



**CALIFORNIA STATE SCIENCE FAIR  
2013 PROJECT SUMMARY**

<b>Name(s)</b> <b>Emily Hernandez</b>	<b>Project Number</b> <b>S1110</b>
<b>Project Title</b> <b>Nutrient Content beneath Native and Non-Native Plants</b>	
<p style="text-align: center;"><b>Abstract</b></p> <p><b>Objectives/Goals</b> Stakeholders interested in preserving native plant communities do much to restore degraded habitats. They encourage us to employ native plants in our gardens because every so often the plants that we put in our gardens escape and become invasive in natural areas. Given that native plants are better for native biodiversity I was motivated to test if native plants had any further positive impact. If that's the case, then perhaps more people would be interested using natives in their gardens.</p> <p><b>Methods/Materials</b> I tested the three major macronutrients: N, P, K and pH. I hypothesized that there will be less N, P, and K under non-native plant soil(Cultivator,Soil bags,Sharpie)Soils were collected under individual native/non-native plants in areas that were dominated by a single species. Soils were poured into bags, labeled informatively and made sure that the soil samples contained decomposing leaf litter. A test kit was used to measure: N, P, K and pH. To measure pH I filled the test chamber with a soil sample, opened a green capsule over the test chamber to pour a powder , added water, fitted the cap onto the comparator and shook thoroughly, I allowed the soil to settle and develop a color for a minute. I then compared the color of the solution against a pH chart, I repeated this test ten times.To measure N, P and K for every native and non-native sample I filled a clean container with 1 cup of soil and 5 cups of D.I water, stirred and allowed the mixture to stand undisturbed until it settled for one day. Once the mixture was ready, using the dropper provided I filled the test with the solution, then removed one of the appropriate colored capsules, hold the capsule over the test chamber, fitted the cap onto the comparator and shook thoroughly, I allowed the soil to settle and develop a color for ten minutes. To record the results I compared the color of the solution against the color chart. I did the same steps for each of N, P, and K tests.</p> <p><b>Results</b> My results showed mixed support for my hypothesis. P and K were close to being significantly higher under non-native as compared to native plants</p> <p><b>Conclusions/Discussion</b> Non-native species are complex. One of the reasons why conservationists encourage us to use natives is because natives are adapted to their environments. To conclude, even though I did not find a major difference in soil macronutrients,I still reason that native plants may have a beneficial effect</p>	
<b>Summary Statement</b> Testing the amount of the three major macronutrients(N, P, K), and pH within native and non-native soil to prove that in addition to biodiversity, native plants do in fact have an affirmative impact.	
<b>Help Received</b>	