Post-fire Responses in a Coastal Redwood/Douglas-Fir Forest, Santa Cruz Mountains, CA

Garren Andrews and Christopher Dicus, California Polytechnic State University, San Luis Obispo, hunnington@email.com

We investigate how fire severity impacts the survival and response (sprouting/seeding) of multiple species in the Santa Cruz Mountains of coastal California, including coast redwood (Sequoia sempervirens), Douglas-fir (Pseudotsuga menziesii), tanoak (Lithocarpus densiflorus), and Pacific madrone (Arbutus menziesii). During August 2009 the Lockheed fire burned nearly 3,160ha of mixed-conifer stands with variable severity. Data from 37 Continuous Forest Inventory (CFI) plots were collected immediately before and for 2 successive years following the 2009 Lockheed Fire. This research entails three objectives. First, we will quantify post-fire mortality of trees that vary in species, size, and fire severity. Second, data will be quantified for post-fire response (sprouting, seeding) of those four tree species in areas of varying fire severity. Third, we will develop logistic regression models that predict post-fire mortality and response for each of the four species. Understanding the relationship between burn severity, mortality and regeneration can allow for better post-fire predictive services. This research will support forest managers in determining the best management practices to facilitate long-term sustainability and protection of environmental infrastructure within coast redwood/Douglas-fir forests.