

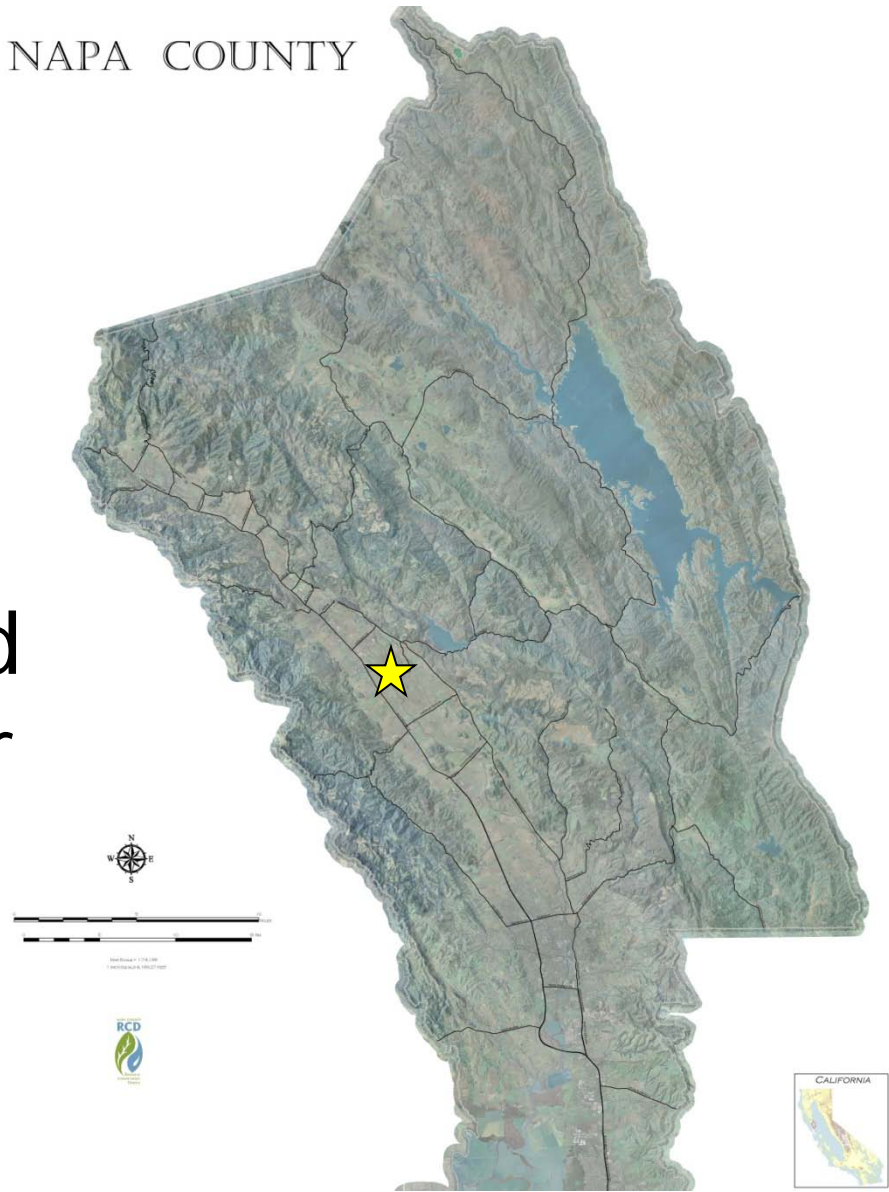
How are we stewarding our
watersheds for future
generations?

A tour of our accomplishments

NAPA COUNTY

Restoring the Rutherford Reach of the Napa River

Gretchen Hayes



The Rutherford Dust Restoration Team: "Our Dirt"

A private-public partnership benefitting property, wildlife, and natural resources.

28 Landowners in Rutherford and Oakville, California



**RUTHERFORD
DUST SOCIETY**
NAPA VALLEY



with National and State Natural Resource Agencies

Problems Addressed

Lack of High Flow Refugia

Eroding Banks/Channel Incision



Invasive Species



Undermined Oak Trees



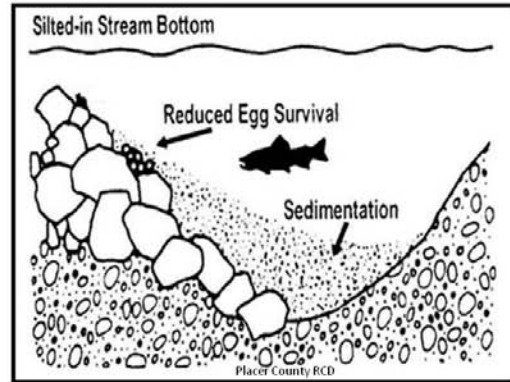
Narrow Riparian Corridor

Lack of Instream Cover

Lack of Spawning Habitat



Degraded Spawning Habitat



Napa River Rutherford Reach Restoration Project



77% Complete (2002-2013)

100% Participation by 28 Landowners

Eroding Banks Reduced by Half

**Satisfying 80% of the TMDL
Water Quality Regulation Goal
for Reducing Fine Sediment Delivery
to the Napa River from Bed Incision
and Bank Erosion**

3.3 of 4.5 Stream Miles Restored

2.5 miles of Berm Setbacks

12 Acres of High Flow Fish Refugia Created

21 Acres of Riparian Forest Re-created

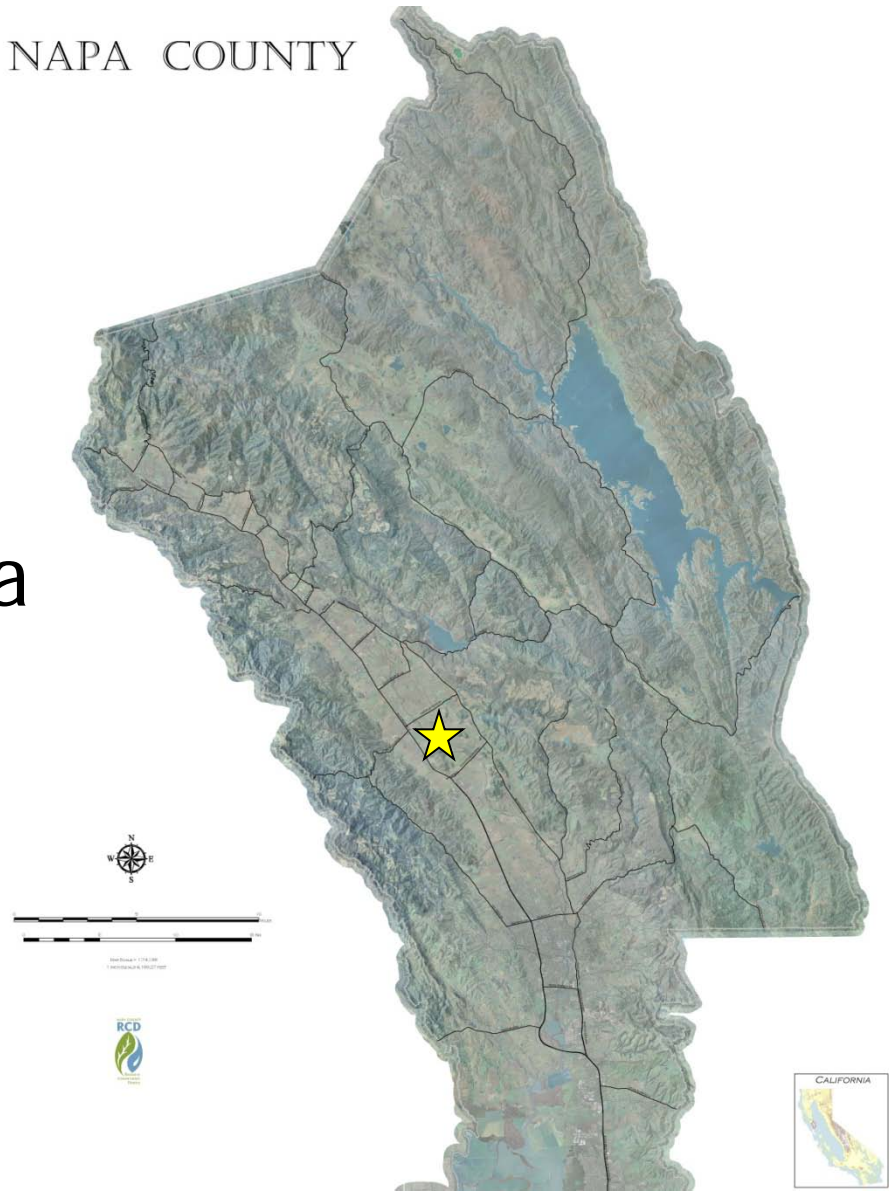
71 Fish Habitat Structures Installed

**Private-Public Partnership Recognized
as a Model for River Restoration**

NAPA COUNTY

Restoring Oakville to Oak Knoll Reach of Napa River

Andrew Collison



Restoring the Napa River Rutherford Reach - A wider perspective on living with the river

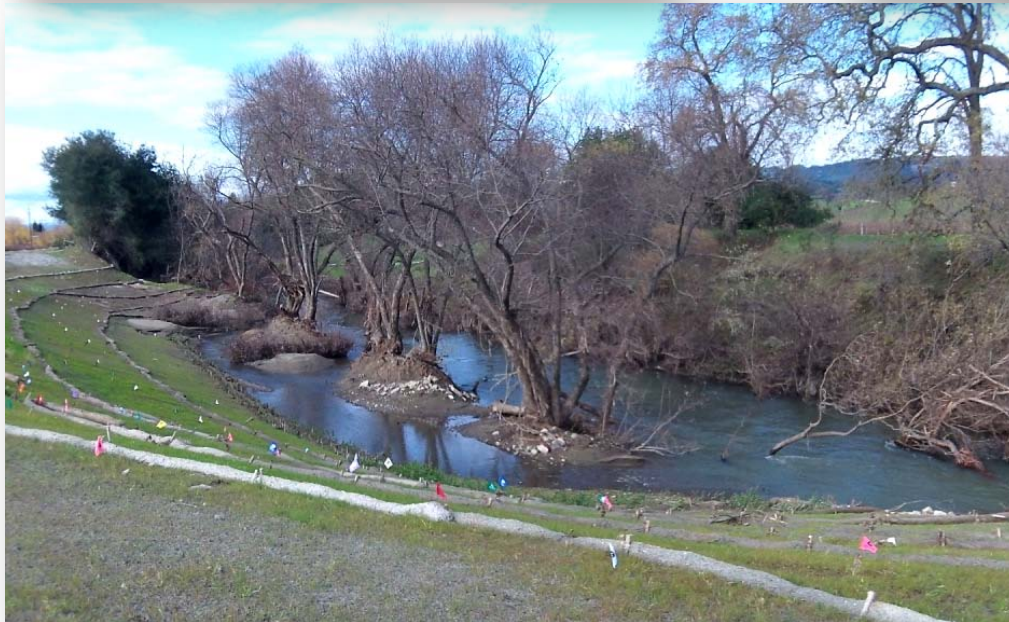
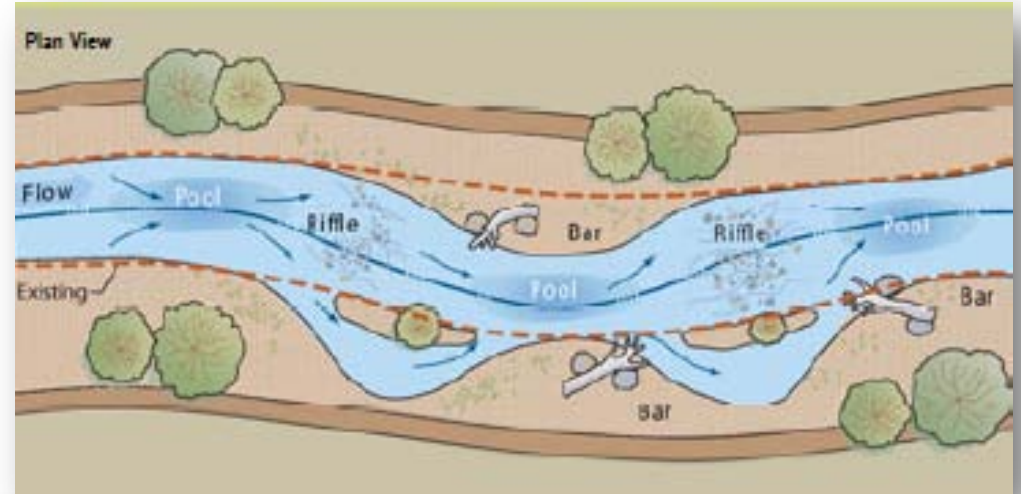


Goals – give the river room to recover from historic confinement

Approach – work with landowners and County

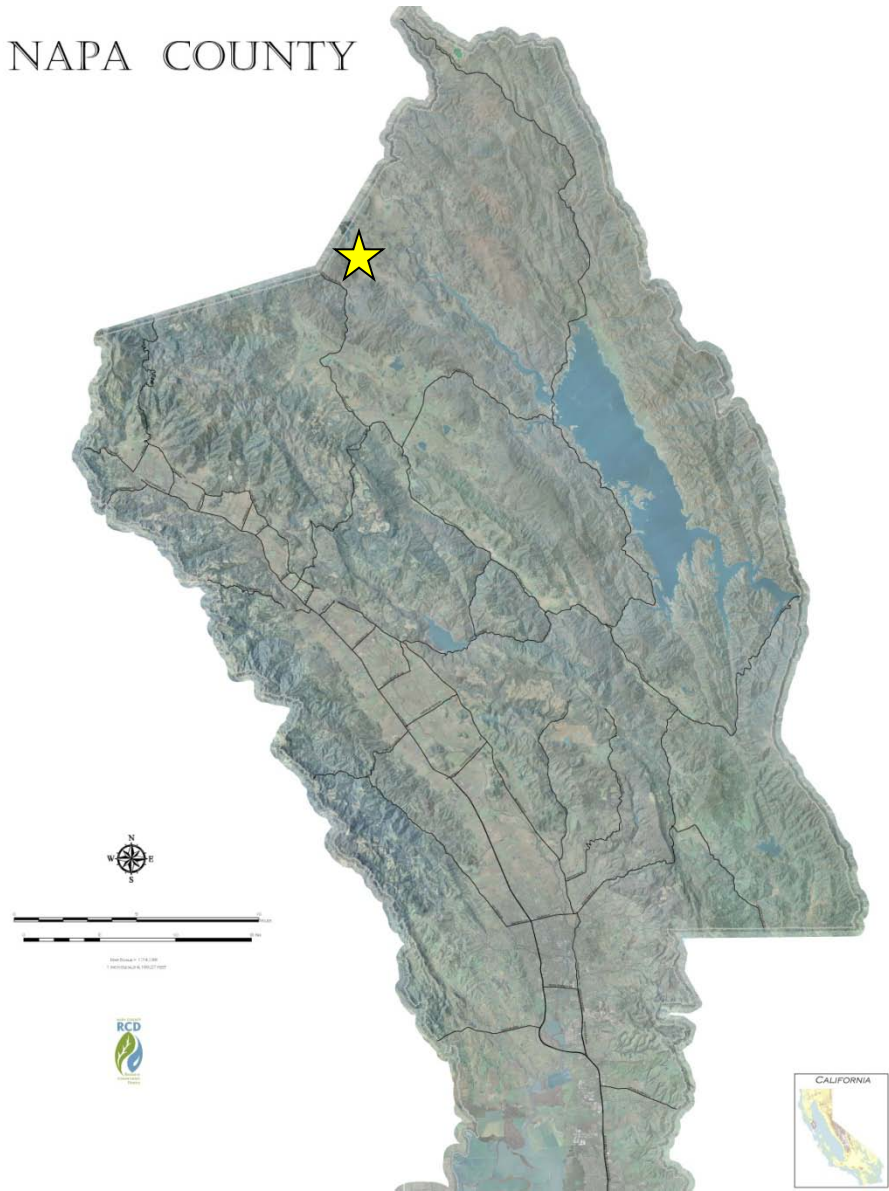


Outcomes – less bank erosion, a living river with room to breathe



NAPA COUNTY

Cleaning Butts Creek Tosha Commendant



Pope Valley Watershed Council



Butts Creek Annual Trash Clean-up

Objective: Reduce trash entering Butts Creek watershed and increase awareness about impacts of illegal dumping

Approach: Yearly volunteer clean-up to remove tires, rims, appliances, furniture and other waste. Disposal provided by Napa County.





Outcomes:

- 100+ cubic yards of trash removed
- Participation of 75+ volunteers and students



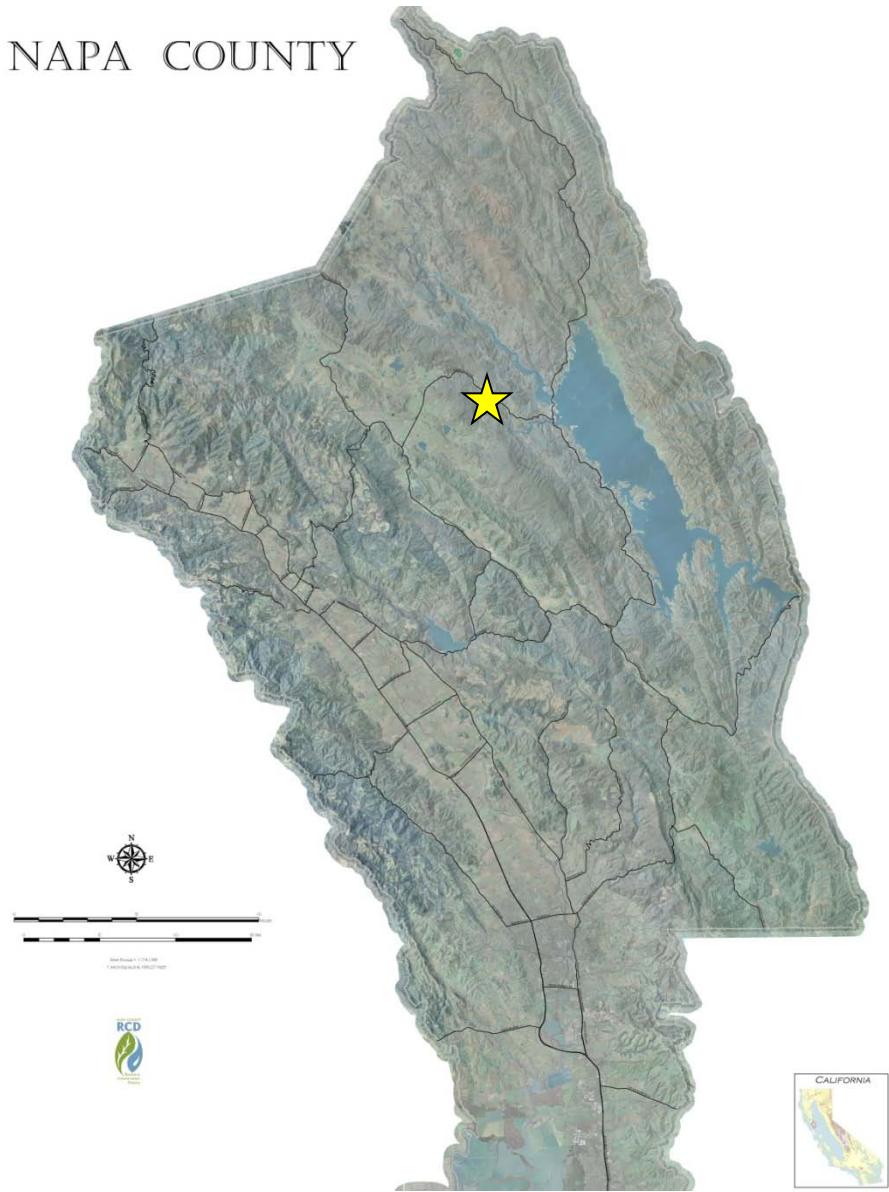
Next steps:

- Increase activities and engagement with Pope Valley School

NAPA COUNTY

Restoring Habitat Along Pope Creek

Claudia Morgan



Tuleyome NAPA



Pope Creek Habitat Restoration

Goal: Replace
invasive plant species
with native grasses
and brushes.

