

Loamy Frozen Terraces, Wet (131B_105)

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* 228 *Range* 149 to 592

Slope Gradient (percent): 1 0 to 4

Aspect (clockwise direction): non-influencing

Landform: turf hummocks on plains; turf hummocks on stream terraces

	<i>Frequency</i>	<i>Duration</i>	<i>Beginning Month</i>	<i>Ending Month</i>	<i>Depth (cm)</i>
Flooding:	None				

Ponding:	Frequent	Long	May	Jun	to
-----------------	----------	------	-----	-----	----

Climatic Features

Annual Precipitation (millimeters): *RV* 436 *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: grassy organic material over loamy cryoturbate over loamy eolian deposits
grassy organic material over sandy and silty cryoturbate

Rooting Depth (cm): *RV:* 44 *Range:* 19 to 73

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)
24 to 44	peat	moderately rapid	.34	3.8 to 4.3	30	
6 to 20		moderate to moderately rapid	.17 to .40	5.6		15 to 20

Restrictive Features: permafrost at 48 to 64 cm

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

Drainage Class: very poorly drained

Vegetation Features

Common Vegetation Types:

Vegetation Type

Black spruce-tamarack/tussock cottongrass woodland

Mixed ericaceous/tussock cottongrass scrub2

Ecological Status

Climax plant community

Mid stage of fire induced secondary succession

Ecological Status-Transition Description:

Two plant communities are identified within this fire influenced site including a potential community with black spruce-tamarack/tussock cottongrass woodland and mid-seral community with mixed ericaceous/tussock cottongrass scrub2. Fire 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.

Vegetation Type	Total	Per Stand			Number of Stands
		Min.	Avg.	Max.	
Black spruce-tamarack/tussock cottongrass woodland	43	12	17	23	11
Mixed ericaceous/tussock cottongrass scrub2	44	7	16	25	10

Characteristics of Black spruce-tamarack/tussock cottongrass woodland

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 = 15. 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.		
TM	PIMA	Picea mariana	1.0	13	20	60	28
TS	PIMA	Picea mariana	0.1	10	25	33	18
TS	LALA	Larix laricina	0.1	6	20	27	13
SL-SM	BEGL	Betula glandulosa	0.1	8	30	100	28
SL-SM	SAPU15	Salix pulchra	0.1	5	25	53	16
SL-SM	LEGR	Ledum groenlandicum	0.1	7	15	27	14
SD-SL	LEPAD	Ledum palustre ssp. decumbens	2.0	21	40	100	46
SD-SL	VAUL	Vaccinium uliginosum	0.1	9	20	87	28
SD-SL	CHCA2	Chamaedaphne calyculata	0.1	11	30	67	27
SD	VAVIM99	Vaccinium vitis-idaea spp. Minus	3.0	9	20	93	29
GM	ERBR6	Eriophorum brachyantherum	25.0	49	70	73	60
GM	ERiop	Eriophorum	55.0	70	85	27	43
L	LICHEN	total lichens	0.0	11	30	100	33
L1	CLADI3	Cladina	0.1	6	15	47	17
M	MOSS	total bryophytes-mosses and liverworts	15.0	50	90	100	71
M1	SPHAG2	Sphagnum	5.0	29	50	87	50
M1	PLSC70	Pleurozium schreberi	0.1	12	30	60	27
M1	ZZMOSS	unknown-mosses	2.0	9	20	73	26
M1	HYSP70	Hylocomium splendens	5.0	14	45	33	21
B	LITTER	litter-herbaceous, mulch, and woody debris <2.5 cm	5.0	39	80	100	62
B	LITTER2	litter-woody debris >2.5 cm	0.0	1	5	100	10
B	WATER	water	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			Units	Number of Records
		Min.	Avg.	Max.		
Trees	TT, TM, TS	4.0	5.3	8.5	m	19
Tree regeneration	TR	0.3	0.9	1.8	m	19
Medium shrubs	SM	1.0	1.3	2.0	m	7
Low shrubs	SL	20.0	46.0	100.0	cm	21
Dwarf shrubs	SD	3.0	11.3	20.0	cm	15
Tall and medium grasses and grass-likes	GT, GM	20.0	49.3	130.0	cm	14
Dwarf herbs, lichens, and bryophytes	GD, FD, L, M	2.0	4.3	10.0	cm	31

