

Loamy Flood Plains (131B_100)

Ecoregion Classification

Section: Yukon-Kuskokwim Bottomlands (131B)

Subsection(s): Minchumina Basin Lowlands (131B.V2)

Lowland Flood Plains & Terraces (131B.V1)

Eolian Lowlands (131B.L1)

Physiographic Features

Elevation (meters): *RV* 281 *Range* 160 to 624

Slope Gradient (percent): 1 0 to 2

Aspect (clockwise direction): non-influencing

Landform: channels on flood plains; flood plains

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

Ponding: None

Climatic Features

Annual Precipitation (millimeters): *RV* 459 *Range* 336 to 651

Annual Air Temperature (°C): -2.6 -3.0 to -2.4

Frost Free Days: 100 80 to 110

Soil Features

Parent Materials: sandy and silty alluvium over sandy and gravelly alluvium

sandy and silty alluvium over sandy and gravelly alluvium derived from schist

Rooting Depth (cm): *RV*: 30 *Range*: 2 to 74

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 9 | slightly decomposed plant material | moderately rapid | .34 | 5.3 to 6.8 | 30 | 80 |
| 5 to 28 | stratified fine sand to silt | moderate | .15 to .20 | 5.7 to 7.9 | 1 | 20 |

Restrictive Features: strongly contrasting textural stratification at 56 to 78 cm

Water Table (May to September): 50 to over 150 cm

Drainage Class: well drained to somewhat poorly drained

Vegetation Features

Common Vegetation Types:

Vegetation Type

White spruce-poplar/alder forest
Thinleaf alder-feltleaf willow scrub
Poplar/alder forest

Ecological Status

Climax plant community
Early stage of primary succession on flood plains
Mid stage of primary succession on flood plains

Ecological Status-Transition Description:

Three plant communities are identified on this flood prone site including a potential community with white spruce-poplar/alder forest, a mid- and early-seral community on successively lower and slightly more flood prone positions with poplar/alder forest and thinleaf alder-willow scrub, respectively. 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-poplar/alder forest | 61 | 10 | 25 | 41 | 5 |
| Thinleaf alder-feltleaf willow scrub | 108 | 7 | 20 | 35 | 19 |
| Poplar/alder forest | 82 | 10 | 24 | 43 | 10 |

Notable Plants:

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

| Vegetation Type | Symbol | Scientific Name |
|--------------------------------------|--------|---------------------------------------|
| White spruce-poplar/alder forest | GOREO2 | Goodyera repens var. ophioides |
| Thinleaf alder-feltleaf willow scrub | EPLE | Epilobium leptocarpum |
| | POPEO | Polygonum pensylvanicum ssp. oneillii |
| Poplar/alder forest | GOREO2 | Goodyera repens var. ophioides |
| | SAEXI | Salix exigua ssp. interior |

Characteristics of White spruce-poplar/alder 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 = 5. 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 | 7.0 | 21 | 50 | 100 | 46 |
| TT | POBA2 | Populus balsamifera | 5.0 | 20 | 50 | 100 | 45 |
| ST | ALVIC | Alnus viridis ssp. crispa | 45.0 | 52 | 60 | 60 | 56 |
| ST | ALTE2 | Alnus tenuifolia | 20.0 | 32 | 40 | 60 | 44 |
| ST | SAAL | Salix alaxensis | 5.0 | 8 | 10 | 40 | 18 |
| ST | SAAR3 | Salix arbusculoides | 10.0 | 10 | 10 | 20 | 14 |
| SL-SM | ROAC | Rosa acicularis | 4.0 | 6 | 10 | 60 | 19 |
| SL-SM | SHCA | Shepherdia canadensis | 0.1 | 8 | 15 | 40 | 18 |
| SM | SAGL | Salix glauca | 10.0 | 10 | 10 | 20 | 14 |
| SD | DRIN4 | Dryas integrifolia | 5.0 | 5 | 5 | 20 | 10 |
| FD-FM | EQPR | Equisetum pratense | 0.1 | 30 | 50 | 60 | 42 |
| FD-FM | PYAS | Pyrola asarifolia | 1.0 | 5 | 10 | 60 | 17 |
| FD | COCA13 | Cornus canadensis | 0.1 | 9 | 25 | 60 | 23 |
| L | LICHEN | total lichens | 0.1 | 1 | 4 | 100 | 10 |
| M | MOSS | total bryophytes-mosses and liverworts | 10.0 | 29 | 60 | 100 | 54 |
| M1 | HYSP70 | Hylocomium splendens | 10.0 | 22 | 40 | 80 | 42 |
| M1 | ZZMOSS | unknown-mosses | 5.0 | 10 | 20 | 80 | 28 |
| B | LITTER | litter-herbaceous, mulch, and woody debris <2.5 cm | 55.0 | 77 | 95 | 100 | 88 |
| B | LITTER2 | litter-woody debris >2.5 cm | 4.0 | 5 | 7 | 100 | 22 |
| 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 | 13.0 | 19.6 | 28.0 | m | 7 |
| Tree regeneration | TR | 4.0 | 4.0 | 4.0 | m | 1 |
| Tall shrubs | ST | 4.5 | 6.0 | 7.5 | m | 4 |
| Medium shrubs | SM | 1.1 | 1.6 | 2.0 | m | 4 |
| Dwarf shrubs | SD | 2.0 | 2.5 | 3.0 | cm | 2 |
| Tall and medium forbs | FT, FM | 20.0 | 20.0 | 20.0 | cm | 2 |
| Dwarf herbs, lichens, and bryophytes | GD, FD, L, M | 1.0 | 4.6 | 11.0 | cm | 7 |

