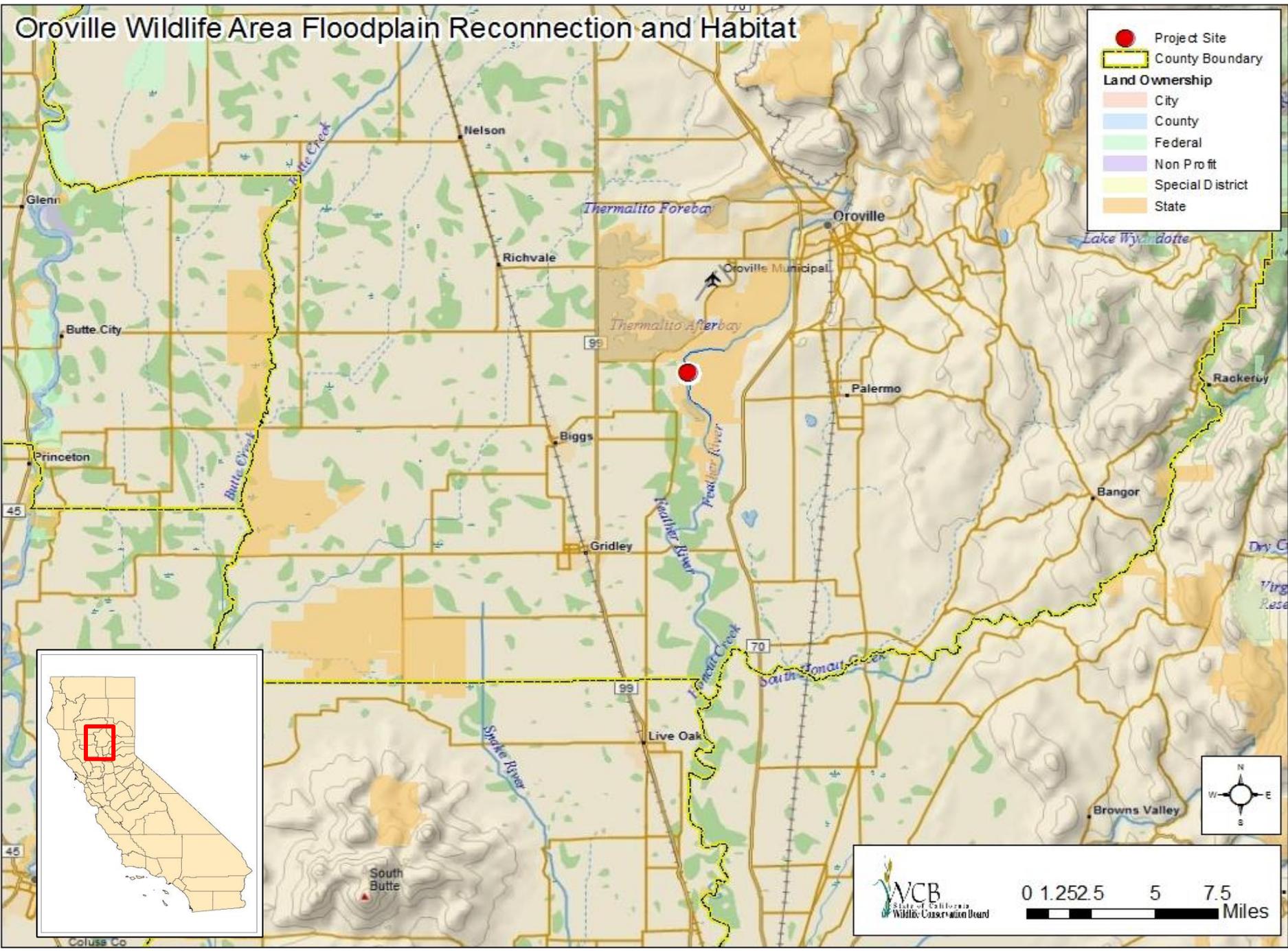
Outcomes:

- Enable the applicant to map all locations of Arundo in the Central Valley
- Analyze the likelihood of success of eradication in each watershed
- Prioritize future restoration sites
- Prepare a long term eradication program

