

Organic Depressions, Fens (131B_501)

Ecoregion Classification

Section: Yukon-Kuskokwim Bottomlands (131B)

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

Lowland Flood Plains & Terraces (131B.V1)

Eolian Lowlands (131B.L1)

332 Soil Survey of

Physiographic Features

RV Range

Elevation (meters): 196 160 to 236

Slope Gradient (percent): 0 0 to 0

Aspect (clockwise direction): non-influencing

Landform: cutoffs on flood plains

Frequency Duration Beginning Month Ending Month Depth (cm)

Flooding: Occasional Long May Sep

Ponding: Frequent Very long May Sep 0 to 20

Climatic Features

RV Range

Annual Precipitation (millimeters): 392 336 to 565

Annual Air Temperature (°C): -2.7 -3.0 to -2.5

Frost Free Days: 100 80 to 110

Soil Features

Parent Materials: grassy organic material over sandy and silty alluvium

Rooting Depth (cm): *RV: 88 Range: 13 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 Texture Permeability AWC pH Effective CEC CEC

(cm) (cm/cm) (me/100g) (me/100g)

56 peat moderately rapid .34 6.0 80

32 silt loam moderate .18 6.8 16

Restrictive Features: strongly contrasting textural stratification at 56 cm

Water Table (May to September): 0 cm

Drainage Class: very poorly drained

Vegetation Features

Common Vegetation Types:

Vegetation Type Ecological Status

Sedge wet meadow Climax plant community

Bluejoint wet meadow Post climax plant community

Water horsetail-marsh five finger-buckbean wet meadow Early stage of pond/fen/bog succession

Ecological Status-Transition Description:

Three plant communities are identified on this site based on relative position and wetness within the site. An early

pond succession community with water horsetail-marsh five finger-buckbean wet meadow is described in wetter

areas often associated with the narrow fringe adjacent to open water. A potential community with sedge wet meadow

is described for the most extensive condition observed within the site. A post successional community with bluejoint

wet meadow is described along the upland fringe where site conditions are slightly drier and the organic surface layer

thinner. Many areas of this site are also influenced by flooding, but saturated conditions on this site are largely

attributed to ground water discharge. Pond succession is considered a transitional pathway between seral

communities within this site.

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

Sedge wet meadow 83 7 19 30 11

Bluejoint wet meadow 51 9 17 29 5

Water horsetail-marsh five finger-buckbean wet meadow 84 12 21 34 9

Alien Plants:

Alien plants include plants on Alaska Exotic Plant Information Clearinghouse Weed List, 2002.

Vegetation Type Symbol Scientific Name

Bluejoint wet meadow RUMAM Rumex maritimus ssp. maritimus

Denali National Park Area, Alaska 333

Notable Plants:

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

Vegetation Type Symbol Scientific Name

Sedge wet meadow CAPA Calla palustris

CACH5 Carex chordorrhiza

CADI4 Carex diandra

CALAA5 Carex lasiocarpa ssp. americana

GLBO Glyceria borealis

GLMAG Glyceria maxima ssp. grandis

LYTH2 Lysimachia thysiflora

MYVE3 Myriophyllum verticillatum

NYTE Nymphaea tetragona

PEMA Pedicularis macrodonta

RINA99 Ricciocarpus natans

SPMI Sparganium minimum

STLO Stellaria longifolia

TYLA Typha latifolia

Bluejoint wet meadow BITR Bidens tripartita

CAPA Calla palustris

CANA Caltha natans

POPEO Polygonum pensylvanicum ssp. oneillii

RINA99 Ricciocarpus natans

Water horsetail-marsh five finger-buckbean wet meadow ASJU Aster junciformis

CAPA Calla palustris

CACH5 Carex chordorrhiza

CADI4 Carex diandra

CEDE4 Ceratophyllum demersum

CIBU Cicuta bulbifera

ERGR8 Eriophorum gracile

LEMI3 Lemna minor

LYTH2 Lysimachia thysiflora

MYVE3 Myriophyllum verticillatum

NAFL Najas flexilis

NYTE Nymphaea tetragona

PEMA Pedicularis macrodonta

POAML Polygonum amphibium ssp.

laevimarginatum

POPEO Polygonum pensylvanicum ssp. oneillii

RINA99 Ricciocarpus natans

SAEXI Salix exigua ssp. interior

SALUL Salix lucida ssp. lasiandra

SCVA Scirpus validus

STLO Stellaria longifolia

TYLA Typha latifolia

UTMI Utricularia minor

VESC2 Veronica scutellata

Characteristics of Sedge wet meadow

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 = 11. 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.

