Gravelly Mountains, Moist (M135A_306)

Ecoregion Classification

Section: Alaska Mountains (M135A)

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

Physiographic Features

	RV	Range
Elevation (meters):	1,188	670 to 2,053
Slope Gradient (percent):	38	2 to 70

Aspect (clockwise direction): non-influencing

Landform: fan terraces on alluvial fans on mountains; mountains; ridges on mountains

Landform Positions: backslopes; summits

	Frequency
Flooding:	None
Ponding:	None

Climatic Features

	RV	Range
Annual Precipitation (millimeters):	1,024	552 to 2,466
Annual Air Temperature (°C):	-5.6	-10.7 to -2.5
Frost Free Days:	60	50 to 70

Soil Features

Parent Materials: gravelly colluvium derived from diorite
gravelly colluvium derived from schist
silty eolian deposits over gravelly colluvium
silty eolian deposits over gravelly colluvium derived from diorite
silty eolian deposits over gravelly colluvium derived from shale
silty eolian deposits over gravelly till
silty eolian deposits over sandy and gravelly alluvium

Rooting Depth (cm): *RV:* 39 *Range:* 6 to 74

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)
2 to 3	moderately decomposed plant material; slightly decomposed plant material	moderately rapid	.34	4.0 to 6.0	30	80
3 to 9	silt loam	moderate to moderately rapid	.12 to .40	4.4 to 7.1	6 to 12	16 to 20
1 to 32	very gravelly sandy loam; very cobbly sandy loam	moderately rapid to rapid	.03 to .12	4.8 to 7.8	6	2 to 16

Restrictive Features: bedrock (paralithic) at 63 to 150 cm or more
strongly contrasting textural stratification at 6 to 12 cm in some components

Water Table (May to September): none

Drainage Class: somewhat excessively drained or well drained

Vegetation Features

Common Vegetation Types:

Vegetation Type	Ecological Status
Cassiope-polar willow-mountain avens dwarf alpine scrub	Climax plant community

Ecological Status-Transition Description:

A single plant community with cassiope-polar willow- mountain avens dwarf scrub is identified on this site and no transitional pathways to other communities have been identified. This site has been designated as "cold" due to snow drifting which shortens the effective growing season and the more northerly exposure which lowers the incidence of solar radiation and ambient air temperature during summer.

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
Cassiope-polar willow-mountain avens dwarf alpine scrub	181	17	31	54	36

Notable Plants:

Notable plants Include rare plants, range extensions, and plants little known from Denali National Park and Preserve.

Vegetation Type	Symbol	Scientific Name
Cassiope-polar willow-mountain avens dwarf alpine scrub	DOAL2	Douglasia alaskana
	DOGO	Douglasia gormanii
	FEBR2	Festuca brevissima
	STAL3	Stellaria alaskana

