

Probability of ignition in Jack and lodgepole pine stands – implications for fuel Management

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We explored the role of fuel moisture, wind speed and stand structure on wildfire ignition in Jack and lodgepole pine stands in western Canada using a historical database. Data from 987 small-scale experimental test fires conducted in field trials at four sites in British Columbia, Alberta, Saskatchewan and Manitoba between 1940 and 1959 were used to model the probability of ignition using logistic regression. Preliminary results indicate that the probability of ignition in pine ground fuels conducted during summer conditions increased with increasing wind speed and decreasing fuel moisture. Despite accounting for fuel moisture and wind conditions, a variable representing stand structure remained significant in the model, confirming that ease of ignition is inhibited in young, dense stands in comparison with more open stand structures. Implications for fuel management are discussed.