Gravelly and Sandy Slopes (M135A_350)

Ecoregion Classification

Section: Alaska Mountains (M135A)

Subsection(s): Lowland Flood Plains & Terraces & Fans (M135A.V1L)
Alpine Flood Plains & Terraces & Fans (M135A.V1)
Boreal Mountains (M135A.M2L)
Glaciated Lowlands (M135A.G1L)

Physiographic Features

	RV	*Range*
Elevation (meters):	694	446 to 1,145
Slope Gradient (percent):	6	0 to 30

Aspect (clockwise direction): non-influencing

Landform: fan terraces on alluvial fans; fan terraces on alluvial fans on mountains; hills; outwash plains; pitted outwash plains; till plains

Landform Positions: backslopes; shoulders; summits

	Frequency
Flooding:	None
Ponding:	None

Climatic Features

	RV	*Range*
Annual Precipitation (millimeters):	587	344 to 923
Annual Air Temperature (°C):	-3.1	-6.0 to -2.1
Frost Free Days:	70	60 to 80

Soil Features

Parent Materials: silty eolian deposits over gravelly alluvium derived from schist
silty eolian deposits over gravelly till
silty eolian deposits over sandy and gravelly alluvium and/or sandy and gravelly outwash
silty eolian deposits over sandy and gravelly outwash

Rooting Depth (cm): *RV:* 25 *Range:* 8 to 61

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)*
4 to 10	slightly decomposed plant material	moderately rapid	.34	3.5 to 6.1	30	
1 to 10	silt loam	moderate	.18 to .40	3.8 to 5.2	12	
1 to 15	silt loam; very gravelly loamy sand; very gravelly sandy loam; extremely gravelly loamy coarse	moderate to rapid	.03 to .40	4.0 to 5.8	2 to 12	2

Restrictive Features: strongly contrasting textural stratification at 9 to 20 cm

Water Table (May to September): none

Drainage Class: somewhat excessively drained or well drained

Vegetation Features

Common Vegetation Types:

Vegetation Type	Ecological Status
White spruce/shrub birch woodland	Climax plant community
White spruce/lichen woodland	Climax plant community on drier microsites
Quaking aspen-white spruce woodland	Mid stage of fire induced secondary succession

Ecological Status-Transition Description:

Two plant communities are identified within this flood prone site including a potential community with white spruce/shrub birch woodland and a community of white spruce/lichen woodland on slightly drier microsites.

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.

		Per Stand			Number of
Vegetation Type	Total	*Min.*	*Avg.*	*Max.*	Stands
White spruce/shrub birch woodland	48	19	25	31	3
White spruce/lichen woodland	25	25	25	25	1
Quaking aspen-white spruce woodland	22	22	22	22	1

Characteristics of White spruce/shrub birch 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 = 18. Only those vascular, lichen, and bryophyte species with average cover >=5% and constancy >=15% are listed.

			Percent Canopy Cover			Percent Constancy	Importance Value
Stratum	Symbol	Scientific Name	*Min.*	*Avg.*	*Max.*		
TT	PIGL	Picea glauca	5.0	17	30	50	29
TM	PIGL	Picea glauca	5.0	11	25	67	27
TM	PIMA	Picea mariana	0.1	8	20	17	12
TR	PIGL	Picea glauca	0.1	9	15	67	25
SL-SM	BEGL	Betula glandulosa	1.0	36	70	100	60
SL-SM	SAPU15	Salix pulchra	0.1	7	20	67	22
SL-SM	SAGL	Salix glauca	0.1	11	30	28	18
SD-SL	VAUL	Vaccinium uliginosum	0.1	30	70	94	53
SD-SL	LEPAD	Ledum palustre ssp. decumbens	0.1	10	25	83	29
SD	EMNI	Empetrum nigrum	0.1	17	40	94	40
SD	VAVIM99	Vaccinium vitis-idaea spp. Minus	2.0	10	40	100	32
GM	CAREX	Carex	0.1	5	15	39	14
GM	ZZGRASS	unknown-grasses	5.0	10	15	17	13
L	LICHEN	total lichens	3.0	17	45	100	41
L1	CLADI3	Cladina	0.1	5	10	50	16
L1	CLRA61	Cladina rangiferina group	0.1	5	10	22	10
M	MOSS	total bryophytes-mosses and liverworts	50.0	75	95	100	87
M1	PLSC70	Pleurozium schreberi	25.0	44	60	39	41
M1	HYSP70	Hylocomium splendens	10.0	35	60	39	37
M1	ZZMOSS	unknown-mosses	0.1	6	10	33	14
B	LITTER	litter-herbaceous, mulch, and woody debris <2.5 cm	0.0	9	30	100	30
B	LITTER2	litter-woody debris >2.5 cm	0.0	2	20	100	14
B	SOIL	mineral-bare soil	0.0	0	1	100	0
B	ROCK	mineral-surface rock fragments	0.0	0	1	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.

