DRAFT

Fire Regime Condition Class (FRCC) Interagency Guidebook Reference Conditions

Author/Modeler(s): Evie Witten
Lead Author Phone: (907) 276-3133 (#107) **E-mail:** akfrcc@alaska.net

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Potential Natural Vegetation (PNV) Name: Dry Herbaceous Meadow

Fire regime group: IV
Geographic Area: Interior, southcentral, western and arctic Alaska

Physical Stetting Description:
The Dry Herbaceous Meadow PNV encompasses many different plant communities on a variety of sties; the common element is that the grass and herb communities are persistent over time on dry sites and do not appear to be a sere of another PNV. Sites where the Dry Herbaceous Meadow PNV occurs include alpine talus and blockfields, alpine and subalpine slopes and meadows, and dry plateaus in mountain ranges. Soils are often dry slits or loams, sometimes with intermixed gravel or rock fragments. Soils on snowbed sites are well drained and often stony. Permafrost is absent with the possible exception of some alpine sites (Viereck et al 1992).

Biophysical Classification:
The Dry Herbaceous Meadow PNV occurs in the following ecoregions described by Nowacki et al (2001):

- ❑ Intermontane Boreal
- ❑ Alaska Range Transition
- ❑ Bering Taiga
- ❑ Arctic Tundra

The following community types described by Viereck et al (1992) are Dry Herbaceous Meadow PNV group:
IIIA1a – Elymus (mircoclimatic, topographic or edaphic climax on dry, steep slopes only)
IIIA1b – Dry Fescue (alpine and subalpine sites)
IIIA1c – Midgrass-shrub
IIIB1a – Seral Herbs (sere developing into graminoid community on steep, south-facing bluffs in interior Alaska)
IIIB1b – Alpine Herb-Sedge (snowbed communities)
IIIB1c – Alpine Herbs

Identification of Key Characteristics of the PNV and Confuser PNVs:
The vegetation communities included in this PNV are diverse (see cross-walk to Viereck et al (1992) community types above). These same community types may occur on different sites as part of a successional sequence of a different PNV. Therefore, the key to identifying the Dry Herbaceous Meadow PNV is to match the community type with the site where it occurs according to the physical setting description and the list of community types described by Viereck et al (1992) above.

Common species on many sites include *Carex* spp., *Festuca* spp., *Calamagrostis* spp., *Agropyron* spp., *Poa* spp., *Elymus innovatus*, and *Bromus pumpellianus.* Codominant herbs, if present, may include *Epilobium angustifolium*, *Achillea borealis*, and *Mertensia paniculata*. Dominant species

in snowbed communities *include Oxyria digyna, Koenigia islandica, Saxifraga rivularis, Cardamine bellidifolia, Poa arctica, Carex lachanalii,* and *Claytonia samentosa*. Other apline sites may support alpine herb communities of *Draba* spp. *Saxifraga* spp., *Festuca brachyphylla*, *Potentilla* spp., *Diapsnsia lapponica, Oxyria digyna*, and *Androsace* spp. (Viereck et al 1992).

Nonspagnaceous mosses are common in many of these communities. Lichens may be present or absent. Netleaf willow (*Salix reticultata*) and ericaceous shrubs may be present on alpine sites. *Artemisia* spp. is the common shrub on dry slopes. Shrubs may be conspicuous but provide < 25% cover. Plant cover may be sparse on some alpine sites.

The Dry Herbaceous Meadow PNV may be confused with the Mesic Herbaceous Meadow PNV which occurs on mesic sites and includes different plant communities. This PNV also includes many community types that occur as early successional communities in other PNVs.

Natural Fire Regime Description:
Very little information is available about fire history in graminoid and herb communities in Alaska. The dominant PNVs of the region that tend to occur adjacent to the Dry Herbaceous Meadow PNV include:

- Upland White Spruce Interior (170 year MFI)
- Black Spruce Interior (80 year MFI)
- Upland Spruce Hardwood Southcentral (200 year MFI)
- Black Spruce Southcentral (165 year MFI)
- Tussock Tundra 1 (230 year MFI)
- Tussock Tundra 2 (560 year MFI)
- Dwarf Shrub Tundra (625 MFI)

Based on the climate and fire histories of adjacent PNVs, mean fire return interval (MFI) for the Dry Herbaceous Meadow was estimated at 170 years for this model.

Other Natural Disturbance Description:
Other natural disturbances may include grazing and landslides.

Natural Landscape Vegetation-Fuel Class Composition:
The natural vegetation structure is a mosaic of the seral stages described in the table below.

