CALIFORNIA STATE SCIENCE FAIR
2005 PROJECT SUMMARY

Name(s)
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Project Number
S0809

Project Title
Nitrate Concentrations in Effluents to the Monterey Bay Sanctuary

Abstract

Objectives/Goals
Determine if implementation of State of California Senate Bill No. 923 has resulted in causing lower nitrates in agricultural effluents into the Monterey Bay Sanctuary.

Methods/Materials
Data collection prior to (from part of my study of 2004) and after passage of this legislation with water samples analyzed for nitrate concentrations in effluents collected in the Salinas Valley Reclamation Ditch during the winter rainy season. This data will also be compared to historic data from the Citizen's Watershed Monitoring Network program. This ground breaking community based volunteer effort to annually measure chemical concentrations in watersheds started as the First Flush Program in Monterey and has expanded to the California coast.

Results
Agricultural run-off analyzed for nitrate concentrations in effluents collected in the Salinas Valey Reclamation Ditch at two locations (Salinas and Castroville) were significantly higher than 2004. The actual concentrations were ten times normal water concentrations. The results show no reductions as predicted by the legislation or industry sources.

Conclusions/Discussion
Claims by the agriculture industry made in an editorial in the Monterey County Herald daily newspaper on November 30, 2004, that voluntary implementation of farm practice to minimize run-off into the Montery Bay Sanctuary are unfounded and not producing improvements in effluent water quality during the rainy season. Observed levels of nitrates for 2005 increased over 2004, to approach or exceed action levels set by the Central Coast Ambient Monitoring Program (CCAMP). This study verifies my inital study of 2004, establishing a data base of unacceptable nitrate concentrations that have the potential to harm wildlife, human community and ocean ecology.

Summary Statement
Are agricultural effluents collected in the Salinas Valley Reclamation Ditch affecting the Monterey Bay Sanctuary?

Help Received
Used lab equipment at Stevenson School under the supervision of Dr. A Galindo