

**\*\*4/6/05 DRAFT\*\***

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

**Modeler:** Doug Havlina

**Date:** 4/6/05

**PNVG Code:** CSAG2

**Potential Natural Vegetation Group:** Cool sagebrush (mountain big sagebrush) with Trees

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

**Description:** PNVG is commonly found at the upper elevations of the big sagebrush zone, sites are usually montane valleys, mountain slopes, and subalpine meadows. Mountain big sagebrush often occurs at ecotones with conifer forests and meadow habitats between 2500' and 9800' elevation. Soils are characterized as moderately well drained, typically having summer moisture from snowmelt or other sources. Common associates include quaking aspen, ponderosa pine, Douglas-fir, subalpine fir, and whitebark pine. Common woody species which encroach into cool sagebrush sites include pinyon pines, juniper species, ponderosa pine, Douglas-fir, lodgepole pine, subalpine fir, and white fir.

**Fire Regime Description:** Fire Regime I (0-35 year, mixed severity) and IV (35-100+, stand replacement).

**Vegetation Type and Structure**

Class	Percent of Landscape	Description
A: post replacement	20	Post-fire community of mountain forbs, grasses, and sprouting shrubs
B: mid-development closed	20	Mid-seral, dense (>15%) canopy cover sagebrush stands with understory of mountain forbs and grasses. Sapling to pole sized encroaching conifers present.
C: mid- open	35	Mid-seral, open (<15%) sagebrush community with perennial grasses and forbs in interspaces. Sapling to pole sized encroaching conifers present.
D: late- open	15	Late-seral, open (<15%) sagebrush community with mixed shrub/herbaceous community.

E: late- closed	10	Scattered conifers/junipers on rocky sites. Late-seral, closed (>15%) sagebrush community, noticeable dead component, with mixed shrub/herbaceous community. Scattered conifers/junipers on rocky sites.
Total	100	

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### Fire Frequency and Severity

Fire Frequency- Severity	Modeled Probability	Pct, All Fires	Description
Replacement Fire	.02	40	Replacement fire in stages A, B, D and E
Non-Replacement Fire	.03	60	Mosaic fire in stages B, C, and D
All Fire Frequency*	.05	100	

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

### References

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.

Barrett, Stephen W., 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.

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.

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.

Miller, Richard F., and Rose, Jeffrey A. 1999. Fire history and western juniper encroachment in sagebrush steppe. *J. Range Manage.* 52:550-559. November 1999.

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.

Stein, Steven J. 1988. Fire History of the Paunsaugunt Plateau in Southern Utah. Great Basin Naturalist. Vol. 48, No. 1. p. 58-63.

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/> [Access Date: 1/26/03].

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.

