Silty Slopes, Cool (M131B_355)

Ecoregion Classification

Section: Kuskokwim Mountains (M131B)

Subsection(s): Boreal Low Mountains (M131B.M1)

Physiographic Features

	RV	*Range*
Elevation (meters):	329	194 to 611
Slope Gradient (percent):	15	15 to 25

Aspect (clockwise direction): non-influencing

Landform: mountains

Landform Positions: backslopes

	Frequency
Flooding:	None
Ponding:	None

Climatic Features

	RV	*Range*
Annual Precipitation (millimeters):	423	345 to 549
Annual Air Temperature (°C):	-2.5	-2.9 to -1.2
Frost Free Days:	80	60 to 100

Soil Features

Parent Materials: silty eolian deposits over gravelly colluvium derived from schist

Rooting Depth (cm): *RV:* 30 *Range:* 19 to 44

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)
10	slightly decomposed plant material	moderately rapid	.34	3.3	30	
9	silt loam	moderate	.26	4.1	12	
11	very channery silt loam	moderately rapid	.12	4.7	6	

Restrictive Features: bedrock (paralithic) at 84 to 150 cm or more
strongly contrasting textural stratification at 19 cm

Water Table (May to September): none

Drainage Class: well drained

Vegetation Features

Common Vegetation Types:

Vegetation Type	Ecological Status
Black spruce/mixed ericaceous shrub woodland	Climax plant community
Black spruce-paper birch/lingonberry woodland	Late stage of fire induced secondary succession

Ecological Status-Transition Description:

Two plant communities are identified within this fire influenced site including a potential community with black spruce/mixed ericaceous shrub woodland and a late-seral community with black spruce- paper birch/lingonberry woodland. Fire is considered a transitional pathway between seral communities within 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 Min.	Per Stand Avg.	Per Stand Max.	Number of Stands
Black spruce/mixed ericaceous shrub woodland	17	13	14	14	2
Black spruce-paper birch/lingonberry woodland	24	11	15	19	3

Characteristics of Black spruce/mixed ericaceous shrub woodland

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 = 2. Only those vascular, lichen, and bryophyte species with average cover >=5% and constancy >=15% are listed.

Stratum	Symbol	Scientific Name	Percent Canopy Cover Min.	Percent Canopy Cover Avg.	Percent Canopy Cover Max.	Percent Constancy	Importance Value
TM	PIMA	Picea mariana	20.0	22	25	100	47
SM	BEGL	Betula glandulosa	10.0	12	15	100	35
SM	ALVIC	Alnus viridis ssp. crispa	5.0	6	7	100	24
SM	SAPU15	Salix pulchra	5.0	5	5	50	16
SM	SPST3	Spiraea stevenii	5.0	5	5	50	16
SL	VAUL	Vaccinium uliginosum	40.0	42	45	100	65
SL	LEPAD	Ledum palustre ssp. decumbens	20.0	22	25	100	47
SD	EMNI	Empetrum nigrum	25.0	25	25	50	35
SD	VAVIM99	Vaccinium vitis-idaea spp. Minus	5.0	10	15	100	32
L	LICHEN	total lichens	10.0	22	35	100	47
L1	CLMI61	Cladina mitis group	10.0	10	10	50	22
L1	CLRA61	Cladina rangiferina group	10.0	10	10	50	22
L1	CLADO3	Cladonia	5.0	5	5	50	16
L1	CLCO19	Cladonia cornuta	5.0	5	5	50	16
L1	CLMU60	Cladonia multiformis	5.0	5	5	50	16
M	MOSS	total bryophytes-mosses and liverworts	65.0	68	70	100	82
M1	HYSP70	Hylocomium splendens	20.0	28	35	100	53
M1	PLSC70	Pleurozium schreberi	25.0	28	30	100	53
M1	ZZMOSS	unknown-mosses	5.0	10	15	100	32
M1	SPHAG2	Sphagnum	5.0	5	5	100	22
B	LITTER	litter-herbaceous, mulch, and woody debris <2.5 cm	10.0	18	25	100	42
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 Min.	Height Avg.	Height Max.	Height Units	Number of Records
Trees	TT, TM, TS	5.5	5.8	6.0	m	2
Medium shrubs	SM	1.2	1.8	2.5	m	4
Low shrubs	SL	30.0	30.0	30.0	cm	1
Dwarf shrubs	SD	10.0	10.0	10.0	cm	1
Tall and medium forbs	FT, FM	25.0	25.0	25.0	cm	1
Dwarf herbs, lichens, and bryophytes	GD, FD, L, M	3.0	3.5	5.0	cm	4

Site Tree Measurements:

Only dominant, codominant, and open grown trees were measured. Height of Measurements = height above ground at which age and diameter was measured. G = ground level, B = breast height (ca 1.5 m).

