



**CALIFORNIA STATE SCIENCE FAIR  
2009 PROJECT SUMMARY**

<b>Name(s)</b> <b>Ariel Takayanagi</b>	<b>Project Number</b> <b>S2415</b>
<b>Project Title</b> <b>Ants as Habitat Quality Indicators for the <i>Glaucopsyche lygdamus palosverdesensis</i>, the Endangered PV Blue Butterfly</b>	
<p style="text-align: center;"><b>Abstract</b></p> <p><b>Objectives/Goals</b> The objective was to determine whether the presence of native ants indicate a potentially healthier habitat for the endangered Palos Verdes blue butterfly, <i>Glaucopsyche lygdamus palosverdesensis</i>, than an area with mostly invasive ants.</p> <p><b>Methods/Materials</b> Five preserves including the Defense Fuel Supply Depot, Chandler, Three Sisters, Alta Vicente, George F. Preserves of the Palos Verdes Land Conservancy were surveyed for native and invasive ants using a pooter. The ants were stored in vials of alcohol and identified using a microscope and an ant key.</p> <p><b>Results</b> While six species, including one invasive exotic, <i>Linepithema humile</i>, and five native species, <i>Pogonomyrmex californicus</i>, <i>Messor andrei</i>, <i>Solenopsis xyloni</i>, <i>Prenolepis imparis</i> and <i>Camponotus semitestaceus</i>, were found at DFSP; only <i>L. humile</i> was found at Chandler, Three Sisters, Alta Vicente, and George F. Preserves.</p> <p><b>Conclusions/Discussion</b> The fact that only the invasive exotic species of the Argentine ant were found at four of the sites indicates that there is a lot of work to be done before they reach the level of health of the undisturbed DFSP habitat. This could involve gradual reduction of irrigation because extra water attracts the Argentine ant, lowering the chances of native ant survival (Snelling 2007). It can be concluded that once areas of natural habitat on the peninsula are irrigated and planted over with non-native plants, it is extremely difficult to bring the habitat back to its normal state. Although the native ants were not found at Chandler or George F., the plantings of the butterfly host plant will continue. Whether the new habitats in areas that have been overrun by <i>L. humile</i> are successful for the reintroduction of the butterfly in the long run will reveal if the presence of the native ant species is required for the survival of the Palos Verdes Blue butterfly. Further study should be done to determine which ant species can be good partners to help the Palos Verdes Blue butterfly survive.</p>	
<b>Summary Statement</b> Areas of the Palos Verdes Peninsula Land Conservancy were surveyed for native and invasive ants to determine whether the areas were healthy habitats for the reintroduction and reestablishment of the endangered Palos Verdes blue butterfly.	
<b>Help Received</b> Ann Dalkey from the Palos Verdes Peninsula Land Conservancy provided areas a lab and areas for surveying. Dr. Roy R. Snelling, Curator Emeritus of the Natural History Museum of Los Angeles trained the researcher how to poot and identify ants.	