#15 Oroville Wildlife Area Floodplain
048 Reconnection and Habitat



Oroville Wildlife Area Floodplain Reconnection and Habitat



#15 Oroville Wildlife Area Floodplain
048 Reconnection and Habitat



#15 Oroville Wildlife Area Floodplain
048 Reconnection and Habitat

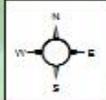
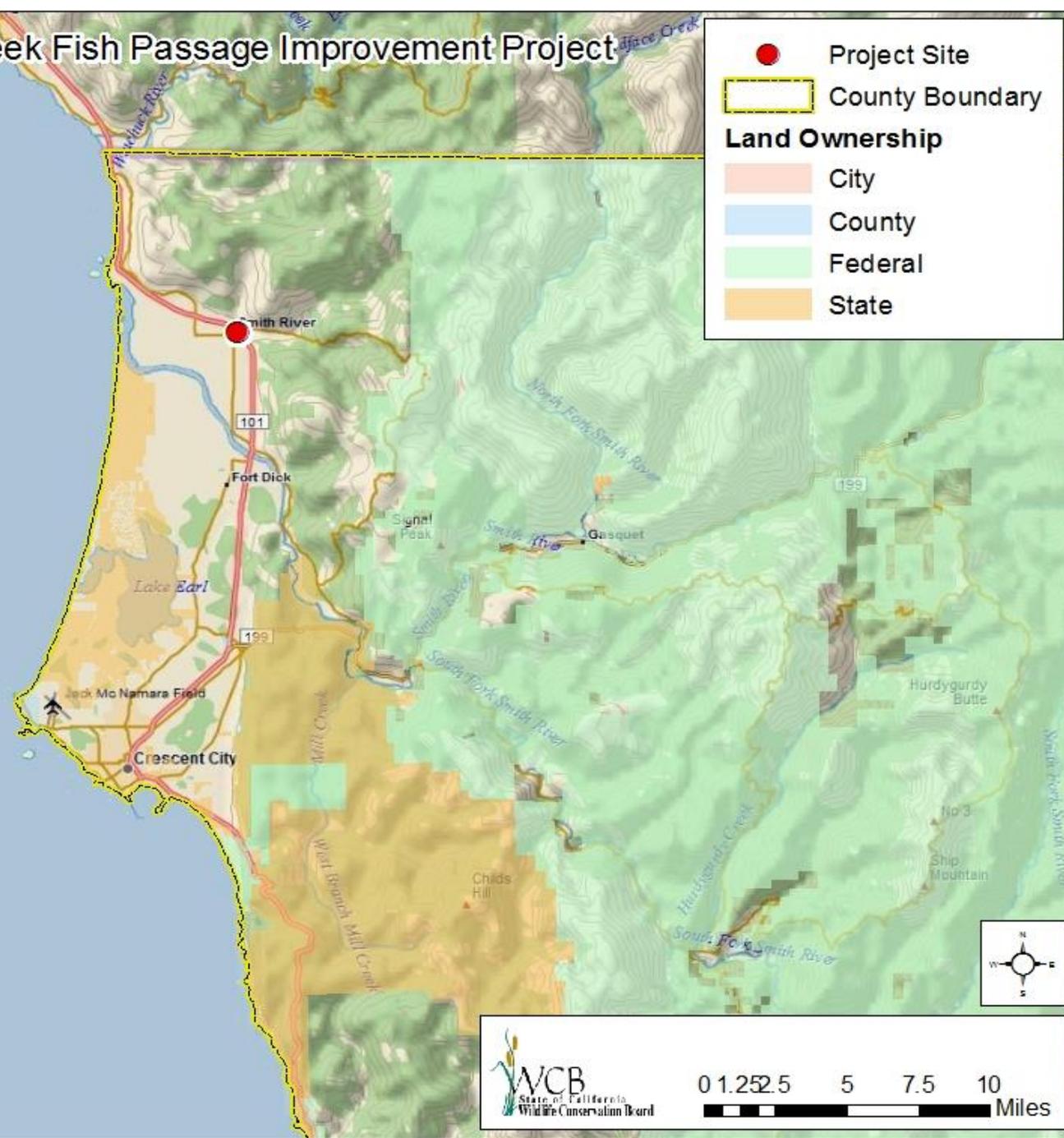


#16 Dominie Creek and Rowdy Creek
012 Fish Passage Improvement Project



Dominie Creek & Rowdy Creek Fish Passage Improvement Project

- Project Site
- ▭ County Boundary
- Land Ownership**
 - City
 - County
 - Federal
 - State



0 1.25 2.5 5 7.5 10 Miles

A scale bar showing distances in miles: 0, 1.25, 2.5, 5, 7.5, and 10 miles.

#16 Dominie Creek and Rowdy Creek
012 Fish Passage Improvement Project



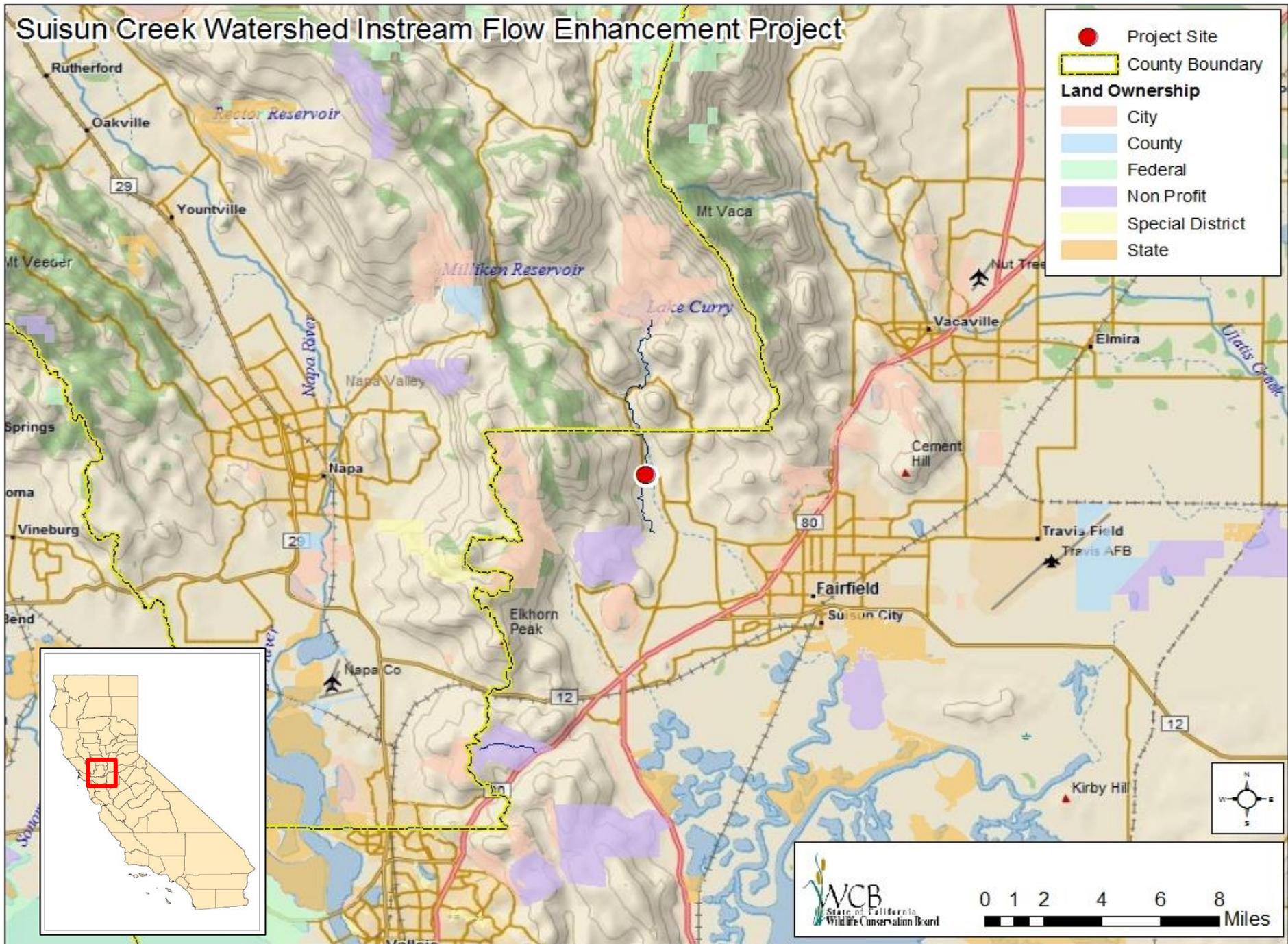
#16 Dominie Creek and Rowdy Creek
012 Fish Passage Improvement Project



