

**\*\*11/4/03 DRAFT\*\***

## **Fire Regime Condition Class (FRCC) Interagency Handbook Reference Conditions**

**Modeler:** Wendel Hann

**Date:** 8/27/03

**PNVG Code:** PGRA3

**Potential Natural Vegetation Group:** Northern Plains Grassland With Shrubs

**Geographic Area:** Northern Great Plains. The Northern Great Plains separate from the Southern Great Plains near the Arkansas River. This area generally includes eastern Montana, North Dakota, eastern Wyoming, South Dakota, and Nebraska.

**Description:** The Northern Plains Grassland occurs in the eastern portion of the states of Montana, Wyoming, and Colorado, and the western portions of the states of North Dakota, South Dakota, and Nebraska. The Northern Plains Grassland with Shrub PNVG occurs within this area on rolling uplands and flats where naturally frequent fire excluded the shrubs and maintained grass dominance.

**Fire Regime Description:** In the natural regime the mean frequency was about 11 years, ranging from as low as 3 up to 20 years. Much of the frequent fire occurred in the class B, closed grass type, with a secondary amount in the open grass class B. Fire was less frequent in the post fire class A because of green regrowth. In the class D, which generally occurs on the rocky ridges and in moist draws fires were even less frequent.

### **Vegetation Type and Structure**

Class	Percent of Landscape	Description
A: post replacement	13	Post-fire grass regrowth and forbs. Typically dominated by western wheatgrass, blue grama, lupine, asters, purple coneflower, and goldenrod. Highly variable canopy closure depending on amount of fire related mortality and seedling development. Height ranges from .5 ft to 1 ft. depending on annual moisture. Forbs often dominate following moist spring rains. This type can burn during years with moist springs followed by very dry summers, but in typical years the green post-fire regrowth has low flamability.
B: mid-development closed	35	Greater than 40% canopy cover and up to 2 ft in height depending on grazing utilization. Typically dominated by western wheatgrass and blue grama. Amount of this class varies; drought may shift this class to the more open class C; this class may also occur on the more productive soils where class C may occur on low productivity soils. Frequent fire is common in this type because of the flammable grassy fuels. It would be rare for a shrub type to develop from this class because of frequent fire and heavy competition from grass.
C: mid- open	50	Less than 40% canopy cover and typically up to 1 ft. in height. Typically dominated by western wheatgrass, blue grama, and buffalograss. Amount of this class varies; moist years may shift this class to the more closed class B; this class may also occur on the low

production soils where class B may occur on higher productivity soils. Fire is less common in this type than in class B due to the less continuous and lower productivity of flammable grassy fuels. For shrubs to dominate and shift class C to D several fire cycles must be missed in order to allow spread of shrubs from rock ridges and draws out into the uplands and flats. Fires may often be spotty and allow some shrub seedlings to develop.

D: late- open

- 2 Shrub cover ranging from 5 to 15% often located in small patches related to inclusions of rocky ridges or small moist areas in the draws. Rocky ridges may have sagebrush or buffaloberry. Moist areas in draws often have rose or silver sage. Fires occur less frequently than in class B or C and are typically related to years with spring moisture followed by very dry summer conditions.

E: late- closed

This type does not occur at amounts greater than 1%.

Total 100

### Fire Frequency and Severity

Fire Frequency-Severity	Modeled Probability	Percent, All Fires	Description
Replacement Fire	.09	80	Upper layer replacement fires in grass or shrub upper layer
Non-Replacement Fire	.02	20	Mosaic fire in open grass and shrub
All Fire Frequency*	.11	100	Mean frequency of 11 years ranging from 3 to 20.

\*Sum of replacement fire and non-replacement fire probabilities.

### References

Brown, James K.; Smith, Jane Kapler, eds. 2000. Wildland fire in ecosystems: effects of fire on flora. Gen. Tech. Rep. RMRS-GTR-42-vol. 2. Ogden, UT: U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station. 257 p.

Schmidt, Kirsten M, Menakis, James P., Hardy, Colin C., Hann, Wendel J., Bunnell, David L. 2002. Development of coarse-scale spatial data for wildland fire and fuel management. Gen. Tech. Rep. RMRS-GTR-87. Fort Collins, CO: U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station. 41 p. + CD.

U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station, Fire Sciences Laboratory (2002, December). Fire Effects Information System, [Online]. Available: <http://www.fs.fed.us/database/feis/> \*USER SUPPLY ACCESS DATE.

### PERSONAL COMMUNICATION:

Larry Rau – Miles City BLM = INCOMPLETE

### MODELER FIELD REVIEWS:

Hann – Missouri Breaks 2002, Rosebud to Jordan 2003, Dakotas/Montana-Wyoming border country 2003

# VDDT Results



