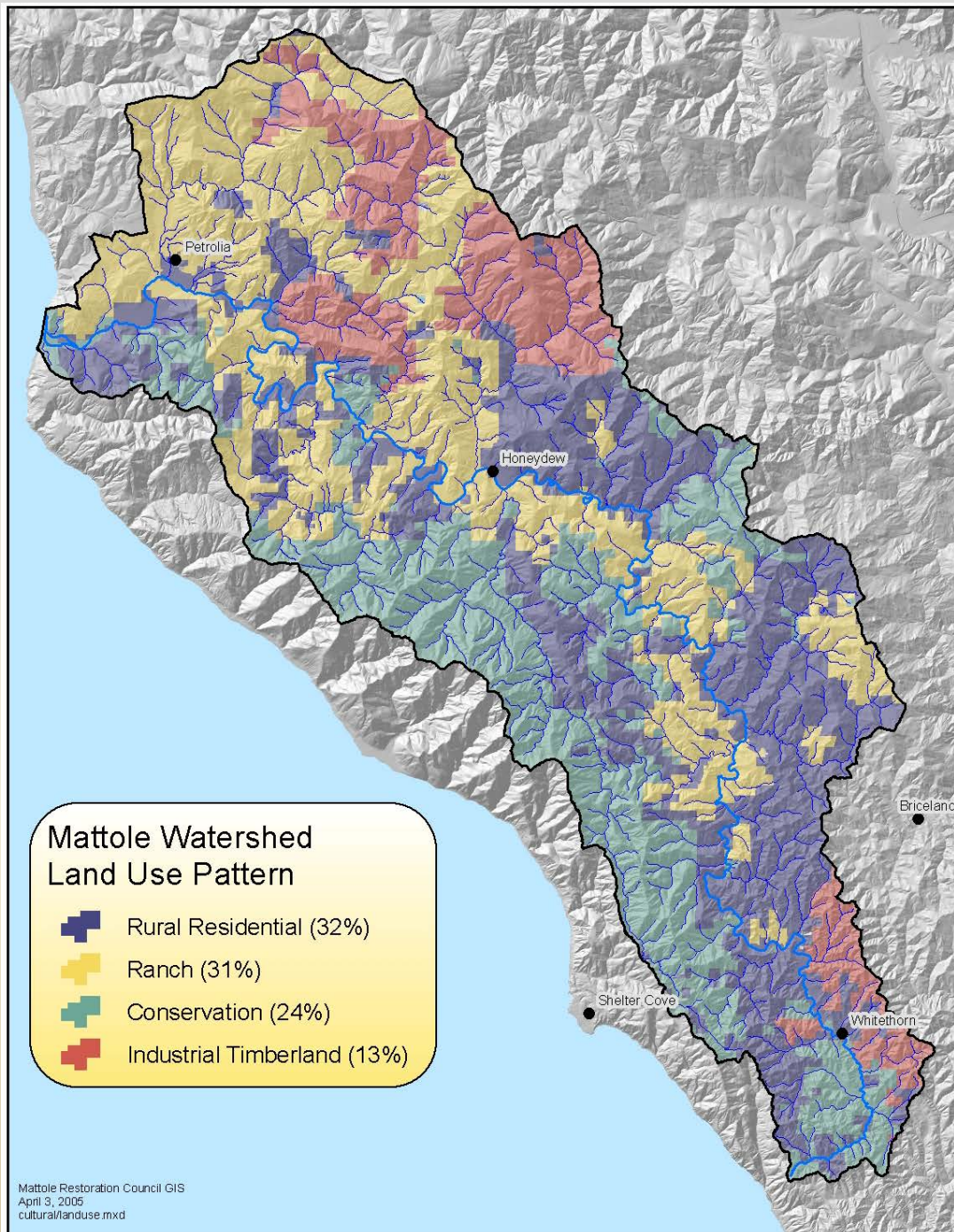


Mattole Integrated Watershed Management A Rural Community's Approach to Restoration



Cassie Pinnell and Unity Minton
Mattole Restoration Council
California Invasive Plant Council, Oct 2014





- 62 miles, south to north
- Un-dammed, un-altered



- No municipal district
- Private use





Federally classified as Tier 1 Key Watershed essential to survival of coho and chinook salmon stocks