#17 Suisun Creek Watershed Instream
067 Flow Enhancement Project



Suisun Creek Watershed Instream Flow Enhancement Project



#17 Suisun Creek Watershed Instream
067 Flow Enhancement Project



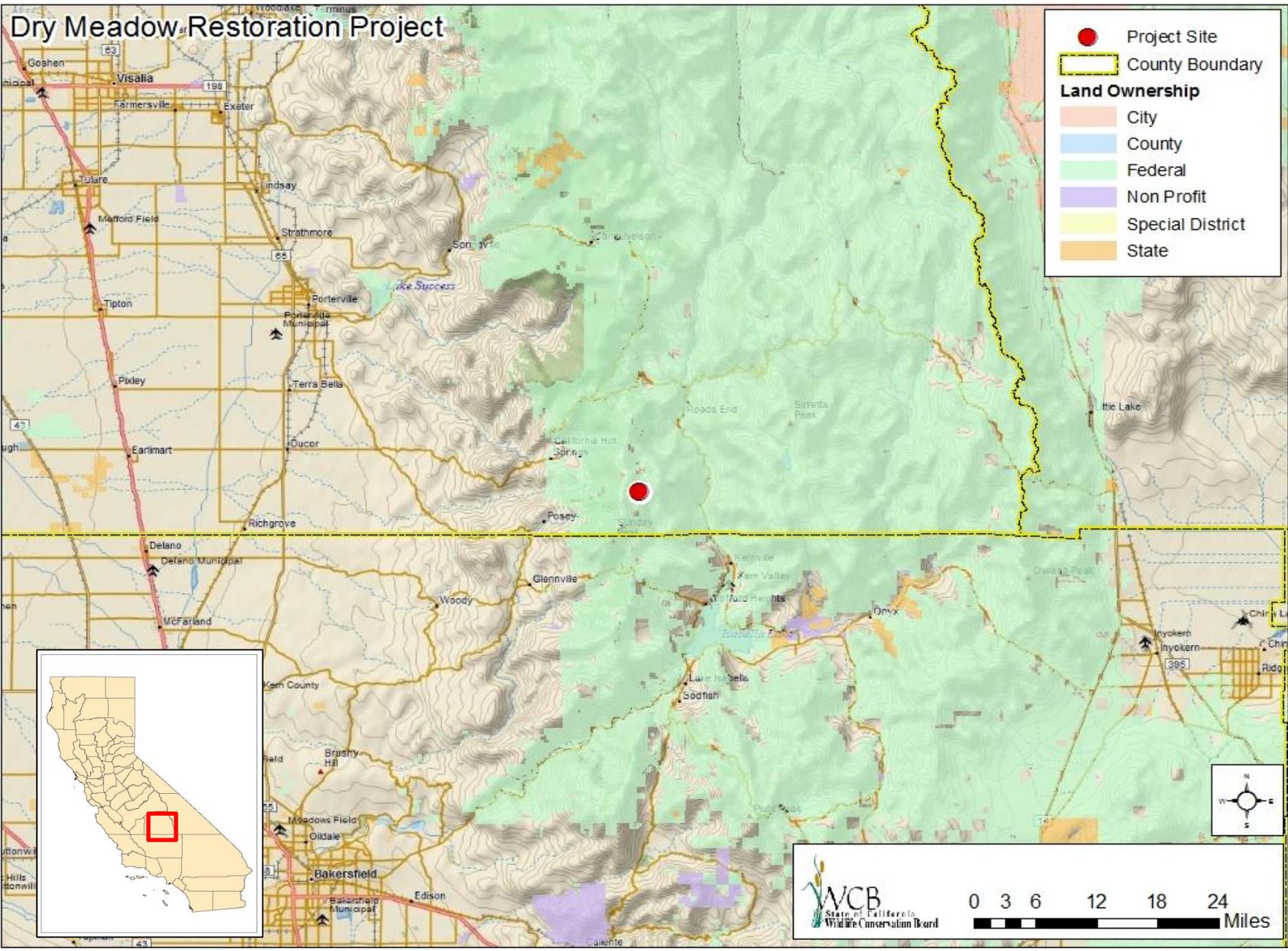
#17 Suisun Creek Watershed Instream
067 Flow Enhancement Project



