

BOREAL LOW ZONE OF YUKON

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**Part 5:**  
**Yukon Central Boreal  
Low Subzone (BOLyc)**

A Field Guide to  
Ecosite Identification

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The logo for Yukon, featuring the word "Yukon" in a bold, white, sans-serif font. Above the letter "o" is a stylized white sunburst or starburst icon.



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Yukon Central Plateau  
Boreal Low Subzone (BOLYyc)  
A Field Guide to Ecosite Identification

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**Part 5. Yukon Plateau Central  
Boreal Low (BOLyc)**

Del Meidinger  
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Note. Part 1 of the Boreal Low Zone Series contains introductory information about ecosite identification in the field and the Yukon bioclimate ecosystem classification system. Part 2 contains ecosite descriptions for the Southern Lakes Boreal Low Subzone (BOLsl), Part 3 contains ecosite descriptions for the Klondike Plateau Boreal Low Subzone (BOLkp), and Part 4 contains ecosite descriptions for the Liard Hyland Boreal Low Subzone (BOLlh).

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Ecological field sampling in the Yukon Central Plateau region began in the mid-1970s. The federal government (Department of Indian Affairs and Northern Development, DIAND) conducted expansive forest inventory, mensuration, and mapping programs throughout the southern half of the Yukon from 1975–1982. Key contributors to this early work on ecological classification were Ed Oswald, John Senyk and Barry Brown, based out of the Pacific Forestry Research Centre, Canadian Forest Service, in Victoria, B.C.

During the period from 1990–2023, field data were collected under the auspices of various inventory programs by the territorial government, federal government, First Nations governments and private industry in the region. Biophysical inventory surveys were conducted by Government of Yukon in the Minto, Nordenskoild River, Carmacks and Southern Lakes areas.

Many individuals collected data that greatly contributed to developing the guide for this region. Angela Milani, Barry Brown, Brett Pagacz, Bruce Bennett, Caitlin Willier, Catherine Kennedy, Chris Wall, Denise Gordon, Ed Oswald, Heather Clarke, Jackie Churchill, Jane Backman, Jennifer Staniforth, John Meikle, Kirsten Wilcox, Kaz Kuba, Lisa Knight, Marina Milligan, Mitch Heynen, Nadele Flynn, Rachelle Robitaille, Rhonda Rosie, Scott Smith, Sherri Elwell, Simon Lapointe, Tess McLeod, Val Loewen and Wayne Strong.

Identification and verification of vascular plants was conducted by W.J. (Bill) Cody, Bruce Bennett and Rhonda Rosie; non-vascular plants were identified by Trevor Goward (lichens) and Terry McIntosh (mosses).

The classification published in this guide is based on analyses of data collected at more than 300 sites in the Yukon Central Plateau region by a variety of sources. This classification dataset was harmonized with the Yukon Biophysical Inventory System (YBIS) as well as additional data from numerous sources; Russell Klassen contributed to the database development. NRCan colleagues Ken Baldwin and Kim Chapman assisted in the development of Yukon Vegetation associations compatible with the Canadian National Vegetation Classification (CNVC), which

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## 1.0 Yukon Central Plateau Boreal Low Subzone (BOLyc)

### 1.1 Subzone description

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The Yukon Central Plateau Subzone (BOLyc) (Figure 1) occupies glaciated plateaus and rounded hills, as well as the broad valleys of the Yukon, MacMillan, Stewart, Nordenskiöld and Pelly rivers (Flynn and McKenna 2015). The climate is continental and semi-arid, with warm summers and cold winters (YEWG 2004; Flynn and McKenna 2015). The subzone is influenced by the rain shadow of the St. Elias Mountains; thus, annual precipitation is relatively light and growing season moisture deficits occur (YEWG 2004). White spruce, pine and aspen stands characterize the forests of this bioclimate subzone. Black spruce is common on nutrient-poor sites across a range of soil moisture regimes, from dry, coarse-textured glaciofluvial terraces to areas influenced by cold air drainage and treed bogs. Mature mesic sites are usually dominated by white spruce or white spruce and pine. Soapberry, twinflower and feathermosses commonly occur in the understorey. Early successional forests on these mesic sites are often aspen, aspen mixed wood or pine. Periodic fires maintain many stands within this subzone in a young structural stage (YEWG 2004).

The driest sites in the subzone are occupied by grasslands, which occur on moderate to steep, south-facing slopes primarily along the Yukon and Pelly rivers. Grasslands are a notable feature of the BOLyc, as the subzone supports the most extensive occurrence of boreal grasslands in Canada (Strong 2015). Grasslands are likely concentrated in this region due to the northwest–southeast trending mountain ridges in conjunction with the rain shadow effect of the Coast Mountains and relatively low elevations (YEWG 2004; Strong 2015). Grassland habitat within the BOLyc provides critical habitat for several rare and endemic vascular plant species, including *Draba yukonensis*, *Eriogonum flavum* var. *aquilinum* and *Nestotus macleanii*. Aspen forests with kinnikinnick-dominated understoreys occur adjacent to grassland communities on warm, moderate slopes with medium to rich nutrient regimes. Open pine and white spruce forests with lichen and litter ground cover dominate dry, nutrient-poor sites commonly associated with coarse-textured soils.

