11/4/03 DRAFT

Fire Regime Condition Class (FRCC) Interagency Handbook
Reference Conditions

Modeler: Ayn Shlisky **Date:** 8/14/03 **PNVG Code:** PPIN5

Potential Natural Vegetation Group: Ponderosa Pine (Colorado Plateau).

Geographic Area: Colorado Plateau.

Description: PNVG occurs in mountains and foothills;.slopes gentle to somewhat steep; generally occurs on southerly aspects in the montane zone.

Fire Regime Description: Fire Regime I, primarily short-interval (e.g., <10 yr) surface fires.

Vegetation Type and Structure

Class	Percent of Landscape	Description
A: post replacement	5	Grass-oak-shrub; stands post-replacement from crown fire or reburn
B: mid-development closed	5	>30% canopy cover of sapling and pole pine, Douglas-fir and Abies spp.
C: mid- open	15	<30% canopy cover of sapling and pole pine. May have other southwestern pines (e.g., Arizona, Chihuahua, Apache); grass or oak-grass understory.
D: late- open	65	<30% ponderosa pine dominated canopy; may have other southwestern pines (e.g., Arizona, Chihuahua, Apache); oak or grass understory
E: late- closed	10	>30% canopy cover ponderosa pine, Douglas-fir and Abies spp
Total	100	

Fire Frequency and Severity

Fire Frequency-Severity	Modeled Probability	Pct, All Fires	Description
Replacement Fire	.01	5	Crown fire in B and E
Non-Replacement Fire	.17	95	99% surface fires; small amount of mosaic fire in A, B, and E

All Fire Frequency*	.18	100

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

References

Alexander, Robert R.; Ronco, Frank, Jr. 1987. Classification of the forest vegetation on the National Forests of Arizona and New Mexico. Res. Note RM-469. Fort Collins, CO: U.S. Department of Agriculture, Forest Service, Rocky Mountain Forest and Range Experiment Station. 10 p.

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

Baisan, Christopher H.; Swetnam, Thomas W. 1997. Interactions of fire regimes and land use in the central Rio Grande Valley. Research Paper RM-RP-330. Fort Collins, CO: U.S. Department of Agriculture, Forest Service, Rocky Mountain Forest and Range Experiment Station. 20 p.

Baisan, Christopher H.; Swetnam, Thomas W. 1990. Fire history on a desert mountain range: Rincon Mountain Wilderness, Arizona U.S.A.. Canadian Journal of Forest Research. 20: 1559-1569.

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.

Brown, Peter M.; Kaye, Margot W.; Huckaby, Laurie S.; Baisan, Christopher H. 2001. Fire history along environmental gradients in the Sacramento Mountains, New Mexico: influences of local patterns and regional processes. Ecoscience. 8(1): 115-126.

Baker, William L. and Donna Ehle. 2001. Uncertainty in surface fire history: the case of ponderosa pine forests in the western United States. Can. J. For. Res. 31: 1205-1226.

Cooper, Charles F. 1960. Changes in vegetation, structure, and growth of southwestern pine forests since white settlement. Ecological Monographs. 30(2): 129-164.

DeVelice, Robert L.; Ludwig, John A.; Moir, William H.; Ronco, Frank, Jr. 1986. A classification of forest habitat types of northern New Mexico and southern Colorado. Gen. Tech. Rep. RM-131. Fort Collins, CO: U.S. Department of

Agriculture, Forest Service, Rocky Mountain Forest and Range Experiment Station. 59 p.

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

Kaufmann, Merrill R., Laurie S. Huckaby, Claudia M. Regan, and John Popp. 1998. Forest reference conditions for ecosystem management in the Sacramento Mountains, New Mexico. Gen. Tech. Rep. RMRS-19. Fort Collins, CO: U.S. Department of Agriculture, Forest Service, Rocky Mountain Forest and Range Experiment Station. 87 p.

