

Miscellaneous 2009

Project: 608 Classification of embers generated during prescribed burns

Leader: Steve Quarles, Advisor, UC RFS
steve.quarles@nature.berkeley.edu

Objective: Results of several post-wildfire surveys have shown that lofted embers have resulted in the loss of many homes. These losses were in part due to the lofted embers entering the attic through vents and igniting combustible materials in the attic. Vents are incorporated into attics and crawlspaces of homes in order to provide air circulation to minimize moisture related damage, and are required by building code. Vents are required to be covered with a minimum 1/4-inch mesh screen, but based on home loss in recent wildfires, this mesh size may be too large. In order to determine minimize mesh size, we must have a better understanding of the size distribution of embers generated during wildfires, and the effect of vegetation type on size. The objective of this research project is to develop a database of the size of embers generated during prescribed burns conducted on the Sierra Foothill Field Station. A pre-fire survey will provide information regarding vegetation type and moisture content. We will set up small plastic covered frames at various locations in front of and beside the fire, but outside the fire boundary. These frames will be evaluated after the fire by measuring the size and number of holes in the plastic.

Project: 806 Effect of Predation by a Phonotactic Parasitoid on the Evolution of Male and Female Reproductive Behavior in a Field Cricket

Leader: William E. Wagner Jr., Associate Professor, School of Biological Sciences, University of Nebraska
wwagner@unlserve.unl.edu

Objective: We are examining the effect of predation by the phonotactic parasitoid fly, *Ormia ochracea*, on the evolution of male singing behavior and female mating preferences in the variable field cricket, *Gryllus lineaticeps*. In this species, females prefer male songs that contain faster and longer chirps and they directly benefit from mating with these males because they provide seminal fluid products that increase female fecundity and longevity. Higher chirp rates and longer chirp durations, however, are also more likely to attract parasitoid flies. As a result, males that produce preferred song types have a higher risk of fly predation, as do females that are near preferred males. Females that mate with multiple males should also have a higher risk of fly predation. We will we will examine the effect of fly predation on the evolution of male singing behavior, female responses to male song, female repeated and multiple mating, male-provided direct benefits, and the reliability of male signals of benefit quality. To do so, we will collect field-inseminated females from seven parasitized and seven non-parasitized populations, establish laboratory stocks, and test the behavior of crickets from each population that have been raised in the common environment of the lab.