



**CALIFORNIA STATE SCIENCE FAIR  
2014 PROJECT SUMMARY**

<b>Name(s)</b> <b>Alia M. Salomon</b>	<b>Project Number</b> <b>S2215</b>
<b>Project Title</b> <b>Hermit Crabs of Northern California: Bay vs. Coast</b>	
<b>Abstract</b> <b>Objectives/Goals</b> The objective of my project was to determine whether or not native Northern California Hermit Crabs prefer different shells, depending on whether they live in bay or coastal habitats. <b>Methods/Materials</b> After researching and recording common Hermit Crab species, characteristics and shell preferences for each location, I visited Bodega Bay and Fitzgerald Marine Reserve during low tides. With a magnifier, I observed and then recorded descriptions of species found, their shells, and their habitat in my journal and through photographs taken with my iPhone, noting the differences and similarities between the locations. After researching environmental characteristics (wave height, temperatures, and vegetation) I charted my findings. <b>Results</b> Although the same types of shells were available in both locations, the crabs in the bay inhabited certain types of Gastropod shells, while the same species of crabs on the coast chose completely different types of shells that were more hydrodynamic and colorful. <b>Conclusions/Discussion</b> Crabs in the bay chose large, dark, round shells, enabling them to camouflage in rocky shores, and offer protection when faced with water flow in the area. The shells chosen on the coast are more hydrodynamic due to the greater water force in the area, and colored more brightly, to match the vegetation in the area and the diet of the Gastropod. Hermit Crabs select shells based on safety from predators, the ability to camouflage, shell stability in the local water flow, and fit for their bodies.	
<b>Summary Statement</b> Shell selection of Hermit Crabs in bay and coastal habitats of Northern California is highly influenced by environment.	
<b>Help Received</b> My mother drove me and my boyfriend to the two locations. They both helped locate crabs for me to observe. I also interviewed Rebecca Trinh, an undergrad student at UC Berkeley also studying crabs, who gave me a better understanding of Hermit Crabs in general. This interview is included in my display.	