Moist to wet forests in the subzone are usually dominated by white spruce; however, pine and/or black spruce are common components. Like the adjacent BOLsl, common Labrador tea dominates the understorey on nutrient-poor, cold sites, while mesic and richer sites are often dominated by willows, red bearberry and dwarf scouring-rush.

Floodplains are typically dominated by white spruce or balsam poplar, depending on the frequency of flooding, and commonly contain prickly rose, river alder and horsetails in the understorey.

Wetlands include bogs, fens, swamps, marshes and shallow water; however, they are not an extensive component of the subzone. Bogs, underlain by permafrost, have open spruce canopies with understoreys dominated by shrub birch and Labrador tea. Sedge-dominated fens can occur in complex with other wetland ecosystems and along broad, low-gradient river systems such as the Nordenskiöld river. Organic accumulation in wetlands and wet forests tends to be deeper in the BOLyc than in areas further south. Shrub-dominated swamps are common throughout the subzone along creeks and rivers and surrounding ponds. Marshes can occur along larger rivers and along the shores of lakes and ponds. Shallow-water wetlands occur in thermokarst ponds in peatlands, or small ponds scattered in the subzone.

The BOLyc is dominated by soils formed under semi-arid conditions on calcareous glacial parent materials (Smith 2004). Upland soils are commonly alkaline and are usually classified as Eutric Brunisols (YEWG 2004; McKenna and Flynn 2015). Soils of moderate to steep, south-facing slopes with extensive grasslands are typically classified as Melanic or Eutric Brunisols. Soils of recent alluvial deposits are commonly classified as Regosols. Gleysols are common on lower-slope, toe and depressional sites without near-surface permafrost. Discontinuous permafrost is found throughout the subzone and is more abundant than in areas further south (YEWG 2004), including the BOLsl. While most well-drained upland soils are free of permafrost, Cryosolic soils are common on poorly drained north-facing lower slopes, toe slopes and valley bottoms (YEWG 2004). These soils can show evidence of cryoturbation in the upper horizons. Organic soils are typically found on wet, poorly drained toe slopes, valley bottoms and depressional areas and are commonly underlain by permafrost. The summer precipitation that occurs in the central Yukon contributes to the accumulation of surface peat, which acts as insulation, limiting the thawing of the ground that is cooled during the winter months (McKenna and Flynn 2015). A notable soil feature is the layer of White River tephra deposited throughout much of the subzone over 1,000 years ago from the eruption of Mount Churchill in eastern Alaska (Smith 2004). The tephra layer is up to 35 cm thick in areas and remains largely unweathered. The vegetation communities that have re-established appear to be unaffected by the ash deposits (Smith 2004).

