

CALIFORNIA STATE SCIENCE FAIR

2001 PROJECT SUMMARY

Your Name (List all student names if multiple authors.)**Lauren C. Huggins**

Science Fair Use Only

S0507**Project Title** (Limit: 120 characters. Those beyond 120 will be ignored. See pg. 9)**The Salinas River, Agriculture's Plentiful Provider. Does Farming Have A Detrimental Effect On The Salinas River?**

Division

S Junior (6-8) S Senior (9-12)**Preferred Category** (See page 5 for descriptions.)**8 - Environmental Engineering****Abstract** (Include Objective, Methods, Results, Conclusion. See samples on page 14.)

Use no attachments. Only text inside these boxes will be used for category assignment or given to your judges.

Objective: The objective of the this project is to determine if there are hazardous levels of nitrates in the Salinas River as a result of local farming fertilizer application. This project was conducted to evaluate how the nitrates directly effect plant life.

Materials and Methods: Water samples were taken from three locations along a five mile range of the Salinas River. Samples were then taken to C.M. Analytical, a water testing facility, to determine the concentration of nitrates in the water as compared to the acceptable level for potable water. The percentage of conductivity was also determined. *Chlorella pyrenoidosa* and *Ulothrix* species of algae were grown in these same samples to determine the eutrophication rate.

Results: The water samples tested at hazardous conductivity and nitrate levels for human consumption. Test's proved nitrates directly effected algae growth rates. As a result of increased algae production, high levels of oxygen were produced, which dramatically diminished plant life.

Conclusion: The results of elaborate testing supported my hypothesis that increased levels of nitrates create rampant eutrophication as observed by testing the water samples with algae. The Salinas River has a profound potential for widespread eutrophication resulting in the loss of plant life. This inturn will decrease the sound ecological environment necessary for plant, aquatic and wildlife. Data suggests that application of fertilizers to farmland near the Salinas River should be sharply reduced. Monitoring of this natural resource is currently inadequate.

Summary Statement (In one sentence, state what your project is about.)

My project's purpose was to measure nitrate levels and their negative effect on plant life in the Salinas River.

Help Received in Doing Project (e.g. Mother helped type report; Neighbor helped wire board; Used lab equipment at university X under the supervision of Dr. Y; Participant in NSF Young Scholars Program) See Display Regulation #8 on page 4.

Mother and father helped gather water samples, drive to water testing facility; C.M. Analytical tested the samples for no charge; Notre Dame High School science instructor, Mr. Kim Robinson allowed me to use lab equipment.