WINE INSTITUTE
THE VOICE FOR CALIFORNIA WINE

Sustainable Winegrowing Practices

October 2002

Highlight of the Month: Controlling Erosion

Conserving soil is essential for contributing to the "terroir" of a wine and its unique personality. Controlling erosion stabilizes the land and helps protect fish by preventing silt and pollutants from entering creeks. It builds good neighbor and community relations through responsible stewardship of the land.

Protecting Hillsides and Fish Habitat at Navarro Vineyards

The steep slopes of Anderson Valley in Mendocino County have some of the thinnest soils and heaviest rainfalls in California, averaging 40 to 90 inches annually. Controlling water erosion is important for local vintners, including the husband-wife team of Ted Bennett and Deborah Cahn of Navarro Vineyards in Philo.

Bennett and Cahn farm 100 of the 910 acres that they purchased in 1973 in this magnificent coastal area. Conserving the soil is challenging, but worth the effort of growing Pinot Noir, Chardonnay and the other early ripening varieties that do so well in this cool Region I climate. They also control erosion to help keep pollutants and sediments out of the fish habitat in the Navarro River.

"We have mapped the whole property to determine the main watershed areas and then developed best management practices for the vineyards and also the roads—critical areas that are often conduits for rain runoff,' explains Cahn.

Each year the winery regrades the roads on a slant to direct the water flow to the inside slope. As the water runs down the inside channel, it falls into one of 60 stone drop boxes that catch the flow and divert it safely off the sides of the roads through underground culvert drains. Piles of rocks disperse the impact of the water as it comes out of the culverts. Navarro checks the culverts after every big rain to clear any debris. The roads are also closed after a storm so that vehicles do not tear up the roads.

Photo courtesy Navarro Vineyards

Navarro Vineyards has planted rows in contours to help prevent water erosion on the hillsides of Anderson Valley.

"We're working with Pathways Research, underwritten by General Motors, to obtain 10 electric low-speed vehicles that will have less impact on roads. They look like golf carts, and we plan to move people around the vineyards in them," says Cahn.

Navarro also maintains roads by planting a ground cover of hydro-seed, a special slurry of straw, water and grass seed, applied on the banks or potential erosion sites before the rains. They protect eroded areas with biodegradable material such as straw matting and coconut husks. Perennial grasses are grown in the waterways so that runoff will not form erosion gullies.

In the vineyards, Navarro composts and irrigates grass cover crops on all rows to help hold the soil in place during winter. Later, alternating rows are mowed and tilled, and in very steep areas, just mowed. They are vigilant in keeping gophers and moles in check, as the tunnels speed water erosion. All of their work has led to their application for Fish Friendly Farming certification.

"When you've been in the industry for a long time, you make long-term commitments to the land. We've made the investment because we plan to pass our business to our daughter and son," says Cahn.

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Benefits of Controlling Erosion:

- *Conserves soil, the foundation of the farm, by transporting water safely out of the vineyards*
- *Prevents vineyard erosion through the use of cover crops and mulches*
- *Stabilizes stream banks and roads with native vegetation and planted grasses*
- *Protects fish habitat by reducing sediments and pollutants that may wash into waterways*
- *Preserves the value of the land*
- *Enhances neighbor and community relations through responsible farming*

Potential Trade-Offs:

- *Involves initial expense for engineering of a drainage system*
- *Requires time and cost for ongoing maintenance*
- *May limit vehicle entry into vineyards during the rainy season because of the impact on the roads*

Protecting Watershed at Solis Winery through Erosion Control

At Solis Winery near Gilroy on California's Central Coast, co-owners David and Valerie Vanni are controlling creek side erosion on their 16 winegrape acres. Their vineyard is flat and not prone to the same runoff that a steep hillside might have, yet they are building a berm between their property and the creek to keep silt and pollutants out of the waterway, and prevent runoff from cutting gouges in the soil.

Since establishing their winery in 1989 and becoming familiar with their property, the Vannis learned that their tributary is not only a spawning ground for steelhead trout, but a feeder creek that eventually flows into the Monterey Bay National Marine Sanctuary 100 miles away. They also wanted to protect their creek because it meanders past the new Bonfante Gardens Family Theme Park and many new housing developments being built in the picturesque Santa Clara Valley.

