

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

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

Modeler: Kelly Pohl

Date: 8/18/03

PNVG Code: PPDF5

Potential Natural Vegetation Group: Ponderosa pine-Douglas-fir

Geographic Area: Colorado Plateau

Description: Generally found in upper montane zone on steep to gentle slopes and all aspects, especially southerly.

Fire Regime Description: **Primarily** Fire regime group I. Includes surface and mixed-intensity fires at varying intervals (7-35 years) with occasional replacement fires.

Vegetation Type and Structure

Class	Percent of Landscape	Description
A: post replacement	15	Openings with grass, shrub, and forbs created after replacement fire. May have seedlings of ponderosa pine or other species (e.g., <i>Larix occidentalis</i> , <i>Pseudotsuga menziesii</i> , <i>Abies</i> spp.)
B: mid-development closed	10	>30% canopy cover of sapling or pole Douglas-fir and ponderosa pine.
C: mid- open	20	<30% canopy cover of sapling or pole ponderosa pine with some Douglas-fir.
D: late- open	50	<30% canopy cover of mature ponderosa pine with occasional Douglas-fir in patches. Other species (<i>Abies</i> spp., <i>Larix occidentalis</i>) may be present
E: late- closed	5	>30% canopy cover of mature Douglas-fir with ponderosa pine and other species (<i>Abies</i> spp.) present.
Total	100	

Fire Frequency and Severity

Fire Frequency-Severity	Modeled Probability	Percent, All Fires	Description
Replacement Fire	.005	10	Occasional stand-replacement fires, mostly in B and E.
Non-Replacement Fire	.075	90	Frequent (7-35 year) surface and mosaic fires in B, C, D, and E. Fires generally maintain open types and decrease density in closed types.
All Fire Frequency*	.08	100	

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

References

Arno, Stephen F. 2000. Fire in western forest ecosystems. In: Brown, James K., Smith, Jane Kapler, eds. Wildland fire in ecosystems: Effects of fire on flora. General Technical Report RMRS-GTR-42 vol. 2. Ogden, UT: US Department of Agriculture, Forest Service, Rocky Mountain Research Station: 97-120.

Baisan, Christopher H., Swetnam, Thomas W. 1997. Interactions of fire regimes and land use in the central Rio Grande Valley. Research Paper RM-RP-330. Fort Collins, CO: US Department of Agriculture, Forest Service, Rocky Mountain Forest and Range Experiment Station. 20 p.

Baker, William L., and Ehle, Donna. 2001. Uncertainty in surface fire history: the case of ponderosa pine forests in the western United States. *Canadian Journal of Forest Research* 31: 1205-1226.

Bastian, Henry V. 2001. Effects of low intensity prescribed fires on ponderosa pine forests in wilderness areas of Zion National Park, Utah. In: Vance, Regina K., Edminster, Carleton B., Covington, W. Wallace, and Blake, Julie A., compilers. *Ponderosa pine ecosystems restoration and conservation: Steps toward stewardship*. Conference proceedings, 2000 April 25-27, Flagstaff, AZ. Proceedings RMRS-P-22. Ogden, UT: US Department of Agriculture, Forest Service, Rocky Mountain Research Station: 43-48.

Bastian, Henry V. 2001. Effects of low-intensity fire on a mixed conifer forest in Bryce Canyon National Park, Utah. In: Vance, Regina K., Edminster, Carleton B., Covington, W. Wallace, and Blake, Julie A., compilers. *Ponderosa pine ecosystems restoration and conservation: Steps toward stewardship*. Conference proceedings, 2000 April 25-27, Flagstaff, AZ. Proceedings RMRS-P-22. Ogden, UT: US Department of Agriculture, Forest Service, Rocky Mountain Research Station: 49-53.

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.

Fule, Peter Z., Covington, W. Wallace, and Moore, Margaret M. 1997. Determining reference conditions for ecosystem management of southwestern ponderosa pine forests. *Ecological Applications* 7(3): 895-908.

Fule, Peter Z., Heinlein, Thomas A., Covington, W. Wallace, Moore, Margaret M. 2003. Assessing fire regimes on Grand Canyon landscapes with fire-scar and fire-record data. *International Journal of Wildland Fire* 12:129-145.

Kaufmann, G. Alan, and Covington, W. Wallace. 2001. Effect of prescribed burning on presettlement ponderosa pines in Grand Canyon National Park. In: Vance, Regina K., Edminster, Carleton B., Covington, W. Wallace, and Blake, Julie A., compilers. *Ponderosa pine ecosystems restoration and conservation: Steps toward stewardship*. Conference proceedings, 2000 April 25-27, Flagstaff, AZ. Proceedings RMRS-P-22. Ogden, UT: US Department of Agriculture, Forest Service, Rocky Mountain Research Station: 36-42.

Kaufmann, Merrill R., Regan, Claudia M., and Brown, Peter M. 2000. Heterogeneity in ponderosa pine/Douglas-fir forests: age and size structure in unlogged and logged landscapes of central Colorado. *Canadian Journal of Forest Research* 30: 698-711.

Madany, Michael H., West, Neil E. 1980. Fire history of two montane forest areas of Zion National Park. In Stokes, M. A., and Dieterich, John H., technical coordinators. *Proceedings of the Fire History Workshop, October 20-24, 1980, Tucson, AZ*. General Technical Report RM-81. Fort Collins, CO: US Department of Agriculture, Forest Service, Rocky Mountain Forest and Range Experiment Station: 50-56.

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.

Swetnam, T. W., and Baisan, C. H. 1996. Historical fire regime patterns in the southwestern United States since AD 1700. In: Allen, C. D., ed. Proceedings of the Second La Mesa Fire Symposium 29-30 March 1994, Los Alamos, New Mexico. General Technical Report RM-GTR-286. US Department of Agriculture, Forest Service, Rocky Mountain Research Station: 11-32.

White, Alan S. 1985. Presettlement regeneration patterns in a southwestern ponderosa pine stand. *Ecology* 66(2): 589-594.

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**.

VDDT Results

