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Fire Regime Condition Class (FRCC) Interagency Guidebook Reference Conditions

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Potential Natural Vegetation (PNV) Name: Mesic Herbaceous Meadow

Fire regime group: V

Geographic Area: Interior, southcentral, and southwest Alaska, Aleutian Islands

Physical Setting Description:

The Mesic Herbaceous Meadow PNV encompasses many different plant communities on a variety of mesic sites; the common element is that the grass and herb communities are persistent over time and do not appear to be a sere of another PNV. Sites where the Mesic Herbaceous Meadow PNV occurs include alpine and subalpine meadows, upland slopes, lowland fens and on stream banks and flat to rolling near-coastal sites in southwest Alaska. Soils range from well-developed, well drained silts or loams, to wet to mesic silts, loams or peat. Permafrost is usually absent with the possible exception of some alpine sites (Viereck et al 1992).

Biophysical Classification:

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

- Intermontane Boreal
- Alaska Range Transition
- Bering Taiga
- Aleutian Meadows – Aleutian Islands (M1)

The following community types described by Viereck et al (1992) are Mesic Herbaceous Meadow PNV group:

- IIB2d – Open Tall Alder-Willow Shrub (sere on wet sedge meadow sites)
- IIIA1d – Midgrass-herb (topographic climax on slopes)
- IIIA1e – Hair-Grass (sere on *Calamagrostis* climax sites near coast)
- IIIA2a – Bluejoint Meadow (climax in southwest Alaska only; sere in wet sedge meadow on some sites on Seward Peninsula)
- IIIA2c – Bluejoint-Shrub (climax on some sites in southwestern Alaska beyond treeline)
- IIIB2c – Large Umbel (climax on Aleutian Islands only)

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 occur on different sites as part of a successional sequence of a different PNV. Therefore, the key to identifying the Mesic Herbaceous Meadow PNV is to match the community type with the site where it occurs according to the physical setting description and Viereck cross-walk above.

Common species on many sites include *Carex* spp., *Festuca* spp., *Deschampsia* spp., *Calamagrostis* spp., *Agropyron* spp., *Poa* spp., and *Bromus pumpehianus*. Codominant herbs, if present, may include *Anemone narcissiflora*, *Lupinus arcticus*, *Aconitum delphinifolium*,

Merensia paniculata, *Cornus canadensis*, *Geranium erianthum*. On the Aleutian Islands umbel communities are dominated by *Heracleum* spp. and *Angelica* spp. (Viereck et al 1992). Shrubs may be conspicuous but provide < 25% cover.

The Mesic Herbaceous Meadow PNV may be confused with the Dry 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 Mesic 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)
- Riparian Spruce Hardwood (300 year MFI)
- Tussock Tundra 1 (230 year MFI)
- Tussock Tundra 2 (560 year MFI)
- Dwarf Shrub Tundra (625 MFI)

Based on the types of sites and climate where this PNV occurs and the fire histories of adjacent PNVs, mean fire return interval (MFI) for the Mesic Herbaceous Meadow was estimated at 350 years for this model.

Other Natural Disturbance Description:

Other natural disturbances may include flood, 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 Mesic 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 herbaceous 0-3 years	0% (Actual=.4%)	Grasses, sedges and/or forbs dominate the site.
B: Mature closed	100%	Grasses, sedges and/or forbs dominate the site.

3-200 years		
Total:	100%	

Modeled Fire Frequency and Severity:

	Mean Probability	Mean Fire Frequency (years) (inverse of probability)	Description
Replacement fire	.0020	500	Based on literature and expert input
Mosaic fire	.0009	1,110	Based on literature and expert input
All Fire	.0029	350	Based on literature and expert input
Other disturbances			

Modeled Fire Severity Composition:

	Percent All Fires	Description
Replacement fire	70%	Based on literature and expert input
Non-replacement fire	30%	Based on literature and expert input
All Fire	100%	