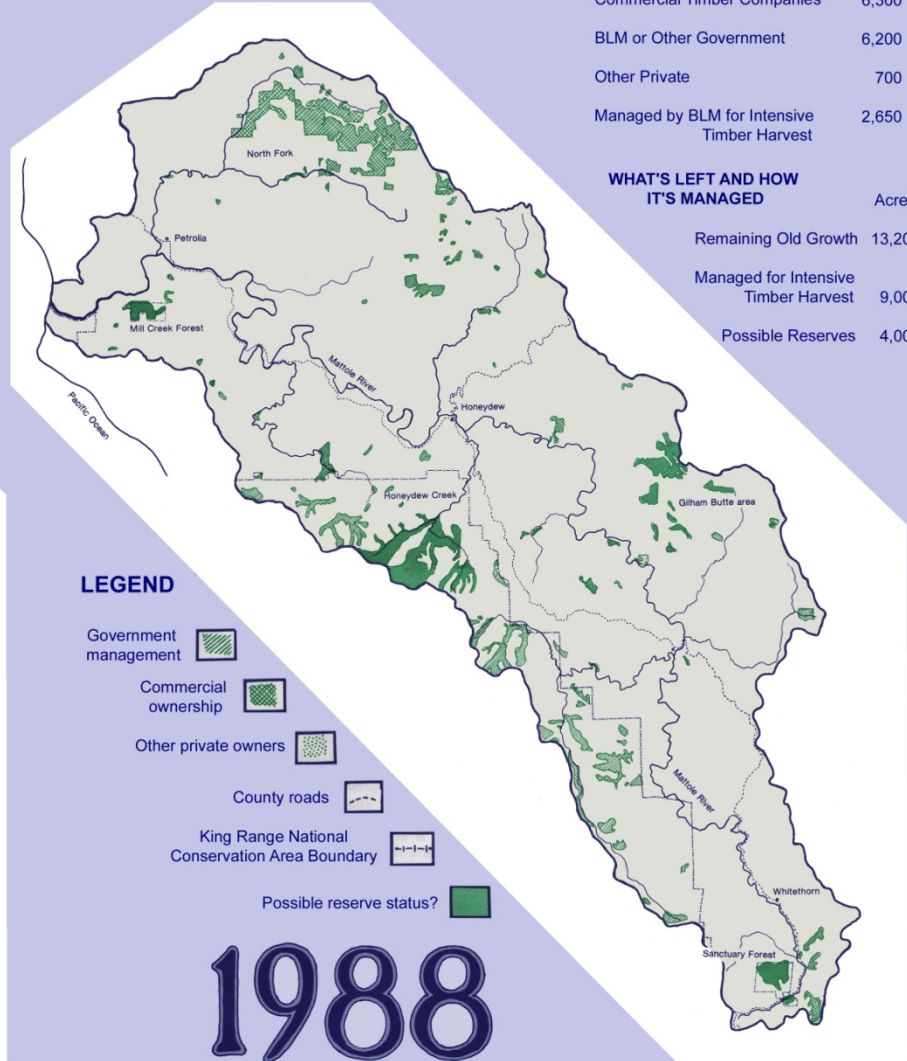
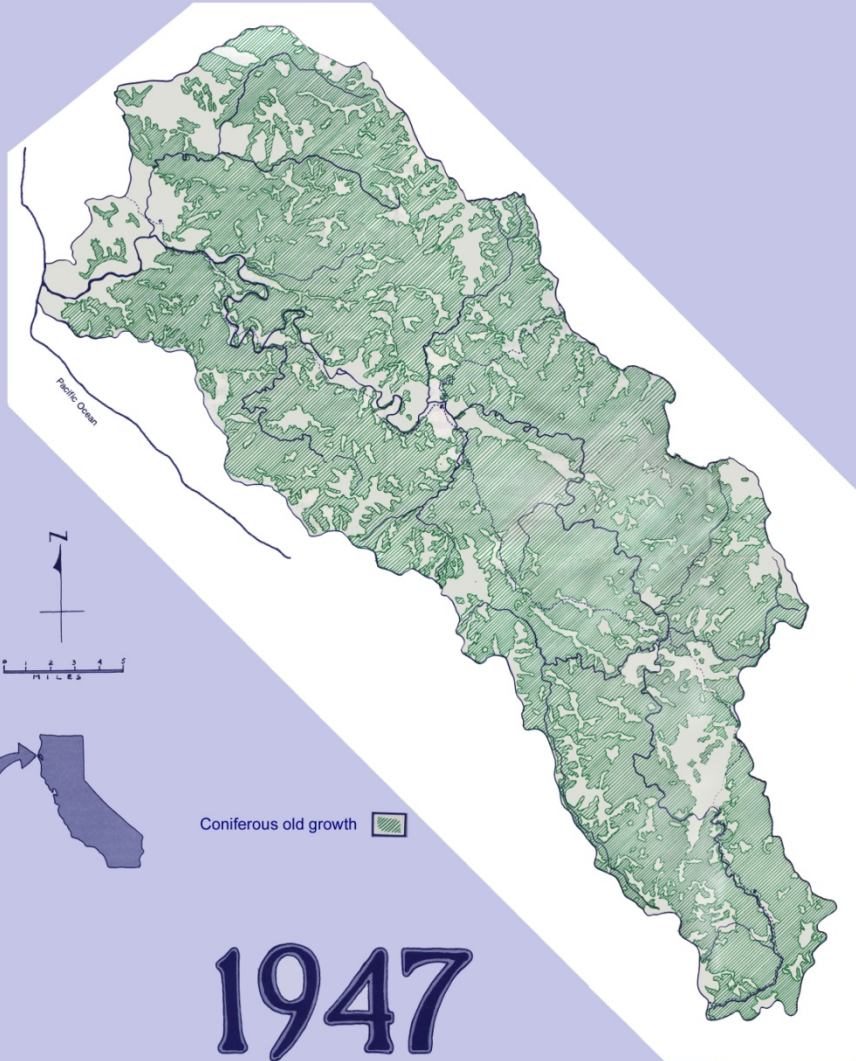
Coho Salmon (FT, ST)
Chinook Salmon (FT)
Steelhead Trout (FT)



The Tan-bark Piles, Petrolia

No. 102

Distribution of Old Growth Coniferous Forests in the Mattole River Watershed



1988 DISTRIBUTION BY OWNERSHIP

	Acres	% of 1988 forests
Commercial Timber Companies	6,300	48
BLM or Other Government	6,200	47
Other Private	700	5
Managed by BLM for Intensive Timber Harvest	2,650	20

WHAT'S LEFT AND HOW IT'S MANAGED

	Acres	% of 1947 forests
Remaining Old Growth	13,200	9
Managed for Intensive Timber Harvest	9,000	7
Possible Reserves	4,000	3

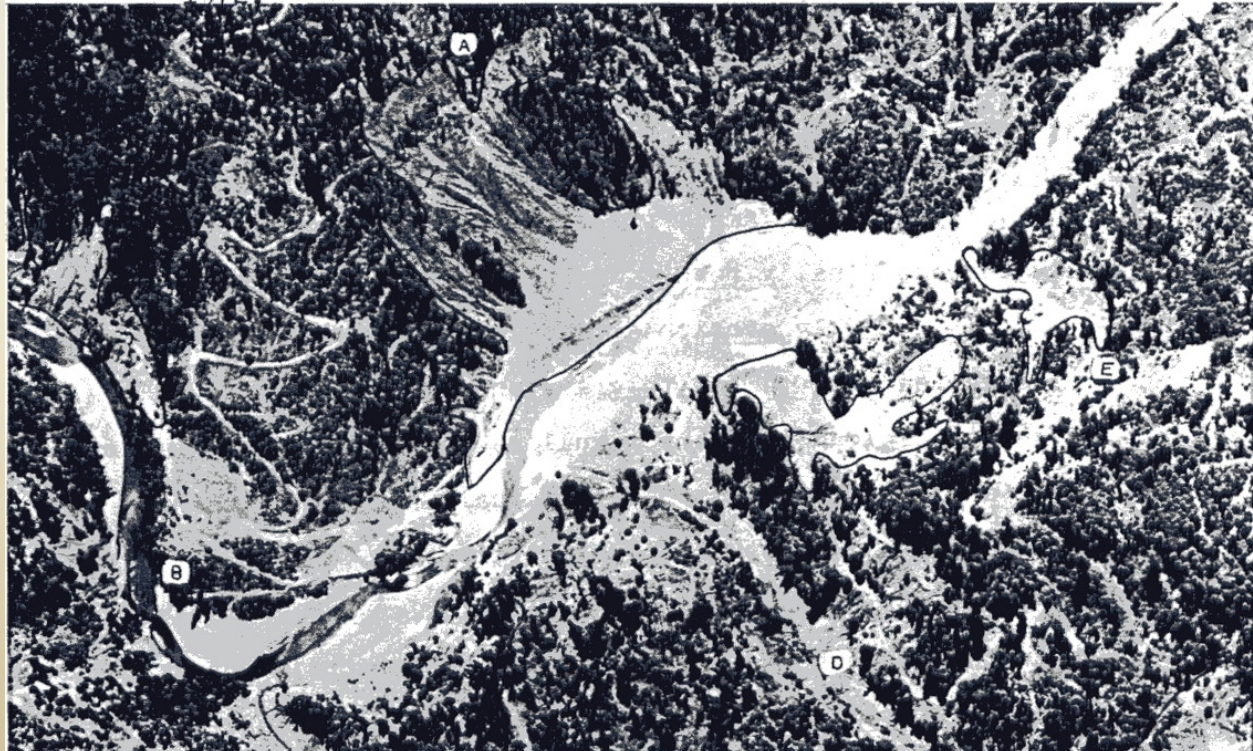
1947-1988 Harvest: 82% Timber, 90% Old growth

Mattole River
1948



(Upper) Mattole River, 1948. Vertical aerial (Area 11), Reach B. Note blue slide Area "A". (Lower) Same Area, 1972.

