Ecological site R226XY086AK
Rubble Lava Flow (AK653 St Paul Island)

Accessed: 05/02/2024

General information

Provisional. A provisional ecological site description has undergone quality control and quality assurance review. It contains a working state and transition model and enough information to identify the ecological site.

Table 1. Dominant plant species

Tree	Not specified
Shrub	Not specified
Herbaceous	Not specified

Physiographic features

This site occurs as a lava flow on the western part of the island. Vegetated areas are interspersed throughout the site.

Table 2. Representative physiographic features

Landforms	(1) Lava flow
Elevation	40–300 ft
Slope	0–60%

Climatic features

Table 3. Representative climatic features

Frost-free period (average)	120 days
Freeze-free period (average)	100 days
Precipitation total (average)	24 in

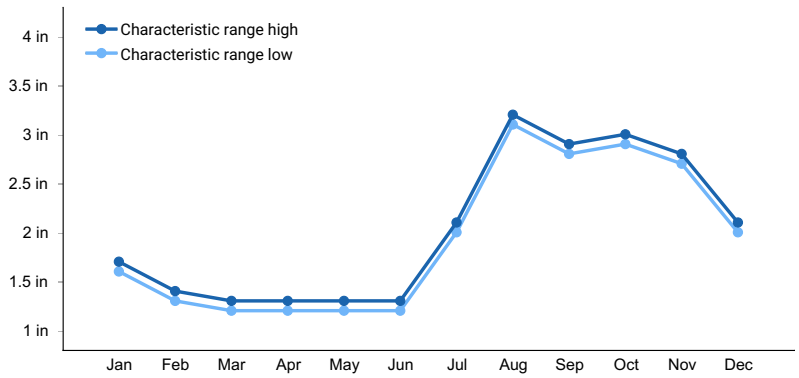

Figure 1. Monthly precipitation range

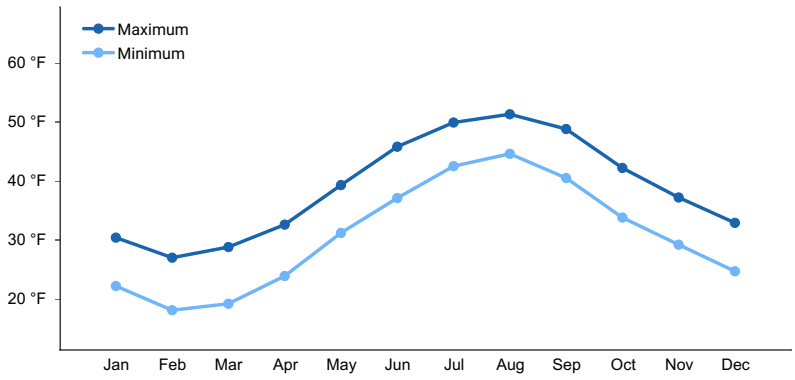

Figure 2. Monthly average minimum and maximum temperature

Influencing water features

Soil features

Soils are shallow and well drained. Soils are very high in organic matter content and soil pH is moderately acid. Runoff is low and permeability is very slow.

Table 4. Representative soil features

Surface texture	(1) Cobbly silt (2) Mucky
Family particle size	(1) Loamy
Drainage class	Well drained
Permeability class	Very slow
Soil depth	10–20 in
Surface fragment cover <=3"	0%
Surface fragment cover >3"	0%
Available water capacity (0-40in)	8.6–8.8 in
Calcium carbonate equivalent (0-40in)	0%
Electrical conductivity (0-40in)	0 mmhos/cm
Sodium adsorption ratio (0-40in)	0
Soil reaction (1:1 water) (0-40in)	5.6–6
Subsurface fragment volume <=3" (Depth not specified)	0%
Subsurface fragment volume >3" (Depth not specified)	0%

Ecological dynamics

State and transition model

Ecosystem states

1. Empetrum nigrum/Lupinus nootkatensis

State 1 submodel, plant communities

1.1. Empetrum nigrum/Lupinus nootkatensis

State 1
Empetrum nigrum/Lupinus nootkatensis

Community 1.1
Empetrum nigrum/Lupinus nootkatensis

Shrubs make up about 60% of the composition, forbs about 30% and grasses and sedges 10% of the composition. Total annual vascular herbage production is 1380 pounds/acre. Total live lichen biomass is 5000 pounds/acre.

Additional community tables

Table 5. Community 1.1 plant community composition

Group	Common Name	Symbol	Scientific Name	Annual Production (Lb/Acre)	Foliar Cover (%)
Shrub/Vine					
1				850–900	
	black crowberry	EMNI	*Empetrum nigrum*	475–500	–
	arctic willow	SAAR27	*Salix arctica*	335–345	–
	northern willow	SAAR6	*Salix arctophila*	45–55	–
	northern mountain cranberry	VAVIM	*Vaccinium vitis-idaea ssp. minus*	0–1	–
	cloudberry	RUCH	*Rubus chamaemorus*	0–1	–
Grass/Grasslike					
1				125–175	
	sedge	CAREX	*Carex*	30–40	–
	wideleaf polargrass	ARLA2	*Arctagrostis latifolia*	20–30	–
	bluejoint	CACAL3	*Calamagrostis canadensis var. langsdorffii*	20–30	–
	common woodrush	LUMU2	*Luzula multiflora*	15–25	–
	alpine fescue	FEBR	*Festuca brachyphylla*	5–15	–
	Alaska fescue	FEBR2	*Festuca brevissima*	0–10	–
	Kentucky bluegrass	POPR	*Poa pratensis*	0–10	–
	spike trisetum	TRSP2	*Trisetum spicatum*	5–10	–
	smallflowered woodrush	LUPA4	*Luzula parviflora*	5	–
	alpine timothy	PHAL2	*Phleum alpinum*	0–5	–

