

Ecological site R223XY801AK

Alpine terrain Cryumbrets and Eutrocrypt, high elevation

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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.



Figure 1. Mapped extent

Areas shown in blue indicate the maximum mapped extent of this ecological site. Other ecological sites likely occur within the highlighted areas. It is also possible for this ecological site to occur outside of highlighted areas if detailed soil survey has not been completed or recently updated.

Table 1. Dominant plant species

Tree	Not specified
Shrub	Not specified
Herbaceous	Not specified

Physiographic features

This site includes well drained, alpine soils on high mountain peaks, ridges, slopes, and basins in the Talkeetna Mountains, above 2000 feet (610 m) elevation. Alpine terrain includes that portion of the alpine zone not included in ecological sites Alpine hummocks and Alpine ridges. Slope ranges up to 100 percent or more. Miscellaneous land types associated with this site are rock outcrops, cliffs, talus, and boulder fields.

Table 2. Representative physiographic features

Landforms	(1) Mountain
Flooding frequency	None
Ponding frequency	None
Elevation	1,952–5,097 ft

Slope	25–70%
Water table depth	60 in
Aspect	E, S, W

Climatic features

Influencing water features

Soil features

Cryumbrepts component is on a mountain. The parent material consists of gravelly colluvium and/or silty loess over gravelly colluvium. The runoff class is high. The depth to restrictive layer is greater than 60 inches to bedrock. It is well drained. The slowest permeability of the soil material is slow. Available water capacity is very low and shrink swell potential is low. This soil is not flooded and is not ponded. The water table is deeper than 6 feet. There are no saline horizons within 30 inches of the soil surface. There are no sodic horizons within 30 inches of the soil surface. It is in nonirrigated land capability class 7e.

Eutrocryepts, high elevation component is on mountains. The parent material consists of gravelly colluvium. The runoff class is high. The depth to restrictive layer is greater than 80 inches. It is well drained. The slowest permeability of the soil material is moderately slow. Available water capacity is high and shrink swell potential is low. This soil is not flooded and is not ponded. The water table is deeper than 6 feet. It is in nonirrigated land capability class 7e.

Table 3. Representative soil features

Surface texture	(1) Very cobbly sandy loam (2) Silt loam (3) Very fine sandy loam
Drainage class	Well drained
Permeability class	Slow to moderately slow
Soil depth	8–60 in
Surface fragment cover ≤3"	0%
Surface fragment cover >3"	0–45%
Available water capacity (0–40in)	1–9 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)	4–7.3
Subsurface fragment volume ≤3" (Depth not specified)	0%
Subsurface fragment volume >3" (Depth not specified)	0%

