

LANDFIRE Biophysical Setting Model

Biophysical Setting 7617260

Aleutian Tidal Marsh

☒ This BPS is lumped with: Alaska Arctic Tidal Flat

☐ This BPS is split into multiple models: Tidal flats are lumped with the Tidal Marsh because they are often barren or sparsely vegetated and therefore may not be mappable as a distinct BpS.

General Information

Contributors (also see the Comments field) **Date** 10/23/2008

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Modeler 3 **Reviewer**

Vegetation Type

Wetlands/Riparian

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*

CALY3 HIVU2
CAGL4 RUCI2
CAMA8 PUCCI
HITE PLMA3

General Model Sources

- ☐ Literature
☐ Local Data
☒ Expert Estimate

Geographic Range

This system occurs on the Alaska Peninsula and Aleutian Islands.

Biophysical Site Description

The following information was taken from the draft Aleutian Tidal Marsh Ecological System description (NatureServe 2008):

This system consists of herbaceous marshes with >10% vascular species cover that are subject to regular tidal inundation. The marshes are typically salt or brackish. Some, however, are primarily freshwater that are infrequently flooded by storm surges or extreme high tides. Tidal marshes are primarily associated with estuaries or coastal lagoons or other locations protected from wave action. Lagoons with outer spits and beaches are well developed and common in the Aleutians. Tidal marshes, however, are not extensive within these lagoons because of constant winds and waves, plus winter sea ice may be extensive and blown to shore, battering the vegetation. It appears that tectonic/isostatic uplift is common, lifting the marshes above the tide.

Vegetation Description

The following information was taken from the draft Aleutian Tidal Marsh Ecological Systems description (NatureServe 2008):

Tidal flats have <10% vascular species cover, and are dominated by bare ground. Tidal marshes have >10% vascular species. Two existing vegetation map classes dominate the system: tidal sedge and tidal herbaceous. Carex lyngbyei, Carex glareosa and Carex mackenziei dominate the tidal sedge class. Other species include Hippuris tetraphylla, Hippuris vulgaris, Ruppia cirrhosa (= Ruppia spiralis), Stellaria humifusa and Zannichellia palustris. Puccinellia spp. or Plantago maritima dominate the tidal herbaceous

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**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

map class, often with <25% cover.

Disturbance Description

Common disturbances in the marsh and mudflat system can include freshwater and tidal flooding, sediment deposition, storm surge, ice shove, tectonic uplift or subsidense and isostatic rebound.

Adjacency or Identification Concerns

Native Uncharacteristic Conditions

This type is not departed from its "Reference Condition."

Scale Description

Small patch

Issues/Problems

Comments

This model was created by Kori Blankenship and Keith Boggs based on information from the draft Aleutians Ecological Systems description (NatureServe 2008).

Vegetation Classes

Class A 100 %

Mid Development 1 All Structures

Upper Layer Lifeform

- ☒ Herbaceous
☐ Shrub
☐ Tree

Indicator Species* and

Canopy Position

CAREX Upper
HITE Upper
PUCCI Upper
PLMA3 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 Aleutian Tidal Marsh and Tidal Flat systems. See Vegetation Description for more information on species composition.

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, K., S.C. Klein, J. Grunblatt and B. Koltun. 2003. Landcover classes, ecoregions and plant associations of Katmai National Park and Preserve. Alaska Natural Heritage Program, Environment and Natural Resources Institute, University of Alaska Anchorage. 274 pp.
- Fleming, M.D. and P. Spencer. 2007. Kodiak Archipelago land cover classification users guide. SAIC at USGS Alaska Science Center, Anchorage, AK. 77 pp.
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- Talbot, S.S., S.L. Talbot and W. B. Schofield. 2006. Vascular flora of Izembek National Wildlife Refuge, westernmost Alaska Peninsula, Alaska. *Rhodora* 108(935):249-293.
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