

Loamy Wet Flood Plains, Frozen (131B_156)

Ecoregion Classification

Section: Yukon-Kuskokwim Bottomlands (131B)

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

Lowland Flood Plains & Terraces (131B.V1)

Physiographic Features

Elevation (meters): *RV* 200 *Range* 160 to 307

Slope Gradient (percent): 1 0 to 1

Aspect (clockwise direction): non-influencing

Landform: flood plains

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

Ponding: None

Climatic Features

Annual Precipitation (millimeters): *RV* 392 *Range* 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: mossy organic material and/or woody organic material over sandy and silty alluvium
sandy and silty alluvium over sandy and gravelly alluvium

Rooting Depth (cm): *RV:* 39 *Range:* 21 to 84

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)
20	mucky peat	moderately rapid	.34	4.7	15	
5 to 19	very fine sandy loam, muck	moderate or moderately rapid	.16 to .26	6.7 to 6.9		20 to 25
22		moderate	.15	7.0		20

Restrictive Features: permafrost at 41 cm
strongly contrasting textural stratification at 20 to 84 cm in some components

Water Table (May to September): 0 to 50 cm

Drainage Class: poorly drained or very poorly drained

Vegetation Features

Common Vegetation Types:

Vegetation Type

White spruce-tamarack/thinleaf alder forest
Diamondleaf willow-shrub birch/bluejoint scrub

Ecological Status

Climax plant community
Early stage of fire induced secondary succession

Ecological Status-Transition Description:

Two plant communities are identified within this fire and flooding influenced site including a potential community with white spruce-tamarack/thinleaf alder forest and an early-seral community with diamondleaf willow-shrub birch/bluejoint scrub. Flooding and fire are considered transitional pathways 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.

Vegetation Type	Total	Per Stand			Number of Stands
		Min.	Avg.	Max.	
White spruce-tamarack/thinleaf alder forest	133	21	34	43	18
Diamondleaf willow-shrub birch/bluejoint scrub	12	12	12	12	1

Alien Plants:

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

Vegetation Type	Symbol	Scientific Name
White spruce-tamarack/thinleaf alder forest	POPR	Poa pratensis

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-tamarack/thinleaf alder forest	CASTS	Calamagrostis stricta ssp. stricta
	GOREO2	Goodyera repens var. ophioides
	RINA99	Ricciocarpus natans
	STLO	Stellaria longifolia

Characteristics of White spruce-tamarack/thinleaf 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 = 18. 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	5.0	13	25	61	28
TT	LALA	Larix laricina	0.1	14	55	50	26
TM	LALA	Larix laricina	0.1	8	25	44	19
SM-ST	ALTE2	Alnus tenuifolia	2.0	14	40	83	34
SM-ST	SAPU15	Salix pulchra	0.1	12	45	67	28
SM-ST	ALVIC	Alnus viridis ssp. crispa	0.1	15	55	22	18
SM-ST	SAAL	Salix alaxensis	0.1	7	40	33	15
SL-SM	ROAC	Rosa acicularis	0.1	6	25	78	22
SL-SM	MYGA	Myrica gale	0.1	13	45	28	19
SM	BEGL	Betula glandulosa	0.1	5	15	61	17
SL-SM	SARI4	Salix richardsonii	0.1	5	15	39	14
SL	VAUL	Vaccinium uliginosum	0.1	16	40	100	40
SL	LEGR	Ledum groenlandicum	1.0	7	10	83	24
SL	CHCA2	Chamaedaphne calyculata	0.1	7	50	56	20
SD	VAVIM99	Vaccinium vitis-idaea spp. Minus	0.1	12	40	89	33
SD	EMNI	Empetrum nigrum	0.1	7	15	67	22
GT	CACA4	Calamagrostis canadensis	0.1	18	60	78	37
FD-FM	EQAR	Equisetum arvense	0.1	22	65	83	43
FD	RUAR	Rubus arcticus	0.1	5	20	72	19
FD	COCA13	Cornus canadensis	0.1	5	15	56	17
FD	RUCH	Rubus chamaemorus	5.0	8	15	17	12
L	LICHEN	total lichens	0.1	2	10	100	14
M	MOSS	total bryophytes-mosses and liverworts	30.0	72	95	100	85
M1	HYSP70	Hylocomium splendens	15.0	41	65	89	60
M1	ZZMOSS	unknown-mosses	10.0	23	70	100	48
M1	SPHAG2	Sphagnum	0.1	7	20	56	20
M1	TONI70	Tomentypnum nitens	0.1	6	15	56	18
M1	PLSC70	Pleurozium schreberi	2.0	10	20	22	15
B	LITTER	litter-herbaceous, mulch, and woody debris <2.5 cm	10.0	33	70	100	57

