Name(s)	Project Number
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Project Title

Survivorship of Valley Oaks: Type I, II, or III?

Abstract

Objectives/Goals

My objectives were to determine what type of survivorship curves valley oak populations had and if the age structure differed between developed and undeveloped locations in Fresno and Tulare counties. My hypothesis was that oak populations in natural conditions should have Type III survivorship curves.

Methods/Materials

At 10 sites (5 developed, 5 undeveloped) in the San Joaquin Valley, I measured the circumference (at 1.3 meters from the base) of as many trees as I could locate within one hour and recorded the measurements in my notebook. I marked the location of every tree with a GPS (global positioning system) unit. I entered the measurements into an Excel spread sheet and used the formula Diameter = Circumference/Pi to calculate the diameter at breast height (DBH). The trees with the largest DBH are the oldest in a population. I created a frequency table with 17 different size classes (10 centimeters/class). I could the€ describe a survivorship curve for each population and for the two different situations (developed and undeveloped).

Results

The combined data for the undeveloped parks produced a Type III survivorship curve but the combined data for the developed parks had no distinct survivorship curve. However, some of the developed parks had good representation of all size classes and some of the undeveloped parks did not.

Conclusions/Discussion

My results indicate that my hypothesis was largely correct for undeveloped parks, with good numbers of all age classes, and higher numbers the younger age classes. My research seems to indicate that oak populations in natural conditions are generally in good condition (Type III). Developed parks need to have more trees in the younger age classes to replace the older trees as they die out.

Summary Statement

My project set out to determine the age structure of valley oak populations in developed and undeveloped parks in Tulare and Fresno counties.

Help Received

My family helped me to get to field sites, my father showed me how to use Excel for my analysis, my mother helped me with my board, and a number of people helped me get access to field sites.