

Loamy Frozen Terraces, Wet (M135A_105)

Ecoregion Classification

Section: Alaska Mountains (M135A)

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

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

Toklat Basin Lowlands (M135A.M7)

Teklanika Boreal Mountains & Plateaus (M135A.M6L)

Boreal Outer Range & Kantishna Hills (M135A.M1L)

Glaciated Lowlands (M135A.G1L)

Physiographic Features

Elevation (meters): *RV* 520 *Range* 211 to 919

Slope Gradient (percent): 3 0 to 12

Aspect (clockwise direction): southwest to west

Landform: turf hummocks on mountains; turf hummocks on outwash plains; turf hummocks on plateaus; turf hummocks on stream terraces

Landform Positions: summits; toeslopes

	<i>Frequency</i>	<i>Duration</i>	<i>Beginning Month</i>	<i>Ending Month</i>	<i>Depth (cm)</i>
Flooding:	None				
Ponding:	Frequent	Long	May	Jun	20 cm

Climatic Features

Annual Precipitation (millimeters): *RV* 538 *Range* 344 to 1,229

Annual Air Temperature (°C): -2.9 -8.3 to -2.1

Frost Free Days: 69 50 to 80

Soil Features

Parent Materials: grassy organic material over silty cryoturbate over silty eolian deposits derived from schist
grassy organic material over silty cryoturbate over silty alluvium
grassy organic material over silty cryoturbate over silty eolian deposits

Rooting Depth (cm): *RV:* 41 *Range:* 28 to 61

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)
22 to 40	peat	moderately rapid	.34	3.6 to 4.9	30	
1 to 8	mucky silt loam	moderate	.19 to .40	5.3 to 5.9	15	20
11	silt loam, muck	moderate	.19	6.6		25

Restrictive Features: permafrost at 52 to 77 cm

Water Table (May to September): 0 to 50 cm

Drainage Class: very poorly drained

Vegetation Features

Common Vegetation Types:

Vegetation Type	Ecological Status
Black spruce/tussock cottongrass woodland	Climax plant community
Cottongrass-fireweed-bluejoint meadow	Early stage of fire induced secondary succession
Shrub birch-tussock cottongrass scrub2	Late stage of fire induced secondary succession

Ecological Status-Transition Description:

Three plant communities are identified on this fire-influenced site including a potential community with black spruce/tussock cottongrass woodland, an early-seral community with cottongrass-fireweed-bluejoint meadow and a late-seral community with shrub birch-tussock cottongrass scrub2. Fire is considered a transitional pathway between seral communities within 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.	
Black spruce/tussock cottongrass woodland	14	14	14	14	1
Cottongrass-fireweed-bluejoint meadow					0
Shrub birch-tussock cottongrass scrub2	18	18	18	18	1

Characteristics of Black spruce/tussock cottongrass woodland

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 = 10. 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.		
TR	PIGL	<i>Picea glauca</i>	0.1	5	10	40	14
SL-SM	B EGL	<i>Betula glandulosa</i>	5.0	16	35	100	40
SD-SL	LEPAD	<i>Ledum palustre</i> ssp. <i>decumbens</i>	10.0	21	35	100	46
SD-SL	VAUL	<i>Vaccinium uliginosum</i>	0.1	13	30	90	34
SD	VAVIM99	<i>Vaccinium vitis-idaea</i> spp. <i>Minus</i>	0.1	6	15	90	23
SD	EMNI	<i>Empetrum nigrum</i>	0.1	9	20	40	19
GM	ERIOP	<i>Eriophorum</i>	15.0	59	80	50	54
GM	ERBR6	<i>Eriophorum brachyantherum</i>	45.0	59	80	40	49
GM	CABI5	<i>Carex bigelowii</i>	7.0	18	30	20	19
L	LICHEN	total lichens	0.0	4	20	100	20
M	MOSS	total bryophytes-mosses and liverworts	10.0	40	90	100	63
M1	SPHAG2	<i>Sphagnum</i>	5.0	34	90	50	41
M1	PLSC70	<i>Pleurozium schreberi</i>	15.0	18	20	20	19
M1	HYSP70	<i>Hylocomium splendens</i>	10.0	15	20	20	17
B	LITTER	litter-herbaceous, mulch, and woody debris <2.5 cm	5.0	34	90	100	58
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.		
Trees	TT, TM, TS	1.0	2.5	6.0	m	11
Tree regeneration	TR	0.5	1.4	2.0	m	6
Medium shrubs	SM	2.5	2.5	2.5	m	1
Low shrubs	SL	20.0	54.8	100.0	cm	25
Dwarf shrubs	SD	10.0	13.7	20.0	cm	15
Tall and medium grasses and grass-likes	GT, GM	30.0	36.0	50.0	cm	10
Tall and medium forbs	FT, FM	10.0	15.0	20.0	cm	2
Dwarf herbs, lichens, and bryophytes	GD, FD, L, M	2.0	8.0	10.0	cm	8

Characteristics of Cottongrass-fireweed-bluejoint meadow

Ecological Status: Early stage of fire induced secondary succession

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.		
TM	PIGL	Picea glauca	10.0	10	10	33	18
SL	BEGL	Betula glandulosa	10.0	18	25	67	35
SD-SL	LEPAD	Ledum palustre ssp. decumbens	10.0	10	10	67	26
SL	SALIX	Salix	20.0	20	20	33	26
SL	SAPU15	Salix pulchra	0.1	5	10	67	18
GM-GT	CACA4	Calamagrostis canadensis	5.0	12	20	100	35
GM	ERIOP	Eriophorum	25.0	40	50	100	63
FM	EPAN2	Epilobium angustifolium	15.0	18	20	67	35
FM	EQPR	Equisetum pratense	15.0	15	15	33	22
L	LICHEN	total lichens	0.1	0	0	100	0
M	MOSS	total bryophytes-mosses and liverworts	15.0	38	80	100	62
M1	POLYT5	Polytrichum	20.0	20	20	33	26
B	LITTER	litter-herbaceous, mulch, and woody debris <2.5 cm	5.0	32	80	100	57
B	SOIL	mineral-bare soil	0.0	17	40	100	41
B	LITTER2	litter-woody debris >2.5 cm	0.1	5	10	100	22
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.		
Trees	TT, TM, TS	6.0	6.0	6.0	m	1
Tree regeneration	TR	2.0	2.0	2.0	m	1
Low shrubs	SL	30.0	51.7	100.0	cm	6
Tall and medium grasses and grass-likes	GT, GM	20.0	51.7	100.0	cm	6
Tall and medium forbs	FT, FM	50.0	50.0	50.0	cm	1

Characteristics of Shrub birch-tussock cottongrass scrub2

Ecological Status: Late stage of fire induced secondary succession

Plant Species Cover, Constancy, and Importance:

Cover, constancy, and importance are based on 1997-2002 field season data. Number of stands sampled = 6. 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.		
SM	ALVIC	Alnus viridis ssp. crispa	5.0	5	5	17	9
SL	BEGL	Betula glandulosa	10.0	27	65	100	52
SD-SL	LEPAD	Ledum palustre ssp. decumbens	0.1	13	30	83	33
SL	SAPU15	Salix pulchra	0.1	10	15	100	32
SD-SL	VAUL	Vaccinium uliginosum	5.0	11	20	67	27
SL	SAGL	Salix glauca	0.1	5	10	50	16
SD	VAVIM99	Vaccinium vitis-idaea spp. Minus	0.1	10	25	67	26
GM	ERIOP	Eriophorum	60.0	75	80	83	79
GM	ERBR6	Eriophorum brachyantherum	25.0	25	25	17	21
GM	CAREX	Carex	0.1	7	15	50	19
GM	CABI5	Carex bigelowii	15.0	15	15	17	16