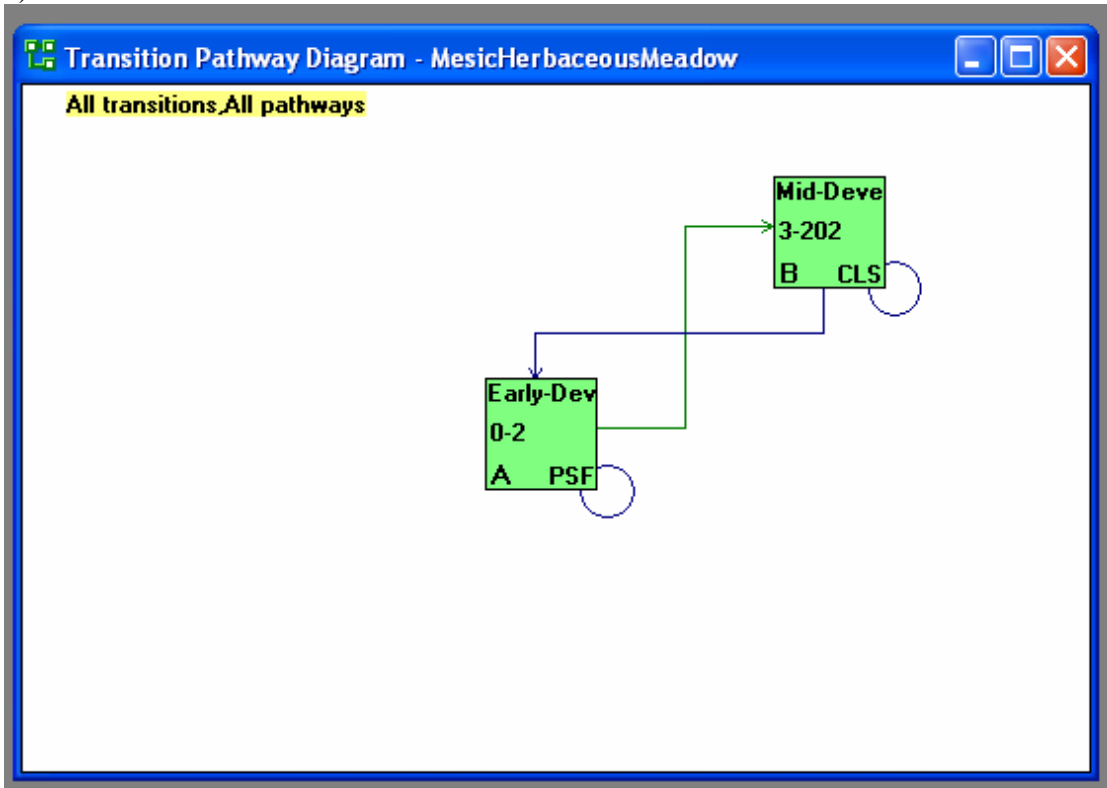
Further Analysis:

References

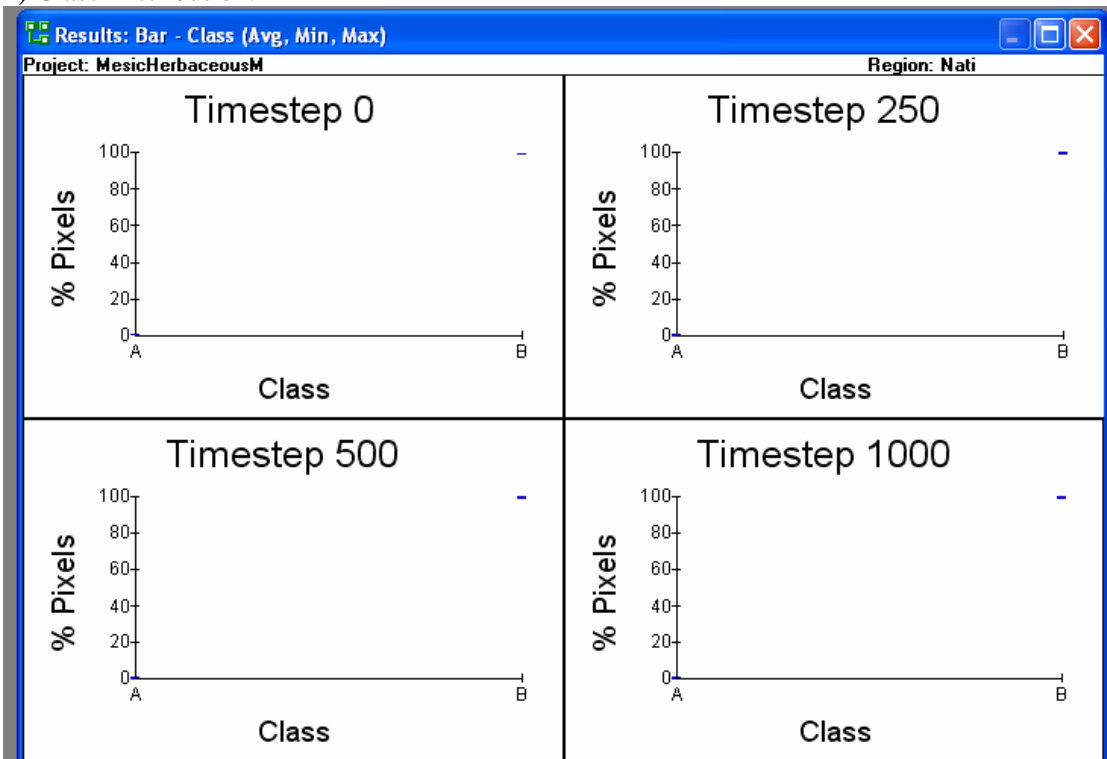
- Nowacki, G., Spencer, P., Brock, T., Fleming, M., and Jorgenson, R. 2001. Narrative Descriptions for the Ecoregions of Alaska and Neighboring Territories. National Park Service. Place of publication unknown. 17 p.
- Personal communication experts' workshop March 2-4 2004. Fire Regime Condition Class (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 successional class box diagram:

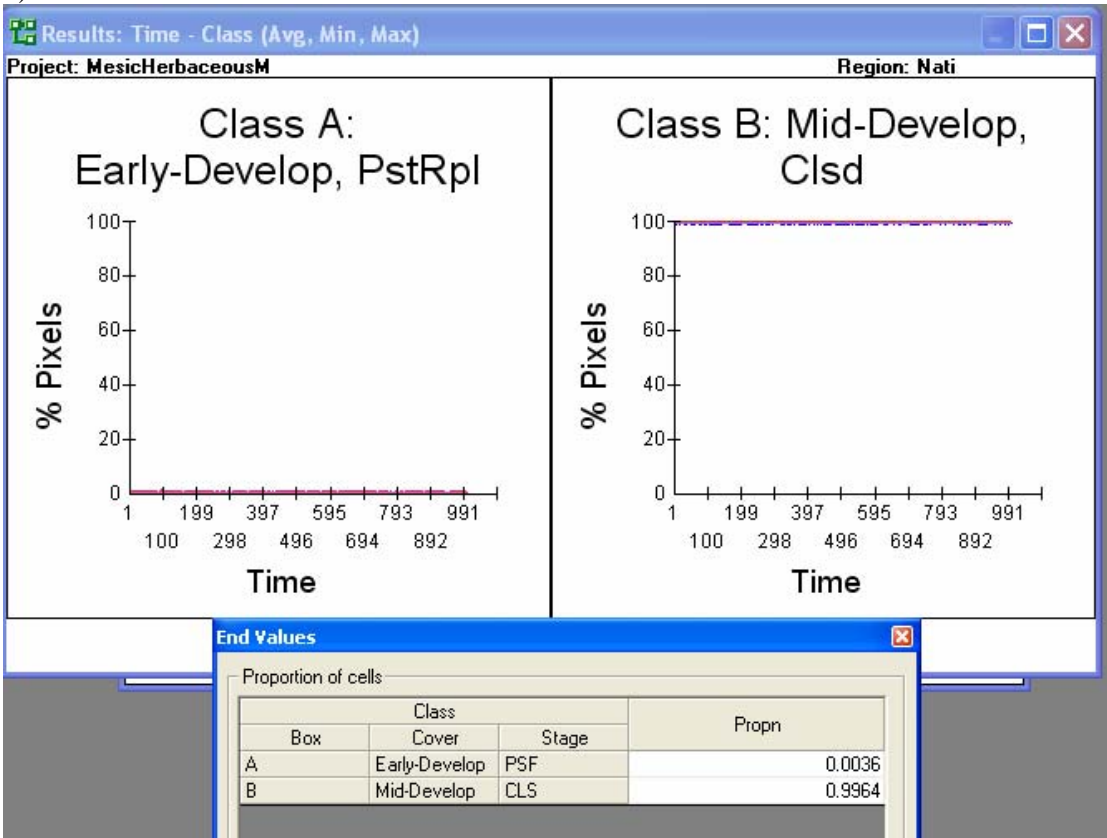
1) Box Model:



2) Class Distribution:



3) Class Time Series:



4) Fire Disturbance Time Series

