LANDFIRE Biophysical Setting Model

Biophysical Setting 7816590 Alaskan Pacific Maritime Mountain Hemlock Peatland

☑ *This BPS is lumped with: see below*

☐ *This BPS is split into multiple models: Alaskan Pacific Maritime Dwarf-Shrub-Sphagnum Peatland (1658). Dwarf Shrub Sphagnam Peatland and Mt. hemlock Peatland often occur in a mosaic especially at higher elevations.*

General Information

Contributors (also see the Comments field **Date** 9/15/2008

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Vegetation Type

Wetlands/Riparian

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*

TSME	ANPO
VAUL	SPHAG2
ELPY	NECR2
EMNI	CAAN10

General Model Sources

☑ Literature
☐ Local Data
☑ Expert Estimate

Geographic Range

This system is found from Kenai Fjords through southeast AK.

Biophysical Site Description

This peatland system typically occurs on sloping terrain (10-50% slopes) and may develop on fairly steep sideslopes in areas with very high rainfall and low permeability (such as Prince William Sound and Kenai Fjords), but can also occur in basins or on flat terrain (NatureServe 2008). Soils are acidic and are usually saturated throughout the growing season (NatureServe 2008). This system occurs from sea level to treeline in the northern portion of the range (Kenai Fjords to Glacier Bay) and at higher elevations (usually above 500m, Banner et al. 1988) in the southern portion of its range (southeast AK and BC).

Vegetation Description

This type is often a mosaic of forested and non-forested peatlands. Stunted forests of Tsuga mertensiana (more common), Cupressus nootkatensis, or Picea sitchensis, with Elliottia pyroliflora and Vaccinium ovalifolium are interspersed with dwarf shrub and herbaceous associations featuring Empetrum nigrum, Vaccinium uliginosum, Vaccinium caespitosum, Phyllodoce glanduliflora, Andromeda polifolia, Kalmia polifolia and Oxycoccus microcarpus. Common herbaceous species include Nephrophyllidium crista-galli, Caltha leptosepala, Trichophorum caespitosum, Dodecatheon pulchellum, Drosera spp., Geum calthifolium, Cornus canadensis, Carex pauciflora, C. anthoxanthea, C. livida, C. pluriflora, C. sitchensis and Eriophorum angustifolium. Sphagnum spp. (especially S. fuscum) is usually abundant in the ground layer (DeVelice et al. 1999, Boggs et al. in prep.). Other bryophytes include Rhytidiadelphus loreus, Dicranum spp., Pleurozium schreberi.

*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

Disturbance Description

The successional dynamics of this system are unknown but it is likely that this system is stable over long time periods (Viereck et al. 1992, II.A.2.b). Fluctuations in the water table may affect this system over time. An occasional wind event may affect this system but its effect would be minimal.

Adjacency or Identification Concerns

This BpS may be found adjacent to ponds with floating, emergent vegetation or sedge dominated fens. It is also found with in the forest mosaic.

Native Uncharacteristic Conditions

Scale Description

Small patch

Issues/Problems

Comments

This model was based on input from experts who attended the LANDFIRE Juneau Modeling Meeting (Feb. 08) and refined by Rick Turner. Review comments resulted in minor edits to the Biophysical Site and Vegetation Description sections to encompass the expression of this system in the northern part of its range.

Vegetation Classes

Class A 100%

Mid Development 1 All Structures

Upper Layer Lifeform

- ☐ Herbaceous
- ☐ Shrub
- ☑ Tree

Indicator Species* and Canopy Position

TSME	Upper
TRCA30	Lower
NECR2	Lower
SPHAG2	Lower

Structure Data (for upper layer lifeform)

	Min	*Max*
Cover	Woodland (10-24% tree cover)	Open (25-59% tree cover)
Height	Dwarf Tree (< 3 m)	Tree (> 3 m)
Tree Size Class	Pole 5–9" (swd)/5–11" (hwd)	

☐ Upper layer lifeform differs from dominant lifeform.

Description

Zero plus years

This class represents the Mountain Hemlock Peatland BpS. See the Vegetation Description for a list of common species.

This community will persist under appropriate hydrological conditions. No disturbances were 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

Banner, A., Hebda, R.J., Oswald, E.T., Pojar, J., Trowbridge, R. 1988. Wetlands of Pacific Canada. In: Wetlands of Canada. National Wetlands Working Group. Ecological Land Classification Series No. 24. Environment Canada, Ottawa, and Polyscience Publications Inc., Montreal. 452 p.

Boggs, K. et al. (in preparation). Kenai Fjords User's Guide.

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

DeVelice, R., C. Hubbard, K. Boggs, S. Boudreau, M. Potkin, T. Boucher, and C. Wertheim. 1999. Plant community types of the Chugach National Forest: Southcentral Alaska. U.S.D.A., Forest Service: Chugach National Forest, Alaska Region, Anchorage, Alaska. Tech. Pub. R10-TP-76. 375 p.

Viereck, L., Dryness, C., Batten A. and K. Wenzlick. 1992. The Alaska vegetation classification. General Technical Report PNW-GTR-286. Portland, Oregon. USDA Forest Service, Pacific Northwest Research Station. 278 p.

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