SL CHCA2 Chamaedaphne calyculata 1.0 6 15 36 15
GT CAAQ Carex aquatilis 1.0 34 80 91 56
GM-GT CARO6 Carex rostrata 1.0 28 85 91 50
GT CACA4 Calamagrostis canadensis 5.0 21 40 82 41
GT ARFU2 Arctophila fulva 0.1 8 25 36 17

334 Soil Survey of

Percent Percent Importance

Stratum Symbol Scientific Name Canopy Cover Constancy Value

Min. Avg. Max.

GM AGSC5 Agrostis scabra 0.1 7 20 27 14
FM-FT EQFL Equisetum fluviatile 0.1 15 30 91 37
FM-FT COPA28 Comarum palustre 1.0 11 30 91 32
FD RUAR Rubus arcticus 0.1 10 30 27 16
L LICHEN total lichens 0.0 0 0 100 0
M MOSS total bryophytes-mosses and liverworts 0.1 25 60 100 50
M1 ZZMOSS unknown-mosses 5.0 18 40 45 28
M1 CALLI10 Calliergon 5.0 13 25 27 19
B LITTER litter-herbaceous, mulch, and woody debris <2.5 cm 20.0 58 90 100 76
B WATER water 0.1 46 95 100 68
B LITTER2 litter-woody debris >2.5 cm 0.0 1 7 100 10
B SOIL mineral-bare soil 0.0 0 0 100 0
B ROCK mineral-surface rock fragments 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 3.0 3.5 4.0 m 2
Tree regeneration TR 0.7 0.7 0.7 m 1
Tall shrubs ST 4.0 4.0 4.0 m 1
Medium shrubs SM 1.1 2.0 3.0 m 7
Low shrubs SL 30.0 63.3 100.0 cm 3
Tall and medium grasses and grass-likes GT, GM 30.0 99.2 160.0 cm 13
Tall and medium forbs FT, FM 40.0 82.7 200.0 cm 11
Dwarf herbs, lichens, and bryophytes GD, FD, L, M 1.0 3.0 10.0 cm 11

Characteristics of Bluejoint wet meadow

Ecological Status: Post 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. **Percent Percent Importance**

Stratum Symbol Scientific Name Canopy Cover Constancy Value

Min. Avg. Max.

SM SAPU15 Salix pulchra 5.0 25 45 40 32
SM RUID Rubus idaeus 5.0 5 5 20 10
SL SAFU Salix fuscescens 5.0 5 5 20 10
GT CACA4 Calamagrostis canadensis 50.0 71 90 100 84
GT CAAQ Carex aquatilis 5.0 5 5 40 14
GT CAUT Carex utriculata 10.0 10 10 20 14
GM CASAL2 Carex saxatilis ssp. laxa 20.0 20 20 20 20
FT COPA28 Comarum palustre 2.0 6 15 80 22
FT EPAN2 Epilobium angustifolium 5.0 5 5 20 10
L LICHEN total lichens 0.0 0 0 100 0
M MOSS total bryophytes-mosses and liverworts 10.0 30 70 100 55
M1 ZZMOSS unknown-mosses 5.0 22 40 60 36

M1 CALL10 Calliergon 5.0 12 20 60 27
 M1 TONI70 Tomentypnum nitens 20.0 20 20 20 20
 B LITTER litter-herbaceous, mulch, and woody debris <2.5 cm 35.0 66 95 100 81
 B SOIL mineral-bare soil 0.0 14 50 100 37
 B WATER water 0.1 10 35 100 32
 B LITTER2 litter-woody debris >2.5 cm 0.0 1 2 100 10
 B ROCK mineral-surface rock fragments 0.0 0 0 100 0
 Denali National Park Area, Alaska 335

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

Medium shrubs SM 1.2 1.4 1.8 m 3
 Low shrubs SL 30.0 30.0 30.0 cm 1
 Tall and medium grasses and grass-like GT, GM 2.0 106.0 180.0 cm 7
 Tall and medium forbs FT, FM 20.0 55.0 80.0 cm 4
 Dwarf herbs, lichens, and bryophytes GD, FD, L, M 1.0 3.5 10.0 cm 6

Characteristics of Water horsetail-marsh five finger-buckbean wet meadow

Ecological Status: Early stage of pond/fen/bog succession

Plant Species Cover, Constancy, and Importance:

Cover, constancy, and importance are based on 1997-2002 field season data. Number of stands sampled = 11. 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.

