

## Sediment Reduction from Vineyards in the Russian and Navarro River Watersheds

The Fish Friendly Farming Program is intended to address soil erosion and sedimentation from vineyards and associated unpaved roads. Additionally, the program addresses elevated water temperatures and invasive plant species, as well as farm chemical runoff. Sedimentation into streams, elevated water temperatures, and invasive plant species negatively impact water quality and beneficial uses, affecting already critically low numbers of steelhead trout and salmon. Under the Fish Friendly Farming Program, several key tasks have been accomplished, including outreach and education, one-on-one site evaluations, assistance with farm plan preparation, identification and implementation schedules addressing human caused sources of sediment, development of site-specific design plans, implementation of streamway restoration plans, and agency farm plan certification. Continued voluntary program participation will result in water quality benefits and increase in salmonid stocks.

The Russian and Navarro Rivers, where the Program began, are located in one of the world's renowned wine grape growing areas of Coastal Northern California. The Russian River flows through Sonoma and Mendocino Counties and the Navarro River is located solely in Mendocino County. Both watersheds drain directly to the Pacific Ocean and have several tributaries known to contain threatened salmonids. The Russian and Navarro River watersheds were listed for sediment impairments under Clean Water Act Section 303(d) in 1996. Sediment impairs water quality and beneficial uses such as fish spawning, recreational uses, and agriculture and municipal water supplies.



Additionally, the Navarro watershed is listed as impaired for temperature, which impacts beneficial uses such as essential cold water habitat for anadromous fish. Both of these rivers are home to several species listed as threatened or endangered on the Federal Endangered Species list, including steelhead trout, Coho and Chinook salmon, the California red-legged frog and fresh water shrimp. The impairments originated with extensive historic logging in both watersheds and are further exacerbated by new development including extensive vineyard and road development. The Navarro River technical TMDL, adopted in December 2000, addressed temperature and sediment impairments and recommended sediment

load reductions of 80% from both roads and vineyards and indicated that stream temperatures could be reduced by up to 5°C by increasing shade canopy up to 80%.

The Fish Friendly Farming Program helps to develop farm conservation plans (farm plans) for all properties enrolled and completing the program. Each farm plan identifies sediment sources on the entire ranch as well as fisheries potential on each stream. Additionally, each farm plan identifies Best Management Practices (BMPs) to control sediment on each identified source area and proposes native riparian vegetation plantings in streamway areas requiring shade canopy or stream bank stabilization. In addition, each farm plan presents an action plan, implementation schedule, and a monitoring plan. Most frequently employed BMPs by the Program to control sediment from vineyards include permanent cover cropping, cover crop mowing, establishment of sheet flow, appropriate setbacks from waterways, and proper installation of drainage



structures. Roads have been shown to be significant sources of sedimentation; BMPs frequently used under the Program to reduce road-related sediment discharges include road outsloping, installation of rolling dips, appropriately sized and installed culverts and cross culverts, and application of rock to the roads' running surfaces. Under the Program, farm chemical usage is evaluated and recommendations made for more efficient chemicals with far less environmental risks. The Program has so far hosted six workshop series

classes, attended by 96 landowners and vineyard managers representing 102 farms in the Navarro and Russian River watersheds. Of those 102 farms, 54 have completed farm plans, approaching 15,000 acres in area. Additionally, 19 stream restoration projects have been implemented in whole or in part through this grant. The Sotoyome Resource Conservation District is the Project Director. Laurel Marcus and Associates is the primary subcontractor who developed and ran the Program, and worked with participants to develop a farm plan for each entire ranch. Representatives from NOAA Fisheries, California Department of Fish and Game, and the North Coast Regional Water Quality Control Board review each farm plan and compare the farm plans and their recommendations to property conditions and provide comments. The Program is designed to include a reevaluation all participating ranches every 5 to 6 years to evaluate on-the-ground implementation of the farm plans and provide agency feedback.

Program goals include reduction in sedimentation from the participating ranches and reduction in stream water temperatures due to increased stream canopy shade. Extensive photo monitoring over the years on each ranch tracks BMP sediment reduction success on roads and vineyards and stream canopy growth and coverage. Although the participating acreage in each watershed can be considered insignificant, the program is rapidly gaining in popularity and the

program has demonstrated to surrounding property users that responsible land stewardship is economically feasible, provides ranch cost savings, and protects their land's resources for future family generations in addition to protecting and enhancing public trust resources. The Russian and Navarro Rivers have not been delisted; however, this Program works to improve water quality and beneficial uses so delisting might occur in the future.



The Sotoyome Resource Conservation District, Laurel Marcus and Associates, and agency representatives from NOAA Fisheries, California Department of Fish and Game, and the North Coast Regional Water Quality Control Board worked together and with participating ranches to successfully complete the first phase of the Program, which ran from 2002

through 2005. 319(h) funding for this phase of this Program totaled \$454,300 and matching funds totaled \$395,941.57 for a grant total of \$850,241.57. 319(h) funding paid for project coordination and management; permitting; vineyard, road, and streamway work; and professional and consultant services. Match funding was provided by ranch participants, the Giant Reed Removal and Riparian Enhancement Program, Environmental Fund for Habitat and Incident-Specific Restoration Projects, Mendocino County Resource Conservation District, NOAA Fisheries, USDA/EQIP, California State Coastal Conservancy, and California Department of Fish and Game. The Program is continuing at present in the North Coast and San Francisco Regional Water Boards under the Agricultural Water Quality Grant Program, and staff of both Regions are collaborating to develop methods to incorporate the Program into our TMDL and Nonpoint Source implementation strategies; we anticipate providing further updates as this program and our collaborative efforts progress.

Contact information:

Scott Gergus

North Coast Regional Water Quality Control Board

5550 Skylane Blvd

Santa Rosa, CA 95403

Phone: 707-576-2685

Email: [sgergus@waterboards.ca.gov](mailto:sgergus@waterboards.ca.gov)