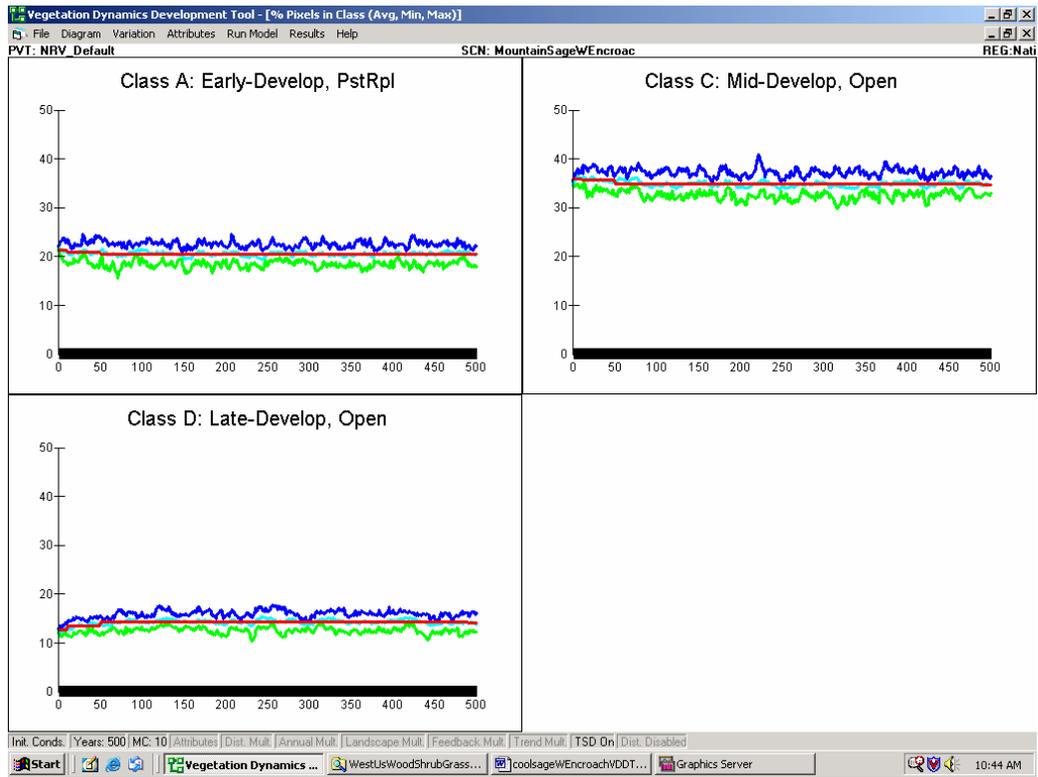
Ward, Kenneth V. 1977. Two-Year Vegetation Response and Successional Trends for Spring Burns in the Pinyon-Juniper Woodland. M.S. Thesis, University of Nevada, Reno. 54 p.

