



**CALIFORNIA STATE SCIENCE FAIR  
2002 PROJECT SUMMARY**

<b>Name(s)</b> Vincenzo A. Ellis	<b>Project Number</b>  22090
<b>Project Title</b> Comparative Habitat Use by Shorebirds	
<p style="text-align: center;"><b>Abstract</b></p> <p><b>Objectives/Goals</b> I looked for any differences in population density and species diversity of shorebirds in the three areas that I observed.</p> <p><b>Methods/Materials</b> Three of the most common shorebird habitats are found in San Diego. These include mudflat, sandy beach, and rocky shore. I observed, identified, and recorded shorebirds at the San Diego River Channel (mudflat), the beach north of Scripps Pier (sandy beach) and the rocky intertidal area also north of Scripps Pier. I looked for any differences in population density and species diversity of shorebirds in these areas. I used a Shannon-Weiner Species Diversity Index and an ANOVA test of density to assess my results.</p> <p><b>Results</b> The river channel has the highest density out of the three areas measured. The Shannon-Weiner test indicated that the river channel was slightly more diverse than the rocky shore and that both were much more diverse than the beach area. Statistical tests showed that there was a 50% chance that the diversity in the three areas was due to randomness. The chance that the density in the three areas was due to randomness was one to 100.</p> <p><b>Conclusions/Discussion</b> Learning about shorebirds is important because they are major predators and a very important part of coastal ecosystems. In addition, some of these shorebirds are endangered. Goss-Custard (1979) argued that knowing shorebird habitat use was important for their conservation, because development ought to occur in areas that will impact them the least. My research in this project will contribute to the knowledge of shorebirds. The place that ought not to be developed are the San Diego River Channel and the Rocky Intertidal north of Scripps Pier. This is because they had the river channel had the most amount of birds and the rocky intertidal had largely different birds yet with a high diversity.</p>	
<b>Summary Statement</b> The purpose of this project is to investigate the use of coastal areas by shorebirds.	
<b>Help Received</b> I would like to thank my father, Dr. Hugh Ellis, an avian physiological ecologist for teaching me about Charadriiformes, giving me access to scientific articles, and for giving me a lot of advice along the way. He also drove me out to the three areas and taught me how to identify birds accurately. I would also like	