

Fire Regime Condition Class (FRCC) Interagency Handbook Reference Conditions

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PNVG Code: ESPF1

Potential Natural Vegetation Group: Southeastern Spruce-Fir

Geographic Area: Appalachian Mountains from ME to NC, including VA and WV; southern limit is Richard Balsam Mountain in NC and the central Smoky Mountains along the NC-TN border.

Description: Montane and allied spruce and spruce-fir forest. Stable, uneven-aged forest with canopy dynamics dominated by gap-phase regeneration on a fine scale, typically at middle to high elevations, usually on the highest mountains, capping the highest peaks. Occurs in the Central Appalachian Broadleaf-Coniferous and Forest Meadow ecological provinces, and the Northern Ridge and Valley and Blue Ridge Mountain ecological sections. Generally site conditions are poor, with short frost-free seasons and shallow, poorly developed, easily eroded soils on steep slopes. Sites are frequently foggy and cloud contact may account for significant moisture. Dominant species are Fraser fir (*Abies fraserii*) and/or red spruce (*Picea rubens*). Other common associates include yellow birch (*Betula allegheniensis*), mountain ash (*Sorbus americana*), mountain maple (*Acer spicatum*), pin cherry (*Prunus serotina*), hobble bush (*Viburnum alnifolium*), and bearberry (*Vaccinium erythrocarpum*).

Fire Regime Description: Fire Regime Group V. Fire disturbances are severe and affect large patch sizes but are very rare, at 300 to 1,000-year intervals; wind events are much more frequent at intervals of 100 to 200 years. Other disturbances, including windthrow, insect attack, and ice storms, usually on a single-tree-gap scale, were much more important than fire although they may have pre-disposed the forest to fire during drought conditions. In modern times other disturbances, especially logging, logging slash fires, balsam woolly adelgid (an exotic species), acid deposition, and climate change, are playing an important role.

Vegetation Type and Structure

Class*	Percent of Landscape	Description
A: post replacement	15	Young stand co-dominated by hardwoods; less than 30 yrs old
B: mid-seral closed	30	Mature stand dominated by spruce and/or fir; 30 - 100 yrs old
E: late- seral closed	55	Old-growth stand dominated by spruce; over 100 yrs old
Total	100	

*Formal codes for classes A-E are: AESP, BMSC, CMSO, DLSO, and ELSC, respectively.

Fire Frequency and Severity

Fire Severity	Fire Frequency (yrs)	Probability	Percent, All Fires	Description
Replacement Fire	500	0.002	100	
Non-Replacement Fire	none	0	0	
All Fire Frequency*	500	0.002	100	

*All Fire Probability = sum of replacement fire and non-replacement fire probabilities. All Fire Fire Frequency = inverse of all fire probability (previous calculation).

References

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.

Kuchler, A.W. 1964. Southeastern spruce-fir forest (*Picea-Abies*). #97 In: Manual to accompany the map Potential Natural Vegetation of the United States. New York, NY: The American Geographical Society. 156 p.

Loehle, Craig. 1988. Tree life histories: the roles of defenses. Canadian Journal of Forest Research 18: 209-222.

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.

Southern Appalachian Man and the Biosphere. 1996. The Southern Appalachian Assessment Terrestrial Technical Report. Report 5 of 5. Atlanta, GA: U.S. Department of Agriculture, Forest Service, Southern Region.

US Department of Agriculture, Forest Service, Southern Region. 1997. Montane and allied spruce and spruce-fir forest old-growth forest community. Pp. 100-102 in: Guidance for conserving and restoring old-growth forest communities in National Forests in the Southern Region: Report of the Region 8 Old-Growth Team. Forestry Report R8-FR 62. Atlanta, GA: U.S. Department of Agriculture, Forest Service, Southern Region. 120 p.

