



**CALIFORNIA STATE SCIENCE FAIR
2003 PROJECT SUMMARY**

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| Name(s) Lucas E. Crandall | Project Number J0606 |
| Project Title The Relationship between Water Temperature and Flow on the Mad River | |
| Abstract Objectives/Goals The objective of my project was to see if there was a relationship between water temperature and flow on the Mad River. Because of the Klamath River fish kill that claimed the life of 33,000 adult king salmon this fall, I wanted to see if high water temperature really did come from lack of flow on rivers. My hypothesis was that when the flow is lower, the water temperature will be higher and when the flow is higher, the water temperature will be lower. Methods/Materials My materials were a spa thermometer, a 3 ft string, a watch, and internet access to record flow from the California Department of Water Resources (CDWR) site. I recorded my temperatures at the same place and time of day. I left the thermometer in the water for 5 minutes at a depth of 2 feet. Later I recorded the flow in cfs from the CDWR site. I took eleven readings during the months of November, December, January, and February. Flow data were put into groups of low, medium, and high. I found the mean for each group for flow and water temperature. Results The results were that when the flow was low the water temperature was the highest. When the flow was medium the water temperature was the lowest. When the flow was high the water temperature was medium. Conclusions/Discussion My hypothesis was partly correct. When the flow was low, the water temperature was the highest, as I expected. However, when the flow was medium, the water temperature was the lowest, and when the flow was high, the water temperature was medium. The lowest temperature was taken on a cold, frosty morning. I think that air temperature, along with the time of year and time of day affects water temperature also. In further studies I would take more readings and take air and water temperature data all year to get a more complete picture. | |
| Summary Statement My project was to see if there was a relationship between water temperature and flow on the Mad River during the months of November, December, January, and February. | |
| Help Received My mother drove me to the river so that I could take my temperature readings. | |