

Gravelly Flood Plains, Cool (M135A_258)

Ecoregion Classification

Section: Alaska Mountains (M135A)

Subsection(s): Alpine Flood Plains & Terraces & Fans (M135A.V1)

Alpine Mountains (M135A.M2)

Alpine Outer Range & Kantishna Hills (M135A.M1)

Physiographic Features

Elevation (meters): *RV* 950 *Range* 609 to 1,569

Slope Gradient (percent): 4 0 to 15

Aspect (clockwise direction): non-influencing

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

Flooding: *Frequency* Occasional *Duration* Long *Beginning Month* May *Ending Month* Aug

Ponding: None

Climatic Features

Annual Precipitation (millimeters): *RV* 879 *Range* 497 to 2,466

Annual Air Temperature (°C): -4.8 -10.7 to -2.5

Frost Free Days: 60 50 to 70

Soil Features

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

Rooting Depth (cm): *RV:* 45 *Range:* 12 to 150

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 decomposed plant material | moderately rapid | .34 | 5.5 to 7.2 | 30 | 80 |
| 7 to 12 | stratified fine sand to silt; silt loam | moderate | .15 to .20 | 5.6 to 7.8 | | 12 to 20 |
| 15 to 33 | extremely cobbly coarse sand; extremely cobbly loamy coarse | rapid | .06 to .10 | 6.4 to 8.3 | | 2 |

Restrictive Features: strongly contrasting textural stratification at 7 to 19 cm

Water Table (May to September): none

Drainage Class: excessively drained or somewhat excessively drained

Vegetation Features

Common Vegetation Types:

Vegetation Type

Feltleaf willow-mixed shrub/herbaceous scrub

Ecological Status

Climax plant community

Ecological Status-Transition Description:

A single plant community with feltleaf willow-mixed shrub/herbaceous scrub is identified on this site and flooding is considered a transitional pathway 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-mixed shrub/herbaceous scrub | 147 | 16 | 34 | 54 | 13 |

Notable Plants:

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

| Vegetation Type | Symbol | Scientific Name |
|--|--------|--------------------|
| Feltleaf willow-mixed shrub/herbaceous scrub | BRGL | Braya glabella |
| | SASE4 | Salix setchelliana |

Characteristics of Feltleaf willow-mixed shrub/herbaceous 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 = 23. Only those vascular, lichen, and bryophyte species with average cover $\geq 5\%$ and constancy $\geq 15\%$ are listed.