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 | 96 | 26.4 | 20.4 | Min. | 4 | B |
| | 124 | 32.8 | 23.9 | Avg. | | |
| | 153 | 36.3 | 25.6 | Max. | | |

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

| Min. | Avg. | Max. | Number of Stands |
|---------------------|------|------|------------------|
| m ² / ha | | | |
| 27.6 | 32.2 | 36.8 | 2 |

Characteristics of Thinleaf alder-feltleaf willow scrub

Ecological Status: Early 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 = 19. 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. | | |
| ST | ALTE2 | Alnus tenuifolia | 10.0 | 44 | 90 | 89 | 63 |
| ST | SAAL | Salix alaxensis | 0.1 | 28 | 70 | 95 | 52 |
| ST | ALVIC | Alnus viridis ssp. crispa | 0.1 | 40 | 85 | 32 | 36 |
| SM-ST | SAAR3 | Salix arbusculoides | 0.1 | 5 | 10 | 47 | 15 |
| SL-SM | ROAC | Rosa acicularis | 0.1 | 5 | 15 | 58 | 17 |
| GM-GT | CACA4 | Calamagrostis canadensis | 0.1 | 14 | 45 | 100 | 37 |
| FD-FM | EQAR | Equisetum arvense | 0.1 | 20 | 75 | 89 | 42 |
| FD-FM | EQPR | Equisetum pratense | 0.1 | 10 | 20 | 16 | 13 |
| FD | RUAR | Rubus arcticus | 0.1 | 13 | 45 | 58 | 27 |
| FD | VIEPR | Viola epipsila ssp. repens | 0.1 | 5 | 15 | 21 | 10 |
| L | LICHEN | total lichens | 0.1 | 0 | 0 | 95 | 0 |
| M | MOSS | total bryophytes-mosses and liverworts | 2.0 | 20 | 55 | 95 | 44 |
| M1 | ZZMOSS | unknown-mosses | 5.0 | 19 | 50 | 47 | 30 |
| M1 | PLAGI7 | Plagiomnium | 0.1 | 5 | 20 | 32 | 13 |
| B | LITTER | litter-herbaceous, mulch, and woody debris <2.5 cm | 2.0 | 72 | 95 | 95 | 83 |
| B | SOIL | mineral-bare soil | 0.0 | 13 | 90 | 95 | 35 |
| B | LITTER2 | litter-woody debris >2.5 cm | 0.0 | 8 | 15 | 95 | 28 |
| B | ROCK | mineral-surface rock fragments | 0.0 | 2 | 30 | 95 | 14 |
| B | WATER | water | 0.0 | 0 | 0 | 95 | 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 | 10.2 | 21.0 | m | 9 |
| Tree regeneration | TR | 0.5 | 2.0 | 4.0 | m | 9 |
| Tall shrubs | ST | 5.0 | 6.5 | 10.0 | m | 22 |
| Medium shrubs | SM | 1.1 | 1.6 | 2.5 | m | 9 |
| Low shrubs | SL | 70.0 | 90.0 | 100.0 | cm | 3 |
| Dwarf shrubs | SD | 3.0 | 3.0 | 3.0 | cm | 1 |
| Tall and medium grasses and grass-likes | GT, GM | 30.0 | 118.0 | 180.0 | cm | 15 |
| Tall and medium forbs | FT, FM | 10.0 | 50.0 | 120.0 | cm | 15 |
| Dwarf herbs, lichens, and bryophytes | GD, FD, L, M | 0.4 | 6.9 | 70.0 | cm | 24 |

