

****11/25/03 DRAFT****

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

Modeler: Steve Barrett

Date: 11/25/03 **PNVG Code:** SPFI7

Potential Natural Vegetation Group: Interior West Lower Subalpine Forest #3.

Geographic Area: Southwestern U.S. (Colorado Plateau- and Desert Mountain Ranges).

Description: PNVG occurs in region's limited amount of subalpine terrain, on gentle to moderately steep slopes (e.g., 10-60%); relatively dry sites generally are dominated by mixed conifers or quaking aspen, and moist sites are dominated by Engelmann spruce and corkbark fir.

Fire Regime Description: Fire Regimes III and IV: Moderately long- to long interval (e.g., 50-200 yr) mixed severity- and stand replacement fires.

Vegetation Type and Structure

Class	Percent of Landscape	Description
A: post replacement	25	Early succession after moderately long- to long interval replacement fires
B: mid-development closed	35	Shade intolerant- and mixed conifer saplings to poles (> 40% canopy cover)
C: mid- open	20	Primarily shade intolerant saplings to poles (<40% canopy cover)
D: late- open	10	Pole- and larger diameter shade intolerant- and mixed conifer species (<40% canopy cover) in small- to moderate size patches, generally on southerly aspects
E: late- closed	10	Pole- and larger diameter shade intolerant- and mixed conifer species (>40% canopy cover), in moderate- to large size patches, all aspects
Total	100	

Fire Frequency and Severity

Fire Frequency-Severity	Modeled Probability	Pct, All Fires	Description
Replacement Fire	.005	46	Replacement fires generally in E and

Non-Replacement Fire	.006	54	D Mod. to severe mixed severity fires (e.g., on non-steep terrain in C and D; in forest-type transition zones; and at margins of replacement burns).
All Fire Frequency*	.011	100	

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

References

- Aplet, Gregory H.; Laven, Rod D.; Smith, F.W. 1988. Patterns of community dynamics in Colorado Engelmann spruce and subalpine fir forests. *Ecology* 69:312-319.
- 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
- Eyre, F. H., ed. 1980. *Forest cover types of the United States and Canada*. Washington, DC: Society of American Foresters. 148 p.
- Fulé, Peter Z.; Covington, W. Wallace; Moore, Margaret M.; Heinlein, Thomas A.; Waltz, A.E.M. 2002. Natural variability in forests of Grand Canyon, USA. *Journal of Biogeography* 29:31-47.
- Fule, Peter Z.; Crouse, Joseph E.; Heinlein, Thomas A.; Moore, Margaret M.; Covington, W. Wallace; Verkamp, Greg. 2003. Mixed-severity fire regime in a high-elevation forest: Grand Canyon, Arizona. *Landscape Ecology* (in press).
- Grissino-Mayer, Henri D.; Baisan, Christopher H.; Swetnam, Thomas W. 1995. Fire history in the Pinaleno Mountains of southern Arizona: Effects of human-related disturbances. In DeBano, L.F., Gottfried, G.J., Hamre, R.H., Edminster, C.B., Ffolliott, P.F., and Ortega-Rubio, A., eds., *Biodiversity and Management of the Madrean Archipelago: The Sky Islands of Southwestern United States and Northwestern Mexico*. Ft. Collins, CO: USDA Forest Service, General Technical Report RM-GTR-264: 399-407.
- Peet, R.K. 2000. Forests of the Rocky Mountains. Pages 75-122 in M. G. Barbour and W.D. Billings, editors, *North American terrestrial vegetation*. 2nd edition. Cambridge University Press, New York, New York.
- 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.

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 6/1/03].

Swetnam, Thomas W.; Baisan, Christopher H. 1996. Historical fire regime patterns in the Southwestern United States. In: Allen, Craig D., ed. Fire effects in Southwestern Forests: Proceedings of the Second La Mesa Fire Symposium. March 29-31, 1994, Los Alamos NM; Gen. Tech. Rep. RM-GTR-286 Fort Collins CO: U.S. Department of Agriculture, Forest Service, Rocky Mountain Forest and Range Experiment Station: 11-32.