#18 Dry Meadow Restoration
019 Project



Dry Meadow Restoration Project



#18 Dry Meadow Restoration
019 Project



#18 Dry Meadow Restoration
019 Project



#19 Baseflow Monitoring for Stream Flow
002 Project Planning and Evaluation in
San Luis Obispo County



Baseflow Monitoring for Stream Flow Enhancement Project Planning and Evaluation in San Luis Obispo County

- Project County
- ▭ San Luis Obispo County
- ▭ County

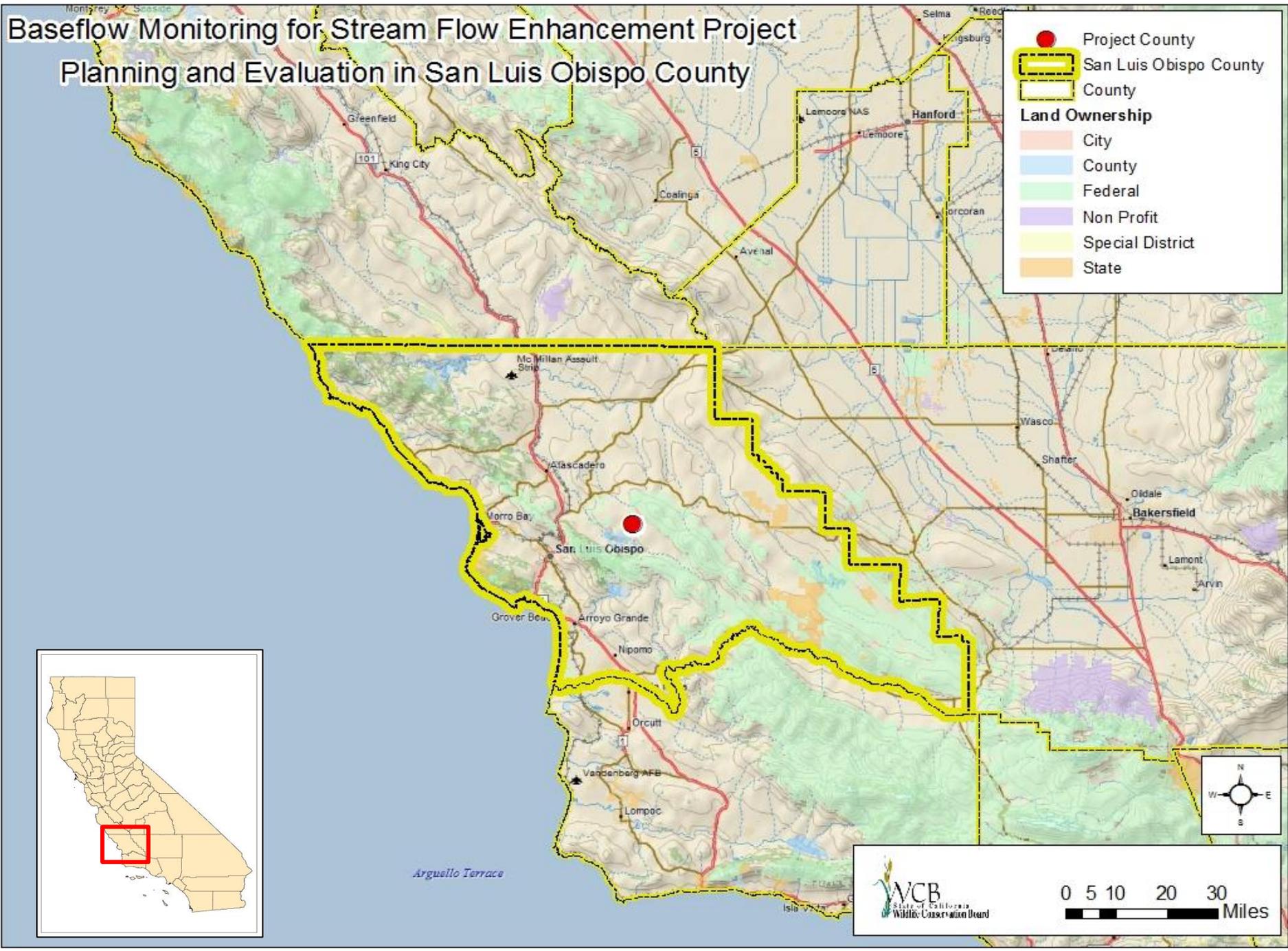
Land Ownership

- ▭ City
- ▭ County
- ▭ Federal
- ▭ Non Profit
- ▭ Special District
- ▭ State



Arguello Terrace

0 5 10 20 30 Miles



#19 Baseflow Monitoring for Stream Flow
002 Project Planning and Evaluation in
San Luis Obispo County



