



**CALIFORNIA STATE SCIENCE FAIR
2010 PROJECT SUMMARY**

Name(s) Katherine A. Houk	Project Number J2408
Project Title Correlation of Owl Limpet Size to Population Density and Intertidal Disribution	
Objectives/Goals I have always been fascinated by tide pools and aquatic environments. I recently heard about a threatened species of limpet, the owl limpet, that inhabits our coastline. I learned that owl limpets can be territorial. Females are known to drive out any neighbors too close to them in order to grow a "farm" or area of algae. I believed the owl limpet population would be more dispersed for the older and larger female owl limpets. I was also curious to know if the females were randomly distributed in regions along with smaller male owl limpets. I hypothesized that female owl limpets might need to be in deeper tidal zones in order to grow algae more abundantly and also to acquire enough food, since owl limpets cannot graze unless they are fully submerged.	
Abstract Methods/Materials For my project, I used eight 100 cm square quadrats which I laid down in vertical transects with each quadrat was 5 meters apart. I recorded the temperature of the ocean water, the air, and the sand. I documented all of the owl limpets and other organisms and took photographs of each quadrat. I measured the owl limpets in mm and took detailed notes of the surroundings within the quadrat and grid boxes. I repeated my procedures on three different days. I documented 24 quadrats in three transects and found ninety-eight owl limpets of varied size and age.	
Results The 98 owl limpets were mainly dwelling in the high-tide and mid-tide intertidal zone. I found that the majority of the owl limpets were smaller males in an early stage of life. The median and mode for limpet length was 9mm. The mean or average size was 10.1 mm. The range in size was from 5mm-52mm. I found that owl limpets with a shell length greater than 30 mm, were dwelling in the three deepest of the quadrats. These quadrats were quadrat 6,7 and 8.	
Conclusions/Discussion I found that some large owl limpets had an area they claimed as their own. I did find a few female owl limpets living within the same grid square as other inhabitants like black turban snails or common limpets. This may have meant that an owl limpet was in the process of removing its close neighbors. According to my results, the larger the limpet, the deeper the intertidal region in which it resided. I also found, the larger the limpet, the more dispersed the population became. I would recommend more tests to confirm the findings.	
Summary Statement I wanted to discover if female owl limpets are concentrated in a specific intertidal region and if the population is more dispersed as the size of the limpets get larger.	
Help Received thankyou to my father for driving me to the tide pools. I would also like to thank my science teacher for helping me with my research.	