



**CALIFORNIA STATE SCIENCE FAIR
2005 PROJECT SUMMARY**

Name(s) Mariko K. Powers	Project Number J0925
Project Title Anemones: Indicators of Global Warming?	
<p style="text-align: center;">Abstract</p> <p>Objectives/Goals My objective was to determine if global warming is affecting the number of Giant Green (northern species) and Sunburst (southern species) sea anemones at the Almar Avenue site in Santa Cruz, California.</p> <p>Methods/Materials An 8 x 32 grid of pvc fittings and pipes was constructed. A separate grid made of smaller sections of pipe was placed atop the larger grid to aid in the process of counting the anemones. Sunburst (2 cm or larger), Giant Green, and unidentified anemones in each section of the 8 ft. by 8 ft. grid were counted at low tide. The area to be counted is defined in the LIMPETS study protocol. Comparison of the current to past counts were taken from the LIMPETS organization's records.</p> <p>Results The average number of Sunburst sea anemones from successful counts is 158, the average number of Giant Green is 45 and the average number of unidentified anemones is 100. The results clearly show that the southern species of anemone, the Sunburst, are 3 times more abundant than the northern species of anemone, the Giant Green. The LIMPETS program recorded anemone counts in 2003 using the same plot (they recorded 133 Sunburst, 58 Giant Green, and 49 unidentified anemones).</p> <p>Conclusions/Discussion There is only one data set available from Jan. 2, 2003 for this site and therefore no accurate conclusion can be made concerning the historical relation between global warming and the number of sea anemone species. However, based on research studies, global warming is believed to be a large factor in the population and range changes seen in southern and northern species of sea life. It also can be determined that there is no significant change in the sea anemone abundance over a short period of time (1-2 years.) This project has expanded my knowledge on the habits and life of sea anemones and the affect that global warming has been having on not only aquatic life but the world as a whole. The data I have collected from this project will contribute to future studies of sea anemones.</p>	
Summary Statement This project was conducted to determine if global warming had influenced the population of the Giant Green and Sunburst sea anemones over a 2 year period of time (2003-2005) at the Almar Avenue site.	
Help Received Mother helped edit report; Father constructed grid and took photos; John Pearse provided information and advice; Shama Hinard and Matt Knop for assistance and introducing the process of anemone counting; Long Marine Lab	