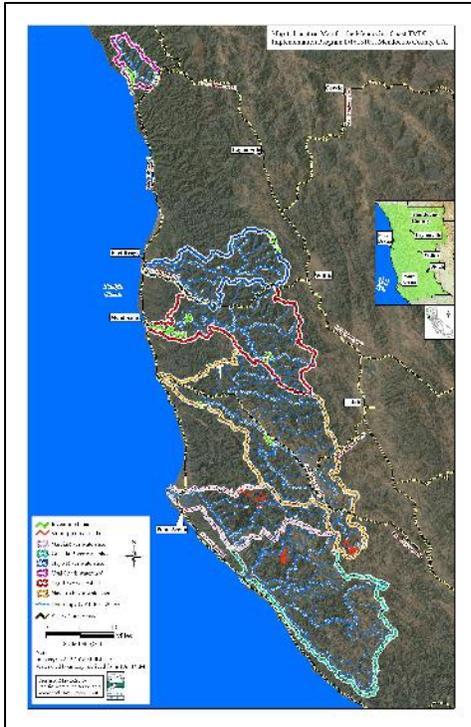


Mendocino Coast TMDL Implementation Program–Agreement No. D1613101
Timber Regulation and Forest Restoration Fund
Conducted by the Mendocino County Resource Conservation District
Ukiah, CA

Final Project Summary

Background



The Mendocino Coast Hydrologic Unit covers nine Hydrologic Areas in Mendocino County. All the major river systems on the Mendocino Coast are identified on the US EPA’s 303(d) List as impaired waterbodies for sediment and most are also “listed” for temperature impairment. In November 2004, the North Coast Regional Water Quality Control Board (NCRWQCB) adopted the Sediment TMDL Implementation Policy for the North Coast Region, included all of the sediment impaired watersheds in the Mendocino County Hydrologic Unit. Scale and land-use in the largest Mendocino Coastal watersheds are as follows: Ten Mile River—120 sq. miles privately owned and majority of the land is in silviculture; Noyo River—113 sq. miles primarily silviculture; Big River—181 sq. miles, silviculture and ranching; Garcia River—114 sq. miles, silviculture, ranching, dairy, and gravel mining; Gualala River—300 sq. miles, silviculture, orchards, viticulture, and ranching.

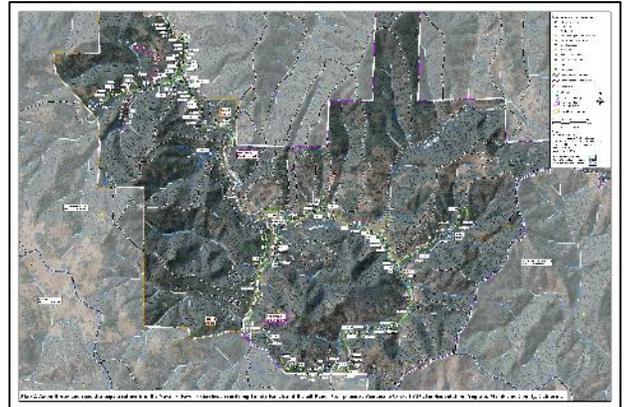
All Mendocino Coast Hydrologic Unit watersheds exhibit evidence of chronic and episodic road related erosion from unimproved roads and legacy logging practices, including riparian roads and instream landings, which contribute to nonpoint source sediment pollution of surface waters. Each of

these river systems supports anadromous salmonids, and habitat for cold water fish species is the most sensitive beneficial use on north coast river systems. Erosion from unpaved logging, ranch, and residential roads has been identified in TMDL Action Plans and Guidance Documents as a significant and controllable contributor to sedimentation problems in coastal Mendocino systems.

The *Mendocino Coast TMDL Implementation Program* project facilitated sediment TMDL goals on the Mendocino Coast through a stewardship approach including outreach, education, field inventories, and implementation. This conveyor belt-like planning and implementation approach has been proven to effectively expedite the implementation of TMDL goals through: direct implementation of sediment reduction treatments, road assessment, inventories, prioritization of future erosion features to facilitate future implementation projects, and education and outreach to landowners which have not yet taken steps to address TMDL goals on their properties.

Project Description

The Mendocino County Resource Conservation District (RCD) implemented a conveyor belt-like approach to addressing sediment TMDL goals on the Mendocino Coast, accomplishing direct on-the-ground implementation of sediment reduction treatments along over 18.6 miles of road, conducting road related sediment source inventories along over 30 miles of private and public road, coordinating with private and public partners through 3 technical advisory council meetings, and providing 3 workshops promulgating progressive best management practices for reduction of road related sediment delivery.



Through the Timber Fund NPS Grant and matching funds from an NRCS, landowners, and other project cooperators, this project upgraded 18.6 miles of forest and ranch roads in the Gualala River, Garcia River, and Navarro River watersheds, using progressive design and maintenance methods outlined in the *Handbook of Forest and Ranch and Rural Roads* (Weaver, Weppner, and Hagans, 2015). The storm-proofing implementation portion of the project prevented a potential 16,675 cubic yards of excessive sediment from delivering to the Gualala River, Garcia River, and Navarro River watersheds. Stream crossings were designed to accommodate 100-year storm event flows and chronically eroding road surfaces were hydrologically disconnected from the stream system by installation of road drainage structures and road shaping.

Three technical advisory council meetings were held to select candidate road segments/sub watersheds for high priority road related sediment source inventories. Over 30 miles of road in the Navarro River, Noyo River, Big River, and Usal Creek watersheds were inventoried in accordance with Chapter X, California Salmonid Stream Habitat Restoration Manual protocols (Weaver et al., 2006).