Stratum	Symbol	Scientific Name	Percent Canopy Cover			Percent Constancy	Importance Value
			Min.	Avg.	Max.		
B	LITTER2	litter-woody debris >2.5 cm	2.0	6	15	100	24
B	WATER	water	0.0	2	15	100	14
B	SOIL	mineral-bare soil	0.0	1	7	100	10
B	ROCK	mineral-surface rock fragments	0.0	1	15	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	6.0	12.9	29.0	m	22
Tree regeneration	TR	2.0	2.2	2.5	m	2
Tall shrubs	ST	3.0	4.1	5.5	m	14
Medium shrubs	SM	1.0	1.8	2.5	m	12
Low shrubs	SL	30.0	61.9	110.0	cm	16
Dwarf shrubs	SD	4.0	8.3	20.0	cm	12
Tall and medium grasses and grass-likes	GT, GM	10.0	103.5	170.0	cm	17
Tall and medium forbs	FT, FM	30.0	53.1	130.0	cm	16
Dwarf herbs, lichens, and bryophytes	GD, FD, L, M	1.0	5.3	60.0	cm	38

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
Larix laricina	48	11.7	11.3	4	B
	56	13.5	13.4		
	63	14.5	15.8		
Picea glauca	42	19.0	10.7	14	B
	127	26.1	15.0		
	288	42.4	25.6		

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

Min.	Avg.	Max.	Number of Stands
12.6	15.5	19.6	8

Characteristics of Diamondleaf willow-shrub birch/bluejoint scrub

Ecological Status: Early stage of fire induced secondary succession

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.		
SM	SAPU15	Salix pulchra	45.0	45	45	100	67
SM	BEGL	Betula glandulosa	30.0	30	30	100	55
SL	CHCA2	Chamaedaphne calyculata	15.0	15	15	100	39
SL	VAUL	Vaccinium uliginosum	5.0	5	5	100	22
GT	CACA4	Calamagrostis canadensis	55.0	55	55	100	74
L	LICHEN	total lichens	0.1	0	0	100	0
M	MOSS	total bryophytes-mosses and liverworts	40.0	40	40	100	63
M1	ZZMOSS	unknown-mosses	25.0	25	25	100	50
M1	POLYT5	Polytrichum	10.0	10	10	100	32
M1	SPHAG2	Sphagnum	5.0	5	5	100	22
B	LITTER	litter-herbaceous, mulch, and woody debris <2.5 cm	80.0	80	80	100	89
B	LITTER2	litter-woody debris >2.5 cm	20.0	20	20	100	45
B	WATER	water	5.0	5	5	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

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.		
Tree regeneration	TR	0.2	0.2	0.2	m	1
Medium shrubs	SM	2.1	2.1	2.1	m	1
Low shrubs	SL	30.0	30.0	30.0	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):

Boreal-riparian forested loamy wet flood plains, frozen (Fluvaquentic Historthels, coarse-loamy)

Boreal-riparian woodland loamy flood plains, wet (Typic Cryaquents, 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)
1FP4	Boreal Flood Plains and Terraces with Discontinuous Permafrost, Wet (Fluvaquentic Historthels, coarse-loamy-Fluentic Haploorthels, coarse-loamy-Cryofibrists, euic Complex)

Geographically Associated Landtypes

131B_101—Loamy High Flood Plains:

This site occurs on very deep, well drained soils. The climax plant community is "White spruce/alder forest."

131B_102—Loamy Frozen Flood Plains:

This site occurs on high flood plains with soils that are well drained and 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 non-flooded terraces with wetter soils and 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."

Similar Landtypes

131B_100—Loamy Flood Plains:

This site occurs on very deep, well drained soils. The climax plant community is "White spruce-poplar/alder forest."

131B_101—Loamy High Flood Plains:

This site occurs on very deep, well drained soils. The climax plant community is "White spruce/alder forest."

131B_255—Gravelly Flood Plains:

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