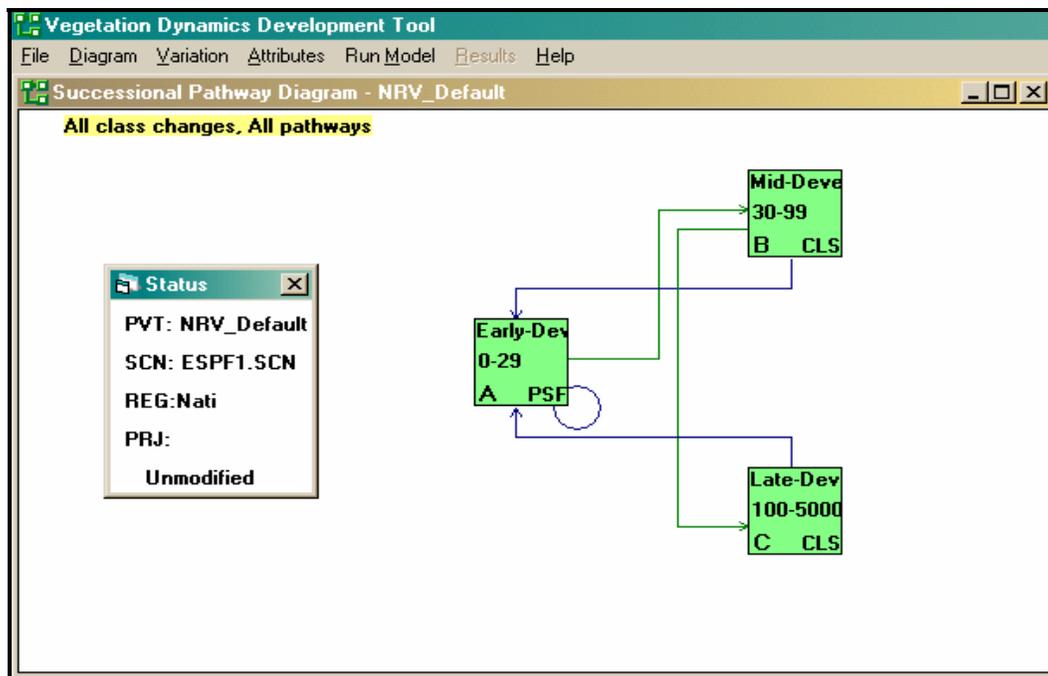
U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station, Fire Sciences Laboratory (2002, December). Fire Effects Information System, [Online 12 February 2004]. Available: <http://www.fs.fed.us/database/feis/>.