Approach: Work with volunteers to train new stewards of the land, use of dri-water for irrigation, and test mycorrhizal fungi for improved plant growth.



Outcome:

Establish a healthy, sustainable ecosystem, prevent run off, stir public interest in restoration work.



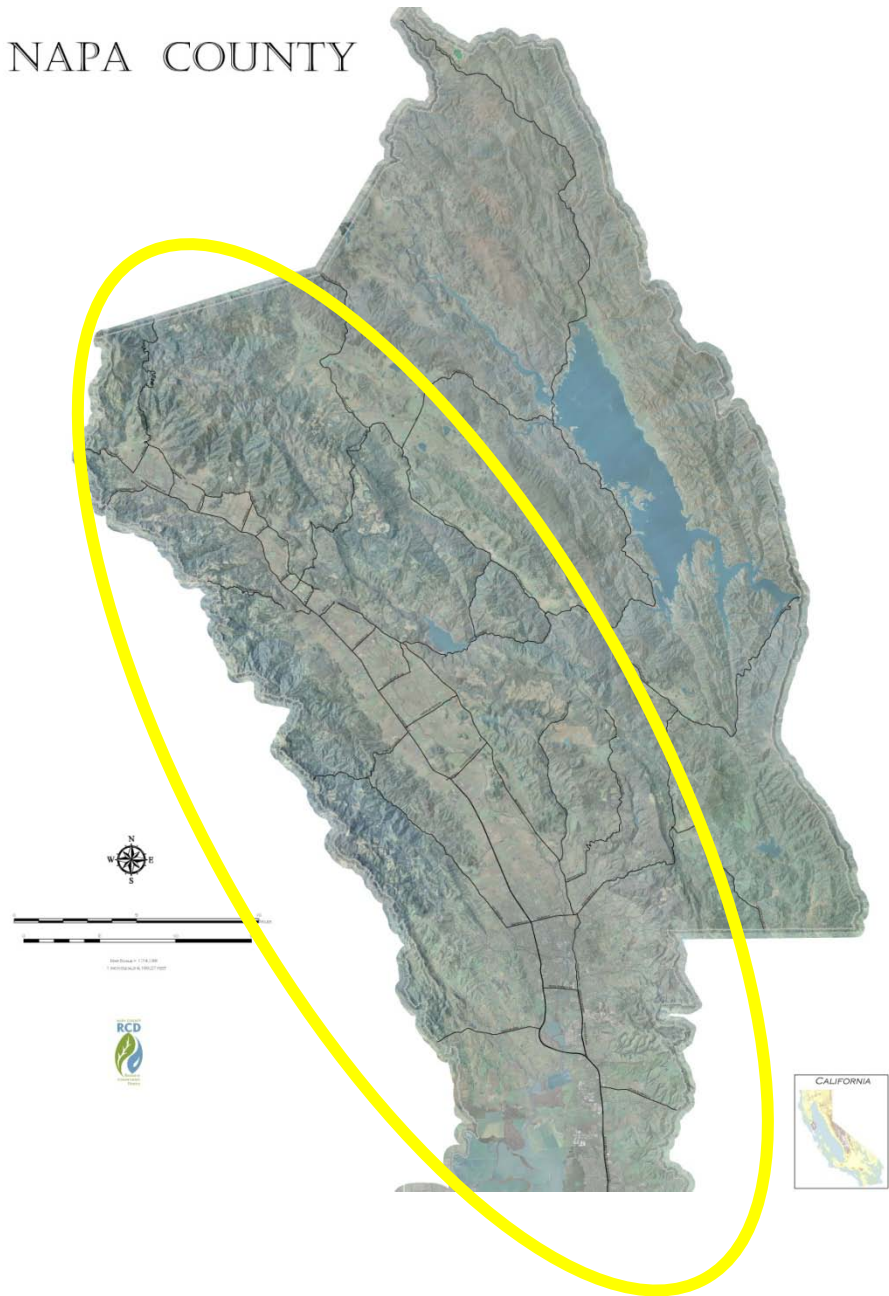
Next steps:

Continue removing re-growth of invasive plants, deplete seed-bank, monitor new plantings, install interpretive signage.

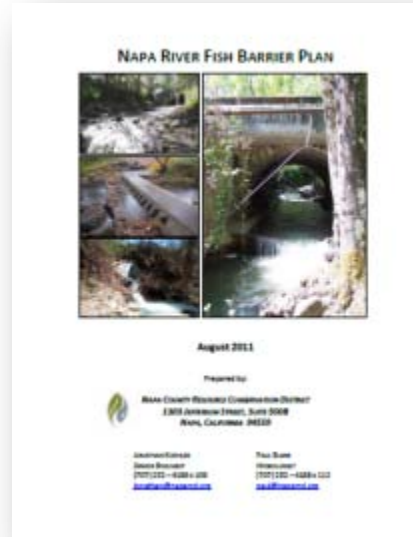
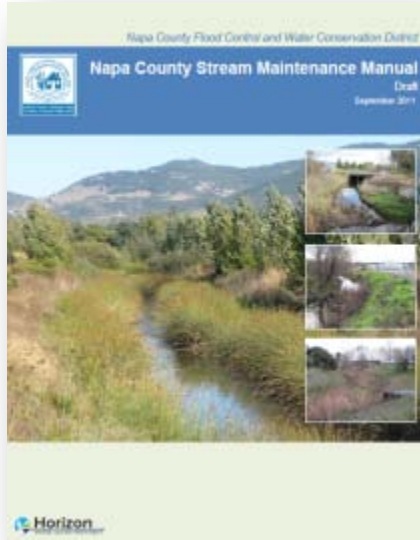
NAPA COUNTY