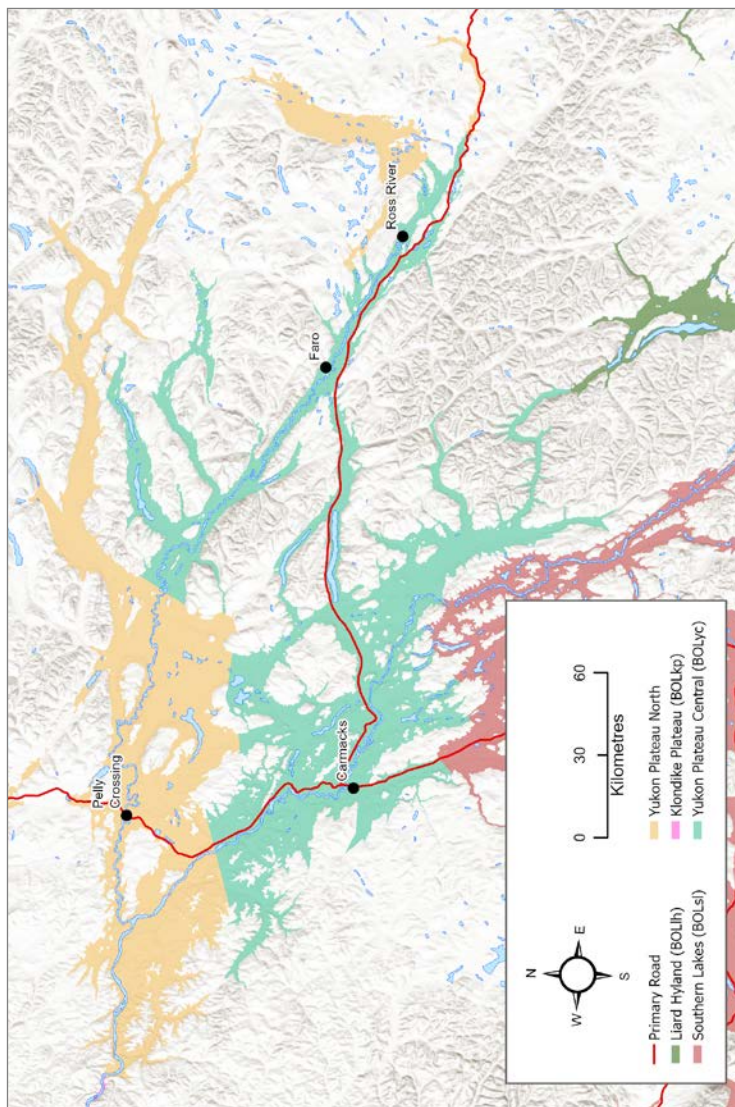


Figure 1. Map of BOLyc

## 1.2 Distinguishing BOLyc from adjacent zones and subzones

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### **BOLyn – Yukon Plateau North**

- North of BOLyc; northern extent of BOL
- Warm-aspect grasslands are rare
- Black spruce is more common on cooler and wetter sites
- Pine is present but not common
- Reference ecosite is characterized as White spruce – Black spruce / Lowbush cranberry / Feathermoss
- Cryosolic soils are more frequent

### **BOLsl – Southern Lakes**

- South and southwest of BOLyc
- Black spruce mostly restricted to bogs and cool sites
- Grasslands are common and similar in abundance to BOLyc
- Vegetation on mature reference sites is White spruce / Soapberry / Feathermoss
- Calcareous parent materials common; saline conditions encountered in some glaciolacustrine deposits
- Less precipitation during summer growing season than BOLyc, resulting in less surface organic accumulation
- Very little permafrost

### **BOLlh – Liard Hyland**

- Southeast of BOLyc; only abuts the BOLyc in the Big Salmon River valley
- Moister climate than BOLyc
- Absence of warm-aspect grasslands
- Black spruce not as common on mesic and drier sites as in BOLyc
- Greater presence of bunchberry (*Cornus canadensis*) overall

## Boreal High (BOH)

- Higher elevations, generally above 900 m; higher rainfall and snowfall than BOL
- Characterized by open white spruce – subalpine fir forests with shrub birch (*Betula glandulosa*) and willow (*Salix* spp., particularly *S. glauca*) understorey
- Shrub birch increases in abundance on upland sites and is a common dominant on non-treed sites

### 1.3 Ecological Classification in the Yukon Plateau Central area

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Oswald and Senyk, of the Canadian Forest Service, Pacific Forest Research Centre, conducted ecological inventory and mapping throughout Yukon in the mid-1970s (Oswald and Senyk 1977). They also conducted localized studies that extended into the area of this subzone (Oswald 1979; Oswald and Brown 1986). Environment Yukon staff collected data in this area for various wildlife habitat projects between 1990 and 2023. Wayne Strong collected considerable data in this area for studies on aspen (Strong 2009), lodgepole pine (Strong 2014) and grassland (Strong 2015) communities. Environment Yukon and Canadian Wildlife Service staff collected data in 2023 to classify the Minto grassland plant communities and describe the habitat of rare plants within the area.

Ecosites in the BOLyc were identified through analysis of 300 ecological plots collected throughout the subzone between 1975 and 2025. The data include:

- 84 plots collected by Oswald and Senyk
- 87 plots collected by Wayne Strong
- 37 plots collected by Environment Yukon staff and contractors
- 25 plots collected in 2015 by EDI Environmental Dynamics Inc. for this field guide
- 65 plots collected on grasslands and related vegetation by Environment Yukon staff and contractors
- 2 plots collected in 1998 for the South Central Yukon guide

Note: Due to limited data within the BOLyc, wetland plots from throughout boreal Yukon were used to characterize wetland ecosites. Plots collected for broad-scale mapping purposes within the BOLyc area were used to qualitatively assess the presence of wetland ecosites.

## 1.4 Limitations of the guide

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The data used in the preparation of this field guide have some limitations. Specifically, there are relatively few plots with detailed soil and site information and a limited number of plots for some ecosites and vegetation associations. As a result, there is some uncertainty in the soils descriptions for some ecosites. Information from adjacent areas was used to supplement the descriptions, where appropriate. The number of plots that have detailed soil descriptions is indicated on the site and soils table for each ecosite.

Comments regarding errors and omissions, or improvements to data quality can be directed to [elc@yukon.ca](mailto:elc@yukon.ca).



## 2.0 Ecosites of the BOLyc

The BOLyc ecosites (or groups of ecosites) are displayed on an edatopic grid, which illustrates their relationship to each other based on relative soil nutrient and moisture regimes (Figure 2-1). BOLyc ecosites are also listed in Table 2-1, along with their codes and names. The ecosites have been organized into four major ecological groupings to assist with identification.