Characteristics of Cassiope-polar willow-mountain avens dwarf alpine 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 = 48. 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.*		
SD-SL	VAUL	Vaccinium uliginosum	0.1	7	30	54	19
SD	CATE11	Cassiope tetragona	0.1	31	70	90	53
SD	SAPO	Salix polaris	0.1	17	60	60	32
SD	DROC	Dryas octopetala	0.1	14	40	67	31
SD	EMNI	Empetrum nigrum	0.1	14	40	48	26
SD	SARE2	Salix reticulata	0.1	8	45	62	22
SD	DRAL7	Dryas alaskensis	5.0	21	35	17	19
L	LICHEN	total lichens	0.0	22	70	100	47
L1	CLMI61	Cladina mitis group	0.1	7	25	48	18
L1	LOLI60	Lobaria linita	0.1	6	45	52	18
L1	CLST60	Cladina stellaris	0.1	8	35	15	11
L2	L2ALL	total lichens-crustose and soil crust	0.1	9	25	17	12
M	MOSS	total bryophytes-mosses and liverworts	5.0	49	85	100	70
M1	ZZMOSS	unknown-mosses	0.1	25	70	75	43
M1	HYSP70	Hylocomium splendens	0.1	15	55	31	22
M1	THRE7	Thuidium recognitum	0.1	21	50	23	22
M1	PLSC70	Pleurozium schreberi	0.1	19	45	17	18
M1	DICRA8	Dicranum	0.1	6	15	38	15
M1	RACOM	Racomitrium	0.1	8	20	25	14
B	LITTER	litter-herbaceous, mulch, and woody debris <2.5 cm	0.0	20	65	100	45
B	ROCK	mineral-surface rock fragments	0.0	4	40	100	20
B	SOIL	mineral-bare soil	0.0	2	25	100	14
B	LITTER2	litter-woody debris >2.5 cm	0.0	0	5	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*	
Tree regeneration	TR	0.3	0.3	0.3	m	1
Medium shrubs	SM	1.2	1.5	1.8	m	3
Low shrubs	SL	25.0	47.9	100.0	cm	7
Dwarf shrubs	SD	1.0	7.5	20.0	cm	59
Tall and medium grasses and grass-likes	GT, GM	4.0	27.6	70.0	cm	17
Tall and medium forbs	FT, FM	20.0	27.5	40.0	cm	8
Dwarf herbs, lichens, and bryophytes	GD, FD, L, M	0.4	4.2	15.0	cm	96

Mapunit Components

Common Name (Soils Name):

Alpine-dwarf scrub dark gravelly colluvial slopes, cold (Typic Haplogelolls, loamy-skeletal)

Alpine-dwarf scrub gravelly colluvial slopes, cold (Typic Eutrogelepts, loamy-skeletal)

Alpine-dwarf scrub gravelly diorite colluvial slopes, cold (Typic Dystrogelepts, loamy-skeletal)

Alpine-dwarf scrub gravelly diorite fans, cold (Typic Dystrogelepts, loamy-skeletal)

Alpine-dwarf scrub gravelly fan terraces, cold (Typic Eutrogelepts, sandy-skeletal)

Alpine-dwarf scrub gravelly schist colluvial slopes, cold (Typic Dystrogelepts, loamy-skeletal)

Alpine-dwarf scrub gravelly till slopes, cold (Typic Eutrogelepts, 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):*
7MSA	Alpine Diorite Mountains, Interior (Typic Dystrogelepts, loamy-skeletal-Rock Outcrop Association, 20 to 150 percent slopes)
7MSHD	Alpine Dark Sedimentary Mountains, High Elevation (Rock Outcrop-Typic Haplogelolls, loamy-skeletal Association, 25 to 150 percent slopes)
7MSHL	Alpine Mixed Lithology Mountains, High Elevation (Rock Outcrop-Typic Eutrogelepts, loamy-skeletal Association, 25 to 70 percent slopes)
7TM24	Alpine Diorite Mountains with Discontinuous Permafrost (Typic Dystrogelepts, loamy-skeletal Association, 14 to 65 percent slopes)
7TMS	Alpine Glaciated Low Mountain Summits (Typic Eutrogelepts, loamy-skeletal Association, 0 to 48 percent slopes)
7V1A	Alpine Diorite Fans (Typic Dystrogelepts, loamy-skeletal-Typic Haplogelods, sandy-skeletal Association, 0 to 6 percent slopes)

Geographically Associated Landtypes

M135A_310—Gravelly Mountains, High Elevation:

This site occurs on warmer more southerly slopes. The climax plant community is "White mountain avens-mixed ericaceous shrub dwarf alpine scrub."

M135A_420—Swales, High Elevation:

This site occurs on swales. The climax plant community is "Diamondleaf willow-mixed willow scrub mosaic."

M135A_ROC—Rock and Ice, Nonvegetated:

This site is interspersed with the others and is more prevalent at higher elevations. The climax plant community is "Sparsely vegetated mountain slopes, Interior."