



**CALIFORNIA STATE SCIENCE FAIR  
2006 PROJECT SUMMARY**

<b>Name(s)</b> <b>Madison J. Russell</b>	<b>Project Number</b> <b>J1426</b>
<b>Project Title</b> <b>The Effect of Fertilizer on the Hatching Rate of African Dwarf Frogs</b>	
<b>Abstract</b> <b>Objectives/Goals</b> The purpose of my project is to determine if run off water from fertilizer will effect the eggs of amphibians. The African Dwarf Frog Egg is representing amphibians. Amphibians are very vulnerabel to changes in the environment. Fertilizer run-off is a problem with the growing population of people moving close to natural streams and rivers. How much fertilizer does it take for the water to become dangerous to the eggs. <b>Methods/Materials</b> First I simulated run off water. I mixed 1/2 cup of fertilizer with 1 gallon of water. (recommended amount). Next I took a sample of lawn from our backyard. Placed the lawn over a bowl and filter. I hen sprayed the lawn with fertilizer solution and let it filter through the lawn into acup that was already 1/2 full. This simulated runoff water into a stream or lake. Next I placed the cup into a tank with waster that was 80 degrees. I allowed the runoff water to reach the same temperature. Once it reached 80 degrees I placed 5 frog eggs into the cup. I then checked for the hatching rate of the eggs. Variables - 5 cups for each variable for a total of 50 eggs 1/2 cup fertilizer to 1 gallon of water - 1/4 cup solution - 1 cup solution - control (no fertilizer) 200 total eggs <b>Results</b> control - 48 of 50 eggs hatched within the first three days. 2 eggs never hatched 1/2 cup fertilizer solution - 7 eggs hatched within first 7 days none survived after that 1/4 cup fertilizer solution - 9 eggs hatched within first 4 days none survived after that 1 cup fertilizer solution - 0 eggs survived <b>Conclusions/Discussion</b> Fertilizer had a very harmful effect on the hatching rate of amphibians. Even the less that recommended amount was extremely harmful to the eggs. I was very surprised at how harmful this was. The nitrates in the fertilizer affected their ecosystem enough to do a lot of damage. With the human population continuing to grow closer to natural streams and lakes we must be very careful in not allowing our runoff waster from lawns, gardens, or farms, to reach these areas. It is very damaging to these animals and can eventually destro their ecosystems.	
<b>Summary Statement</b> Determining if fertilizer from runoff water will have a harmful effect on amphibian eggs.	
<b>Help Received</b> Dad helped get eggs, and helpd with getting supplies for experiment. Dad helped with board.	