- Dry to mesic ecosites
- Mesic to moist forests
- Floodplain ecosites
- Wetland ecosites: bog, fen, swamp, marsh and shallow water classes

Following the edatopic grid and identification tools for each grouping, each ecosite is further described and characterized. For upland ecosites, this information includes a general description, a table of site and soil characteristics, a vegetation summary and association table and site photos. These tools allow the user to identify an ecosite and further describe the vegetation community by identifying the vegetation association.

Wetland ecosites are presented in a shorter format than the upland ecosites. Wetland ecosite information includes a general description and vegetation summary and association tables. There are 35 wetland ecosites known to occur in the BOLyc. Users should refer to the Wetland Ecosites of the Yukon Field Guide (Environment Yukon 2026) for a complete description of the wetland ecosites, including site and soils tables. Plot data for wetlands in the BOLyc are sparse. Wetland descriptions include data from throughout Yukon; therefore, variations in site descriptions may vary slightly from conditions within the BOLyc.

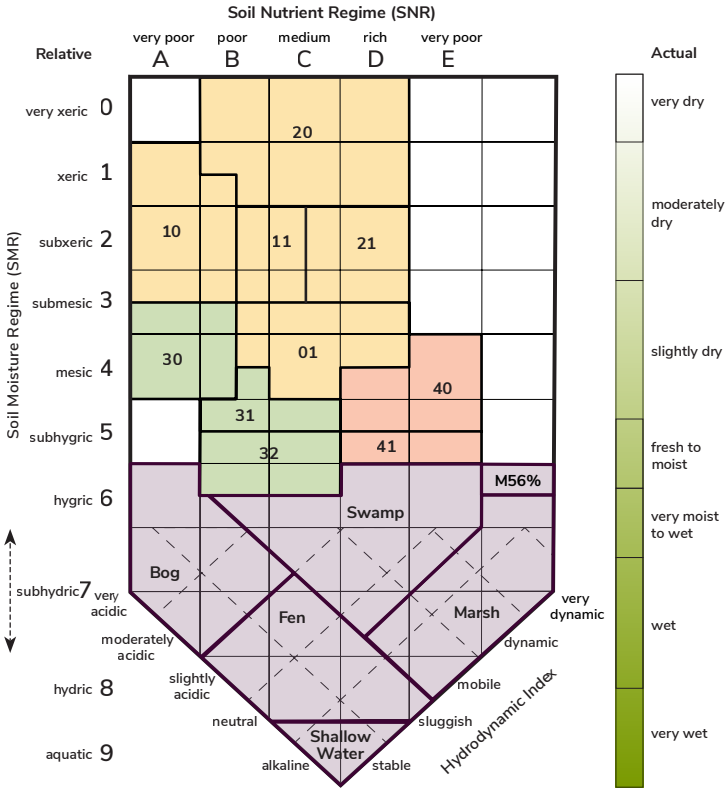


Figure 2-1. Edatopic grid for BOlyc ecosites

**Table 1-1.** Names and codes of ecosites

Ecosite	Ecosite grouping and name	Ecosite	Ecosite grouping and name
<b>Dry to mesic ecosites</b>		<b>F15</b>	Mud sedge – Bog buckbean
<b>01</b>	PS – Twinflower – Step moss forest	<b>F17</b>	Peat moss fen
<b>10</b>	PSw – Lowbush cranberry – Lichen woodland	<b>F18</b>	Russet cottongrass fen
<b>11</b>	APSw – Grass forest	<b>F20</b>	Wild calla fen
<b>20</b>	Pasture sage – Purple reedgrass grassland	<b>Swamp</b>	
<b>21</b>	At – Kinnikinnick forest	<b>S01</b>	Willow – Bluejoint swamp
<b>Mesic to moist ecosites</b>		<b>S03</b>	Willow – Water sedge swamp
<b>30</b>	PS – Labrador tea – Feathermoss forest	<b>S05</b>	Willow – Shrub birch – Water sedge swamp
<b>31</b>	Sw – Willow – Red bearberry forest	<b>S07</b>	Sb – Labrador tea – Peat moss swamp
<b>32</b>	Sw – Shrub birch – Willow forest	<b>S08</b>	SbSw – Red bearberry – Brown moss swamp
<b>Floodplain ecosites</b>		<b>S10</b>	SbSw – Shrub birch – Feathermoss – Brown moss swamp
<b>40</b>	Sw – Horsetail riparian forest	<b>S13</b>	Sw – Willow – Horsetail swamp
<b>41</b>	B – Horsetail riparian forest	<b>S15</b>	SbSw – Alder – Labrador tea – Peat moss swamp
<b>Wetland ecosites</b>		<b>S20</b>	Diamond-leaved willow – Water sedge swamp
<b>Bog</b>		<b>Marsh</b>	
<b>B03</b>	Sb – Labrador tea – Peat moss bog	<b>M01</b>	Beaked sedge – Water sedge marsh
<b>B04</b>	Sb – Lichen bog	<b>M02</b>	Water horsetail marsh
<b>B06</b>	Sb – Sloping bog	<b>M04</b>	Short-awned foxtail marsh
<b>B09</b>	Peat moss bog	<b>M08</b>	Awned sedge marsh
<b>Fen</b>		<b>M09</b>	Bulrush marsh
<b>F01</b>	Water sedge fen	<b>M10</b>	Reedgrass marsh
<b>F02</b>	Shrub birch – Water sedge fen	<b>M56%</b>	Baltic rush saline marsh
<b>F03</b>	Willow – Water sedge fen	<b>Shallow water</b>	
<b>F04</b>	SbSw – Water sedge fen	<b>W04</b>	Mare's-tail shallow water
<b>F05</b>	Sb – Tussock sedge fen	<b>W09</b>	Pond-lily shallow water
<b>F06</b>	Shrub birch – Tussock sedge fen	<b>W12</b>	Giant water moss shallow water
<b>F13</b>	Water horsetail – Sedge fen	<b>W13</b>	Slimy macroalgae shallow water

