



**CALIFORNIA STATE SCIENCE FAIR
2009 PROJECT SUMMARY**

Name(s) Christina C. Gunzenhauser	Project Number S2009
Project Title The Effects of Episodic Drought on the Rhus integrifolia Phenology	
<p style="text-align: center;">Abstract</p> <p>Objectives/Goals</p> <p>Rhus integrifolia is an extremely common coastal sage in Southern California. It is classified as a drought-resistant, evergreen scrub. These characteristics enable it to thrive on rocky coasts and cliffs. I observed in my previous work that this was not exactly the case. The variations in plant growth that I recorded were uncharacteristic of Rhus integrifolia. From this I originally concluded that there was an environmental condition that was affecting the growth. My initial work suggested that there was a correlation between precipitation and several growth characteristics. The purpose of this study, is to report on a full two years of study and analyze the relation between various growth characteristics and monthly precipitation levels. This data will prove crucial to identifying the environmental effects of severe droughts on seemingly #drought resistant# plant life.</p> <p>As I analyzed the large amount of data, I found that precipitation levels were affecting various characteristics. After analyzing all of the parameters of data and comparing them to monthly precipitation, I found that the resulting trends confirmed my hypothesis. Several of the growth characteristics such as branch length, branch diameter, number of leaves, and number of new shoots all varied in relation to the precipitation levels. Branch length, branch diameter, and the number of leaves varied most directly. This study provides an estimate of the magnitude of this relationship and provides a baseline for measuring the effects of severe drought on plant-life of California. This, in turn, allows us to analyze any consequential risks involving the surrounding animal life or the higher chance of brush fire.</p>	
Summary Statement My project is the two year study of the evergreen scrub, Rhus integrifolia, and its changing growth when effected by droughts.	
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