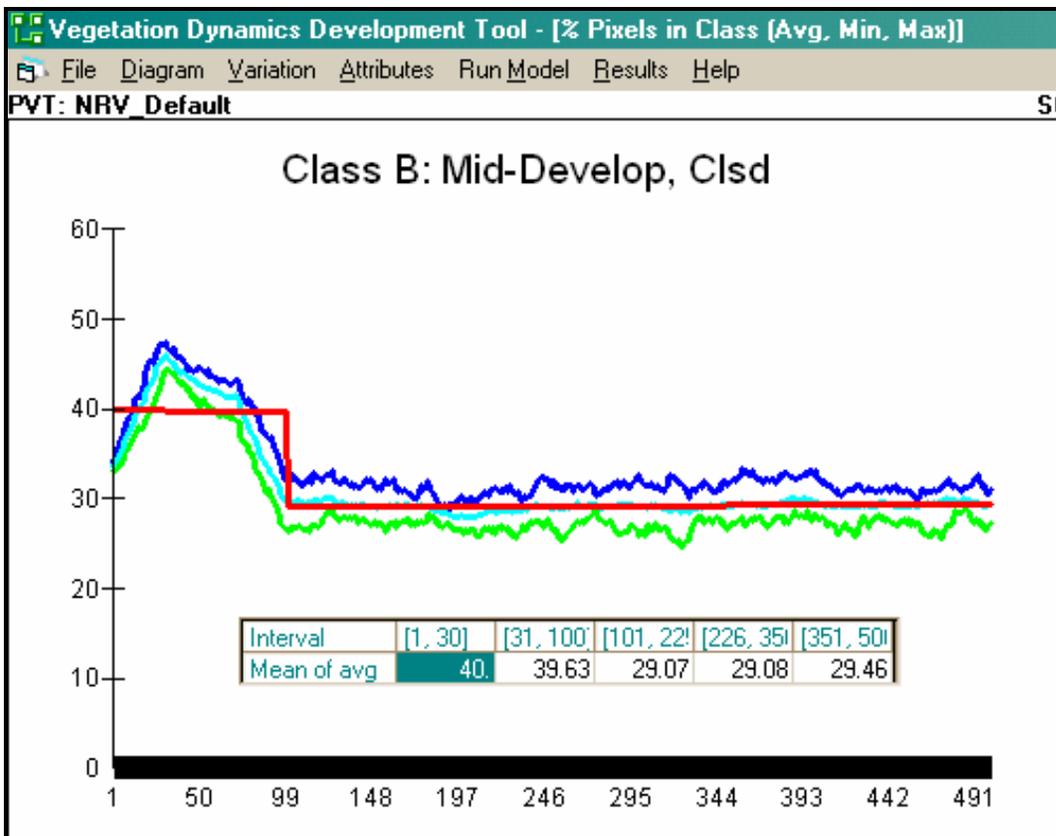
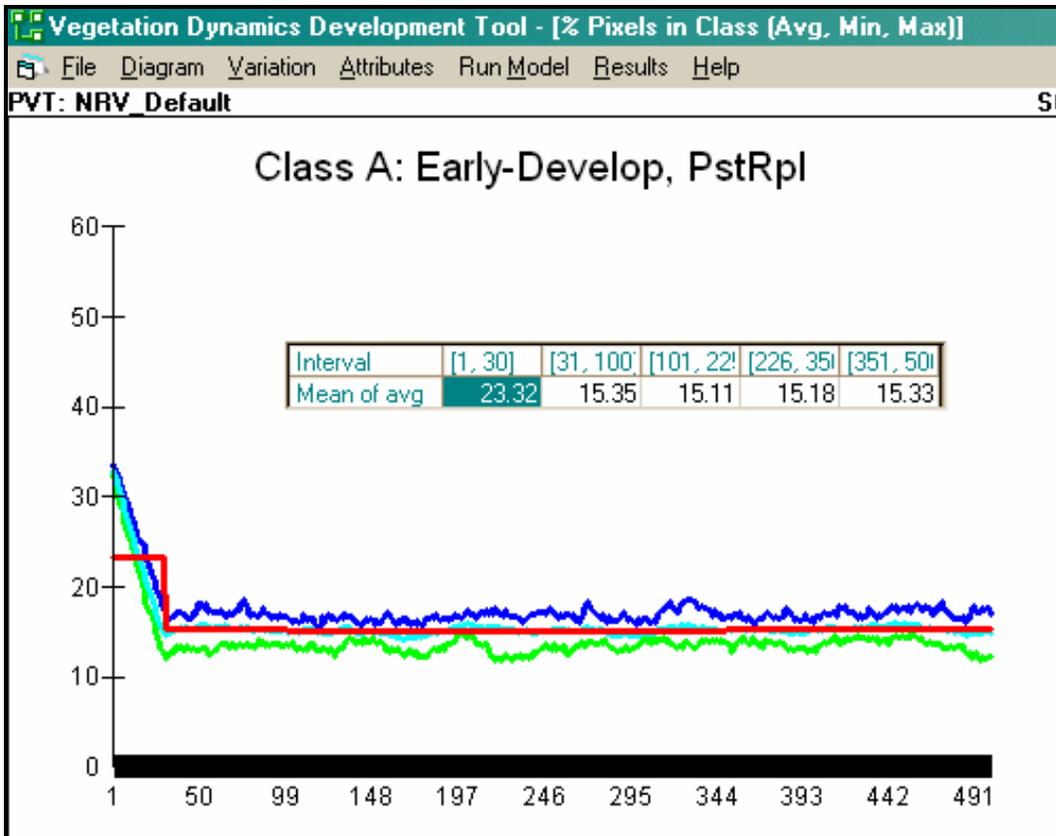
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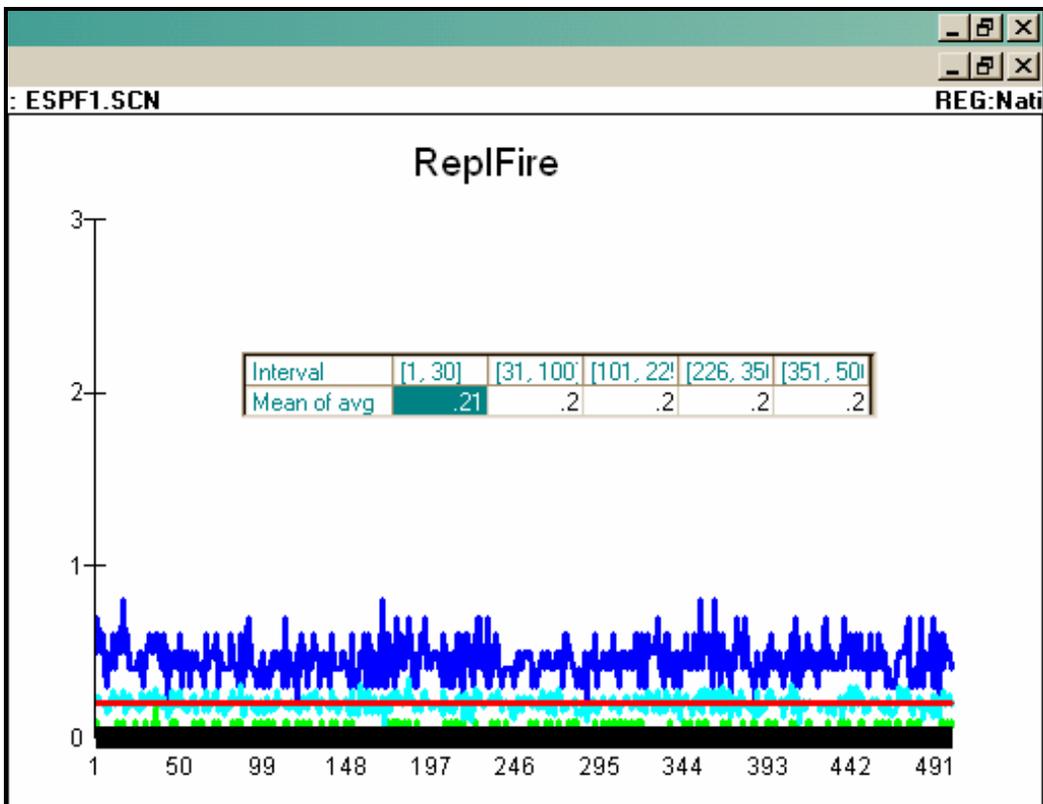
