



**CALIFORNIA STATE SCIENCE FAIR
2004 PROJECT SUMMARY**

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Project Title How Clean Is the Stream?	
<p style="text-align: center;">Abstract</p> <p>Objectives/Goals We wanted to determine how healthy the creeks in Anderson Valley are and which feeder creek contributes the most pollution into Anderson Creek. We thought that Con Creek would contribute the most pollution because there is agricultural land where chemicals are used surrounding the area.</p> <p>Methods/Materials To determine the pollution in the creeks, we looked at the dissolved oxygen levels and the temperature at each site. We also gathered macroinvertebrates, small insects without backbones that indicate stream health, by a person holding a net in the creek downstream from a helper who kicked and scrubbed rocks. Then we identified each insect and qualified it under pollution tolerant, wide range, or pollution intolerant categories. We used Rubber boots, thermometer, stopwatch, home-made net, forceps, magnifying glasses, "CHEMets" Dissolved Oxygen Kit, plastic bottles with caps, cleaning brush, petri dishes, small fishnets.</p> <p>Results We found that Con Creek had the least amount of dissolved oxygen and the second least amount of macroinvertebrates. Rancheria Creek had the least amount of macroinvertebrates but a reasonably high amount of dissolved oxygen. Also, all the streams had a high amount of pollution intolerant macroinvertebrates and very few pollution tolerant macroinvertebrates.</p> <p>Conclusions/Discussion Based on our results, our hypothesis was partially right. Con Creek had the second lowest amount of macroinvertebrates as well as the lowest amount of dissolved oxygen. However, Rancheria Creek had the fewest macroinvertebrates. Rancheria Creek flows through many cattle ranches and through vineyards as well, whose runoff of dirt and chemicals may account for this reduced population of macroinvertebrates. For the most part, our results support the claim that all the creeks in the valley are healthy. We always found pollution intolerant macroinvertebrates in our samples and very few pollution tolerant macroinvertebrates were collected. Levels of dissolved oxygen in our streams are high, and the streams maintain a consistent and relatively cool temperature. Projects like ours that monitor different physical and biological aspects of stream ecology are important for establishing and maintaining conservation and restoration efforts.</p>	
Summary Statement We determined the stream quality of local creeks by examining levels of dissolved oxygen and classifying macroinvertebrates by pollution tolerant groups.	
Help Received Our Science teacher monitored our science project and watershed restoration manager drove us to take our creek samples	