

# Loamy High Flood Plains (M135A\_151)

## Ecoregion Classification

**Section:** Alaska Mountains (M135A)

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

Toklat Basin Lowlands (M135A.M7)

## Physiographic Features

**Elevation (meters):** *RV* 616 *Range* 280 to 1,145

**Slope Gradient (percent):** 4 0 to 16

**Aspect (clockwise direction):** southeast to southwest

**Landform:** flood plains; flood plains on alluvial fans on mountains

**Flooding:** *Frequency* Occasional *Duration* Brief *Beginning Month* May *Ending Month* Sep

**Ponding:** None

## Climatic Features

**Annual Precipitation (millimeters):** *RV* 569 *Range* 344 to 923

**Annual Air Temperature (°C):** -3.0 -6.0 to -2.1

**Frost Free Days:** 70 60 to 80

## Soil Features

**Parent Materials:** sandy and gravelly alluvium derived from schist  
sandy and silty alluvium over sandy and gravelly alluvium

**Rooting Depth (cm):** *RV:* 26 *Range:* 5 to 71

## 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)
3 to 7	slightly decomposed plant material; moderately decomposed plant material	moderately rapid	.34	5.2 to 6.2	30	80
9 to 23	stratified fine sand to silt; extremely cobbly loamy sand	moderate to rapid	.08 to .15	5.8 to 7.6		2 to 15
9 to 10	stratified fine sand to silt	moderate	.15	5.8 to 6.6		15

**Restrictive Features:** strongly contrasting textural stratification at 43 cm in some components

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

**Drainage Class:** somewhat excessively drained or well drained

## Vegetation Features

### Common Vegetation Types:

Vegetation Type	Ecological Status
White spruce/bog blueberry/feathermoss forest	Climax plant community
White spruce/diamondleaf willow/bog blueberry woodland	Late stage of primary succession on flood plains

### Ecological Status-Transition Description:

Two plant communities are identified within this flood prone site including a potential community with white spruce/bog blueberry/feathermoss forest and a late-successional community with white spruce/diamondleaf willow/bog blueberry

woodland. Flooding is considered a transitional pathway between seral communities within this site as well as between this site and other geographically associated sites.

### 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.	
White spruce/bog blueberry/feathermoss forest	44	28	30	31	2
White spruce/diamondleaf willow/bog blueberry woodland	25	25	25	25	1

### Characteristics of White spruce/bog blueberry/feathermoss forest

**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 = 9. 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.		
TT	PIGL	Picea glauca	15.0	37	60	67	50
TM	PIGL	Picea glauca	5.0	28	50	33	30
TR	PIGL	Picea glauca	0.1	5	10	44	15
SL-SM	SAPU15	Salix pulchra	0.1	10	25	67	26
SL-SM	BEGL	Betula glandulosa	0.1	8	15	44	19
SM	SALIX	Salix	0.1	5	10	22	10
SD-SL	VAUL	Vaccinium uliginosum	3.0	25	55	78	44
SL	PEFL15	Pentaphylloides floribunda	3.0	6	10	44	16
SD	EMNI	Empetrum nigrum	0.1	22	70	89	44
SD	VAVIM99	Vaccinium vitis-idaea spp. Minus	0.1	11	25	56	25
GM-GT	CACA4	Calamagrostis canadensis	0.1	8	20	44	19
GM-GT	FEAL	Festuca altaica	0.1	6	20	44	16
FM	EQAR	Equisetum arvense	5.0	30	80	33	31
FD-FM	GELI2	Geocaulon lividum	0.1	5	10	22	10
FD	COCA13	Cornus canadensis	0.1	8	20	33	16
L	LICHEN	total lichens	0.0	1	7	100	10
M	MOSS	total bryophytes-mosses and liverworts	40.0	72	95	100	85
M1	HYSP70	Hylocomium splendens	20.0	62	90	67	64
M1	PLSC70	Pleurozium schreberi	15.0	18	20	22	20
M1	ZZMOSS	unknown-mosses	5.0	8	10	22	13
M1	PTCR70	Ptilium crista-castrensis	5.0	5	5	22	10
B	LITTER	litter-herbaceous, mulch, and woody debris <2.5 cm	0.0	13	30	100	36
B	LITTER2	litter-woody debris >2.5 cm	0.0	6	15	100	24
B	SOIL	mineral-bare soil	0.0	2	20	100	14
B	ROCK	mineral-surface rock fragments	0.0	1	5	100	10
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	13.5	25.0	m	10
Tree regeneration	TR	0.5	1.6	3.0	m	5
Tall shrubs	ST	4.5	4.5	4.5	m	1
Medium shrubs	SM	1.0	1.7	2.5	m	17
Low shrubs	SL	20.0	55.3	100.0	cm	15
Dwarf shrubs	SD	8.0	10.6	20.0	cm	15
Tall and medium grasses and grass-likes	GT, GM	30.0	65.0	100.0	cm	4
Tall and medium forbs	FT, FM	20.0	30.0	70.0	cm	14
Dwarf herbs, lichens, and bryophytes	GD, FD, L, M	2.0	9.2	10.0	cm	24

### 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	122	19.3	12.8	Min.	7	B
	162	27.2	16.0	Avg		
	273	31.8	19.8	Max.		