| Stratum | Symbol | Scientific Name | Percent Canopy Cover | | | Percent Constancy | Importance Value |
|---------|---------|--|----------------------|------|------|-------------------|------------------|
| | | | Min. | Avg. | Max. | | |
| SL-ST | SAAL | Salix alaxensis | 1.0 | 28 | 85 | 100 | 53 |
| SL-SM | SAPU15 | Salix pulchra | 10.0 | 26 | 60 | 43 | 33 |
| SL-SM | SHCA | Shepherdia canadensis | 0.1 | 14 | 45 | 74 | 32 |
| SL-SM | SAGL | Salix glauca | 0.1 | 19 | 50 | 48 | 30 |
| SL-SM | SABA3 | Salix barclayi | 5.0 | 20 | 40 | 30 | 24 |
| SL-SM | SARI4 | Salix richardsonii | 0.1 | 12 | 60 | 39 | 22 |
| SD-SM | SANI10 | Salix niphoclada | 0.1 | 6 | 15 | 17 | 10 |
| SD-SL | VAUL | Vaccinium uliginosum | 1.0 | 14 | 40 | 26 | 19 |
| SD | SARE2 | Salix reticulata | 0.1 | 11 | 40 | 57 | 25 |
| SD | DROC | Dryas octopetala | 0.1 | 7 | 30 | 43 | 17 |
| SD | EMNI | Empetrum nigrum | 0.1 | 5 | 20 | 39 | 14 |
| SD | ARRU6 | Arctous rubra | 0.1 | 6 | 25 | 30 | 13 |
| GM-GT | CACA4 | Calamagrostis canadensis | 3.0 | 26 | 80 | 39 | 32 |
| GM-GT | FEAL | Festuca altaica | 0.1 | 9 | 35 | 48 | 21 |
| GM-GT | CAPO | Carex podocarpa | 0.1 | 5 | 20 | 26 | 11 |
| FM-FT | MEPA | Mertensia paniculata | 0.1 | 7 | 40 | 52 | 19 |
| FM | HEAL | Hedysarum alpinum | 0.1 | 7 | 15 | 26 | 13 |
| FD-FM | PEFR5 | Petasites frigidus | 0.1 | 8 | 20 | 17 | 12 |
| FD | RUAR | Rubus arcticus | 0.1 | 6 | 20 | 30 | 13 |
| L | LICHEN | total lichens | 0.0 | 7 | 40 | 100 | 26 |
| M | MOSS | total bryophytes-mosses and liverworts | 0.0 | 45 | 85 | 100 | 67 |
| M1 | ZZMOSS | unknown-mosses | 0.1 | 36 | 70 | 52 | 43 |
| M1 | HYSP70 | Hylocomium splendens | 5.0 | 23 | 40 | 26 | 24 |
| M1 | CLDE70 | Climacium dendroides | 1.0 | 6 | 10 | 17 | 10 |
| B | LITTER | litter-herbaceous, mulch, and woody debris <2.5 cm | 2.0 | 35 | 95 | 100 | 59 |
| B | ROCK | mineral-surface rock fragments | 0.0 | 7 | 40 | 100 | 26 |
| B | LITTER2 | litter-woody debris >2.5 cm | 0.0 | 5 | 30 | 100 | 22 |
| B | SOIL | mineral-bare soil | 0.0 | 5 | 50 | 100 | 22 |
| 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 | 5.0 | 5.5 | 6.0 | m | 2 |
| Tall shrubs | ST | 3.0 | 3.7 | 5.0 | m | 4 |
| Medium shrubs | SM | 1.0 | 1.8 | 3.0 | m | 27 |
| Low shrubs | SL | 20.0 | 70.0 | 100.0 | cm | 22 |
| Dwarf shrubs | SD | 2.0 | 8.3 | 20.0 | cm | 12 |
| Tall and medium grasses and grass-likes | GT, GM | 15.0 | 72.8 | 130.0 | cm | 9 |
| Tall and medium forbs | FT, FM | 10.0 | 31.1 | 70.0 | cm | 15 |
| Dwarf herbs, lichens, and bryophytes | GD, FD, L, M | 1.0 | 5.7 | 20.0 | cm | 29 |

Mapunit Components

Common Name (Soils Name):

Alpine-riparian scrub gravelly flood plains (Typic Gelorthents, sandy-skeletal)

Alpine-riparian scrub gravelly flood plains, cool (Typic Gelorthents, sandy-skeletal)

Alpine-riparian scrub gravelly schist flood plains (Typic 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):

| | |
|------|---|
| 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) |
| 7FP2 | Alpine Flood Plains (Oxyaquic Gelorthents, sandy-skeletal-Typic Gelorthents, sandy-skeletal-Riverwash Complex) |
| 7V11 | Alpine Fans (Typic Gelorthents, sandy-skeletal-Riverwash-Typic Haplogelods, sandy-skeletal Association, 0 to 15 percent slopes) |
| 7V5 | Alpine Fans with Discontinuous Permafrost (Typic Eutrogelepts, sandy-skeletal-Typic Historthels, coarse-loamy over sandy-skeletal-Typic Gelorthents, sandy-skeletal Association, 2 to 20 percent slopes) |
| 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 thick loamy surface textured soils. The climax plant community is "Riparian low diamondleaf willow-feltleaf willow scrub."

M135A_257—Gravelly Low Flood Plains, High Elevation:

This site occurs on slightly lower flood plains with somewhat poorly drained soils. The climax plant community is "Feltleaf willow scrub, cool."

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 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 in the boreal biome at lower elevation. The climax plant community is "Feltleaf willow-green alder

M135A_257—Gravelly Low Flood Plains, High Elevation:

This site occurs in the alpine biome at higher elevation. The climax plant community is "Feltleaf willow scrub, cool."