

Hummocks (M135S_363)

Ecoregion Classification

Section: South Central Mountains (M135S)

Subsection(s): Subalpine Mountains (M135S.M5L)

Alpine Mountains (M135S.M5)

Physiographic Features

Elevation (meters): *RV* 917 *Range* 395 to 1,614

Slope Gradient (percent): 21 0 to 45

Aspect (clockwise direction): southeast to southwest

Landform: earth hummocks on hills; earth hummocks on mountains; earth hummocks on till plains; earth hummocks on mountains

Landform Positions: backslopes; footslopes; shoulders

Frequency

Flooding: 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 loess over gravelly colluvium derived from diorite
silty volcanic ash and/or loess over gravelly colluvium derived from sedimentary rock
silty volcanic ash and/or loess over gravelly till

Rooting Depth (cm): *RV:* 32 *Range:* 3 to 68

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	slightly decomposed plant material	moderately rapid	.34	3.1 to 4.3	30	
7 to 21	silt loam	moderate	.34	3.3 to 5.3	25	

Restrictive Features: bedrock (paralithic) at 66 to 150 cm or more
strongly contrasting textural stratification at 36 cm

Water Table (May to September): none

Drainage Class: well drained

Vegetation Features

Common Vegetation Types:

Vegetation Type

Steller cassiope-crowberry-partridge foot alpine dwarf scrub

Blueberry-crowberry/dwarf dogwood dwarf alpine scrub

Ecological Status

Climax plant community

Climax plant community on wetter microsites

Ecological Status-Transition Description:

Two plant communities are identified on this site. The potential community of Steller cassiope-crowberry-partridge foot

dwarf scrub is very similar to 169Xy307 but has a characteristic pattern of hummocky micro-relief. Of minor extent where slightly more moist conditions occur is a community of blueberry-crowberry/dwarf dogwood dwarf scrub. No transitional pathways to other communities have been identified for 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.	
Steller cassiope-crowberry-partridge foot alpine dwarf scrub	116	16	26	45	23
Blueberry-crowberry/dwarf dogwood dwarf alpine scrub	58	20	30	36	3

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-partridge foot alpine dwarf scrub	CAFO3	Carex foenea
	DISI6	Diphasiastrum sitchense
	PHAL4	Phyllodoce aleutica

Characteristics of Steller cassiope-crowberry-partridge foot alpine dwarf 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 = 23. 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	LUPE	Luetkea pectinata	2.0	28	70	96	52
SD	CAST33	Cassiope stelleriana	1.0	30	50	87	51
SD	EMNI	Empetrum nigrum	0.1	24	70	91	47
SD	VAUL	Vaccinium uliginosum	0.1	9	60	52	22
SD	VACE	Vaccinium cespitosum	1.0	5	10	30	12
SD	SAST2	Salix stolonifera	0.1	5	7	22	10
FD-FM	GYDR	Gymnocarpium dryopteris	0.1	12	40	17	14
FD	DIAL5	Diphasiastrum alpinum	0.1	8	20	87	26
FD	COCA13	Cornus canadensis	1.0	19	60	17	18
L	LICHEN	total lichens	0.1	12	35	100	35
L1	CLADO3	Cladonia	0.1	6	20	91	23
M	MOSS	total bryophytes-mosses and liverworts	25.0	54	85	100	73
M1	ZZMOSS	unknown-mosses	10.0	34	55	74	50
M1	PLSC70	Pleurozium schreberi	7.0	18	40	35	25
M1	DICRA8	Dicranum	0.1	10	20	57	24
B	LITTER	litter-herbaceous, mulch, and woody debris <2.5 cm	15.0	40	80	100	63
B	ROCK	mineral-surface rock fragments	0.0	1	15	100	10
B	LITTER2	litter-woody debris >2.5 cm	0.0	0	0	100	0
B	SOIL	mineral-bare soil	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.

