

Loamy Frozen Slopes, High Elevation (M131B_415)

Ecoregion Classification

Section: Kuskokwim Mountains (M131B)

Subsection(s): Alpine Low Mountains (M131B.M1A)

Boreal Low Mountains (M131B.M1)

Physiographic Features

Elevation (meters): *RV* 488 *Range* 197 to 632

Slope Gradient (percent): 10 4 to 16

Aspect (clockwise direction): non-influencing

Landform: hummocks on mountains; nonsorted circles on mountains

Landform Positions: backslopes; shoulders; summits

Flooding: *Frequency* None

Ponding: None

Climatic Features

Annual Precipitation (millimeters): *RV* 465 *Range* 356 to 549

Annual Air Temperature (°C): -2.8 -2.9 to -2.0

Frost Free Days: 60 50 to 70

Soil Features

Parent Materials: mossy organic material and/or woody organic material over silty cryoturbate over gravelly cryoturbate derived from schist

silty eolian deposits over gravelly cryoturbate derived from schist

Rooting Depth (cm): *RV:* 36 *Range:* 28 to 45

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. CEC = cation exchange capacity.

Thickness (cm)	Texture	Permeability	AWC (cm/cm)	pH	Effective CEC (me/100g)	CEC (me/100g)
1 to 20	peat; slightly decomposed plant material	moderately rapid	.34	3.9 to 4.6	30	
2 to 14	silt loam, muck; silt loam	moderate	.26	4.4 to 5.3	12 to 15	
2 to 25	very channery silt loam; very channery loam	moderately rapid	.12	4.4 to 5.7	5 to 6	6

Restrictive Features: bedrock (paralithic) at 88 to 150 cm or more
permafrost at 42 to 150 cm
strongly contrasting textural stratification at 1 to 34 cm

Water Table (May to September): 0 to 120 cm

Drainage Class: moderately well drained to poorly drained

Vegetation Features

Common Vegetation Types:

Vegetation Type
Mixed ericaceous shrub-shrub birch scrub

Ecological Status
Climax plant community

Ecological Status-Transition Description:

A single plant community with mixed ericaceous shrub-shrub birch scrub is identified on this site. No transitional pathways to other communities have been identified for this site.

Vascular Plant Species Richness:

Vascular plant species richness is based on 1999-2002 field season data only. Data from 1997 and 1998 were not used in the calculations.

Vegetation Type	Total	Per Stand			Number of Stands
		Min.	Avg.	Max.	
Mixed ericaceous shrub-shrub birch scrub	26	10	14	16	5

Characteristics of Mixed ericaceous shrub-shrub birch scrub

Ecological Status: Climax plant community

Plant Species Cover, Constancy, and Importance:

Cover, constancy, and importance are based on 1997-2002 field season data. Number of stands sampled = 5. Only those vascular, lichen, and bryophyte species with average cover >=5% and constancy >=15% are listed.

Stratum	Symbol	Scientific Name	Percent Canopy Cover			Percent Constancy	Importance Value
			Min.	Avg.	Max.		
SD-SM	BEGL	Betula glandulosa	0.1	16	40	100	40
SD-SL	LEPAD	Ledum palustre ssp. decumbens	15.0	21	30	100	46
SD-SL	VAUL	Vaccinium uliginosum	10.0	21	45	100	46
SD	VAVIM99	Vaccinium vitis-idaea spp. Minus	5.0	15	20	100	39
SD	ARAL13	Arctous alpina	1.0	7	20	80	24
SD	EMNI	Empetrum nigrum	3.0	10	20	60	24
GM	CABI5	Carex bigelowii	0.1	13	35	80	32
GM	ERBR6	Eriophorum brachyantherum	0.1	7	15	60	20
FD	RUCH	Rubus chamaemorus	0.1	7	15	60	20
L	LICHEN	total lichens	5.0	38	65	100	62
L1	CLADI3	Cladina	3.0	11	25	100	33
L1	FLCU	Flavocetraria cucullata	5.0	12	20	80	31
L1	CLRA61	Cladina rangiferina group	5.0	9	15	60	23
L1	CLMU60	Cladonia multiformis	5.0	8	10	40	18
L1	STERE2	Stereocaulon	5.0	5	5	40	14
L1	CLMI61	Cladina mitis group	5.0	5	5	20	10
M	MOSS	total bryophytes-mosses and liverworts	15.0	42	70	100	65
M1	PLSC70	Pleurozium schreberi	5.0	13	20	100	36
M1	HYSP70	Hylocomium splendens	0.1	9	20	100	30
M1	ZZMOSS	unknown-mosses	2.0	9	20	100	30
M1	SPHAG2	Sphagnum	0.1	6	15	100	24
B	LITTER	litter-herbaceous, mulch, and woody debris <2.5 cm	10.0	28	55	100	53
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
B	ROCK	mineral-surface rock fragments	0.0	0	0	100	0
B	WATER	water	0.0	0	0	100	0

Stratum Height:

Stratum height is based on 1997-2002 field season data. All plant species and ground layer records from all stands are included in the calculations.

Stratum Name	Included Strata	Height			Units	Number of Records
		Min.	Avg.	Max.		
Trees	TT, TM, TS	2.0	3.8	5.8	m	5
Tree regeneration	TR	2.5	2.5	2.5	m	1
Medium shrubs	SM	1.2	1.7	2.0	m	3
Low shrubs	SL	30.0	47.5	80.0	cm	4
Dwarf shrubs	SD	7.0	13.4	20.0	cm	5
Tall and medium grasses and grass-like	GT, GM	30.0	42.5	50.0	cm	4
Tall and medium forbs	FT, FM	90.0	90.0	90.0	cm	1
Dwarf herbs, lichens, and bryophytes	GD, FD, L, M	2.0	3.4	5.0	cm	12

Mapunit Components

Common Name (Soils Name):

Alpine-scrub gravelly schist circles, Kuskokwim Mountains (Ruptic-Histic Aquiturbels, loamy-skeletal)

Alpine-scrub-sedge gravelly schist hummocks, frozen (Typic Histoturbels, loamy-skeletal)

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: Common Name (Soils Name):

4S1 Alpine Low Schist Mountain Summits with Continuous Permafrost
(Ruptic-Histic Aquiturbels, loamy-skeletal-Typic Histoturbels, coarse-silty-Typic Histoturbels, loamy-skeletal Association, 0 to 16 percent slopes)

Geographically Associated Landtypes

M131B_179 — Gravelly Frozen Slopes, Wet:

This site occurs on slightly higher positions on low mountain summits with wetter moderately deep soils over permafrost. The climax plant community is "Tussock cottongrass/mixed ericaceous shrub meadow2."

M131B_355 — Silty Slopes, Cool:

This site occurs on lower slopes with soils that are well drained and moderately deep or deep over bedrock. The climax plant community is "Black spruce/mixed ericaceous shrub woodland."