"We want our winery to be a good neighbor and a good industry in the valley. Many people are moving into the area because of the high-tech industries nearby. We want to do things that will help assure that we can stay in agriculture for as long as possible," says David Vanni, who produces 6500 cases of award-winning wines.

Vanni learned how a berm would help protect their creek and the watershed through his work serving on the advisory board of the Santa Clara Valley Water District. Discussions there led the Vannis to establish a 1000-foot long berm with a pond on their side of the wall of earth. Red Fescue grasses are being planted to keep the berm from eroding. The vegetation filters out silt and pollutants as the water slowly seeps into the creek. Preventing silt from entering the creek keeps fish eggs from being buried too deeply so they can hatch. It also maintains the depth of the water so fish can return to spawn.

Vanni says that containing the water on their property poses no problems. The soil is porous, mostly gravel and sand, so the water soaks into the soil quickly and disappears within 24 hours. They plant cover crops, such as bell beans, in the vineyards not only to improve fertility, but the water-holding capacity and soil permeability.

"Building the berm is not a big, costly project," says Vanni. "We are encouraging neighbors to do the same. If everybody contributes a little, watershed issues will improve."

Photo courtesy of Solis Winery

Solis Winery production manager Mike Vanni works on building a berm that will help prevent silt and pollutants from washing into the creek.

Conserving Soil at Moon Mountain Vineyard

In 1996, a wildfire on Sonoma Mountain burned winegrape acreage at Moon Mountain Vineyard and a good deal of the brush land in the surrounding panoramic hills. But the fire also led to a rebirth. The winery's steep hillside vineyards, stretching nearly 2,000-feet high, were renewed with cover crops, compost and other organic farming practices to help protect the vulnerable slopes from erosion after the fire.

Equally important in using these methods was the goal of founding entity Chalone Wine Group to cultivate ultra high quality fruit from the mountain's rich volcanic soils.

"Soil is such a precious commodity. Without it, one can't get the terroir and taste of the wine," says Phil Coturri, consulting vineyard manager. "Soil conservation is what farmers do, which means being vigilant in controlling erosion. It's part of the cycle of vineyard work: pruning, irrigating, harvesting and erosion control."

The 74 planted acres at Moon Mountain have a drainage system that seems as highly engineered as streets in a city for directing water runoff. Cutting across all the vineyard roads run shallow diagonal gutters. They divert the water to the sides of the roads where larger ditches lined with rocks guide the water flow into subterranean culvert drains. The culvert design helps drop out sediment and safely transports the water down to nearby Agua Caliente Creek and eventually out to the San Francisco Bay.

After harvest, activities to control erosion step up. Coturri's team plants grass seed on the road sides and lays down crushed rock on the main roads for limited vehicle traffic. The crew also spreads straw on all vineyard avenues and exposed areas of bare dirt.

In the vineyards, Coturri's team mows alternate rows planted with a cover crop of mixed clovers that look and perform like a straw filter during the rainy season. They rough till the other rows to form a green manure. Every five or six years, they alternate the mowing and tilling regimen between the rows. All the rows have been planted in contours, and the roads meander through the hills—all designed to slow down the runoff and lessen the impact on the soil.

"Vineyards with about a 10-15 percent slope or greater, depending upon the soil, are now required to have an erosion control plan in effect, but we did it at Moon Mountain before the county mandated it," says Coturri. "It's just responsible farming."

(At left) Vineyard manager Phil Coturri checks the condition of the ground cover between rows before the rainy season. Piles of crushed rock in the background will be spread on main roads to filter and slow the runoff and protect the soil. (Above) Silt is allowed to settle at the bottom of a culvert so the water can flow safely out the subterranean drain.

