

LANDFIRE Biophysical Setting Model

Biophysical Setting 6716890

Alaska Arctic Non-Acidic Dryas Dwarf-Shrubland

☐ This BPS is lumped with:

☐ This BPS is split into multiple models:

General Information

Contributors (also see the Comments field) **Date** 10/17/2008

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Modeler 2 Keith Boggs Ankwb@uaa.alaska.edu **Reviewer**
Modeler 3 **Reviewer**

Vegetation Type

Upland Shrubland

Map Zone

67

Model Zone

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

Dominant Species*

DROC SAAR27
DRIN4 SARE2
SAOP CATE11
RHLA2 ARRU

General Model Sources

- ☐ Literature
☐ Local Data
☒ Expert Estimate

Geographic Range

This BpS occurs throughout arctic AK, from the Bristol Bay lowlands in southwestern AK to the North Slope on the Arctic Ocean.

Biophysical Site Description

This is a common system on non-acidic substrates (pH typically >6) in the hills and mountains of arctic Alaska. Common slope positions include valleys, sideslopes, summits and ridges. Cover is sparse due to extreme exposure, exposed bedrock or unstable substrates. Sites are typically dry to mesic and are rare on late-lying snowbeds. Non-acidic sites are more common near floodplains, on carbonate substrates, and loess deposition areas. This system may be found as small patches on river bluffs on the Beaufort Coastal Plain. It does not occur on flat thaw-lake plains. The soils are typically thin, stony, and well-drained.

Vegetation Description

Dwarf-shrub cover is >25% and dominated by Dryas spp. Dryas octopetala and/or Dryas integrifolia codominate with Saxifraga oppositifolia and Rhododendron lapponicum. Other common dwarf-shrubs include Salix arctica, Salix reticulata, Cassiope tetragona and Arctostaphylos rubra. Herbaceous species include Lupinus arcticus, Carex scirpoidea, Carex rupestris, Oxytropis nigrescens, Potentilla uniflora, Artemisia senjavinensis, Artemisia globularia, Artemisia furcata, Hedysarum boreale ssp. mackenziei, Saxifraga oppositifolia and Equisetum spp. Lichens such as Thamnia spp. and Cetraria islandica also occur.

Disturbance Description

Successional relationships are unclear. Cryoturbation is the primary disturbance affecting this BpS.

*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

Adjacency or Identification Concerns

Species composition can not be used to separate this BpS from the Alaska Arctic Acidic Dryas Dwarf-Shrubland BpS. This type should first be mapped as Dryas Dwarf-Shrubland and then split into acidic vs. nonacidic using the bedrock geology map.

Native Uncharacteristic Conditions

Scale Description

Small to large patch size.

Issues/Problems

Comments

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

DROC Upper
DRIN4 Upper
SAOP Upper
RHLA2 Upper

Structure Data (for upper layer lifeform)

	Min	Max
Cover	Open Shrub (25-74% shrub cover)	Open Shrub (25-74% shrub cover)
Height	Dwarf Shrub (< 20cm)	Low Shrub (20cm to 1.5m)
Tree Size Class	None	

- ☒ Upper layer lifeform differs from dominant lifeform.

Herbaceous inclusions may be common in some areas.

Description

Zero plus years

This class represents the Non-Acidic Dryas Dwarf-Shrubland system. Refer to the vegetation description for common species. Low shrubs can occur but with less than 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.

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