

# Gravelly Mountains, Warm (M135A\_355)

## Ecoregion Classification

**Section:** Alaska Mountains (M135A)

**Subsection(s):** Boreal Mountains (M135A.M2L)

Boreal Outer Range & Kantishna Hills (M135A.M1L)

## Physiographic Features

**Elevation (meters):** *RV* 760 *Range* 273 to 1,152

**Slope Gradient (percent):** 29 14 to 48

**Aspect (clockwise direction):** east to west

**Landform:** mountains; valleys on mountains

**Landform Positions:** backslopes; footslopes

**Flooding:** *Frequency* None

**Ponding:** None

## Climatic Features

**Annual Precipitation (millimeters):** *RV* 560 *Range* 358 to 783

**Annual Air Temperature (°C):** -3.6 -5.7 to -2.4

**Frost Free Days:** 70 60 to 80

## Soil Features

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

**Rooting Depth (cm):** *RV:* 30 *Range:* 12 to 58

## 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)
8 to 9	slightly decomposed plant material	moderately rapid	.34	3.8 to 4.0	30	
4 to 11	mucky silt loam; silt loam	moderate	.26 to .40	3.8 to 4.4	12 to 15	
9 to 10	very channery loam; very gravelly sandy loam	moderately rapid	.10 to .12	4.8 to 6.2	6	6

**Restrictive Features:** bedrock (paralithic) at 96 to 150 cm or more  
strongly contrasting textural stratification at 12 to 20 cm

**Water Table (May to September):** none

**Drainage Class:** well drained

## Vegetation Features

### Common Vegetation Types:

#### Vegetation Type

White spruce/green alder forest

Broadleaf deciduous-white spruce forest

#### Ecological Status

Climax plant community

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 white

spruce/green alder forest and late-seral community with broadleaf-white spruce forest. 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			Number of Stands
		Min.	Avg.	Max.	
White spruce/green alder forest					0
Broadleaf deciduous-white spruce forest					0

### Characteristics of White spruce/green alder forest

**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 = 9. 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	PIGL	Picea glauca	10.0	22	30	56	35
TM	PIGL	Picea glauca	5.0	16	30	44	27
SM-ST	ALVIC	Alnus viridis ssp. crispa	0.1	17	40	100	41
SL-SM	B EGL	Betula glandulosa	0.1	23	50	67	39
SD-SL	VAUL	Vaccinium uliginosum	2.0	21	45	100	46
SD-SL	EMNI	Empetrum nigrum	10.0	18	35	56	32
SL	LEPAD	Ledum palustre ssp. decumbens	0.1	10	20	44	21
SD-SL	VAVIM99	Vaccinium vitis-idaea spp. Minus	0.1	5	10	89	21
SL	RITR	Ribes triste	3.0	5	7	33	13
SL	LEGR	Ledum groenlandicum	0.1	5	10	22	10
SD	ARRU6	Arctous rubra	0.1	6	15	44	16
GM-GT	CACA4	Calamagrostis canadensis	1.0	6	10	22	11
GM	CALAM	Calamagrostis	5.0	13	20	33	21
GM	ZZGRASS	unknown-grasses	10.0	13	15	22	17
FM	GELI2	Geocaulon lividum	5.0	8	10	22	13
L	LICHEN	total lichens	0.0	9	25	100	30
M	MOSS	total bryophytes-mosses and liverworts	10.0	57	90	100	75
M1	PLSC70	Pleurozium schreberi	10.0	20	30	22	21
B	LITTER	litter-herbaceous, mulch, and woody debris <2.5 cm	0.0	26	75	100	51
B	LITTER2	litter-woody debris >2.5 cm	0.0	4	15	100	20
B	SOIL	mineral-bare soil	0.0	0	2	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	6.0	12.0	20.0	m	6
Tree regeneration	TR	2.0	2.8	4.0	m	4
Tall shrubs	ST	3.0	3.3	4.0	m	3
Medium shrubs	SM	1.0	1.9	3.0	m	12
Low shrubs	SL	20.0	54.1	100.0	cm	22
Dwarf shrubs	SD	10.0	10.0	10.0	cm	4
Tall and medium grasses and grass-likes	GT, GM	20.0	26.7	30.0	cm	3
Tall and medium forbs	FT, FM	30.0	75.0	100.0	cm	4
Dwarf herbs, lichens, and bryophytes	GD, FD, L, M	10.0	10.0	10.0	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 glauca	34	19.1	10.7	Min.	4	B
	76	23.2	13.6	Avg.		
	140	30.2	15.8	Max.		

