USDA Natural Resources Conservation Service

Ecological site R240XY088AK
Rocky Volcanic Cone

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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 on steep volcanic cone slopes.

Table 2. Representative physiographic features

Landforms	(1) Volcanic cone
Elevation	37–183 m
Slope	100%

Climatic features

Table 3. Representative climatic features

Frost-free period (average)	120 days
Freeze-free period (average)	100 days
Precipitation total (average)	610 mm

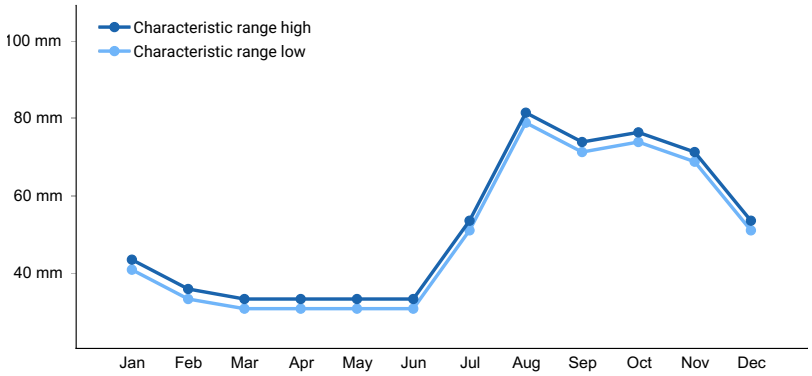

Figure 1. Monthly precipitation range

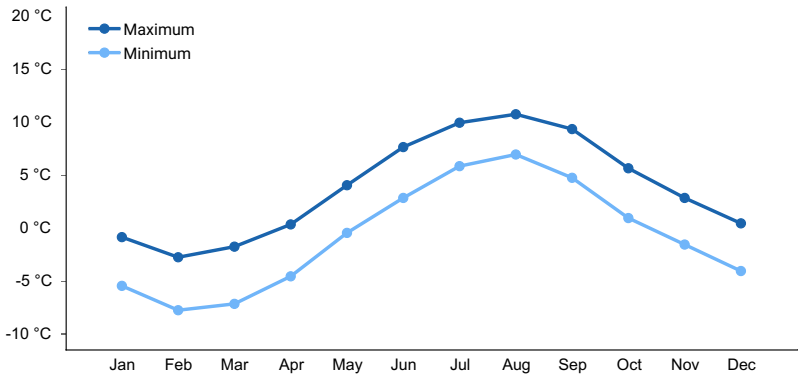

Figure 2. Monthly average minimum and maximum temperature

Influencing water features

Soil features

Soils are deep to very deep and well drained. Soils are very gravelly or very cobbly and textures are medium to coarse. Soil pH is moderately acid. Runoff is negligible and permeability is very rapid.

Table 4. Representative soil features

Surface texture	(1) Very cobbly silt loam
Family particle size	(1) Loamy
Drainage class	Well drained
Permeability class	Very rapid
Soil depth	102–165 cm
Surface fragment cover <=3"	0%
Surface fragment cover >3"	0%
Available water capacity (0-101.6cm)	9.14–9.65 cm
Calcium carbonate equivalent (0-101.6cm)	0%
Electrical conductivity (0-101.6cm)	0 mmhos/cm
Sodium adsorption ratio (0-101.6cm)	0
Soil reaction (1:1 water) (0-101.6cm)	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. Salix arctica/Artemisia tilesii

State 1 submodel, plant communities

1.1. Salix arctica/Artemisia tilesii

State 1
Salix arctica/Artemisia tilesii

Community 1.1
Salix arctica/Artemisia tilesii

Shrubs make up about 40% of the composition, forbs about 50% and grasses and sedges 10% of the composition. Total annual vascular herbage production is 1660 pounds/acre. Total live lichen biomass is 1000 pounds/acre.