Natural Scale of Landscape Vegetation-Fuel Class Composition and Fire Regime:
The Dry Herbaceous Meadow PNV exists within a landscape mosaic composed primarily of forested, tundra and wetland PNVs. Most of the other PNVs occurring in the region are characterized by large, primarily replacement fires.

Uncharacteristic Vegetation-Fuel Classes and Disturbance:
Uncharacteristic sites have disproportionate percentages of seral classes on the landscape relative to those listed below.

PNV Model Classes and Descriptions:

Class	Modeled Percent of Landscape	Description
A: Post-disturbance	1%	Grasses, sedges and/or forbs dominate the site.

herbaceous 0-3 years		
B: Mature closed 3-200 years	99%	Grasses, sedges and/or forbs dominate the site.
Total:	100%	

Modeled Fire Frequency and Severity:

	Mean Probability	Mean Fire Frequency (years) (inverse of probability)	Description
Replacement fire	.49	200	Based on literature and expert input
Mosaic fire	.10	1,000	Based on literature and expert input
All Fire	.59	170	Based on literature and expert input
Other disturbances			

Modeled Fire Severity Composition:

	Percent All Fires	Description
Replacement fire	85%	Based on literature and expert input
Non-replacement fire	15%	Based on literature and expert input
All Fire	100%	

Further Analysis:

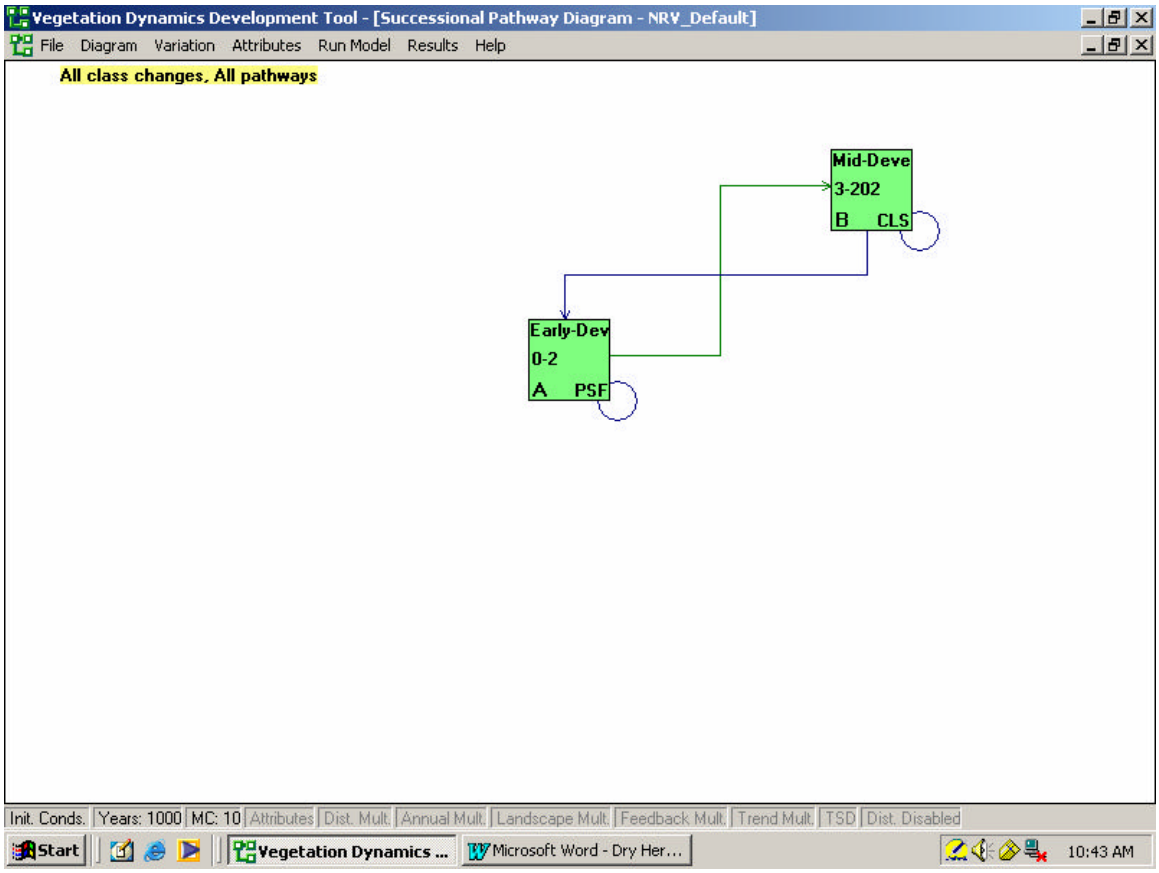
References

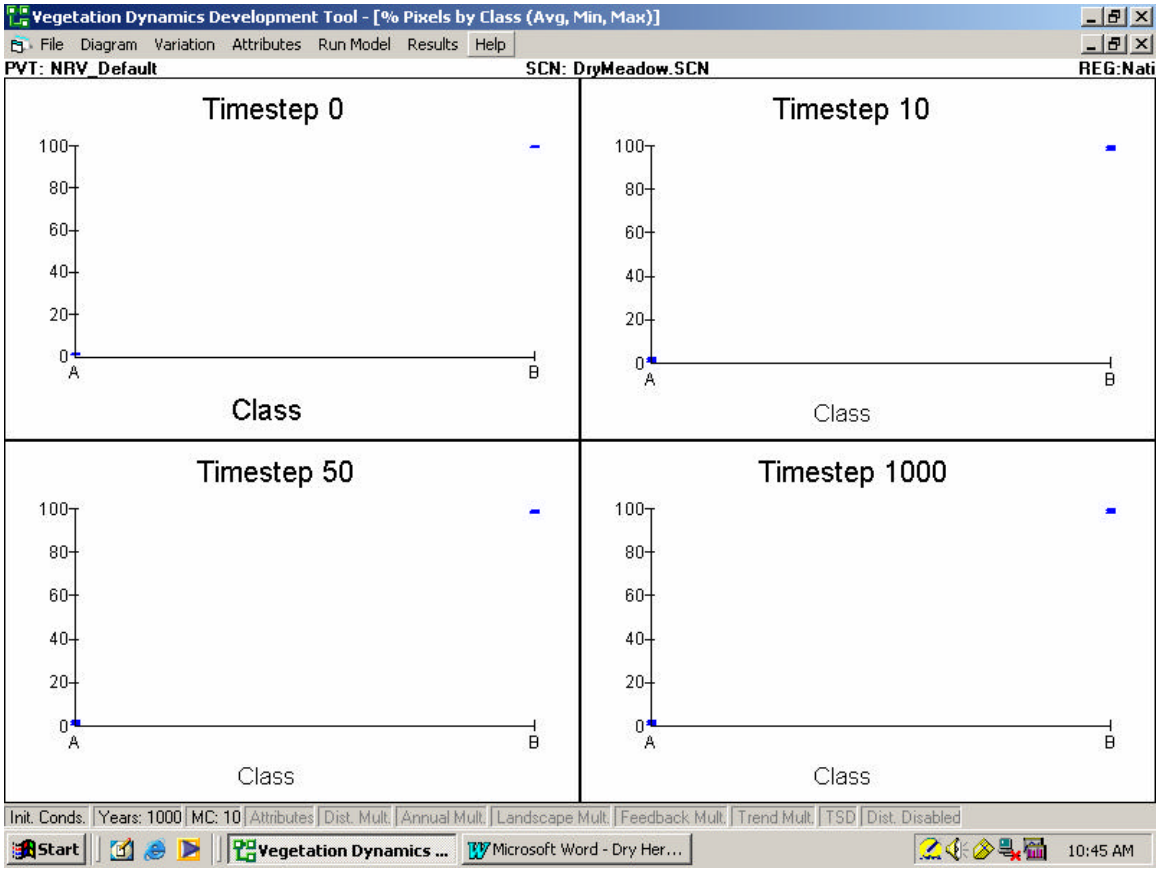
Nowacki, G., Spencer, P., Brock, T., Fleming, M., and Jorgenson, R. 2001. Narrative Descriptions for the Ecoregions of Alaska and Neighboring Territories. National Park Service. Place of publication unknown. 17 p.

Personal communication experts' workshop, March 2-4 2004. Fire Regime Condition Class (FRCC) interagency experts' workshop to develop and review Potential Natural Vegetation (PNV) groups for Alaska. Anchorage, Alaska.

Viereck, L.A., Dyrness, C.T., Batten, A.R., and Wenzlick, K.J. 1992. The Alaska Vegetation Classification. Gen. Tech. Rep. PNW-GTR-286. Portland, OR. U.S. Department of Agriculture, Forest Service, Pacific Northwest Research Station. 278 p.

VDDT model diagrams:




Vegetation Dynamics Development Tool - [% Pixels by Class (Avg, Min, Max)]
File Diagram Variation Attributes Run Model Results Help
PVT: NRV_Default
SCN: DryMeadow.SCN
REG:Nati
Timestep 0
Timestep 10
Timestep 50
Timestep 1000
100
80
60
40
20
0
A
B
Class
Init. Conds.
Years: 1000
MC: 10
Attributes
Dist. Mult.
Annual Mult.
Landscape Mult.
Feedback Mult.
Trend Mult.
TSD
Dist. Disabled
Start
Vegetation Dynamics ...
Microsoft Word - Dry Her...
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