

# NATURAL FIRE REGIME AND FIRE REGIME CONDITION CLASS (FRCC)

## Natural Fire Regime

A natural fire regime is a general classification of the role fire would play across a landscape without modern human mechanical intervention.<sup>1,2</sup> The five natural fire regimes are classified based on average number of years between fires (fire frequency) combined with the severity of the fire on the dominant overstory vegetation (amount of vegetation replacement). These five regimes include:

- I – 0 to 35 year frequency and low (surface fires most common) to mixed (less than 75% of the dominant overstory vegetation replaced) severity;
- II – 0 to 35 year frequency and high severity (greater than 75% of the dominant overstory vegetation replaced);
- III – 35 to 100+ year frequency and mixed severity (less than 75% of the dominant overstory vegetation replaced);
- IV – 35 to 100+ year frequency and high severity (greater than 75% of the dominant overstory vegetation replaced);
- V – 200+ year frequency and high severity (greater than 75% of the dominant overstory vegetation replaced).

## Fire Regime Condition Class (FRCC)

A fire regime condition class (FRCC) is a classification of the amount of change in fire frequency and severity from the natural fire regime.<sup>3</sup> The three classes are based on low (FRCC 1), moderate (FRCC 2), and high (FRCC 3) change from the natural fire regime.<sup>4,5</sup> The change in natural fire regime results from changes to one or more of the following fire regime attributes:

- Vegetation characteristics (i.e., species composition, structural stages, stand age, canopy closure, and mosaic pattern);
- Fuel composition;
- Fire frequency, severity, and pattern; and
- Other associated disturbances (e.g., insect and diseased mortality, grazing, and drought).

Characteristic vegetation and fuel conditions are considered to be those that occurred within the natural fire regime. Uncharacteristic conditions are considered to be those that did not occur within the natural fire regime. Examples of uncharacteristic conditions include invasive species (e.g. weeds, insects, and diseases) or excessive vegetation removal. The amount of change is based on comparison of the fire regime attributes as identified above to the natural fire regime. The amount of change is then classified to determine the FRCC.

The table on the following page provides a simplified description of FRCC and the associated potential risks.



<sup>1</sup> Agee, J.K. 1993. Fire ecology of Pacific Northwest Forests. Island Press, Wash. DC.

<sup>2</sup> Brown, J.K. 1995. Fire regimes and their relevance to ecosystem management. Pages 171-178 *In* Proceedings of Society of American Foresters National Convention, Sept. 18-22, 1994, Anchorage, AK. Society of American Foresters, Wash. DC.

<sup>3</sup> Hann, W.J., Bunnell, D.L. 2001. Fire and land management planning and implementation across multiple scales. *Int. J. Wildland Fire*. 10:389-403.

<sup>4</sup> Hardy, C.C., Schmidt, K.M., Menakis, J.M., Samson, N.R. 2001. Spatial data for national fire planning and fuel management. *International Journal of Wildland Fire* 10:353-372.

<sup>5</sup> Schmidt, K.M., Menakis, J.P. Hardy, C.C., Hann, W.J., Bunnell, D.L. 2002. Development of coarse-scale spatial data for wildland fire and fuel management. General Technical Report, RMRS-GTR-87, U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station, Fort Collins, CO.

FRCC	Description	Potential Risks	Example
FRCC 1	Within the natural range of variability of vegetation characteristics; fuel composition; fire frequency, severity and pattern; and other associated disturbances	Fire behavior, effects, and other associated disturbances are similar to those that occurred prior to fire suppression and other types of management that do not mimic the natural fire regime and associated vegetation and fuel characteristics. Composition and structure of vegetation and fuels are similar to the natural fire regime. Risk of loss of key ecosystem components (e.g. native species, large trees, and soil) is low. Fire behavior, effects, and other associated disturbances are moderately changed (more or less severe).	<p>Native perennial and shrubland vegetation.</p> 
FRCC 2	Moderate change from the natural regime of vegetation characteristics; fuel composition; fire frequency, severity and pattern; and other associated disturbances	Composition and structure of vegetation and fuel are moderately altered. Uncharacteristic conditions range from low to moderate. Risk of loss of key ecosystem components is moderate. Fire behavior, effects, and other associated disturbances are highly changed (more or less severe).	<p>Removal of native grass.</p> 
FRCC 3	High change from the natural regime of vegetation characteristics; fuel composition; fire frequency, severity and pattern; and other associated disturbances	Composition and structure of vegetation and fuel are highly altered. Uncharacteristic conditions range from moderate to high. Risk of loss of key ecosystem components is high.	<p>Invasive understory with damaged shrubland.</p> 