4/6/05 DRAFT

Fire Regime Condition Class (FRCC) Interagency Handbook Reference Conditions

Modeler: Doug Havlina Date: 4/6/05 PNVG Code: BSAG2

Potential Natural Vegetation Group: Basin Big Sagebrush with Trees

Geographic Area: Pacific Northwest, Columbia Plateau, Northern Rockies,

Central Rockies, Great Basin

Description: Potential natural vegetation group occupying ecological conditions between Wyoming and mountain big sagebrush habitats. Basin big sagebrush communities are indicative of productive sites, and have historically been converted to farmland. Sites are generally well drained soils on plains, valley bottoms and lower foothills, often occurring in a matrix with Wyoming big sagebrush. Basin big sagebrush sites experience a higher fire frequency than other warm sagebrushes due in part to more continuous herbaceous fuels. Pinyon pine, juniper, and ponderosa pine are species historically encroaching into this PNVG, where localized lack of fine fuels or atypical weather patterns allowed advanced succession onto small patches.

Fire Regime Description: Fire Regimes I and II, frequent mixed severity and stand replacement.

Vegetation Type and Structure

Class	Percent of	Description	
	Landscape		
A: post	25	Post-fire community of forbs and	
replacement		perennial grasses. Scattered juniper	
		or pinyon snags may be present.	
B: mid-	20	Mid-seral, dense (>15%) canopy	
development		cover sagebrush stands with	
closed		understory of forbs and grasses.	
C: mid-open	35	Mid-seral, open (<15%) sagebrush	
		community with perennial grasses and	
		forbs in interspaces	
D: late-open	15	Late-seral, open (<15%) pinyon,	
		juniper, or ponderosa pine woodland	
		community with limited	
		shrub/herbaceous community	
E: late-closed	5	Late-seral, closed (>15%) pinyon,	

juniper, or ponderosa pine forest.				
Areas missed fire events due to lack				
of fine fuels or random fire weather				
patterns. Depauperate				
shrub/herbaceous understory.				

Total 100

Fire Frequency and Severity

The frequency and Severity					
Fire Frequency-	Modeled	Pct, All	Description		
Severity	Probability	Fires			
Replacement Fire	.021	51	Upper layer replacement maintenance in A. Upper layer replacement in stages B, C, D, and E.		
Non-Replacement Fire	.02	49	Mosaic burning in stages B, C, and D.		
All Fire Frequency*	.041	100	25 year mean fire interval from lightning and Native American burning		

^{*}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., 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.

Gruell, George E. Historical and Modern Roles of Fire in Pinyon-Juniper. In: Proceedings, USDA Forest Service RMRS-P-9. p. 24-28.

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., Svejcar, Tony J., and Rose, Jeffrey A. Impacts of western juniper on plant community composition and structure. J. Range Manage. 53:574-585. November 2000.

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.

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.

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: 1/22/03].

USDI Bureau of Land Management, Idaho State Office. 1999. Proceedings: Sagebrush Steppe Ecosystems Symposium. (Entwistle, Patricia G., DeBolt, Ann M., Kaltenecker, Julienne 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.

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.

VDDT Results





