

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

RV Range

Elevation (meters): 281 160 to 624

Slope Gradient (percent): 1 0 to 2

Aspect (clockwise direction): non-influencing

Landform: channels on flood plains; flood plains

Frequency Duration Beginning Month Ending Month

Flooding: Occasional Brief May Sep

Ponding: None

Climatic Features

RV Range

Annual Precipitation (millimeters): 459 336 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 Texture Permeability AWC pH Effective CEC CEC

(cm) (cm/cm) (me/100g) (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 Ecological Status

White spruce-poplar/alder forest Climax plant community

Thinleaf alder-feltleaf willow scrub Early stage of primary succession on flood plains

Poplar/alder forest 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 sprucepoplar/

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.

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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.

Per Stand Number of

Vegetation Type Total Min. Avg. Max. Stands

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 $\geq 5\%$ and constancy $\geq 15\%$ are listed. **Percent Percent Importance**

Stratum Symbol Scientific Name Canopy Cover Constancy 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 HYSPT0 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 Number

Min. Avg. Max. Units of Records

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

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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 Diameter Height Number Height of

(years) (cm) (m) **of Trees 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

_____ m² / ha _____ of Stands

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. **Percent Percent Importance**

Stratum Symbol Scientific Name Canopy Cover Constancy 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 arbusculooides* 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 Number

Min. Avg. Max. Units of Records

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

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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. **Percent Percent Importance**

Stratum Symbol Scientific Name Canopy Cover Constancy 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 HYP70 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 Number

Min. Avg. Max. Units of Records

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-like 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

Map Unit 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 sandyskeletal-

Typic Cryorthents, sandy-skeletal Complex)

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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 birchspruce/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."