



**CALIFORNIA STATE SCIENCE FAIR
2013 PROJECT SUMMARY**

Name(s) Anna Maxwell; Adela Weigel	Project Number S1917
Project Title Sudden Oak Death: The Spread and Its Correlation to Abiotic Factors	
<p style="text-align: center;">Abstract</p> <p>Objectives/Goals Many Oak trees in Santa Cruz Country are infected by Phytophthora ramorum, a type of Stramenopile that is similar to a fungus. Our objective is to determine if any abiotic factors we test, including relative air humidity, illumination, air temperature, soil temperature, and soil moisture, affect the spread and amplitude of the pathogen's progression.</p> <p>Methods/Materials Our procedures include recording infected trees at both of our two sites, and confirming our diagnosis with ImmunoStrips. We are also collecting air temperature, soil temperature, soil moisture, relative humidity, and light exposure with a Vernier LabQuest along a transect at each site.</p> <p>Results Looking at our data from September 2012 through February 2013, the abiotic factors and the rate of SOD show no significant correlation. The readings for the abiotic factors illumination, soil temperature, and air temperature are erratic and do not follow with the increase in Sudden Oak Death. The abiotic factors soil moisture and humidity increase due to the occurrence of higher moisture levels during the winter.</p> <p>Conclusions/Discussion Through the process of measuring abiotic factors from contrasting climate sites, and by recording the percent of oaks infected over time, our data consistently shows that there is no correlation between abiotic factors and the spread of sudden oak death, disproving our hypothesis. Although soil moisture correlated with the spread of SOD on our Fall Creek site, soil moisture does not correlate with SOD on our Quail Hollow site, leading us to conclude that soil moisture is not a significant factor.</p>	
Summary Statement We are recording the spread of Sudden Oak Death at two sites in San Lorenzo Valley, and are looking for a correlation between the spread of sudden oak death and the abiotic factors at our sites.	
Help Received Jane Orbuch, science teacher, provided us with equipment; Michael Loik helped us plan the start of our project.	