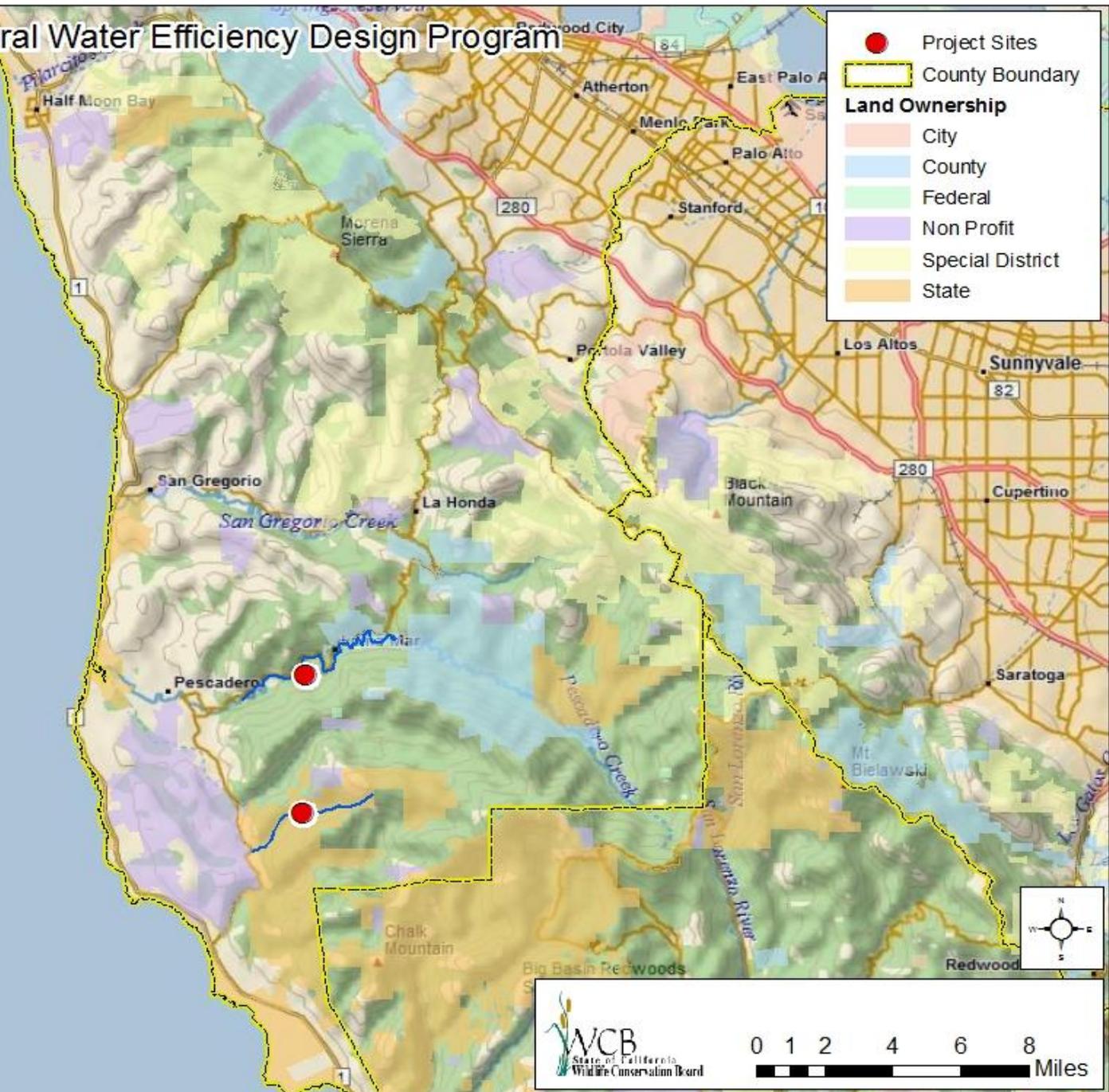
#19 Baseflow Monitoring for Stream Flow
002 Project Planning and Evaluation in
San Luis Obispo County



