



**CALIFORNIA STATE SCIENCE FAIR
2014 PROJECT SUMMARY**

Name(s) Lauren J. Smith	Project Number S2218
Project Title Bird Biodiversity in Henry Cowell Redwoods State Park	
<p style="text-align: center;">Abstract</p> <p>Objectives/Goals In this project, I monitored the biodiversity and abundance of birds in four different habitats (meadow, river-meadow, river-redwood, and redwood) in Henry Cowell Redwoods State Park. Previously, I determined that overall bird biodiversity does not vary much among the four habitat types, but the types of species vary among habitats. This year my hypothesis was that there would be (1) seasonal differences in bird biodiversity and abundance reflecting seasonal changes in representation of permanent residents, seasonal residents, and transients/migrants, and (2) interannual changes in biodiversity and abundance that reflect changes in climate.</p> <p>Methods/Materials I surveyed eight sites once or twice a month along a predetermined loop at Henry Cowell from October 2011 through February 2013, recording all the birds I saw and heard at each site over a 10-minute period, and recording weather conditions. The materials that I used included 8.5x32 binoculars, a Kestrel weather meter and compass, a waterproof notebook and pencil, and the Sibley Guide to the Birds of North America (iPhone App with audio).</p> <p>Results My results confirm that bird biodiversity does vary across the seasons and from year to year, and that recent climatic patterns have affected the biodiversity and abundance of birds in the park.</p> <p>Conclusions/Discussion I can draw various conclusions from the data I have collected over the past two and a half years. I have concluded that biodiversity and abundance do not vary significantly among the four habitats I examined; they do, however, vary significantly across the seasons and from year to year. I have also concluded that climate has had an effect on the biodiversity of birds in Henry Cowell, but instead of declining diversity due to the drought, the park appeared to serve as a refuge for a variety of species that may have been displaced from harder hit areas.</p>	
Summary Statement This project is about the changes in bird biodiversity and abundance in Henry Cowell Redwoods State Park in relation to changes in climate and seasonal representation of year-round and seasonal residents, migrants, and transients.	
Help Received My dad/project mentor, Dr. Jeff Smith, monitored with me and helped with data analysis using Microsoft Excel.	