

# Gravelly Mountains, Moist (M135S\_307)

## Ecoregion Classification

**Section:** South Central Mountains (M135S)

**Subsection(s):** Alpine Mountains (M135S.M5)

Nonvegetated Alpine Mountains (M135S.B2)

## Physiographic Features

**Elevation (meters):** *RV* 1,125 *Range* 406 to 2,018

**Slope Gradient (percent):** 39 20 to 70

**Aspect (clockwise direction):** non-influencing

**Landform:** mountains

**Landform Positions:** backslopes; footslopes

**Flooding:** *Frequency* None

**Ponding:** None

## Climatic Features

**Annual Precipitation (millimeters):** *RV* 1,568 *Range* 509 to 3,285

**Annual Air Temperature (°C):** -5.9 -11.4 to -1.7

**Frost Free Days:** 60 50 to 70

## Soil Features

**Parent Materials:** silty volcanic ash and/or eolian deposits over gravelly till

silty volcanic ash and/or gravelly colluvium over gravelly colluvium derived from diorite

silty volcanic ash and/or gravelly colluvium over gravelly colluvium derived from sedimentary rock

**Rooting Depth (cm):** *RV*: 40 *Range*: 4 to 79

## 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	slightly decomposed plant material; moderately decomposed plant material	moderately rapid	.34	3.3 to 4.0	30	
4 to 6	silt loam; gravelly loam	moderate	.12 to .40	3.6 to 4.6	12 to 25	
6 to 25	very channery loam; extremely channery loam; very cobbly sandy loam; extremely cobbly sandy loam	moderate or moderately rapid	.10 to .34	4.3 to 5.7	6 to 25	6

**Restrictive Features:** bedrock (paralithic) at 72 to 150 cm or more

strongly contrasting textural stratification at 6 to 15 cm

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

**Drainage Class:** well drained

## Vegetation Features

### Common Vegetation Types:

#### Vegetation Type

Steller cassiope-crowberry dwarf alpine scrub

#### Ecological Status

Climax plant community

### Ecological Status-Transition Description:

A single plant community with Steller cassiope-crowberry dwarf scrub is identified as the potential on this site. No transitional pathways to other communities have been identified for this site. This site has been designated as "cool" 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. The vegetation on this site, however, is very similar to that of 169Xy363, with slightly more Steller cassiope and a slightly more variable composition. The ground surface here also lacks hummocky micro-relief.

### 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.	
Steller cassiope-crowberry dwarf alpine scrub	127	11	25	49	21

### Notable Plants:

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

Vegetation Type	Symbol	Scientific Name
Steller cassiope-crowberry dwarf alpine scrub	CAFO3	Carex foenea
	DISI6	Diphasiastrum sitchense
	PHAL4	Phyllodoce aleutica
	PHCA10	Phyllodoce caerulea

### Characteristics of Steller cassiope-crowberry 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 = 22. 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	CAST33	Cassiope stelleriana	1.0	34	75	86	54
SD	EMNI	Empetrum nigrum	0.1	19	60	86	40
SD	LUPE	Luetkea pectinata	0.1	19	40	86	40
SD	VAUL	Vaccinium uliginosum	0.0	7	20	59	20
SD	CATE11	Cassiope tetragona	0.1	15	30	18	16
SD	VACE	Vaccinium cespitosum	0.1	6	15	32	14
SD	SARE2	Salix reticulata	0.1	8	20	18	12
FD	DIAL5	Diphasiastrum alpinum	0.1	6	20	73	21
L	LICHEN	total lichens	0.0	13	60	100	36
L1	CLST60	Cladina stellaris	0.1	7	25	23	13
M	MOSS	total bryophytes-mosses and liverworts	10.0	49	80	100	70
M1	ZZMOSS	unknown-mosses	10.0	31	55	73	48
M1	DICRA8	Dicranum	5.0	14	40	59	29
M1	PLSC70	Pleurozium schreberi	0.1	11	30	32	19
B	LITTER	litter-herbaceous, mulch, and woody debris <2.5 cm	5.0	39	85	100	62
B	ROCK	mineral-surface rock fragments	0.0	2	10	100	14
B	SOIL	mineral-bare soil	0.0	1	5	100	10
B	LITTER2	litter-woody debris >2.5 cm	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.		
Low shrubs	SL	20.0	26.7	30.0	cm	3
Dwarf shrubs	SD	1.0	4.9	10.0	cm	27
Tall and medium grasses and grass-likes	GT, GM	6.0	17.1	40.0	cm	9
Tall and medium forbs	FT, FM	13.0	30.7	70.0	cm	4
Dwarf herbs, lichens, and bryophytes	GD, FD, L, M	1.0	3.5	10.0	cm	60

## **Mapunit Components**

### **Common Name (Soils Name):**

- Alpine-dwarf scrub gravelly colluvial slopes, cool (Andic Dystricryepts, loamy-skeletal)
- Alpine-dwarf scrub gravelly diorite colluvial slopes, cool (Andic Dystricryepts, loamy-skeletal)
- Alpine-dwarf scrub gravelly diorite colluvial slopes, warm (Andic Dystricryepts, loamy-skeletal)
- Alpine-dwarf scrub gravelly diorite till slopes, cool (Typic Haplocryods, 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):**

- 9MSA Alpine Diorite Mountains  
(Andic Dystricryepts, loamy-skeletal-Rock Outcrop Association, 20 to 150 percent slopes)
- 9MSH Alpine Mountains  
(Rock Outcrop-Andic Dystricryepts, loamy-skeletal Association, 20 to 150 percent slopes)

## **Geographically Associated Landtypes**

### **M135S\_310—Gravelly Mountains:**

This site occurs on warmer more southerly facing micro-sites. The climax plant community is "Lichen/mixed ericaceous shrub dwarf alpine scrub."

### **M135S\_421—Gravelly Colluvial Slopes:**

This site occurs on plain colluvial slopes. The climax plant community is "Barclay willow/mixed forb scrub mosaic."

### **M135S\_ROC—South Central 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, South Central."

## **Similar Landtypes**

### **M135S\_363—Hummocks:**

This site has a thick loamy surface layer and hummocky surface micro-relief. The climax plant community is "Steller cassiope-crowberry-partridge foot alpine dwarf scrub."