

LANDFIRE Biophysical Setting Model

Biophysical Setting 7617120

Alaska Arctic Coastal Brackish Meadow

- ☐ 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 Grassland/Herbaceous

Map Zone

76

Model Zone

- ☒ Alaska ☐ N-Cent.Rockies
☐ California ☐ Pacific Northwest
☐ Great Basin ☐ South Central
☐ Great Lakes ☐ Southeast
☐ Northeast ☐ S. Appalachians
☐ Northern Plains ☐ Southwest

Dominant Species*

CARA5 CAAQ
CADE3 DUFI
DEAR4 ERRU2
ERAN6 CARA4

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. In MZ76 this type is found in Nowacki ecoregions 8, 9 and 10.

Biophysical Site Description

This BpS is tidally inundated during storm tides and extreme high tides and, consequently is brackish (Talbot et al. 1985, Jorgenson et al. 1997, Boggs et al. 2008). The soils typically lack organics and permafrost is uncommon (Boggs et al. 2008).

Vegetation Description

Species composition is variable throughout the region. The main indicators on the Yukon-Kuskokwim Delta and the Kotzebue Sound Lowlands ecoregions (Nowacki et al. 2001) are *Carex rariflora* (>10%), *Calamagrostis deschampsii* and *Dendranthema arcticum*. Other common species include *Eriophorum russeolum*, *Carex ramenskii* (usually present but not dominant) and *Salix ovalifolia*. Additional dominants on the Beaufort Coastal Plain are *Eriophorum angustifolium*, *Carex aquatilis* and *Dupontia fisheri*.

Disturbance Description

Coastal Brackish Meadows are occasionally inundated by storm surge or extreme high tides, which are the dominant processes shaping this system. Over very long time scales this BpS is probably seral to its adjacent systems (Alaska Arctic Tidal Marsh and Alaska Arctic Coastal Sedge-Dwarf-Shrubland), but this is not considered in this model.

Adjacency or Identification Concerns

This BpS often occurs immediately inland of the Alaska Arctic Tidal Marsh and seaward of the Alaska

*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

Arctic Coastal Sedge-Dwarf-Shrubland systems. It is similar to the Coastal Sedge-Dwarf-Shrubland BpS but has < 25% shrub cover.

Native Uncharacteristic Conditions

Scale Description

Large patch

Issues/Problems

Comments

This system was created for the AK Arctic region and did not receive review for other regions in the state.

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

CARA5 Upper
CADE3 Upper
ERAN6 Upper
CAAQ Upper

Structure Data (for upper layer lifeform)

	Min	Max
Cover	Herbaceous	Herbaceous
Height	Herbaceous	Herbaceous
Tree Size Class	None	

☐ Upper layer lifeform differs from dominant lifeform.

Description

Zero plus years

This class represents the Coastal Brackish Meadow system. Refer to the vegetation description for common species. Shrubs may be present but would have <25% cover.

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. Smith and T.M. Zimmer. 1997. An ecological land survey for the Colville River Delta, Alaska, 1996. ABR, Inc. Fairbanks, AK. 141 p.

Nowacki, G., P. Spencer, M. Fleming, T. Brock and T. Jorgenson. 2001. Unified ecoregions of Alaska. U.S. Department of the Interior, U.S. Geological Survey. Open file-report 02-297. 2 page map.

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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