****DRAFT****

Fire Regime Condition Class (FRCC) Interagency Handbook Reference Conditions

Modeler: Cecil Frost **Date: 11-20-04** **PNVG Code: EPWM**

Potential Natural Vegetation Group: Eastern Prairie-Woodland Mosaic

Geographic Area: Upper piedmont flats and lower mountain valleys on the east side of the Southern Appalachian mountains, Georgia to Pennsylvania, Including the Great Valley, the Shenandoah Valley and possibly the Hudson Valley of New York.

Description: The original community as described by early explorers and the first settlers was a mosaic of open woodland with interspersed prairies (Lederer 1672, Logan 1859). The prairie component was located on the flat to convex and gently rolling uplands of the larger fire compartments. The largest of these in the southern part of the range was up to five miles wide without a tree or only a few blackjack oaks (Logan 1859). In the Great Valley of Virginia, West Virginia and Maryland, extensive grasslands on the uplands were interspersed with oak woodland in ravines. The woodland canopy was dominated by post oak (*Quercus stellata*), blackjack oak (*Q. marilandica*), and shortleaf pine (*Pinus echinata*) in the southern half of the range, and by white oak (*Quercus alba*), mockernut hickory (*Carya tomentosa*), hackberry (Celtis occidentalis) and red cedar (*Juniperus virginiana*) in the Shenandoah Valley and other northern valleys with calcareous soils. On acidic soils, black oak (*Quercus velutina*) was a constituent in the northern range). Open prairies and the grassy understory beneath woodland trees were dominated by tallgrass species such as little bluestem (*Schizachyrium scoparium*) and Indiangrass (*Sorghastrum nutans*) on the drier sites, with switchgrass (*Panicum virgatum*) and big bluestem (*Andropogon gerardii*) in moist swales. The grasses were interspersed with a diverse assortment of perennial forbs. The federally endangered smooth coneflower (*Echinacea laevigata*) was a component of the herb layer in the southern range from North Carolina to northeast Georgia. Understories of fire-maintained wooded areas were characterized by short grasses such as poverty grass (*Danthonia spp*) in the southern end of the range and *Deschampsia flexuosa* in the northern range.

Relation to other vegetation types: The description of this type is limited to vegetation of the zone of prairie-woodland mosaic at the toe of the Appalachians and the Appalachian eastern interior valleys. Grades to the east into piedmont oak-hickory-shortleaf pine in the Carolinas and south, and to closed canopy oak-hickory forests from Virginia north. On the piedmont there were smaller and more dispersed prairies which included several distinct types depending upon soils and geological substrates such as diabase and serpentine. Graded locally upslope into fire-maintained chestnut oak (*Quercus montana*)-mockernut hickory (*Carya tomentosa*) and, historically, American chestnut (*Castanea dentata*) forest with a grassy, fire-maintained understory. .

Crosswalk: This type, only recently rediscovered in the historical literature, was unknown to Küchler and does not appear in other vegetation classifications.

Fire Regime Description: Fire regime group I. Surface fires, set annually by Native Americans, mostly in late October and November (Byrd 1728), of light intensity in woodlands and short grass, medium intensity in tallgrass prairie. Burning was done after the end of the growing season In fall and early winter when Indians left their villages to live in fall hunting camps. Reasons for burning mentioned in historical records were to drive game, to keep the countryside open and free of underbrush for easy travel, and to facilitate gathering of fall mast such as acorns and chestnuts.

Model Assumptions: Because of the very high fire frequency, vegetation structure and species composition was stabilized by fire, with fire effects largely limited to annual reduction of grass in the prairies and beneath the woodland and forest canopies. Tree replacement caused by fire was rare, with tree-by-tree replacement from senescence or wind damage the dominant model. The model is treated as a woodland type because in the overall mosaic, the total prairie area was likely smaller than the associated grassy woodlands. Classes A and C represent prairie, classes B, D and E represent woodlands.

