

DEMONSTRATION PLOTS FOR COMPARING FUEL COMPLEXES AND FOR MANAGING SPRUCE BEETLE OUTBREAKS

Elizabeth G. Hebertson

USDA Forest Service, Ogden Field Office, 4746 South 1900 E, Ogden, UT 84403

Michael J. Jenkins

Wildland Fire Science, Department of Forest Resources, Utah State University, Logan, UT 84322

Linda L. Wadleigh

USDA Forest Service, Kaibab National Forest, 800 South 6th Street, Williams, AZ 86046

ABSTRACT

The activities of insects, diseases, and abiotic agents are known to contribute to changes in the characteristics of fuels complexes and associated fire behavior. Landscape-scale density-management strategies have been proposed as viable alternatives to sanitation or salvage for managing insect and disease outbreaks. The effect of various density treatments on fuels complexes or fuels development, however, is not known.

An important agent of disturbance in Intermountain Region national forests of the United States is the spruce beetle (*Dendroctonus rufipennis*). Outbreaks have caused extensive mortality resulting in significant loss of timber, recreational opportunities, and reduced aesthetics. Mortality resulting from outbreaks has also resulted in increased dead fuel loads and will likely alter the fuels complex of infested stands over time. The Fishlake National Forest, in cooperation with the Utah State Division of Forestry, Fire and State Lands, will implement two density-management treatments in several spruce (*Picea*)–fir (*Abies*) forests to reduce susceptibility of these stands to spruce beetle infestation and to enhance tree vigor.

This situation provides an excellent opportunity to establish permanent demonstration plots in treated versus untreated stands. Fuels inventories and appraisals will be conducted to determine changes in the fuel complex and profile over time. Based on the fuel inventory and appraisal data, fuels treatment strategies including a combination of mechanical and biomass utilization will be implemented on the demonstration plots. Prescribed fire will also be considered for treating fuel, provided all prescription variables are met. Other benefits derived from this information include the demonstration of strategies for managing insect outbreaks and fuel development and manipulation.

Citation: Hebertson, E.G., M.J. Jenkins, and L.L. Wadleigh. 2004. Demonstration plots for comparing fuel complexes and for managing spruce beetle outbreaks [abstract]. Page 153 in R.T. Engstrom, K.E.M. Galley, and W.J. de Groot (eds.). Proceedings of the 22nd Tall Timbers Fire Ecology Conference: Fire in Temperate, Boreal, and Montane Ecosystems. Tall Timbers Research Station, Tallahassee, FL.