

ASSIGNING FIRE REGIMES ON THE MONONGAHELA NATIONAL FOREST, WEST VIRGINIA

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The use of prescribed fire on the Monongahela National Forest is expected to increase as the role of fire is better understood and appreciated. Ecological knowledge of an area's fire regime is essential in meeting the intent of a burn program. A fire-adapted vegetation model emulating the coarse-scale work was developed in 2002 as a first attempt to assign fire regimes on the Monongahela. Spatial analyses and maps were generated using geographic information systems, specifically the Model Builder extension in ArcView 3.2 (ESRI, Redlands, CA). Available resource themes were reviewed for relevancy in estimating fire regimes. From these, four themes were selected: land type associations, fire-adapted vegetation, potential natural vegetation, and current forest types. All themes were converted to 20- by 20-m grids for applicability at the stand level (10's to 100's of ha). Selected features in the themes were given scaling values of 1 through 5 to represent vegetation fire adaptation, with 1 representing vegetation most adapted to fire and 5 the least. Weights were assigned to each theme according to its estimated influence or importance on fire regimes. Current forest type and potential natural vegetation were weighted equally and higher than other input themes. The resulting weighted scores were then categorized into fire regime groups based on ecological knowledge of fire-vegetation relationships. Fire regimes were assigned as follows: model ranking one = fire regime IV (35 to 100 years, stand-replacement severity), model ranking two = fire regime I (0 to 35 years, low severity), model ranking three = fire regime III (35 to 100 years, mixed severity), and rankings four and five = fire regime V (200+ years, stand-replacement severity). Fire regime II (0 to 35 years, stand-replacement severity) was not considered applicable to landscapes on the Monongahela.

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