Vegetation Type and Structure

Class*	Percent of Landscape	Description
A: post replacement	31	Open prairie patches dominated by perennial grasses.
B: mid-seral closed	9	Unburned sapling to pole-sized oaks with reduced herbaceous understory.
C: mid- seral open	18	Prairie unburned for 2-3 years: denser grass cover, fuel accumulation of dead grass, and reduced cover of forbs.
D: late- seral open	35	Woodland/savanna oak-hickory (& shortleaf pine in the southern range) overstory with understory of perennial grasses and forbs. Cover <65%.
E: late- seral closed	7	Closed canopy (>65%) with red oak, white oak, black oak, tulip poplar, hackberry, and in the most fire-sheltered ravines, sugar maple and beech in the north. In the south, white oak, post oak, mockernut hickory and sometimes white pine (*Pinus strobus*) in fire-sheltered north slopes. Understory with tree saplings and low shrubs such as blueberry (*Vaccinium* spp.).
Total	100	

Fire Frequency and Severity

Fire Severity	Fire Frequency (yrs)	Probability	Percent, All Fires	Description
Replacement Fire	3	.32	72	Two kinds of "replacement": grass reduced to ground in prairies and scattered individual trees killed to ground in woodlands.
Non-Replacement Fire	8	.12	28	In woodland and forest: light, post-growing season surface fires in leaf litter and grass.
All Fire Frequency*	2.3	0.44	100	