Mattole River
1972



Prone to excessive erosion

- High rainfall (50-115"/yr)
- Most seismically active watershed in Continental US
- High slope instability



76% human induced erosion
from unmanaged roads
(logging era)

- 425 miles active
- 2,800 miles abandoned

Remaining logging, grazing,
and conversion of forest to
pasture



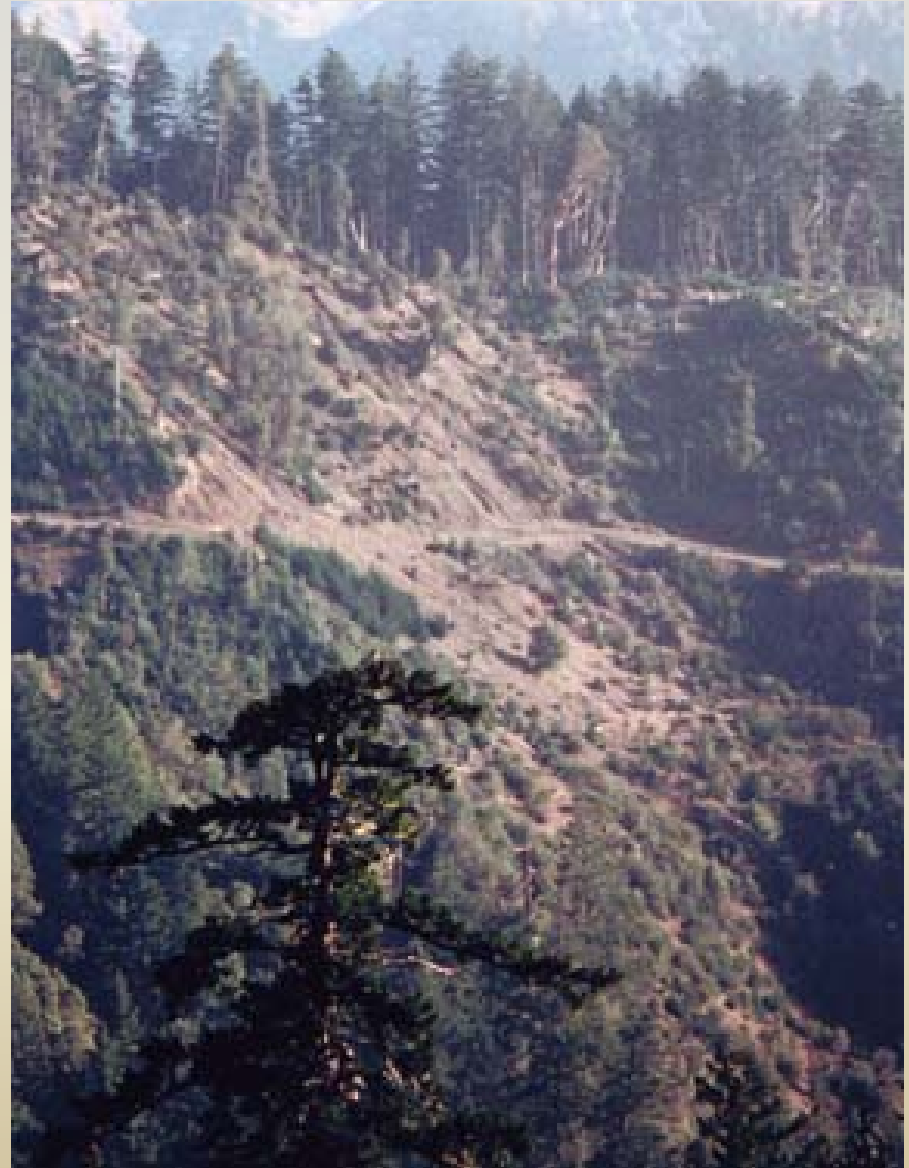
Loss of salmonid habitat:

- Sedimentation
 - Landslides
 - Streambank failure
 - Sheet and gully erosion
- Loss of large woody debris
- Increase water temperature
 - Loss of riparian cover
 - Shallow, less pools
- Reduced flows



Impaired Watershed

- EPA as 303(d) Impaired by two nonpoint source water pollutants:
 - Sediment
 - Temperature
- TMDLs have been developed for both



Community Watershed Restoration



SUPPORTING RECOVERY





Pre

**225 Miles of Roads
Upgraded or Decommissioned**



Post



Pre

1400 Stream Crossings Removed or Upgraded



Post



Pre



Post

**22,300ft
Streambank Stabilized**

SUPPORTING NATIVE ECOSYSTEMS

Native Seed Collection



**Collected over 650 lbs of native seed
(maintain local genetics)**

Native Plant Nursery



30,000 and 50,000 annually

Native Grass Farm

- ¼ acre
- 10 native species
- 2000 plants

Native Grassland Enhancement

A group of about seven people are working on a grassland enhancement project on a hillside. They are using tools like shovels and rakes to clear the ground and plant native grasses. The workers are wearing various work clothes, including hats and backpacks. The background shows a dense forest of evergreen trees under a clear blue sky. The foreground is a mix of dry, yellowish grass and dark, rich soil.

