



**CALIFORNIA STATE SCIENCE FAIR  
2007 PROJECT SUMMARY**

<b>Name(s)</b> <b>Kayla R. Dawe</b>	<b>Project Number</b> <b>J1012</b>
<b>Project Title</b> <b>Death by Toxicity</b>	
<b>Objectives/Goals</b> Different types of pollutants can accumulate in parking areas. The purpose of conducting this experiment was to learn if our water is being effected by everyday contaminates that accumulate in parking areas when the sediment runs off in to our watersheds with rainfall.	
<b>Abstract</b> I established a stable culture of Daphnia Magna from culture kits purchased. I researched the San Benito County watershed visiting two to obtain sediment samples from the parking areas. Each sample was weighed in 80gr increments and placed in separate containers. Each sample was diluted with spring water at different concentrations of 0.25L, 0.50L and 1L simulating rain water run-off. Each container was labeled with g/L concentration. 20 Daphnia Magna were added to each concentration and 20 Daphnia were added to my control of plain spring water. All concentrations were placed in the same place so they would all have the same environmental conditions such as temperature and light. A count was conducted and the number of viable Daphnia recorded at 8, 16, 24 and 48 hours. The percentage of viable Daphnia was calculated. The percentage of viable Daphnia versus sediment concentration was graphed for each time point.	
<b>Methods/Materials</b> I established a stable culture of Daphnia Magna from culture kits purchased. I researched the San Benito County watershed visiting two to obtain sediment samples from the parking areas. Each sample was weighed in 80gr increments and placed in separate containers. Each sample was diluted with spring water at different concentrations of 0.25L, 0.50L and 1L simulating rain water run-off. Each container was labeled with g/L concentration. 20 Daphnia Magna were added to each concentration and 20 Daphnia were added to my control of plain spring water. All concentrations were placed in the same place so they would all have the same environmental conditions such as temperature and light. A count was conducted and the number of viable Daphnia recorded at 8, 16, 24 and 48 hours. The percentage of viable Daphnia was calculated. The percentage of viable Daphnia versus sediment concentration was graphed for each time point.	
<b>Results</b> After my final count at 48 hours, my control with no debris had the most viable Daphnia with 55% still alive. All of the concentrations with the debris added had a death rate of 80% to 100%.	
<b>Conclusions/Discussion</b> My hypothesis that this toxicity was harming our watersheds was proven. The Daphnia placed in with the debris did not last as long as my control group that was placed in plain spring water. I would recommend that people try to be more aware of things that could effect this run-off in to our watersheds. Daphnia Magna are part of the food chain so keep in mind that this toxic debris could also effect the fish that we eat!	
<b>Summary Statement</b> My project is about the affect that toxic run-off from sediment in parking areas has on our watersheds.	
<b>Help Received</b> Mother drove me to sights to obtain samples; Mother drove me to the store to purchase supplies to assemble my board; Mother ordered my Daphnia Magna culture kits; Mother helped type report; Cousin showed me how to create graphs on the computer.	