



**CALIFORNIA STATE SCIENCE FAIR
2012 PROJECT SUMMARY**

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| Name(s) David Duncan | Project Number J1105 |
| Project Title Warning! Dangerous Bacteria in Los Angeles Lakes? | |
| <p style="text-align: center;">Abstract</p> <p>Objectives/Goals There are 99 lakes in Los Angeles County that are not regularly monitored for water quality. The main objective of my project is to test four Los Angeles County lakes that are open to the public -- for the presence/absence and concentration levels of potentially harmful bacteria, specifically total coliform bacteria and E. coli. I believe that I will find bacterial contamination in some of the lakes that I test.</p> <p>Methods/Materials I collected lake water samples from four Los Angeles County lakes. I first did a presence/absence test for total coliform for each lake sample -- by combining the water sample with a nutrient-indicator, and incubating the sample for 24 hours at 35 degrees Celsius. If the sample tested positive for the presence of coliform (i.e., water sample turns yellow) -- I then tested the same sample for the presence/absence of E. coli by using a 365-nm UV light (i.e., the water sample glows fluorescent blue if E. coli is present). I also tested for concentration levels of total coliform and E. coli.</p> <p>Results All four lake samples tested positive for the presence of total coliform and E. coli -- and all four lake samples showed high concentrations of total coliform and E. coli. The results show that there are high levels of bacterial contamination in all four of the Los Angeles County lakes that I tested.</p> <p>Conclusions/Discussion Hundreds of thousands of people visit our Los Angeles County lakes every year for swimming, boating, and fishing. But unlike our California beaches, the majority of these lakes are not regularly monitored for safe water quality. My experiment showed that there are high concentrations of total coliform and E. coli in four of our L.A. County lakes. This potentially dangerous bacteria could pose a serious risk to public health and safety. The results of this experiment suggest the importance of having our lakes regularly monitored -- and the results posted for the public.</p> | |
| Summary Statement I tested four Los Angeles County lakes for bacterial contamination, specifically for total coliform and E. coli. | |
| Help Received My parents drove me to the four L.A. County lakes and helped me order/pick up supplies. A microbiologist talked with me about bacteria and loaned me a lab coat and goggles, a test tube rack, and a pipette pump. She helped make sure my materials and procedures were okay. | |