



**CALIFORNIA STATE SCIENCE FAIR
2005 PROJECT SUMMARY**

Name(s) Ariana G. Haro	Project Number S1207
Project Title Statistical Validity of Environmentally Variable Small Population Data Bases	
<p style="text-align: center;">Abstract</p> <p>Objectives/Goals The goal was to determine whether a particular area surveyed statistically represents the slightly larger area surrounding it (given the variability of the living data in the mathematical study model); utilizing real data derived from an alpine survey project as a model.</p> <p>Methods/Materials 10m² and 30m² quadrant samples from an alpine data base were obtained for examination. The data was limited to one species of plant surveyed in this model study. T-values were determined and compared for each of the L1 and L2 ranges of the large and smaller population samples for statistical validity at a 0.95 confidence level.</p> <p>Results The smaller population frequency was 0.24. At the 0.95 confidence level the interval was L1= .3815 and L2= .3815 for the larger population. The smaller population sample did not fit within the t-test confidence interval of the larger population.</p> <p>Conclusions/Discussion To support my conclusion I examined all nine quadrants of the larger 30m² quadrant study area. No individual 10m² quadrant fit the 0.95 confidence interval limits for the 30m² quadrant population. This would clearly support my hypothesis.</p>	
Summary Statement Utilizing real research data I was able to confirm that using a small population sample does not accurately represent the larger population.	
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