Planted over 16,500 native grass plants

Native Grassland Enhancement



Planted over 7 acres native grass plants

Department of Water Resources Integrated Regional Water Management



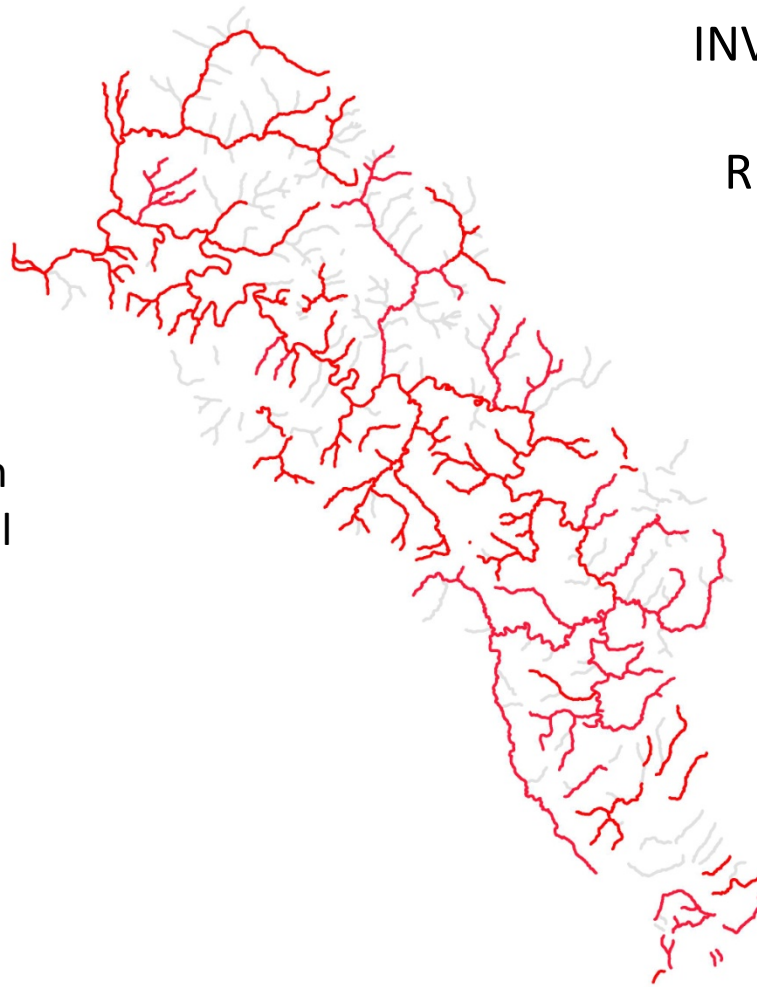
Riparian and Invasive Treatments

Mainstem Mattole (62 miles) with Tributaries



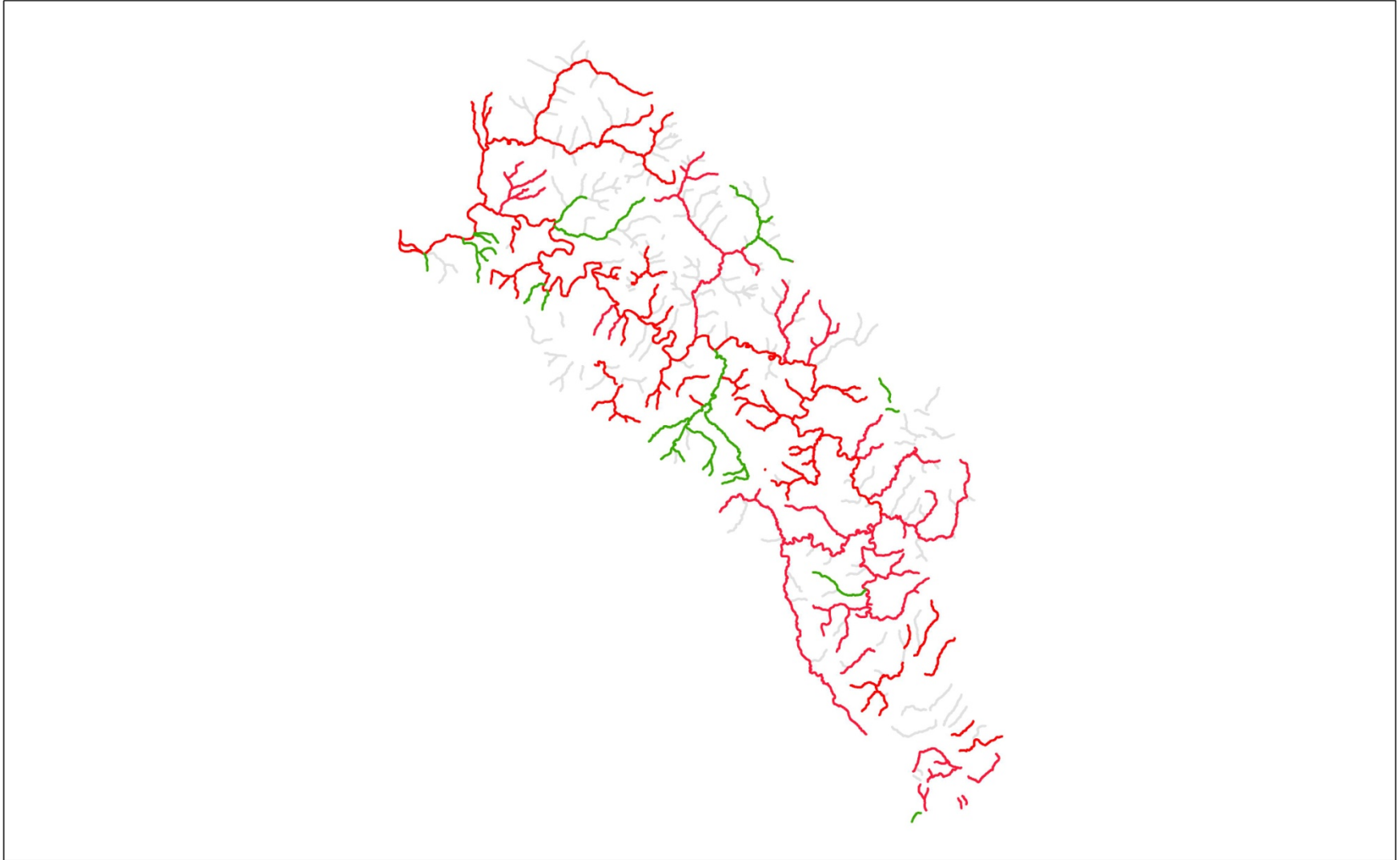
Assessed over 200 miles (Red)

INVASIVE POPULATIONS AND RIPARIAN POTENTIAL



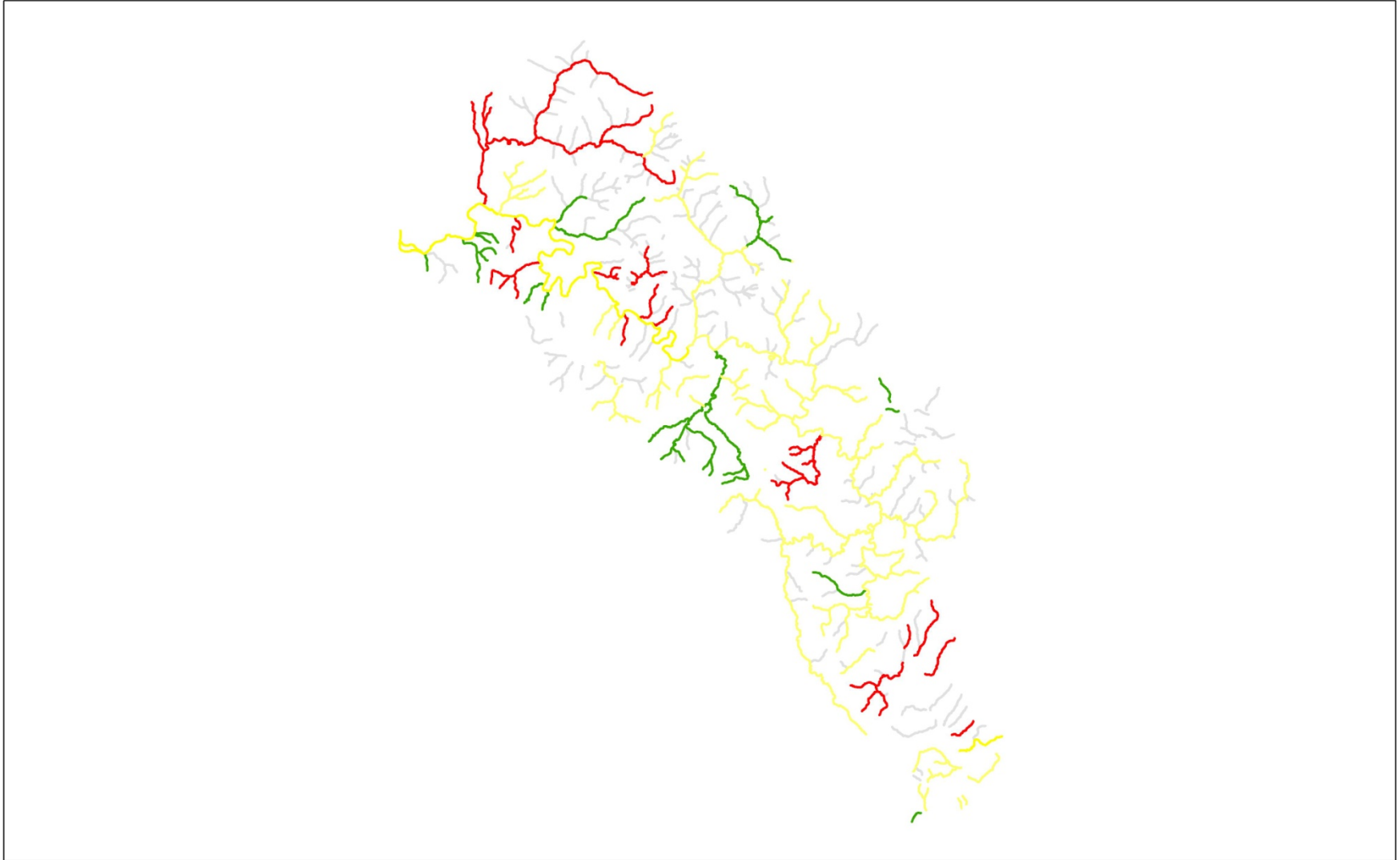
- Current/historic salmon
- NMFS intrinsic potential
- Lacks riparian cover
- Source of sediment
- Lacks complexity
- High priority area
- Potential for success
- Safe access for crews
- Protected land, etc.

