

Why I am staying at the Point Reyes Light

Fred Smith on new fishing regulations

Danger to dogs from blue-green algae

# Fish-friendly roads in the Valley

by **Jacoba Charles**

Dirt moves. We know this intuitively and scientifically: call it the crunch of a clod beneath a sneaker, call it dust kicked up by a pickup, call it erosion. The life of a lump of soil on a hillside is anything but static. What is much less obvious is the role that roads play in the movement of sediment, and the impact that movement has on salmon and steelhead trout in the San Geronimo valley once it is delivered to streams.

When no road interrupts the landscape, eroded soil rarely moves far. The water that carries it is blocked and slowed by plants, or absorbed back into the ground. Water arriving at a stream has usually been filtered clean, allowing

salmon to get enough oxygen and providing clean gravel in which eggs and juvenile salmon can live.

Roads and trails, with their impermeable skins and flat backs, shed water easily: no absorbing, no filtering. Classic road designs are either level or sloped inward, both of which concentrate the water that pours down the hills in a rainstorm. The banks, ditches and surfaces of unpaved roads add massive quantities of sediment to the water when they aren't maintained. And that concentrated torrent, full of mud and grit, often tumbles unchecked through ditches and culverts

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by **Drew Himmelstein**

Kathleen O'Toole, 61, takes 15 prescription medications for ailments ranging from scoliosis to asthma to migraines. She has been on Social Security disability for over 10 years and qualifies for a Medi-Cal entitlement that covers her prescriptions and doctor's visits. Yet since Friday, O'Toole has not been able

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>> Seven computers stolen from Lagunitas School during a 40th anniversary celebration of the Summer of Love.

# >> Roads

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But West Marin's rutted and dusty roads don't have to pose a threat to fish, Danny Hagans and Bill Birmingham of Pacific Watershed Associates said in Saturday's fish-friendly road workshop, which was organized by the Marin Municipal Water District and Marin County Open Space District.

With proper contours, even large roads can become what Hagans calls "hydrologically invisible." A road that slopes outward and has frequent rolling dips that function as water bars won't cause

much erosion, he said. The water that runs off the hill will be filtered by the soil and vegetation, and will be clear when it reaches the river, instead of the chocolate brown color that sometimes reaches as far as Tomales Bay.

Few of the 599 miles of roads and trails that run throughout the Lagunitas Creek watershed meet Hagans' standards - particularly the 163 miles that are privately owned and unpaved. Every creek that drains into Tomales Bay is listed by the state as "impaired for sediments." Though no one knows precisely how much of a role the roads play in that designation, the experts agree that they are a major sediment contributor.

"The Tomales Bay watershed holds 10 to 15 percent of the federally and state endangered Coho for the entire state," said Ruth Pratt, a Senior Planner with the Marin County Department of Public Works. "That's a reason why so much energy has gone into restoration recently." In the past ten years, the Marin Municipal Watershed and the Marin County Open Space have increased their efforts to improve the roads that are under their jurisdiction. Pacific Watershed Associates, who are statewide experts on environmentally sound road construction, recently did an inventory of all the roads



and trails on the property owned by the two agencies.

Birmingham said that the inventory included an assessment of each place where a stream crossed a road or trail for the potential sediment contribution to streams, and now a team of land managers and biologists are deciding which repairs are most important. As a result of this project, 28 roads on Marin Municipal Watershed District property are being repaired with funding from a State Water Resources Control Board grant.

On Saturday, the road experts turned their attention to giving homeowners advice on methods for improving roads that are either private or simply not county maintained. The free workshop was sponsored by the same grant that funded the road restoration. Funding is also available to help homeowners and neighborhood associations repair the unmaintained roads in their area.

The workshop focused on practical methods for controlling erosion on non-county-maintained roads, both private and public. The group of 12 landowners spent the morning discussing the hydrology of roads, the effects of roads on salmon, treatment options, and funding and liability issues. In the afternoon, they piled into a van and went on a tour of roads, culverts and stream crossings.