Removing Fish Barriers in the Napa Valley

Shaun Horne



Napa River Watershed Fish Barriers



Zinfandel Bridge



Calistoga Foot Bridge



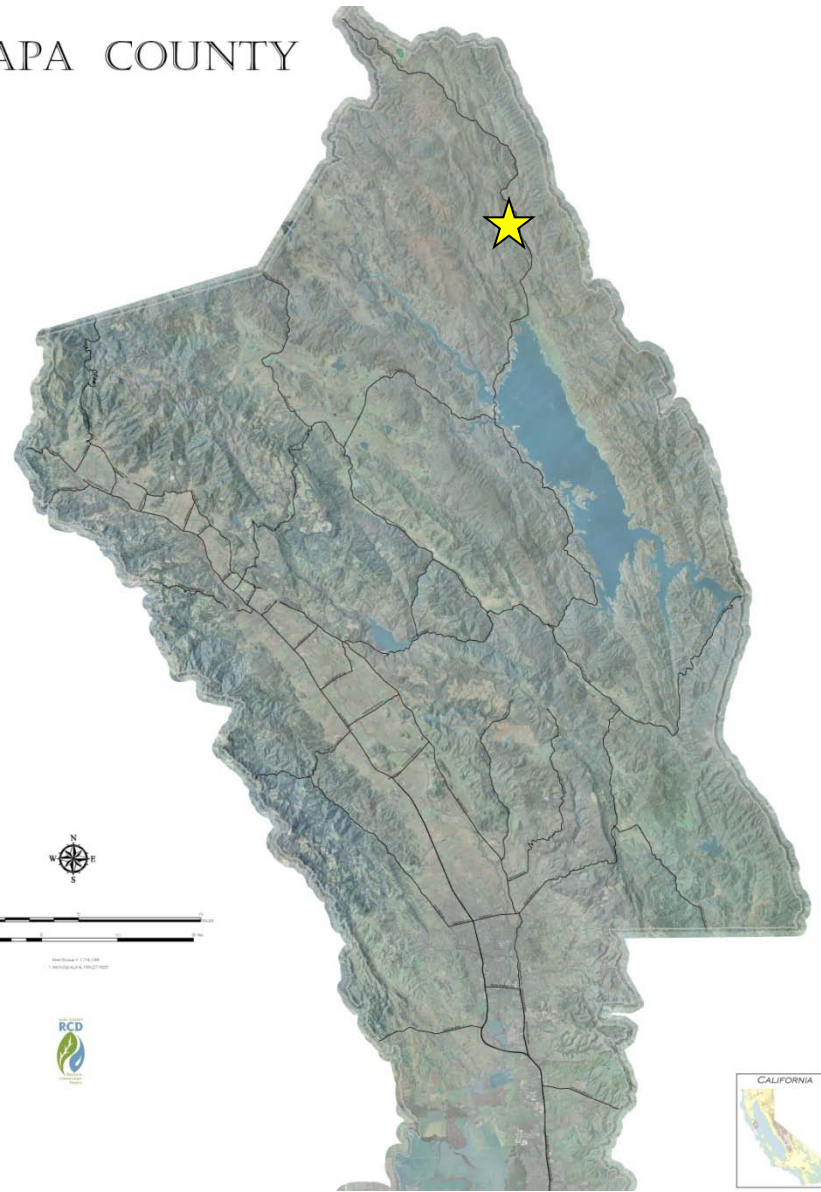
Murphy Creek



Wing Canyon Creek



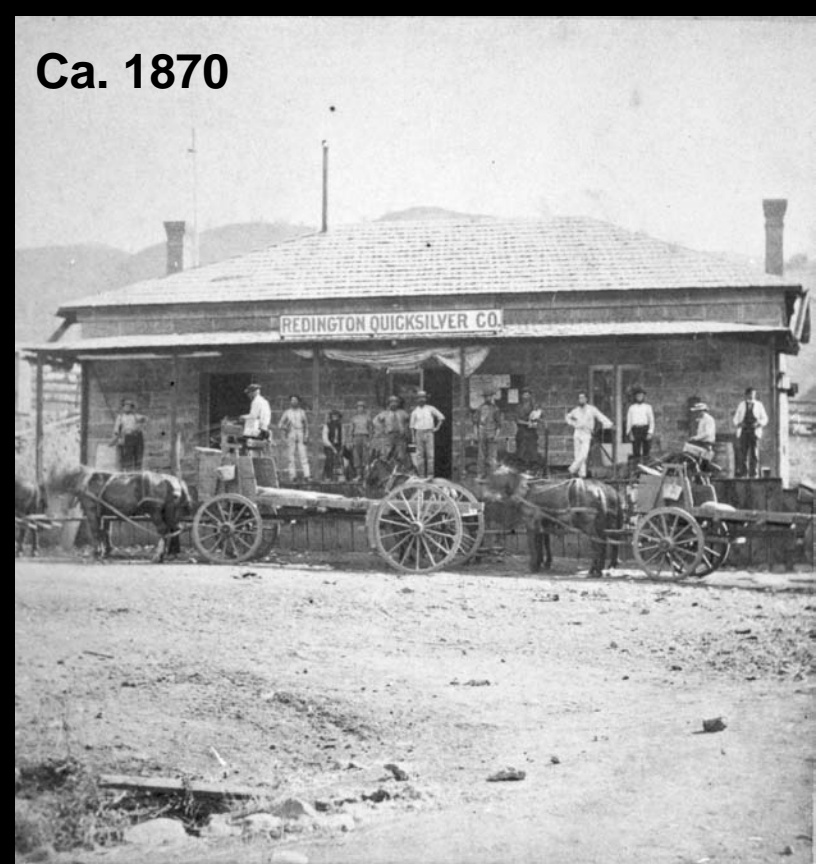
NAPA COUNTY



Restoring Eticuera Creek Watershed

Leslie Scott

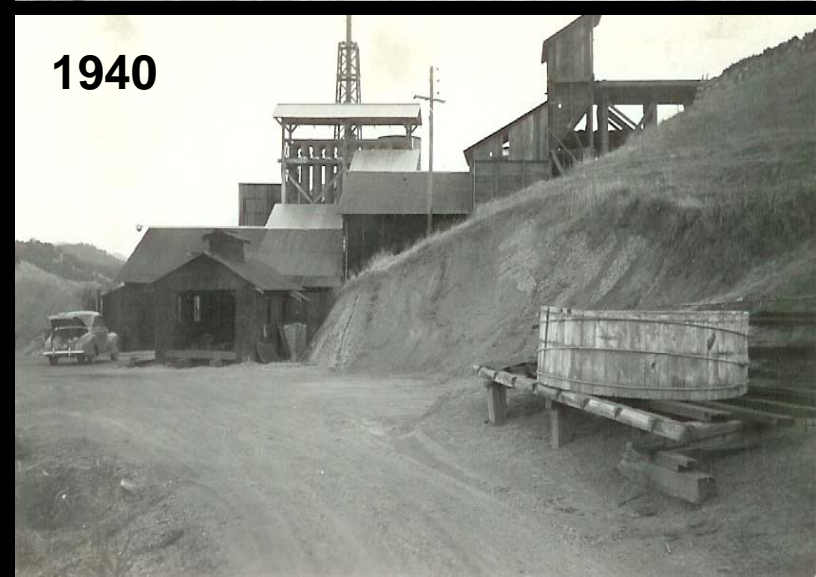
Ca. 1870



1970

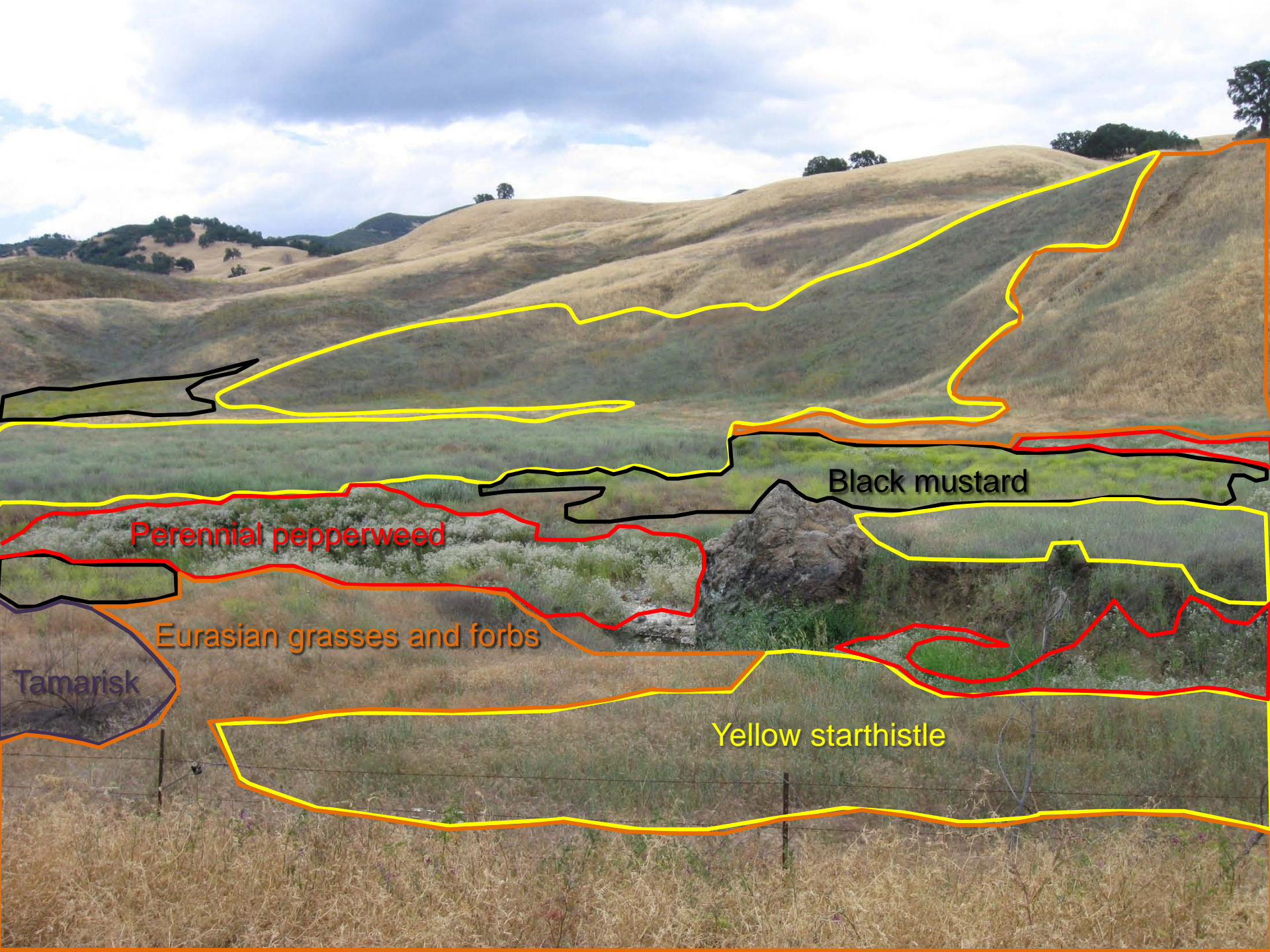


1940



2011





Perennial pepperweed

Eurasian grasses and forbs

Tamarisk

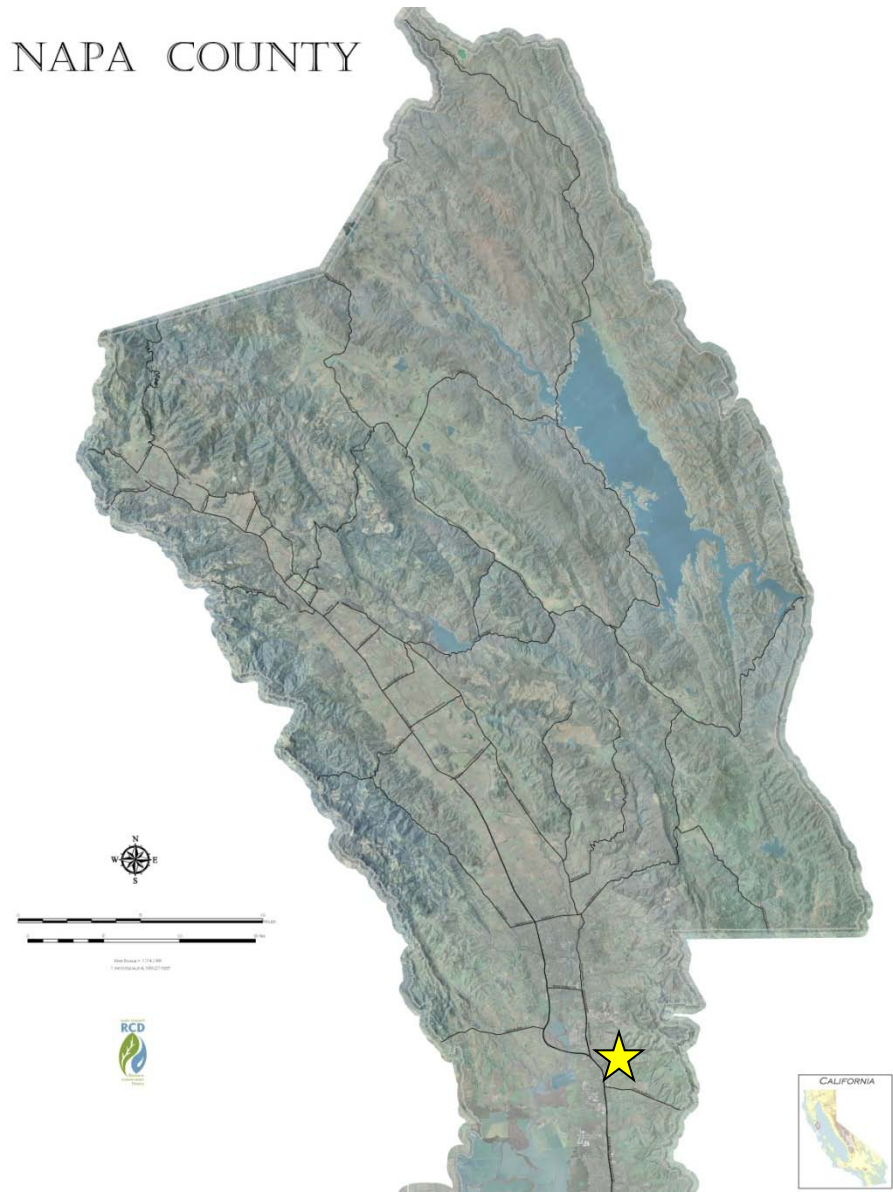
Black mustard

Yellow starthistle

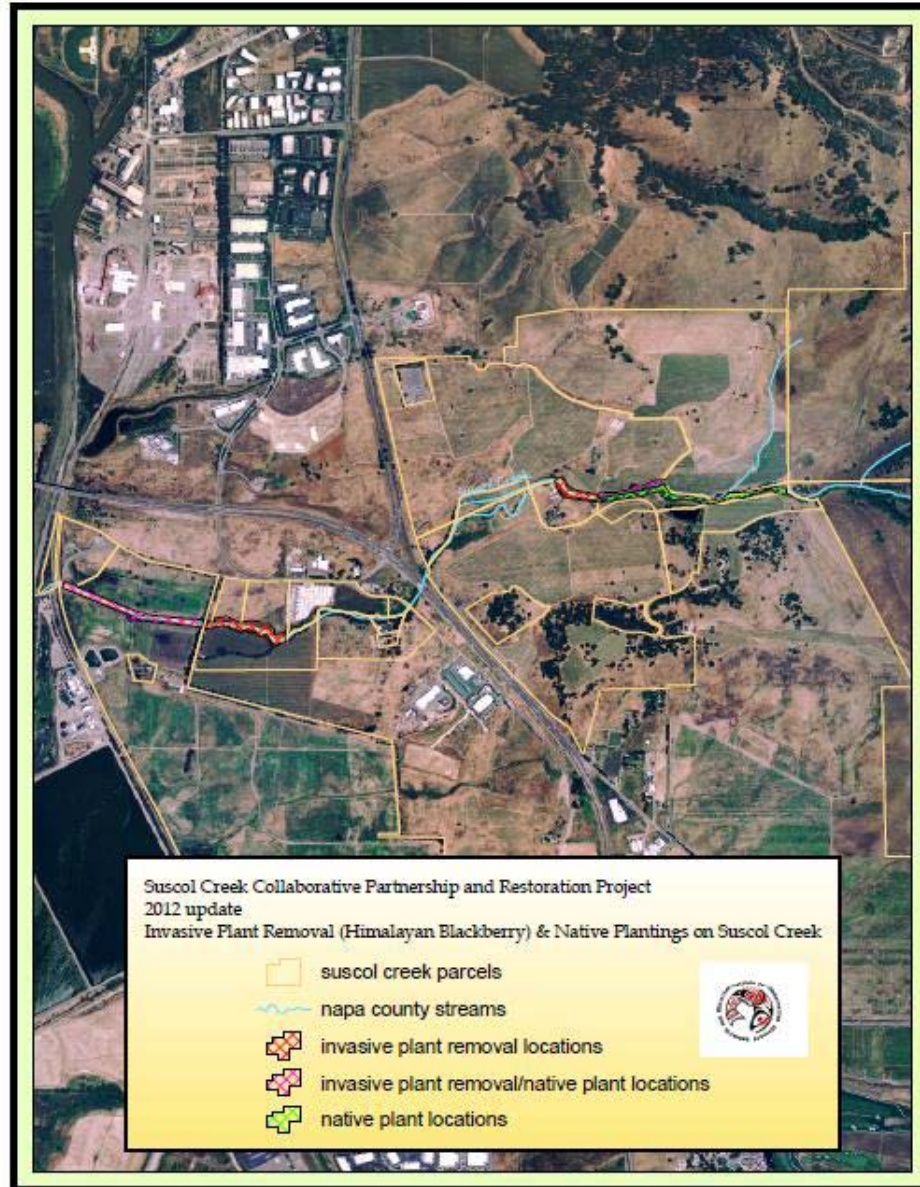
NAPA COUNTY

Coordinating Stewardship
Suscol Creek

Chris Malan



The Institute for Conservation Advocacy Research and Education ICARE



Protect, Conserve & Restore Fresh Water Resources



Suscol Creek Stewardship



HBB removal 400 ft. long x 75 ft. wide
&
native plantings site 2012-2014



HBB causing aggradation forming new
channel

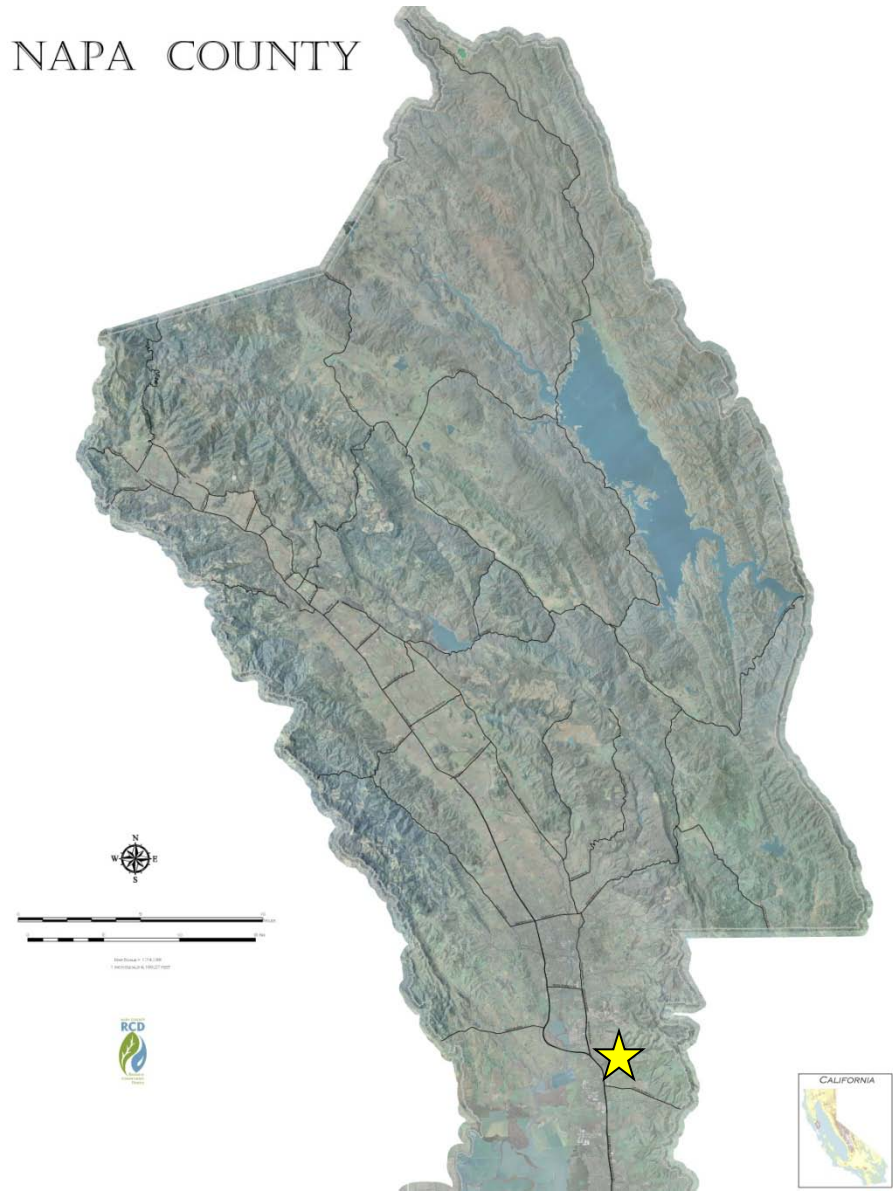


Suscol Creek invaded by non-native HBB

Revegetating Suscol Creek

Darcy Aston

NAPA COUNTY



Napa Sanitation District



Suscol Creek Revegetation Project

- Replace Himalayan blackberry with native plants
- Involve local students in revegetation efforts.



Measurable outcomes:

1. Removal of invasive blackberry and revegetation with native plants on 1.9 acres of creek bank.
2. Involvement of 105 students from Vista 360 Elementary School.



Next steps:

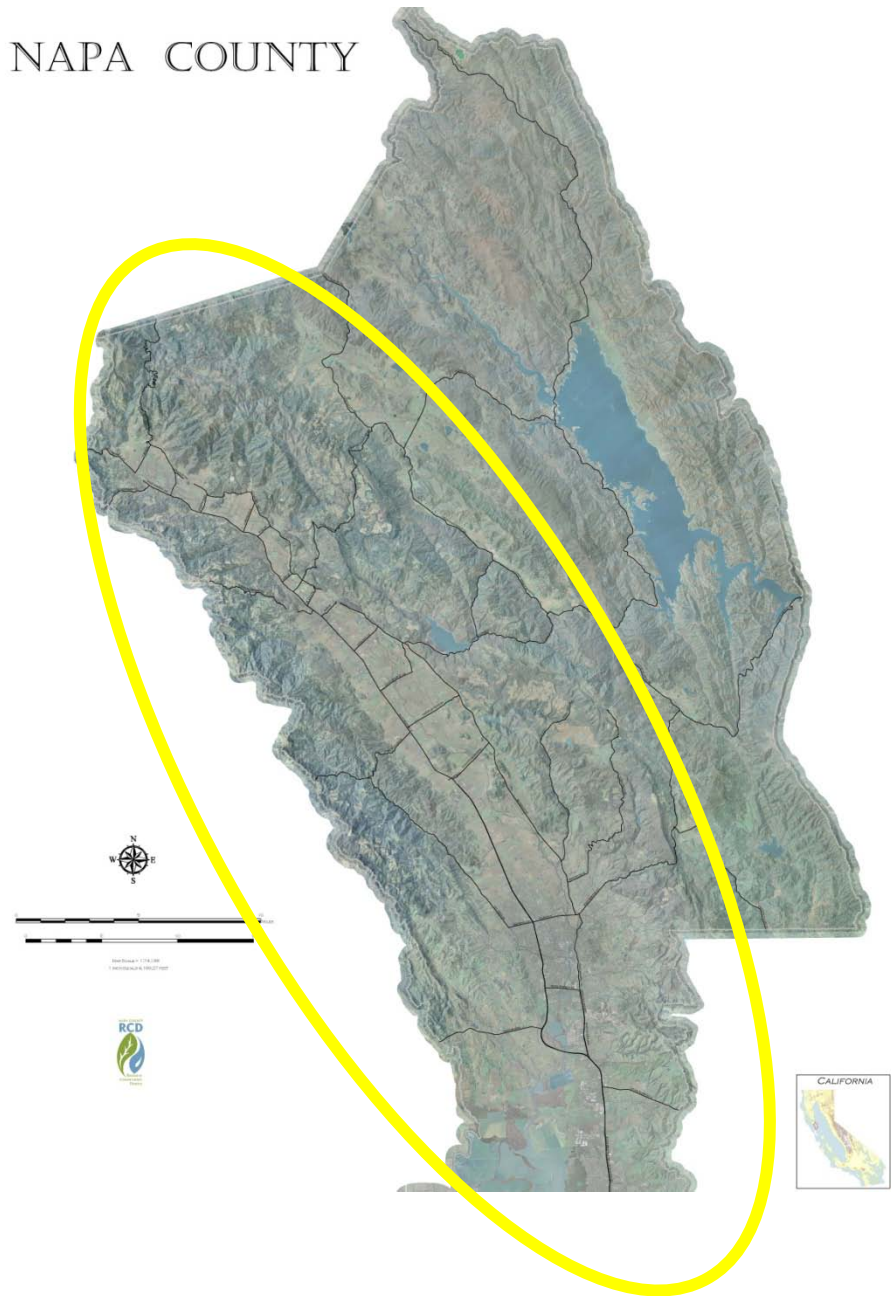
Involve students in monitoring and maintenance.

Initiate restoration on Sheehy Creek.

NAPA COUNTY

Reducing the Impact of Roads on Water Quality

Bill Birmingham



Addressing Sediment from Roads in Napa County

Road-related erosion is a significant source of sediment associated with land-use in the Napa River watershed and perhaps the most cost effective source to treat



Paved roads



Stream crossing failure



Unpaved roads

Before treatment



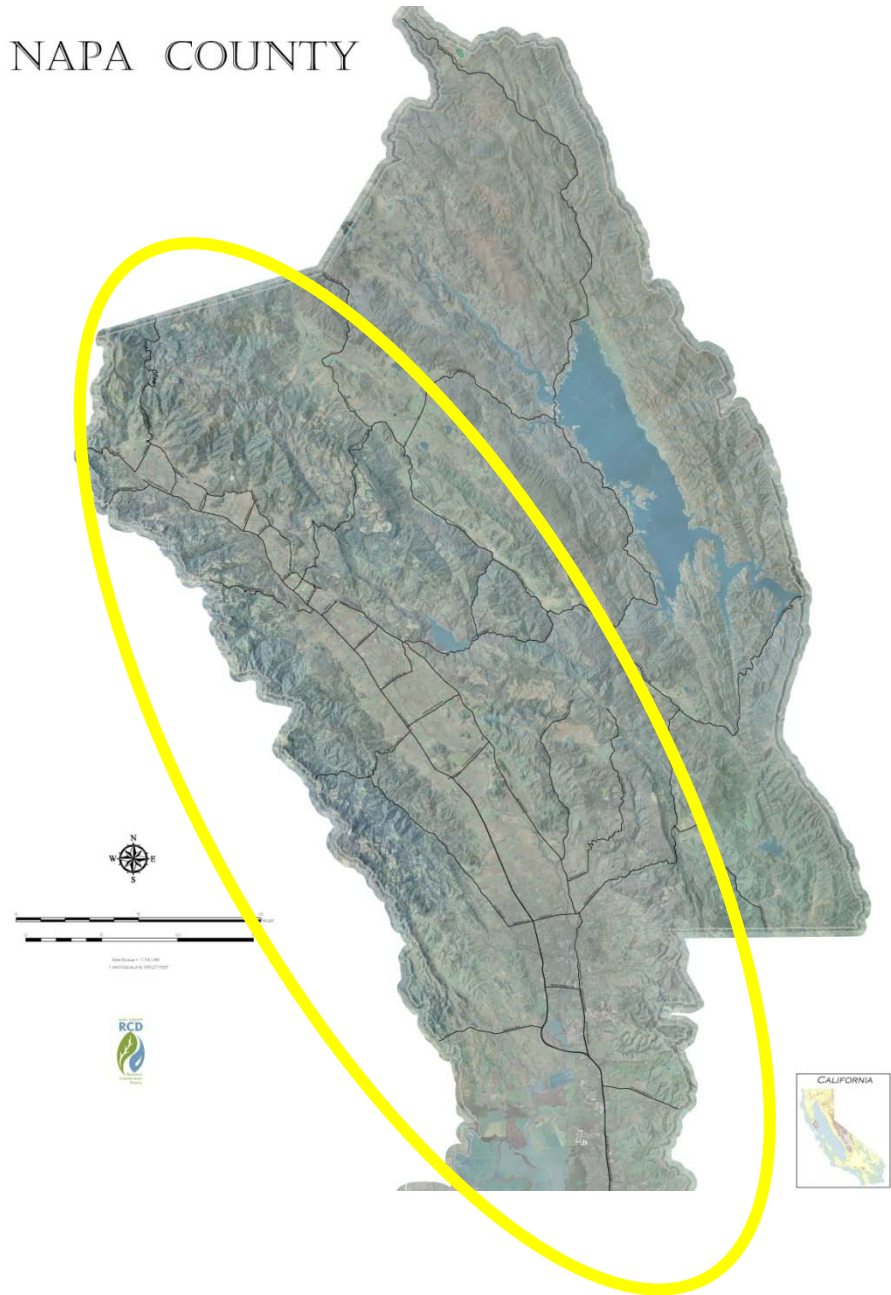
After treatment



Monitoring Sediment Movement in the Napa River Watershed

Bill Birmingham

NAPA COUNTY

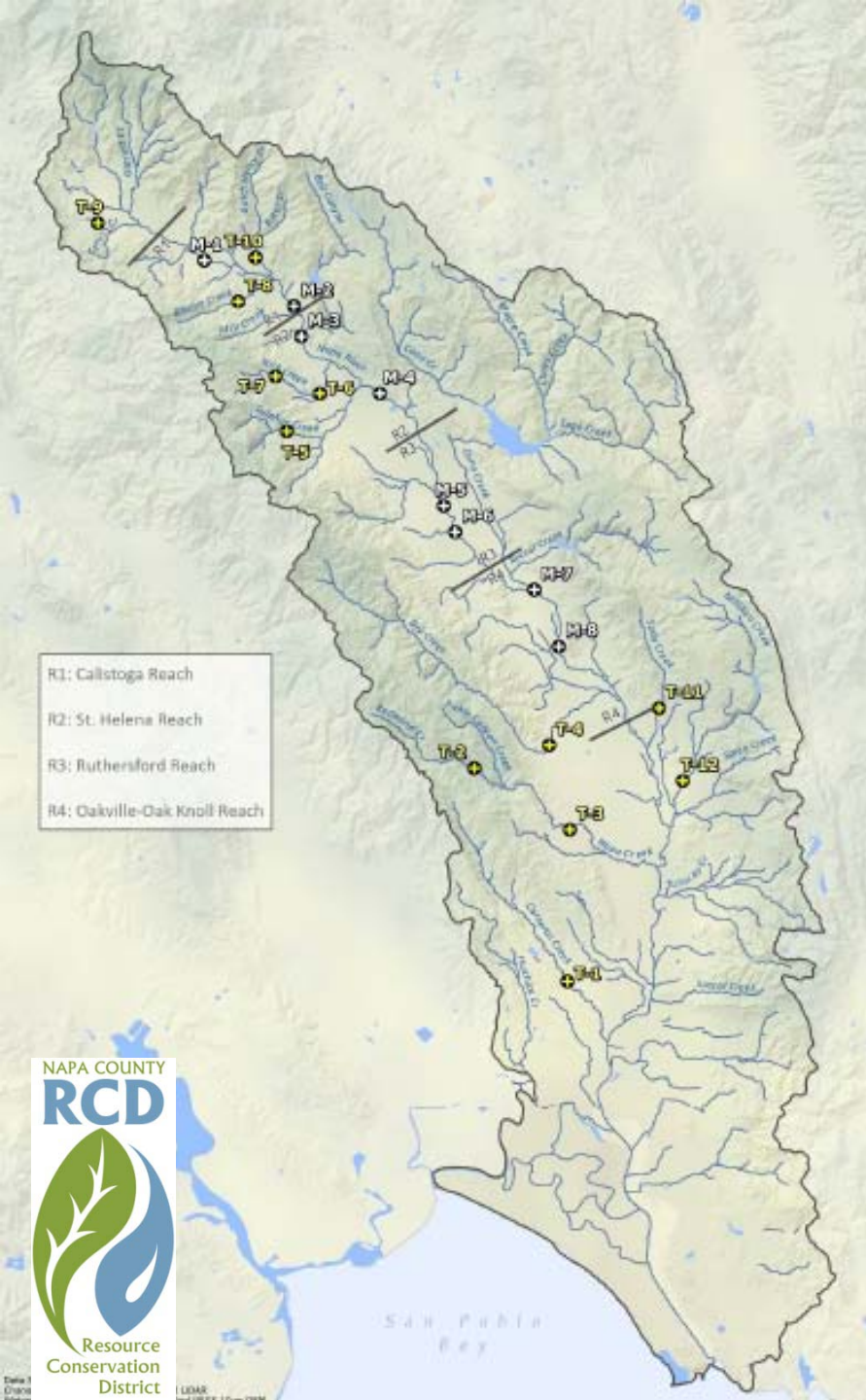


Is the amount, distribution and movement of fine sediment in our watershed suitable to support healthy runs of Steelhead and Chinook Salmon?