Areas Not Requiring Treatment (Green)





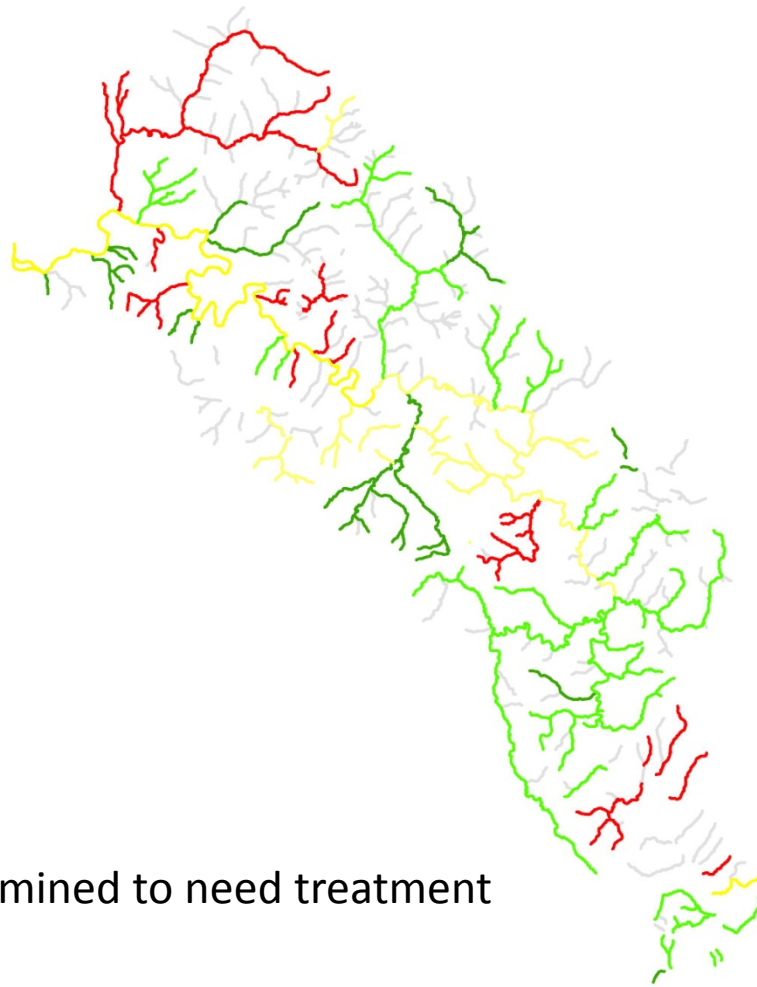
Plans Developed (Yellow)







Treatment Completed (Light Green)



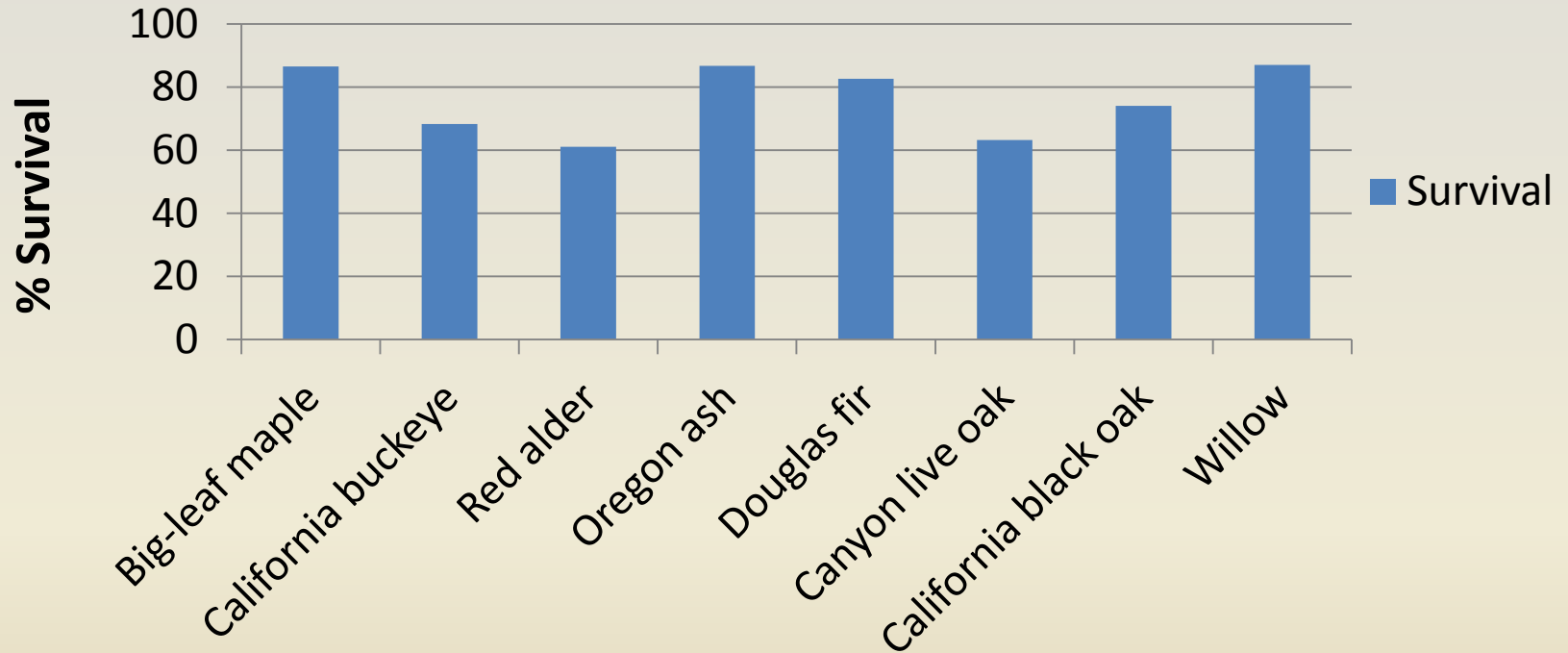
Over 80% of sites determined to need treatment



