



**CALIFORNIA STATE SCIENCE FAIR  
2003 PROJECT SUMMARY**

<b>Name(s)</b> <b>Stephen M. Shay</b>	<b>Project Number</b> <b>J1433</b>
<b>Project Title</b> <b>The Effects of Storm Water Runoff on Marine Life</b>	
<b>Objectives/Goals</b> The purpose of this experiment was to determine the effects of stormwater runoff (using various everyday pollutants which can be found in stormwater runoff) on marine life (using brine shrimp as the test species).	
<b>Abstract</b> <b>Methods/Materials</b> The independent variables were gasoline, motor oil, weed killer, pesticide, fertilizer and Drano. The dependent variable was the death in the brine shrimp.  Six glass 9 oz cups were lined up and filled with 100 mL of salt water using a syringe. Using a syringe 5 mL of each pollutant was drawn, placed and stirred into each cup with a sterile plastic straw. Using a syringe, 20 brine shrimp in 2.5 mL of salt water were placed in each cup. A timer was started and each minute the brine shrimp in each cup were counted and monitored and the death of each logged on my test sheet. Three cups were monitored at a time with a magnified eye piece for each 20 minute interval until all pollutants had been tested and each minute logged. This test was conducted on two separate weekends with the average results graphed.	
<b>Results</b> All pollutants did not kill the brine shrimp at the same rate. The pesticide and Drano were the most harmful killing all the brine shrimp in the first 10 minutes. The motor oil and weed killer were the least harmful in the 20 minutes of the study. The above findings demonstrated that everyday pollutants contain ingredients so destructive to brine shrimp that alternative products should be used. This teaches us that other everyday products containing the same ingredients as the most harmful (pesticide and Drano) should be avoided.	
<b>Conclusions/Discussion</b> The information gained from this experiment will help people realize the damage stormwater runoff pollutants can have on our marine life. Hopefully it will educate people about their impact on marine life through stormwater runoff pollution. People can then make more informed choices about how their everyday behavior effects marine life and ultimately all life on this planet.  If the concentration of pollutants had been increased, would all the brine shrimp have died? Would actual testing of coastal waters affect the brine shrimp over a longer period of time? It would be interesting to use a more extensive list of household pollutants and log the outcome.	
<b>Summary Statement</b> My project shows how common everyday household pollutants can be washed into stormdrains and carried to the ocean, thereby harming and/or killing our marine life.	
<b>Help Received</b> Dad helped assemble and monitor the use of the harmful pollutants. Mom helped me search the internet for background and helped correct my punctuation. My Aunt helped me choose graphics and print them out.	