



**CALIFORNIA STATE SCIENCE FAIR  
2003 PROJECT SUMMARY**

<b>Name(s)</b> Melissa L. McEvilly	<b>Project Number</b> <b>J0920</b>
<b>Project Title</b> <b>How Clean Is the San Dieguito River?</b>	
<p style="text-align: center;"><b>Abstract</b></p> <p><b>Objectives/Goals</b> The purpose of my project was to discover how clean the water along the San Dieguito river watershed was, and where the cleanest area was. I believed the water nearest the source of the river would be the cleanest, and the water would get progressively dirtier as I neared the river mouth.</p> <p><b>Methods/Materials</b> To obtain my results, I collected two water samples each from thirteen different areas along the San Dieguito river, and tested them for acidity, salt content, amount of suspended solids, clarity, and the presence of microorganisms. To do this, I used pH strips to measure acidity, an electrical circuit and known concentrations of sodium chloride to estimate salt content, a spectrophotometer machine to measure suspended materials, a microscope equipped with a digital camera together with GIEMSA dye to stain microorganisms, and my own observations.</p> <p><b>Results</b> I found that the water nearest the source of the river was the cleanest, and that none of the other samples could be clearly determined to be the dirtiest.</p> <p><b>Conclusions/Discussion</b> My conclusion is that although the water along the San Dieguito river should not be drunk by humans, it seems to be healthy enough for environmental needs. Since the wildlife and ecosystems surrounding the San Dieguito river watershed depend on this water, I can conclude that the ongoing efforts by public agencies and volunteer groups to preserve this watershed for environmental purposes seem to be working.</p>	
<b>Summary Statement</b> The purpose of my project was to use five different experiments to test different aspects of the cleanliness of the San Dieguito river.	
<b>Help Received</b> My father helped type my report, and obtain water samples; my mother helped make graphs; I used lab equipment at UCSD under the supervision of Dr. Robert McEvilly.	