		Height				Number
Stratum Name	Included Strata	*Min.*	*Avg.*	*Max.*	*Units*	of Records
Trees	TT, TM, TS	6.0	10.8	22.0	m	25
Tree regeneration	TR	2.0	2.7	4.0	m	13
Tall shrubs	ST	4.8	4.8	4.8	m	1

Stratum Name	Included Strata	Height				Number of Records
		Min.	Avg.	Max.	Units	
Medium shrubs	SM	1.0	1.5	2.5	m	17
Low shrubs	SL	10.0	54.1	100.0	cm	32
Dwarf shrubs	SD	7.0	12.3	20.0	cm	18
Tall and medium grasses and grass-likes	GT, GM	30.0	30.0	30.0	cm	2
Tall and medium forbs	FT, FM	20.0	36.0	100.0	cm	5
Dwarf herbs, lichens, and bryophytes	GD, FD, L, M	3.0	8.0	10.0	cm	13

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 glauca	51	20.6	10.7	*Min.*	8	B
	113	27.3	12.5	*Avg*		
	179	36.8	14.3	*Max.*		

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

Min.	Avg.	Max.	Number of Stands
------	*m2 / ha*	------	
12.7	12.7	12.7	1

Characteristics of White spruce/lichen woodland

Ecological Status: Climax plant community on drier microsites

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.		
TM	PIGL	Picea glauca	5.0	10	15	100	32
SL-SM	BEGL	Betula glandulosa	45.0	53	65	100	73
SD	LEPAD	Ledum palustre ssp. decumbens	20.0	20	20	33	26
SD	VAVIM99	Vaccinium vitis-idaea spp. Minus	5.0	10	15	67	26
SD	EMNI	Empetrum nigrum	15.0	15	15	33	22
SD	ARUV	Arctostaphylos uva-ursi	5.0	5	5	33	13
GM	FESTU	Festuca	0.1	18	35	67	35
GM	CACA4	Calamagrostis canadensis	5.0	5	5	33	13
GM	FEAL	Festuca altaica	5.0	5	5	33	13
L	LICHEN	total lichens	45.0	53	60	100	73
L1	CLADI3	Cladina	20.0	20	20	33	26
L1	CLRA61	Cladina rangiferina group	10.0	10	10	33	18
L1	STERE2	Stereocaulon	10.0	10	10	33	18
L1	CLADO3	Cladonia	5.0	5	5	33	13
L1	CLUN61	Cladonia uncialis group	5.0	5	5	33	13
M	MOSS	total bryophytes-mosses and liverworts	15.0	23	35	100	48
M1	PLSC70	Pleurozium schreberi	20.0	20	20	33	26
M1	ZZMOSS	unknown-mosses	10.0	10	10	33	18
M1	POCO38	Polytrichum commune	5.0	5	5	33	13
B	LITTER	litter-herbaceous, mulch, and woody debris <2.5 cm	15.0	28	50	100	53
B	LITTER2	litter-woody debris >2.5 cm	0.1	0	0	100	0
B	SOIL	mineral-bare soil	0.1	0	0	100	0
B	ROCK	mineral-surface rock fragments	0.1	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	4.0	5.3	6.0	m	3
Tree regeneration	TR	0.4	1.6	3.0	m	4
Medium shrubs	SM	1.5	1.5	1.5	m	1

Stratum Name	Included Strata	Height				Number of Records
		Min.	Avg.	Max.	Units	
Low shrubs	SL	50.0	75.0	100.0	cm	2
Dwarf shrubs	SD	20.0	20.0	20.0	cm	1
Tall and medium grasses and grass-likes	GT, GM	30.0	36.7	50.0	cm	3
Dwarf herbs, lichens, and bryophytes	GD, FD, L, M	3.0	3.0	3.0	cm	2

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 glauca	50	20.1	7.9	Min.	2	B
	52	21.0	8.5	Avg		
	54	21.8	9.1	Max.		