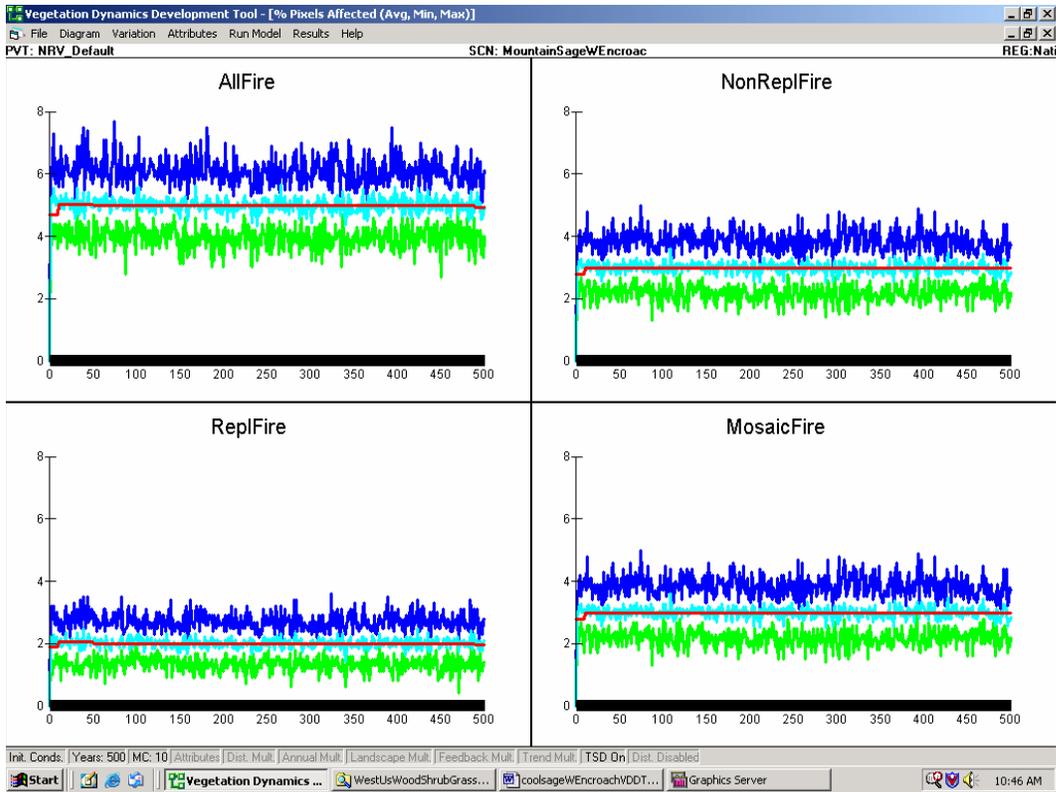
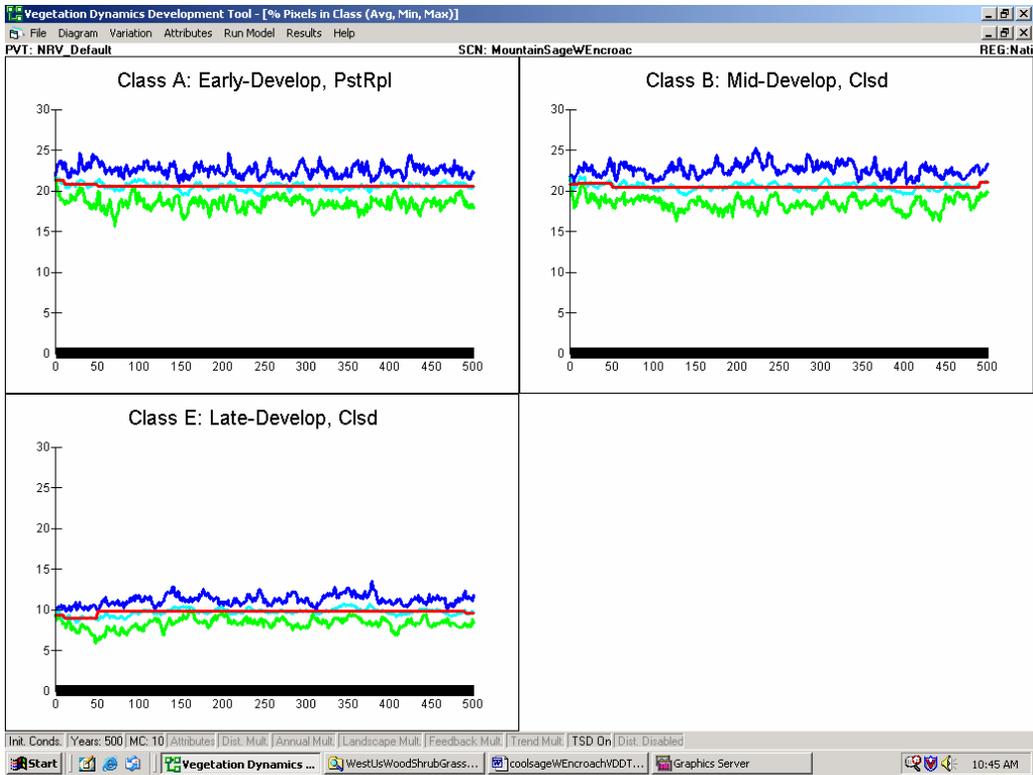
Wright, Henry A., Neuenschwander, Leon F., and Britton, Carlton M. 1979. The role and use of fire in Sagebrush-Grass and Pinyon-Juniper Plant Communities. Gen. Tech. Rep. INT-GTR-58. Ogden, UT: U.S. Department of Agriculture, Forest Service, Intermountain Research Station. 48 p.

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.

# VDDT Results





**Photographs:**  
Landscape CC1

Landscape CC2

Landscape CC3

Landscape-Current

Landscape-Historical

Class A – Early Development

Class B – Mid-Development Closed

Class C – Mid-Development Open

Class D – Late Development Open

Class E – Late Development Closed