

# The South Fork of the Russian River

By Dr. Daniel Wickham  
Board President, Friends of the  
Russian River

An unacknowledged truth about the Russian River is that it has a "South Fork." This South Fork has a profound influence on water quality in the lower Russian River because it is the main drainage for almost all of the major urban area in the river's watershed as well as the bulk of the county's dairy land. This South Fork is called the Laguna de Santa Rosa and it combines with Mark West Creek to discharge into the Russian River just upstream of Steelhead Beach at Forestville.

Upstream of this confluence many of the water quality issues in the Russian River are of a physical nature. These include sediment loading from deforestation and vineyard development, destruction of the capacity to filter the major drinking water supply by indiscriminate gravel extraction, unnatural manipulation of flow from reservoir releases and Eel River diversions, and excessive groundwater extraction from vineyard irrigation.

Impacts in the South Fork and the lower Russian River are largely chemical and biological. The most impor-

tant of these include (1) phosphate, biochemical and bacterial loading from Santa Rosa's sewage system discharges; (2) phosphate, nitrogen and bacterial loading from dairy operations; (3) petroleum hydrocarbon loading from paved urban surfaces; (4) nutrient loading from excessive fertilizer use in urban and suburban landscaping; and (5) nitrate and hydrocarbon loading from air pollution.

Added to these chemical and biological loads is the profound reduction of water storage capacity in the Laguna basin from sedimentation due to unregulated residential and agricultural development, and especially from wetland destruction by infill and drainage.

All one needs to know about the Laguna and its contribution to lower river pollution is told in the extensive but largely unanalyzed and uncoordinated samples collected by the Regional Water Quality Control Board and the City of Santa Rosa's Sewage Treatment system (which serves Sebastopol and Rohnert Park as well).

Starting in the 1940s and then notably in the early 1970s most studies demonstrating obnoxious algal blooms and fecal contamination


in the lower Russian River tied it directly to discharges from the sewage treatment plant at Santa Rosa, along with dairy operations.

Phosphate remains the primary nutrient problem both in the Laguna and in the lower Russian River.

Phosphate stimulates algae production whether nitrates are present or not. The City, directed by misinformed staff at the Regional Board, has spent millions of dollars attempting to remove nitrates from their discharges, while ignoring phosphate. This is despite hundreds of published scientific papers documenting the futility of this approach. Phosphate comes primarily from wastewater, which can easily be controlled. Nitrogen cannot be controlled because of a simple biological fact. If both phosphate and nitrate are present in water it will stimulate the bloom of green algae. If nitrate is removed at the treatment plant, the excess phosphate will stimulate the bloom of blue-green algae, which are not only toxic to aquatic wildlife, but fix nitrogen from the atmosphere. Every pound of nitrogen removed in some chemical or biological reaction at the treatment plant will

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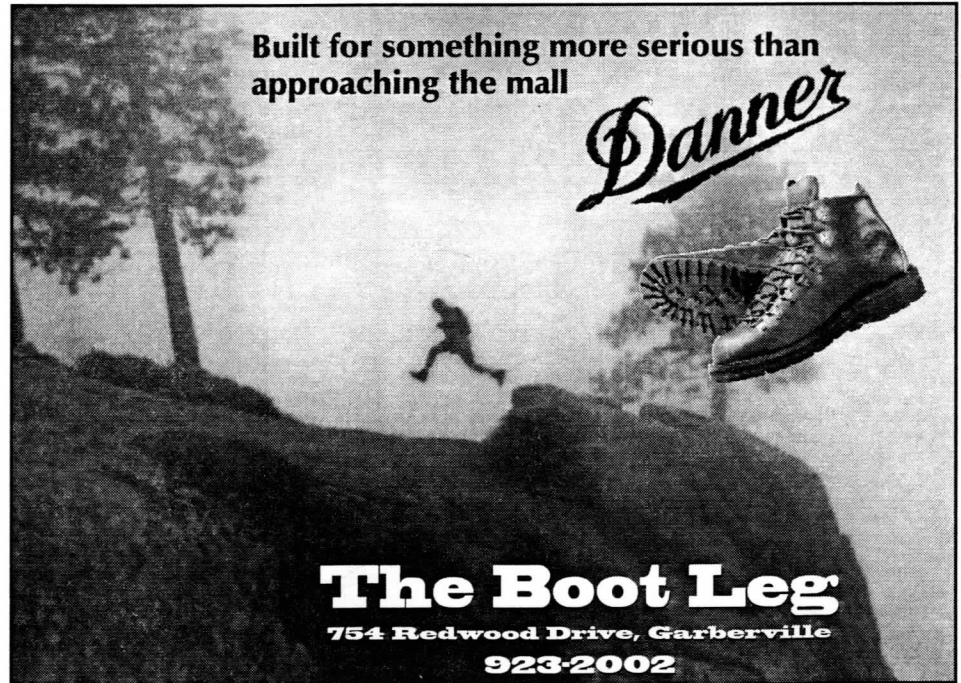
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