Gravelly Slopes (M135A_358)

Ecoregion Classification

Section: Alaska Mountains (M135A)

Subsection(s): Teklanika Alpine Mountains & Plateaus (M135A.M6)
Boreal Mountains (M135A.M2L)
Alpine Mountains (M135A.M2)
Boreal Outer Range & Kantishna Hills (M135A.M1L)
Alpine Outer Range & Kantishna Hills (M135A.M1)
Glaciated Lowlands (M135A.G1L)
Glaciated Uplands (M135A.G1)

Physiographic Features

	RV	Range
Elevation (meters):	854	261 to 1,792
Slope Gradient (percent):	30	4 to 70

Aspect (clockwise direction): non-influencing

Landform: escarpments; hills; mountains; till plains

Landform Positions: backslopes; footslopes; toeslopes

	Frequency
Flooding:	None
Ponding:	None

Climatic Features

	RV	Range
Annual Precipitation (millimeters):	762	446 to 2,466
Annual Air Temperature (°C):	-3.9	-10.7 to -2.4
Frost Free Days:	62	50 to 80

Soil Features

Parent Materials: silty eolian deposits over gravelly colluvium derived from schist
silty eolian deposits over gravelly colluvium derived from shale
silty eolian deposits over gravelly residuum
silty eolian deposits over gravelly till
silty eolian deposits over gravelly till derived from diorite

Rooting Depth (cm): *RV:* 37 *Range:* 10 to 113

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 7	slightly decomposed plant material	moderately rapid	.34	4.4 to 5.1	30	
1 to 6	silt loam	moderate to moderately rapid	.14 to .40	4.2 to 5.1	6 to 15	
1 to 28	silt loam; very gravelly sandy loam; very channery silt loam; extremely channery silt loam	moderate to moderately rapid	.10 to .40	4.2 to 5.6	5 to 12	6

Restrictive Features: bedrock (paralithic) at 120 to 150 cm or more
strongly contrasting textural stratification at 8 to 13 cm

Water Table (May to September): none

Drainage Class: well drained

Vegetation Features

Common Vegetation Types:

Vegetation Type	Ecological Status
Shrub birch-bog blueberry scrub	Climax plant community

Ecological Status-Transition Description:

A single plant community with shrub birch-bog blueberry scrub is identified on this site. 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.

		Per Stand			Number of
Vegetation Type	Total	*Min.*	*Avg.*	*Max.*	Stands
Shrub birch-bog blueberry scrub	141	12	25	43	23

Notable Plants:

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

Vegetation Type	Symbol	Scientific Name
Shrub birch-bog blueberry scrub	CAAL6	Carex albonigra
	DOGO	Douglasia gormanii
	FEBR2	Festuca brevissima

Characteristics of Shrub birch-bog blueberry 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 = 74. Only those vascular, lichen, and bryophyte species with average cover >=5% and constancy >=15% are listed.

			Percent Canopy Cover			Percent	Importance
Stratum	Symbol	Scientific Name	*Min.*	*Avg.*	*Max.*	Constancy	Value
SD-ST	BEGL	Betula glandulosa	0.1	36	85	100	60
SD-SM	SAPU15	Salix pulchra	0.1	7	45	57	20
SD-SM	SAGL	Salix glauca	0.1	5	25	38	14
SD-SL	VAUL	Vaccinium uliginosum	0.1	28	60	97	52
SD-SL	LEPAD	Ledum palustre ssp. decumbens	0.1	10	40	69	26
SD	EMNI	Empetrum nigrum	0.1	14	40	70	31
SD	VAVIM99	Vaccinium vitis-idaea spp. Minus	0.1	7	25	88	25
SD	ARAL13	Arctous alpina	0.1	7	30	38	16
SD	CATE11	Cassiope tetragona	0.1	10	35	19	14
SD	DROC	Dryas octopetala	0.1	9	40	23	14
SD	SARE2	Salix reticulata	0.1	7	40	23	13
GM-GT	CACA4	Calamagrostis canadensis	0.1	10	40	24	15
GM	CAREX	Carex	0.1	6	25	42	16
L	LICHEN	total lichens	0.0	12	70	100	35
L1	STERE2	Stereocaulon	0.1	5	20	34	13
M	MOSS	total bryophytes-mosses and liverworts	0.0	44	90	100	66
M1	PLSC70	Pleurozium schreberi	0.1	29	75	32	30
M1	HYSP70	Hylocomium splendens	0.1	20	65	28	24
M1	ZZMOSS	unknown-mosses	0.1	14	60	34	22
M1	DICRA8	Dicranum	0.1	5	10	16	9
B	LITTER	litter-herbaceous, mulch, and woody debris <2.5 cm	0.0	22	90	100	47
B	SOIL	mineral-bare soil	0.0	1	30	100	10
B	ROCK	mineral-surface rock fragments	0.0	1	45	100	10
B	LITTER2	litter-woody debris >2.5 cm	0.0	0	5	100	0
B	WATER	water	0.0	0	3	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	0.5	4.2	18.0	m	29
Tree regeneration	TR	0.5	1.9	4.0	m	9
Tall shrubs	ST	3.0	3.9	4.8	m	2
Medium shrubs	SM	1.0	1.5	2.5	m	44
Low shrubs	SL	20.0	52.6	100.0	cm	150
Dwarf shrubs	SD	2.0	11.5	20.0	cm	171
Tall and medium grasses and grass-likes	GT, GM	20.0	55.2	130.0	cm	21
Tall and medium forbs	FT, FM	10.0	26.7	200.0	cm	42
Dwarf herbs, lichens, and bryophytes	GD, FD, L, M	1.0	7.8	10.0	cm	147

