LANDFIRE Biophysical Setting Model

Biophysical Setting 7816650 Alaskan Pacific Maritime Coastal Meadow and Slough-Levee

☑ *This BPS is lumped with: see below*

☐ *This BPS is split into multiple models: Alaskan Pacific Maritime Coastal Dune, Beach, and Beach Meadow (1666).*

General Information

Contributors (also see the Comments field **Date** 4/1/2008

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Vegetation Type

Upland Grassland/Herbaceous

Map Zone

78

Model Zone

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

Dominant Species*

HOPE POEM
LEMO8 FERU2
LAJAM DESCH
EQVA LUNO

General Model Sources

☑ Literature
☐ Local Data
☑ Expert Estimate

Geographic Range

This system is found along the North Pacific coastline from Prince William Sound through southeast AK.

Biophysical Site Description

This system includes moist and wet meadows associated with delta deposits and uplifted marsh and beach deposits as well as coastal sandy beaches, meadows, beach dunes and sand spits. Vegetation zonation in this system is related to exposure to salt spray and disturbance. Sandy soils may be periodically exposed to overwash from storm surges and exceptionally high tides, but they drain rapidly and precipitation rapidly leaches salt from the system (Boggs 2000).

Vegetation Description

Plant communities on these coastal sand systems can be dominated by a variety of grasses and forbs. Salt tolerant forb communities featuring Honckenya peploides and Mertensia maritima var. asiatica (not common in SE AK) often occur just above mean high tide. As dune height and distance from the ocean increases, the sites are dominated by Leymus mollis then co-dominated by Lathyrus maritimus (Lathyrus japonicus var. maritimus) and Leymus mollis. These sites are above the high tide line but still experience storm surges. Tidally flooded dune slacks may be colonized by herbaceous communities dominated by Equisetum variegatum, and may eventually succeed to shrub communities with Malus fusca, Alnus rubra, Myrica gale (not common in SE AK) and Salix spp. (not common in SE AK except in riparian areas).

Rich forb types occur on dunes and back beaches even further removed from the ocean. Species composition is variable but may include any of the following: Deschampsia beringensis, Festuca rubra, Potentilla egedii, Castilleja spp., Heracleum maximum, Parnassia palustris, Lupinus nootkatensis,

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Angelica lucida, A. genuflecta, Carex mackenziei, C. lyngbyei, Hordeum brachyantherum Poa eminens, Achillea millefolium ssp. borealis, Fragaria chiloensis, Calamagrostis canadensis, Ligusticum scoticum and Senecio pseudoarnica.

Disturbance Description

Vegetation dynamics in beach meadows are driven by salinity and sand deposition both of which vary depending on distance from the water (i.e. possibility of inundation). Beach succession is not always unidirectional; shifting sand or beach subsidence may cause less salt tolerant species to die and halophytic herbs to regain dominance.

These communities are relatively stable over time although isostatic rebound may allow spruce communities to eventually occupy what are now meadow sites (in the southern areas of SE Alaska, where the rate of isostatic rebound is much slower, this may not be so obvious).

Adjacency or Identification Concerns

This type is found adjacent to the coastline.

Native Uncharacteristic Conditions

Scale Description

Small patch, can be linear.

Issues/Problems

Successional stages were not defined for this type because it was determined that the classes could not be mapped using LANDFIRE's methodology.

Comments

The model description was developed based on information from the draft Ecological Syestems descriptions (NatureServe 2008) for the Alaskan Pacific Maritime Coastal Meadow and Slough-Levee and Alaskan Pacific Maritime Coastal Dune, Beach, and Beach Meadow systems. Amy Miller and Karen Dillman provided input on the description and the VDDT model.

Vegetation Classes

Class A 100 %

Mid Development 1 All Structures

Upper Layer Lifeform

- ☑ Herbaceous
- ☐ Shrub
- ☐ Tree

Indicator Species* and Canopy Position

LEMO8	Upper
HOPE	Upper
LAJAM	Upper
POEM	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 relatively stable coastal meadow system dominated by herbaceous communities. Beach meadows that are exposed to the open ocean are more likely to be buried or flooded rather than inland areas due to the proximity to severe weather in outer coast areas. Species composition is variable (refer to the Vegetation Description for more information).

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This type is relatively stable over time. The possibility of storm surge (only relevant for areas near the water's edge) depositing sediment and burying existing vegetation is included in the model as Option 1 but the probability associated with it is not meaningful (it is a place holder due to lack of information).

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

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

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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 fir combined (All Fires). Average FI is central tendency modeled. Minimum and maximum show the relative range of fire intervals, if known. Probability is the inver 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.

Additional Disturbances Modeled

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

References

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