Veblen, T.T.; Hadley, K.S.; Nel, E.M.; Kitzberger, T.; Reid, M.S.; Villalba, R. 1994. Disturbance regime and disturbance interactions in a Rocky Mountain subalpine forest. *Journal of Ecology* 82:125-135.

Whipple, S.A.; Dix, R.L. 1979. Age structure and successional dynamics of a Colorado subalpine forest. *American Midland Naturalist* 101:142-158.

White, M.A.; Vankat, J. L. 1993. Middle and high elevation coniferous forest communities of the North Rim region of Grand Canyon National Park, Arizona, USA. *Vegetatio* 109:161-174.

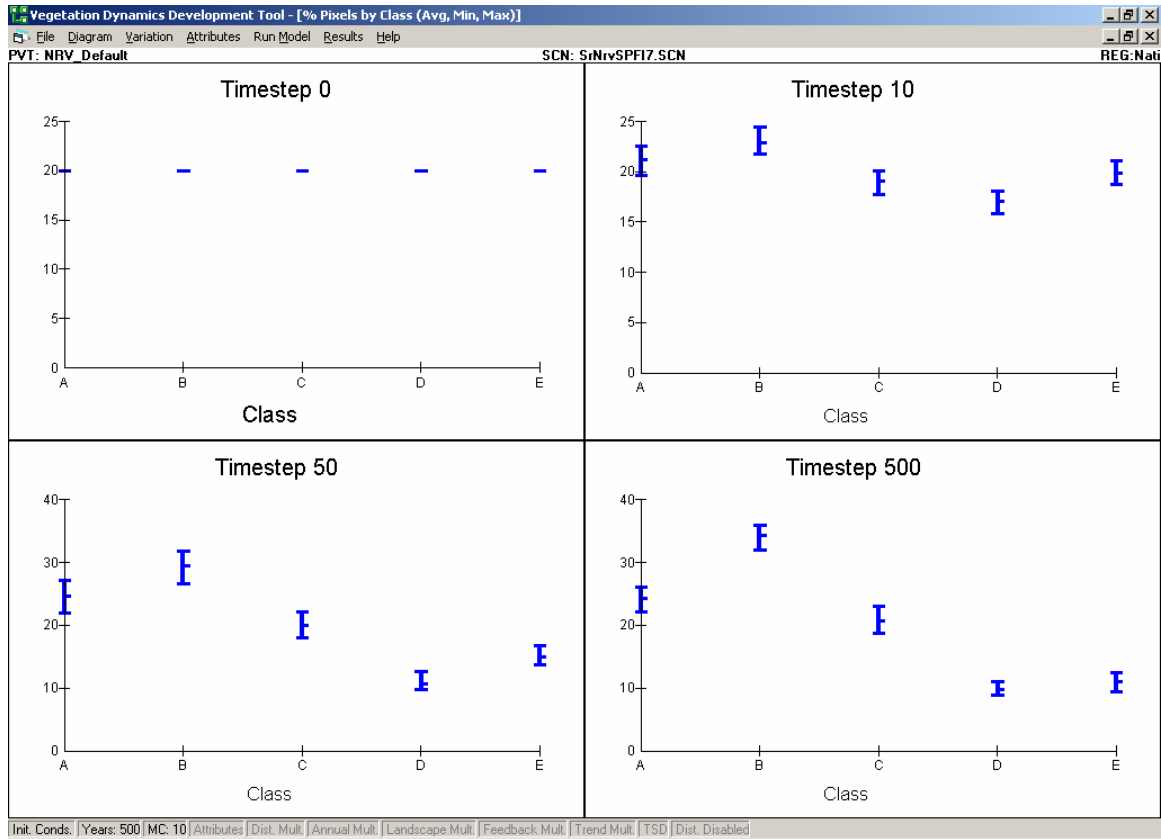
