



**CALIFORNIA STATE SCIENCE FAIR
2006 PROJECT SUMMARY**

Name(s) Hillary R. Cleary, IV	Project Number J1605
Project Title A Study of the Santa Cruz Cypress (<i>Cupressus ambramsiana</i>) Tree	
Abstract Objectives/Goals Project in plant ecology in which several physiographic factors including slope, aspect and soil types were analyzed to determine the effects on the growth and development of the Santa Cruz cypress tree. Methods/Materials Established a belt transect over ten acres of land within sand hills habitat in Bonny Doon, California. Selected 12 mature Santa Cruz cypress trees. Recorded soil type, measured the height, DBH, health and vigor, slope, aspect, and age by core sampling each tree and counting annual growth rings. Correlated data of 6 trees growing in Zayante soils and 6 trees growing on outcrops of xerorthent bedrock. Mattson core sampler USGS aerial photograph biltmore stick digital camera dissecting scope stereo glasses Soil Conservation Service publication for Soils of Santa Cruz county Results Santa Cruz cypress trees growing on Zayante soils on average are more than two times healthier than trees growing on xerorthent bedrock including overall greater height and size. However, Santa Cruz cypress trees growing on bedrock are up to 55 years older than Zayante soil trees. Conclusions/Discussion My hypothesis stated that Santa Cruz cypress trees growing on moist, less exposed sandy soils will be overall healthier, more vigorous, and grow at a faster rate compared to the trees growing on drier, more exposed bedrock. My hypothesis was correct. In addition, I believe that the smaller size and reduced vigor of trees growing on bedrock was due primarily to the reduced availability of water and that this is the ecological limiting factor.	
Summary Statement Analysis of phsiographic conditons affecting the growth and development of the Santa Cruz cypress tree.	
Help Received Father helped with field work and proofed report, mother helped assemble poster board	