



**CALIFORNIA STATE SCIENCE FAIR  
2014 PROJECT SUMMARY**

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<b>Project Title</b> Harmful Algal Blooms in Santa Cruz Waters	
<b>Abstract</b> <b>Objectives/Goals</b> My objective is to study how water quality indicators change before and after a Harmful Algal Bloom (HAB) in Santa Cruz waters. <b>Methods/Materials</b> I obtained data from the Southern California Coastal Ocean Observing System (SCCOOS) and the University of California-Santa Cruz Ocean Observing Platform (SCOOP) between 7/18/2012 and 9/5/2012 to study how water quality indicators including dissolved oxygen, water temperature, pH, total chlorophyll content, and Domoic acid levels change before and after an algal bloom. After collecting and graphing the data, I made observations on the different water quality indicators of HAB species. <b>Results</b> Baseline levels of domoic acid are less than 2 ng/mL and 0-1000 cells/L for Pseudonitzschia seriata, an HAB former. Around August 16, 2012, Domoic acid levels peaked at 9 ng/mL when the species count for Pseudonitzschia seriata was around 10,000,000 cells/L. After August 16, 2012, levels of both Domoic acid and HAB species count returned to baseline. My study shows a positive trend between Domoic acid levels and growth of algal bloom with Pseudonitzschia seriata species. No specific trends were observed with the other variables. <b>Conclusions/Discussion</b> My results suggest that water quality indicators do change before and after a Harmful Algal Bloom. My study showed a positive trend between Domoic acid levels and Pseudonitzschia seriata species. Marine biologists can use these indicators to predict peak times of algal blooms and warn fisherman and coastal communities about potential quarantine periods to protect their health. Further studies need to be done to confirm my observations.	
<b>Summary Statement</b> In this project, I study how water quality indicators change before and after a Harmful Algal Bloom (HAB) in Santa Cruz waters.	
<b>Help Received</b> My father bought the poster board.	