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

Seklecki, Marietter T., Grissino-Mayer, Henry D., Swetnam, Thomas W. 1996. Fire history and possible role of Apache-set fires in the Chiricahua Mountains of southeastern Arizona. In: Ffolliott, Peter F., DeBano, Leonard F., Baker, Malchus, B., Jr. [and others], tech. coords. Effects of fire on Madrean Province ecosystems: a symposium proceedings; 1996 March 11-15, Tuscon, AZ. Gen. Tech. Rep RM-GTR-289. Fort Collins, CO: U.S. Department of Agriculture, Forest Service, Rocky Mountain Forest and Range Experiment Station: 238-246.

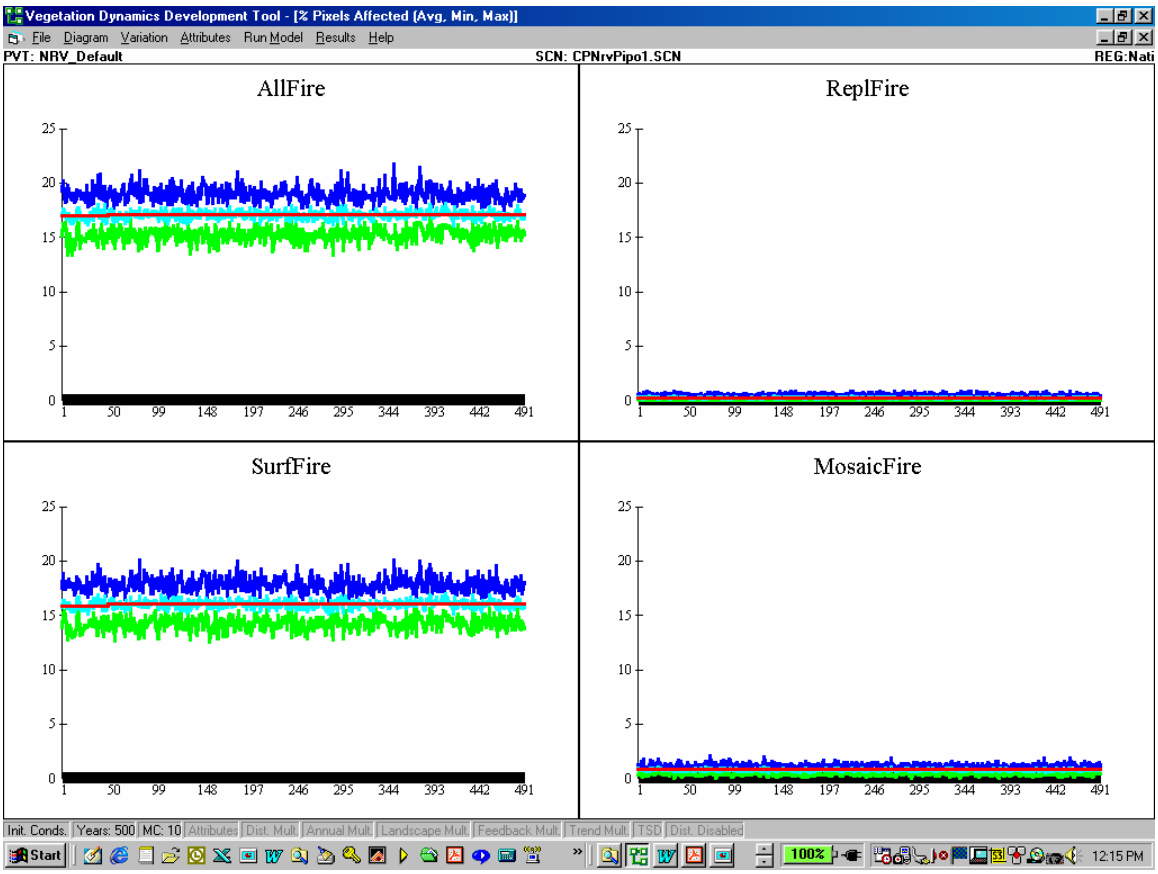
Swetnam, Thomas W., Baisan, Christopher H., Caprio, Anthony C., and Brown, Peter M. 1992. Fire history in a Mexican oak-pine wodland and adjacent montane conifer gallery forest in southeastern Arizona. In: Ffolliott, Peter F., Gottfried, Gerald J., Bennett, Duane A., Hernandez C., Victor Manueal, Ortega-Rubio, Alfredo, Hamre, R.H. 1992. Ecology and management of oak and associated woodlands: perspectives in the Southwestern United States and Northern Mexico. Gen. Tech. Rep. RM-218. Sierra Vista, AZ April 27-30. U.S. Department of Agriculture, Forest Service, Rocky Mountain Forest and Range Experiment Station, p165-173.

