

2005 JFSP Principal Investigator Workshop Project Progress Report

Project Title: Learning from the past: Retrospective analyses of fire behavior in Yosemite and Sequoia-Kings Canyon National Parks

JFSP Project No.: 04-2-1-110

Project Location: Sequoia-Kings Canyon and Yosemite National Parks

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Brief Description of Project: Yosemite and Sequoia-Kings Canyon National Parks have identified a critical need to be able to understand and track the consequences of their fire suppression decisions. This 3-year project will use retrospective fire behavior modeling and risk-benefit assessments for suppressed lightning ignitions that have occurred since 1994 to measure these consequences. We will determine where lightning ignitions would have spread had they not been suppressed, assess the effects that would have resulted from these fires, and quantify the cumulative impacts of fire suppression. Results will be compiled and presented in a GIS data library to allow easy reference for managers during the fire season when developing response strategies to unplanned ignitions and when preparing WFIP analyses. Furthermore, the project will develop methodology and step-by-step procedures for conducting these retrospective analyses so that Park fire management staff can add to this information resource annually. This research will improve the planning of fuels management activities by supplementing the Fire Return Interval Departure analysis that is routinely done by both Parks. Results will allow park managers to frame future decisions and cost-benefit analyses in the context of past experiences, track the cumulative effects of suppression, and communicate tradeoffs to the public and other governmental entities.

Status: We began work on the project in November 2004. Accomplishments in the nine months since include:

- Coordination – Onsite meetings with park staff in November 2004 and March 2005. Also met in March 2005 with users and developers of FVS-FFE, FOFEM, and the new set of comprehensive fuel models for feedback on our proposed approach.
- Training/equipment – The GIS Specialist/Fire Modeler attended a five-day FVS-FFE course in November, 2005 and completed the S-493 ‘FARSITE: Fire Area Simulator’ course in May, 2005. A dual-processor workstation has been dedicated to this project.
- Data – Approximately 90% of the necessary input data has been gathered for the Yosemite NP study site and 75% for the Sequoia-Kings Canyon Study site. This spring, an expanded surface fuel data set (i.e., 40 new fuel models as opposed to 13 standard NFFL) was developed for the Yosemite NP study site.
- Analysis – A proof-of-concept run demonstrating the cumulative effects analysis for the South Fork Merced study area in Yosemite is approximately 75% complete.
- Webpage posted <http://leopold.wilderness.net/research/fprojects/F006.htm>

Issues/Concerns: The project is within budget and on target for a September 30, 2007 completion date. We changed the initial year for our analysis from 1991 to 1994 due to data limitations. We are currently evaluating alternative approaches for updating fuels in the cumulative effects analysis and may use a combination of expert opinion rules, FOFEM, and/or FVS-FFE.