SL ANPO Andromeda polifolia 1.0 8 20 27 15
 SL MYGA Myrica gale 5.0 8 10 27 15
 GT CAR06 Carex rostrata 10.0 28 45 45 35
 GM-GT CAAQ Carex aquatilis 5.0 14 25 64 30
 GM-GT CAUT Carex utriculata 3.0 12 20 18 15
 FT EQFL Equisetum fluviatile 2.0 49 85 100 70
 FM-FT COPA28 Comarum palustre 3.0 17 50 82 37
 FM METR3 Menyanthes trifoliata 5.0 38 80 45 41
 FM CAPA Calla palustris 0.1 5 20 36 13
 FD UTIN2 Utricularia intermedia 0.1 12 35 27 18
 L LICHEN total lichens 0.0 0 0 100 0
 M MOSS total bryophytes-mosses and liverworts 0.0 19 65 100 44
 M1 ZZMOSS unknown-mosses 0.1 19 45 55 32
 M1 SPHAG2 Sphagnum 0.1 8 20 45 19
 M1 TONI70 Tomentypnum nitens 4.0 10 15 18 13
 M2 RINA99 Ricciocarpus natans 0.1 5 15 27 12
 B WATER water 5.0 64 100 100 80
 B LITTER litter-herbaceous, mulch, and woody debris <2.5 cm 0.0 25 50 100 50
 B SOIL mineral-bare soil 0.0 7 60 100 26
 B LITTER2 litter-woody debris >2.5 cm 0.0 0 0 100 0
 B ROCK mineral-surface rock fragments 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 2.0 2.0 2.0 m 1
 Tree regeneration TR 1.5 1.5 1.5 m 1
 Medium shrubs SM 1.2 1.4 1.5 m 5
 Low shrubs SL 30.0 76.7 100.0 cm 6
 Tall and medium grasses and grass-like GT, GM 2.0 80.1 160.0 cm 17
 Tall and medium forbs FT, FM 20.0 71.7 140.0 cm 23
 Dwarf herbs, lichens, and bryophytes GD, FD, L, M 1.0 1.9 3.0 cm 8

Map Unit Components

Common Name (Soils Name):

Boreal-riparian wet meadow organic depressions (Cryofibrists, euic)

336 Soil Survey of

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):

1FP4 Boreal Flood Plains and Terraces with Discontinuous Permafrost, Wet
(Fluvaquentic Historthels, coarse-loamy-Fluventic Haplorthels, coarse-loamy-Cryofibrists, euic Complex)

1ST Boreal Plains with Discontinuous Permafrost

(Typic Historthels, coarse-silty-Fluventic Haplorthels, coarse-loamy-Cryofibrists, euic Complex)

1ST1 Boreal Terraces with Discontinuous Permafrost, Minchumina Basin

(Typic Historthels, coarse-loamy-Typic Histoturbels, coarse-silty-Cryofibrists, euic Association)

Geographically Associated Landtypes

131B_101—Loamy High Flood Plains:

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

131B_102—Loamy Frozen Flood Plains:

This site occurs on higher positions with well drained soils that are moderately deep over permafrost. The climax plant

community is "Mixed paper birch-spruce/prickly rose forest."

131B_104—Loamy Frozen Terraces:

This site occurs on terraces with loamy soils that have permafrost at moderate depths. The climax plant community is

"Black spruce-tamarack/Labrador tea woodland."

131B_156—Loamy Wet Flood Plains, Frozen:

This site occurs on slightly higher positions with loamy soils that have permafrost at moderate depths. The climax

plant community is "White spruce-tamarack/thinleaf alder forest."

Similar Landtypes

131B_506—Organic Depressions, Eutrophic Fens:

This site occurs on soils in more nutrient rich fens with thinner organic mats. The climax plant community is "Tulfted

bulrush meadow."

131B_530—Depressions, Bogs:

This site occurs on soils in acid bogs. The climax plant community is "Sedge/sphagnum moss bog."