Resources:

- ***California Resource Conservation Districts (RCD) –*** *Links to all the RCDs, which help provide technical assistance and field advice on farm conservation practices to keep soil in the fields and out of the waterways. www.nacdnet.org/about*
- ***An Introduction to Water Erosion Control —*** *www.agric.gov.ab.ca/agdex/500/72000003.html*
- ***Erosion Control Resources from the Web –*** *Erosion control best management practices. http://earthonline.org/test/erosioncontrol.html*
- *Technical assistance and other information on reducing soil erosion are also available at such locations as the Agricultual Stabilization & Conservation Service office, UC Cooperative Extension, and many regional winery and grower associations*

THE CODE OF SUSTAINABLE WINEGROWING PRACTICES

In early 2001, leadership and funding from Wine Institute and the California Association of Winegrape Growers (CAWG) led to the formation of a committee to develop a "Code of Sustainable Winegrowing Practices." This proposed voluntary program, establishing statewide guidelines for sustainable farming and winemaking, is now complete and being introduced to the wine community this fall beginning with an October 29, 2002 conference.

Purpose: The purpose of the project is to enhance the California wine industry's leadership role in responding to pressures resulting from population growth, public and legislative attitudes, environmental decisions from regulatory and governmental bodies, and other growth-related issues. The new Code, and its implementation, can greatly augment the industry's collective and unified ability to accommodate these pressures, while assuring that future generations can produce the finest world-class wines. The goal of the Code is to "promote farming and winemaking practices that are sensitive to the environment, responsive to the needs and interests of society-at-large, and economically feasible in practice." In a recent address to Wine Institute's Board of Directors John De Luca characterized the proposed Code as "most likely the greatest legacy we can create for the wine community, our larger society, and generations yet unborn."

Project Summary: More than 50 Wine Institute and CAWG members, as well as outside stakeholders such as representatives from Cal/EPA and independent farm advisors, sit on the committee spearheading the project. Committee Chair Michael Honig leads work on this first-ever statewide initiative, which includes a system to measure the voluntary industry input from vineyards and wineries. The data collected from the project will be used to benchmark the wine community's progress on sustainability and target educational campaigns where needed. The winegrowing portion of the guide book will build upon the successful programs of the Lodi-Woodbridge Winegrape Commission and the Central Coast Vineyard Team. Outside comment from regional grower and vintner associations and a wide range of university educators, environmental and social equity groups, and wine industry experts has played an important role in the Code development. Dr. Jeff Dlott of RealToolbox, a sustainable agriculture and resource conservation consulting firm, was contracted to help oversee the project and measurement system.

Next Steps: At Wine Institute's June 2002 Annual Meeting of Members, the Institute Board of Directors provided comment and approved a complete 490-page draft of guidelines for the Code of Sustainable Winegrowing Practices. CAWG's Board of Directors also approved the draft Code guidelines.

To attract implementation funds for this project, the Wine Institute Board established a 501(c)3 nonprofit, non-lobbying foundation in conjunction with CAWG. This was necessary as many philanthropic organizations donate solely to 501(c)3 groups. Named the California Sustainable Winegrowing Alliance, this entity will help advance the adoption of sustainable viticulture and winemaking practices through research and education. Bylaws have been approved and a board of trustees has been appointed by both Wine Institute and CAWG.

Since the establishment of the California Sustainable Winegrowing Alliance, the California Department of Food and Agriculture has awarded a $280,000 grant to the foundation in October, 2002. The funds will be used for educational workshops to implement the Code in the coming year, as well as the production of the Code workbooks

For more information on the project, go online to ***www.wineinstitute.org/communications/SustainablePractices/vision.htm*** or call the Communications Department at 415/356-7520.

Upcoming topics for "Highlight of the Month" publications are as follows:

- **November – "Protecting Air and Water Quality"**
- **December – "Attracting and Retaining Good People"**

✶Topics of a seasonal nature are matched to the time of year when the practice takes place.

The practice of "Controlling Erosion," highlighted in this issue, pertains to the Code of Sustainable Winegrowing Practices in the following areas: Viticulture; Soil Management; Vineyard Water Management; Pest Management; Wine Quality; Ecosystem Management; Winery Water Conservation and Water Quality; Material Handling; Solid Waste Reduction and Management; Neighbors and Community.

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