PERSONAL COMMUNICATIONS

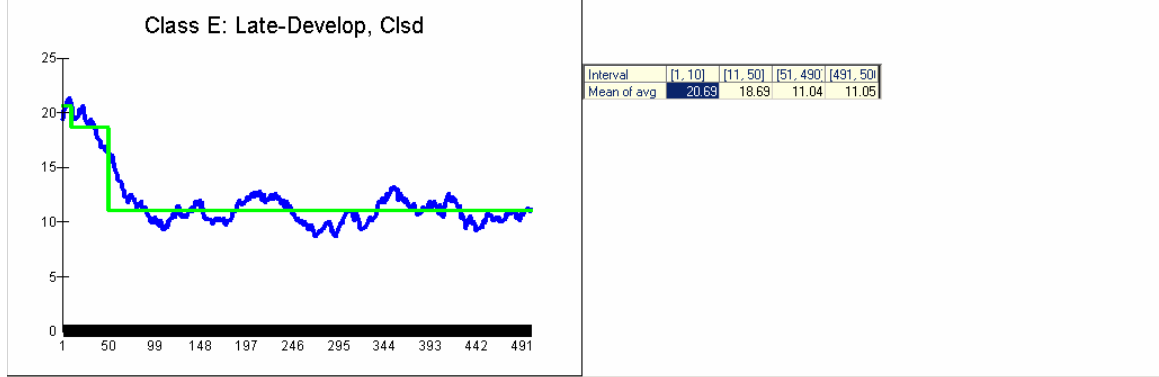
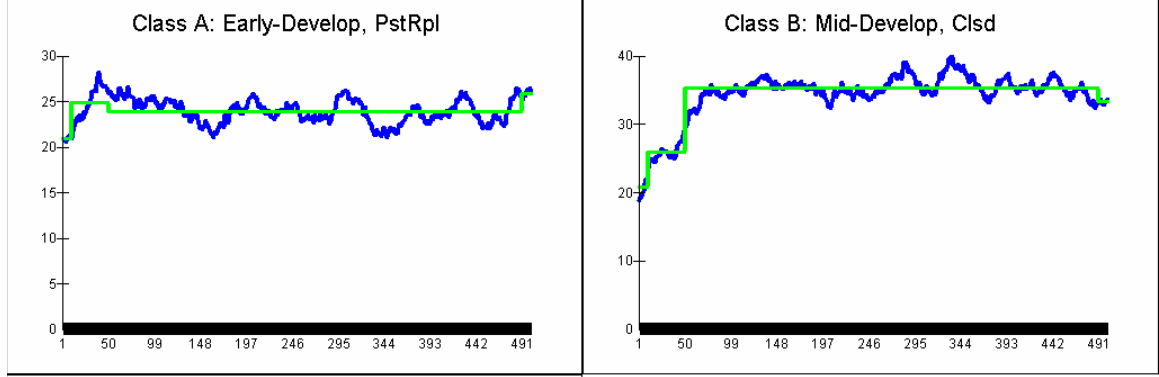
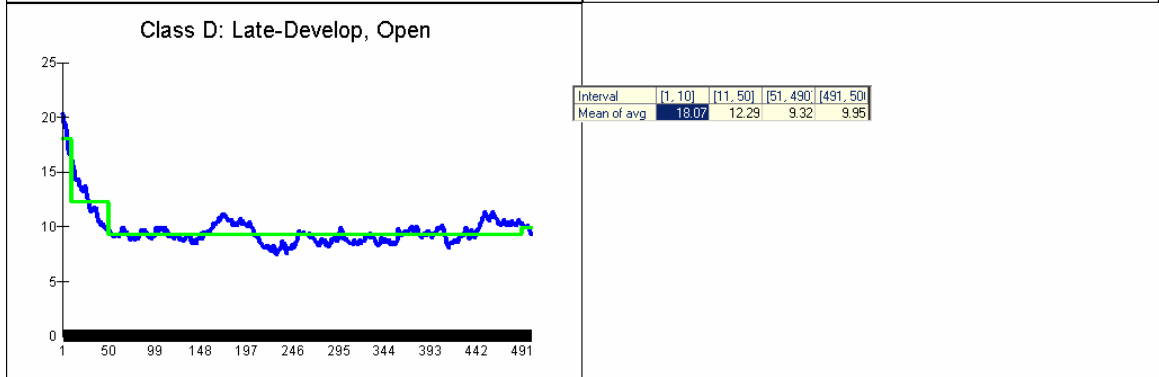
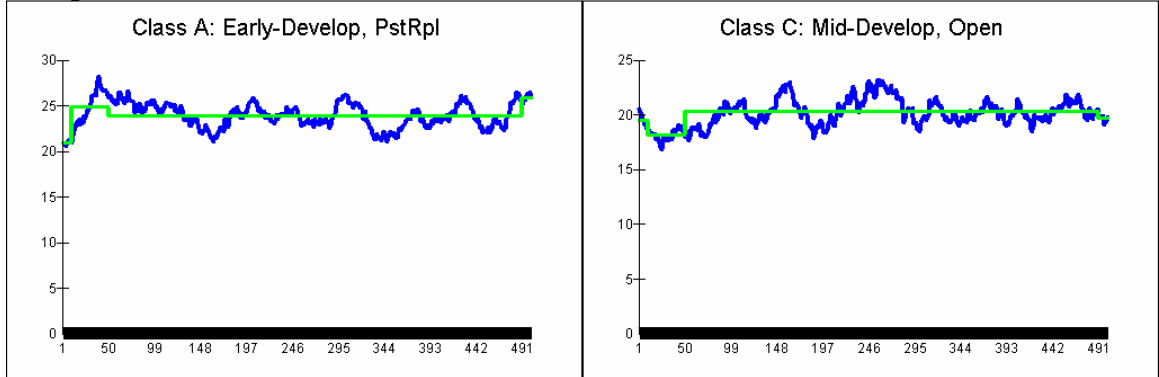
6/2/03 personal communication with Staff Researcher Christopher Baisan, Laboratory of Tree Ring Research, Tucson, AZ

