

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

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

Modeler: Doug Havlina

Date: 8/14/03

PNVG Code: PPIN1

Potential Natural Vegetation Group: Ponderosa Pine-Pacific Northwest/Great Basin.

Geographic Area: Pacific Northwest, Columbia Plateau, Great Basin, California.

Description: PNVG generally occurs on flat and gentle south-facing slopes on the east slope of the Cascades, dry California valleys, Blue Mountains, Wallowa Mountains, Central Idaho, and adjacent Great Basin. Lower montane forest type formed by heterogeneous mosaics of even-aged stands. This PVT primarily transitions to mixed conifer, juniper, sagebrush, and grassland communities in the northwestern U.S.

Fire Regime Description: Fire Regime I, primarily short-interval (e.g., <20 yr) surface fires.

Vegetation Type and Structure

Class	Percent of Landscape	Description
A: post replacement	10	Bunchgrass and forb dominated community following lethal fire. Frequent sprouting shrubs and scattered conifer seedlings.
B: mid-development closed	5	Dense mid-development forest; pole to large pole size trees susceptible to stagnation. Marginal understory associated with limited site resources.
C: mid- open	20	Open mid-development forest with diverse herbaceous understory and scattered woody shrubs. Maintained by frequent burning.
D: late- open	55	Open late-development forest; widely spaced trees, diverse understory, and limited surface fuels due to frequent burning.
E: late- closed	10	Dense late-development forest with significant within-stand mortality. Poorly developed understory and substantial surface fuel accumulation.
Total	100	

Fire Frequency and Severity

Fire Frequency-Severity	Modeled Probability	Pct, All Fires	Description
Replacement Fire	.007	10	Crown fire in stage B and E
Non-Replacement Fire	.06	90	Primarily surface fires in stage C and D
All Fire Frequency*	.067	100	

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

References

Agee, James K. 1990. The Historical Role of Fire In Pacific Northwest Forests. In: Walstad, J.K., Radosevich, S.R., and Sandberg, D.V. (editors). *Natural and Prescribed Fire in Pacific Northwest Forests*. Oregon State University Press, Corvallis, OR. P. 25-38.

Agee, James K. 1991. Fire History Along an Elevational Gradient in the Siskiyou Mountains, Oregon. *Northwest Science*, Vol. 65, No. 4, 1991. p. 188-199.

Agee, James K. 1993. *Fire Ecology of Pacific Northwest Forests*. Island Press, Washington D.C. 493 p.

Agee, James K. 1994. *Fire and Weather Disturbances in Terrestrial Ecosystems of the Eastern Cascades*. Gen. Tech. Rep. PNW-GTR-320. Portland, OR: U.S. Department of Agriculture, Forest Service, Pacific Northwest Research Station. 37 p.

Anderson, Hal E. 1982. *Aids to Determining Fuel Models For Estimating Fire Behavior*. Gen. Tech. Rep. INT-122. Ogden, UT: U.S. Department of Agriculture, Forest Service, Intermountain Forest and Range Experiment Station. 22 p.

Arno, Stephen F. 2000. Fire in western forest ecosystems. In: Brown, James K.; Kapler-Smith, Jane, eds. *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: 97-120.

Arno, Stephen F., Scott, Joe H., and Hartwell, Michael G. 1995. *Age-Class Structure of Old Growth Ponderosa Pine/Douglas-fir Stands and its Relationship to Fire History*. Res. Paper INT-RP-481. Ogden, UT: U.S. Department of Agriculture, Forest Service, Intermountain Research Station: 25 p.

Arno, Stephen F., and Menakis, James P. 1997. *Fire Episodes in the Inland Northwest (1540-1940) Based on Fire History Data*. Gen. Tech. Rep. INT-GTR-

370. Ogden, UT: U.S. Department of Agriculture, Forest Service, Intermountain Research Station. 17 p.

Barrett, Stephen W. 1999. A Fire Regimes Classification for Northern Rocky Mountain Forests. 37 p.

Bork, Joyce L. 1984. Fire History in Three Vegetation Types on the Eastern Side of the Oregon Cascades. PhD. Dissertation, Oregon State University. 56 p.

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.

Crane, Marilyn F. 1982. Fire ecology of Rocky Mountain Region forest habitat types. Final report: Contract No. 43-83X9-1-884. Missoula, MT: U.S. Department of Agriculture, Forest Service, Region 1. 272 p. On file with: U.S. Department of Agriculture, Forest Service, Intermountain Research Station, Fire Sciences Laboratory, Missoula, MT.

