



**CALIFORNIA STATE SCIENCE FAIR  
2015 PROJECT SUMMARY**

<b>Name(s)</b> <b>Sofia R. Aiello</b>	<b>Project Number</b> <b>J2201</b>
<b>Project Title</b> <b>Lagoon Bird Species Diversity at High vs. Low Tide</b>	
<p style="text-align: center;"><b>Abstract</b></p> <p><b>Objectives/Goals</b> While observing birds at a local lagoon, I noticed that the overall bird abundance and diversity seemed to differ at high versus low tide. I was interested to learn more about how the tide impacts shorebird activity. I hypothesized that there would be a significantly greater diversity of bird species at low tide. I also believed that migratory bird species might be found in a closer proximity to the trail at low tide.</p> <p><b>Methods/Materials</b> I observed a total of 23 different bird species over a period of several months and many visits to the lagoon. I used a notebook, binoculars, laser range finder, and bird field guide to observe birds. I used an anemometer, hygrometer, and thermometer to measure wind speed, wind chill, humidity, and temperature. I used a three-way meter to measure light, moisture, and soil pH.</p> <p><b>Results</b> Over several months, I observed 23 different bird species and 391 individual birds. I discovered that there was much larger bird diversity at low tide than at high tide. I observed 21 bird species at low tide and ten bird species at high tide. I also noticed that most of the migrant birds were seen at low tide and that the close proximity of the visitors' trail did not seem to inhibit the migrant bird species or even many of the threatened bird species in their activity.</p> <p><b>Conclusions/Discussion</b> From these results, I concluded that at low tide there may be greater bird species diversity observed and a greater total number of birds seen. The tide level did not seem to deter the birds even when they were exposed to greater proximity to the trail. I would recommend more tests at several different wetland environments to provide more accurate results. This project can be altered or continued to learn more about the effects of tides on bird abundance, diversity, and density.</p>	
<b>Summary Statement</b> My project documented the impacts of high and low tides on bird species diversity and abundance at a local lagoon.	
<b>Help Received</b> Science teacher, local bird watchers of the San Elijo Lagoon, and family helped observe bird species.	