



**CALIFORNIA STATE SCIENCE FAIR
2008 PROJECT SUMMARY**

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Project Title Comparison of Phenological Development of <i>Rhus integrifolia</i> During a Dry and Wet Year in a Coastal Sage Community	
Abstract Objectives/Goals The objective is to compare growth characteristics of the coastal sage scrub during consecutive dry and wet years. Methods/Materials Six plants from the Portuguese Bend nature preserve were selected and monitored. Growth characteristics were measured monthly from January 2007 to January 2008, including branch length and diameter; number of leaves, empty nodes, and flowers; and the presence of fruit. Rain and temperature information were obtained from on-line weather resources. Temporal growth characteristics were plotted to determine patterns of plant growth and relationships with weather. Results Branch length, number of leaves, number of empty nodes, number of flowers, and the presence of fruit were positively associated with rainfall and temperature. Branch diameter showed minimal positive association, but manifested little change during the study period. The number of negative nodes was negatively associated with weather, due to the fact that less leaves fell off branches during periods of increased precipitation and temperature. Conclusions/Discussion Coastal sage scrub is an important member of ecological communities in southern California coastal areas and has been reduced in population by urban development. Understanding its growth characteristics is fundamental to predicting its survival under various threats, including global warming. During the entire study period, all plants grew measurably, showing remarkable resiliency in time of a severe drought. Growth was positively associated with increased temperature and rain.	
Summary Statement This study establishes baseline growth characteristics of the coastal sage scrub. <i>R. integrifolia</i> , during periods of drought and rain.	
Help Received None	