

Pacific Southwest Research Station

Sierra Nevada Research Center

Plumas Lassen Administrative Study: Study Module on Fuels and Fire at the Landscape Scale

The Research:

Past management activities including fire suppression, harvesting, and livestock grazing have changed the structure and composition of many coniferous forest in the western United States. These changes in vegetation have altered habitat for a variety of species. Correspondingly, changes in vegetation and fuel loading have changed the risks of fire spreading across the landscape.

The USDA Forest Service aims to actively manage vegetation with the goal of reducing fire risk across the landscape while minimizing negative effects on wildlife habitat and ecosystem stability. Assessing the effects of this vegetation management across the forested ecosystems of the Plumas and Lassen National Forests is the goal of the Plumas-Lassen Administrative Project (PLAS). We need to investigate the potential change in fire behavior and risk given current silvicultural and fire risk mitigation treatments.

Objectives:

- Assess current conditions, in terms of fuel loads and vegetation
- Assess current potential fire behavior and effects given these measured fuel and vegetation conditions
- Evaluate how landscape fuels treatments would affect vegetation condition and fire behavior and effects
- Develop a system for rating ladder fuel hazards
- Produce an analytical system in which we can integrate descriptions of current conditions with models that project responses of fire behavior and effects given prescriptions of treatment and weather scenarios
- Understand the synergistic effects between potential treatments and various response variables of concern—silviculture, fire risk, and wildlife habitat





Photo: K. Menning

Application of Research Results:

The ladder fuel hazard rating system (LaFHA) we have developed should be helpful for managers wishing to assess the risk of fire climbing into the canopy of forests. It is published in the April, 2007 issue of the Western Journal of Applied Forestry.

Our fire modeling should prove useful for the Forest Service and public to evaluate the risks of fires under different weather scenarios and conditions. We are evaluating fire risks at conditions that range from moderate (70th weather percentile) and severe (90th) to extreme (97.5th).

We have teamed with the mammal and small bird research teams to evaluate landscape heterogeneity and their measures of species occurrence, richness and diversity. We hope that these analyses will be useful for managers who wish to track species or know where they may be expected to be found.

Collaborators:

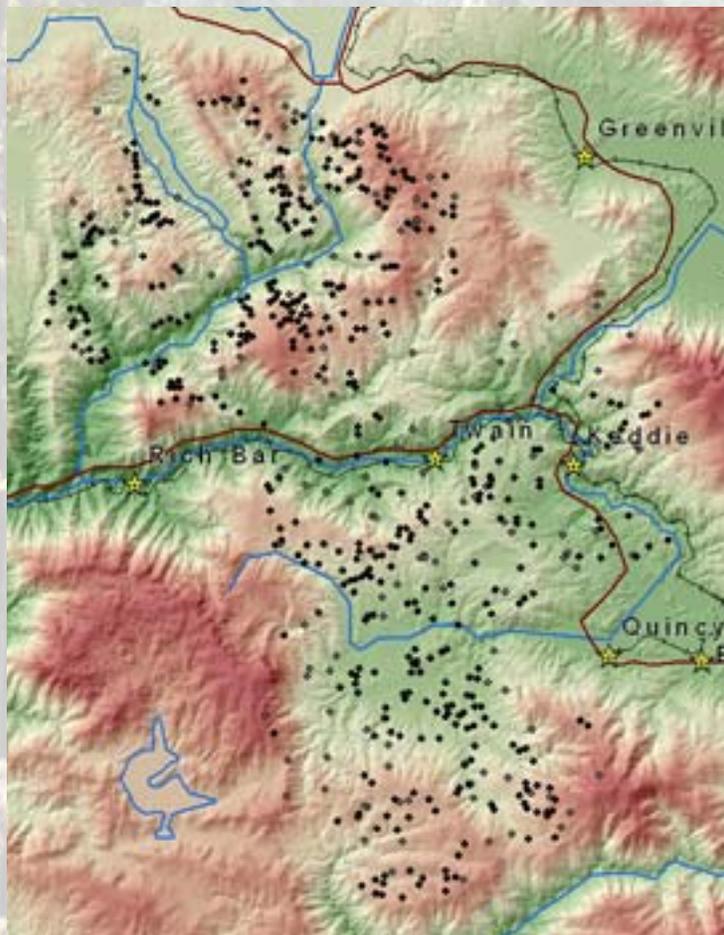
This study is being conducted by UC Berkeley in collaboration with staff of the Sierra Nevada Research Center of PSW. We value these opportunities for collaboration that enables a broader understanding of key questions addressed by the Sierra Nevada Research Center.



USDA Forest Service
Pacific Southwest Research
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Map of area and plots

Location:

The location for this study is on portions of the Plumas and Lassen National Forests, including much of the land base for the HFQLG Pilot Project within the Westside coniferous forests. The HFQLG Pilot Project includes approximately 2.5 million acres within the Lassen, Plumas, and Tahoe National Forests. In this fuels and fire research module, we are focused on 150,000 acres primarily to the north and west of Quincy. In the map above, over 600 plots are shown as black dots where data have been sampled for this project.

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