



**CALIFORNIA STATE SCIENCE FAIR
2013 PROJECT SUMMARY**

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Project Title The Effects of Eucalyptus globulus Trees on Native Plants	
<p style="text-align: center;">Abstract</p> <p>Objectives/Goals Eucalyptus trees are controversial because they are non-native large trees that reproduce well in the central coast. Eucalyptus trees are native to Australia but were widely planted in California. We observed that oak habitat appeared to have higher diversity than Eucalyptus habitat. We wanted to test whether Eucalyptus trees had a negative effect on native plants and what the mechanism might be.</p> <p>Methods/Materials We transplanted a native species, <i>Stachys bullata</i>, into both habitats and measured survival. We conducted a greenhouse experiment to test differences in soil quality between soil collected from underneath both Eucalyptus and oak trees. We also tested seed germination in water strained from leaf litter from both habitats to test for toxic water soluble compounds. We used several different materials consisting of a wide variety from quadrats and Transect tape to different native plants such as <i>Stachys bullata</i>.</p> <p>Results We found that on average the number of species in the two habitats weren't different (~1.25 species/quadrat), but the overall diversity was much greater in the oak habitat (9 species verses 21 species, respectively). However, there was no difference in <i>Stachys</i> survival between habitats. Greenhouse plants grew the same in Eucalyptus and oak soil until 3 months later when all plants in Eucalyptus soil died. There was also no difference in seed germination in water leached from Eucalyptus and oak leaf litter. While we found a difference in diversity between the habitats, we cannot attribute this difference to soil differences or water soluble compounds</p> <p>Conclusions/Discussion Overall, we found that Eucalyptus habitats do not have an immediate negative effect on native plants. Future work should address the effects of light, temperature, and the thick duff layer observed under Eucalyptus trees.</p>	
Summary Statement The allelopathic effects of Eucalyptus trees on native plants.	
Help Received Members of SCWIBBLES program helped us out on the field	