**Over 370,000
riparian plants planted**

Riparian Restoration

Survival at Granny Creek



Target: 80% Year 2

10,000ft of willow baffles and willow walls



Before



After

805 acres of riparian habitat treated



Before



After

5,310 ft livestock exclusion fencing



Treated all high priority invasive sites

47 sites total



9 English ivy sites



1 Cape ivy site



8 Japanese knotweed sites



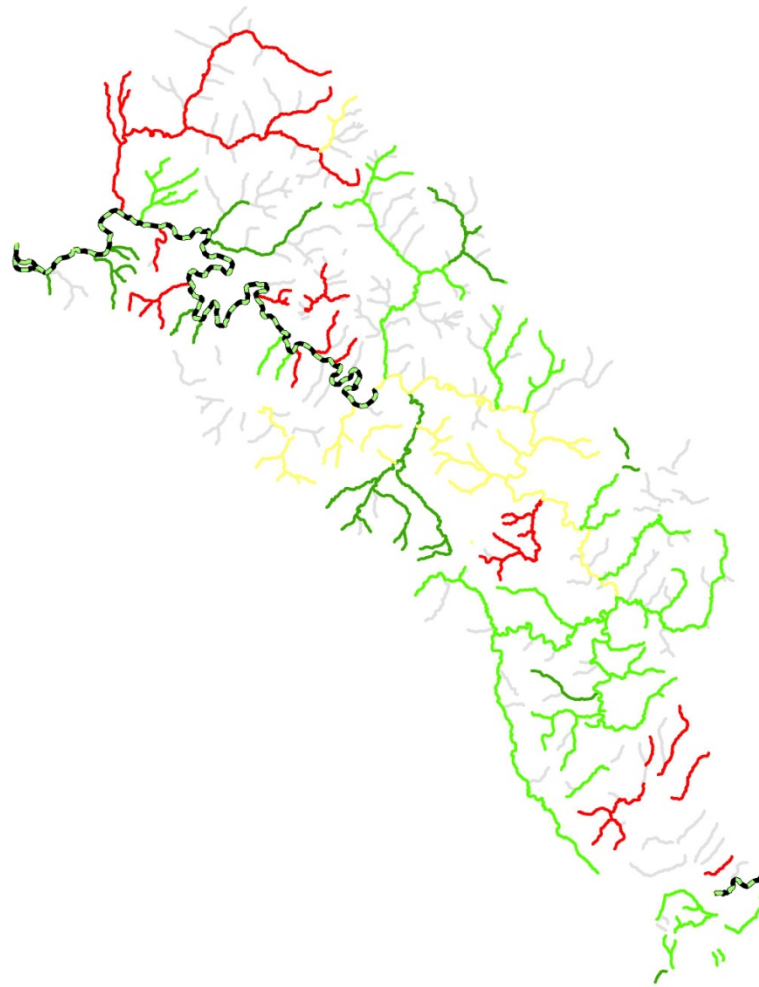
18 Scotch and French broom sites



7 tansy ragwort sites



Currently restoring lower 10 miles of mainstem and Baker Creek



Where we see salmon spawning in dry years

BLM-MRC

King Range National Conservation Area



Over 10 years, currently manage 30 sites



Humboldt Weed Management Area

Japanese Knotweed Site along Lower Mattole



2005



2013



2013

2005



**MANAGING INVASIVES
COMMUNITY INVOLVEMENT**

Mission of Invasive Plant Program

Work towards preserving and protecting the native ecosystems in the Mattole watershed



Mattole Watershed Species Of Interest



Japanese knotweed



Scotch broom



French broom



Cape ivy



English ivy



Tansy ragwort



Malta star-thistle



Gopher weed



Oblong spurge



Cotoneaster



European beachgrass



Yellow flag iris

2013-14 – The Year in Review

Public and Private Lands

Broom: 32

Tansy: 10

English ivy: 7

Pampas grass: 3

European beachgrass: 5

Oblong spurge: 3

Iceplant: 3

Malta starthistle: 2

Cape ivy: 2

Yellow flag iris: 1

Gopher weed: 1

Annual non-native grasses at the Mattole Beach: 1

TOTAL of 70 Sites

EDUCATION

Mattole Environmental Education Program



Mattole Environmental Education Program



Nick's Interns

- High school students
- Summer employment
- Hands-on experience



Nick's Interns Tansy Ragwort

- Pre-treatment: July 2014



- Post-treatment: July 2014



Mattole Field Institute



Mattole Field Institute

Yellow Flag Iris



Before: May 2014



After: July 2014

Native Ecosystem Restoration 6 Month Internship



Cape Ivy pile and tarp maintenance



Watershed Stewards Project Americorps



Lost Coast European Beachgrass Removal



Spanish Flat: Before

Spanish Flat: After

OUTREACH

WANTED

DEAD OR ALIVE



Tansy Ragwort A.K.A. "Stinking Willie."

