

LANDFIRE Biophysical Setting Model

Biophysical Setting 7217010

Alaska Arctic Coastal Sedge-Dwarf-Shrubland

☐ This BPS is lumped with:

☐ This BPS is split into multiple models:

General Information

Contributors (also see the Comments field)

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Vegetation Type

Upland Shrubland

Map Zone

72

Model Zone

☒ Alaska

☐ N-Cent.Rockies

☐ California

☐ Pacific Northwest

☐ Great Basin

☐ South Central

☐ Great Lakes

☐ Southeast

☐ Northeast

☐ S. Appalachians

☐ Northern Plains

☐ Southwest

Dominant Species*

EMNI CARA5
SAFU CADE3
SAOV DECA18
BENA PUAN

General Model Sources

☐ Literature

☐ Local Data

☒ Expert Estimate

Geographic Range

This BpS is found along the coastline of arctic AK including along the Beaufort Sea, Chuckchi Sea and the Bearing Sea. It is a dominant system on the Yukon-Kuskokwim Delta.

Biophysical Site Description

This BpS is only periodically tidally flooded (i.e. floods less frequently than the brackish meadow or tidal marsh) and typically has permafrost.

Vegetation Description

Dominant dwarf-shrubs are *Empetrum nigrum*, *Salix fuscescens*, *Salix ovalifolia* and sometimes *Betula nana*. Diagnostic herbaceous species are *Carex rariflora*, *Calamagrostis deschampsiioides*, *Deschampsia caespitosa* and *Puccinellia andersonii*. Additional species include *Dupontia fisheri*, *Arctagrostis latifolia*, *Alopecurus alpinus*, *Tanacetum bipinnatum* and *Petasites frigidus*.

Disturbance Description

Coastal Sedge-Dwarf Shrublands are occasionally inundated by storm surge or extreme high tides, which are the dominant process shaping this system. Successional relationships for this type are unclear.

Adjacency or Identification Concerns

This BpS typically occurs immediately above the coastal brackish meadow or tidal marsh systems. Adjacent inland systems, which are not tidally influenced, include the Dwarf-Shrub-Sphagnum Peatland or Permafrost Plateau Dwarf-Shrub Lichen Tundra systems. This BpS is similar to the Coastal Brackish Meadow BpS but has > 25% shrub cover.

*Dominant Species are from the NRCS PLANTS database. To check a species code, please visit <http://plants.usda.gov>.

**Fire Regime Groups are: I: 0-35 year frequency, surface severity; II: 0-35 year frequency, replacement severity; III: 35-100-year frequency, mixed severity; IV: 35-100+ year frequency, replacement severity; V: 200+ year frequency, replacement severity

Native Uncharacteristic Conditions

Scale Description

Large patch

Issues/Problems

Comments

This model was created by Kori Blankenship and Keith Boggs based on the draft Arctic Ecological Systems description (Boggs et al. 2008).

Vegetation Classes

Class A 100 %

Mid Development 1 All Structures

Upper Layer Lifeform

- ☐ Herbaceous
☒ Shrub
☐ Tree

Indicator Species* and

Canopy Position

EMNI Upper
SAFU Upper
SAOV Upper
CARA5 Upper

Structure Data (for upper layer lifeform)

Min		Max
Cover	Open Shrub (25-74% shrub cover)	Closed Shrub (> 75% shrub cover)
Height	Dwarf Shrub (< 20 cm)	Dwarf Shrub (< 20 cm)
Tree Size Class	None	

☐ Upper layer lifeform differs from dominant lifeform.

Description

Zero plus years

This class represents the Coastal Sedge-Dwarf-Shrubland system. Refer to the vegetation description for common species.

No disturbances modeled.

Class B 0 %

[Not Used] [Not Used]

Upper Layer Lifeform

- ☐ Herbaceous
☐ Shrub
☐ Tree

Indicator Species* and

Canopy Position

Structure Data (for upper layer lifeform)

Min		Max
Cover		
Height		
Tree Size Class		

☐ Upper layer lifeform differs from dominant lifeform.

Description

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Class C 0 %

[Not Used] [Not Used]

Upper Layer Lifeform

- ☐ Herbaceous
☐ Shrub
☐ Tree

**Indicator Species* and
Canopy Position**

Structure Data (for upper layer lifeform)

	Min	Max
Cover		
Height		
Tree Size Class		

☐ Upper layer lifeform differs from dominant lifeform.

Description

Class D 0 %

[Not Used] [Not Used]

Upper Layer Lifeform

- ☐ Herbaceous
☐ Shrub
☐ Tree

**Indicator Species* and
Canopy Position**

Structure Data (for upper layer lifeform)

	Min	Max
Cover		
Height		
Tree Size Class		

☐ Upper layer lifeform differs from dominant lifeform.

Description

Class E 0 %

[Not Used] [Not Used]

Upper Layer Lifeform

- ☐ Herbaceous
☐ Shrub
☐ Tree

**Indicator Species* and
Canopy Position**

Structure Data (for upper layer lifeform)

	Min	Max
Cover		
Height		
Tree Size Class		

☐ Upper layer lifeform differs from dominant lifeform.

Description

Disturbances

Fire Regime Group:** NA

Historical Fire Size (acres)

Avg 0

Min 0

Max 0

Sources of Fire Regime Data

- ☐ Literature
☐ Local Data
☒ Expert Estimate

Fire Intervals

	Avg FI	Min FI	Max FI	Probability	Percent of All Fires
Replacement					
Mixed					
Surface					
All Fires					

Fire Intervals (FI):

Fire interval is expressed in years for each fire severity class and for all types of fire combined (All Fires). Average FI is central tendency modeled. Minimum and maximum show the relative range of fire intervals, if known. Probability is the inverse of fire interval in years and is used in reference condition modeling. Percent of all fires is the percent of all fires in that severity class.

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Additional Disturbances Modeled

- ☐ Insects/Disease ☐ Native Grazing ☐ Other (optional 1)
☐ Wind/Weather/Stress ☐ Competition ☐ Other (optional 2)

References

Boggs et al. 2008. International Ecological Classification Standard: Terrestrial Ecological Classifications. Draft Ecological Systems Description for the Alaska Arctic Region.

Jorgenson, T.M., J.E. Roth, E.R. Pullman, R.M. Burgess, M.K. Reynolds, A.A. Stickney, M.D. Smilh and T.M. Zimmer. 1997. An ecological land survey for the Colville River Delta, Alaska, 1996. ABR, Inc. Fairbanks, AK. 141 p.

Talbot, S.S., M.D. Fleming and C.J. Markon. 1985. U.S. Fish and Wildlife Service LANDSAT-Facilitated vegetation map and vegetation reconnaissance of Yukon Delta National Wildlife Refuge, Alaska. Resource Support, U.S. Fish and Wildlife Service, Anchorage, Alaska.

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