Stratum Name	Included Strata	Height			Units	Number of Records
		Min.	Avg.	Max.		
Medium shrubs	SM	1.0	1.0	1.0	m	1
Low shrubs	SL	20.0	30.0	40.0	cm	4
Dwarf shrubs	SD	1.0	4.1	15.0	cm	31
Tall and medium grasses and grass-likes	GT, GM	4.0	30.0	90.0	cm	9
Tall and medium forbs	FT, FM	12.0	31.0	50.0	cm	2
Dwarf herbs, lichens, and bryophytes	GD, FD, L, M	1.0	2.1	8.0	cm	52

Characteristics of Blueberry-crowberry/dwarf dogwood dwarf alpine scrub

Ecological Status: Climax plant community on wetter 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.		
SD	VAUL	Vaccinium uliginosum	30.0	45	55	100	67
SD	EMNI	Empetrum nigrum	10.0	18	30	100	42
SD	VAVIM99	Vaccinium vitis-idaea spp. Minus	0.1	15	30	67	32
SD	CATE11	Cassiope tetragona	25.0	25	25	33	29
SD	B EGL	Betula glandulosa	7.0	7	7	33	15
FM-FT	EPAN2	Epilobium angustifolium	0.1	10	20	67	26
FM	GEER2	Geranium erianthum	5.0	5	5	33	13
FD	COCA13	Cornus canadensis	0.1	17	25	100	41
FD	RUST6	Rubus stellatus	5.0	8	10	67	23
FD	GYDR	Gymnocarpium dryopteris	5.0	5	5	33	13
L	LICHEN	total lichens	0.1	20	40	100	45
L1	CLADI3	Cladina	5.0	8	10	67	23
L1	MARI60	Masonhalea richardsonii	15.0	15	15	33	22
L1	CEIS61	Cetraria islandica group	1.0	6	10	67	20
L1	CLADO3	Cladonia	5.0	5	5	67	18
L1	CLRA61	Cladina rangiferina group	5.0	5	5	33	13
M	MOSS	total bryophytes-mosses and liverworts	35.0	45	50	100	67
M1	PLSC70	Pleurozium schreberi	10.0	18	30	100	42
M1	ZZMOSS	unknown-mosses	5.0	13	20	100	36
M1	DICRA8	Dicranum	25.0	25	25	33	29
M1	HYS70	Hylocomium splendens	5.0	5	5	33	13
B	LITTER	litter-herbaceous, mulch, and woody debris <2.5 cm	20.0	45	60	100	67
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			Units	Number of Records
		Min.	Avg.	Max.		
Low shrubs	SL	40.0	60.0	80.0	cm	2
Dwarf shrubs	SD	6.0	9.4	20.0	cm	5
Tall and medium grasses and grass-likes	GT, GM	100.0	100.0	100.0	cm	1
Tall and medium forbs	FT, FM	60.0	70.0	80.0	cm	2
Dwarf herbs, lichens, and bryophytes	GD, FD, L, M	3.0	4.2	8.0	cm	6

Mapunit Components

Common Name (Soils Name):

Alpine-dwarf scrub silty hummocks (Andic Humicryods, medial over loamy-skeletal)

Alpine-dwarf scrub silty till hummocks (Andic Humicryods, medial over 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):

9MSH1	Alpine Low Mountains (Andic Humicryods, medial over loamy-skeletal-Andic Dystrocryepts, loamy-skeletal-Humic Vitricryands, medial-skeletal Association, 10 to 80 percent slopes)
9TM3	Alpine Cirque Valleys (Andic Humicryods, medial over loamy-skeletal-Andic Dystrocryepts, loamy-skeletal-Aquandic Cryaquepts, loamy-skeletal Complex, 8 to 60 percent slopes)

- 9TM4 Alpine Diorite Cirque Valleys
(Andic Humicryods, medial over loamy-skeletal-Typic Haplocryods, loamy-skeletal-Andic Dystrocryepts, loamy-skeletal Complex, 10 to 80 percent slopes)
- 9TP Alpine Till Plains and Hills
(Andic Dystrocryepts, loamy-skeletal-Andic Humicryods, medial over loamy-skeletal-Typic Cryaquands, medial over loamy-skeletal Association, 0 to 30 percent slopes)

Similar Landtypes

M135S_307—Gravelly Mountains, Moist:

This site lacks hummocky surface micro-relief and is very shallow to gravelly till material. The climax plant community is "Steller cassiope-crowberry dwarf alpine scrub."

M135S_358—Gravelly Slopes:

This site lacks hummocky surface micro-relief and is very shallow to gravelly till material. The climax plant community is "Bog blueberry dwarf alpine scrub."