16630

North Pacific Shrub Swamp

BpS Model/Description Version: Nov. 2024

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| --- | --- | --- | --- |
| **Modelers** |  | **Reviewers** |  |
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| None | None | None | None |
| None | None | None | None |

Vegetation Type

Woody Wetland

Map Zones

73, 74, 75, 76, 77, 78

Geographic Range

This Biophysical Setting (BpS) occurs from Cook Inlet Basin and Prince William Sound through southeast AK.

Biophysical Site Description

Shrub swamps occur on poorly drained fine textured soil in lowland areas or depressions that retain standing water throughout all or most of the growing season (NatureServe 2008; Viereck et al. 1992, IIB1f). Soils may be organic, muck or mineral (NatureServe 2008).

Vegetation Description

Deciduous shrub swamps are usually dominated by alders, but willows or an alder/willow mix also occur (Viereck et al. 1992). *Alnus viridis* ssp. *sinuata* often dominates the shrub layer but *Salix* spp. is also reported. The shrub layer is typically open with many dead stems and is commonly 3-5 meters tall (Viereck et al. 1992). Wetland species including *Carex aquatilis var. dives* (*Carex sitchensis*), *Carex utriculata, Equisetum fluviatile* and *Lysichiton americanus* dominate the understory. On some sites *Sphagnum* spp. is common in the understory.

Though this system is classified as closed by Viereck, et al. (1992), it may also occur in an open form.

BpS Dominant and Indicator Species

|  |  |  |
| --- | --- | --- |
| **Symbol** | **Scientific Name** | **Common Name** |
| ALVIS | *Alnus viridis ssp. sinuata* | Sitka alder |
| SALIX | *Salix spp.* | Willow |
| CAAQD | *Carex aquatilis var. dives* | Sitka sedge |
| CAUT | *Carex utriculata* | Northwest territory sedge |
| EQFL | *Equisetum fluviatile* | Water horsetail |
| LYAM3 | *Lysichiton americanus* | American skunkcabbage |
| SPHAG2 | *Sphagnum spp.* | Sphagnum |

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

Disturbance Description

Shrub swamps likely represent a topoedaphic climax community which will persist as long as the hydrologic conditions supporting them are maintained (Viereck et al. 1992). Some sites may move back and forth between this system and peatlands, forest, or even open water or aquatic bed as hydrology changes, but these transitions are not directional and are generally outside of the time scale of this model.

This system likely does not burn in southeast AK.

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

This BpS is similar to the Western North American Boreal Deciduous Shrub Swamp system but does not include fire as a disturbance factor.

Issues or Problems

Native Uncharacteristic Conditions

Comments

This model did not receive review specifically for z76.

This model was developed based on input from experts who attend the LANDFIRE Juneau Modeling Meeting (Feb. 08) and the draft Maritime Ecological Systems description (NatureServe 2008) and refined by David D'Amore. A reviewer noted that the term “swamp” in the Ecological System name may not be appropriate in this case and that it is not a term usually used to describe Southeast Alaska wetlands. Reviewer suggested using naming conventions from the USFWS's Cowardin classification system (Cowardin et al. 1979). The LANDFIRE project names for BpS models are identical to the name for the Ecological System on which they are based so this suggestion could not be implemented, although it was noted for future work on the Ecological Systems.

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 | UN | UN | UN | UN | UN | UN | UN | UN |
| Shrub | 0.5-1.0 | A | A | UN | UN | UN | UN | UN | UN | UN | UN |
| Shrub | 1.0-3.0 | A | A | UN | UN | UN | UN | UN | UN | UN | UN |
| Shrub | >3.0 | A | A | UN | UN | UN | UN | UN | UN | UN | UN |
| Tree | 0-5 | A | A | UN | UN | UN | UN | UN | UN | UN | UN |
| Tree | 5-10 | A | A | UN | UN | UN | UN | UN | UN | UN | UN |
| Tree | 10-25 | A | A | UN | UN | UN | UN | UN | UN | UN | UN |
| Tree | 25-50 | A | A | UN | UN | UN | UN | UN | UN | UN | UN |
| Tree | >50 | A | A | UN | UN | UN | UN | UN | UN | UN | UN |

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** |
| ALVIS | *Alnus viridis* ssp*. sinuata* | Sitka alder | Upper |
| SALIX | *Salix* spp. | Willow | Upper |
| CAAQD | *Carex aquatilis var. dives* | Sitka sedge | Lower |
| CAAQD | *Carex aquatilis var. dives* | Sitka sedge | Lower |

Description

This class represents the stable Shrub Swamp community. See the Vegetation Description for a list of common species.

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

Cowardin, L. M., V. Carter, F. C. Golet, E. T. LaRoe. 1979. Classification of wetlands and deepwater habitats of the United States. U.S. Department of the Interior, Fish and Wildlife Service, Washington, D.C. Jamestown, ND: Northern Prairie Wildlife Research Center Online. http://www.npwrc.usgs.gov/resource/wetlands/classwet/index.htm (Version 04DEC1998).

NatureServe. 2008. International Ecological Classification Standard: Terrestrial Ecological Classifications. Draft Ecological Systems Description for the Alaska Maritime Region.

Viereck et al. 1992. The Alaska vegetation classification. Pacific Northwest Research Station, USDA Forest Service, Portland, OR. Gen. Tech. Rep. PNW-GTR286. 278 p.