Monitoring Sediment

- Gravel permeability
- Riverbed scour
- 20 monitoring reaches in the Napa River watershed.
- Minimum of 500 data points collected per reach



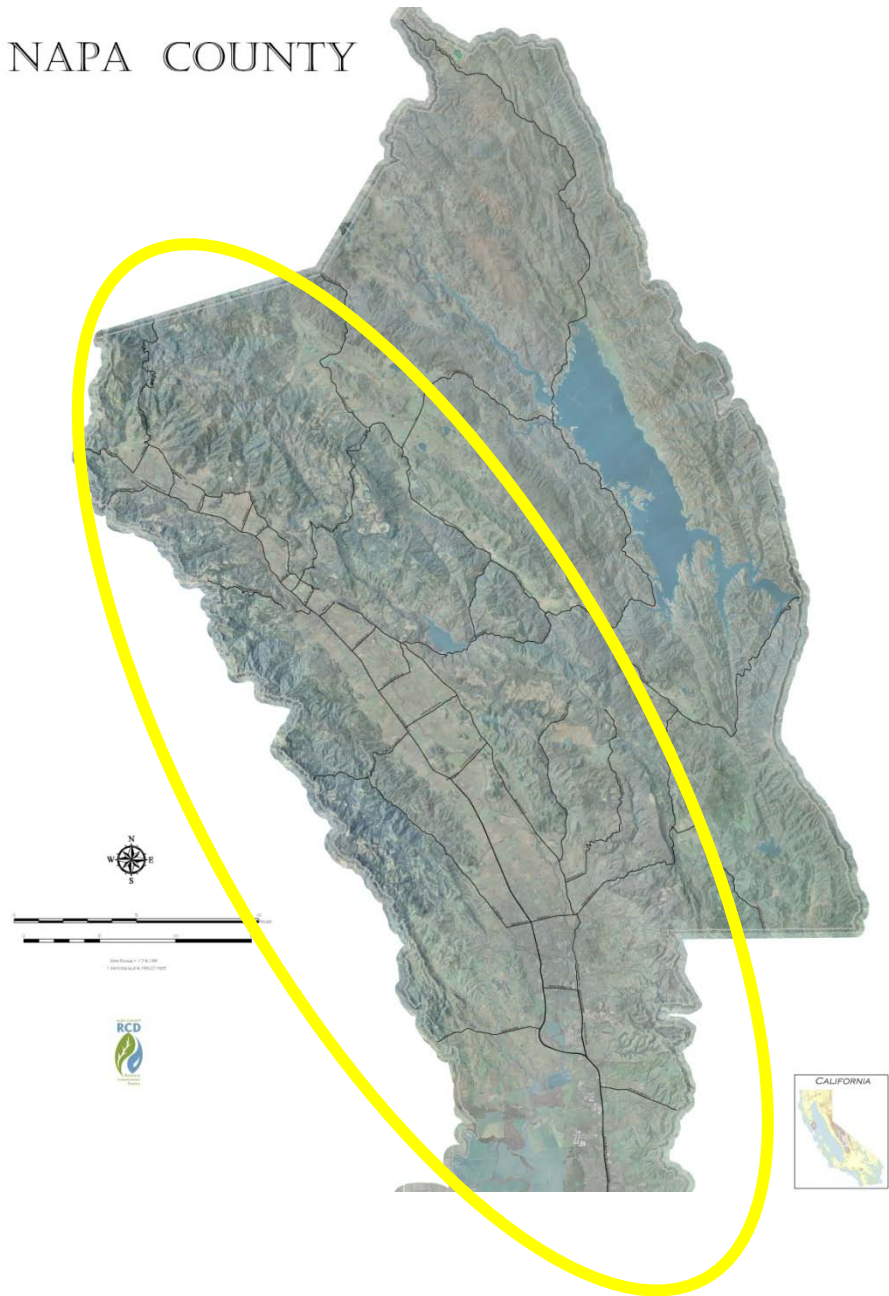


One year of
data collected.
Results still
being analyzed.

NAPA COUNTY

Monitoring Fish in the Napa River Watershed

Leigh Sharp



Fisheries Monitoring

- Nine years of salmon spawner surveys
- Seven years of salmon genetics sampling
- Five years of out-migrant smolt monitoring in the Napa River
- One year of tracking migration through remote sensing





What have we learned?



- Very few exotic fish species in freshwater reaches.
- Native fish assemblage is almost entirely intact.
- High fish species diversity relative to other streams in the region.

- Adult Chinook salmon returns are highly variable from year to year.
- The Napa River produced Chinook salmon smolts in every year monitored.

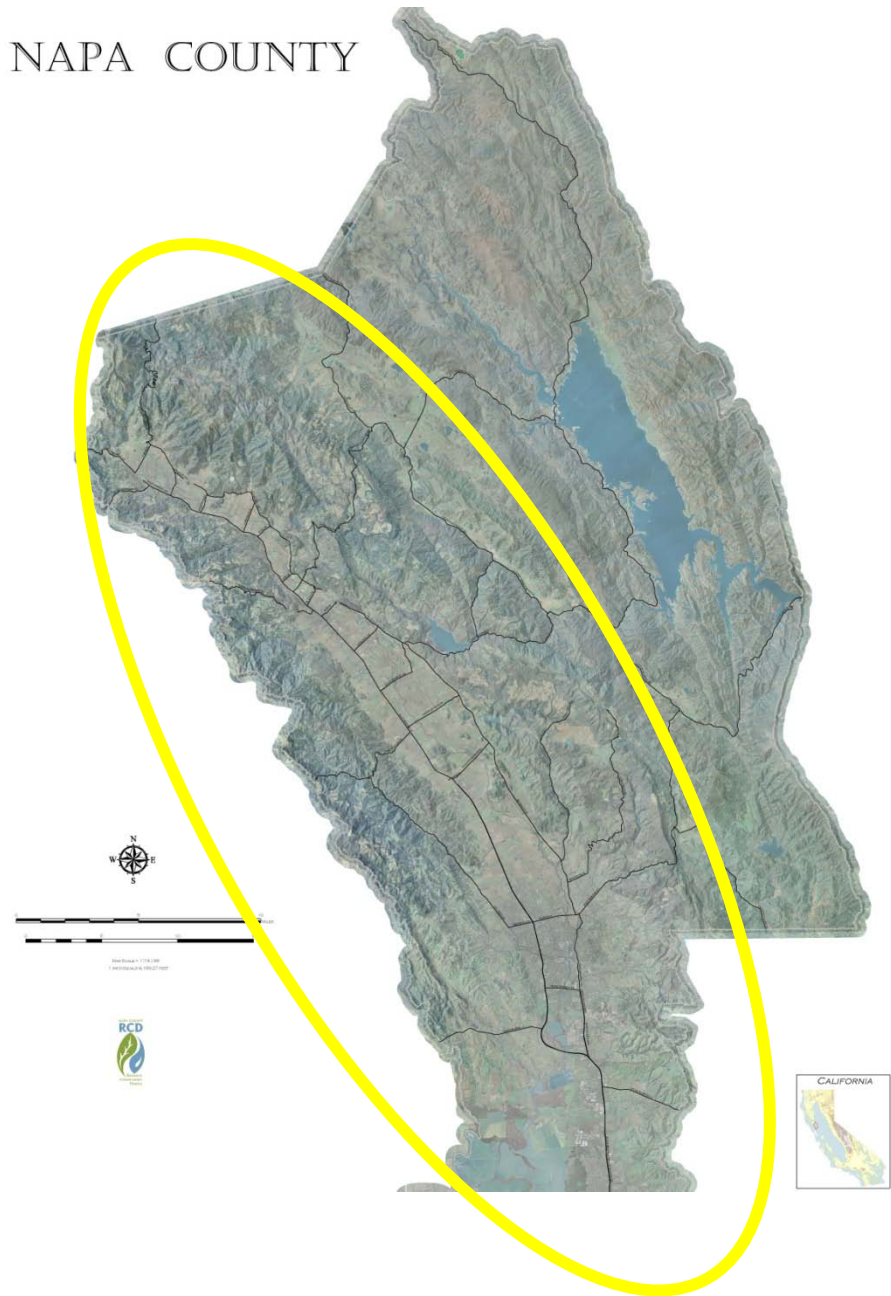


- Steelhead smolt production is fairly consistent from year to year.
- Steelhead smolts tend to be large (>150mm).
- Steelhead smolt survival to the ocean is relatively high.

NAPA COUNTY

Mobilizing Volunteers to Support Fish

Wayne Ryan



Napa River Steelhead

Works with biologists to recruit, train, and organizes reliable volunteer crew

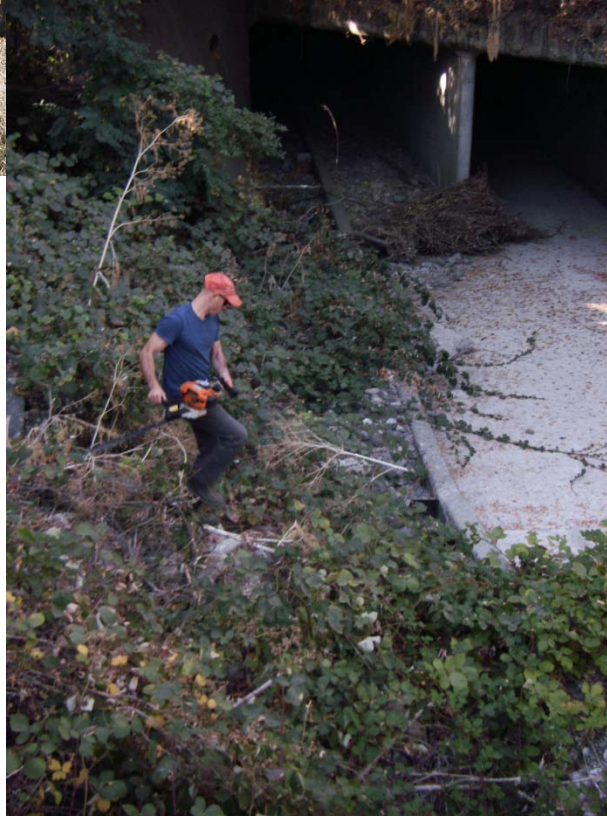
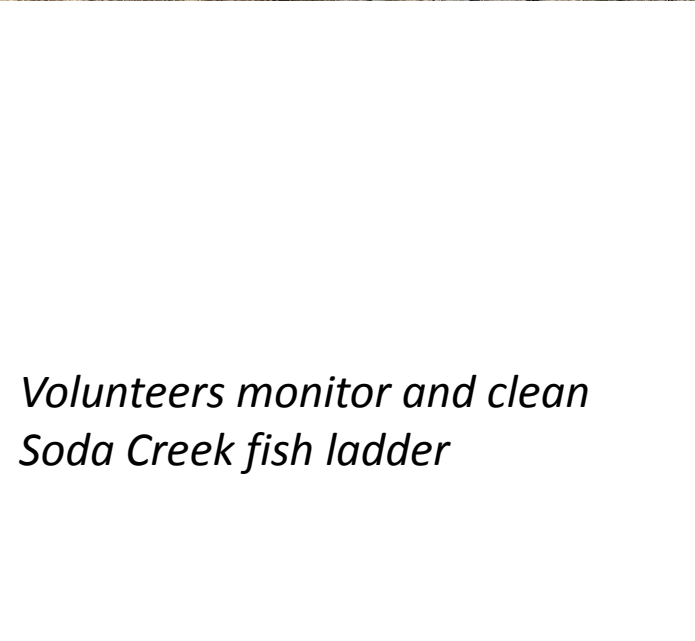


Volunteers removing fish passage barrier from Wing Canyon Creek





Volunteers constructing and installing Napa River rotary screw trap

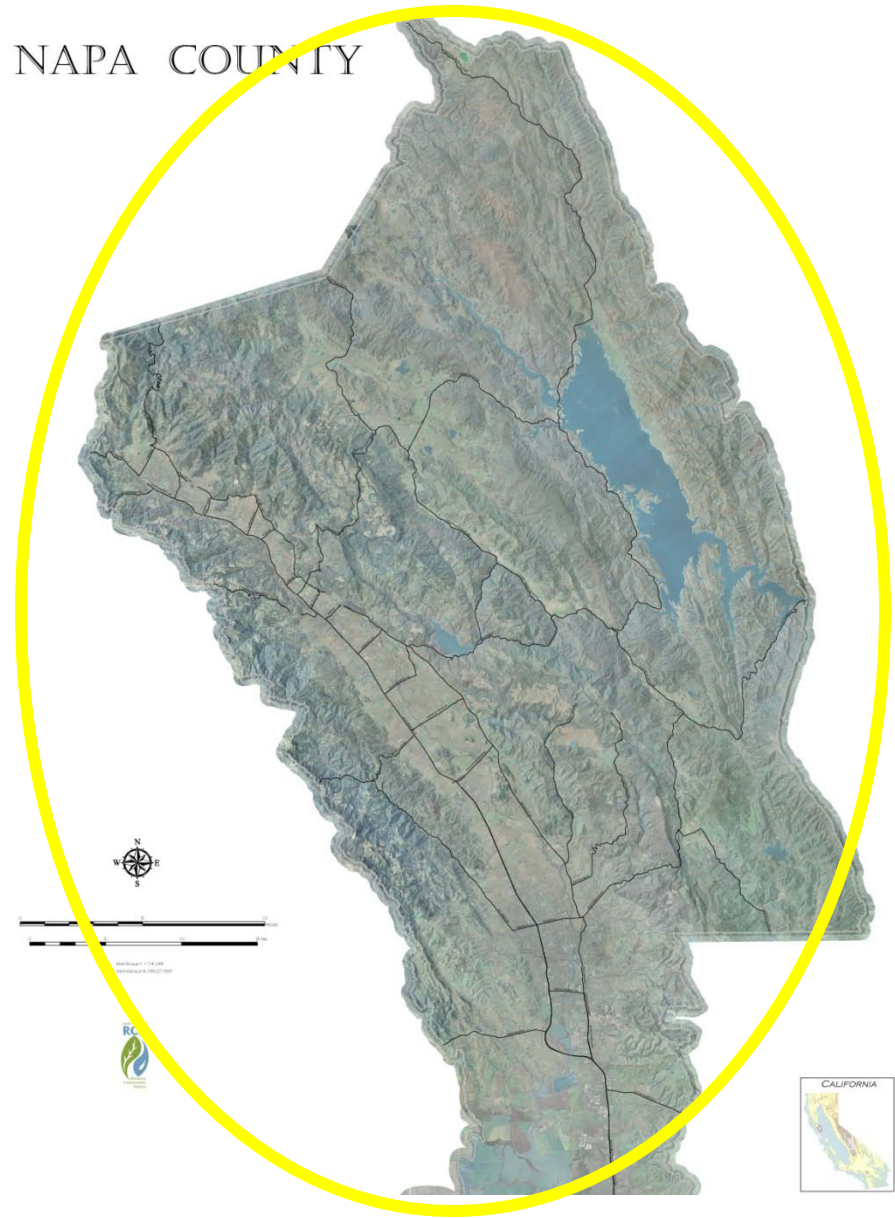


Volunteers monitor and clean Soda Creek fish ladder

Organizing Waterways Keepers

Margret Smetana

NAPA COUNTY



Waterways Keepers



Goal

To protect the habitat, health and natural beauty of the Valley's river, streams & wetlands by removing the human impacts of plastic litter and other debris.

Scope/Approach

- Committed to one full year
- Chose the same 2-3 "hot spots" to clear each month
- Assess viability of a year-round sustained, volunteer effort to augment local funded clean-ups



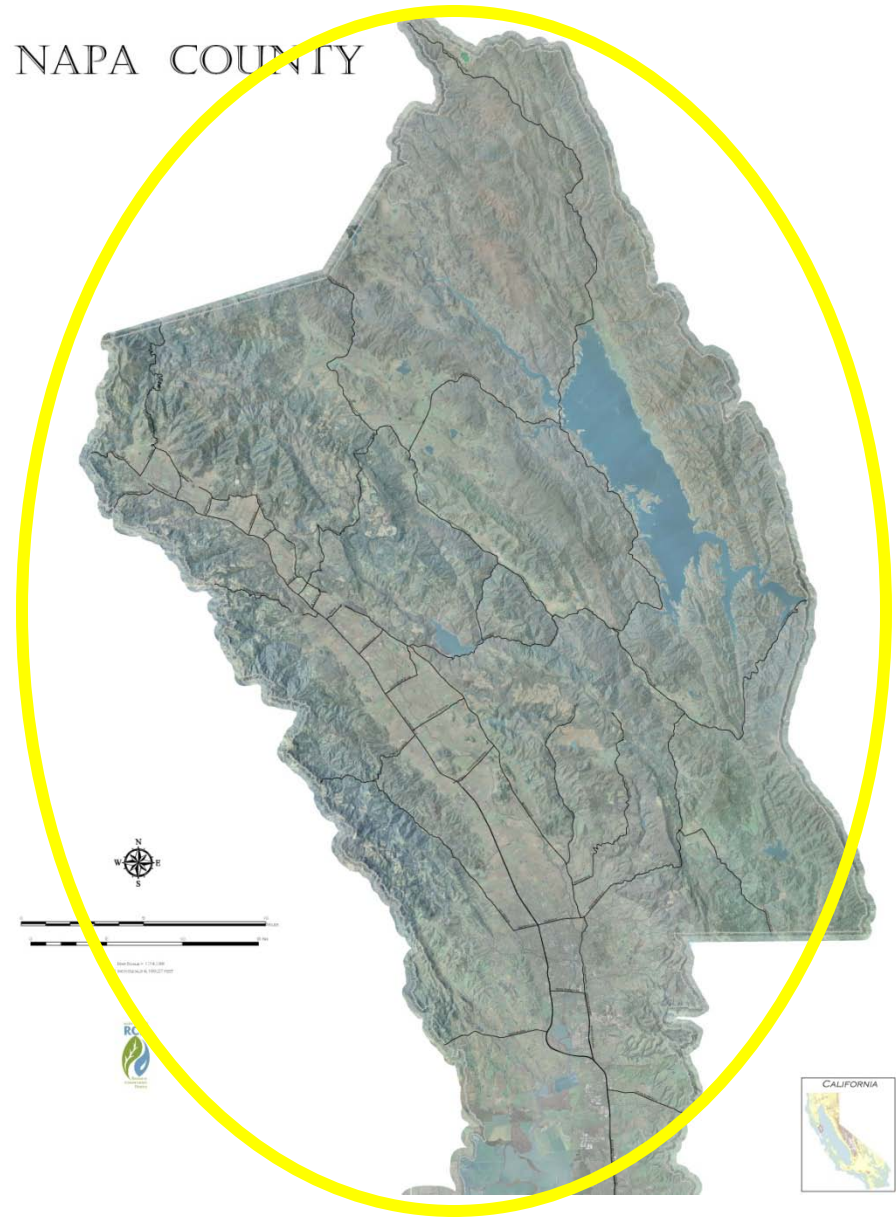
Project Outcomes

- Partnerships for volunteerism between CanDo, The Flood Control District, RCD, and Vintage High
 - Awareness has promoted advocacy including presentations to the Napa City Council & Board of Supervisors
 - Value of small efforts by many bring hope and enthusiasm to helpers of all age groups. Orig. group grew x 7
- ### **Stewarding Resources for the Future**
- Salvador Creek is now clean and will be maintained as an ongoing Vintage High School student project
 - Visible positive results at The Oxbow, Napa River at Riverpark and points south to the wetlands

Providing Funding for Environmental Education Field Trips

Stephanie
Turnipseed

NAPA COUNTY



Environmental Education Coalition of Napa County (EECNC)



Objective:

To connect members of our community, particularly youth, with the local environment.

