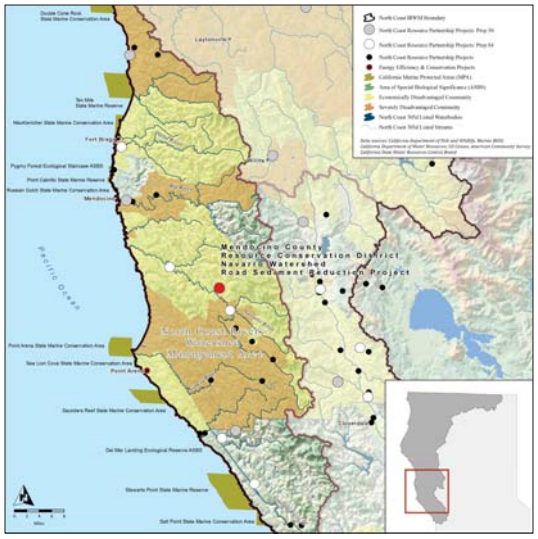
Navarro Watershed Road Sediment Reduction Project

MENDOCINO COUNTY RESOURCE CONSERVATION DISTRICT (MCRCD)



STATEMENT OF THE PROBLEM

Water quality and salmonid habitat in Indian, North Fork Navarro and Rancheria Creek subwatersheds in the Navarro River basin have been severely impacted by excess sediment loading from upslope sources including erosion and sediment delivery associated with networks of unimproved, poorly drained forest/ranch roads.

PROJECT GOALS

Short-term goals: reduce anthropogenic erosion and sediment delivery by implementing erosion control and prevention treatments on properties in the Indian Creek and upper Rancheria Creek basins.

Long-term goal: contribute towards salmonid habitat improvement and to promote sediment and temperature TMDL goals in the Navarro watershed.

THE SOLUTION

Prescriptions employed for this project were based on road related sediment source inventories (PWA 2003, 2004) and work was performed using methods outlined in *Handbook of Forest and Ranch Roads* (Weaver and Hagans 1994).

PROJECT IMPLEMENTATION AND ACCOMPLISHMENTS

Work was undertaken during summer low-flow periods of '08 and '09 to minimize any impacts to water quality. No overland flow was observed at these locations while work was underway.

Between September 3, 2008 and October 30, 2009, 119 sites along approximately 18.6 miles of road were treated, including 103 stream crossings, 6 road drainage discharge points, 4 landslides, and 4 ditch relief culverts. Approximately 9 miles of hydrologically connected road reaches adjacent to sediment delivery sites were treated with road shaping and road drainage structures to disperse road surface runoff and prevent the delivery of fine sediment from roadbed erosion. An additional 12 miles of road networks were upgraded by leveraging Proposition 50 funds to obtain both 319(h) funding and NRCS cost-share support. Together this facilitated landscape level improvements to water quality.

Digital photography was used to document site conditions before, during, and after earthwork and implementation of erosion control and erosion prevention treatments at project locations.

COMPLETION DATE

October 2009

PROJECT BUDGET

IRWM funds:	*$ 585,067*
Leveraged funds:	*$ 450,000*
Total cost:	**$1,035,067**

BENEFITS

Economic

- Using a benefit of $6/ton[1] to represent several avoided costs associated with reduced sedimentation, prevention of 5,950 yd^3 of episodic, storm-driven sediment delivery to streams in the project area has a one-time estimated value of $9,639
- Using a benefit of $6/ton[1], prevention of 8770 yd^3 of chronic sediment delivery from road surface erosion has an estimated yearly value of $14,205 through 2019
- This project contributes to regional efforts to revitalize salmon fisheries

Water Quality

- Road upgrades save on annual maintenance costs and reduce the risk of episodic stream crossing failures and substantially reduce potential sediment delivery to streams
- Road related erosion is the most controllable source of anthropogenic sediment, and implementing these treatments supports all downstream beneficial uses
- Upland sediment control enhances instream water quality and habitat for anadromous cold water fish species, like coho salmon and steelhead-trout, some of the most sensitive beneficial uses in the watershed.

Other

- Reduction in flood event frequency/intensity

Habitat and Ecosystem Function

- Improved ecosystem function through elimination of road-associated barriers and fragmentation, increasing habitat connectivity and reducing migration barriers

Cultural

- Open Enrollment Workshop topics included effects of sediment delivery on aquatic habitats and techniques to improve road drainage
- Landowners will be able to improve management practices long-term, increasing sediment reduction contributed by this project

Jobs and Local Economy

- The cost of the project was $1,035,067, which was spent using local labor and supplies when possible, thus contributing to State goals for environmental justice and social equity
- Approximately 12 to 15 jobs were created/maintained by the project
- Other economic benefits included: local business such as building supply, feed supply, culvert and fuel distributers—all received benefits due to the project

NEXT STEPS & RECOMMENDATIONS

With the successful completion of this project watershed landowners and agencies have a sound foundation for implementing further watershed restoration as funding becomes available.

CONTACT

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Ken Montgomery, local horticulturist and owner of Anderson Valley Nursery, for supporting and supplying locally grown, site specific native plant material and nurturing students to appreciate native plants and their role in the natural world

Tom Schott, visionary NRCS District Conservationist emeritus—for leading the effort to implement both watershed restoration and coordinated permitting in the Navarro

The Navarro Watershed Working Group (NWWG) and the Anderson Valley community for their support of the Navarro River Resource Center

NORTH COAST RESOURCE PARTNERSHIP