## Ecosite identification tools

Table 2-2 summarizes identification characteristics for each ecosystem group (**Step 1: Identify ecosystem group or subgroup**).

**Step 2: Tools to identify ecosite by ecological grouping** present three identification tools for each group or subgroup to identify the specific ecosite within:

- a landscape profile showing the typical distribution of ecosites (or wetland classes) on the landscape
- an ecosite identification table presenting key features for identifying the ecosites; and
- a vegetation table listing the common species for each ecosite, using colour and symbols to indicate their relative frequency and abundance

### Step 1: Identify ecosystem group or subgroup<sup>1</sup>

Table 2-2. BOlyc ecosite names and codes (table continues onto next page)

Moisture	Site/soils	Overstorey/ shrubs	Ground cover
<b>Dry to mesic ecosites</b>			
SMR :0 – 4 Drainage: VR – M	<b>Dry sites:</b> generally moderate to steep, warm slopes and/or coarse-textured  <b>Submesic to mesic sites:</b> finer (medium) textures or lower on slope; often level or mid-slopes  Permafrost absent	Forests (A, APSw, ASw, P, PSb, PSbSw, PSw, SbSw, Sw, SwW), grasslands, dry meadows or shrublands	<b>Dry sites:</b> drought-tolerant lichens, rock mosses, kinnikinnick, purple reedgrass, forbs; moss cover generally sparse  <b>Submesic to mesic sites:</b> variable understorey; shrubs (rose, willow, alder) can be moderately abundant; feathermosses prominent
<b>Mesic to moist ecosites</b>			
SMR: 4 – 5 (6) Drainage: M – I (P) Moist sites with some seepage	Mostly lower and toe slopes and level sites; sometimes mid-slopes; moisture-receiving; cold air influence on some sites; permafrost may be present	Forests (A, APSw, ASw, P, PSb, PSbSw, PSw, SbSw, Sw, SwW); Labrador tea, shrub birch and/or rose common	Red bearberry, Altai fescue or other grasses; feathermosses usually prominent
<b>Floodplain ecosites</b>			
SMR: 4 – 5 Drainage: W – M (I) Subsurface water table: some surface flooding events	Fluvial parent materials; flooding is the major geologic process; permafrost uncommon	Forests (B, SwB, Sw); river alder, prickly rose and highbush cranberry common	Horsetails; groundcover may be sparse

Moisture	Site/soils	Overstorey/ shrubs	Ground cover
<b>Wetland ecosites</b>			
<b>Bog ecosites</b>			
SMR: 7 (6) Drainage: P – VP Stable water table: surface is usually dry as it is raised above the water table	Level or depressional sites (sometimes sloping); > 40 cm (sometimes 30 cm) poorly decomposed peat; permafrost common; nutrient-poor	Open to sparse Sb; Labrador tea usually prominent; open bogs with no trees possible	Cloudberry, lowbush cranberry and bog cranberry usually present; moderate to high cover of peat mosses; feathermosses or lichens can be abundant
<b>Fen ecosites</b>			
SMR: 7 – 8 Drainage: P – VP Water table at or near surface, or seepage on top of permafrost	Mid to toe slopes, or level or depressional sites; > 30-40 cm of fibric or mesic peat; permafrost may be present; nutrient poor to medium	Mostly non-treed, with trees <10% cover; if treed, sparse to open Sb and/or Sw; can be willow or shrub birch dominated; commonly open with shrub cover <10%	Sedges or tussock cottongrass; peat mosses and brown mosses
<b>Swamp ecosites</b>			
SMR: 6 – 7, Drainage: P – VP Fluctuating water table: seepage may be present; signs of gleying or water table within 40 cm; subsurface water flow or flooding common	Mid to toe slopes, or level or depressional sites; often along rivers, creeks in valleys or draws; generally shallow layer (5-30 cm) of well-decomposed peat over mineral soil; permafrost may be present; nutrient poor to rich	Forest (Sb, Sw, SbSw, SbW, SwW) or shrub dominated (willows, river alder)	Variable understorey including bluejoint reedgrass, sedges, and/or horsetails; mosses include feather, brown, peat, and leafy mosses
<b>Marsh ecosites</b>			
SMR: 7 – 8 Drainage: I – VP Fluctuating water table: water table may be present at surface	Sandy, silty or loamy mineral soils with shallow humus layer; permafrost may be present; nutrient rich to very rich (or saline)	Tree cover <10%; shrub cover <10%	Sedge, rush, water horsetail, or grass dominated
<b>Shallow water ecosites</b>			
SMR: 9 Drainage: Aquatic Generally permanent water less than 2 m deep	Aquatic	Tree cover <10%; shrub cover <10%	Emergent aquatics, including mares-tail, pond-lily, water moss, or macroalgae

