



**CALIFORNIA STATE SCIENCE FAIR
2008 PROJECT SUMMARY**

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Project Title Urban Eutrophication: A Field Study of Increasing Concentrations of Nitrates	
Abstract Objectives/Goals The purpose of this experiment was to analyze the effects of nitrate as a cause of eutrophication, specifically in the wetlands of Hidden Valley Wildlife Preserve, and to compare the resulting data from year 2006 with those from year 2007. The hypothesis stated that if the duckweed infestation at the Hidden Valley Education Pond is triggered by eutrophication, then the nitrate concentration from year 2007 should be greater than that from year 2006. Methods/Materials Part of the process was collecting water samples from the Education Pond at Hidden Valley Wildlife Preserve. These samples were then taken to the Riverside Regional Water Quality Treatment Plant, where they were placed into an ion chromatograph and tested for nitrate concentrations. This procedure was repeated once a month for two months, in order to obtain more accurate results. The data was recorded and analyzed. Results The amounts of nitrates in parts per million (mg/L) for the year 2007 were significantly greater than the amounts for the year 2006. The nitrate levels in 2006 were 12.49 mg/L and 6.05 mg/L, while the nitrate levels in 2007 were 19.26 mg/L and 19.99 mg/L. Conclusions/Discussion The nitrate concentrations in year 2007 were significantly higher than those recorded in year 2006, which most likely caused the mass production of duckweed at the Education Pond of Hidden Valley Wildlife Preserve. The main cause of eutrophication is known to be the continuous supply of nitrates into bodies of water. The data from this experiment proves the hypothesis correct. Analysis of the results from years 2006 and 2007 reveals that there is a correlation between nitrate concentrations and eutrophication.	
Summary Statement The purpose of this experiment was to analyze the effects of nitrate as a cause of eutrophication, specifically in the wetlands of Hidden Valley Wildlife Preserve, and to compare the resulting data from year 2006 with those from year 2007.	
Help Received The Riverside Regional Water Quality Treatment Plant tested our samples for nitrates with their ion chromatograph machine.	