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Fire Regime Condition Class (FRCC) Interagency Guidebook Reference Conditions

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Potential Natural Vegetation (PNV) Name: Non-Forested Wetland

Fire regime group: V
Geographic Area: Throughout lowlands and uplands of Alaska, but not found in mountains

Physical Stetting Description:
The Non-Forested Wetland PNV encompasses many different plant communities on a variety of wet sties; the common element is that the wetland communities are persistent over time and do not appear to be a sere of another PNV. Sites where the Non-Forested Wetland PNV occurs include coastal margins and marshes, tidal flats, ponds, sloughs, oxbow lakes and lake margins, sluggish streams, and upland depressions and thermokarst pits in arctic and northwestern Alaska. Soils range from mineral or organic-rich mucks to saturated peaty soils forming quaking mats (Viereck et al 1992). Permafrost may be present on sites in interior and arctic Alaska, but is generally absent under wetland communities elsewhere in the state.

Biophysical Classification:
The Non-Forested Wetland PNV occurs in the following ecoregions described by Nowacki et al (2001):

- ❑ Intermontane Boreal
- ❑ Alaska Range Transition
- ❑ Arctic Tundra
- ❑ Bering Taiga
- ❑ Bering Tundra
- ❑ Aleutian Meadows – Aleutian Islands (M1)
- ❑ Coastal Rainforests

The following community types described by Viereck et al (1992) are Non-Forested Wetland PNV group:

IIIA3d – Fresh Sedge Marsh
IIIA3e – Fresh Grass Marsh
IIIA3f – Subarctic Lowland Sedge Wet Meadow
IIIA3g – Subarctic Lowland Sedge-Shrub Wet Meadow
IIIA3h – Halophytic Grass Wet Meadow
IIIA3I – Halophytic Sedge Wet Meadow
IIIA3j – Subarctic Lowland Sedge-Bog Meadow
IIIA3k – Subarctic Lowland Sedge-Moss Bog Meadow

IIIB3a – Fresh Herb Marsh
IIIB3b – Subarctic Lowland Herb Wet Meadow
IIIB3c – Subarctic Lowland Herb Bog Meadow
IIIB3d – Halophytic Herb Wet Meadow

IIID1a – Pondlilly
IIID1b – Common Marestail
IIID1c – Aquatic Buttercup
IIIDid – Burreed
IIID1d – Water Milfoil
IIID1f – Fresh Pondweed
IIID1g – Water Star-Wort
IIID1h – Aquatic Cryptogam
IIID2a – Four-Leaf Marestail
IIID2b – Brackish Pondweed
IIID3a – Eelgrass

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 Non-Forested Wetland PNV is to match the community type with the site where it occurs according to the physical setting description and Viereck cross-walk above.

Many communities within this PNV are dominated by *Carex* spp.. Other common species include *Arctophila fulva*, *Puccinellia* spp., *Eriophorum* spp. and the tall emergent sedges *Scirpus validus* and *Eleocharis palustris*. Important shrubs include *Salix* spp. and *Myrica gale*. Low shrubs, including *Andromeda polifolia* and *Vaccinium oxycoccos* may be present on some inland sites. In Halophytic communities common forbs include *Honckenya peploides, Triglochin maritimum*, and *Plantago maritima*. Emergent herbs, including *Menyanthes trifoliata, Potentilla palustris*, *Caltha palustris* and *Equisetum fluviatile* are important on some sites. Aquatic plants such as *Hippuris vulgaris*, *Nuphar polysepalum*, *Nymphaea tetragona* or *Sparganium* spp. may also be present. Sphagnum and other aquatic mosses may be present or absent. Trees and lichens are absent.

The Non-Forested Wetland PNV is not easily confused with any other PNV in Alaska.

Natural Fire Regime Description:
Very little information is available about fire history in wetland communities in Alaska. Based on the types of sites and climates where this PNV occurs and the fire histories of adjacent PNVs, mean fire return interval (MFI) for the Non-Forested Wetland PNV was estimated at 1,000 years for this model.

Other Natural Disturbance Description:
Other natural disturbances include floods and grazing.

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 Non-Forested Wetland PNV exists within a landscape mosaic composed of forested, tundra and persistent shrub and herbaceous PNVs. Most of the other PNVs occurring in most of 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	1%	Grasses, sedges and/or forbs colonize the site.
B: Mature closed 3-1000 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	.06	2,500	Based on literature and expert input
Mosaic fire	.04	1,665	Based on literature and expert input
All Fire	.10	1,000	Based on literature and expert input
Other disturbances			

Modeled Fire Severity Composition:

	Percent All Fires	Description
Replacement fire	60%	Based on literature and expert input
Non-replacement fire	40%	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: