

Gravelly and Sandy Terraces, High Elevation (M135A_352)

Ecoregion Classification

Section: Alaska Mountains (M135A)

Subsection(s): Lowland Flood Plains & Terraces & Fans (M135A.V1L)

Alpine Flood Plains & Terraces & Fans (M135A.V1)

Boreal Mountains (M135A.M2L)

Alpine Mountains (M135A.M2)

Alpine Outer Range & Kantishna Hills (M135A.M1)

Physiographic Features

Elevation (meters): *RV* 842 *Range* 280 to 1,460

Slope Gradient (percent): 7 0 to 25

Aspect (clockwise direction): non-influencing

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

Landform Positions: backslopes; shoulders; summits

Flooding: *Frequency* None

Ponding: None

Climatic Features

Annual Precipitation (millimeters): *RV* 793 *Range* 344 to 2,466

Annual Air Temperature (°C): -4.4 -10.7 to -2.1

Frost Free Days: 62 50 to 80

Soil Features

Parent Materials: silty eolian deposits over sandy and gravelly alluvium

silty eolian deposits over sandy and gravelly alluvium derived from schist

Rooting Depth (cm): *RV:* 26 *Range:* 2 to 81

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)
5 to 8	slightly decomposed plant material	moderately rapid	.34	4.0	30	
2 to 12	silt loam	moderate	.18 to .19	4.0 to 4.3	12	
2 to 6	silt loam; loamy sand; extremely gravelly loamy sand; extremely gravelly coarse sand	moderate to rapid	.03 to .19	4.0 to 5.8	2 to 12	2 to 16

Restrictive Features: strongly contrasting textural stratification at 15 to 34 cm

Water Table (May to September): none

Drainage Class: somewhat excessively drained

Vegetation Features

Common Vegetation Types:

Vegetation Type

Shrub birch-bog blueberry/lichen scrub

Ecological Status

Climax plant community

Ecological Status-Transition Description:

A single plant community with shrub birch-bog blueberry/lichen 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.

Vegetation Type	Total	Per Stand			Number of Stands
		Min.	Avg.	Max.	
Shrub birch-bog blueberry/lichen scrub	64	17	23	37	5

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/lichen scrub	STLO	Stellaria longifolia

Characteristics of Shrub birch-bog blueberry/lichen 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 = 27. 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.		
SL-ST	SAAL	Salix alaxensis	0.1	7	40	22	12
SL-SM	BEGL	Betula glandulosa	0.1	50	95	100	71
SL-SM	SAPU15	Salix pulchra	0.1	8	45	74	24
SL-SM	SAGL	Salix glauca	0.1	5	20	37	14
SL-SM	SALIX	Salix	0.1	8	25	19	12
SD-SL	VAUL	Vaccinium uliginosum	0.1	17	60	93	40
SD-SL	VAVIM99	Vaccinium vitis-idaea spp. Minus	0.1	10	40	89	30
SD-SL	LEPAD	Ledum palustre ssp. decumbens	0.1	10	40	56	24
SD	EMNI	Empetrum nigrum	0.1	17	40	78	36
SD	SARE2	Salix reticulata	4.0	6	10	19	11
GM-GT	CACA4	Calamagrostis canadensis	0.1	9	30	37	18
GM-GT	FEAL	Festuca altaica	0.1	5	20	52	16
L	LICHEN	total lichens	0.0	21	70	100	46
L1	CLADI3	Cladina	0.1	11	40	52	24
L1	STERE2	Stereocaulon	0.1	9	40	44	20
L1	FLCU	Flavocetraria cucullata	1.0	5	15	15	9
M	MOSS	total bryophytes-mosses and liverworts	0.0	56	95	100	75
M1	HYSP70	Hylocomium splendens	0.1	41	90	22	30
M1	ZZMOSS	unknown-mosses	0.1	9	25	41	19
M1	PLSC70	Pleurozium schreberi	0.1	11	30	22	16
M1	POCO38	Polytrichum commune	3.0	12	20	19	15
B	LITTER	litter-herbaceous, mulch, and woody debris <2.5 cm	0.0	15	100	100	39
B	LITTER2	litter-woody debris >2.5 cm	0.0	1	15	100	10
B	SOIL	mineral-bare soil	0.0	0	5	100	0
B	ROCK	mineral-surface rock fragments	0.0	0	3	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	0.2	3.7	9.0	m	9
Tree regeneration	TR	0.5	2.7	4.0	m	3
Medium shrubs	SM	1.2	1.6	2.0	m	13
Low shrubs	SL	20.0	61.0	110.0	cm	53
Dwarf shrubs	SD	2.0	9.2	20.0	cm	22
Tall and medium grasses and grass-likes	GT, GM	20.0	42.5	70.0	cm	8

Stratum Name	Included Strata	Height			Units	Number of Records
		Min.	Avg.	Max.		
Tall and medium forbs	FT, FM	10.0	25.6	100.0	cm	16
Dwarf herbs, lichens, and bryophytes	GD, FD, L, M	2.0	7.8	10.0	cm	32

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	67	20.8	8.5	Min.	B
	95	24.2	10.0	Avg	
	148	29.5	11.0	Max.	

Mapunit Components

Common Name (Soils Name):

- Alpine-scrub gravelly schist terraces (Typic Haplogelods, sandy-skeletal)
- Alpine-scrub gravelly terraces (Typic Haplogelods, sandy-skeletal)
- Alpine-scrub loamy terraces (Typic Haplogelods, coarse-loamy over sandy-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):

- 5V1 Alpine Schist Alluvial Fans with Discontinuous Permafrost
(Typic Haplogelods, sandy-skeletal-Typic Historthels, coarse-loamy-Typic Gelorthents, loamy- skeletal Association, 2 to 15 percent slopes)
- 7AF Alpine Alluvial Fans
(Oxyaquic Eutrogelepts, coarse-silty over sandy-skeletal-Typic Haplogelods, sandy-skeletal Association, 2 to 8 percent slopes)
- 7AF2 Alpine and Boreal Alluvial Fans
(Typic Haplogelods, sandy-skeletal-Typic Cryorthents, sandy-skeletal Association, 10 to 25 percent slopes)
- 7FP21 Alpine Diorite Terraces and Flood Plains
(Typic Haplogelods, sandy-skeletal-Oxyaquic Gelorthents, sandy-skeletal-Typic Haplogelods, coarse-loamy over sandy-skeletal Complex)
- 7ST Alpine Terraces
(Typic Haplogelods, sandy-skeletal-Typic Haplogelods, coarse-loamy over sandy-skeletal Association, 0 to 10 percent slopes)
- 7V1 Alpine Lower Mountain Slopes and Fans with Discontinuous Permafrost
(Typic Haplogelods, sandy-skeletal-Typic Historthels, coarse-loamy over sandy-skeletal-Typic Historthels, loamy-skeletal Association, 0 to 20 percent slopes)
- 7V11 Alpine Fans
(Typic Gelorthents, sandy-skeletal-Riverwash-Typic Haplogelods, sandy-skeletal Association, 0 to 15 percent slopes)
- 7V2 Boreal Fans and Mountain Footslopes
(Oxyaquic Eutrocryepts, coarse-loamy over sandy-skeletal-Typic Eutrocryepts, sandy-skeletal-Typic Haplogelods, sandy-skeletal Association, 0 to 32 percent slopes)
- 8FP2 Boreal Schist Flood Plains and Terraces
(Oxyaquic Cryorthents, sandy-skeletal-Typic Cryorthents, sandy-skeletal-Typic Haplogelods, sandy-skeletal Complex)
- 8ST1 Alpine Schist Terraces and Mountain Toeslopes with Discontinuous Permafrost
(Typic Histoturbels, loamy-skeletal-Typic Historthels, coarse-loamy-Typic Haplogelods, sandy-skeletal)

Geographically Associated Landtypes

M135A_150—Loamy Flood Plains, High Elevation:

This site occurs on flooded soils with thick loamy surface textures. The climax plant community is "Riparian low diamondleaf willow-feltleaf willow scrub."

M135A_258—Gravelly Flood Plains, Cool:

This site occurs on flooded soils. The climax plant community is "Feltleaf willow-mixed shrub/herbaceous scrub."

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_180—Gravelly Frozen Slopes:

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

M135A_356—Gravelly Slopes, High Elevation:

This site has soils that are well drained. The climax plant community is "Shrub birch-dwarf ericaceous scrub mosaic."

M135A_358—Gravelly Slopes:

This site has soils that are well drained. The climax plant community is "Shrub birch-bog blueberry scrub."