Three workshops, containing both classroom and field components were provided to the public, to educate landowners, land managers, and agency staff on sediment TMDLs, impacts of road related sediment delivery, erosion control and erosion prevention BMPs, and solicit nomination of their properties for road-related future sediment delivery site assessment.

Project Goals Accomplished:

- Upgraded 18.6 miles of unimproved forest and ranch roads to withstand a 100-year storm event
- Approximately 16,675 yd³ of sediment saved from delivering to streams (Garcia River: 4,550 yd³; Gualala: 8,210 yd³; Navarro: 3,920 yd³)
- Total annual load reduction to 303(d) listed waterbodies of approximately 1,375 tons (Garcia River: 418 tons; Gualala: 551 tons; Navarro: 406 tons)
- Two (2) stream crossings upgraded with bridges to accommodate the 100-year recurrence flood flows
- Modified 1 temporal barrier to fish passage to improve passage conditions
- Three Technical Advisory Committee meetings were held
- Three workshops and tours were conducted to project sites in Anderson Valley, Caspar, and Fort Bragg.
- Approximately thirty miles of roads were inventoried in 2019/2020, including roads in Usal Creek, Noyo River, Big River, and Navarro River watersheds.

Project Performance

Performance Overview:

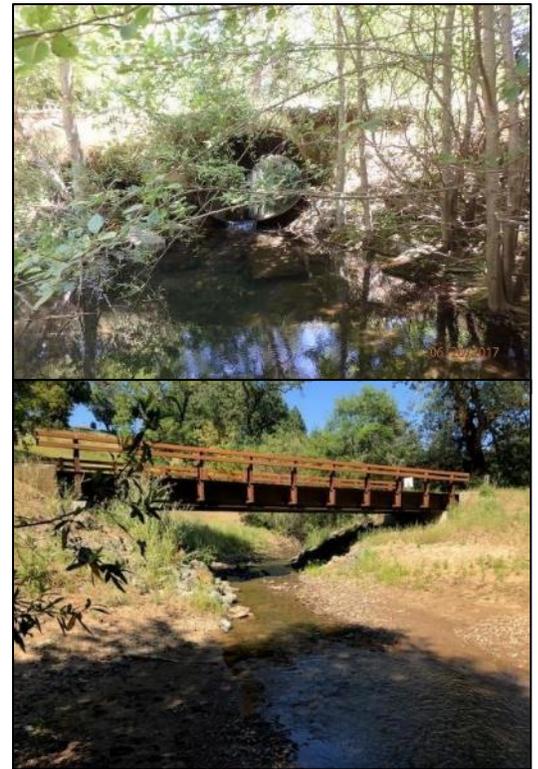
The project met all deliverables and exceeded estimated sediment savings by approximately 5% and annual load reduction target of 2.6%. An additional bridge was installed through matching funds from NRCS, for a total of 7 bridges throughout the project area. Two amendments were granted the last one in 2020, and all work was completed by April 30, 2020, and all grant close-out deliverables will be completed before May 31, 2020.

Project Challenges & Solutions:

- CDFW Lake and Streambed Permitting fees imposed on environmental projects funded by other California State agencies were exorbitantly high, and greater than the allocated budget.
- Coordination of assessment and implementation on many private properties increased requirements for planning, permitting, coordination and administration.

Cost Estimates vs Actual Costs:

MCRCD and PWA did request adjustments of less than 2% overall, which is fairly low considering the complexity of the project—education, a Technical Advisory Group, assessment, and implementation throughout a large coastal region and multiple watersheds and landowners. Before the project went to construction in 2017, SWRCB granted an extension and thus the project was also longer than originally planned and budgeted for.



Schedule & Critical Dates:

The Technical Advisory Group was convened later than anticipated, in January 2019. The TAG helped MCRCD and PWA to prioritize and identify road segments for inventories/assessments. The TAG also helped to promote the three workshops—also held in 2019. The final TAG conference call was held during the Covid-19 shelter in place in April 2020.

PAEP—Summary of Results:

Table of Goals & Outcomes

<p>Sediment Reduction Goals:</p> <ul style="list-style-type: none"> • Treat at least 17.1 miles of road • Control 15,880 cubic yards of sediment • Annual sediment load reduction of 1,339 tons/year • Four landowners involved with implementation of road storm-proofing treatments 	<p>Sediment Reduction Outcomes:</p> <ul style="list-style-type: none"> • Treated 18.6 miles of road • Controlled 16,675 cubic yards of sediment • Annual sediment load reduction of 1,374 tons/year • Four landowners involved with implementation of road storm-proofing treatments
<p>Sediment TMDL Goals:</p> <ul style="list-style-type: none"> • Implement a Technical Advisory Committee • Increase miles of roads with comprehensive sediment source assessments 	<p>Sediment TMDL Outcomes:</p> <ul style="list-style-type: none"> • TAC and MCRCD identified 30 miles of prioritized road segments for inventory • Thirty (30) miles of roads were assessed for road related sediment sources • Eleven (11) landowners or associations were cooperated with to produce road related sediment source assessments

<p>Increase stakeholder knowledge of road related sediment source BMPs:</p> <ul style="list-style-type: none">• Increase number of watershed residents and operators who can identify and address road related sediment sources	<p>Increase stakeholder knowledge of road related sediment source BMPs:</p> <ul style="list-style-type: none">• Conducted 3 BMP workshops with 57 total attendees• Distributed 150 handbooks
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