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 of Trees	Height of Measurements
	(years)	(cm)	(m)		
Picea mariana	71	4.8	3.0	2	G
	92	6.5	4.1		
	112	8.1	5.2		

Characteristics of Mixed ericaceous/tussock cottongrass scrub2

Ecological Status: Mid 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 = 10. 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.		
SD-SM	LEPAD	Ledum palustre ssp. decumbens	0.1	36	60	100	60
SD-SM	BEGL	Betula glandulosa	0.1	12	50	100	35
SD-SL	VAUL	Vaccinium uliginosum	0.1	6	15	100	24
SD	VAVIM99	Vaccinium vitis-idaea spp. Minus	0.1	10	15	100	32
SD	EMNI	Empetrum nigrum	1.0	8	15	20	13
GM	ERBR6	Eriophorum brachyantherum	25.0	52	80	100	72
FD	RUCH	Rubus chamaemorus	0.1	8	20	100	28
L	LICHEN	total lichens	0.1	6	31	100	24
M	MOSS	total bryophytes-mosses and liverworts	5.0	36	60	100	60
M1	SPHAG2	Sphagnum	3.0	21	30	100	46
M1	ZZMOSS	unknown-mosses	2.0	8	15	100	28
M1	POCO38	Polytrichum commune	0.1	8	25	40	18
M1	PLSC70	Pleurozium schreberi	5.0	12	20	20	15
B	LITTER	litter-herbaceous, mulch, and woody debris <2.5 cm	30.0	67	95	100	82
B	LITTER2	litter-woody debris >2.5 cm	0.0	9	20	100	30
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	3.5	5.2	8.0	m	6
Tree regeneration	TR	0.3	1.1	2.5	m	12
Medium shrubs	SM	1.0	1.3	1.5	m	7
Low shrubs	SL	20.0	58.9	100.0	cm	9
Dwarf shrubs	SD	1.0	7.9	15.0	cm	9
Tall and medium grasses and grass-likes	GT, GM	30.0	53.3	130.0	cm	9
Tall and medium forbs	FT, FM	20.0	43.3	80.0	cm	3
Dwarf herbs, lichens, and bryophytes	GD, FD, L, M	1.0	4.0	10.0	cm	21

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 mariana	35	6.4	3.7	Min.	G
	35	6.4	3.7	Avg.	
	35	6.4	3.7	Max.	

Mapunit Components

Common Name (Soils Name):

- Boreal-taiga/tussock loamy eolian slopes, frozen (Typic Histoturbels, coarse-loamy)
- Boreal-taiga/tussock mica rich silty terraces, frozen (Typic Histoturbels, coarse-silty)
- Boreal-taiga/tussock silty terraces, frozen (Typic Histoturbels, coarse-silty)

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):

1FW1	Boreal Terraces with Continuous Permafrost (Typic Historthels, coarse-loamy-Typic Histoturbels, coarse-silty Complex)
1ST1	Boreal Terraces with Discontinuous Permafrost, Minchumina Basin (Typic Historthels, coarse-loamy-Typic Histoturbels, coarse-silty-Cryofibrists, eucic Association)
1STW	Boreal Terraces with Continuous Permafrost, Wet (Typic Histoturbels, coarse-silty-Typic Historthels, coarse-loamy Association)
2FG	Boreal Terraces with Continuous Permafrost, Very Wet (Typic Histoturbels, coarse-silty-Glacial Folistels, dysic Association)
3FP3	Boreal Mica-Rich Terraces and Flood Plains with Discontinuous Permafrost (Typic Histoturbels, coarse-silty-Fluventic Haplorthels, coarse-loamy-Typic Historthels, coarse-loamy Association)
3FU3	Boreal Eolian Plains and Dunes with Discontinuous Permafrost (Typic Historthels, coarse-loamy-Typic Histoturbels, coarse-loamy-Typic Haplocryods, sandy Association, 0 to 38 percent slopes)

Geographically Associated Landtypes

131B_100—Loamy Flood Plains:

This site occurs on flood plains with very deep, well drained soils. The climax plant community is "White spruce-poplar/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 slightly drier soils. The climax plant community is "Black spruce-tamarack/Labrador tea woodland."

131B_156—Loamy Wet Flood Plains, Frozen:

This site occurs on flood plains. The climax plant community is "White spruce-tamarack/thinleaf alder forest."