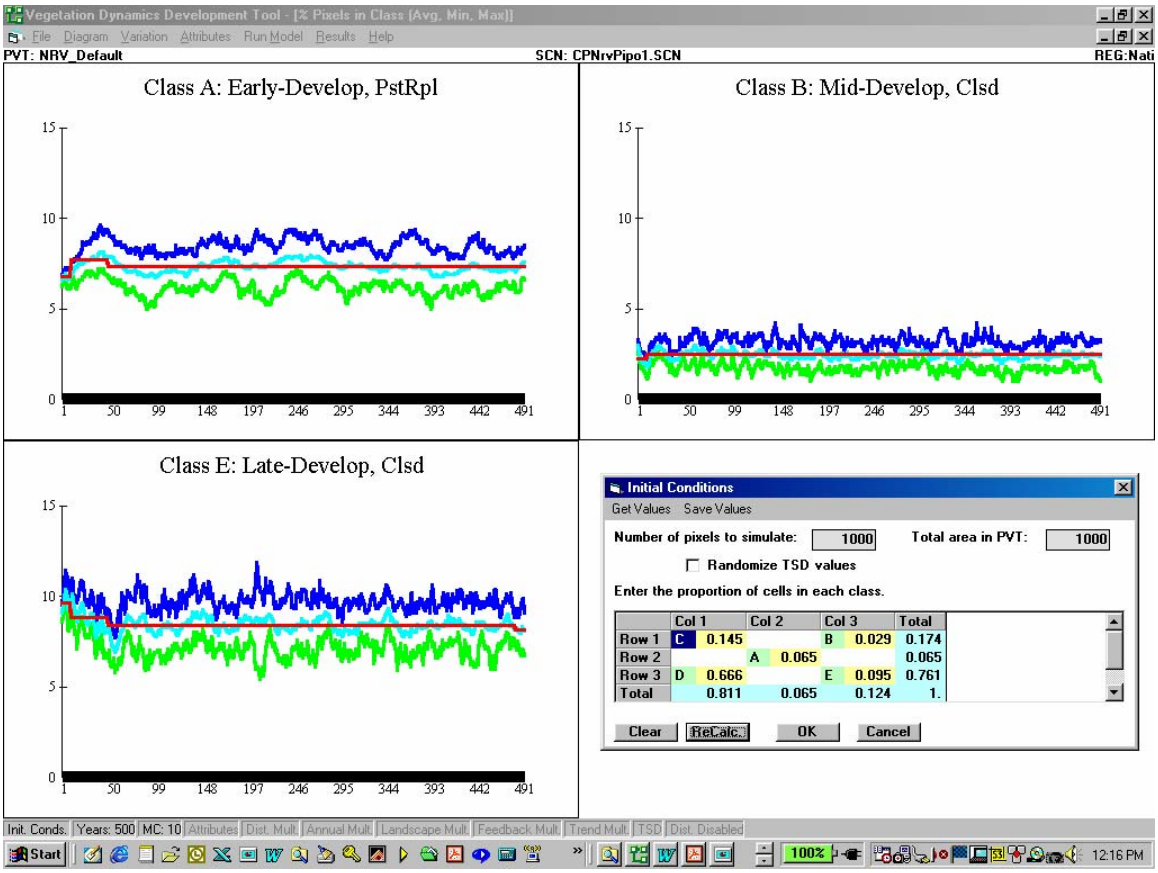
Touchan, Ramzi, Allen, Craig D., Swetnam, Thomas W. 1996. Fire history and climatic patterns in ponderosa pine and mixed conifoer forests of the Jemez

Moountains, Northern New Mexico. In: Allen, Craig D., tech. ed. Fire effects in southwestern forests: Proceedings of the second La Mesa Fire symposium; 1004 March 29-31; Los Alamos, New Mexico. Gen. Tech. Rep. RM-GTR-286. Fort Collins, CO: U.S. Department of Agriculture, Forest Service, Rocky Mountain Forest and Range Experiment Station: 33-46.

