

JFSP Project Number: 05-1-2-06

Principal Investigator: Jill Johnstone and Teresa Hollingsworth

2006 Progress Report

1. Why is the research important from your perspective?

Land managers in Alaska are faced with the challenge of managing fire in a way that preserves human life and property while at the same time conserving the key ecological processes driven by fire. Because managers have little capacity to alter fire behavior by direct fuel manipulations across the large extent of Alaskan boreal forest, the ability to use and interpret natural variations in fire processes should be a major component of long-term fuel management in the region. This research focuses on predicting, interpreting, and maximizing the beneficial impacts of variations in fire severity on ecosystem rehabilitation and provides a direct contribution to fire management needs in Alaska. In addition, this research will contribute to our basic understanding of how changes in fire regime affect patterns of ecosystem recovery within boreal forests.

2. How will managers and practitioners use this research?

Managers will be able to use the *successional trajectories workbook* and *maps of potential forest types* to predict post-fire trajectories of ecosystem recovery under different conditions of fire severity. This will provide an important information source in the development of plans for prescribed burns or wildfire management. Information on fire effects on patterns of ecosystem recovery can be used to develop management plans that maximize the desired effects of a fire event on future ecosystem characteristics. The *successional trajectories workbook* will also provide guidance for on-the-ground assessment of fire impacts on wildlife habitat, future forest flammability, or other ecosystem services.

3. Is the work applicable at local, regional, or national scales and why?

This work will be directly applicable to local and regional scales. Mapping of potential post-fire forest types will be done for specific game management units so that the results can be directly applied to local decisions on fire management. General rules and statistical models relating post-fire recovery to site conditions and fire severity will be applicable at the regional scale, and may be generalized to black spruce forests throughout the boreal region.

4. Please provide contact information for three managers or field practitioners who can provide testimonials of how they use your research findings for each JFSP project.

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