

Gravelly Low Flood Plains, High Elevation (M135A_257)

Ecoregion Classification

Section: Alaska Mountains (M135A)

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

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

Alpine Mountains (M135A.M2)

Alpine Outer Range & Kantishna Hills (M135A.M1)

Physiographic Features

Elevation (meters): *RV* 872 *Range* 609 to 1,298

Slope Gradient (percent): 1 0 to 3

Aspect (clockwise direction): west to east

Landform: channels on flood plains

	<i>Frequency</i>	<i>Duration</i>	<i>Beginning Month</i>	<i>Ending Month</i>
Flooding:	Frequent	Long	May	Aug

Ponding: None

Climatic Features

Annual Precipitation (millimeters): *RV* 783 *Range* 497 to 1,229

Annual Air Temperature (°C): -4.3 -8.3 to -2.5

Frost Free Days: 60 50 to 70

Soil Features

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

Rooting Depth (cm): *RV:* 31 *Range:* 7 to 72

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)
1	moderately decomposed plant material	moderately rapid	.34	6.7		80
10 to 12	stratified sand to silt; stratified highly decomposed plant material to sand to silt	moderate	.17 to .20	6.0 to 7.6		12 to 20
19 to 20	extremely cobbly loamy sand; extremely gravelly coarse sand; extremely cobbly loamy coarse sand; extremely gravelly coarse sand	rapid	.06	6.0 to 7.6		2

Restrictive Features: strongly contrasting textural stratification at 11 to 12 cm

Water Table (May to September): 50 to 120 cm

Drainage Class: somewhat poorly drained

Vegetation Features

Common Vegetation Types:

Vegetation Type

Feltleaf willow scrub, cool
Dry herbaceous meadow, cool

Ecological Status

Climax plant community
Mid 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 of feltleaf willow scrub, cool and a mid-seral community of dry herbaceous meadow, cool on slightly lower positions. 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.	
Feltleaf willow scrub, cool	109	38	47	55	5
Dry herbaceous meadow, cool	22	22	22	22	1

Notable Plants:

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

Vegetation Type

Feltleaf willow scrub, cool

Symbol

BOMI
CALA13

Scientific Name

Botrychium minganense
Carex laevisculmis

Characteristics of Feltleaf willow scrub, cool

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 = 16. 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-ST	SAAL	Salix alaxensis	0.1	30	80	100	55
SL-SM	SAPU15	Salix pulchra	2.0	23	60	75	42
SL-SM	PEFL15	Pentaphylloides floribunda	0.1	6	30	94	24
SL-SM	SHCA	Shepherdia canadensis	0.1	10	30	56	24
SL-SM	BEGL	Betula glandulosa	0.1	6	20	50	17
SM	SARI4	Salix richardsonii	0.1	6	15	25	12
SD-SL	VAUL	Vaccinium uliginosum	0.1	7	15	50	19
SD	SARE2	Salix reticulata	0.1	9	40	56	22
SD	EMNI	Empetrum nigrum	0.1	6	30	50	17
GM-GT	CACA4	Calamagrostis canadensis	0.1	21	60	56	34
GM	ZZGRAM	unknown-graminoids	5.0	10	15	19	14
GM	CAREX	Carex	0.1	8	25	19	12
FD-FM	EPLA	Epilobium latifolium	0.1	7	20	75	23
FD-FM	COCA13	Cornus canadensis	0.1	11	40	25	17
FD-FM	ARAR9	Artemisia arctica	0.1	5	10	19	10
FD-FM	ZZFORB	unknown-forbs	0.1	5	15	19	10
L	LICHEN	total lichens	0.0	2	15	100	14
M	MOSS	total bryophytes-mosses and liverworts	3.0	32	70	100	57
M1	ZZMOSS	unknown-mosses	5.0	11	25	38	20
M1	PLSC70	Pleurozium schreberi	0.1	17	30	19	18
M1	RACA11	Racomitrium canescens	5.0	17	30	19	18
M1	HYSP70	Hylocomium splendens	0.1	10	25	25	16
B	LITTER	litter-herbaceous, mulch, and woody debris <2.5 cm	1.0	31	70	100	56
B	ROCK	mineral-surface rock fragments	0.0	11	50	100	33
B	LITTER2	litter-woody debris >2.5 cm	0.0	4	10	100	20
B	SOIL	mineral-bare soil	0.0	3	10	100	17
B	WATER	water	0.0	1	5	100	10