Characteristics of Poplar/alder forest

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 = 12. 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 | POBA2 | Populus balsamifera | 15.0 | 36 | 50 | 58 | 46 |
| TM | POBA2 | Populus balsamifera | 10.0 | 29 | 45 | 42 | 35 |
| ST | ALTE2 | Alnus tenuifolia | 10.0 | 39 | 65 | 75 | 54 |
| ST | ALVIC | Alnus viridis ssp. crispa | 40.0 | 56 | 65 | 33 | 43 |
| SM-ST | SAAL | Salix alaxensis | 1.0 | 10 | 20 | 58 | 24 |
| SL-SM | ROAC | Rosa acicularis | 0.1 | 14 | 40 | 75 | 32 |
| SL | VAUL | Vaccinium uliginosum | 0.1 | 6 | 15 | 33 | 14 |
| GM-GT | CACA4 | Calamagrostis canadensis | 0.1 | 13 | 45 | 83 | 33 |
| FD-FM | EQAR | Equisetum arvense | 0.1 | 12 | 75 | 75 | 30 |
| FD | COCA13 | Cornus canadensis | 0.1 | 15 | 60 | 83 | 35 |
| FD | RUAR | Rubus arcticus | 0.1 | 5 | 10 | 50 | 16 |
| L | LICHEN | total lichens | 0.0 | 0 | 4 | 100 | 0 |
| M | MOSS | total bryophytes-mosses and liverworts | 5.0 | 18 | 85 | 100 | 42 |
| M1 | ZZMOSS | unknown-mosses | 5.0 | 12 | 25 | 58 | 26 |
| M1 | HYSP70 | Hylocomium splendens | 1.0 | 15 | 55 | 42 | 25 |
| B | LITTER | litter-herbaceous, mulch, and woody debris <2.5 cm | 0.0 | 72 | 95 | 100 | 85 |
| B | LITTER2 | litter-woody debris >2.5 cm | 0.0 | 8 | 25 | 100 | 28 |
| B | SOIL | mineral-bare soil | 0.0 | 0 | 3 | 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 | 6.0 | 12.2 | 18.0 | m | 13 |
| Tree regeneration | TR | 2.0 | 3.2 | 4.5 | m | 6 |
| Tall shrubs | ST | 4.0 | 5.3 | 7.0 | m | 12 |
| Medium shrubs | SM | 1.3 | 1.8 | 3.0 | m | 11 |
| Low shrubs | SL | 30.0 | 67.5 | 100.0 | cm | 4 |
| Dwarf shrubs | SD | 1.0 | 1.0 | 1.0 | cm | 1 |
| Tall and medium grasses and grass-likes | GT, GM | 100.0 | 124.0 | 130.0 | cm | 5 |
| Tall and medium forbs | FT, FM | 30.0 | 58.0 | 150.0 | cm | 5 |
| Dwarf herbs, lichens, and bryophytes | GD, FD, L, M | 0.6 | 4.8 | 10.0 | cm | 22 |

Mapunit Components

Common Name (Soils Name):

Boreal-riparian forested loamy flood plains, moderately wet (Aquic Cryofluvents, coarse-loamy over sandy-skeletal)

Boreal-riparian scrub loamy schist 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):

| | |
|------|---|
| 1FP | Boreal Flood Plains with Discontinuous Permafrost, Minchumina Basin (Fluvaquentic Historthels, coarse-loamy-Aquic Cryofluvents, coarse-loamy over sandy-skeletal-Typic Cryofluvents, coarse-loamy over sandy-skeletal Complex) |
| 2FP2 | Boreal Schist Flood Plains with Discontinuous Permafrost (Typic Cryofluvents, coarse-loamy over sandy-skeletal-Typic Cryorthents, sandy-skeletal Complex) |
| 2FP3 | Boreal Flood Plains with Discontinuous Permafrost (Typic Cryofluvents, coarse-loamy over sandy-skeletal-Aquic Cryofluvents, coarse-loamy over sandy-skeletal-Typic Cryorthents, sandy-skeletal Complex) |
| 3FP1 | Boreal Flood Plains and Terraces with Discontinuous Permafrost (Typic Cryofluvents, coarse-loamy over sandy-skeletal-Typic Historthels, coarse-loamy over sandy-skeletal-Aquic Cryofluvents, coarse-loamy over sandy-skeletal Complex) |

Geographically Associated Landtypes

131B_101—Loamy High Flood Plains:

This site occurs on higher positions with lower flooding frequency. The climax plant community is "White spruce/alder forest."

131B_104—Loamy Frozen Terraces:

This site occurs on uplands that are not flooded and have wetter soils with permafrost at moderate depths. The climax plant community is "Black spruce-tamarack/Labrador tea woodland."

131B_501—Organic Depressions, Fens:

This site occurs on cutoff meanders with wetter soils. The climax plant community is "Sedge wet meadow."

131B_505—Loamy Channels:

This site occurs in channels with wetter soils that are moderately deep over permafrost. The climax plant community is "Tamarack-black spruce/leatherleaf woodland."

Similar Landtypes

131B_101—Loamy High Flood Plains:

This site occurs on higher flood plain positions. The climax plant community is "White spruce/alder forest."

131B_102—Loamy Frozen Flood Plains:

This site occurs on moderately deep soils over permafrost. The climax plant community is "Mixed paper birch-spruce/prickly rose forest."

131B_156—Loamy Wet Flood Plains, Frozen:

This site occurs on wetter soils that have permafrost at moderate depths. The climax plant community is "White spruce-tamarack/thinleaf alder forest."

131B_255—Gravelly Flood Plains:

This site occurs on soils that are very shallow to sand and gravel. The climax plant community is "White spruce-poplar woodland."