# \*\*11/4/03 DRAFT\*\*

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

Modeler: Douglas Zollner Date: 8/13/03 PNVG Code: POAK

Potential Natural Vegetation Group: Plains Oak and Shinnery Oak Shrubland

Geographic Area: Southern High Plains; Trans Pecos

**Description**: Sand shinnery is the dominant vegetation on xeric, shallow to deep sandy soils, especially dune fields; intermixed with shortgrass prairie and other shrubs. Many of the dune fields are relatively fire proof with sparse herbaceous cover. On better sites, soils with higher clay content, the herbaceous layer is better developed and fire frequency higher. Plains oak and shinnery forms a mosaic with short grass prairie.

**Fire Regime Description:** Fire Regime Group II (Frequent, mixed and stand replacement severity). Most of these fires are wind driven, especially with sparse fine fuels.

Class	Percent of	Description
	Landscape	
A: post replacement	55	Post fire this community is composed of short grass and forbs with respouting shrubs less than 3' tall.
B: mid-development closed	30	Mid seral; closed canopy shrubland with a sparse herbaceous layer under shrubs and short grasses in- between. Shrubs to 6' tall. Shrub cover more than 35%.
C: mid- open	5	Mid seral; open canopy shrubland with a herbaceous of short grasses. Shrubs to 6' tall. Shrub cover less than 35%.
D: late- open	5	Late seral; open canopy shrubland with a herbaceous of short grasses. Shrubs more than 6' tall. Shrub cover less than 35%.
E: late- closed	5	Late seral; closed canopy shrubland with a sparse herbaceous layer under shrubs and short grasses in- between. Shrubs over 6' tall. Shrub cover more than 35%.
Total	100	

### **Vegetation Type and Structure**

Fire	Frequency and Se	V	e	ri	t	y		
			-	-			-	

Fire Frequency-	Modeled	Percent,	Description
Severity	Probability	All Fires	
Replacement Fire	.06	75	Primarily top-killing in A, B, E;
Non-replacement fire	.02	25	Mosaic (mixed severity) in all types
All Fire Frequency*	.08	100	Fire return interval of 4-20 years. Severity
			normally top-killing except with sparse fuels.

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

#### References

Bonner, F. T., Vozzo, J. A. 1987. Seed biology and technology of Quercus. GTR-SO-66. New Orleans, LA: USDA, FS, Southern Forest Exp. Sta. 21P.

Brown, David E. 1982. Plains and Great Basin grasslands. In: Brown, David E., ed. Biotic communities of the American Southwest—United States and Mexico. Desert Plants. 4(1-4) 115-121.

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.

Darr, Gene W., Klebenow, Donald A. 1975. Deer, brush control, and livestock on the Texas Rolling Plains. J. Range Management. (39) 3: 363-365.

Dodson, Gary. 1987. Xanthoteras sp. (Hymenoptera: Cunipidae) gall abundance on shinnery oak (Quercus harvardii) in New Mexico: an indicator of plant stress. Southwestern Naturalist. (32) 4: 463-468.

Ethridge, D. E., Pettit, R. D., Suddeth, R. G. Stoecher, A. L. 1987. Optimal economic timing of range improvement alternatives: Southern High Plans. J. of Range Management. 40(6): 555-559.

Herbal, Carlton H. 1979. Utilization of grass and shrublands of the southwestern United States. In Walker, B. H. ed. Management of semiarid ecosystems. Vol. 7. Developments in agriculture and managed forest ecology. Amsterdam: Elsevier Scientific Publishing.

Kuchler, A. W. 1964. Manual to accompany the map of potential vegetation of the conterminous United States. Special Publications No. 36. New York: American Geographical Society. 77. P.

McPherson, G, R. 1992. Ecology of oak woodlands in Arizona. In Ffolliott, P. F. and others, Tech eds. Ecology and management of oak and associated woodlands: perspectives in the southwestern United States and Northern Mexico; Sierra Vista, AZ. RMRSGTR-218 Fort Collins, CO: USDA-FS Rocky Mountain Forest And Range Exp. Sta.: 24-33.

Petit, Russel D. 1986. Sand shinnery Oak : control and management. Management Note 8. Lubbock TX: Texas Tech University, College of Agricultural Sciences. 5p.

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.

Secor, Jack B,. Shamash, Saied, Smeal, Daniel, Gennao, Antonio. 1983. Soil Characteristics of two desert plant community types that occur in the Los Mendos area of southeastern New Mexico. Soil Sci. 136 (3): 133-144.

Wright, Henry A. 1978. Use of fire to manage grasslands of the Great Plains: Central and Southern Great Plains. In Hyder, Donald N. ed. Proceedings, 1<sup>st</sup> international rangelands congress; 1978 14-18.

Wright, Henry A.; Thompson, Rita. 1978. Fire effects. In: Fire Management: Prairie plant communities: proceedings of a symposium and workshop; USDA, FS, Intermountain Research Sta. Fire Sciences Lab, Missoula Mt.

U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station, Fire Sciences Laboratory (2002, December). Fire Effects Information System, [Online]. Available: <u>http://www.fs.fed.us/database/feis/</u>. (Accessed 8/15/03).

## **VDDT Results:**







