

Small Mammal and Herpetofaunal Abundance and Diversity Along a Gradient of Sudden Oak Death Infection¹

Kyle Apigian², Letty Brown², Jenny Loda³, Sarah Toas⁴, and Barbara Allen-Diaz²

Abstract

We studied the effects of sudden oak death (SOD) on coast live oak woodlands in the San Francisco Bay Area. Small mammals and herpetofauna were sampled in the spring and fall of 2002 and 2003 along a gradient of *Phytophthora ramorum* infection. Coverboards along a grid were sampled in the spring to determine herpetofaunal numbers and diversity while Sherman live traps were used to measure small mammal populations. Descriptive analyses indicate that the California slender salamander (*Batrachoseps attenuatus*) was the most common herpetofauna present on all SOD sites, but did not show a consistent pattern with *P. ramorum* infection. Wood rats (*Neotoma fuscipes*) were found only on our two most heavily affected sites. Deer mice (*Peromyscus maniculatus*) were most common on heavily affected sites, while Piñon mice (*Peromyscus truei*) and brush mice (*Peromyscus boylii*) were more common on less affected sites. Observed patterns of abundance may be related to some aspects of habitat change related to SOD, such as increased downed, woody debris, crown cover reduction, and changes in overstory tree species. However, there may be many other covariates that impact the abundance of these groups (for example, geography, climate, competitors, and predators) that are unrelated to SOD. Our study design may have not been powerful enough to detect effects of SOD; natural variations in population size make larger sample sizes necessary to detect potentially small effects of habitat change. Additionally, it is important to monitor these populations for longer than two seasons to potentially detect differences.

Key words: small mammals, herpetofauna, sudden oak death, *Phytophthora ramorum*

¹ An abstract of a poster presented at the Sudden Oak Death Second Science Symposium: The State of Our Knowledge, January 18 to 21, 2005, Monterey, California

² Department of Environmental Science, Policy, and Management, University of California, Berkeley, California 94720; kapigian@nature.berkeley.edu

³ Department of Natural Resource Ecology and Management, Iowa State University, Ames, Iowa 50011

⁴ 1771 Highland Place #4, Berkeley, CA 94709