Stratum	Symbol	Scientific Name	Percent Canopy Cover			Percent Constancy	Importance Value
			Min.	Avg.	Max.		
FD	RUCH	Rubus chamaemorus	0.1	5	15	50	16
L	LICHEN	total lichens	0.0	2	5	100	14
M	MOSS	total bryophytes-mosses and liverworts	0.1	33	70	100	57
M1	SPHAG2	Sphagnum	25.0	28	30	33	30
M1	PLSC70	Pleurozium schreberi	15.0	15	15	17	16
M1	ZZMOSS	unknown-mosses	15.0	15	15	17	16
M1	HYSP70	Hylocomium splendens	10.0	10	10	17	13
B	LITTER	litter-herbaceous, mulch, and woody debris <2.5 cm	0.0	38	80	100	62
B	SOIL	mineral-bare soil	0.0	6	15	100	24
B	WATER	water	0.0	6	20	100	24
B	LITTER2	litter-woody debris >2.5 cm	0.0	0	0	100	0
B	ROCK	mineral-surface rock fragments	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	6.0	6.0	6.0	m	1
Tree regeneration	TR	0.5	1.2	2.0	m	2
Medium shrubs	SM	2.0	2.0	2.0	m	1
Low shrubs	SL	30.0	58.7	100.0	cm	15
Dwarf shrubs	SD	5.0	11.7	20.0	cm	3
Tall and medium grasses and grass-likes	GT, GM	30.0	35.0	50.0	cm	8
Dwarf herbs, lichens, and bryophytes	GD, FD, L, M	2.0	2.0	2.0	cm	2

Mapunit Components

Common Name (Soils Name):

- Boreal-taiga/tussock high elevation silty frozen loess slopes, Alaska Mountains (Typic Histoturbels, coarse-silty)
- Boreal-taiga/tussock mica rich silty loess slopes, frozen (Typic Histoturbels, coarse-silty)
- Boreal-taiga/tussock silty frozen terraces, Alaska Mountains (Typic Histoturbels, coarse-silty)

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):

- 10P3 Boreal Dissected Plateaus with Discontinuous Permafrost
(Typic Historthels, coarse-silty-Typic Histoturbels, coarse-silty-Typic Umbrorthels, coarse-silty Association, 0 to 20 percent slopes)
- 10TS Boreal Plateaus with Continuous Permafrost
(Typic Historthels, coarse-silty-Typic Histoturbels, coarse-silty Association, 0 to 20 percent slopes)
- 10TS1 Boreal Mountain Toeslopes with Discontinuous Permafrost, Nenana Gravels
(Typic Historthels, loamy-skeletal-Typic Histoturbels, coarse-silty Association, 0 to 14 percent slopes)
- 10V2 Boreal Terraces and Plateau Toeslopes with Continuous Permafrost
(Typic Histoturbels, coarse-silty-Typic Historthels, coarse-loamy Association, 0 to 2 percent slopes)
- 11ST Boreal Terraces and High Flood Plains with Discontinuous Permafrost
(Typic Cryofluvents, coarse-loamy over sandy-skeletal-Typic Historthels, coarse-loamy-Typic Histoturbels, coarse-silty Association, 0 to 2 percent slopes)
- 7STF Alpine Terraces and Outwash Plains with Continuous Permafrost
(Typic Histoturbels, coarse-silty-Typic Historthels, coarse-loamy Association, 0 to 3 percent slopes)
- 8LMF Boreal Lower Mountain Slopes, Thermokarsted
(Typic Umbrorthels, coarse-silty-Typic Histoturbels, coarse-silty Association, 0 to 40 percent slopes)

Geographically Associated Landtypes

M135A_104 — Loamy Frozen Terraces:

This site occurs on similar positions with slightly drier soils. The climax plant community is "Spruce/shrub birch-bog blueberry woodland."

M135A_151 — Loamy High Flood Plains:

This site occurs on slightly lower positions with deep, well drained soils. The climax plant community is "White spruce/bog blueberry/feathermoss forest."

M135A_156 — Loamy Wet High Flood Plains:

This site occurs on flood plains. The climax plant community is "White spruce/Richardson willow/horsetail woodland."

M135A_350 — Gravelly and Sandy Slopes:

This site occurs on very deep, well drained gravelly soils. The climax plant community is "White spruce/shrub birch woodland."

Similar Landtypes

M135A_400 — Loamy Frozen Slopes:

This site has drier soils. The climax plant community is "Black spruce/bog blueberry-Labrador tea woodland."