Tree Species	Age (years)	Diameter (cm)	Height (m)		Number of Trees	Height of Measurements
Picea mariana	66	9.1	5.8	*Min.*	1	G
	66	9.1	5.8	*Avg*		
	66	9.1	5.8	*Max.*		

Characteristics of Black spruce-paper birch/lingonberry woodland

Ecological Status: Late stage of fire induced secondary succession

Plant Species Cover, Constancy, and Importance:

Cover, constancy, and importance are based on 1997-2002 field season data. Number of stands sampled = 3. 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.*		
TT	PIMA	Picea mariana	20.0	20	20	33	26
TT	BENE4	Betula neoalaskana	15.0	15	15	33	22
TM	PIMA	Picea mariana	65.0	65	65	33	46
TM	BENE4	Betula neoalaskana	5.0	8	10	67	23
TR	PIMA	Picea mariana	15.0	15	15	33	22
ST	ALVIC	Alnus viridis ssp. crispa	5.0	20	40	100	45
SL-SM	LEGR	Ledum groenlandicum	15.0	27	40	100	52
SL-SM	SPST3	Spiraea stevenii	1.0	8	15	67	23
SL	VAUL	Vaccinium uliginosum	5.0	9	15	100	30
SL	LEPAD	Ledum palustre ssp. decumbens	5.0	5	5	33	13
SD	VAVIM99	Vaccinium vitis-idaea spp. Minus	30.0	37	45	100	61
FM	EQSY	Equisetum sylvaticum	0.1	9	25	100	30
FD	GELI2	Geocaulon lividum	25.0	25	25	33	29
FD	COCA13	Cornus canadensis	5.0	5	5	33	13
L	LICHEN	total lichens	0.1	23	40	100	48
L1	CLADO3	Cladonia	0.1	7	15	100	26
L1	PEAP61	Peltigera apthosa group	0.1	7	20	100	26
L1	CLADI3	Cladina	2.0	8	15	67	23
L1	CLRA61	Cladina rangiferina group	5.0	5	5	33	13
M	MOSS	total bryophytes-mosses and liverworts	40.0	63	80	100	79
M1	HYSP70	Hylocomium splendens	5.0	27	45	100	52
M1	ZZMOSS	unknown-mosses	10.0	15	25	100	39
M1	PLSC70	Pleurozium schreberi	5.0	12	15	100	35
M1	POCO38	Polytrichum commune	0.1	7	20	100	26
B	LITTER	litter-herbaceous, mulch, and woody debris <2.5 cm	5.0	22	30	100	47
B	LITTER2	litter-woody debris >2.5 cm	7.0	8	10	100	28
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				Number of Records
		Min.	*Avg.*	*Max.*	*Units*	
Trees	TT, TM, TS	7.0	8.3	10.0	m	3
Tree regeneration	TR	4.5	4.5	4.5	m	1
Tall shrubs	ST	3.5	3.5	3.5	m	2
Medium shrubs	SM	1.0	1.0	1.0	m	1
Low shrubs	SL	40.0	60.0	80.0	cm	2
Dwarf shrubs	SD	12.0	16.3	20.0	cm	3
Tall and medium forbs	FT, FM	30.0	35.0	40.0	cm	2
Dwarf herbs, lichens, and bryophytes	GD, FD, L, M	2.0	4.3	8.0	cm	7

Site Tree Measurements:

Only dominant, codominant, and open grown trees were measured. Height of Measurements = height above ground at which age and diameter was measured. G = ground level, B = breast height (ca 1.5 m).

Tree Species	Age (years)	Diameter (cm)	Height (m)		Number of Trees	Height of Measurements
Picea mariana	68	16.5	11.3	*Min.*	2	B
	73	18.5	12.8	*Avg*		
	78	20.6	14.3	*Max.*		

Tree Basal Area (all trees >1.5 m tall):

Min.	Avg.	Max.	Number of Stands
	m2 / ha		
25.3	25.3	25.3	1

Mapunit Components

Common Name (Soils Name):

Boreal-taiga mica rich silt loess slopes (Typic Dystrocryepts, 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):*
4BS	Boreal Schist Mountain Backslopes with Discontinuous Permafrost (Typic Dystrocryepts, loamy-skeletal-Typic Historthels, loamy-skeletal Association, 8 to 25 percent slopes)

Geographically Associated Landtypes

M131B_349 — Silty Slopes:

This site occurs on lower slopes with well drained deep or very deep soils over bedrock. The climax plant community is "Paper birch-white spruce forest."

M131B_400 — Loamy Frozen Slopes:

This site occurs on lower slopes with wetter soils that have permafrost at moderate depths. The climax plant community is "Black spruce/Labrador tea woodland."

M131B_415 — Loamy Frozen Slopes, High Elevation:

This site occurs on non-sorted circles on higher slopes. The climax plant community is "Mixed ericaceous shrub-shrub birch scrub."

Similar Landtypes

M131B_400 — Loamy Frozen Slopes:

This site occurs on lower slopes with wetter soils that have permafrost at moderate depths. The climax plant community is "Black spruce/Labrador tea woodland."