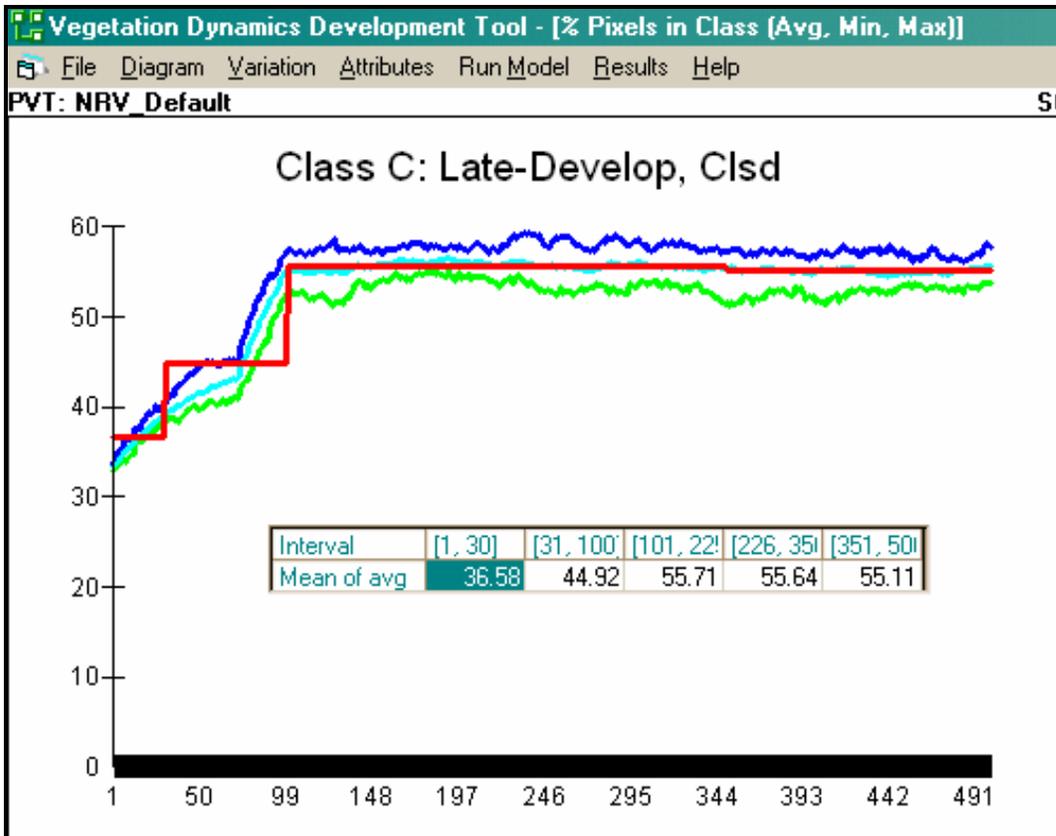
Peer Review by Bill Patterson III, University of Massachusetts Amherst, Amherst, MA, at Milwaukee, WI: 20 July, 2004.