### Tree Basal Area (all trees >1.5 m tall):

Min.	Avg.	Max.	Number of Stands
m <sup>2</sup> / ha			
11.5	21.8	32.2	2

### Characteristics of White spruce/diamondleaf willow/bog blueberry woodland

**Ecological Status:** Late stage of primary succession on flood plains

### Plant Species Cover, Constancy, and Importance:

Cover, constancy, and importance are based on 1997-2002 field season data. Number of stands sampled = 15. 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.		
TT	PIGL	Picea glauca	5.0	22	40	67	38
TM	PIGL	Picea glauca	5.0	12	35	60	27
TR	PIGL	Picea glauca	0.1	7	15	87	25
SL-ST	SAPU15	Salix pulchra	0.1	18	50	80	38
SL-ST	SALIX	Salix	10.0	34	50	27	30
SM-ST	SAAL	Salix alaxensis	0.1	8	20	47	19
SL-SM	BEGL	Betula glandulosa	10.0	13	20	20	16
SL-SM	PEFL15	Pentaphylloides floribunda	0.1	5	10	47	15
SL-SM	SAGL	Salix glauca	0.1	5	15	27	12
SD-SL	VAUL	Vaccinium uliginosum	0.1	15	30	67	32
SD-SL	LEPAD	Ledum palustre ssp. decumbens	0.1	14	40	33	21
SD	EMNI	Empetrum nigrum	0.1	14	30	67	31
SD	VAVIM99	Vaccinium vitis-idaea spp. Minus	1.0	11	30	60	26
GM-GT	CACA4	Calamagrostis canadensis	0.1	11	20	47	23
GM	CAREX	Carex	5.0	15	25	27	20
GM	ZZGRASS	unknown-grasses	3.0	12	20	27	18
FM	EQAR	Equisetum arvense	1.0	14	30	27	19
FD-FM	PEFR5	Petasites frigidus	0.1	5	15	27	12
L	LICHEN	total lichens	0.0	5	15	100	22
M	MOSS	total bryophytes-mosses and liverworts	20.0	69	95	100	83
M1	HYSP70	Hylocomium splendens	0.1	50	90	33	41
M1	ZZMOSS	unknown-mosses	0.1	8	25	20	13
B	LITTER	litter-herbaceous, mulch, and woody debris <2.5 cm	0.0	15	35	100	39
B	LITTER2	litter-woody debris >2.5 cm	0.0	6	15	100	24
B	SOIL	mineral-bare soil	0.0	1	10	100	10
B	ROCK	mineral-surface rock fragments	0.0	1	20	100	10
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	2.0	11.1	17.0	m	21
Tree regeneration	TR	0.5	1.8	4.7	m	15
Tall shrubs	ST	3.0	4.7	12.0	m	8
Medium shrubs	SM	1.0	1.8	3.0	m	14
Low shrubs	SL	20.0	46.7	100.0	cm	27
Dwarf shrubs	SD	3.0	10.7	20.0	cm	11
Tall and medium grasses and grass-likes	GT, GM	30.0	51.4	100.0	cm	7

Stratum Name	Included Strata	Height			Units	Number of Records
		Min.	Avg.	Max.		
Tall and medium forbs	FT, FM	10.0	24.3	50.0	cm	23
Dwarf herbs, lichens, and bryophytes	GD, FD, L, M	10.0	10.0	10.0	cm	15

### 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
				Min.	Avg.	
Picea glauca	97	26.4	10.7	Min.	5	B
	141	33.9	13.7	Avg.		
	226	47.0	15.8	Max.		

### Tree Basal Area (all trees >1.5 m tall):

Min.	Avg.	Max.	Number of Stands
18.4	18.4	18.4	1

### Mapunit Components

#### Common Name (Soils Name):

Boreal-riparian forested gravelly schist flood plains (Typic Cryorthents, sandy-skeletal)

Boreal-riparian forested loamy high flood plains (Typic Cryofluvents, 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):

11FP	Boreal Flood Plains, High Elevation (Typic Cryofluvents, coarse-loamy over sandy-skeletal-Oxyaquic Cryorthents, sandy-skeletal-Typic Cryorthents, sandy-skeletal Association, 0 to 3 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)
5V2	Boreal Schist Alluvial Fans (Typic Haplocryods, loamy-skeletal-Typic Cryorthents, sandy-skeletal Association, 4 to 16 percent slopes)
7FP1	Boreal Flood Plains and Terraces (Typic Cryofluvents, coarse-loamy over sandy-skeletal-Oxyaquic Cryorthents, sandy-skeletal Complex)
8FP2	Boreal Schist Flood Plains and Terraces (Oxyaquic Cryorthents, sandy-skeletal-Typic Cryorthents, sandy-skeletal-Typic Haplogelods, sandy-skeletal Complex)

### Geographically Associated Landtypes

#### M135A\_105—Loamy Frozen Terraces, Wet:

This site occurs on higher terrace positions with soils that are shallow over permafrost and wetter. The climax plant community is "Black spruce/tussock cottongrass woodland."

#### M135A\_156—Loamy Wet High Flood Plains:

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

#### M135A\_350—Gravelly and Sandy Slopes:

This site occurs on terraces with very deep, well drained soils with a thin loamy surface mantle over sand and gravel. The climax plant community is "White spruce/shrub birch woodland."

### Similar Landtypes

#### M135A\_104—Loamy Frozen Terraces:

This site occurs on terraces with wetter soils that are moderately deep over permafrost. The climax plant community is "Spruce/shrub birch-bog blueberry woodland."

#### M135A\_355—Gravelly Mountains, Warm:

This site occurs in uplands and is not flooded. The climax plant community is "White spruce/green alder forest."

#### M135A\_800—Escarpments:

This site occurs in uplands and is not flooded. The climax plant community is "White spruce forest."