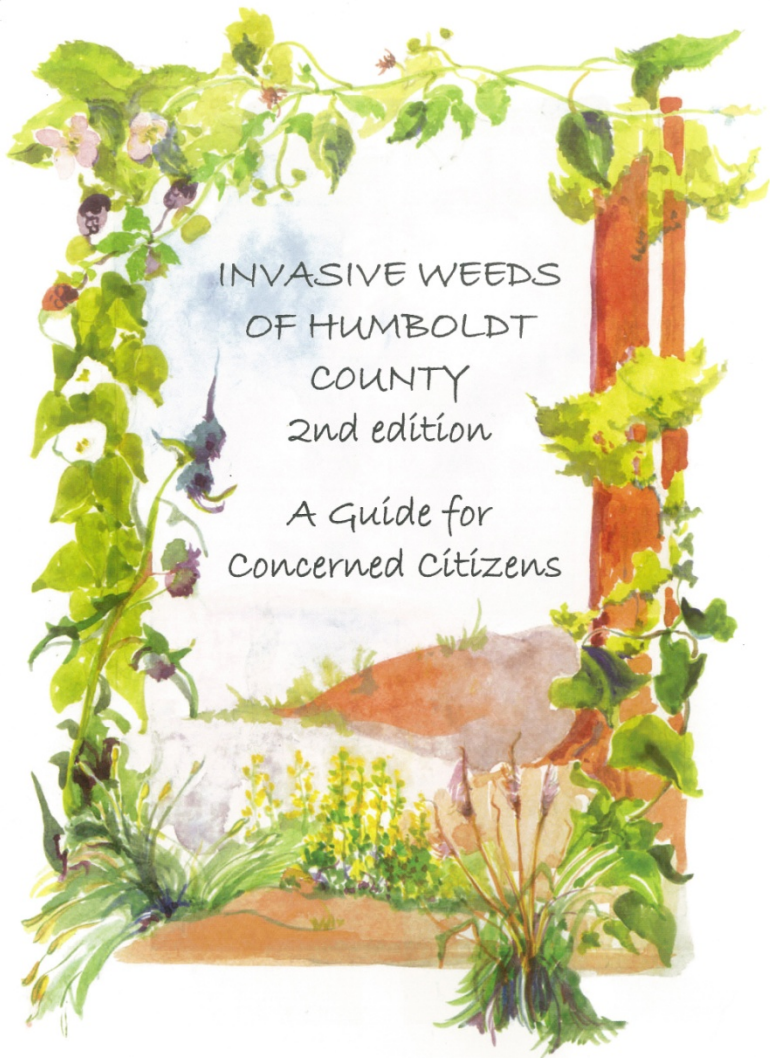
Wanted for environmental destruction and spreading deadly poisons. Tansy is one of the leading causes of poisoning in cattle and horses. Its toxic alkaloids can also pass to humans from contaminated cow and goat milk as well as honey. This noxious invader spreads rapidly through pastures, rangelands, riparian areas and roadsides, displacing any quality forage plants and native species that cross its deadly path.

IF YOU HAVE ANY INFORMATION REGARDING THIS PLANT,

PLEASE CONTACT UNITY AT

THE MRC: 629-3514

Fliers posted throughout
Mattole watershed



INVASIVE WEEDS
OF HUMBOLDT
COUNTY
2nd edition
A Guide for
Concerned Citizens

Web Resources

- BugwoodWiki Invasipedia** - <http://wiki.bugwood.org/invasipedia>
- Bureau of Land Management (BLM)** - <http://www.blm.gov/weeds>
- CalFlora** - <http://www.calflora.org>
- California Department of Agriculture (CDFA) Encycloweed** - http://www.cdfa.ca.gov/phpps/ipc/encycloweed/encycloweed_hp.htm
- California Invasive Plant Council (CAL-IPC)** - <http://www.cal-ipc.org>
- California Native Plant Society (CNPS), Northcoast Chapter** - <http://northcoastcnps.org>
- Humboldt County Department of Agriculture** - <http://co.humboldt.ca.us/ag/>
- Humboldt County Weed Management Area** - <http://www.cdfa.ca.gov/go/HumboldtWMA>
- Redwood National and State Parks** - <http://www.nps.gov/redw/naturescience/exotic-vegetation.htm>
- U.S. Fish and Wildlife Service's Plant Guide for Humboldt Bay's Dunes and Wetlands** - <http://www.fws.gov/HumboldtBay/plants.html>

Books

- Bossard, C., J. Randall & M. Hoshovsky (eds.). 2000. **Invasive Plants of California's Wildlands**. Univ. of Calif. Press.
- DiTomaso, J. 2003. **Aquatic and Riparian Weeds of the West**. Diane Pub. Co.
- DiTomaso, J. 2007. **Weeds of California and other Western States (vols 1 & 2)**. Univ. of Calif. Agriculture and Natural Resources.
- Whitson, T. 2006. **Weeds of the West (9th Edition)**. Diane Pub. Co.



Photo credit: James Sowerwine

HWMA's FREE Lend-A- Wrench Program

The Humboldt County Weed Management Area (HWMA) has Weed Wrenches™ available for free check-out by community members and organizations wishing to control invasive brooms and other woody shrubs.

Eliminate invasive shrubs in three easy steps:

1. Check out a Weed Wrench™ from the HWMA.
2. Pull out your mature shrubs in winter or spring, when the ground is wet, before seed set.
3. Monitor the site and remove seedlings as they occur.

Seeds of some shrub species, such as Scotch broom, can persist in the soil for many years, so diligent follow-up treatment is important to successfully eradicate an infestation. New seedlings are much easier to pull than mature plants.

Weed Wrenches™ are available at:

Bureau of Land Management Arcata Field Office
1695 Heindon Road (off Janes Road) in Arcata.
Call (707) 825-2300 for more information.



Humboldt County Weed Management Area

Humboldt County Weed Management Area is a consortium of public agencies, non-profit organizations and private citizens dedicated to the goal of reducing the impacts of invasive plants to natural and agricultural lands in Humboldt County.

- Cover art: Margaret McGee. Sketches: Giant knotweed by Monica Scholey. All others by Andrea Pickart.
- Scientific nomenclature follows the Jepson Interchange 09/02/09. <http://ucjeps.berkeley.edu/interchange.html>
- Printed on recycled paper.
- Suggested citation: Humboldt County Weed Management Area. 2010. *Invasive Weeds of Humboldt County: A Guide for Concerned Citizens* (2nd Edition). Arcata, California.
- An online version of this guide is available at the HWMA's website: <http://www.cdfa.ca.gov/go/HumboldtWMA>

Mattole Restoration Council's Invasive Plant Community Cost-Share Program

By Unity Peterson

Is that pesky patch of Scotch broom staring you down every morning as you sip your coffee? Are those Tansy ragwort plants swaying in the wind taunting and teasing you in the summer breeze? Whether or not you have been meaning to deal with those invasive plant infestations on your property, now is a great time to take action! The MRC is introducing its new Invasive Plant Community Cost-Share Program.

WHY IS THIS PROGRAM IMPORTANT?

We have all seen what invasive plants can do to the natural landscape in this watershed, especially if left untreated. For instance in the spring, when the Scotch broom is in full bloom, it is shocking to see how much of the pastures and meadows are now covered in a thick blanket of bright yellow, leaving the natural ecosystem completely altered and the land utterly useless. Each year, Tansy ragwort seems to be spreading throughout the rangelands of the watershed. Due to its toxicity, Tansy ragwort poses a serious threat to livestock and seriously degrades the value of the landscape. These are just a few examples of invasive species that exist in the Mattole. The goal of this program is to extend the reach of our effort to control invasive plant infestations in our watershed through collaboration with landowners. The Invasive Plant Community Cost-Share Program allows us to leverage funding to document and treat sites that we were not aware of or did not previously have the resources to treat. In short, if we work together to keep these invasives in check, we have a much better chance of restoring and preserving the beautiful natural landscape of this watershed that is loved by all.

HOW IT WORKS:

The MRC will provide cost-share incentives to landowners who are interested in removing invasive plant infestations on their property. The amount of funds allocated to each landowner for cost share will depend on the priority level of their project site. The Invasive Plant Program Coordinator will visit and assess the project site based on Table 1 below. The percentage category that most closely defines the project site, will be the percentage of the project cost that MRC will cover, while the landowner will be responsible for the remaining cost.