To accomplish this, EECNC:

- Puts on the annual Earth Day festival in downtown Napa.
- EECNC raises funds through the annual Earth Day event to pay for buses to take students on environmental field trips in Napa County.

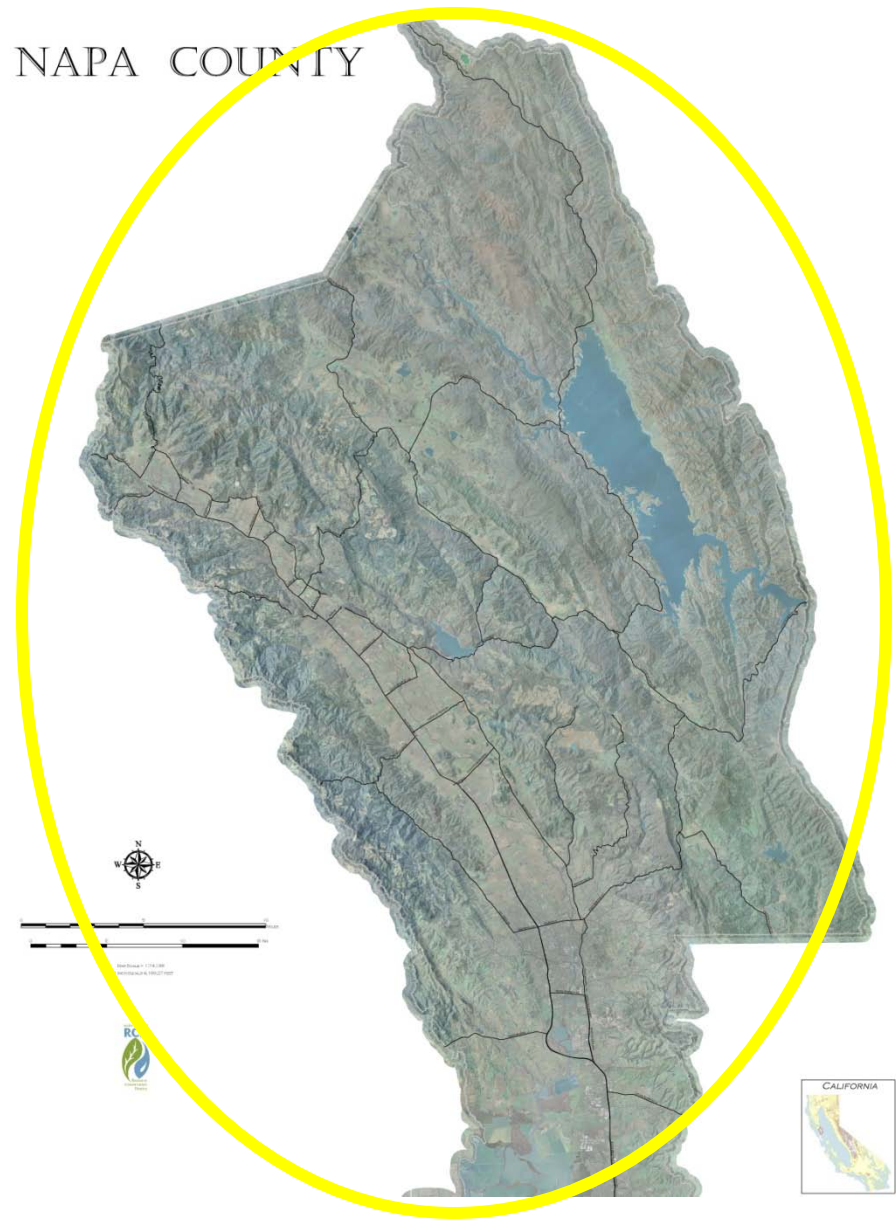


- During the 2011-13 school years, EECNC funded 30 field trips
- Locations: Lake Berryessa, Scientopia, Connolly Ranch, Suscol Creek, Selby Creek, Bothe Park, Lake Hennessy, NV Museum, Eco Reserve
- Activities: Trout release, ecological restoration, recycling education, and general env. education
- EECNC plans to offer this field trip bus grant money to Napa County teachers every year.

NAPA COUNTY

Providing Outdoor Education and Stewardship Projects for Kids

Stephanie Turnipseed





Objective- Enhance student knowledge of the local environment and demonstrate how natural resources can be managed in a way that benefits agriculture and the environment

Program Structure:

- Elementary- 1 to 2 classroom visits and 1 field experience focusing on basic ecology concepts
- Middle- 1 to 2 classroom visits and 2 field experiences focusing on ecosystems and botany
- High- 1 to 2 classroom visits and 3 to 5 field experiences focusing on local ecology, resource management and ag/env. careers



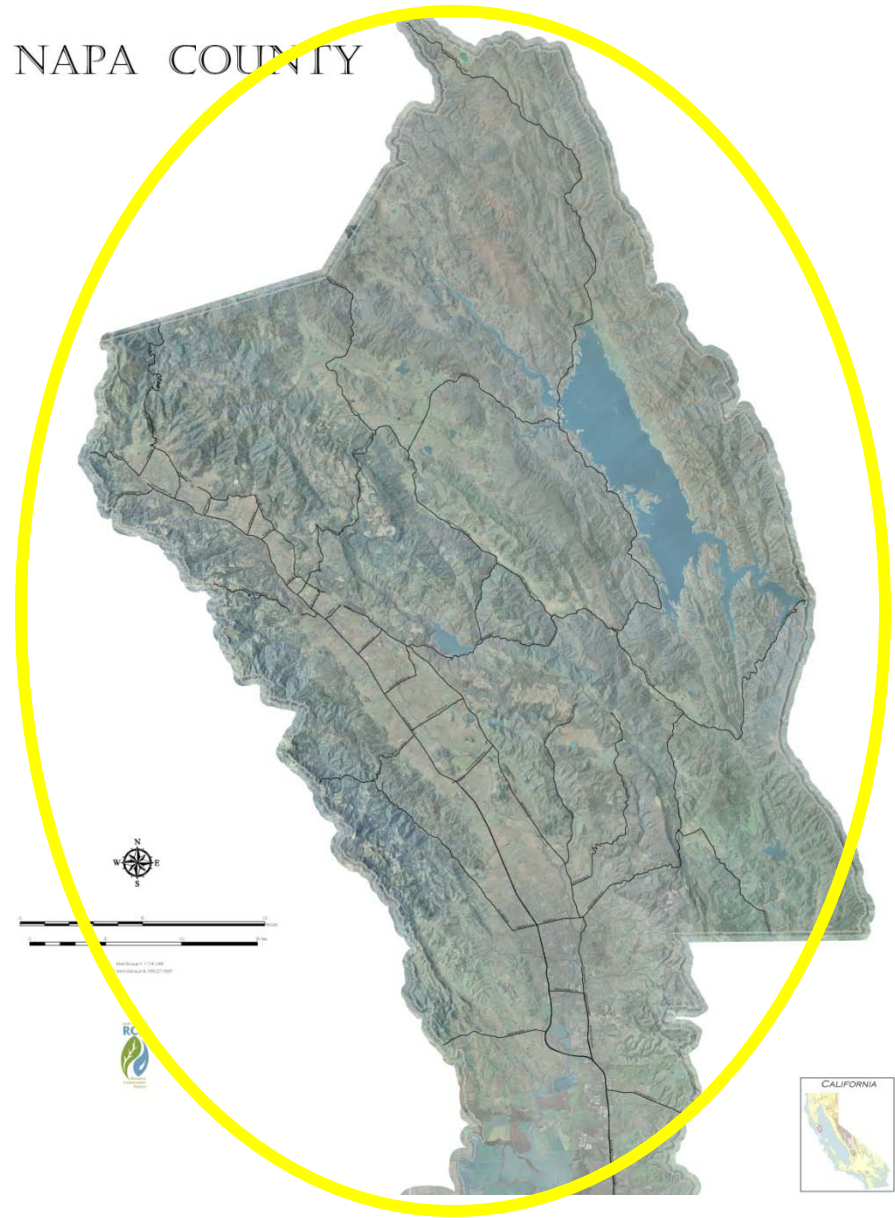
- Field activities include:
 - planting native vegetation
 - removing invasive plant species
 - installing drip irrigation
 - building bird boxes
 - stenciling storm drains
 - removing litter
 - hands-on ecology lessons
- Each school year, the RCD aims to serve 40 or more classes or 1,000+ students!



Re-Oaking Napa County

Bernhard Krevet

NAPA COUNTY



Acorns to Oaks

Partnerships for Re-Oaking the Napa Valley





Acorns to Oaks

Project Objectives:

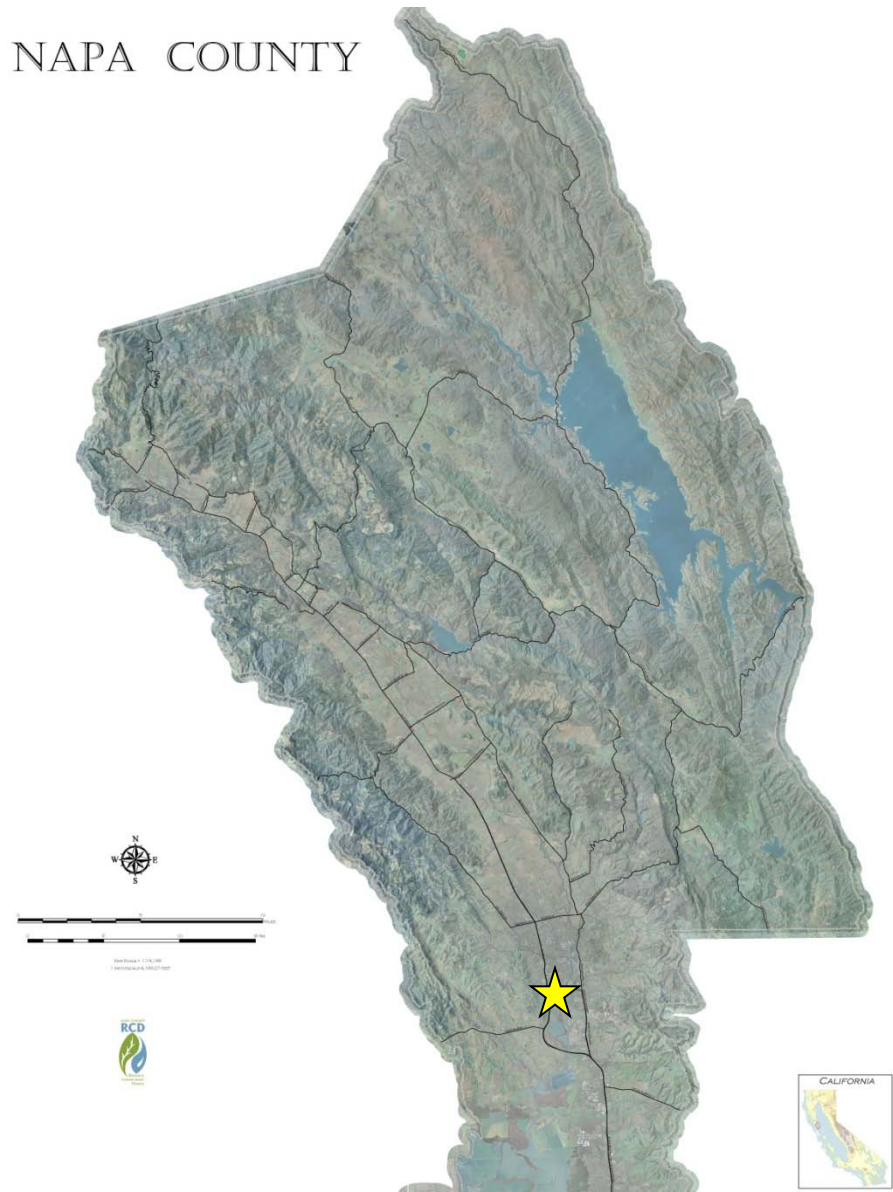
- Improve wildlife habitat and ecological function of the Napa Valley by planting more oaks;
- Educate the public about the plight and the importance of our oak trees;
- Give kids hands-on learning time and the opportunity to make lasting connections with nature through planting trees.



Building Environmental Awareness at River School

Louann Talbert

NAPA COUNTY

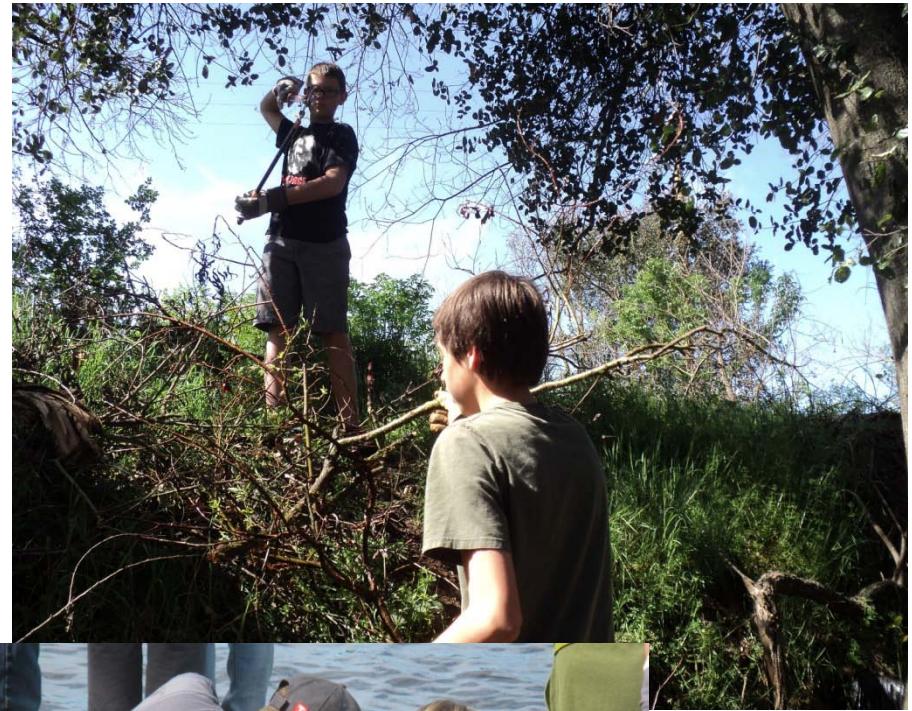


River School Environmental Stewards -



Students created their own problem statement as their goal: How can we, as curious 7th and 8th grade Life Science students, learn enough information about our local fish to become good stewards and protect our waterways?

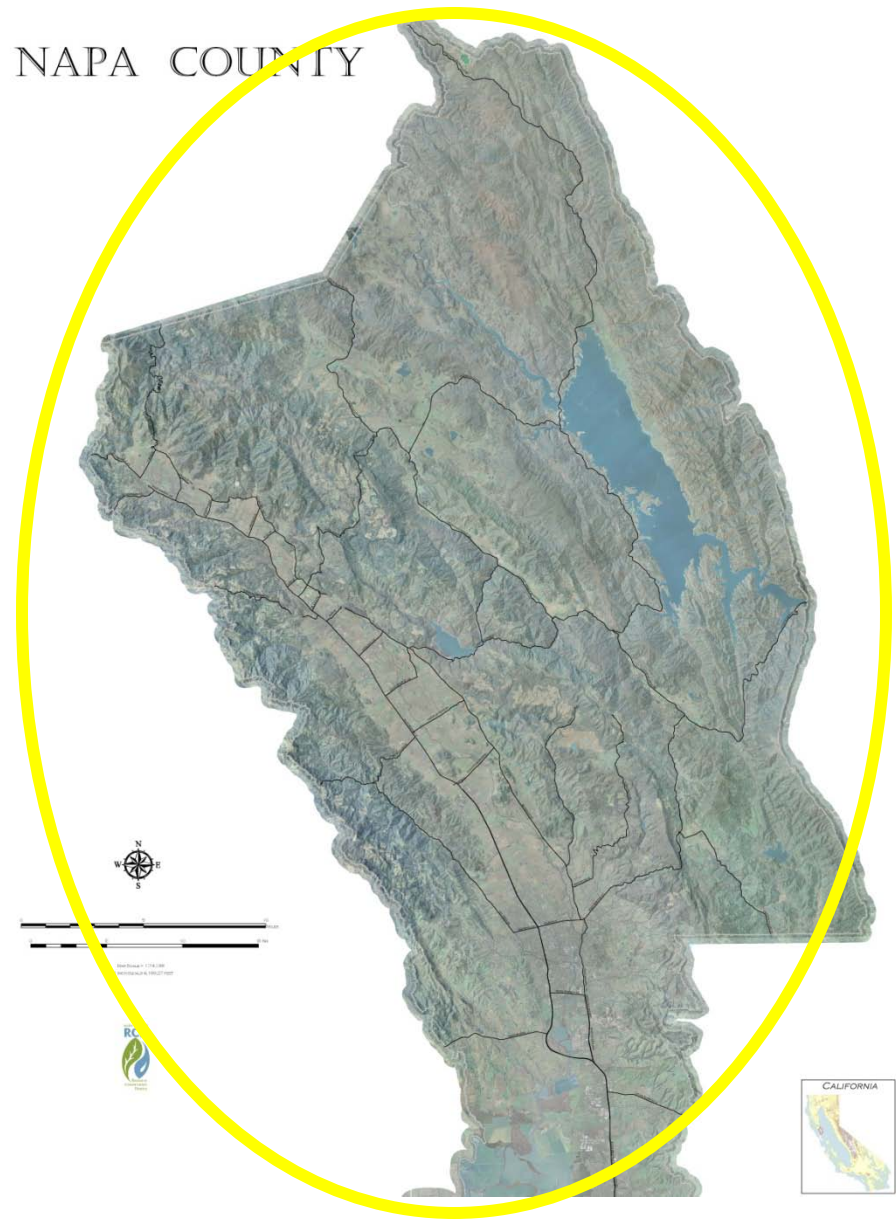
Project-Based Learning strategies were used by groups to collaborate on 13 different action projects, impacting our local waterways today and encouraging a sense of environmental stewardship in students for the future. Projects ranged from fundraising lemonade stands and bake sales (earning over \$300 for FONR, the Marine Mammal Center and the RCD) to disseminating information to local citizens to clean-up projects at Kennedy Park, Playground Fantastico, creeks, the river and ocean.