**Characteristics of Broadleaf deciduous-white spruce forest**

**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	PIGL	Picea glauca	10.0	10	10	33	18
TM	BENE4	Betula neoalaskana	25.0	33	40	67	47
TM	POTR5	Populus tremuloides	35.0	35	35	33	34
TM	PIGL	Picea glauca	10.0	10	10	33	18
TM	PIMA	Picea mariana	5.0	5	5	33	13
TR	PIMA	Picea mariana	15.0	15	15	33	22
SM-ST	ALVIC	Alnus viridis ssp. crispa	5.0	8	10	67	23
SL	VAUL	Vaccinium uliginosum	5.0	12	15	100	35
SL	LEGR	Ledum groenlandicum	5.0	13	20	67	30
SL	SPST3	Spiraea stevenii	5.0	10	15	67	26
SL	BEGL	Betula glandulosa	5.0	5	5	33	13
SL	LEPAD	Ledum palustre ssp. decumbens	5.0	5	5	33	13
SL	SHCA	Shepherdia canadensis	5.0	5	5	33	13
SD	EMNI	Empetrum nigrum	0.1	15	30	67	32
SD	VAVIM99	Vaccinium vitis-idaea spp. Minus	5.0	8	10	100	28
SD	ARUV	Arctostaphylos uva-ursi	5.0	5	5	33	13
GT	CACA4	Calamagrostis canadensis	20.0	20	20	33	26
L	LICHEN	total lichens	0.0	8	25	100	28
M	MOSS	total bryophytes-mosses and liverworts	10.0	28	60	100	53
M1	HYSP70	Hylocomium splendens	65.0	65	65	33	46
B	LITTER	litter-herbaceous, mulch, and woody debris <2.5 cm	20.0	42	65	100	65
B	ROCK	mineral-surface rock fragments	0.0	7	20	100	26
B	LITTER2	litter-woody debris >2.5 cm	2.0	6	10	100	24
B	SOIL	mineral-bare soil	0.0	3	10	100	17
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	8.0	9.3	12.0	m	6
Tree regeneration	TR	3.0	3.0	3.0	m	1
Tall shrubs	ST	3.0	4.5	6.0	m	2
Medium shrubs	SM	1.5	1.8	2.0	m	2
Low shrubs	SL	30.0	54.5	100.0	cm	11
Dwarf shrubs	SD	10.0	10.0	10.0	cm	4
Tall and medium grasses and grass-likes	GT, GM	70.0	70.0	70.0	cm	1
Tall and medium forbs	FT, FM	10.0	10.0	10.0	cm	1
Dwarf herbs, lichens, and bryophytes	GD, FD, L, M	10.0	10.0	10.0	cm	3

### 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	88	22.6	13.4	Min.	1	B
	88	22.6	13.4	Avg		
	88	22.6	13.4	Max.		

### Mapunit Components

#### Common Name (Soils Name):

Boreal-forested gravelly schist colluvial slopes (Typic Dystrocryepts, loamy-skeletal)

Boreal-forested gravelly warm till slopes (Typic Eutrocryepts, 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):

7MS2 Boreal Glaciated Lower Mountain Slopes

(Oxyaquic Eutrocryepts, coarse-loamy-Typic Eutrocryepts, loamy-skeletal Association, 10 to 45 percent slopes)

8MVF Boreal and Subalpine Schist Mountain Valleys

(Humic Cryaquepts, loamy-skeletal-Oxyaquic Eutrocryepts, loamy-skeletal-Typic Dystrocryepts, loamy-skeletal Association, 12 to 50 percent slopes)

### Geographically Associated Landtypes

#### M135A\_303—Gravelly Mountains, Acid:

This site occurs on adjacent ridges. The climax plant community is "Green alder/red current/bluejoint scrub."

#### M135A\_354—Loamy Slopes, Wet:

This site occurs on wetter soils with thick loamy surface textures. The climax plant community is "White spruce/willow woodland, wet."

#### M135A\_400—Loamy Frozen Slopes:

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

### Similar Landtypes

#### M135A\_151—Loamy High Flood Plains:

This site is flooded. The climax plant community is "White spruce/bog blueberry/feathermoss forest."

#### M135A\_358—Gravelly Slopes:

This site occurs on slightly higher slopes. The climax plant community is "Shrub birch-bog blueberry scrub."

#### M135A\_800—Escarpments:

This site occurs on steeper, drier slopes. The climax plant community is "White spruce forest."