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

Min.	Avg.	Max.	Number of Stands
------	m2 / ha	------	
8.1	8.1	8.1	1

Characteristics of Quaking aspen-white spruce woodland

Ecological Status:

Mid 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.		
TM	POTR5	Populus tremuloides	10.0	25	40	67	41
TM	PIGL	Picea glauca	10.0	10	10	33	18
TR	PIGL	Picea glauca	2.0	9	15	67	25
SM	SAPU15	Salix pulchra	5.0	5	5	33	13
SL	VAUL	Vaccinium uliginosum	10.0	20	30	67	37
SL	LEPAD	Ledum palustre ssp. decumbens	0.1	15	30	67	32
SL	BEGL	Betula glandulosa	0.1	10	20	67	26
SD	VAVIM99	Vaccinium vitis-idaea spp. Minus	5.0	25	50	100	50
SD	EMNI	Empetrum nigrum	0.1	13	25	100	36
SD	ARRU6	Arctous rubra	5.0	5	5	33	13
GT	CACA4	Calamagrostis canadensis	5.0	5	5	33	13
GM	FEAL	Festuca altaica	15.0	15	15	33	22
GM	ZZGRASS	unknown-grasses	5.0	5	5	33	13
FM	LUAR2	Lupinus arcticus	5.0	10	15	67	26
L	LICHEN	total lichens	0.1	20	55	100	45
M	MOSS	total bryophytes-mosses and liverworts	20.0	25	30	100	50
M1	POCO38	Polytrichum commune	15.0	15	15	33	22
M1	HYSP70	Hylocomium splendens	5.0	5	5	33	13
M1	ZZMOSS	unknown-mosses	5.0	5	5	33	13
B	LITTER	litter-herbaceous, mulch, and woody debris <2.5 cm	45.0	57	65	100	75
B	LITTER2	litter-woody debris >2.5 cm	5.0	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	5.0	10.8	17.0	m	4
Tree regeneration	TR	1.0	1.5	2.0	m	4
Low shrubs	SL	30.0	46.7	80.0	cm	3
Dwarf shrubs	SD	3.0	3.0	3.0	cm	1
Tall and medium grasses and grass-likes	GT, GM	30.0	30.0	30.0	cm	2

Stratum Name	Included Strata	Height				Number of Records
		Min.	*Avg.*	*Max.*	*Units*	
Tall and medium forbs	FT, FM	30.0	30.0	30.0	cm	1
Dwarf herbs, lichens, and bryophytes	GD, FD, L, M	2.0	2.0	2.0	cm	1

Mapunit Components

Common Name (Soils Name):

Boreal-forested gravelly outwash slopes (Typic Eutrocryepts, sandy-skeletal)

Boreal-forested gravelly schist terraces (Typic Haplocryods, loamy-skeletal)

Boreal-forested gravelly till slopes (Typic Haplocryods, loamy-skeletal)

Boreal-woodland gravelly terraces (Typic Eutrocryepts, sandy-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 major component in other map units.

Symbol:	*Common Name (Soils Name):*
5V2	Boreal Schist Alluvial Fans (Typic Haplocryods, loamy-skeletal-Typic Cryorthents, sandy-skeletal Association, 4 to 16 percent slopes)
7AFF	Boreal Outwash Plains and Fans with Discontinuous Permafrost (Typic Eutrocryepts, sandy-skeletal-Typic Cryaquents, coarse-loamy over sandy-skeletal-Typic Historthels, coarse-loamy Association, 0 to 5 percent slopes)
7P2	Boreal Glaciated Plains and Hills (Typic Eutrocryepts, sandy-skeletal-Typic Eutrocryepts, coarse-silty over sandy-skeletal Association, 0 to 30 percent slopes)
7P4	Boreal Glaciated Plains and Hills with Discontinuous Permafrost (Typic Haplocryods, loamy-skeletal-Typic Historthels, coarse-loamy-Typic Eutrocryepts, sandy-skeletal Association, 0 to 20 percent slopes)
7P6	Boreal Outwash Plains with Continuous Permafrost (Typic Historthels, coarse-loamy-Typic Eutrocryepts, sandy-skeletal Association, 0 to 10 percent slopes)
7V2	Boreal Fans and Mountain Footslopes (Oxyaquic Eutrocryepts, coarse-loamy over sandy-skeletal-Typic Eutrocryepts, sandy-skeletal-Typic Haplogeleods, sandy-skeletal Association, 0 to 32 percent slopes)

Geographically Associated Landtypes

M135A_400—Loamy Frozen Slopes:

This site occurs on wetter soils with permafrost at moderate depths and has thick loamy surface textures. The climax plant community is "Black spruce/bog blueberry-Labrador tea woodland."

M135A_550—Loamy Depressions:

This site occurs on kettle depressions. The climax plant community is "Graminoid herbaceous meadow."

Similar Landtypes

M135A_104—Loamy Frozen Terraces:

This site has soils that are moderately deep over permafrost. The climax plant community is "Spruce/shrub birch-bog blueberry woodland."