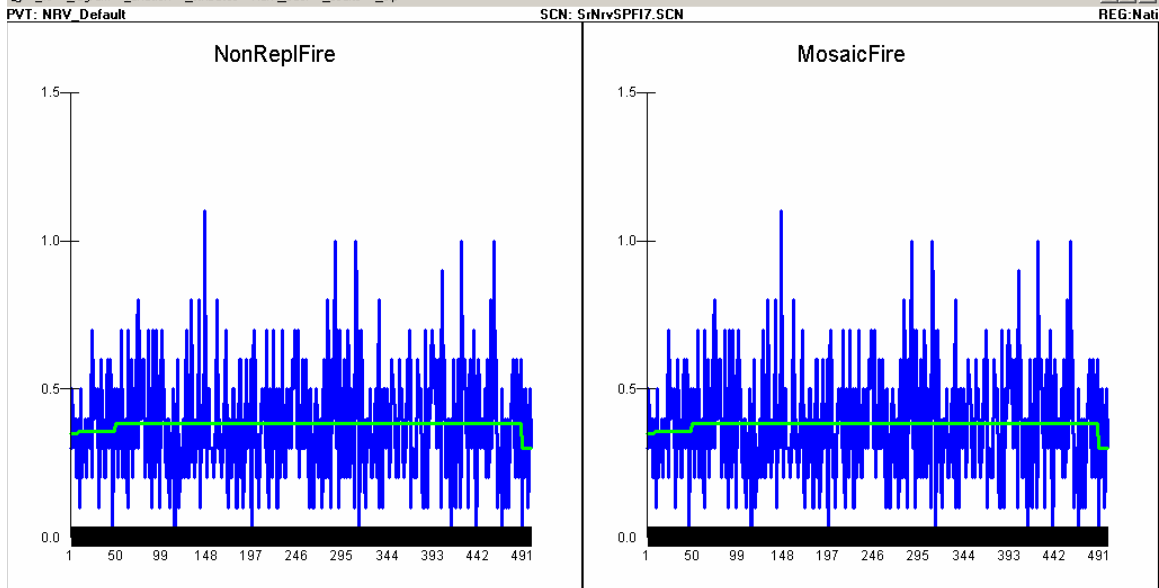
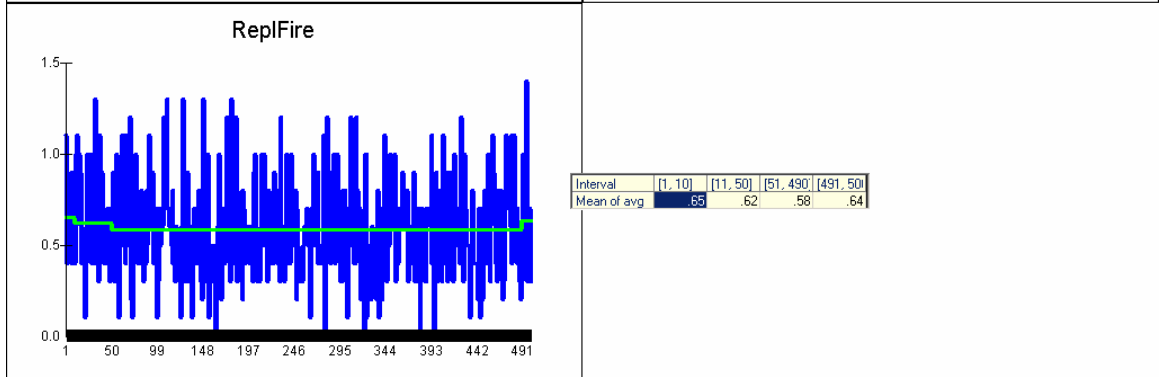
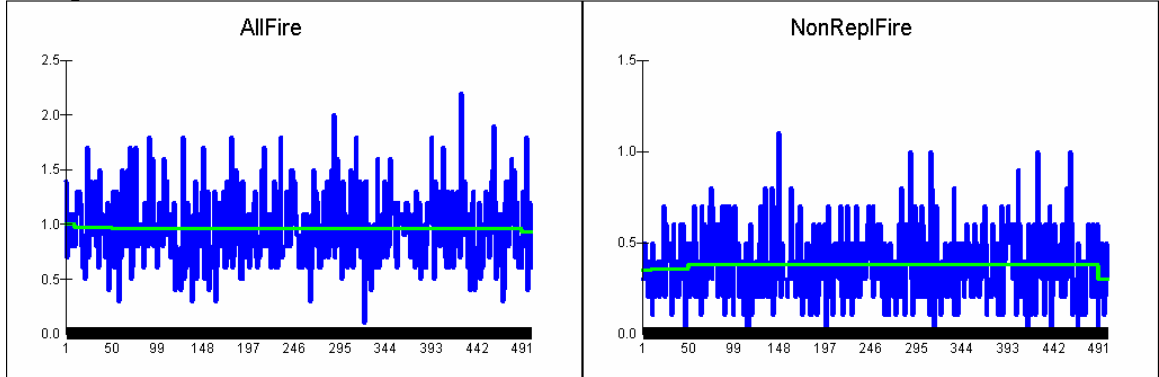
6/3/03 e-mail communication with Dr. Thomas Swetnam, Laboratory of Tree Ring Research, Tucson, AZ

6/3/03 e-mail communication with Dr. Craig Allen, U.S. Geological Survey Jemez Mts. Field Station, Midcontinent Ecological Science Center, Los Alamos, NM

VDDT Results







Interval	[1, 10]	[11, 50]	[51, 490]	[491, 500]
Mean of avg	.35	.36	.38	.3