Mapunit Components

Common Name (Soils Name):

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

Alpine-scrub gravelly diorite till slopes (Typic Haplogelods, loamy-skeletal)

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

Alpine-scrub gravelly schist colluvial slopes, thick surface (Typic Dystrogelepts, loamy-skeletal)

Alpine-scrub gravelly slopes (Typic Haplogelods, loamy-skeletal)

Alpine-scrub gravelly till slopes (Typic Haplogelods, 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):*
5SA11	Alpine and Subalpine Schist Mountains (Typic Dystrogelepts, loamy-skeletal-Oxyaquic Eutrocryepts, loamy-skeletal Association, 5 to 40 percent slopes)
5TS1	Alpine Schist Lower Mountain Slopes with Discontinuous Permafrost, Warm (Ruptic-Histic-Aquiturbels, loamy-skeletal-Typic Dystrogelepts, loamy-skeletal-Typic Histoturbels, loamy-skeletal Association, 5 to 45 percent slopes)
7ES	Boreal and Alpine Escarpments (Typic Eutrocryepts, coarse-loamy-Typic Haplogelods, loamy-skeletal-Nonvegetated Talus Complex, 30 to 70 percent slopes)
7MS1D	Alpine Dark Sedimentary Mountains (Typic Haplogelolls, loamy-skeletal-Rock Outcrop-Typic Eutrogelepts, loamy skeletal Association, 25 to 70 percent slopes)
7MS1L	Alpine Mixed Lithology Mountains (Rock Outcrop-Typic Eutrogelepts, loamy skeletal Association, 25 to 70 percent slopes)
7NG2	Alpine Backslopes on Hills, Nenana Gravels (Typic Haplogelods, loamy-skeletal-Oxyaquic Eutrocryepts, coarse-loamy-Oxyaquic Eutrogelepts, coarse- loamy Association, 12 to 45 percent slopes)
7SA1	Alpine and Subalpine Mountains (Rock Outcrop-Typic Haplogelolls, loamy-skeletal-Typic Eutrogelepts, loamy-skeletal Association, 25 to 85 percent slopes)
7SA3	Alpine and Subalpine Glaciated Mountains with Discontinuous Permafrost (Oxyaquic Eutrocryepts, coarse-loamy-Typic Historthels, loamy-skeletal-Typic Haplogelods, loamy-skeletal Association, 20 to 55 percent slopes)
7SA31	Subalpine Mountains (Typic Dystrocryepts, loamy-skeletal-Oxyaquic Eutrocryepts, coarse-loamy-Typic Haplogelods, loamy- skeletal Association, 8 to 70 percent slopes)
7TM21	Alpine Glaciated Low Diorite Mountains with Discontinuous Permafrost (Typic Dystrogelepts, sandy-skeletal-Typic Eutrogelepts, loamy-skeletal-Typic Haplogelods, loamy- skeletal Association, 8 to 40 percent slopes)
7TP2	Alpine Till Plains and Hills with Discontinuous Permafrost (Typic Haplogelods, loamy-skeletal-Typic Eutrogelepts, loamy-skeletal-Typic Historthels, loamy-skeletal Association, 2 to 50 percent slopes)

7TP3 Boreal and Alpine Hills with Discontinuous Permafrost
(Typic Haplogelods, loamy-skeletal-Oxyaquic Eutrocryepts, coarse-loamy-Typic Historthels, loamy-skeletal Association, 0 to 35 percent slopes)

7TP5 Boreal and Alpine Till Plains and Hills with Discontinuous Permafrost
(Typic Historthels, loamy-skeletal-Typic Haplogelods, loamy-skeletal Association, 2 to 24 percent slopes)

7TP8 Alpine Glaciated Diorite Plains and Hills
(Typic Haplogelods, loamy-skeletal-Typic Dystrogelepts, sandy-skeletal-Oxyaquic Eutrogelepts, loamy- skeletal Association, 2 to 35 percent slopes)

8LMV Alpine and Subalpine Schist Mountain Valleys
(Typic Dystrogelepts, loamy-skeletal Association, 8 to 60 percent slopes)

8MBS Alpine Schist Mountains with Discontinuous Permafrost
(Typic Dystrogelepts, loamy-skeletal-Typic Historthels, loamy-skeletal Association, 14 to 50 percent slopes)

8MFS Alpine and Subalpine Schist Lower Mountain Slopes with Discontinuous Permafrost
(Typic Historthels, coarse-loamy-Typic Dystrogelepts, loamy-skeletal-Oxyaquic Eutrocryepts, loamy-skeletal Association, 10 to 45 percent slopes)

Geographically Associated Landtypes

M135A_180—Gravelly Frozen Slopes:

This site occurs on wetter soils with permafrost at moderate depths. The climax plant community is "Shrub birch-mixed ericaceous shrub/sedge scrub."

M135A_356—Gravelly Slopes, High Elevation:

This site occurs on slightly higher elevations. The climax plant community is "Shrub birch-dwarf ericaceous scrub mosaic."

M135A_405—Swales:

This site occurs on swales with seasonally wet soils. The climax plant community is "Green alder scrub mosaic."

Similar Landtypes

M135A_177—Loamy Frozen Slopes, High Elevation:

This site has soils that are moderately deep over permafrost. The climax plant community is "Shrub birch-bog blueberry/moss scrub."

M135A_352—Gravelly and Sandy Terraces, High Elevation:

This site occurs on terraces with somewhat excessively drained soils. The climax plant community is "Shrub birch-bog blueberry/lichen scrub."

M135A_356—Gravelly Slopes, High Elevation:

This site occurs at higher elevation. The climax plant community is "Shrub birch-dwarf ericaceous scrub mosaic."