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

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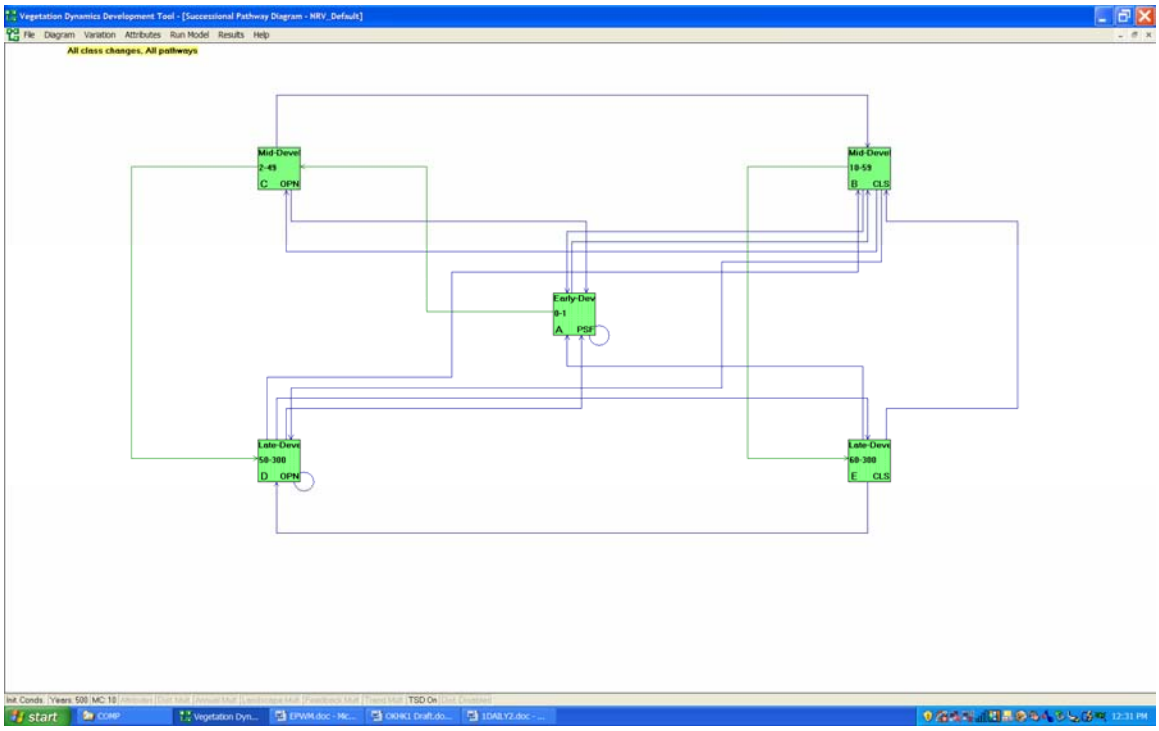
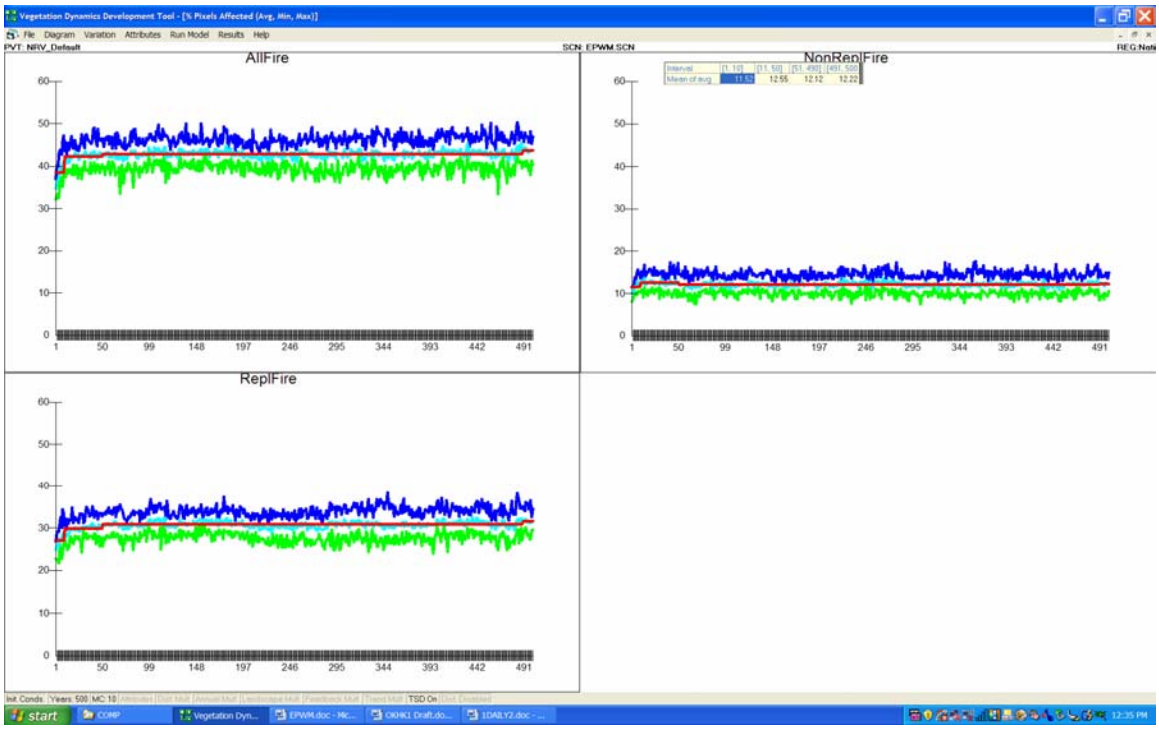
VDDT File Documentation
Include screen captures (print-screens) from any of the VDDT graphs that were used to develop reference conditions.

