CALIFORNIA STATE SCIENCE FAIR
2010 PROJECT SUMMARY

Name(s)
Rachel A. Klose

Project Number
J1212

Project Title
The Regrowth of Invasive Plants in Comparison to Native Plants in a Coastal Sage Scrub Habitat after a Brush Fire

Abstract

Objectives/Goals

The purpose of this experiment was to establish quadrants in three types of land in a burned coastal sage scrub habitat and count the number of each type of plant that regrows. This will help land conservancies to predict the habitual growth of plants in newly burned land.

The question of this experiment is: Will a brush fire in a coastal sage scrub habitat make the land more susceptible to invasive plants?

Methods/Materials

The materials used were: 36 sturdy wooden stakes (about 30 cm long with extras just in case any break), a mallet, a spool of twine, scissors, a GPS, 9 neon plastic flags, gloves, hiking boots, a camera, measuring tape in metric system, a data book, a pencil, a percent coverage chart, cardboard, and a box cutter.

I hiked down into the Palos Verdes Nature Reserve and located the types of land. In each type, I established three 1 meter by 1 meter quadrants with wooden stakes and twine. Every month I recorded the number of grasses, native, and invasive plants, the site characteristics, and the percent coverage.

Results

The invasive plants took over and had the most plants and were bigger except for in the unburned native land. At first in the native burned area, there was an average of 12 small native plants and only 4 non-natives. Two months later, there was an average of 3 native plants and an average of 493 non-native plants. In the non-native burned area, it started off with an average of 0 natives and an average of 406 non-natives. Two months later, there was an average of 0 natives and 1,467 non-natives.

Conclusions/Discussion

The unburned native land stayed the same because all of the native plants were already full grown and were dominant over the area, though the non-natives took over everywhere else. This was because this experiment took place after large amounts of precipitation, and plants native to a coastal sage scrub habitat use C(4) photosynthesis, where they grow better in harsh weather conditions with little rain and high temperatures. The hypothesis is predicted to be correct by the late spring and summer months.

Summary Statement

My experiment is about what type of plant will win dominance over the others in different types of land after being burned by a wildfire.

Help Received

Received access to nature reserve from the Palos Verdes Land Conservancy; Ann Dalkey, Palos Verdes Land Conservancy Director of Science Programs helped to identify the land and types of plants and how to manage my data