Nitrogen, Phosphorus, and Sediment Loads in an Agricultural Watershed Along the Central Coast of California. (A05-loshuertos190741-Poster)

Authors:

- M.Los Huertos - *University of California, Santa Cruz*
- L.Gentry - *University of California, Santa Cruz*
- C.Shennan - *University of California, Santa Cruz*

Abstract:

The Monterey Bay National Marine Sanctuary is the largest marine protected area in the US and includes Elkhorn Slough, an ecologically important intertidal wetland. This study examines the link between land use and water quality along Carneros Creek, which is the primary freshwater source to the slough. During the past two years, concentrations of nitrate-N, ortho-P, ammonium-N, and suspended sediment in Carneros Creek have ranged from 0.3 to 28.3, 0.01 to 5.32, 0.01 to 8.18, and 100 to 2700 mg/L, respectively. High sediment values were associated with high flow events, while high nutrient values occurred during low flow. Since February 2002, we have monitored an agricultural ditch that also discharges into Elkhorn Slough. This ditch maintained a relatively constant flow with nitrate-N, ammonium-N and ortho-P concentrations ranging from 29.6 to 51.4, 0.03 to 0.34, and 1.02 to 9.53 mg/L, respectively. The consistently high nutrient concentrations in the agricultural ditch may reflect nutrient accumulation in shallow ground water over many cropping cycles whereas the highly variable nutrient concentrations in Carneros Creek may result from recent farm activities.

Corresponding Author Information:

Marc Los Huertos
University of California, Santa Cruz
Environmental Studies, 1156 High Street
Santa Cruz, CA 95064

phone: 831-459-4926
e-mail: marcos@cats.ucsc.edu

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