Additional community tables

Table 5. Community 1.1 plant community composition

Group	Common Name	Symbol	Scientific Name	Annual Production (Kg/Hectare)	Foliar Cover (%)
Shrub/Vine					
1				701–757	
	northern willow	SAAR6	*Salix arctophila*	336–342	–
	oval-leaf willow	SAOVC	*Salix ovalifolia var. cyclophylla*	185–191	–
	black crowberry	EMNI	*Empetrum nigrum*	168–179	–
	netleaf willow	SARE2	*Salix reticulata*	17–28	–
	lingonberry	VAVI	*Vaccinium vitis-idaea*	0–6	–
Grass/Grasslike					
1				196–252	
	shortstalk sedge	CAPO	*Carex podocarpa*	95–106	–
	alpine timothy	PHAL2	*Phleum alpinum*	50–67	–
	showy sedge	CASP5	*Carex spectabilis*	34–45	–
	fescue	FESTU	*Festuca*	0–11	–
	arctic bluegrass	POARA2	*Poa arctica ssp. arctica*	0–11	–
	spike trisetum	TRSP2	*Trisetum spicatum*	0–6	–
	bluegrass	POA	*Poa*	0–6	–
	woodrush	LUZUL	*Luzula*	0–1	–
	arctic lupine	LUAR2	*Lupinus arcticus*	–	–
Forb					
1				897–953	
	Tilesius' wormwood	ARTI	*Artemisia tilesii*	219–235	–

	Nootka lupine	LUNO	*Lupinus nootkatensis*	118–135	–
	seacoast angelica	ANLU	*Angelica lucida*	95–106	–
	Pacific hemlockparsley	COGM	*Conioselinum gmelinii*	84–95	–
	arctic cinquefoil	PONA6	*Potentilla nana*	73–78	–
	field sagewort	ARCAB4	*Artemisia campestris ssp. borealis var. borealis*	50–62	–
	whitish gentian	GEAL2	*Gentiana algida*	45–56	–
	villous cinquefoil	POVI4	*Potentilla villosa*	39–50	–
	captiate valerian	VACA3	*Valeriana capitata*	11–22	–
	Bering chickweed	CEBE2	*Cerastium beeringianum*	11–22	–
	larkspurleaf monkshood	ACDE2	*Aconitum delphiniifolium*	11–22	–
	boreal draba	DRBO	*Draba borealis*	11–22	–
	whorled lousewort	PEVE	*Pedicularis verticillata*	6–17	–
	yellow marsh saxifrage	SAHI3	*Saxifraga hirculus*	6–17	–
	arctic raspberry	RUARS	*Rubus arcticus ssp. stellatus*	0–11	–
	Aleutian violet	VILA6	*Viola langsdorffii*	0–11	–
	northern starwort	STCA	*Stellaria calycantha*	0–11	–
	alpine bistort	POVI3	*Polygonum viviparum*	0–11	–
	Hornemann's willowherb	EPHOB	*Epilobium hornemannii ssp. behringianum*	0–11	–
	boreal yarrow	ACMIB	*Achillea millefolium var. borealis*	6–11	–
	bittercress	CARDA	*Cardamine*	0–6	–
	arctic stitchwort	MIAR3	*Minuartia arctica*	0–6	–
	saxifrage	SAXIF	*Saxifraga*	0–6	–
	heartleaf saxifrage	SANEN	*Saxifraga nelsoniana ssp. nelsoniana*	0–1	–
	tall Jacob's-ladder	POAC	*Polemonium acutiflorum*	0–1	–
	rockjasmine	ANDRO3	*Androsace*	0–1	–
	Kamchatka rockcress	ARKA6	*Arabis kamchatica*	0–1	–
	Macoun's poppy	PAMA5	*Papaver macounii*	–	–
Lichen					
1				0–11	
	whiteworm lichen	THAMN3	*Thamnolia*	0–11	–

Animal community

This site provides high value winter forage for reindeer. Willows growing on this site are also high forage value during the winter and winter-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):**

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

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:**