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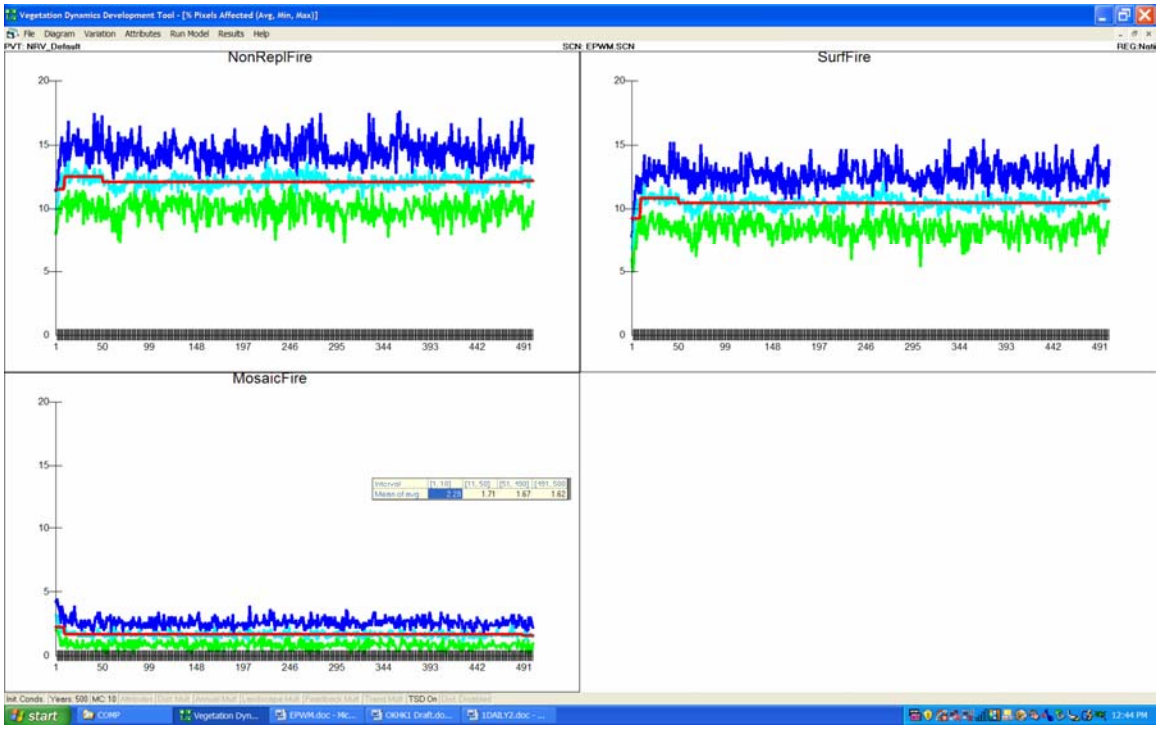
NonReplFire
ReplFire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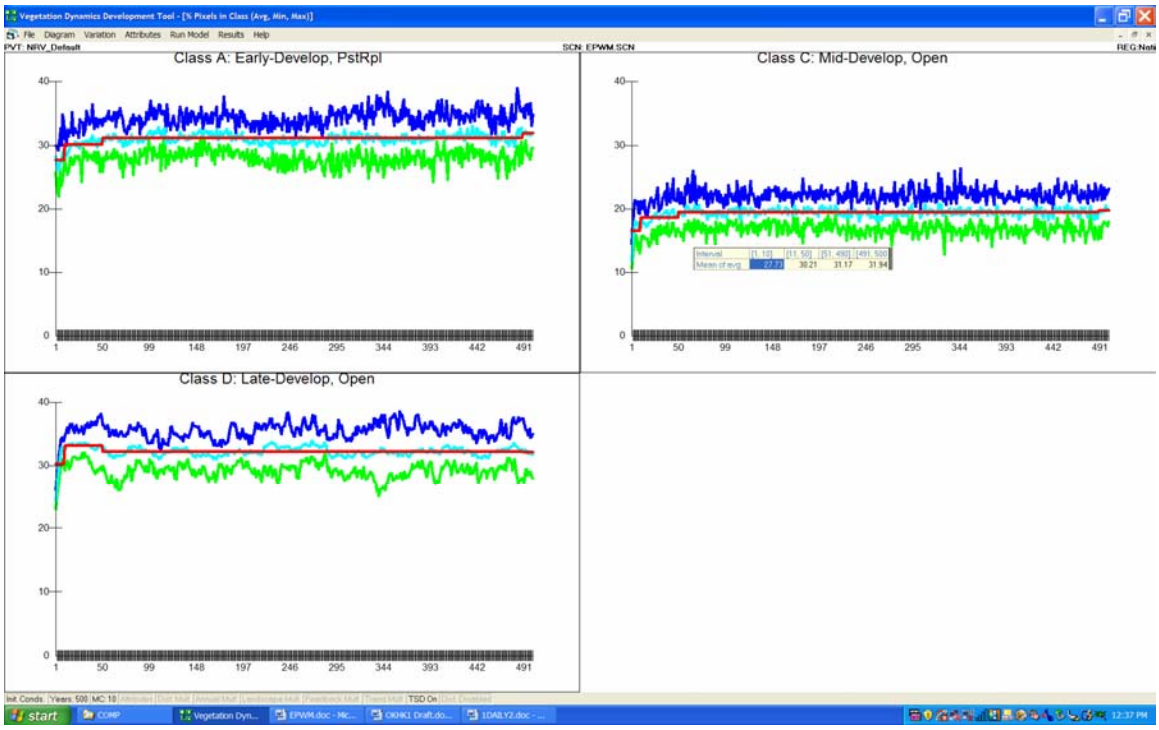
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File Diagram Variation Attributes Run Model Results Help
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SCN: EPWM.SCN
Class A: Early-Develop, PstRpl
Class C: Mid-Develop, Open
Class D: Late-Develop, Open
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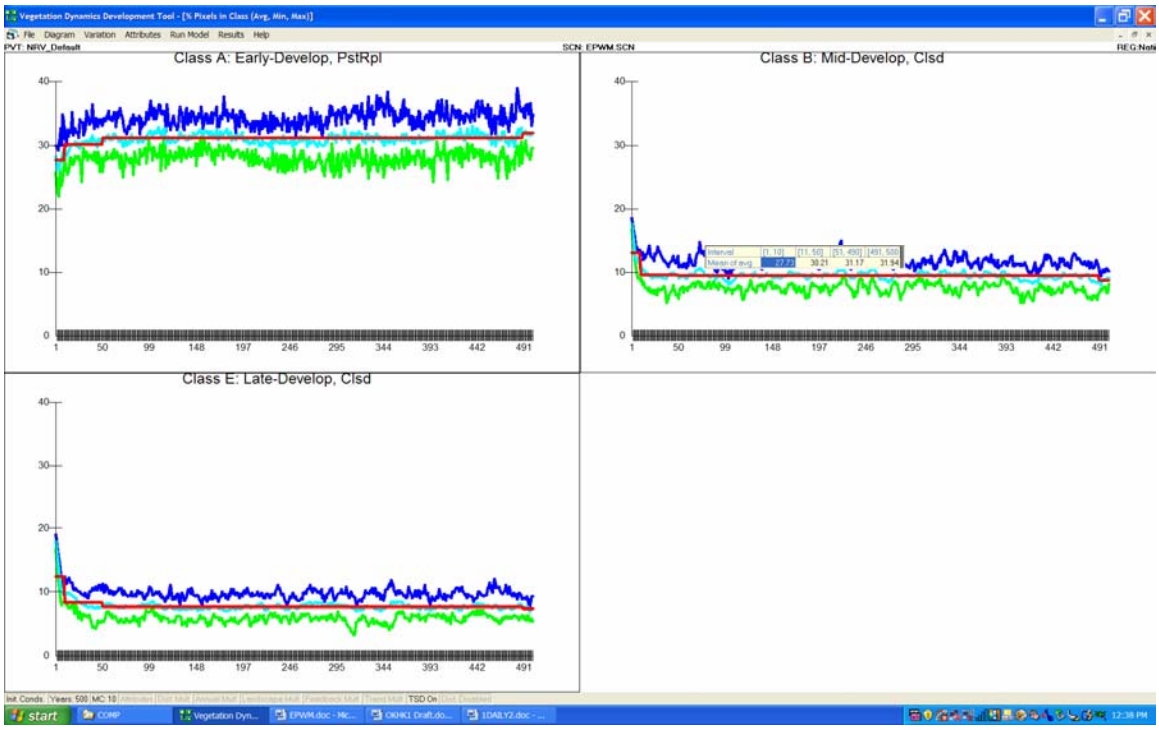
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File Diagram Variation Attributes Run Model Results Help
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SCN: EPWM.SCN
Class A: Early-Develop, PstRpl
Class B: Mid-Develop, Clsd
Class E: Late-Develop, Clsd
Init Conds Years: 500 MC: 10
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Prairie restoration site on grounds of National Conservation Training Center, Shepherdstown, WV in the "Great Valley". Foreground is tallgrass mixture of Indiangrass, Switchgrass, and big bluestem. Substrate is limestone.