16400

Aleutian Mesic-Wet Willow Shrubland

BpS Model/Description Version: Nov. 2024

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| --- | --- | --- | --- |
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Vegetation Type

Shrubland

Map Zones

73, 76, 80

Geographic Range

This BpS is relatively uncommon yet widespread on Kodiak Island, the Alaska Peninsula, and diminishes moving west.

Biophysical Site Description

This type can occur on broad valleys, along streams and lakeshores, and on mountain sideslopes (NatureServe 2008). Each of these geophysical settings support moderate soil moisture regimes that in turn support recurrent plant species assemblages. In Katmai National Park and Preserve it is found up to about 660 m elevation and sporadically above the alder zones on mountain slopes (Boggs et al. 2003). The soil substrates range from mineral to peat and the sites are mesic to wet (NatureServe 2008).

Vegetation Description

The dominant willow species are *Salix barclayi, S. glauca* and *S. pulchra* although *S. alaxensis* and *S. commutata,* are also common*. Alnus viridis* ssp*. sinuata* may codominate.Understory herbaceous and shrub species include *Achillea millefolium var. borealis, Angelica lucida, Calamagrostis canadensis, Carex lenticularis var. lipocarpa,* *C. aquatilis var. aquatilis, C. utriculata, Chamerion angustifolium* ssp*. angustifolium, Equisetum arvense, E. pratense, Geranium erianthum, Heracleum maximum* (= *Heracleum lanatum*), *Rubus arcticus, Sanguisorba canadensis* (= *Sanguisorba stipulata*)*, Vaccinium vitis-idaea, V. uliginosum, Empetrum nigrum* and *Betula nana* (NatureServe 2008).

BpS Dominant and Indicator Species

|  |  |  |
| --- | --- | --- |
| **Symbol** | **Scientific Name** | **Common Name** |
| SABA3 | *Salix barclayi* | Barclay's willow |
| SAGL | *Salix glauca* | Grayleaf willow |
| SAPU15 | *Salix pulchra* | Tealeaf willow |
| SAAL | *Salix alaxensis* | Feltleaf willow |
| SACO2 | *Salix commutata* | Undergreen willow |
| ALVIS | *Alnus viridis ssp. sinuata* | Sitka alder |

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

Disturbance Description

This system appears to be relatively stable over time. Viereck and others (1992) note that the successional status of Closed Tall Willow Shrub (II.B.1.a) on sheltered upland slopes are unclear and that these stands may persist over long time periods. Insects and diseases also affect willows.

In 2015, an extensive literature search was done by Fire Effects Information System staff to locate information for a synthesis on Fire regimes of Alaskan alder and willow shrublands with few results for this BpS (Innes 2015). This review found no fires reported for Aleutian mesic-wet willows shrublands. Alder and willow communities can act as firebreaks but are also known to burn during extreme fire weather (Innes 2015).

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

Large patch

Adjacency or Identification Concerns

Issues or Problems

Native Uncharacteristic Conditions

See Innes 2015 for contemporary changes in fire regimes of Alaskan alder and willow shrublands.

Comments

In 2015 an extensive search was done by FEIS staff to locate information for a synthesis on Fire regimes of Alaskan alder and willow shrublands (Innes 2015). At that time, the scientific literature about fire regimes in Alaskan alder and willow shrublands was scarce. Descriptions of fire ignition, season, pattern, and size specific to alder and willow shrublands were not found in the literature.

For LANDFIRE National this model was created by Kori Blankenship and Keith Boggs based on the draft Aleutians Ecological Systems description (NatureServe 2008).

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 | 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** |
| SABA3 | *Salix barclayi* | Barclay's willow | Upper |
| SAGL | *Salix glauca* | Grayleaf willow | Upper |
| SAPU15 | *Salix pulchra* | Tealeaf willow | Upper |
| SAAL | *Salix alaxensis* | Feltleaf willow | Upper |

Description

This class represents the Mesic-Wet Willow Shrubland. See Vegetation Description for more information on species composition.

*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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Innes, Robin J. 2015. Fire regimes of Alaskan alder and willow shrublands. In: Fire Effects Information System, [Online]. U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station, Missoula Fire Sciences Laboratory (Producer). Available: http://www.fs.fed.us/database/feis/fire\_regimes/AK\_alder\_shrub/all.html [ 2016, August 3].

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Viereck, L.A., C.T. Dyrness, A.R. Batten and K.J. Wenzlick. 1992. The Alaska vegetation classification. Pacific Northwest Research Station, USDA Forest Service, Portland, OR. Gen. Tech. Rep. PNW-GTR286. 278 p.