



**CALIFORNIA STATE SCIENCE FAIR  
2012 PROJECT SUMMARY**

<b>Name(s)</b> <b>Madaly Alcalá</b>	<b>Project Number</b> <b>S2202</b>
<b>Project Title</b> <b>Zooplankton Biodiversity Comparison</b>	
<p style="text-align: center;"><b>Abstract</b></p> <p><b>Objectives/Goals</b> It is important for zooplankton, especially meroplankton, to have a sustainable environment to spawn, reproduce, and develop. Distribution of plankton in the ocean is dependent upon many factors such as intensity of light, time of day and night, salinity, temperature, turbidity, currents and tides, nutrients, season reproduction cycles, and predators. An ideal safe location for plankton is a salt marsh, which is semi-sheltered, and often serves as nursing grounds for young marine life. Therefore, the biodiversity of the man-made salt marsh should be greater than the surrounding coastal due to the environmental conditions there.</p> <p><b>Methods/Materials</b> 12 Trials of data collection from the man made salt marsh and the Cabrillo boat launch. At each location: the temperature of the ocean water was taken with a thermometer, the salinity was also taken using a refractometer. A 25 micron plankton tow was used to collect the plankton. After both zooplankton beaker samples were collected, each was strained through a 35 micron mesh to condense the plankton in a smaller amount of water. After both were strained, it was processed into a Bogorav tray using a pipette, using 6mL at a time. The tray was put under a dissection microscope and the meroplankton were morphologically identified and tallied by phyla.</p> <p><b>Results</b> The results showed that the boat launch had more biodiversity of meroplankton. The Shannon Weaver index was used to find the index, or biodiversity, of each collection day; the bigger the index the greater the biodiversity, not because of a greater amount, but because of a greater evenness amongst the organisms. A grand average was created from all the indexes for each location, the marsh averaging a 1.06 index and the boat launch averaging a 1.16 index. This indicates a slightly less competition between species at the boat launch and a competition that has narrowed down the amount of species able to make a living at the mad-made salt marsh.</p> <p><b>Conclusions/Discussion</b> The salt marsh should have been more diverse because it is supposed to serve as a natural nursery for larval organisms; but there was a sewage spill in the marsh on July 20th, seven days before the first collection. The results may be an indication that the sewage spill did affect the marine life held within the marsh; which goes to show that the city of San Pedro has to take initiative to fix the sewage drains and where they drain out.</p>	
<b>Summary Statement</b> The fate of plankton populations is dependent on a stable environemnt, which the man-made salt marsh at Cabrillo Beach has neglected to protect.	
<b>Help Received</b> Mentor: Adrienne McColl	