



# CALIFORNIA STATE SCIENCE FAIR 2011 PROJECT SUMMARY

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<b>Project Title</b> Birds of the Santa Cruz Sandhills	
<b>Abstract</b> <b>Objectives/Goals</b> The Santa Cruz Sandhills is a rare and unique habitat found only in central Santa Cruz County, California. There are two distinct communities that make up the habitat which comprise of less than 1,000 acres of Sandhills habitat. These two communities are home to many endemic organisms that are adapted to the climate the habitat makes. Because of this uniqueness and rarity, the Sandhills have been a topic of study in many different areas of science. However, one area lacks considerably: birds and avian ecology. Very little information is known about what exactly the 'birds of the Santa Cruz Sandhills' are, and no documented study has been performed to answer this question. <b>Methods/Materials</b> Our three survey sites were each surveyed once a week (day determined by a RNG), totaling to three surveys per week. We tossed a fair coin at the start of each survey to determine if we start in Sandhills or adjacent habitat. We established two Sandhills points and two adjacent habitat points at each site. If heads, we would begin at Point 1 in Sandhills, then Point 2. We would then go to Point 2 in adjacent, then Point 1. At each point we would begin with a 5-minute "settling" period to allow birds that we unintentionally disturbed while entering the point area to resume natural activity and then we would record all the birds detected, auditorily and visually, within a 50 meter radius. Surveys began one hour after sunrise. <b>Results</b> By using the Shannon-Weaver Index, relative abundance charts, and ANOVA tests, we can see community and species differences between the Sandhills and Adjacent habitat. We have determined that the Sandhills does hold a resident population of bird species and that the Sandhills' avian life structurally varies between the two communities as well. <b>Conclusions/Discussion</b> It is clear that there is a resident population of birds within the Sandhills that is not heavily influenced by adjacent habitats, and that avian life structurally varies between the two main habitat types, so there are two distinct populations of birds within the Sandhills. This is important because it sets a baseline as to what the "birds of the Sandhills" are, and is also important because birds are just one part of this rare ecosystem and are connected to the endemic and endangered organisms within the Sandhills. Hopefully this study will promote future research and conservation of the birds and Sandhills as a whole.	
<b>Summary Statement</b> This project was designed to describe what the 'birds of the Santa Cruz Sandhills' are.	
<b>Help Received</b> Dr. Jeff Smith, mentor, assisted with the development of the procedure and methods of statistical analysis.	