16470

Alaskan Pacific Acidic Shrub-Sedge Peatland

BpS Model/Description Version: Nov. 2024

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| **Modelers** |  | **Reviewers** |  |
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|  |  |  |  |

Vegetation Type

Woody Wetland

Map Zones

73, 74, 75, 76, 77, 78, 80

Geographic Range

This Biophysical Setting (BpS) occurs from the eastern Aleutian Islands, Alaska Peninsula, Cook Inlet, and Kodiak Island through southeast AK.

Biophysical Site Description

This ecological system occurs in basins, shallow depressions, seepage channels on flat to gentle slopes, and pond margins. It is often mosaiced with the wet meadow and other wetland ecological systems including dwarf-shrub- and well-developed herbaceous-dominated peatlands (bog and poor fens), and occurs on peat, floating organic mats, or mineral soil. Peat depth is >40 cm and may be over mineral soil, floating, or submerged. This system includes raised bogs with *Sphagnum* spp.; soils are acidic and are usually saturated throughout the growing season.

Vegetation Description

*Sphagnum* spp. (especially *Sphagnum fuscum*) dominates the ground layer, but codominance includes other mosses, liverworts, shrubs, and forbs. This system has >25% shrub cover and common shrubs include *Andromeda polifolia, Betula nana, Empetrum nigrum, Kalmia polifolia, Ledum palustre* ssp*. decumbens, Ledum* spp., *Salix pulchra, Vaccinium oxycoccos (= Oxycoccus microcarpos)*, and *Vaccinium uliginosum*. Common herbaceous species include *Carex aquatilis var. dives (= Carex sitchensis), Carex livida, Carex pluriflora, Carex pauciflora, Comarum palustre, Cornus suecica, Drosera* spp., *Eriophorum angustifolium, Eriophorum* spp., *Parnassia kotzebuei, Rubus chamaemorus,* and *Trichophorum cespitosum*. Nonvascular species include *Philonotis fontana var. americana, Scapania* spp., *Nardia* spp., *Marsupella* spp., and *Siphula* spp. Fruticose lichens may occur on the hummocks.

BpS Dominant and Indicator Species

|  |  |  |
| --- | --- | --- |
| **Symbol** | **Scientific Name** | **Common Name** |
| SPFU70 | *Sphagnum fuscum* | sphagnum |
| ANPO | *Andromeda polifolia* | bog rosemary |
| BENA | *Betula nana* | dwarf birch |
| EMNI | *Empetrum nigrum* | black crowberry |
| KAPO | *Kalmia polifolia* | bog laurel |
| LEPAD | *Ledum palustre ssp. decumbens* | marsh Labrador tea |
| SAPU15 | *Salix pulchra* | tealeaf willow |
| VAOX | *Vaccinium oxycoccos* | small cranberry |

Species names are from the NRCS PLANTS database. Check species codes at http://plants.usda.gov.

Disturbance Description

Hydrologic dynamics and peat formation govern this system. Under appropriate hydrologic conditions this system will remain stable for long periods, but changes in water level or frequency and duration of flooding may cause a transition to another BpS. Substantial flooding/increase in water level may lead to the development of emergent marsh. This system does not likely burn in southeastern Alaska.

Fire Frequency

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Severity** | **Avg FI** | **Percent of All Fires** | **Min FI** | **Max FI** |
| Replacement |  |  |  |  |
| Moderate (Mixed) |  |  |  |  |
| Low (Surface) |  |  |  |  |
| All Fires |  |  |  |  |

Fire interval is expressed in years for each fire severity class and for all types of fire combined (All Fires). Average FI is the central tendency modeled. Percent of all fires is the percent of all fires modeled in that severity class. Minimum and Maximum FIs show the relative range of fire intervals as estimated by model contributors, if known.

Scale Description

Small patch

Adjacency or Identification Concerns

Issues or Problems

Native Uncharacteristic Conditions

Comments

In 2021 Pat Comer drafted this description based on NatureServe’s updated Ecological Systems classification for AK. This concept was not described or modeled by LANDFIRE prior to 2021. Kori Blankenship created a simple one-box model to represent the BpS dynamics.

Succession Classes

**Mapping Rules**

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Upper Layer Lifeform** | **Height (m)** | **Canopy Cover (%)** | | | | | | | | | |
| **0-10** | **11-20** | **21-30** | **31-40** | **41 - 50** | **51-60** | **61-70** | **71-80** | **81-90** | **91-100** |
| Herb | 0-0.5 | A | A | A | A | A | A | A | A | A | A |
| Herb | 0.5-1.0 | A | A | A | A | A | A | A | A | A | A |
| Herb | >1.0 | A | A | A | A | A | A | A | A | A | A |
| Shrub | 0-0.5 | A | A | A | A | A | A | A | A | A | A |
| Shrub | 0.5-1.0 | A | A | A | A | A | A | A | A | A | A |
| Shrub | 1.0-3.0 | A | A | A | A | A | A | A | A | A | A |
| Shrub | >3.0 | A | A | A | A | A | A | A | A | A | A |
| Tree | 0-5 | A | A | A | A | A | A | A | A | A | A |
| Tree | 5-10 | A | A | A | A | A | A | A | A | A | A |
| Tree | 10-25 | A | A | A | A | A | A | A | A | A | A |
| Tree | 25-50 | A | A | A | A | A | A | A | A | A | A |
| Tree | >50 | A | A | A | A | A | A | A | A | A | A |

Succession class letters A-E are described in the Succession Class Description section. Some classes use a leafform distinction where a qualifier is added to the class letter: Brdl (broadleaf), Con (conifer), or Mix (mixed conifer and broadleaf). UN refers to uncharacteristic native or a combination of height and cover that would not be expected under the reference condition. NP refers to not possible or a combination of height and cover which is not physiologically possible for the species in the BpS.

**Description**

Class A 100 Mid Development 1 - All Structures

Indicator Species

|  |  |  |  |
| --- | --- | --- | --- |
| **Symbol** | **Scientific Name** | **Common Name** | **Canopy Position** |
| SPFU70 | *Sphagnum fuscum* | sphagnum | Upper |
| ANPO | *Andromeda polifolia* | bog rosemary | Upper |
| BENA | *Betula nana* | dwarf birch | Upper |
| EMNI | *Empetrum nigrum* | black crowberry | Upper |

Description

This class represents the stable acidic shrub-sedge peatland community. This class persists indefinitely under appropriate hydrological conditions.

*Maximum Tree Size Class*  
None

Model Parameters

Deterministic Transitions

|  |  |  |  |
| --- | --- | --- | --- |
| **From Class** | **Begins at (yr)** | **Succeeds to** | **After (years)** |
| Mid1:ALL | 0 | Mid1:ALL | 999 |

Probabilistic Transitions

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Disturbance Type** | **Disturbance occurs In** | **Moves vegetation to** | **Disturbance Probability** | **Return Interval (yrs)** | **Reset Age to New Class Start Age After Disturbance?** | **Years Since Last Disturbance** |

References

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