



**CALIFORNIA STATE SCIENCE FAIR  
2003 PROJECT SUMMARY**

<b>Name(s)</b> Ariel E.T. Single	<b>Project Number</b> <b>J1922</b>
<b>Project Title</b> <b>Effects of Habitat Diversity and Basin Size on Bird Use of Ponding Basins</b>	
<b>Abstract</b> <b>Objectives/Goals</b> There are many ponding basins in Fresno, but not much other wetland habitat. Many birds use these basins. I looked at how the habitat diversity and size of ponding basins affected the total number of birds, and the species diversity of birds using the basin. <b>Methods/Materials</b> I estimated pond size and measured habitat diversity of 8 ponds in a 36 square mile area of northeast Fresno. I visited each pond 10 times during December-January 2002-2003. Using binoculars, I recorded the number and species of birds at each pond, their activity, and what habitat they were using. <b>Results</b> Ponds were 11.9ha - 2.9ha, with 3-7 habitats per pond. The habitats were emergent vegetation; short grass; shallow water; open water; mudflat; shoreline, bare ground; and weeds. I saw 37 species of birds, mostly shorebirds and waterfowl. The number of species observed at each pond ranged from 1 to 12. Species diversity was predicted by pond size and the combination of habitat diversity and pond size. Bird numbers were predicted by pond size. <b>Conclusions/Discussion</b> I expected habitat diversity to be an important predictor for species diversity, but that did not happen. Instead, pond size, and the interaction of size and habitat diversity were good predictors for species diversity. Larger ponds might have more habitat diversity, and might provide more space for the different species to coexist. Pond size was also the only predictor for number birds. Larger ponds might provide more space and resources to hold more birds.	
<b>Summary Statement</b> How bird numbers and species diversity are affected by pond size and habitat diversity.	
<b>Help Received</b> Mom: glueing board, editing, stats. Dad: data editing, driving to ponds, learning birds.	