1 Table modified from McKenna et al. (2019)

**Step 2: Tools to identify ecosite by ecological grouping**

**Table 2-3.** Dry to mesic ecosites – Ecosite identification table

Dry to mesic ecosites	Moisture	Site/soils	Overstorey/shrubs	Ground cover
<b>20</b> Pasture sage – Purple reedgrass grassland	SMR: 0-1 Drainage: VR-W	moderate to steep warm slopes; Humus form commonly multi, often colluvial or glaciofluvial	<b>non-forested</b> (<10% tree cover); commonly low to absent shrub cover but moderate rose cover is possible	<b>grasses and forbs</b> dominate
<b>21</b> At – Kinnikinnick forest	SMR: 2 Drainage: R-W	warm, moderate slopes; moder or mull humus form; often colluvial or glaciofluvial	<b>aspen</b> overstorey	<b>kinnikinnick</b> and grasses dominate understorey; moss and lichen sparse
<b>10</b> PSw – Lowbush cranberry – Lichen woodland	SMR: 1-3 Drainage: R-W	warm to neutral slopes, soil is coarse- textured, humus form commonly mor, often glaciofluvial or morainal	<b>pine and/or spruce</b> overstorey; if aspen overstorey it has a kinnikinnick understorey and occurs on level sites	<b>lichen or lichen – ground shrub</b> dominated
<b>11</b> APSw – Grass forest	SMR: 2-3 Drainage: R-W	typically level or gently sloping; moder or mor humus form, often glaciofluvial	<b>aspen, pine and/or spruce</b> overstorey, if aspen or mixed aspen coniferous overstorey it has a grassy understorey	<b>grasses</b> dominate understorey; forb layer commonly sparse
<b>01</b> PS – Twinflower – Step moss forest	SMR: 3-4 Drainage: W-M	mostly level or midslope, mostly mor humus form	tree cover may be coniferous, mixed or deciduous	<b>feathermosses</b> dominate with lowbush cranberry and/or twinflower common



