



California Science Center
CALIFORNIA STATE SCIENCE FAIR
2001 PROJECT SUMMARY

Your Name (List all student names if multiple authors.) William W. Zondler II	Science Fair Use Only <h1 style="margin: 0;">J0726</h1>
Project Title (Limit: 120 characters. Those beyond 120 will be ignored. See pg. 9) What's Killing Fish At The Salton Sea?	Division J Junior (6-8) J Senior (9-12)
Preferred Category (See page 5 for descriptions.) 7 - Environmental Biology	
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: My project objective was to find out if low levels of oxygen was contributing to the fish die-offs in the Salton Sea. Materials and Methods: Materials that I used to test the water were; a water test kit made by Wardly (tests for pH, ammonia, nitrites and nitrates), Oxygen test kit made by Red Sea Fish Pharm, Hydrometer (tests for Salinity and water temperature), Water bottles for collecting water samples and a notebook for writing observations and to record water test readings. I planned and took numerous trips to the Salton Sea. I took water samples and tested for various water quality standards. I tested a three specific sites. Site #1 was at the Salton Sea Recreation Center, Site #2 was at the Salton Sea Beach Marina Jetty, and Site #3 was at the Martin Flora Day Park in the Salton City. I recorded my test findings in my notebook. All tests were completed to the standards provided to determine each value of pH, ammonia, nitrites, nitrates, oxygen, salinity and water temperature. I took water samples home to examine algae in the water samples with the Itel QX3 Microscope. Results: I found low levels of oxygen at four different sites/days, even though the overall average for oxygen was well above "safe" specifications. The oxygen level of the Salton sea should be maintained at about 8.5 ppm for the fish to thrive. My oxygen results were recorded from a low of 5.0 ppm to a high of 18.0 ppm. and then averaged to an overall reading of 10.4 ppm. I also discovered and recorded unsafe levels of salinity and ammonia consistently. In order for the Salton Sea to have a "safe" environment for the fish the salinity level should be 1.02 ppm or below, the average level of salinity that I recorded was 1.037 ppm. The "safe" readings for ammonia in the Salton Sea should be at or below 0.5 ppm, my readings were averaged to 1.5 ppm. Conclusions/Discussions: Based on the overall averages of my results, I conclude that my hypothesis is proven wrong. However, looking at the results on an individual level, my hypothesis is partially correct. Based on my research and personal observations, I consider that the weather conditions and time of year are factors in my results. I plan on taking water samples for testing throughout the year, especially in the summer, so that I may prove that theory.	
Summary Statement (In one sentence, state what your project is about.) My project is based on discovering the reason for fish die-offs in the Salton Sea.	
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. My Mom, dad and brother took me on numerous road trips to the Salton Sea and helped in conducting and supervising my tests, David and Marjy Lam provided me with microbiology books and advice, advice and research information from Steve Horvitz, the Superintendent for the Salton Sea, and Milton Friend, Chief Scientist at the Salton Sea Science Office	