

Soil Survey of the Delta River Area, Alaska

Ecological Site Description

Gravelly Frozen Slopes, Ruptic (R228XY182AK)

Ecological Site Characteristics

Site Type: Rangeland

Site Name: Gravelly Frozen Slopes, Ruptic

Site ID: R228XY182AK (Old: R173XY182AK)

Major Land Resource 228 - Interior Alaska Mountains

Ecoregion Classification

Section: Alaska Mountains (M135A)

Subsection(s): Alpine Mountains (M135A.M2)

Glaciated Uplands (M135A.G1)

Physiographic Features

Elevation (feet): 2,365 to 5,295

Slope Gradient (percent): 0 to 25

Aspect (clockwise direction): non-influencing

Landform: circles on mountains; circles on till plains; stripes on mountains

Landform Positions: backslopes; summits

Flooding: ^{Frequency} None

Ponding: None

Climatic Features

Annual Precipitation 23 to 52

Annual Air Temperature (°F): 24 to 25

Frost Free Days: 50 to 80

Soil Features

Parent Materials: silty eolian deposits over gravelly alluvium

Rooting Depth (inches): *RV:* 8 *Range:* 3 to 17

Soil Layers and Properties within Representative Rooting Depth:

Layers are described from the surface downward. If more than one texture is listed, the predominant texture is listed first. AWC = available water capacity. pH = hydrogen ion activity in the soil using the 1:1 soil-water ratio method. CEC = cation exchange capacity.

Thickness (inches)	Texture	Permeability	AWC (inches/inch)	pH	Effective CEC (me/100g)	CEC (me/100g)
5	peat	moderately rapid	.34	5.4	30	
3	silt loam	moderate	.19	5.8		20

Restrictive Features: permafrost at 11 inches

Drainage Class: poorly drained

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Vegetation Features

Common Vegetation Types:

Vegetation Type

Shrub birch/sedge scrub mosaic
Lichen/dwarf scrub mosaic

Ecological Status

Climax plant community
Climax plant community on drier microsites

Vascular Plant Species Richness:

Vegetation Type

Shrub birch/sedge scrub mosaic
Lichen/dwarf scrub mosaic

Total	Per Stand			Number of Stands
	Min.	Avg.	Max.	
38	8	12	21	6
50	13	22	34	3

Characteristics of Shrub birch/sedge scrub mosaic

Ecological Status: Climax plant community

Plant Species Cover, Constancy, and Importance:

Number of stands sampled = 13. Only those vascular, lichen, and bryophyte species with average cover $\geq 5\%$ and constancy $\geq 15\%$ are listed. Importance value equals the square root of Percent Constancy times Average Cover.

Stratum	Symbol	Scientific Name	Percent Canopy Cover			Percent Constancy	Importance Value
			Min.	Avg.	Max.		
SL-SM	BEGL	Betula glandulosa	5.0	31	50	46	38
SL-SM	SAPL2	Salix planifolia	0.2	7	15	31	15
SD-SL	VAUL	Vaccinium uliginosum	5.0	16	25	46	27
SL	LEDE5	Ledum decumbens	5.0	13	20	23	17
SD-SL	LEGR	Ledum groenlandicum	4.0	6	10	23	12
GM	CAREX	Carex	0.2	7	15	31	15
L	LICHEN	total lichens	10.0	37	80	46	41
L	FOLIO	total lichens-foliose	3.0	3	3	8	5
M	MOSS	total bryophytes-mosses and liverworts	0.2	33	70	46	39
B	SOIL	mineral-bare soil	0.0	7	25	46	18
B	LITTER	litter-herbaceous, mulch, and woody debris <2.5 cm	0.0	4	15	46	14
B	ROCK	mineral-surface rock fragments	0.0	1	5	46	7
B	LITTER2	litter-woody debris >2.5 cm	0.0	0	0	46	0
B	WATER	water	0.0	0	0	46	0

Characteristics of Lichen/dwarf scrub mosaic

Ecological Status: Climax plant community on drier microsites

Plant Species Cover, Constancy, and Importance:

Number of stands sampled = 3. Only those vascular, lichen, and bryophyte species with average cover $\geq 5\%$ and constancy $\geq 15\%$ are listed. Importance value equals the square root of Percent Constancy times Average Cover.

Stratum	Symbol	Scientific Name	Percent Canopy Cover			Percent Constancy	Importance Value
			Min.	Avg.	Max.		
SD-SL	VAUL	Vaccinium uliginosum	15.0	17	20	100	41
SL	SALIX	Salix	7.0	7	7	33	15
SL	LEDE5	Ledum decumbens	5.0	5	5	33	13
SD	SARE2	Salix reticulata	0.2	7	15	100	26
SD	ARAL2	Arctostaphylos alpina	3.0	5	7	67	18
SD	LOPR	Loiseleuria procumbens	10.0	10	10	33	18
GM	CABI5	Carex bigelowii	4.0	15	25	67	32
L	LICHEN	total lichens	35.0	55	80	100	74

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Stratum	Symbol	Scientific Name	Percent Canopy Cover			Percent Constancy	Importance Value
			Min.	Avg.	Max.		
M	MOSS	total bryophytes-mosses and liverworts	5.0	32	60	100	57
B	LITTER	litter-herbaceous, mulch, and woody debris <2.5 cm	3.0	14	30	100	37
B	ROCK	mineral-surface rock fragments	0.0	2	5	100	14
B	WATER	water	0.2	2	5	100	14
B	LITTER2	litter-woody debris >2.5 cm	0.0	0	0	100	0
B	SOIL	mineral-bare soil	0.0	0	0	100	0

Map Unit Components

Component Name (Classification):

Frostcircle

(Coarse-loamy, mixed, superactive, nonacid, subgelic Ruptic-Histic Aquiturbels)

Soil Map Units

Only those map units in which the landtype is a major component are listed. The landtype also may occur as a minor component in other map units.

Symbol: Map Unit Name:

MSB	Fields-Minya-Frostcircle association, 0 to 75 percent slopes
MSD	Frostcircle-Minya-Minya, cool, complex, 0 to 28 percent slopes
MSS	Frostcircle peat, 0 to 25 percent slopes
MST	Frostcircle-Ogive association, 0 to 25 percent slopes

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M135A.M2.3—Alpine Mountains with Discontinuous Permafrost Landtype Association (DR Soil Survey)



Plate 41 (DR Soil Survey). Circles in the foreground are mounded features formed by intense freezing and are typically underlain by permafrost. These represent soils in which a shallow water table is perched over permafrost. The component is Frostcircle, a major component in map unit MSD—Frostcircle-Minya-Minya, cool complex, 0 to 28 percent slopes.

M135A.G1—Alaska Mountains. Glaciated Uplands Subsection



Figure 7. Cross section of map units, soils, ecological sites, and potential natural communities in the Alaska Mountains. Interior Glaciated Uplands Subsection (M135A.G1) (Delta River Area, Soil Survey).

