

JFSP 2005 Principal Investigator Workshop

Project Title: Fire regimes & forest structure of Utah & eastern Nevada: A multi-scale history from tree rings

Project Location: Utah and eastern Nevada

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Description of Project: Utah and eastern Nevada currently lack the site-specific histories of fire and forest structure that are necessary for scientifically based land-management planning in this region. For a region with such extensive fire-adapted ecosystems, surprisingly few fire and forest-structure histories have been reconstructed and these only at stand scales and only in a few of the region's forest types. Twentieth century fire exclusion profoundly changed forest and fuel structures in many forests of the western US. However, these changes did not occur uniformly across the landscape due to variations in forest type, topography, and regional gradients in climate. As a result, we cannot confidently extrapolate fire and forest-structure histories across this region based on the few existing fine-scale histories. Our **main objective** is to reconstruct multi-century histories of fire and forest structure across a range of topography, forest type and regional climate in 10 watersheds in Utah and eastern Nevada, from fire scars and tree establishment dates. Our spatially explicit sampling design will collect this information in an efficient, systematic manner across agency boundaries and forest types. Our **second objective** is to scientifically assess the extent to which our fire and forest-structure histories can be extrapolated to unsampled areas by elucidating the drivers of spatial variation in the areas that we sample. Our **third objective** is to communicate the results of our work to wildland managers in Utah and eastern Nevada.

Status Report:

- We have completed sampling in 14 watersheds in Utah and eastern Nevada (Paunsagunt Plateau, Henry Mountains, Tushar Mountains, Abajo Mountains, Wah Wah Mountains, Mytoge Mountain, Boulder Mountain, Ephraim Canyon, Uinta Mountains, East Tavaputs Plateau, Bear River Range, and Snake Range).
- We have collected wood samples from $\approx 11,000$ trees at ≈ 370 plots. We have prepared all these samples for analysis and have completed dendrochronologically dating 80% of them.
- We have reconstructed fire dates at 50% of the sites and mapped the reconstructed fires in GIS.
- Preliminary results from this project were presented at the Ecological Society of America Annual Meeting in 2004 (*Variation in historical fire regimes across an elevation and forest gradient in Utah*) and at the University of Colorado, Boulder Geography Seminar Series.
- We have completed a final report for the Fishlake National Forest (*Historical Fire Regimes and Forest Structure, Fishlake National Forest: Final Report on a Pilot Study*).
- In fall 2005, we will draft a Forest Service General Technical Report containing the dendrochronological reconstructions for each watershed, plus maps and graphical summaries. In spring 2006, we will begin drafting manuscripts for peer-reviewed journals and make oral presentations at ranger districts and supervisor's offices across the study area.

Issues/Concerns; changes in research objectives, methods, or products: We do not have any issues/concerns nor do we anticipate any changes to our objectives, methods or products.