#20 Domestic and Agricultural Water
016 Efficiency Design Program



Domestic and Agricultural Water Efficiency Design Program



#20 Domestic and Agricultural Water
016 Efficiency Design Program



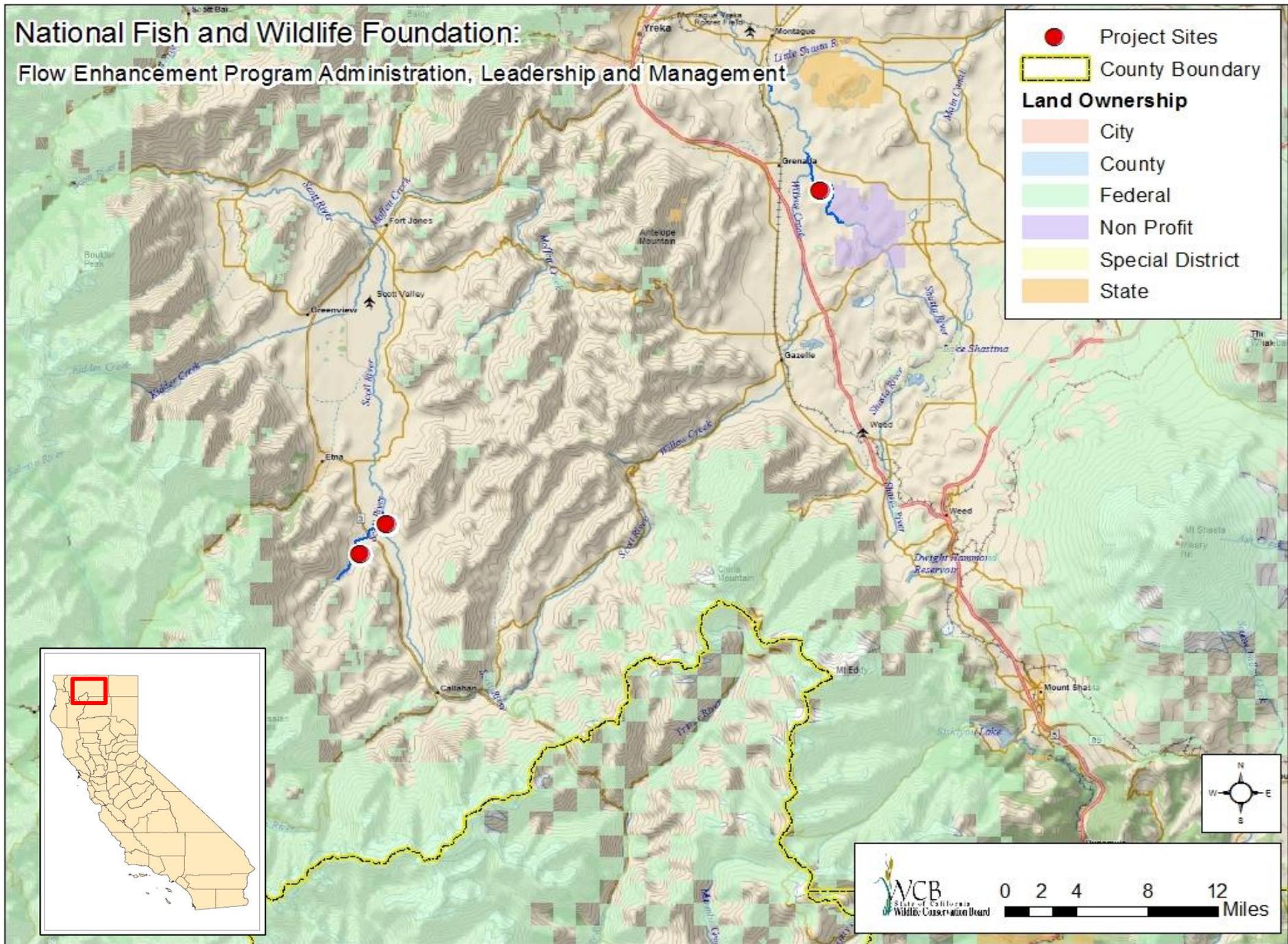
#20 Domestic and Agricultural Water
016 Efficiency Design Program



#21 Flow Enhancement Program
058 Administration, Leadership &
Management



National Fish and Wildlife Foundation: Flow Enhancement Program Administration, Leadership and Management



- Project Sites
- ▭ County Boundary
- Land Ownership**
- ▭ City
- ▭ County
- ▭ Federal
- ▭ Non Profit
- ▭ Special District
- ▭ State



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0 2 4 8 12 Miles

#21 Flow Enhancement Program
058 Administration, Leadership &
Management



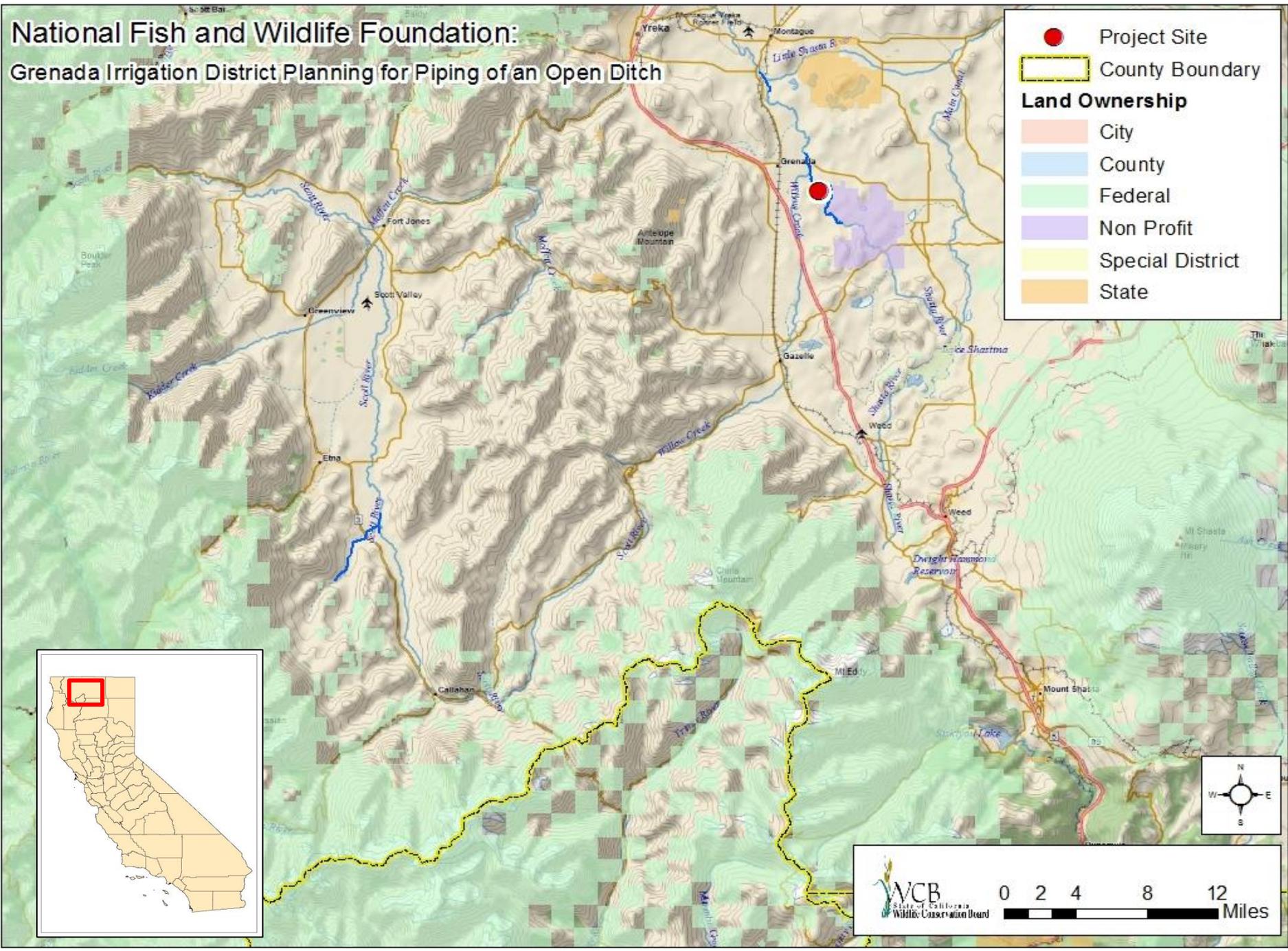
#21 Flow Enhancement Program
058 Administration, Leadership &
Management