DRY TO MESIC ECOSITES

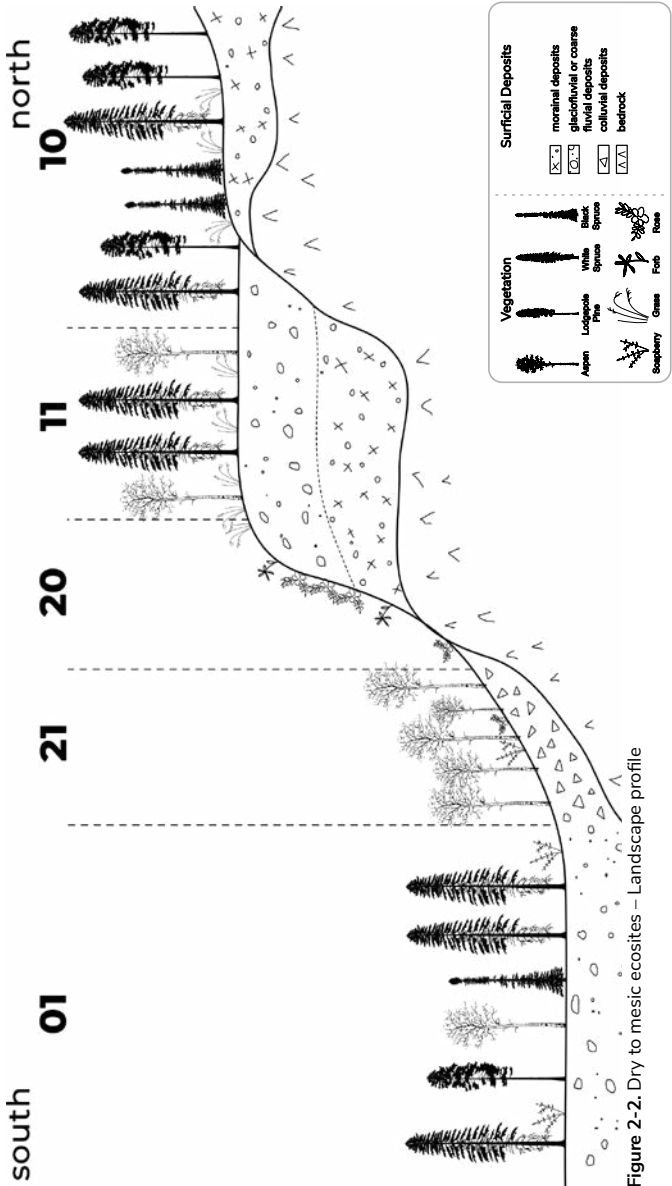


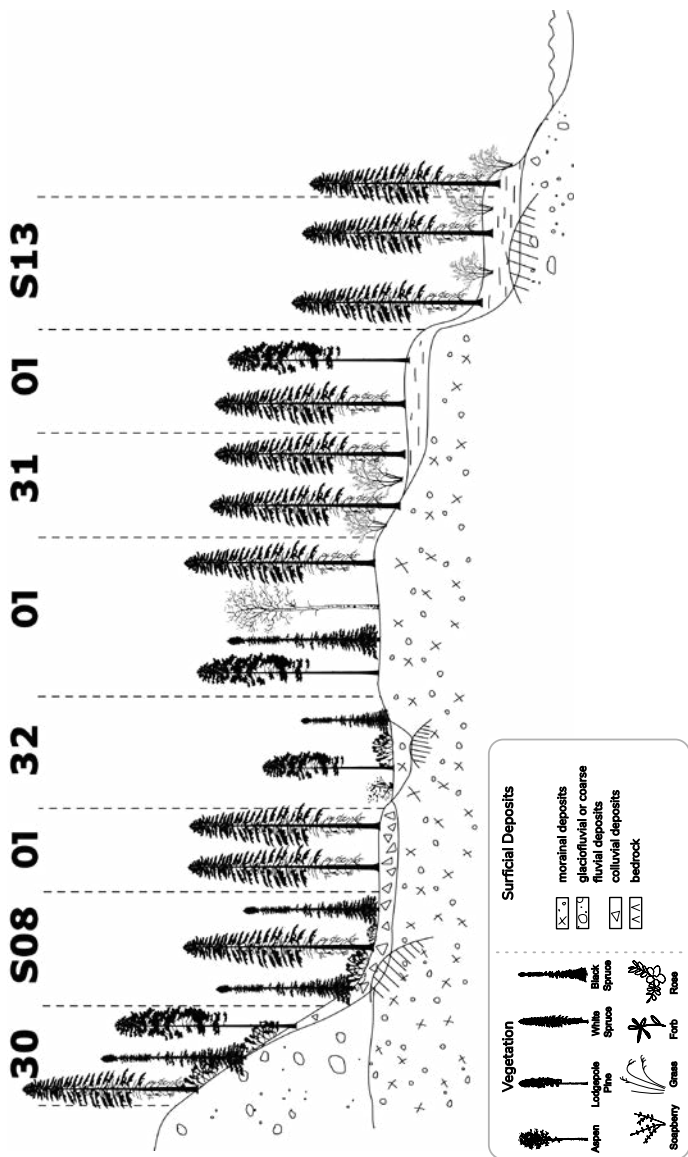
Figure 2-2. Dry to mesic ecosites – Landscape profile

Table 2-5. Mesic to moist forest and floodplain ecosites – Ecosite identification table

Dry to Mesic Ecosites	Moisture	Site/Soils	Overstorey/Shrubs	Ground Cover
<b>01</b> PS – Twinflower – Step moss forest	SMR: 3-4 Drainage: W-M	mostly level or midslope, mostly mor humus form	tree cover may be coniferous, mixed or deciduous	<b>feathermosses</b> dominate with lowbush cranberry and/or twinflower common
<b>30</b> PS – Labrador tea – Feathermoss forest	SMR: 3-4 Drainage: W-M	north facing mid slopes (lower to upper), some level; typically mor humus form	usually <b>spruce</b> or <b>pine</b> dominated; moderate to high cover of <b>Labrador tea</b>	<b>feathermoss</b> and <b>lowbush cranberry</b> dominate
<b>31</b> Sw – Willow – Red bearberry forest	SMR: 4-5 Drainage: M-H	level or cool aspect lower and toe slopes; typically mor humus form; permafrost may be present	<b>spruce</b> dominated; <b>willows</b> common	feathermoss, <b>red bearberry</b> , other round shrubs and dwarf scouring-rush dominate
<b>32</b> Sw – Shrub birch – Willow forest	SMR: 5-6 Drainage: I-P	level, depression, lower slope; humus form is moder or mor; soils are often cryoturbated; cold air drainage	<b>spruce</b> or <b>pine</b> dominated; moderate to high cover of <b>shrub birch</b> and/or <b>willow</b> ; Labrador tea may be present	mixed: ground shrubs, grasses, lichen
<b>40</b> Sw – Horsetail riparian forest	SMR: 4-5 Drainage: M-W	generally mor or moder humus form; fluvial parent material; subject to frequent flooding	<b>balsam poplar</b> dominated; <b>prickly rose</b> and <b>highbush cranberry</b> may be abundant	<b>horsetails</b> and feathermoss are characteristic; forbs common
<b>41</b> B – Horsetail riparian forest	SMR: 5 Drainage: M-W	generally mor or moder humus form; fluvial parent material; subject to frequent flooding	<b>balsam poplar</b> dominated; <b>prickly rose</b> and <b>highbush cranberry</b> may be abundant	<b>horsetails</b> are characteristic