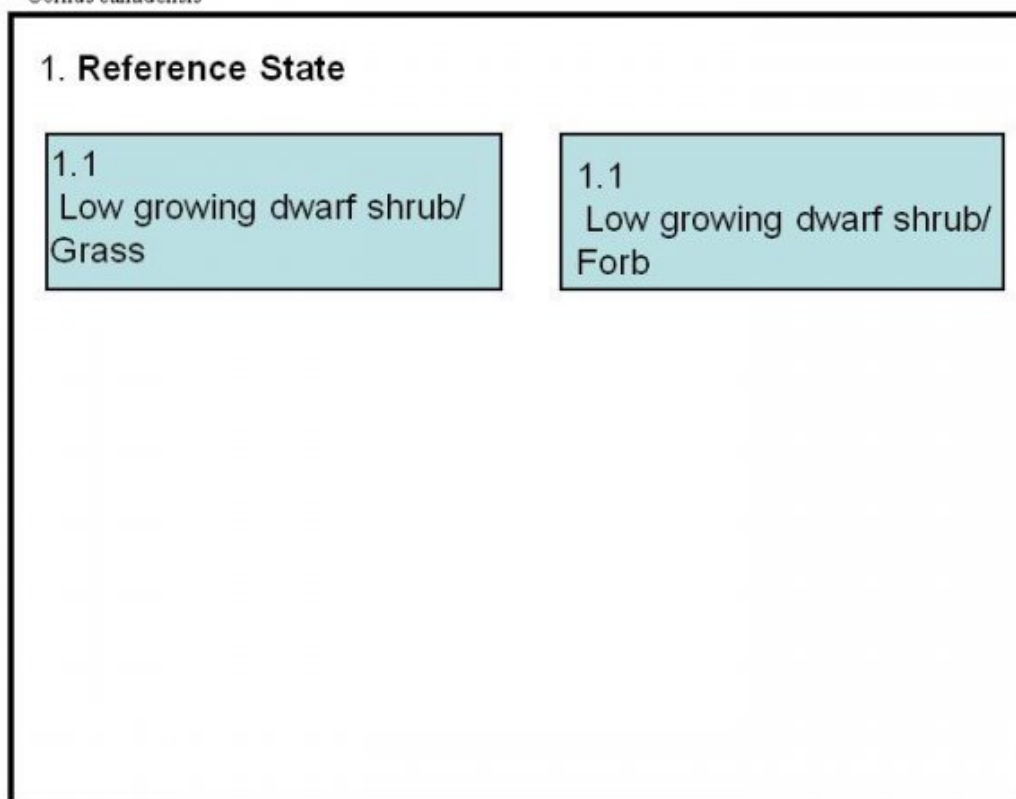
Ecological dynamics

No disturbance pathways were observed. Two potential plant communities co-exist on this site. They are found in a "mosaic" and are co-dependent with each other but are not succession or disturbance dependent on each other. In

this case two 1.1 plant communities are identified in the STM. 1.1 Low growing dwarf shrub/forb will be considered the 1.2 plant community in order to capture in ESIS.

State and transition model

R223XY801AK: Alpine Terrain; *Cassiope stelleriana*-*Luetkea pectinata*/*Calamagrostis canadensis*-*Cornus canadensis*



Legend

- Plant community phase pathway
- Reversible portion of transition
- Irreversible portion of transition

State 1 Reference

Community 1.1 Low growing dwarf shrub/grass

Vegetation varies in response to slope, aspect, soil depth and drainage, wind patterns, and snow avalanching and accumulation; and includes a variety of alpine dwarf scrub and herbaceous types.

Table 4. Ground cover

Tree foliar cover	0%
Shrub/vine/liana foliar cover	1-45%
Grass/grasslike foliar cover	1-40%
Forb foliar cover	5-50%
Non-vascular plants	0%
Biological crusts	5%
Litter	85%
Surface fragments >0.25" and <=3"	0%

Surface fragments >3"	1%
Bedrock	0%
Water	0%
Bare ground	0%

Table 5. Canopy structure (% cover)

Height Above Ground (Ft)	Tree	Shrub/Vine	Grass/ Grasslike	Forb
<0.5	–	1-45%	1-5%	–
>0.5 <= 1	–	–	40-40%	5-50%
>1 <= 2	–	–	–	–
>2 <= 4.5	–	–	–	–
>4.5 <= 13	–	–	–	–
>13 <= 40	–	–	–	–
>40 <= 80	–	–	–	–
>80 <= 120	–	–	–	–
>120	–	–	–	–

Figure 2. Plant community growth curve (percent production by month). AK0022, Southern. 60-200 days.

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0	0	0	0	10	30	45	10	5	0	0	0

Community 1.2 Low growing dwarf shrub/Forb

This plant community is considered a 1.1 potential. It occurs with the grassy 1.1 site in a "mosaic" pattern. This plant community will be associated with the 1.1 Low growing dwarf shrub/forb in the STM.

Table 6. Ground cover

Tree foliar cover	0%
Shrub/vine/liana foliar cover	3-50%
Grass/grasslike foliar cover	1-2%
Forb foliar cover	1-20%
Non-vascular plants	10%
Biological crusts	0%
Litter	2%
Surface fragments >0.25" and <=3"	0%
Surface fragments >3"	0%
Bedrock	0%
Water	0%
Bare ground	0%

Table 7. Canopy structure (% cover)

Height Above Ground (Ft)	Tree	Shrub/Vine	Grass/ Grasslike	Forb
<0.5	–	3-50%	1-2%	1-20%
>0.5 <= 1	–	–	–	–
>1 <= 2	–	–	–	–
>2 <= 4.5	–	–	–	–
>4.5 <= 13	–	–	–	–
>13 <= 40	–	–	–	–
>40 <= 80	–	–	–	–
>80 <= 120	–	–	–	–
>120	–	–	–	–

Figure 3. Plant community growth curve (percent production by month). AK0022, Southern. 60-200 days.

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0	0	0	0	10	30	45	10	5	0	0	0

Additional community tables

Table 8. Community 1.1 forest understory composition

Common Name	Symbol	Scientific Name	Nativity	Height (Ft)	Canopy Cover (%)
Grass/grass-like (Graminoids)					
bluejoint	CACA4	<i>Calamagrostis canadensis</i>	Native	–	40
Shrub/Subshrub					
partridgefoot	LUPE	<i>Luetkea pectinata</i>	Native	–	45

Table 9. Community 1.2 forest understory composition

Common Name	Symbol	Scientific Name	Nativity	Height (Ft)	Canopy Cover (%)
Forb/Herb					
bunchberry dogwood	COCA13	<i>Cornus canadensis</i>	Native	–	20
Shrub/Subshrub					
partridgefoot	LUPE	<i>Luetkea pectinata</i>	Native	–	50

Contributors

Dennis Moore
 Dkautz
 Michelle Schuman

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)	
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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):**

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:

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:**
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