#22 Grenada Irrigation District Planning for
058 Piping of an Open Ditch



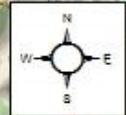
National Fish and Wildlife Foundation: Grenada Irrigation District Planning for Piping of an Open Ditch



- Project Site
- County Boundary

Land Ownership

- City
- County
- Federal
- Non Profit
- Special District
- State



0 2 4 8 12 Miles

#22 Grenada Irrigation District Planning for
058 Piping of an Open Ditch



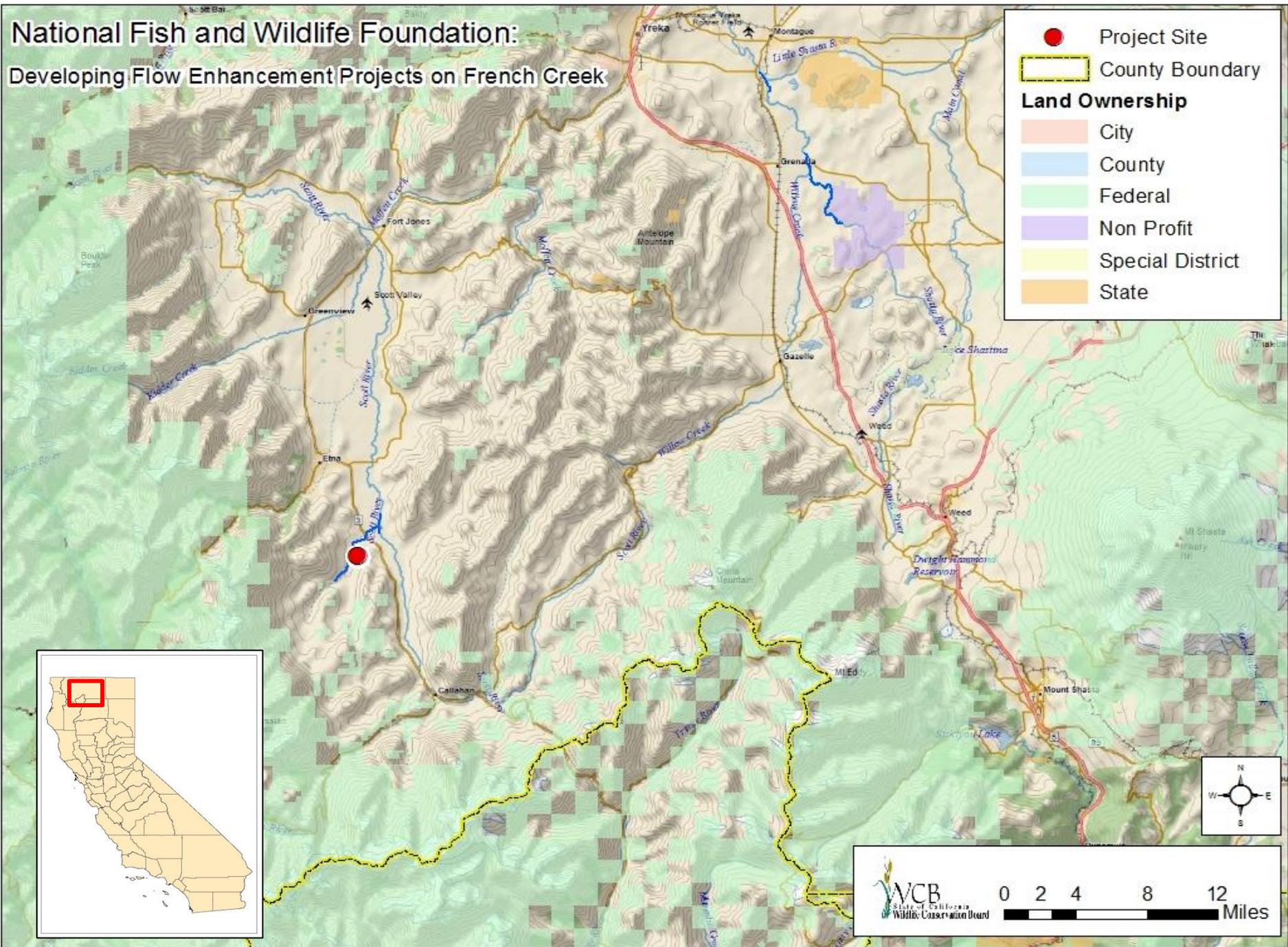
#22 Grenada Irrigation District Planning for
058 Piping of an Open Ditch



