

Progress Towards a Lightning Ignition Model for the Northern Rockies

Paul Sopko ^{A B}, Don Latham

^A US Forest Service

^B Corresponding author, Email: psopko@fs.fed.us

Abstract

We are in the process of constructing a lightning ignition model specific to the Northern Rockies using fire occurrence, lightning strike, ecoregion, and historical weather, NFDRS (National Fire Danger Rating System), lightning efficiency and lightning “possibility” data. Daily grids for each of these categories were reconstructed for the 2003 fire season (184 days- May through October) in an area defined by the boundaries of USFS Region 1. Logistic Regression analysis will be used with the binary dependent variable being the occurrence of a lightning ignited fire that has been recorded to the appropriate agency in a grid cell. The independent variables listed above will be tested and coefficients developed for each one found to be statistically significant. This analysis will be done spatially for each grid cell in each grid created for each variable during the 184 day time span. The models developed can be used by fire management agencies to estimate fire occurrences directly after fire season lightning events. Daily estimated fire occurrence maps can be created giving managers a refined view of areas where resources should be targeted.