

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

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

Modeler: Doug Havlina

Date: 8/15/03

PNVG Code: WSAG1

Potential Natural Vegetation Group: Warm Sagebrush (Wyoming big sagebrush) Without Trees.

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

Description: Wide-ranging PNVG common to Basin and Range province, extending into the Pacific Northwest and east into the central Rockies. Wyoming big sagebrush usually occupies foothills, terraces, slopes and plateaus. Soils are generally shallow and well drained. These relatively arid sites may abut Juniper, Juniper-Pinyon, ponderosa pine, xeric sagebrush, and grasslands vegetation types across its range. Wyoming big sagebrush sites have fewer understory species relative to other big sagebrush subspecies.

Fire Regime Description: Fire Regimes II and III; short- to moderately long interval (e.g., 30-75 yr) stand replacement- and mixed severity fires.

Vegetation Type and Structure

Class	Percent of Landscape	Description
A: post replacement	15	Post-fire community of forbs and perennial grasses
B: mid-development closed	5	Mid-seral, dense (>15%) canopy cover sagebrush stands with understory of forbs and grasses
C: mid- open	15	Mid-seral, open (<15%) sagebrush community with perennial grasses and forbs in interspaces
D: late- open	50	Late-seral, open (<15%) sagebrush community with limited shrub/herbaceous community
E: late- closed	15	Late-seral, closed (>15%) sagebrush community, noticeable dead component, with limited shrub/herbaceous community
Total	100	

Fire Frequency and Severity

Fire Frequency-	Modeled	Pct, All	Description
-----------------	---------	----------	-------------

Severity	Probability	Fires	
Replacement Fire	.01	54	Crown fire in stages B and E
Non-Replacement Fire	.0085	46	Mosaic fire in stages B, C and D
All Fire Frequency*	.0185	100	

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

References

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., 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.

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.

Everett, Richard L., and Ward, Kenneth. 1984. Early Plant Succession on Pinyon-Juniper Controlled Burns. Northwest Science, Vol. 58, No. 1. p. 57-68.

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.
- Hironaka, M., Fosberg, M.A., and Winward, A.H. 1983. Sagebrush-Grass Habitat Types of Southern Idaho. University of Idaho, College of Forestry, Wildlife, and Range Sciences Bulletin Number 35. 44 p.
- 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.
- 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.
- Miller, Rick, Baisan, Chris, Rose, Jeff, and Pacioretty, Dave. 2001. Pre-and Post-Settlement Fire Regimes in Mountain Big Sagebrush and Aspen: The Northwestern Great Basin. Final Report to the National Interagency Fire Center. 28 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.
- Ott, Jeffrey, E., McArthur, E. Durant, and Sanderson, Stewart C. 2001. Plant Community Dynamics of Burned and Unburned Sagebrush and Pinyon-Juniper Vegetation in West-Central Utah. In: *Proceedings, USDA Forest Service RMRS-P-9*. p. 177-190.
- Platou, Karen A. 1985. Plant Successional Patterns on Seral Sagebrush/Grass Ranges in Northern Nevada. M.S. Thesis, University of Nevada, Reno. 105 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.

- Soule', Peter T., and Knapp, Paul A. 1999. Western juniper expansion on adjacent disturbed and near-relict sites. *J. Range Manage.* 52:525-533. September 1999.
- Soule' Peter T., and Knapp, Paul A. 2000. *Juniperus occidentalis* (western juniper) establishment history on two minimally disturbed research natural areas in central Oregon. *Western North American Naturalist* (60)1, p. 26-33.
- Stein, Steven J. 1988. Fire History of the Paunsaugunt Plateau in Southern Utah. *Great Basin Naturalist*. Vol. 48, No. 1. p. 58-63.
- Tausch, Robin J., and West, Neil E. 1987. Differential Establishment of Pinyon and Juniper Following Fire. *The American Midland Naturalist* 119(1). p. 174-184.
- 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: 1/25/03].
- USDI Bureau of Land Management, Idaho State Office. 1999. Proceedings: Sagebrush Steppe Ecosystems Symposium. (Entwistle, Patricia G., DeBolt, Ann M., Kaltenecker, Julianne H., and Steenhof, Karen [Compilers]). Publication No. BLM/ID/PT-001001+1150. 145 p.
- Wall, Travis G., Miller, Richard F., and Svejcar, Tony J. 2001. Juniper encroachment into aspen in the Northwest Great Basin. *J. Range Manage.* 54:691-698. November 2001.
- Ward, Kenneth V. 1977. Two-Year Vegetation Response and Successional Trends for Spring Burns in the Pinyon-Juniper Woodland. M.S. Thesis, University of Nevada, Reno. 54 p.
- Wright, Henry A., Neuenschwander, Leon F., and Britton, Carlton M. 1979. The role and use of fire in Sagebrush-Grass and Pinyon-Juniper Plant Communities. Gen. Tech. Rep. INT-GTR-58. Ogden, UT: U.S. Department of Agriculture, Forest Service, Intermountain Research Station. 48 p.
- Young, James A., and Evans, Raymond A. 1981. Demography and Fire History of a Western Juniper Stand. *J. Range Manage.* 34:501-505. November 1981.
- Young, James A., and Evans, Raymond A. 1978. Population Dynamics after Wildfires in Sagebrush Grasslands. *J. Range Manage.* 31:283-289. July 1978.

MODELER FIELD REVIEWS

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

VDDT Results