#23 Developing Flow Enhancement
058 Projects on French Creek



National Fish and Wildlife Foundation: Developing Flow Enhancement Projects on French Creek



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0 2 4 8 12 Miles

#23 Developing Flow Enhancement
058 Projects on French Creek



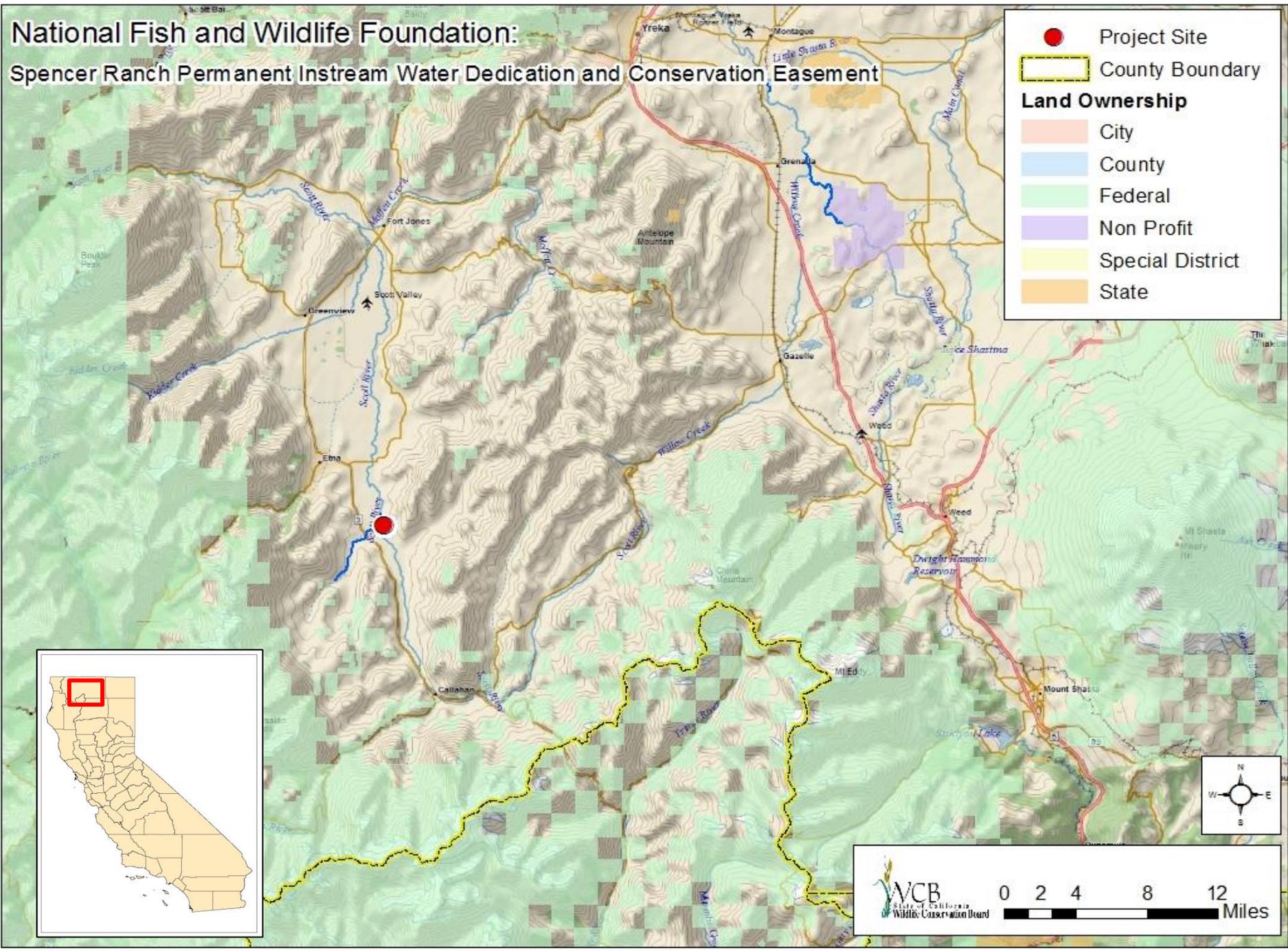
#23 Developing Flow Enhancement
058 Projects on French Creek



#24 Spencer Ranch Permanent Instream
058 Water Dedication and Conservation
Easement



National Fish and Wildlife Foundation: Spencer Ranch Permanent Instream Water Dedication and Conservation Easement



- Project Site
- ▭ County Boundary
- Land Ownership**
- ▭ City
- ▭ County
- ▭ Federal
- ▭ Non Profit
- ▭ Special District
- ▭ State



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Wildlife Conservation Board

0 2 4 8 12 Miles

#24 Spencer Ranch Permanent Instream
058 Water Dedication and Conservation
Easement



#24 Spencer Ranch Permanent Instream
058 Water Dedication and Conservation
Easement