NAPA COUNTY

Promoting Fish Friendly Farming

Shari Gardner



CALIFORNIA LAND STEWARDSHIP INSTITUTE

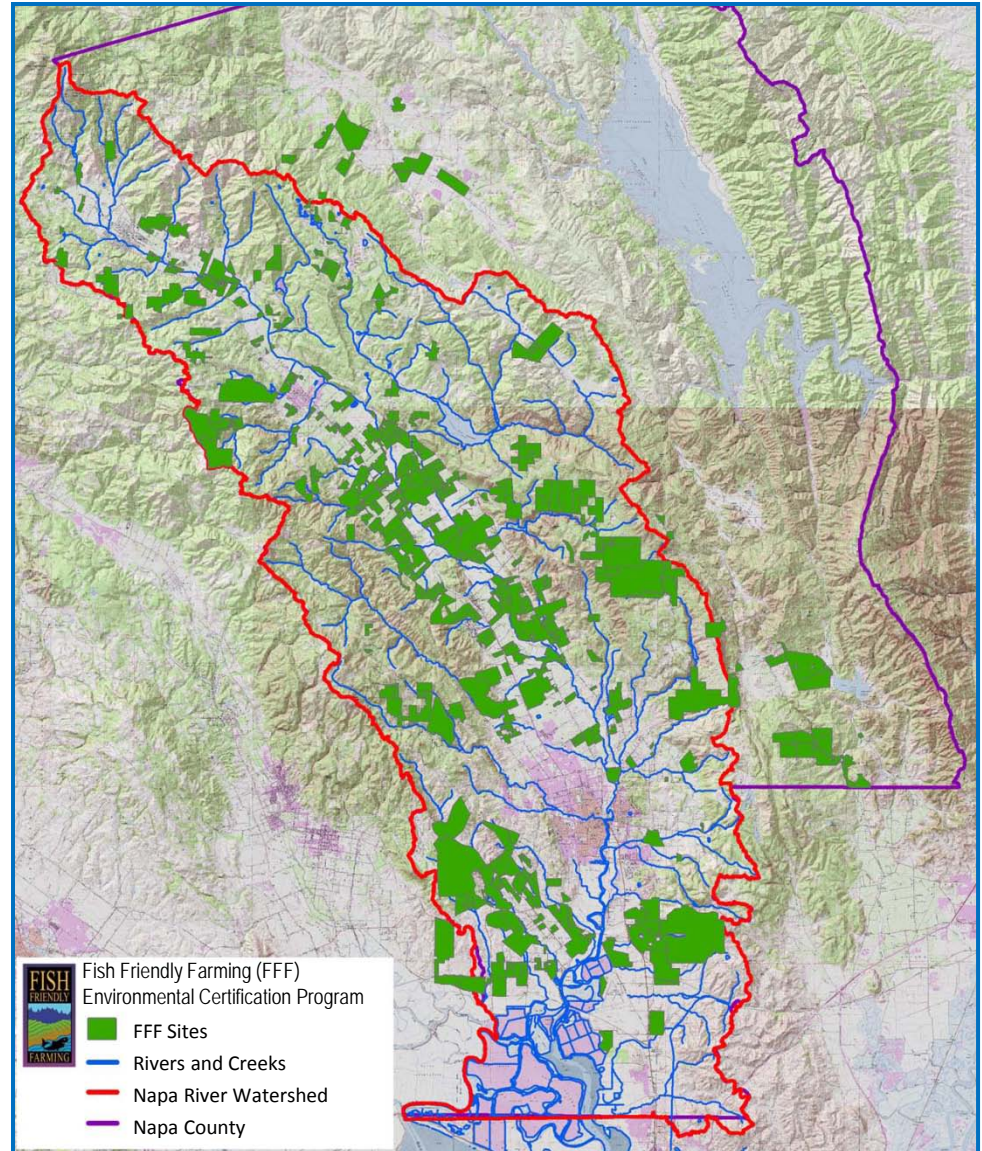
**A non-profit organization to assist public and private landowners
to implement land management practices and ecological
restoration projects for the long term benefit of the environment**



CALIFORNIA LAND STEWARDSHIP INSTITUTE

Beneficial Management Practices for:

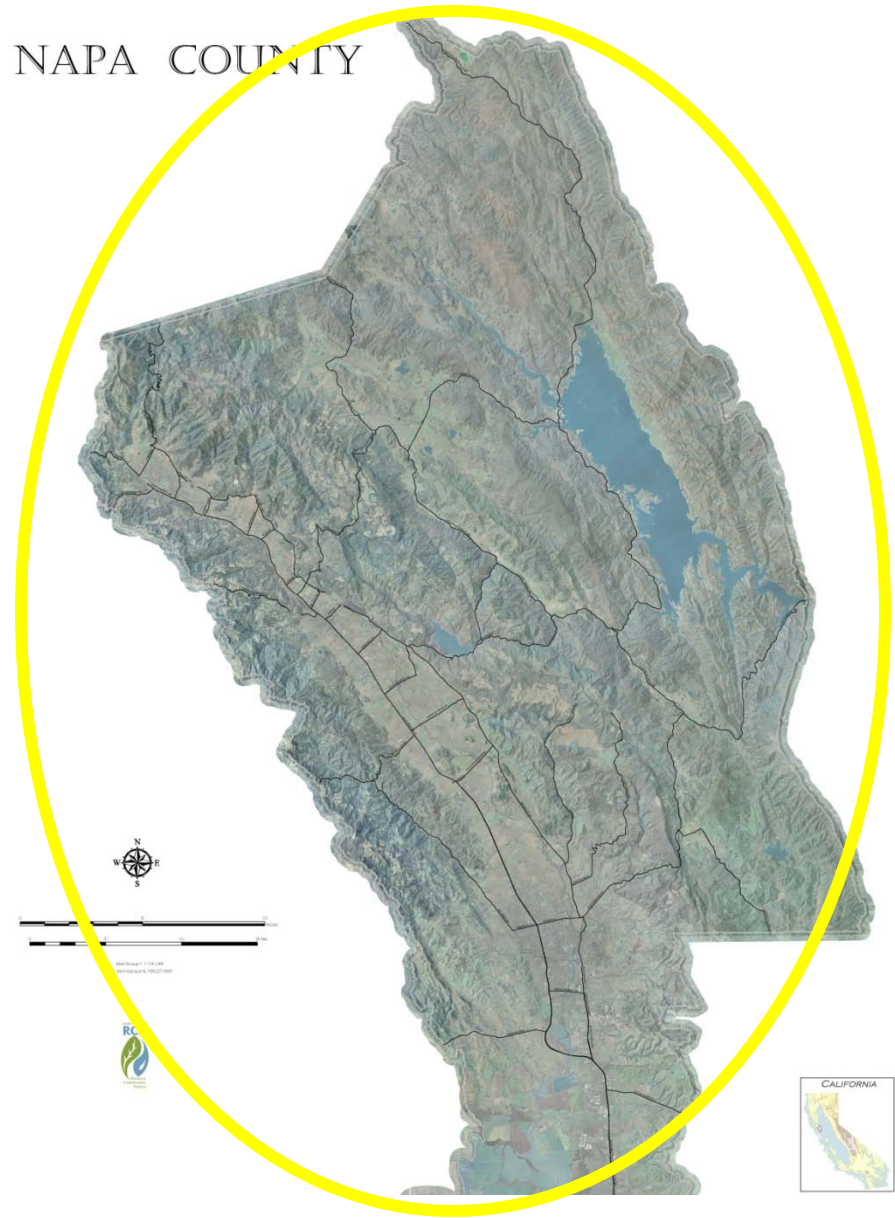
- Soil and water conservation,
- Restoration and revegetation of riparian corridors,
- Repair and careful management of roads to reduce sediment,
- Limited chemical use



Greening Napa's Wine Industry

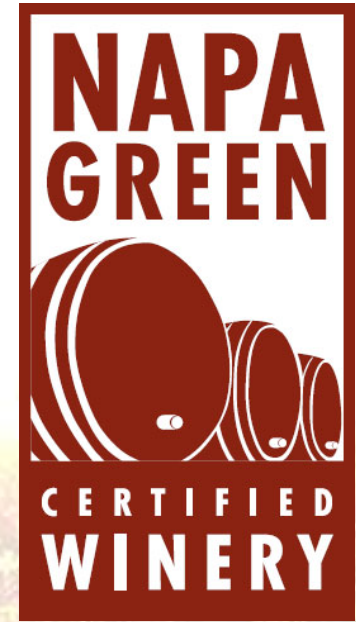
Michelle Novi

NAPA COUNTY





NAPA GREEN



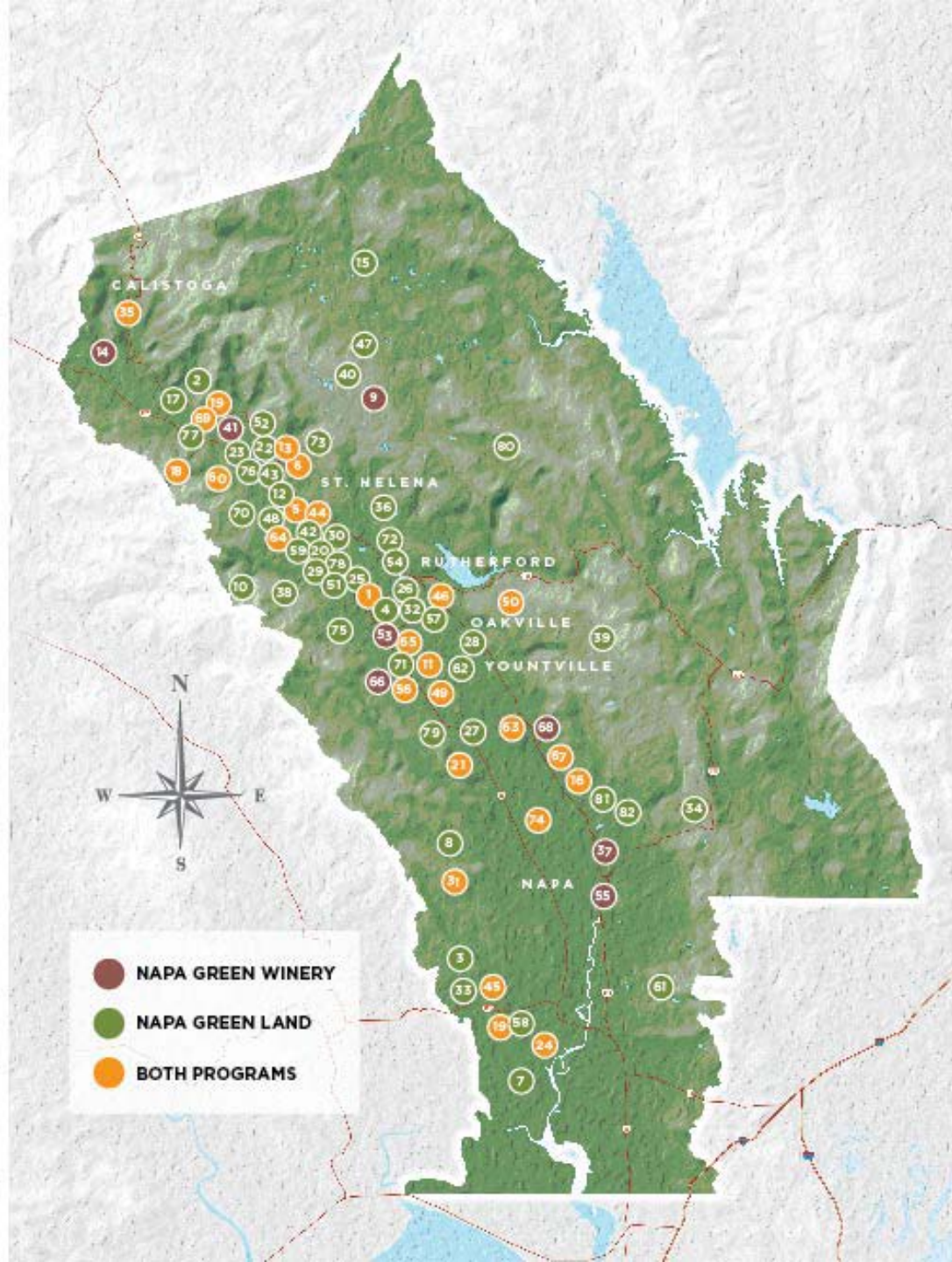
The wine industry's most comprehensive, "best practices" program for land-use and wine production.

- Napa Green is specifically tailored to Napa
- Participants implement specific best management practices at their vineyards and wineries that reduce soil loss and lower total water and energy demands
- Total acres enrolled in Napa County = 55,500 acres
- Total vineyard acres certified = 15,901 acres
- More than 1/3 of the total vineyard acreage in Napa County is Certified Napa Green
- 50 wineries projected to be Certified by 2014
- Growers and vintners who meet usage requirements may now use the certification marks on their back labels

for more information, please visit napagreen.org

PARTICIPATING WINERIES

- 1) Alpha Omega
- 2) Araujo Estate Wines
- 3) Artesa Winery
- 4) Beaujeu Vineyard
- 5) Beringer Vineyards
- 6) Bosschen Vineyards
- 7) Bouchaine Vineyards
- 8) Brandlin Vineyard
- 9) CADE Estate Winery
- 10) Cain Vineyard & Winery
- 11) Cakebread Cellars
- 12) Charles Krug
- 13) Chateau Boswell Winery
- 14) Chateau Montelena
- 15) Clark-Clauden Vineyards
- 16) Clos Du Val
- 17) Clos Pegase
- 18) CONSTANT
- 19) Cuvaison Estate Wines
- 20) Dana Estates
- 21) Domaine Chandon
- 22) Duckhorn Vineyards
- 23) Ehlers Estate
- 24) Etude
- 25) Franciscan Estate
- 26) Frog's Leap
- 27) Gamble Family Vineyards
- 28) Gargulo Vineyards
- 29) HALL
- 30) Holtz Wine Cellars
- 31) The Hess Collection Winery
- 32) Honig Vineyard & Winery
- 33) Hudson Vineyards
- 34) Jarvis
- 35) Jericho Canyon Vineyard
- 36) Joseph Phelps Vineyards
- 37) Judd's Hill
- 38) Keenan Winery
- 39) Krupp Brothers
- 40) Ladera Vineyards
- 41) Larkmead Vineyards
- 42) Long Meadow Ranch Winery
- 43) Markham Vineyards
- 44) Merryvale Vineyards



NAPA GREEN WINERY
 NAPA GREEN LAND
 BOTH PROGRAMS



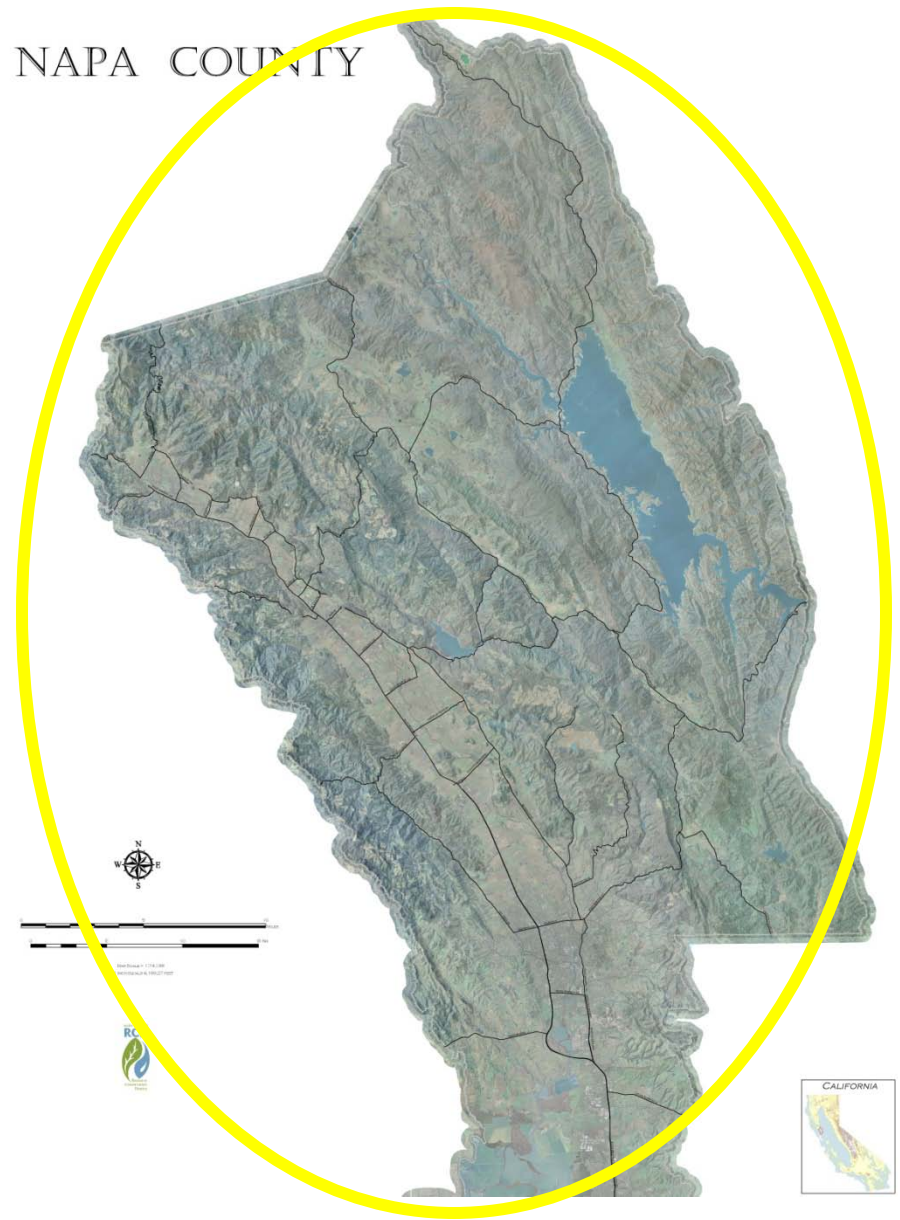
- 45) Michael Mondavi Family Estate
- 46) Mumm Napa
- 47) Neal Family Vineyards
- 48) Newton Vineyard
- 49) Opus One
- 50) Ovid
- 51) Pahlmeyer
- 52) Parry Cellars
- 53) PEJU
- 54) Quintessa
- 55) Robert Craig Winery
- 56) Robert Mondavi Winery
- 57) Round Pond Estate
- 58) Sainisbury
- 59) Salvestrin
- 60) Schramsberg Vineyards
- 61) Sciandri Family Vineyards
- 62) Silver Oak Cellars
- 63) Silverado Vineyards
- 64) Spottswoode Estate Vineyard & Winery
- 65) St. Supéry Estate Vineyards & Winery
- 66) Staglin Family Vineyard
- 67) Stag's Leap Wine Cellars
- 68) Stag's Leap Winery
- 69) Sterling Vineyards
- 70) Stony Hill Vineyard
- 71) Swanson Vineyards
- 72) The Terraces
- 73) Tournesol
- 74) Trefethen Family Vineyards
- 75) Tres Sabores
- 76) Trinchero Napa Valley
- 77) Twomey Cellars
- 78) V. Sattui Winery
- 79) VHR, Vine Hill Ranch
- 80) Volker Eisele Family Estate
- 81) White Rock Vineyards
- 82) William Hill Estate Winery

To contact these wineries or to make a tasting appointment, please visit www.napagreen.org/wineries

NAPA COUNTY

Encouraging
conservation on-the-
ground

Rita Steiner



USDA NRCS

Natural Resources Conservation Service

“All of Our Heads Together Are Better Than One”
Pearlie Reed



Working with partners to:

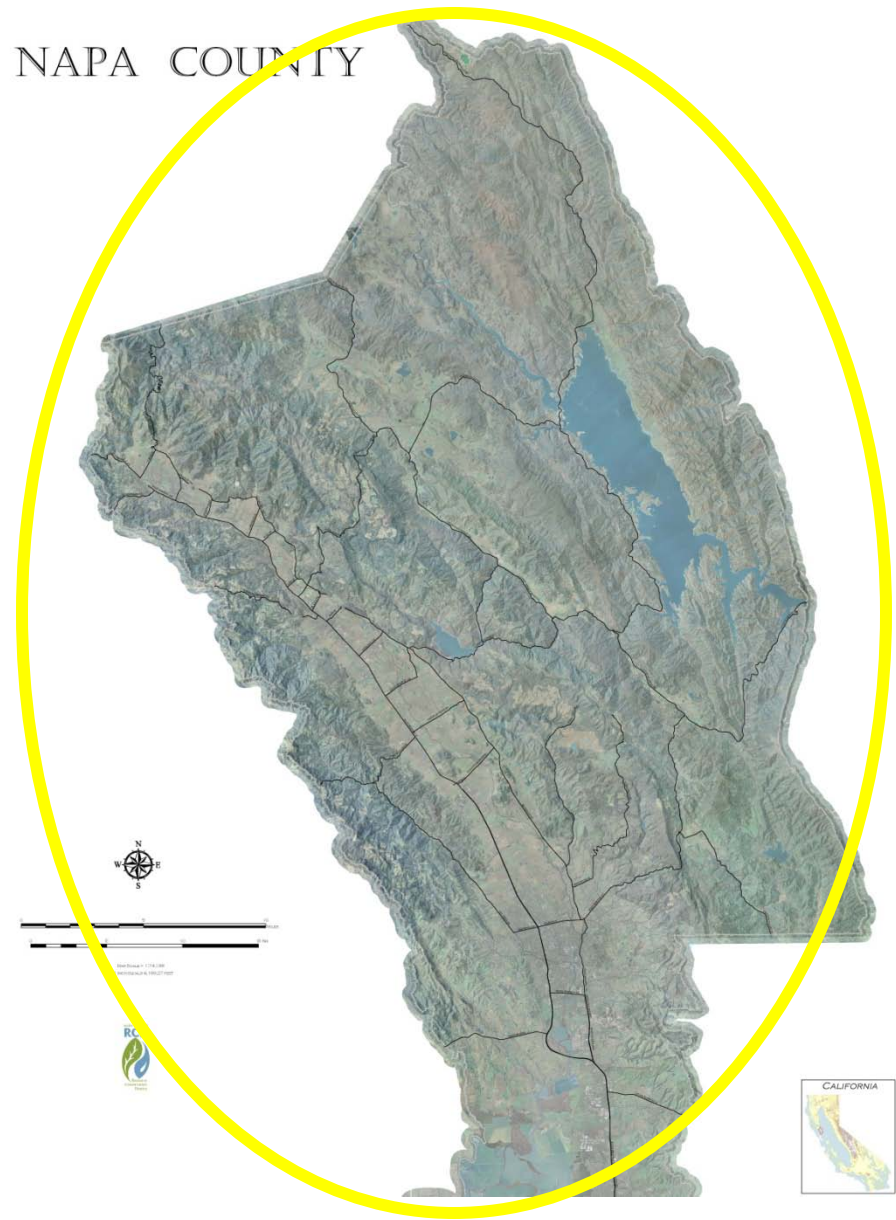
- Leverage funds and technical expertise
- Protect the watershed
- Assist landowners with protection of property
- Educate homeowners on creek care and habitat



Making Napa County Bay-Friendly

Pat Costello

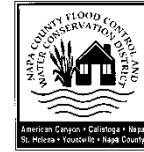
NAPA COUNTY



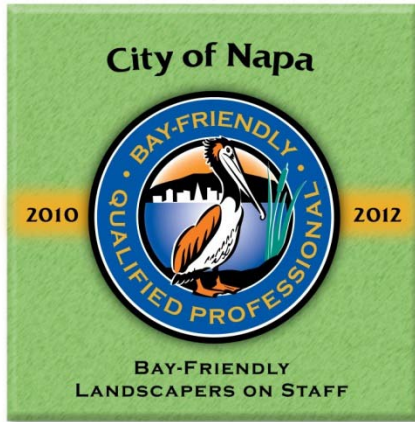


A Tradition of Stewardship
A Commitment to Service

Making Napa County Bay-Friendly



Qualified Professionals



Garden Tours



Annual
Since
2011

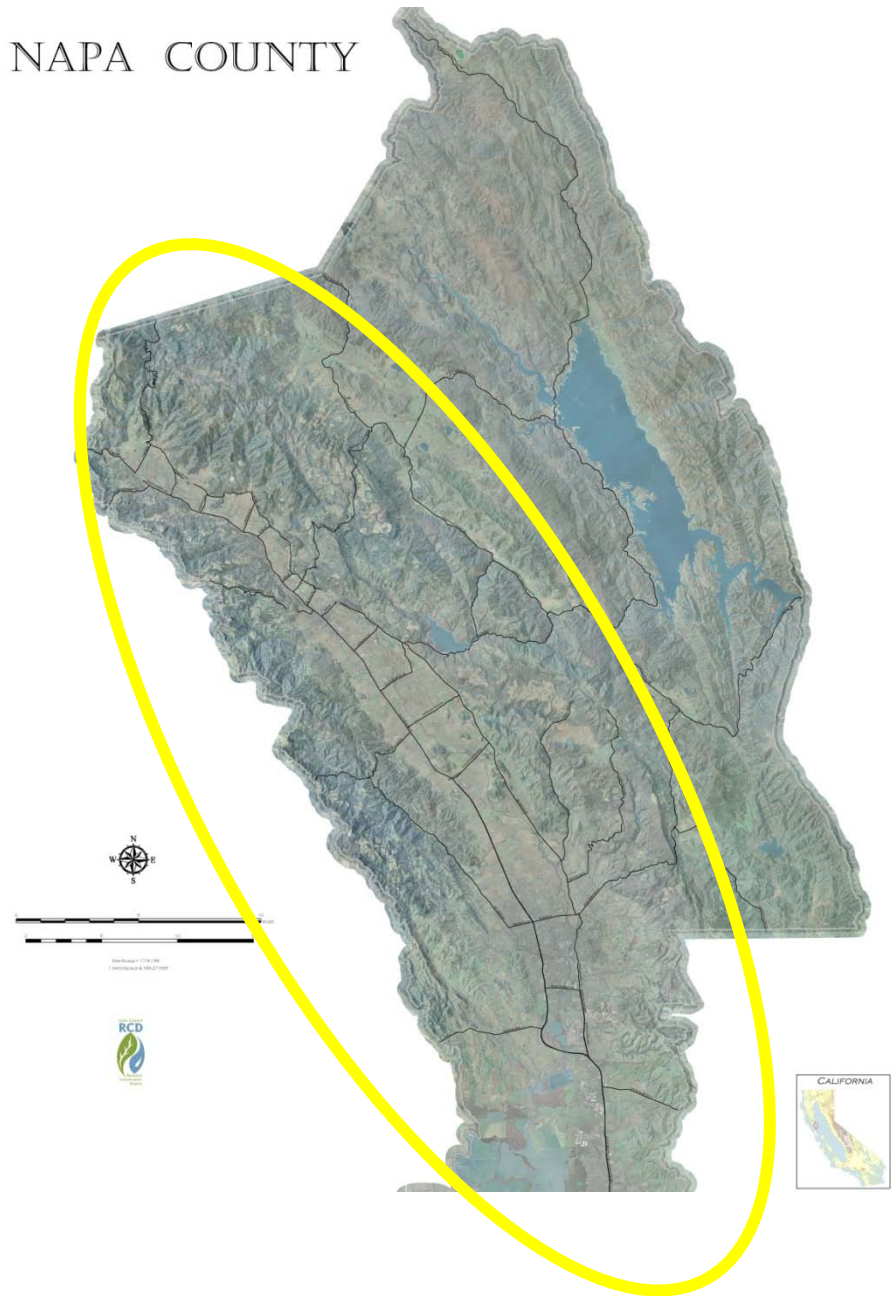
- 80 Landscape **Maintenance** Pros Locally, 2010-2012
- Solano County Partnership
- 3-Day Landscape **Design** Training, June 18-20, 2013
- Online Directory
- "Cash For Grass" Referrals

- Includes 12 Gardens, Topical Workshops
- "Cash For Grass" Inspiration
- **Peak Attendance 2013**

NAPA COUNTY

Promoting Rainwater Harvesting in the Napa Valley

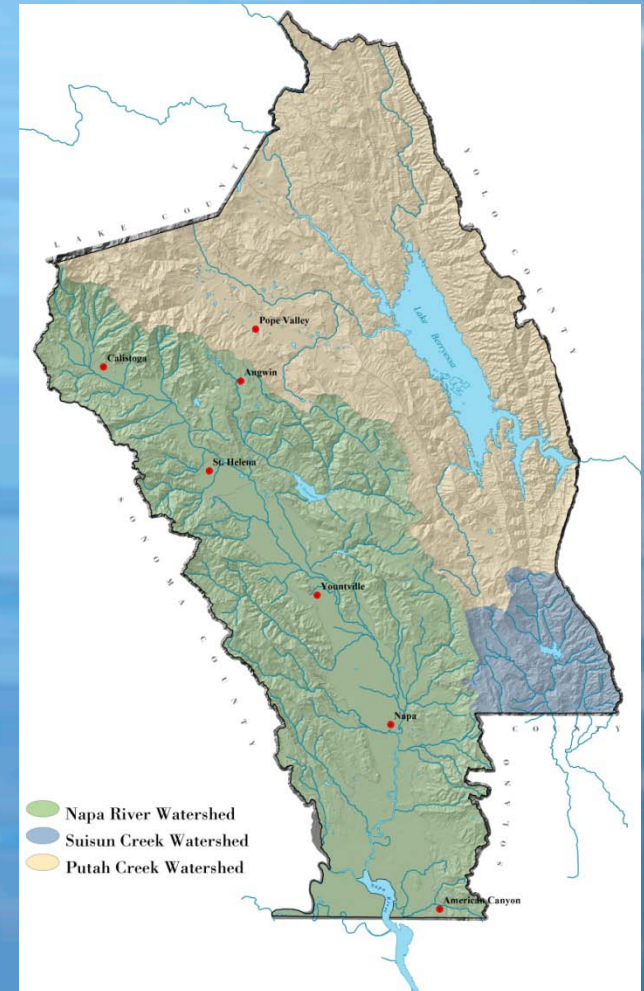
Deborah Elliott





Rainwater Harvesting

- Rebates for rain gardens, rain barrels/cisterns
- Available to folks in the Napa River & Suisun Creek Watersheds
- State funding - expires in two years





Rainwater Harvesting

Benefits:

- Save water
- Reduce stormwater runoff

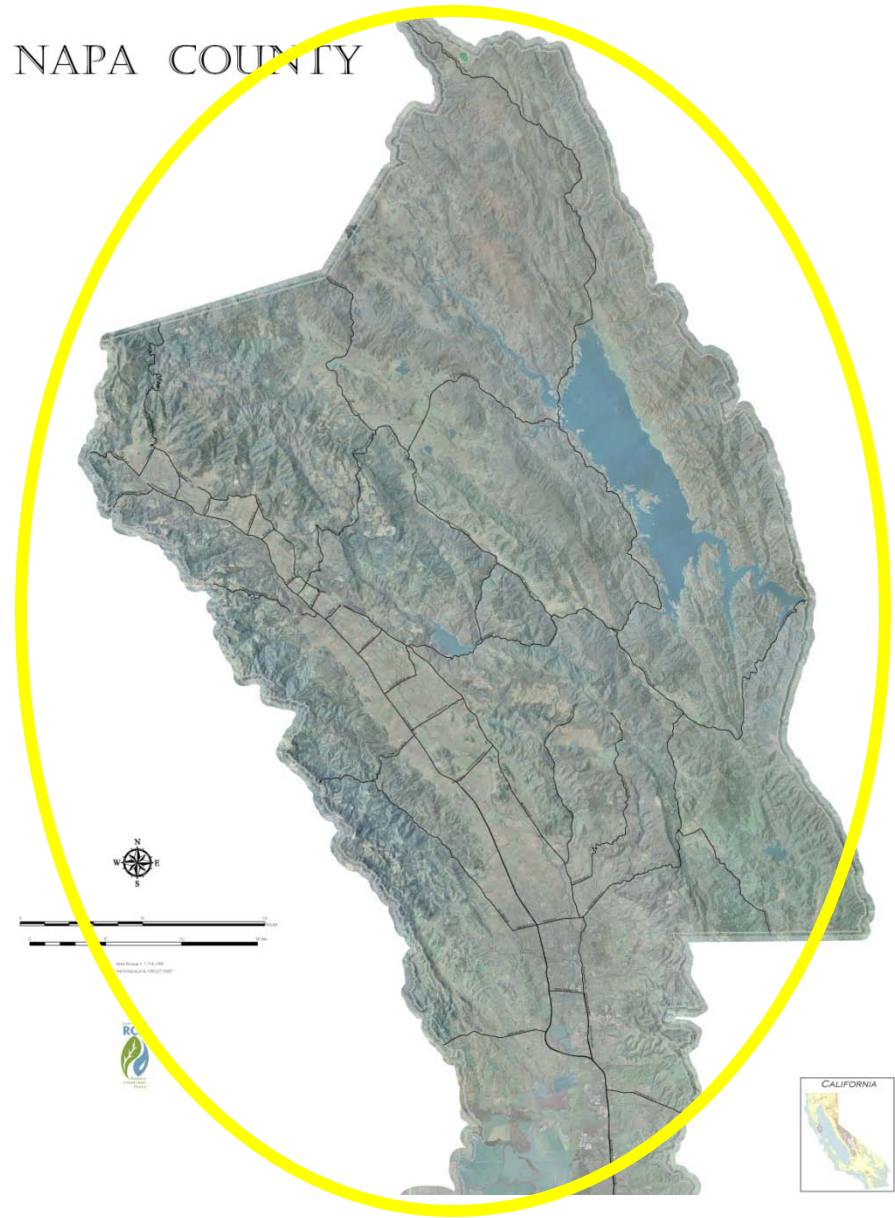


www.napawatersheds.org/rainwater

NAPA COUNTY

Improving
stormwater quality

Jamison Crosby



Napa Countywide Stormwater Pollution Prevention Program



- Our Water Our World
- Objective: Reduce pesticide use & toxic effects in creeks
- Intercept consumers at the point of purchase
- Encourage use of less toxic pesticides and alternatives



9 participating stores:

- Silverado Ace, Calistoga
- Mid City Nursery, ACanyon
- Steve's Hardware, St.Helena
- CVB, St. Helena & Napa
- Van Winden Nursery, Napa
- Zeller's Ace, Napa
- OSH, Napa
- Home Depot, Napa

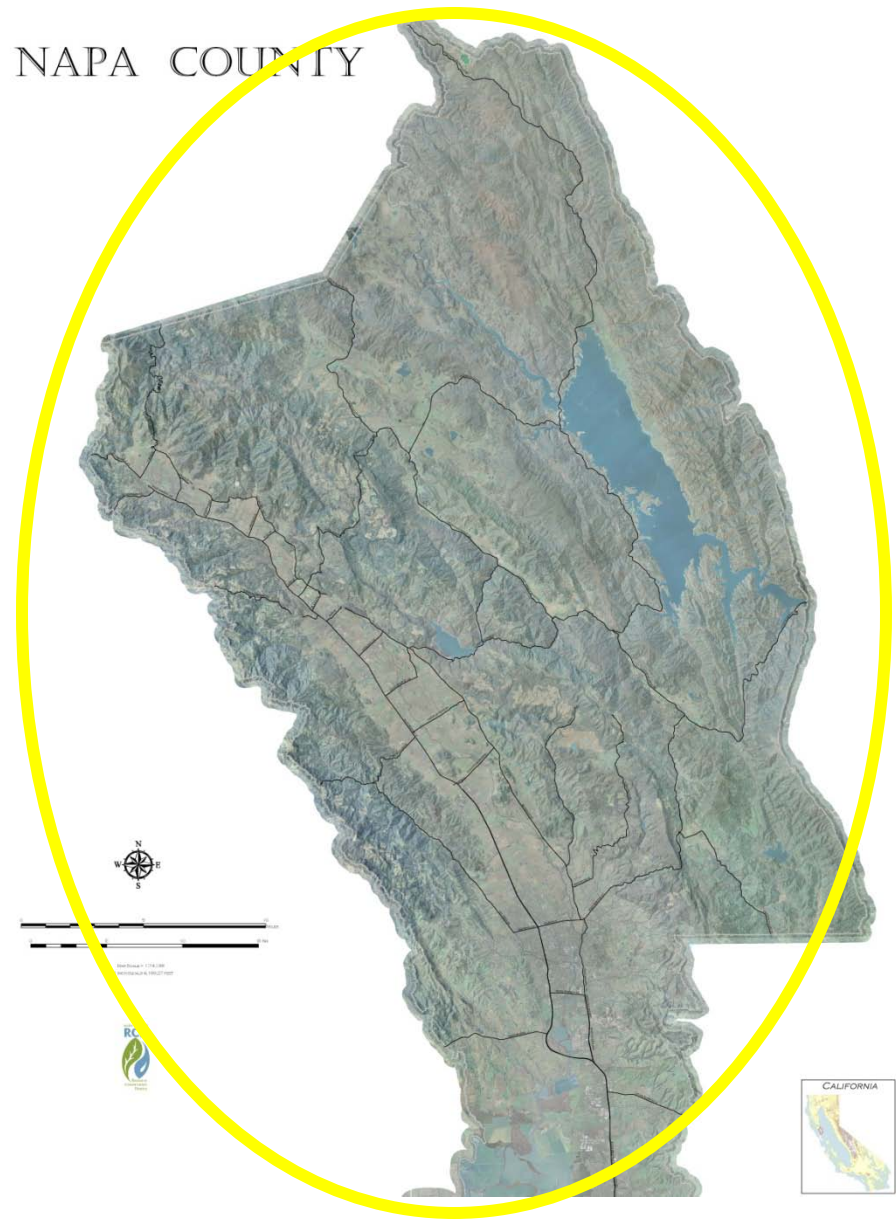
- 17% increase in sales of less toxic products at OSH, Napa
- 19% increase in sales of less toxic products at Home Depot, Napa



Promoting Native Plants

Eric Nightingale

NAPA COUNTY



Napa Chapter, California Native Plant Society



Native Plant Sale and Wildflower Show

- **Project objective:** Educate public about value and beauty of using native plants in water-wise landscaping that also provides habitat for local fauna.
- **Approach taken to meet objective:** Semi-annual plant sales that offer to the public native plants not otherwise readily available.