	bluegrass	POA	*Poa*	0–5	–
	Bering's tufted hairgrass	DEBE2	*Deschampsia beringensis*	0–5	–
	mountain harebell	CALA7	*Campanula lasiocarpa*	0–1	–
	shortstalk sedge	CAPO	*Carex podocarpa*	0–1	–
	Siberian oatgrass	TRSI2	*Trisetum sibiricum*	0–1	–
Forb					
1				350–375	
	Nootka lupine	LUNO	*Lupinus nootkatensis*	220–230	–
	seacoast angelica	ANLU	*Angelica lucida*	50–55	–
	woodfern	DRYOP	*Dryopteris*	35–45	–
	boreal sagebrush	ARAR9	*Artemisia arctica*	5–15	–
	Pacific hemlockparsley	COGM	*Conioselinum gmelinii*	10–15	–
	whorled lousewort	PEVE	*Pedicularis verticillata*	5–10	–
	Bering chickweed	CEBEG3	*Cerastium beeringianum ssp. beeringianum var. grandiflorum*	5–10	–
	Danish scurvygrass	COGR6	*Cochlearia groenlandica*	0–5	–
	Lapland cornel	COSU4	*Cornus suecica*	0–1	–
	boreal draba	DRBO	*Draba borealis*	0–1	–
	larkspurleaf monkshood	ACDE2	*Aconitum delphiniifolium*	0–1	–
	larkspurleaf monkshood	ACDEC	*Aconitum delphiniifolium ssp. chamissonianum*	0–1	–
	boreal yarrow	ACMIB	*Achillea millefolium var. borealis*	0–1	–
	sweetflower rockjasmine	ANCH	*Androsace chamaejasme*	0–1	–
	arctic stitchwort	MIAR3	*Minuartia arctica*	0–1	–
	Bering chickweed	CEBE2	*Cerastium beeringianum*	0–1	–
	Hornemann's willowherb	EPHOB	*Epilobium hornemannii ssp. behringianum*	0–1	–
	whitish gentian	GEAL2	*Gentiana algida*	0–1	–
	villous cinquefoil	POVI4	*Potentilla villosa*	0–1	–
	moss campion	SIAC	*Silene acaulis*	0–1	–
	northern starwort	STCA	*Stellaria calycantha*	0–1	–
	arctic starflower	TREU	*Trientalis europaea*	0–1	–
	arctic starflower	TREUA	*Trientalis europaea ssp. arctica*	0–1	–
	alpine violet	VILA10	*Viola labradorica*	0–1	–
	common chickweed	STME2	*Stellaria media*	0	–
	alpine bistort	POVI3	*Polygonum viviparum*	0	–
Lichen					
1				0–10	
	whiteworm lichen	THAMN3	*Thamnolia*	0–10	–

Animal community

This site provides high value winter forage for reindeer. Willow growing on this site is also high forage value during

the winter and early spring months.

Contributors

Swanson

Rangeland health reference sheet

Interpreting Indicators of Rangeland Health is a qualitative assessment protocol used to determine ecosystem condition based on benchmark characteristics described in the Reference Sheet. A suite of 17 (or more) indicators are typically considered in an assessment. The ecological site(s) representative of an assessment location must be known prior to applying the protocol and must be verified based on soils and climate. Current plant community cannot be used to identify the ecological site.

Author(s)/participant(s)	
Contact for lead author	
Date	
Approved by	
Approval date	
Composition (Indicators 10 and 12) based on	Annual Production

Indicators

1. **Number and extent of rills:**

   _____

2. **Presence of water flow patterns:**

   _____

3. **Number and height of erosional pedestals or terracettes:**

   _____

4. **Bare ground from Ecological Site Description or other studies (rock, litter, lichen, moss, plant canopy are not bare ground):**

   _____

5. **Number of gullies and erosion associated with gullies:**

   _____

6. **Extent of wind scoured, blowouts and/or depositional areas:**

   _____

7. **Amount of litter movement (describe size and distance expected to travel):**

   _____

8. **Soil surface (top few mm) resistance to erosion (stability values are averages - most sites will show a range of values):**

   _____

9. **Soil surface structure and SOM content (include type of structure and A-horizon color and thickness):**

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10. **Effect of community phase composition (relative proportion of different functional groups) and spatial distribution on infiltration and runoff:**

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11. **Presence and thickness of compaction layer (usually none; describe soil profile features which may be mistaken for compaction on this site):**

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12. **Functional/Structural Groups (list in order of descending dominance by above-ground annual-production or live foliar cover using symbols: >>, >, = to indicate much greater than, greater than, and equal to):**

    Dominant:

    Sub-dominant:

    Other:

    Additional:

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13. **Amount of plant mortality and decadence (include which functional groups are expected to show mortality or decadence):**

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14. **Average percent litter cover (%) and depth (in):**

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15. **Expected annual annual-production (this is TOTAL above-ground annual-production, not just forage annual-production):**

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16. **Potential invasive (including noxious) species (native and non-native). List species which BOTH characterize degraded states and have the potential to become a dominant or co-dominant species on the ecological site if their future establishment and growth is not actively controlled by management interventions. Species that become dominant for only one to several years (e.g., short-term response to drought or wildfire) are not invasive plants. Note that unlike other indicators, we are describing what is NOT expected in the reference state for the ecological site:**

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17. **Perennial plant reproductive capability:**