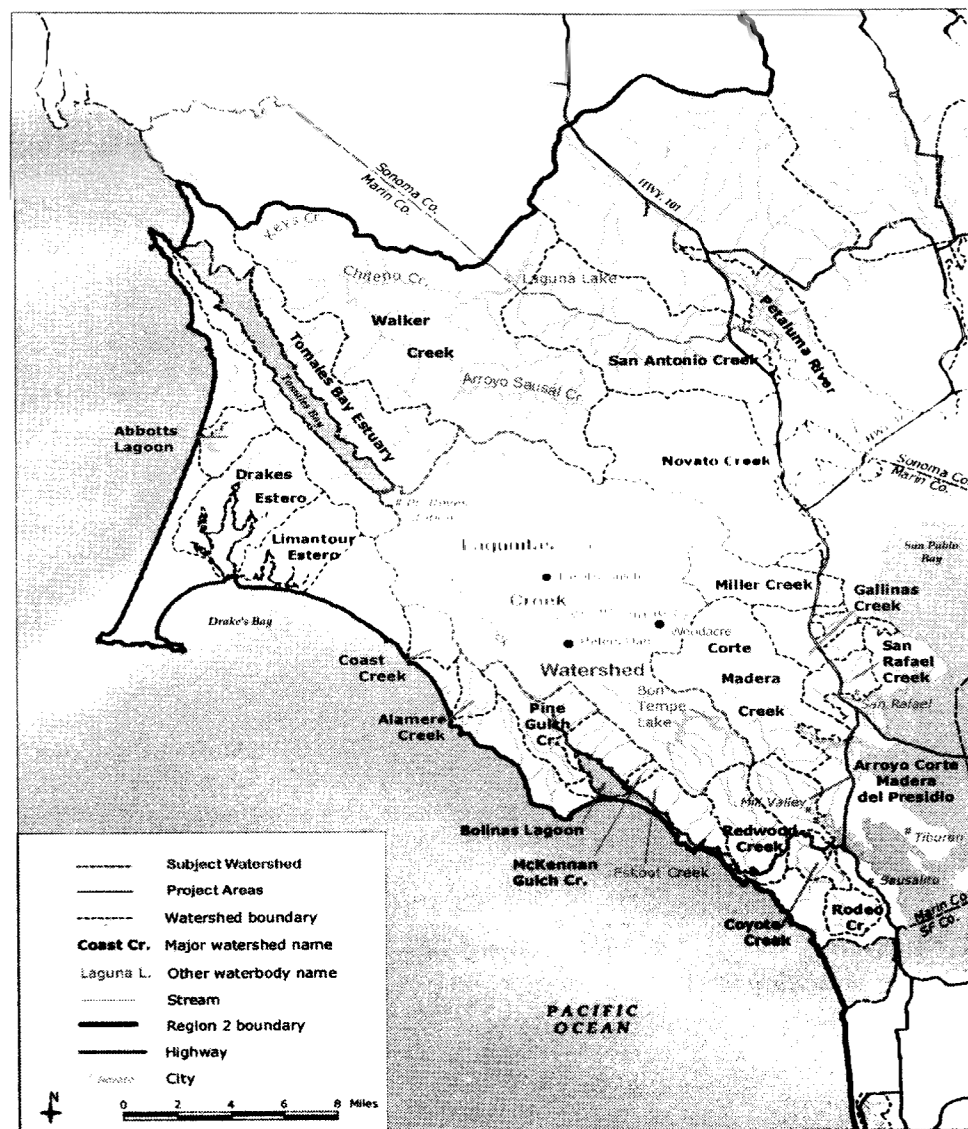
The tour included stops at stream crossings on Salix Avenue, Laurel Street and Park Street in Woodacre, and East Cintura in Lagunitas. At each stop, desirable aspects of the road, ditch and culvert

construction, as were possibilities for improving the road were pointed out. "The state doesn't do its job," Hagans said of steep and rutted Park Street. "Roads like this are clear violations of regulations, but no one does anything about it." He said that the government is hampered by a lack of funding for both monitoring and repairs.

"I think private landowners might be intimidated away from doing work on banks and roads because it can be pricey and there is permitting involved," Paola Bouley, a watershed biologist with SPAWN, added in a later conversation. However, both Bouley and county officials from the Open Space and the Water District are hopeful that the availability of funding will help change that situation.

The final stop on the trip was at one of the roads that was restored by Pacific Watershed Associates on Marin Municipal Watershed District property. The broad, outward-sloping road winds up a steep hillside. Rolling dips shuttle water off the road, while a wide culvert shuttles a rocky creek across to a gully on the other side. A little bit farther uphill, an ordinary-looking grassy hillside is actually a decommissioned road. That little quarter-mile stretch, at least, is looking pretty good.

"Those guys are really the gurus of road restoration," said Bouley. "Now we want to move this process out into the community, and start fixing the problems on non-county-maintained roads."



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