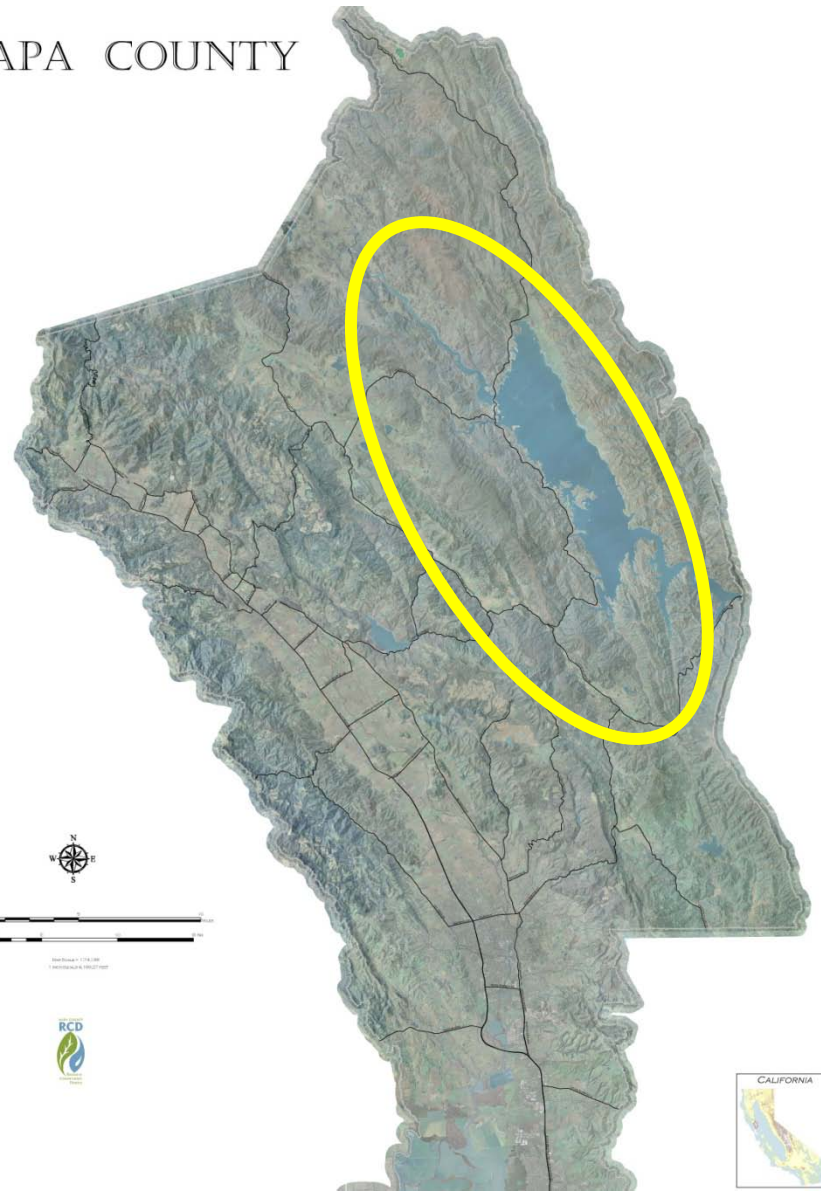
Measureable outcome of project:
Attendance at sales and Wildflower Shows and sales of plants



Other projects:

- Wildflower walks in Napa County
- Classroom projects in Martha Walker Native Plant Garden – a demonstration garden of native plants
- Horticultural workshops

NAPA COUNTY



Building Trails in the Putah Creek Watershed

Carol Kunze



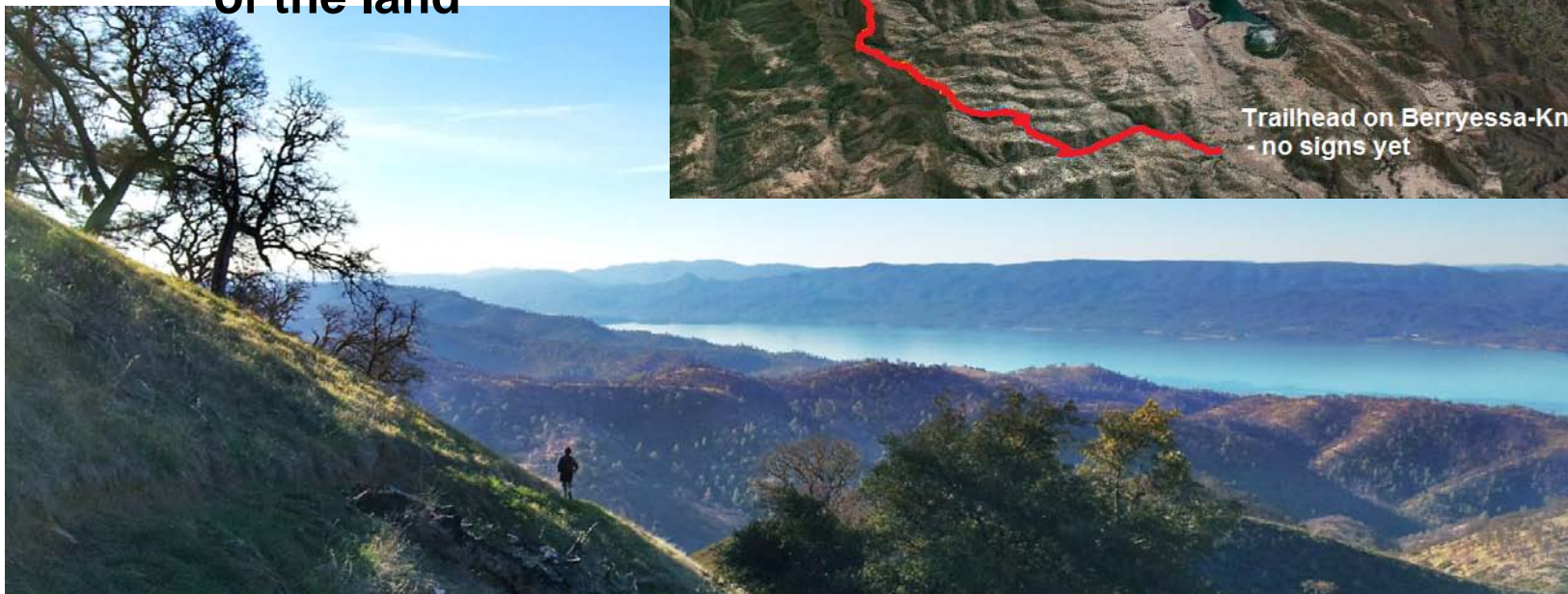
Napa Park District (NCRP&OSD) & Tuleyome *NAPA*



Trails in the Putah Creek Watershed

BERRYESSA PEAK TRAIL

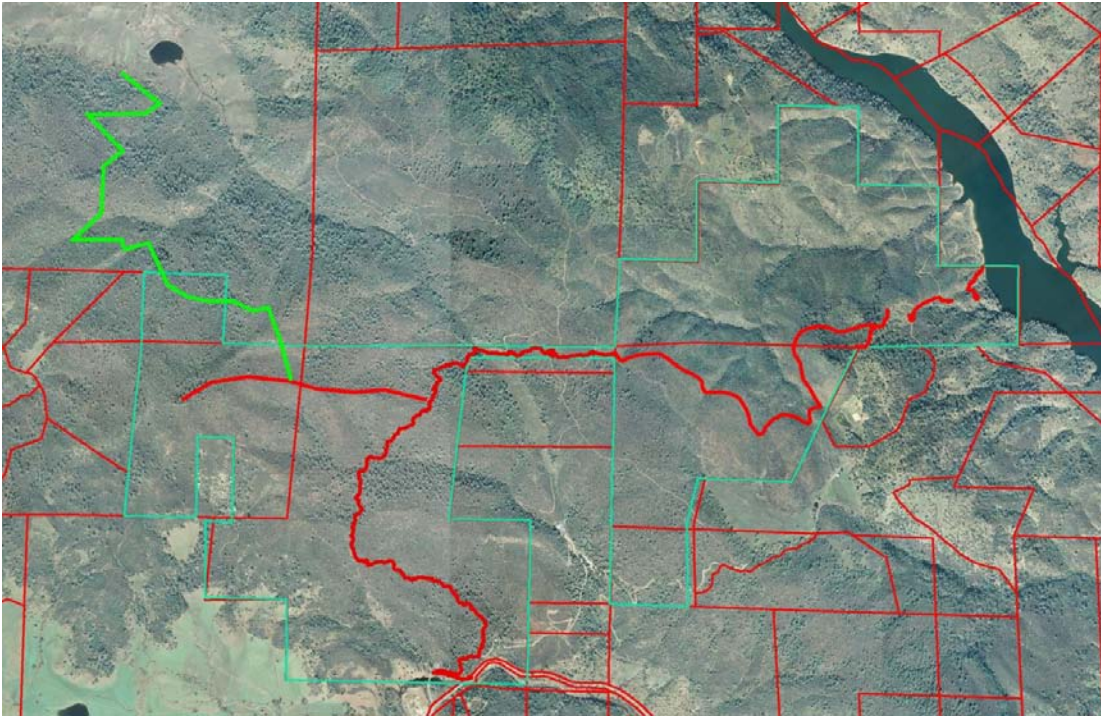
**Trails create a
constituency that supports
protection
of the land**



Pope to Putah Trail on BLM

Proposed Spanish Valley Connector Trail

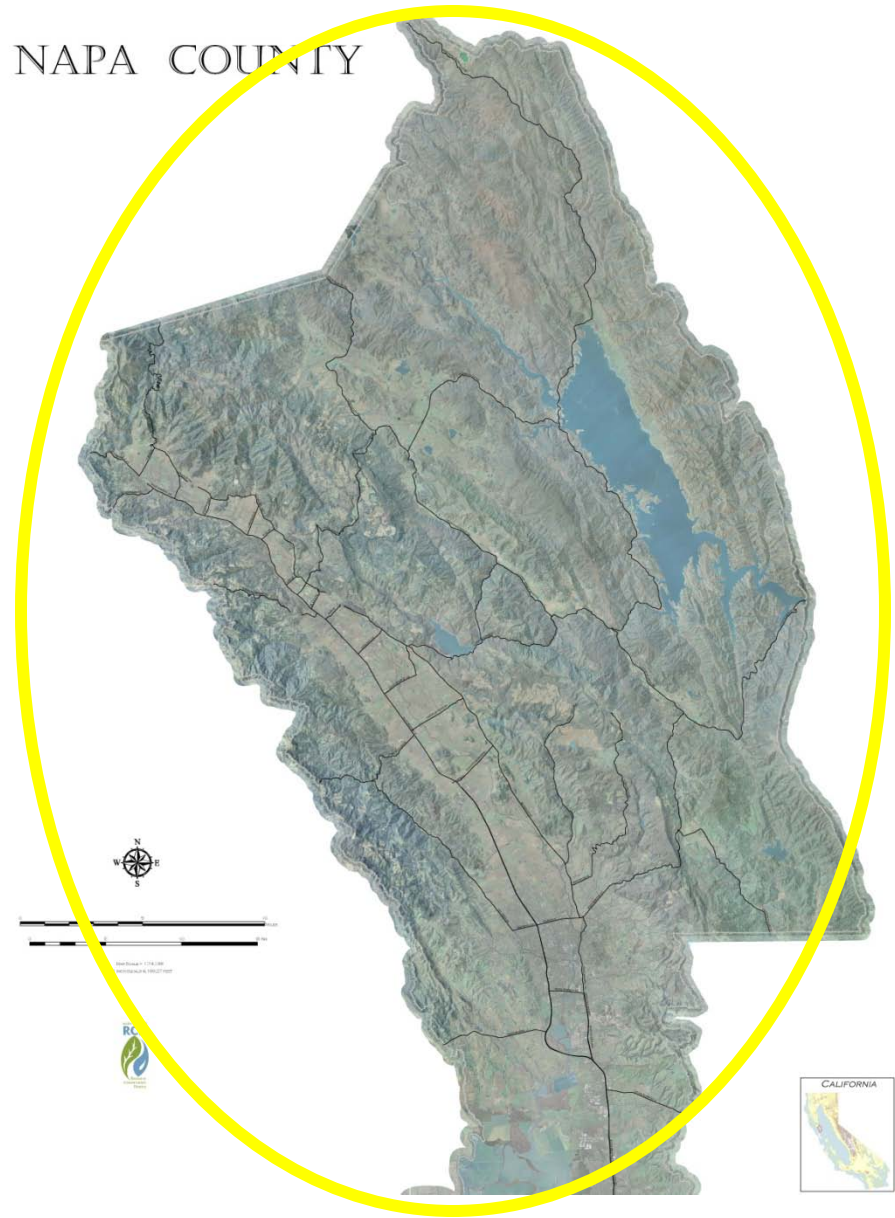
Working with volunteers and teaching sustainable trail design creates active stewards of the land



NAPA COUNTY

Supporting Restoration

Ken Schwarz



Napa County Stream Maintenance Program Support



Salvador Creek at Jefferson St.



Cattail growth in Salvador Creek Collector



Sediment and cattails at Sheehy Cr.



Steep banks at Salvador Creek



Steep banks and plantings at Tulocay Creek



Debris, sediment, trash at Tulocay Creek

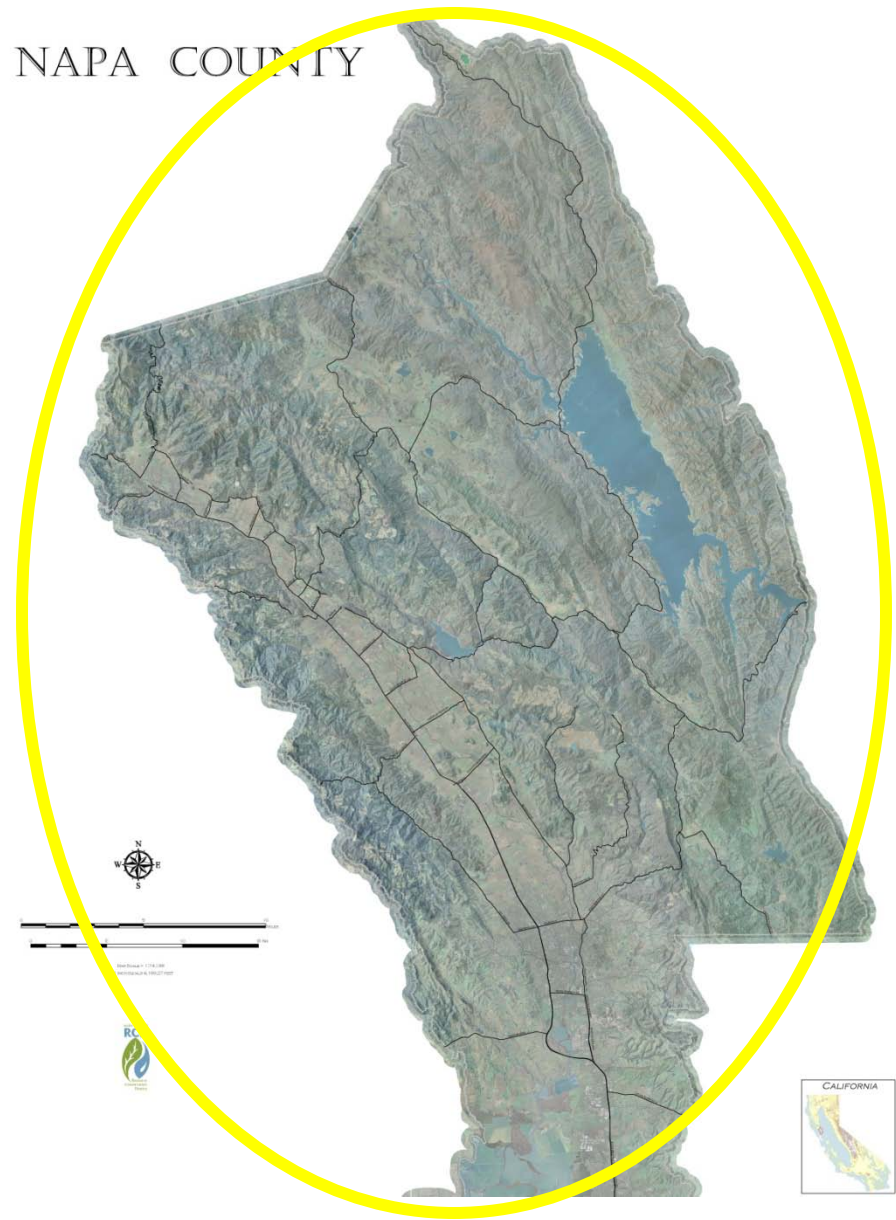
Regulatory Assistance for Rutherford and Oakville Projects



Providing Hub for Napa County Watersheds

Jeff Sharp

NAPA COUNTY



Watershed Information Center & Conservancy



New WICC Website

www.napawatersheds.org



A Tradition of Stewardship
A Commitment to Service

Connect Now!

- Easy
 - Modern
 - Fast

EVENTS SEE ALL

WICC Board Meeting
 Mar 28, 2013 4:00pm - 6:00pm

Napa River Rotary Screw Trap Open House
 Mar 30, 2013 9:00am - 10:00am

Beyond the Shore - The facts about sea level rise in San Francisco Bay
 Apr 2, 2013 1:00pm - 4:00pm

Grateful Dead



WICC is... Projects

NEWS SEE ALL

Free Home Composting Workshops - Napa Valley
 APR 15, 2013
 Learn how to turn yardwaste and kitchen scraps into wonderfully rich compost to use as a soil ame...

FEATURED SEE ALL



Cash rebates for rain gardens and rain barrels
 Rain gardens and rain barrels/cisterns are two simple approaches to slow, spread and sink stormwater before it has a chance to impact local creeks. Capture the gold running off your roof!

A History of Wine Industry Sustainability
 The Napa Valley has a long history of sustainability. The Napa Green Certified Land and Winery programs are the wine industry's most comprehensive "best practices" in landuse and

WICC Interactive Map map tips

LEGEND Basin Layers WICC

Napa River Basin More
 Soil and Geology Map
 Toggle layers using the checkboxes

- Major Streams
- Faults
- Geology
 - Artificial Fill (historic)
 - Clear Lake Volcanics (Pleistocene-Pliocene)
 - Sonoma Volcanics (Pliocene-Miocene)
 - Other Pleistocene - Pliocene Units (QT)
 - Franciscan Complex (Cretaceous-Jurassic)
 - Great Valley Complex (Cretaceous-Ariassic)

Watersheds > Characteristics

Characteristics

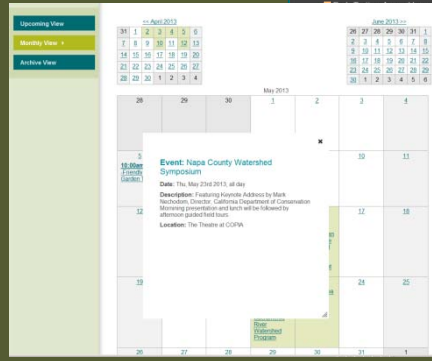
Water
 All life depends on water for survival. Two goals of watershed protection efforts in Napa County are **protecting water quality** and **protecting water quantity**. [more description...](#)

Weather
 The Napa Valley has a Mediterranean climate characterized by warm, dry summers and cold, moist winters. The majority of annual precipitation occurs as rain that falls during the winter and early spring. [more description...](#)

Wildlife
 Napa County's watersheds not only provide a home to over 133,000 people, they also support abundant wildlife. Several of which hold the unique status of rare, threatened, or endangered. [more description...](#)

Fish
 The Napa River watershed supports an assemblage of 30 native fish species, including several threatened and/or rare species such as steelheadrainbow trout, fall-run Chinook salmon, Pacific and river lamprey, hardhead, hitch, tule perch, and Sacramento splittail. [more description...](#)

Plants
 Napa County's numerous and diverse plant communities can readily be seen on a drive up the valley. [more description...](#)



Plannng - Regional Water Planning

Integrated Regional Water Management Planning in Napa County

Water in Napa County supports diverse ecology, thriving agriculture, and picturesque open spaces. It also supports a wide variety of recreational, economic, employment and career opportunities. With more than 130,000 water users and over two dozen agencies governing water resources, a focused Integrated Regional Water Management Plan (IRWMP) is helpful to ensure that the community and its ecology continue to flourish by sharing and managing water responsibly and strategically.

By integrating water management plans and related projects, Napa County will ensure that everyone has a stake in how we efficiently steward water resources. Management plans are being developed responsibly in accordance to major watersheds established by the state, and will work to meet other agricultural, industrial, and ecological needs for water resources.

All water users and stakeholders are invited to become involved in the IRWMP process. For detailed information on what IRWMP is or how to participate please follow the links below or in the side bar links under Related Content Links.

Learn More

- What is IRWMP?
- Which IRWMP plans encompass watersheds in Napa County?
- Which leading IRWMP planning efforts in Napa County?
- What kinds of projects does IRWMP encompass?



