CALIFORNIA STATE SCIENCE FAIR
2012 PROJECT SUMMARY

Name(s)
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Project Number
J1929

Project Title
The Importance of Coyote Bush in Chaparral Ecosystems

Abstract

Objectives/Goals
My objective was to learn what roles the coyote bush and its' visitors play in chaparral ecosystems during the fall.

Methods/Materials
Using insect nets, kill jars, and observational skills, I collected insect specimens and sighted other animals, such as tree frogs. I visited the site four times and collected and sighted specimens on two different coyote bushes. I pinned the insects and identified each one down to family using books and the help of CSU Chico professor and entomologist, Dr. Donald Miller. By comparing our specimens to those of the University's insect collection, I managed to do this. Dr. Miller reviewed my identifications for accuracy. I calculated the number of individual specimens collected in each family. To determine the food source and niche of each specimen, I used textbooks and Internet searches.

Results
I observed and/or caught and identified 82 individuals from 9 different orders and 23 different families. Most of these were pollinators/nectarivores, followed by carnivores/predators, herbivores, omnivores and parasites. I calculated percentages for each order caught, individuals caught in each niche category, and native/non-native species. I then generated several graphs to show these results.

Conclusions/Discussion
My conclusion is that an entire food web of animals was located on these two bushes. This is important because fall is a time of year when insect populations are very low. These data suggest that coyote bush plays a vital role in providing both native and non-native pollinators and pest-eating predators essential nutrients to make it through the winter. The data further suggests that planting or conserving coyote bush will increase animal diversity in chaparral ecosystems.

Summary Statement
My project is about how flowering coyote bush is vitally important to chaparral ecosystems because it supports an entire food web of organisms in the fall when insect populations are very low.

Help Received
Mother and father helped format report; Used insect collection at CSU Chico under the supervision of Dr. Don Miller; Dr. Kristina Scheirenbeck, CSU Chico, helped with plant identification; Mr. Jeff Mott, Dir. of Butte Creek Ecological Reserve - Honey Run Unit, for permission to collect specimens and encouragment