Crane, M.F., and Fischer, W.C. 1986. Fire Ecology of the Forest Habitat Types of Central Idaho. Gen. Tech. Rep. GTR-INT-218. Ogden, UT: U.S. Department of Agriculture, Forest Service, Intermountain Research Station. 86 p.

Everett, Richard L., Schellhaas, Richard, Keenum, Dave, Spurbecak, Don, and Ohlson, Pete. 2000. Fire history in the ponderosa pine/Douglas-fir forests on the east slope of the Washington Cascades. *Forest Ecology and Management* 129 (2000) 207-229.

Eyre, F. H., ed. 1980. Forest cover types of the United States and Canada. Washington, DC: Society of American Foresters. 148 p.

Franklin, J.F., and Dyrness, C.T. 1973. Vegetation of Oregon and Washington. Research Paper PNW-80. Portland, OR: U.S. Department of Agriculture, Forest Service, Pacific Northwest Forest and Range Experiment Station. 216 p.

Hall, Frederick C. 1980. Fire History – Blue Mountains, Oregon. Presented at: Fire History Workshop, University of Arizona, Tucson, AZ.

Hardy, Colin C., Kirsten M. Schmidt, James P. Menakis, R. Neil Samson. 2001. Spatial data for national fire planning and fuel management. *Int. J. Wildland Fire*. 10(3&4): 353-372.

Hessburg, P.F., Smith, B.G., Salter, R.B., Ottmar, R.D., and Alvarado, E. 2000. Recent changes (1930s-1990s) in spatial patterns of interior northwest forests, USA. *Forest Ecology and Management* 136 (2000) 53-83.

Johnson, C.G., and Simon, S.A. 1987. Plant Associations of the Wallowa-Snake Province. U.S. Forest Service Region 6 Ecological Technical Paper 255A-86.

Kilgore, B.M. 1981. Fire in ecosystem distribution and structure: western forests and scrublands. p. 58-89. In: H.A. Mooney et al. (Technical Coordinators). Proceedings: Conference on Fire Regimes and Ecosystem Properties, Honolulu, 1978. Gen. Tech. Rep. WO-GTR-26.

Kuchler, A.W. 1964. Potential Natural Vegetation of the Conterminous United States. American Geographic Society Special Publication No. 36. 116 p.

Maruoka, Kathleen R. 1993. Fire History of Mixed-Conifer Stands in the Blue Mountains, Oregon and Washington. In: Proceedings, 12th Conference on Fire and Forest Meteorology, Jekyll Island, GA. p. 638-641.

McKenzie, Donald, Peterson, David L., and Agee, James K. 2000. Fire Frequency in the Interior Columbia River Basin: Building Regional Models from Fire History Data. Ecological Applications, 10(5), 2000. p. 1497-1516.

Morgan, Penelope, and Parsons, Russ. 2001. Historical range of variability of forests of the Idaho Southern Batholith Ecosystem. Report to Boise Cascade Corporation, Boise, ID. 35 p.

Morrison, Peter H., and Swanson, Frederick J. 1990. Fire History and Pattern in a Cascade Range Landscape. Gen. Tech. Rep. PNW-GTR-254. Portland, OR: U.S. Department of Agriculture, Forest Service, Pacific Northwest Research Station. 73 p.

Ogle, Karen, and DuMond, Valerie. 1997. Historical Vegetation on National Forest Lands in the Intermountain Region. U.S. Department of Agriculture, Forest Service, Intermountain Region, Ogden, UT. 129 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.

Smith, Jane Kapler, Fischer, William C. 1997. Fire Ecology of the Forest Habitat Types of Northern Idaho. Gen. Tech. Rep. INT-GTR-363. Ogden, UT: U.S. Department of Agriculture, Forest Service, Intermountain Research Station. 142 p.

Steele, Robert, Arno, Stephen F., and Geier-Hayes, Kathleen. 1986. Wildfire Patterns Change in Central Idaho's Ponderosa Pine-Douglas-fir Forest. *Western Journal of Applied Forestry*. Vol. 1. No. 1. p. 16-18.

Steele, Robert, Pfister, Robert D., Ryker, Russell A., Kittams, Jay A. 1981. Forest Habitat Types of Central Idaho. Gen. Tech. Rep. INT-GTR-114. Ogden, UT: U.S. Department of Agriculture, Forest Service, Intermountain Research Station. 138 p. + map.

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/> [Accessed: January 30, 2003].

MODELER FIELD REVIEWS

Havlina, Doug. Boise and Payette NFs. 2000-2002.

VDDT RESULTS