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	1.7	2.0	m	3
Tree regeneration	TR	1.0	2.0	3.0	m	5
Tall shrubs	ST	3.0	3.6	5.0	m	6
Medium shrubs	SM	1.0	1.8	2.5	m	20
Low shrubs	SL	20.0	77.5	100.0	cm	20
Dwarf shrubs	SD	2.0	13.4	20.0	cm	8
Tall and medium grasses and grass-likes	GT, GM	40.0	46.7	50.0	cm	3
Tall and medium forbs	FT, FM	10.0	24.4	70.0	cm	32
Dwarf herbs, lichens, and bryophytes	GD, FD, L, M	1.0	8.4	10.0	cm	25

Characteristics of Dry herbaceous meadow, cool

Ecological Status: Mid 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 = 1. 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.		
GT	CACA4	Calamagrostis canadensis	15.0	15	15	100	39
GM	FERU2	Festuca rubra	15.0	15	15	100	39
FM	EPLA	Epilobium latifolium	20.0	20	20	100	45
FD	ANRI	Anemone richardsonii	5.0	5	5	100	22
FD	EQSC	Equisetum scirpoides	5.0	5	5	100	22
L	LICHEN	total lichens	0.0	0	0	100	0
M	MOSS	total bryophytes-mosses and liverworts	30.0	30	30	100	55
B	ROCK	mineral-surface rock fragments	50.0	50	50	100	71
B	LITTER	litter-herbaceous, mulch, and woody debris <2.5 cm	20.0	20	20	100	45
B	WATER	water	10.0	10	10	100	32
B	LITTER2	litter-woody debris >2.5 cm	0.1	0	0	100	0
B	SOIL	mineral-bare soil	0.1	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.		
Tall and medium grasses and grass-likes	GT, GM	130.0	130.0	130.0	cm	1
Tall and medium forbs	FT, FM	40.0	40.0	40.0	cm	1
Dwarf herbs, lichens, and bryophytes	GD, FD, L, M	2.0	2.0	2.0	cm	1

Mapunit Components

Common Name (Soils Name):

Alpine-riparian scrub gravelly diorite flood plains, moderately wet (Oxyaquic Gelorthents, sandy-skeletal)

Alpine-riparian scrub gravelly flood plains, moderately wet (Oxyaquic Gelorthents, sandy-skeletal)

Alpine-riparian scrub gravelly schist flood plains, moderately wet (Oxyaquic Gelorthents, 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):

7FP2 Alpine Flood Plains

(Oxyaquic Gelorthents, sandy-skeletal-Typic Gelorthents, sandy-skeletal-Riverwash Complex)

7FP21 Alpine Diorite Terraces and Flood Plains

(Typic Haplogelods, sandy-skeletal-Oxyaquic Gelorthents, sandy-skeletal-Typic Haplogelods, coarse-loamy over sandy-skeletal Complex)

8FP1 Alpine Schist Flood Plains and Terraces
(Oxyaquic Gelorthents, sandy-skeletal-Typic Gelorthents, sandy-skeletal-Typic Gelaquents, coarse- loamy over sandy-skeletal Complex)

Geographically Associated Landtypes

M135A_150—Loamy Flood Plains, High Elevation:

This site occurs on well drained flooded soils. The climax plant community is "Riparian low diamondleaf willow-feltleaf willow scrub."

M135A_258—Gravelly Flood Plains, Cool:

This site occurs on flood plains and excessively drained soils with gravelly surface textures. The climax plant community is "Feltleaf willow-mixed shrub/herbaceous scrub."

M135A_352—Gravelly and Sandy Terraces, High Elevation:

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

Similar Landtypes

M135A_153—Loamy Wet Flood Plains:

This site has wetter soils with a thick loamy surface mantle. The climax plant community is "Feltleaf willow/shrubby cinquefoil/scouring rush meadow/scrub."

M135A_250—Gravelly Low Flood Plains, Acid:

This site occurs within the alpine biome at higher elevation. The climax plant community is "Feltleaf willow-green alder scrub."

M135A_258—Gravelly Flood Plains, Cool:

This site has soils that are excessively drained. The climax plant community is "Feltleaf willow-mixed shrub/herbaceous scrub."