LANDFIRE Biophysical Setting Model

Biophysical Setting 7716430 Alaskan Pacific Maritime Alpine Dwarf-Shrubland

☑ *This BPS is lumped with: See below*

☐ *This BPS is split into multiple models: The Alpine Herbaceous Dwarf Shrubland BpS represents the following Ecological Systems: Alaska Sub-boreal and Maritime Alpine Mesic Herbaceous Meadow (1645), Maritime Alpine Sparse Dwarf-Shrub (1674), Maritime High Alpine Herbaceous (1675). These types may be distinct existing vegetation communities but little is known about their successional relationships. Furthermore, these types may be difficult to map separately because they occur either adjacent or in a mosaic with one another and several of them are small patch systems. For these reasons, these types are modeled as one BpS.*

General Information

Contributors (also see the Comments field **Date** 7/30/2008

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Vegetation Type

Upland Shrubland

Map Zone

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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	CAMA11
PHAL4	LUNO
HAST3	VASI
ARAR9	GEER2

General Model Sources

☐ Literature
☐ Local Data
☑ Expert Estimate

Geographic Range

This BpS is found from Prince William Sound south through southeast AK.

Biophysical Site Description

Alpine herb and shrub systems occur on a variety of sites in the subalpine and alpine zones. Much of the alpine zone will be under snow for most of the year leading to a short growing season. Environmental conditions are often harsh, particularly on exposed summits and ridge tops where vegetation may be sparse with a high proportion of exposed rock or soil.

Vegetation Description

This BpS represents several existing vegetation types so species composition is highly variable.

Shrub species may include: Artemisia arctica, Cassiope mertensiana, Empetrum nigrum, Harrimanella stelleriana, Luetkea pectinata, Loiseleuria procumbens, Phyllodoce aleutica, P. glanduliflora, Salix arctica, S. reticulata, S. rotundifolia, Sibbaldia procumbens, Vaccinium uliginosum and Vaccinium vitis-idaea.

Herbceous species may include: Aconitum delphiniifolium, Anemone narcissiflora, Astragalus alpinus,

*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 seve

Athyrium filix-femina, Carex macrochaeta, Castilleja unalaschcensis, Chamerion angustifolium, Chamerion latifolium, Calamagrostis canadensis, Geranium erianthum, Lupinus nootkatensis, Minuartia arctica, Nephrophyllidium crista-galli, Saxifraga bracteata, Saxifraga bronchialis, Silene acaulis, Sanguisorba canadensis, Senecio triangularis, Valeriana sitchensis, Veratrum viride and Viola spp.

Disturbance Description

These communities tend to be quite stable over time. Soil disturbance, such as soil creep or freeze-thaw cycles, is likely the main disturbance factor although snow avalanche is possible in some areas. Wind plays a role in inhibiting vegetation growth on exposed summits and ridge tops. Reduced snow levels could allow invasion of other plants and lead to succession to another system. This type is unlikely to carry fire.

Adjacency or Identification Concerns

Native Uncharacteristic Conditions

Scale Description

Issues/Problems

It is unclear whether there is a successional relationship between herbs and shrubs in some alpine types or whether soil differences result in the prevalence of different life forms on different sites. Because of the uncertainty, this system is represented by a single seral stage.

Comments

This model was based on the draft Maritime Ecological Systems description (NatureServe 2008) with input by Tom DeMeo.

Vegetation Classes

Class A **100 %**

Mid Development 1 All Structures

Upper Layer Lifeform

- ☐ Herbaceous
- ☑ Shrub
- ☐ Tree

Indicator Species* and Canopy Position

EMNI	Upper
PHAL4	Upper
CAMA11	Upper
LUNO	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)	Low Shrub (20 cm to 1.5 m)
Tree Size Class	None	

☐ Upper layer lifeform differs from dominant lifeform.

Herbaceous vegetation may also be dominant.

Description

Zero plus years

Alpine Herbaceous-Dwarf Shrub communities may include a diverse mix of species and species assemblages. The Class Indicator Species listed are not true indicators -- refer to the Vegetation Description for species information.

No disturbances modeled.

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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

Disturbances

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Fire Regime Group:** NA

Historical Fire Size (acres)

Avg 0
Min 0
Max 0

Sources of Fire Regime Data

- [ ] Literature
- [ ] Local Data
- [x] 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 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)
- [ ] Other (optional 2)

References

NatureServe. 2008. International Ecological Classification Standard: Terrestrial Ecological Classifications. Draft Ecological Systems Description for Alaska Maritime Region.

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