



**CALIFORNIA STATE SCIENCE FAIR
2017 PROJECT SUMMARY**

Name(s) Gwendolyn M. Shernock	Project Number J1613
Project Title The Effects of Glyphosate on Freshwater Bacillariophyceae	
Abstract Objectives/Goals Glyphosate is the most widely-used agricultural chemical ever. It is one of the many homo sapien-ensued factors that affects our environment. The purpose of my project was to determine how glyphosate effects bacillariophyceae, as to determine how agricultural runoff effects Pacific algal blooms. Methods/Materials To test glyphosate's effect on freshwater bacillariophyceae, I left twenty beakers - each with freshwater bacillariophyceae, purified water, medium, and various increments of glyphosate, ranging from 0.05 to 0.4 milliliters - for twelve hours, and collected data before and after glyphosate exposure. I compared the two sets of data to determine what measurement of glyphosate resulted in higher cell-count. Results I found that samples containing 0.05 milliliters of glyphosate, with lesser concentrations proportional to those in aquatic environments, yield the greatest cell reproduction, while samples that had 0.1 milliliters of glyphosate produced a decline in cells. Conclusions/Discussion Based on my results, I conclude that agricultural chemicals positively affect marine algal bloom growth. In recent years, toxic bacillariophyceae blooms, pseudo-nitzschia blooms, in the Pacific Ocean have been growing at an alarming rate, and thus negatively affecting the health of marine wildlife. My findings can be used to understand how homo sapiens are influencing our environment, and what we can do to help it.	
Summary Statement I found that glyphosate positively affects bacillariophyceae growth, and concluded that agricultural chemicals positively affect marine algal bloom growth.	
Help Received My vice principal Kevin Trone advised me throughout my project. I consulted Jordan Mayor and Genevieve Rozhon when composing my research and hypothesis. Freshwater bacillariophyceae cultures were purchased from Flinn Scientific. I made the bacillariophyceae medium.	