NOTE: At this time we currently have funding to implement our Cost-Share Program for Scotch and French broom project sites. However, we are planning to expand the program to include all invasive species outlined in Table 2. Therefore, we encourage landowner's feedback and input; let us know what type of invasive plants you have on your land, and how the cost-share program would be most effective for you. Information about new invasive species in the watershed and new infestations is valuable for several reasons. First, if we identify and catch them early we can more easily treat and eradicate the species. Secondly, once we know what exists here we can more easily seek funding for those projects in the future.

Table 1: Assessment Criteria

% Cost Covered by MRC	75%	50%	25%
Invasive Species Category	Red Alert/High	Moderate	Limited
Size of Infestation	New Infestation	Moderate	Well Established
Habitat Value	High/Critical	Moderate	Low
Fire Danger	High	Medium	Low
Previously Treated	More than Once	Once	Never
Proximity to Water/Road	Situated On	Near	Distant/Outlying

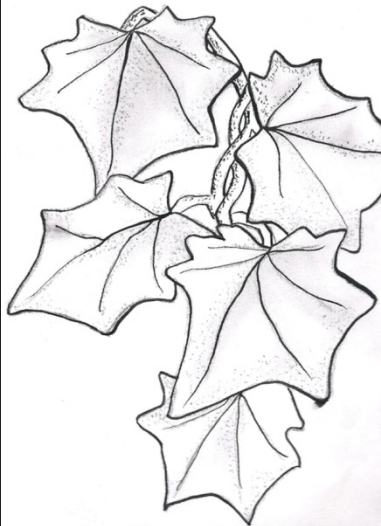
Table 2: Categorized Species List

Red Alert/ High	Moderate	Limited
Japanese knotweed	Tansy ragwort	Klamath weed
Yellow star thistle	Foxglove	Himalayan blackberry
Cape Ivy	Ox-eye daisy	Bull thistle
English Ivy	Scotch broom	Canada thistle
Malta star thistle	French broom	Italian thistle
Pampas grass		

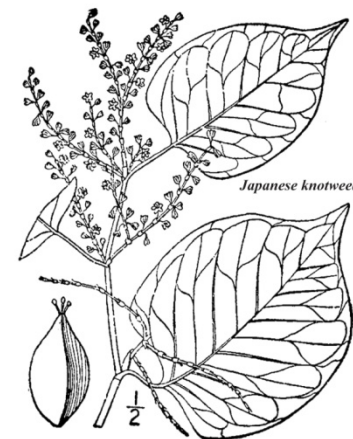
OUR OBJECTIVE: To provide a resource for the community that will encourage and provide assistance to landowners to conduct invasive weed removal projects on their property and to preserve the ecological integrity of the Mattole River watershed through community-based invasive weed control. This cost-share program will offer additional incentives for local landowners, officials, and citizens to work collaboratively to develop a more comprehensive and effective invasive weed management program.



Klamath weed (also called St. John's wort)



Cape Ivy illustrated by Unity Peterson.



Japanese knotweed

EXAMPLE:

Scott Blackberry lives near Ettersburg and has had a French broom infestation that he has been wanting to get rid of but just hasn't had the time or resources to treat it. He learns of the Invasive Plant Community Cost-Share Program from a flier at the Honeydew Store and calls the Mattole Restoration Council and talks to the Invasive Plant Program Coordinator. The Coordinator makes an appointment to meet Scott and assess the site and the percentage that the MRC will cover, as well as estimate the total cost of the project. They discuss this for a while and Scott agrees to move forward with the project. The Program Coordinator then organizes the invasive plant removal crew and begins pulling French broom. At the end of the project, Scott pays the MRC the percentage he had agreed upon and then sits down with the Program Coordinator to discuss how to continue to treat this site so that he can eventually eradicate this broom patch. He is informed that he can either re-treat the patch himself the following year or continue to take part in the Cost-Share program. Either way he realizes that re-treatment is vital and if done properly each year re-treatment will become easier, faster and cheaper.



Malta star thistle



Bull thistle

HOW TO PARTICIPATE IN THE COST-SHARE PROGRAM:

1. Contact Unity, the Invasive Plant Program Coordinator, at the MRC office: 629-3514.
2. Arrange a pre-project inspection. MRC staff will map and assess your project site, including the percentage that the MRC will pay as well as the total project cost.
3. Review the maps and project plan. Sign work agreement with MRC
4. Implement the project.
5. Conduct post-project review and develop non-binding long-term management plan with MRC staff.

Images of invasive plants shown on these pages, except for Cape Ivy, appear courtesy of USDA-NRCS PLANTS Database / Britton, N.L., and A. Brown. 1913. An illustrated flora of the northern United States, Canada and the British Possessions. 3 vols. Charles Scribner's Sons, New York.

Volumes and page numbers for each species are as follows:
 Bull thistle: Vol. 3: 549; Klamath weed (aka St. John's wort): Vol. 2: 533; Japanese knotweed: Vol. 1: 676; Malta star thistle: Vol. 3: 559; Scotch broom: Vol. 2: 350

Early Detection Rapid Response

- 300 square miles
- Community reliance
- Webpage and paper

“I SAW IT!”

Invasive Plant Sightings in the Mattole Watershed

Drop off at the Mattole Restoration Council Office in Petrolia (upstairs at the Mattole Valley Community Center) or mail to: *PO Box 160/Petrolia, CA 95558* THANK YOU!

Your name and contact information:
Plant name (s): (NOTE: It is helpful to include photographs if possible)
Date you SAW IT:
Location of Sighting (Detailed description and/or rough map is helpful):
Habitat: (Ex: Roadsides, Forest, Rangelands, Public Recreation Area, Riparia, etc.)
Size of Infestation: (Check the box that best describes the infestation) <input type="checkbox"/> Small infestation (1-10 plants) <input type="checkbox"/> Large infestation (50-100 plants) <input type="checkbox"/> Medium infestation (10-50 plants) <input type="checkbox"/> Too many to count
Name and Address of Landowner (s) if known:
Notes:

The information you provided is for MRC use only and will not be shared with anyone else. Your observation will be added to our database and will greatly help our efforts in managing Invasive Plants in the Mattole watershed. Thank you very much for participating!

COMMUNITY INVOLVEMENT

Volunteer Days





**Lend-A-Wrench:
Unlimited, free tool access for residents**

Invasive Plant Removal

Do you have a pesky patch of invasive plants that you want to get rid of? Our services provide reliable crews trained in invasive plant removal at an affordable cost.

- * **Fast**
- * **Efficient**
- * **Experienced**



For a Free Consultation, Contact
Unity at the Mattole Restoration
Council * 629-3514 or unity@mattole.org *





Fee For Service Project : Scotch broom removal on the Lower North Fork





RESOURCES LEGACY FUND
Creative Solutions. Lasting Results.

Mattole Landowners, Volunteers, and Supporters



Mattole Restoration Council
www.mattole.org

Cassie Pinnell, Executive Director
cassie@mattole.org

Unity Minton, Invasive Plant Coordinator
unity@mattole.org