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/ [User, supply access date here].

VDDT RESULTS

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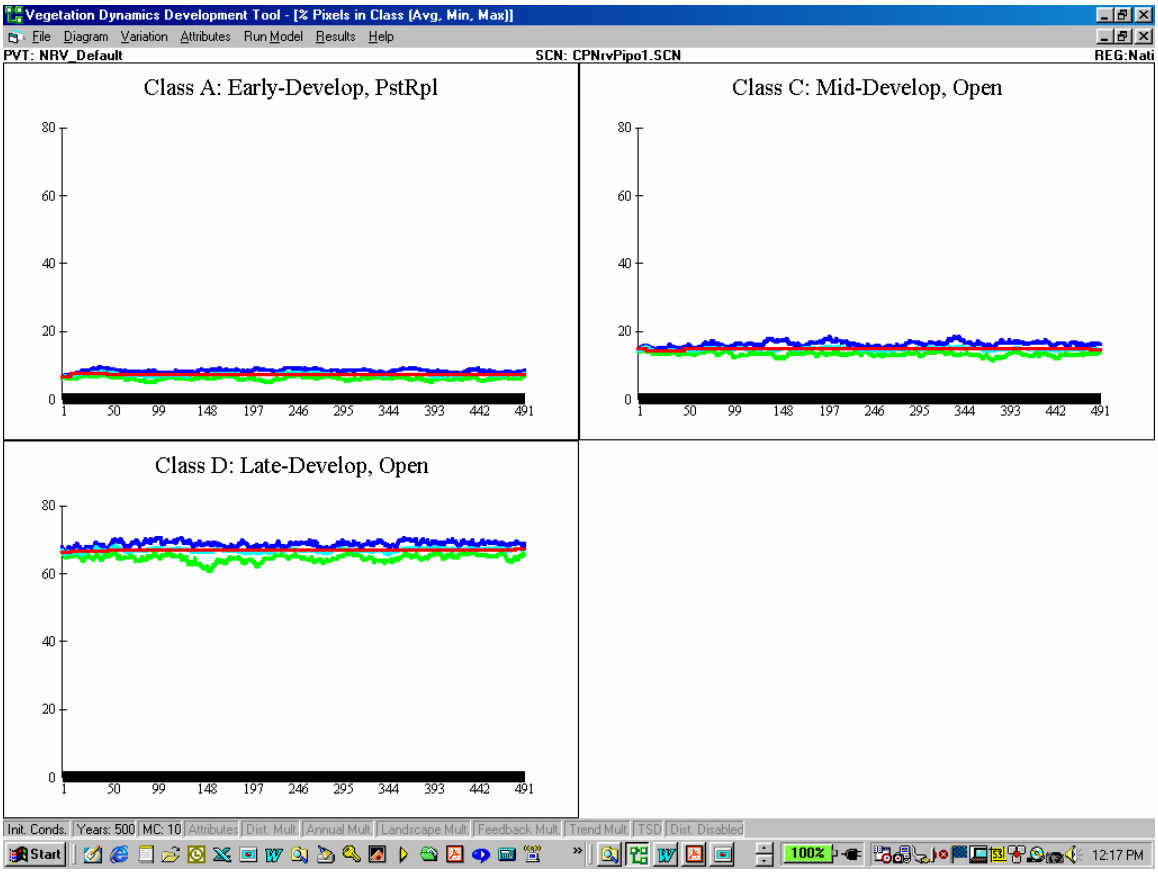
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