VDDT File Documentation

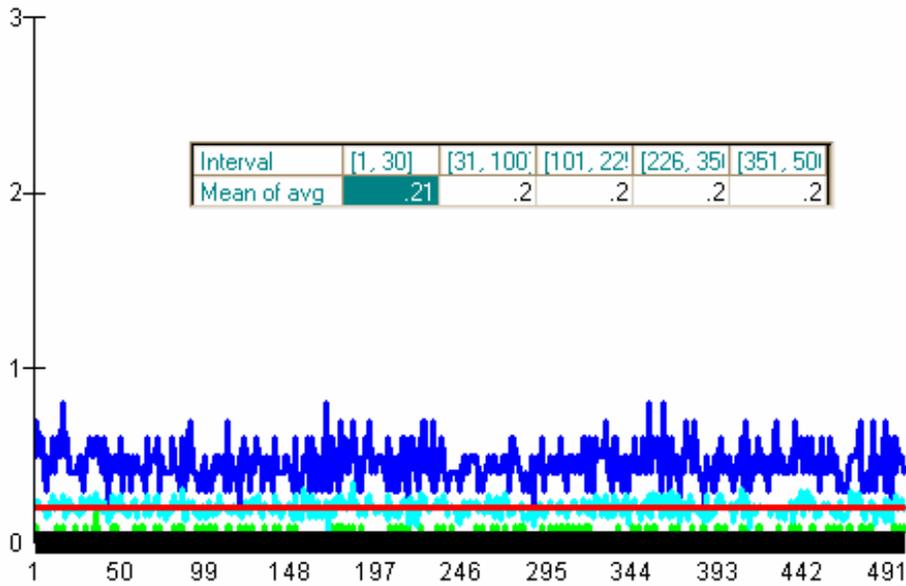
Assumption: Native American fire was considered but not determined to be a significant factor.







AllFire



WindWethStres

