



CALIFORNIA STATE SCIENCE FAIR 2012 PROJECT SUMMARY

Name(s) Daniel I. Vitenson	Project Number J2221
Project Title Influence of Tides on Behavior of Light-Footed Clapper Rails	
<p style="text-align: center;">Abstract</p> <p>Objectives/Goals The Light-footed Clapper Rail is an endangered bird that inhabits Western coastal marshes. Light-footed Clapper Rails are shy animals and difficult to monitor for behavior and population counts. The goal of this project was to find out if tidal movement might affect Clapper Rail behavior as much as time of day. In my review of literature, I had read that Clapper Rails are crepuscular, and only a few articles suggested that Clapper Rail behavior is based on the tide. My hypothesis was that Clapper Rail behavior will be based on the tide. As the tide goes down, more food will be exposed for Clapper Rails, and Clapper Rails will forage throughout the marsh for food. At high tide, Clapper Rails might be #flushed out# and exposed due to the flooding.</p> <p>Methods/Materials The materials used in this project included a laser range finder (measuring to the nearest meter), an anemometer, binoculars, a notepad, a tide chart, and a digital hygrometer-thermometer clock. The procedures followed in this project were: I gathered my materials at the location, I logged the climate conditions, tide, time, location, and weather, and finally, I searched for Clapper Rails and documented other bird species.</p> <p>Results I visited three different saltwater marshes and lagoons a total of 23 times; I spotted a Light-footed Clapper Rail on approximately twenty five percent of my visits. My three project sites were the Tijuana Estuary, the San Elijo Lagoon, and the Buena Vista Lagoon. My results suggested that tides have an impact on Clapper Rail behavior because eighty three percent of the times I spotted Clapper Rails were at low tide and within a few hours of midday. I also spotted a Clapper Rail once during high tide.</p> <p>Conclusions/Discussion My conclusion was that Light-Footed Clapper Rails may be more active during low tide because they were spotted foraging during a low tide. The time did not seem to matter because all the times Clapper Rails were spotted were near or during mid day. I plan to continue to visit the marshes and observe the Light-Footed Clapper Rail at various times of day and tides to confirm my findings. The results of this project can be applied when taking a census of Clapper Rails because this project states that low tide may be a time when Clapper Rails are more active.</p>	
Summary Statement I observed the endangered Light-footed Clapper Rail in its native environment to investigate the effects of tidal movements on behavior.	
Help Received Parents provided transportation to and from the project sites.	