Figure 2-3. Mesic to moist forest (and associated forested swamps) ecosites – Landscape profile



WETLAND ECOSITES

Table 2-6. Bog ecosites – Ecosite identification table

Bog Ecosites	Moisture	Site/Soils	Overstorey/Shrubs	Ground Cover
B03 Sb – Labrador tea – Peat moss bog	SMR: 6–7 stable water table at or near surface	level sites; >40 cm of fibric peat; permafrost present, starting at 20–55 cm	sparse to open stands of, often stunted, <b>black spruce</b> ; <b>Labrador tea</b> dominant; shrub birch common	ground shrubs common, including bog cranberry, cloudberry, and crowberry; <b>peat mosses</b> dominant; feathermosses common and sometimes of high cover
B04 Sb – Lichen bog	SMR: 6–7 stable water table at or near surface	level sites; >30 cm of fibric peat; permafrost present; drier surface than other wetlands; permafrost present, starting at 30–55 cm	sparse to open stands of, often stunted, <b>black spruce</b> ; <b>Labrador tea</b> dominant; shrub birch common	ground shrubs common, including cloudberry and lowbush cranberry; <b>reindeer lichens</b> dominant; <b>peat mosses</b> abundant
B06 Sb – Sloping bog	SMR: 6 seepage at permafrost layer	moderate to steep, cool-aspect slopes; >30 cm of fibric peat; permafrost present, starting at 40–50 cm	open stands of, often stunted, <b>black spruce</b> ; <b>Labrador tea</b> dominant; shrub birch frequent	ground shrubs common, mostly lowbush cranberry and cloudberry; <b>peat mosses</b> and <b>feathermosses</b> dominate
B09 Peat moss bog	SMR: 7 stable water table at surface	thermokarst depressions or collapse scars within peat plateau bogs with abundant ice; level sites; >100 cm of fibric peat; permafrost possible >100 cm	tree cover <10%; shrub cover <10%	sparse cover of ground shrubs or sedge; <b>peat mosses</b> strongly dominate

Table 2-6. Bog ecosites – Vegetation table

Layer	Ecosite No. of plots	B03 39	B04 52	B06 14	B09 2	English Name
Trees	<i>Picea mariana</i>	■■■■■	■■■■■	■■■■■		black spruce
Shrubs	<i>Chamaedaphne calyculata</i>				■	leatherleaf
	<i>Betula glandulosa</i>	■■■	■■■	■■■		shrub birch
	<i>Rhododendron</i> spp.	■■■■■	■■■■■	■■■■■		Labrador teas
	<i>Vaccinium uliginosum</i>	■	□□	■		blueberry
Ground Shrubs	<i>Andromeda polifolia</i>		□		■■■	bog rosemary
	<i>Empetrum nigrum</i>	■■■	□□	■		crowberry
	<i>Rubus chamaemorus</i>	■■■	■■■	■	■	cloudberry
	<i>Vaccinium oxycoccos</i>	■■■	■		■	bog cranberry
	<i>Vaccinium vitis-idaea</i>	■■■	■■■	■■■		lowbush cranberry
	<i>Carex aquatilis</i>				■	water sedge
Forbs	<i>Drosera anglica</i>				■■■	English sundew
Bryophytes	<i>Sphagnum</i> spp.	■■■■■	■■■■■	■■■■■	■■■■■	peat mosses
	<i>Hylocomium / Pleurozium</i>	■■■	□□□	■■■		feathermosses
Lichens	<i>Cladonia</i> spp.	■■■■■	■■■■■	■■■		reindeer lichens

Note: gold cells highlight key diagnostic species. Frequency (%) □ 25-50% ■ 50-70 ■ 70-100 | Mean cover (%) ■ <1 ■ 1-3 ■ 10-25 ■ >25

Figure 2-4. Selected bog (and associated fen and swamp) ecosites – Landscape profile

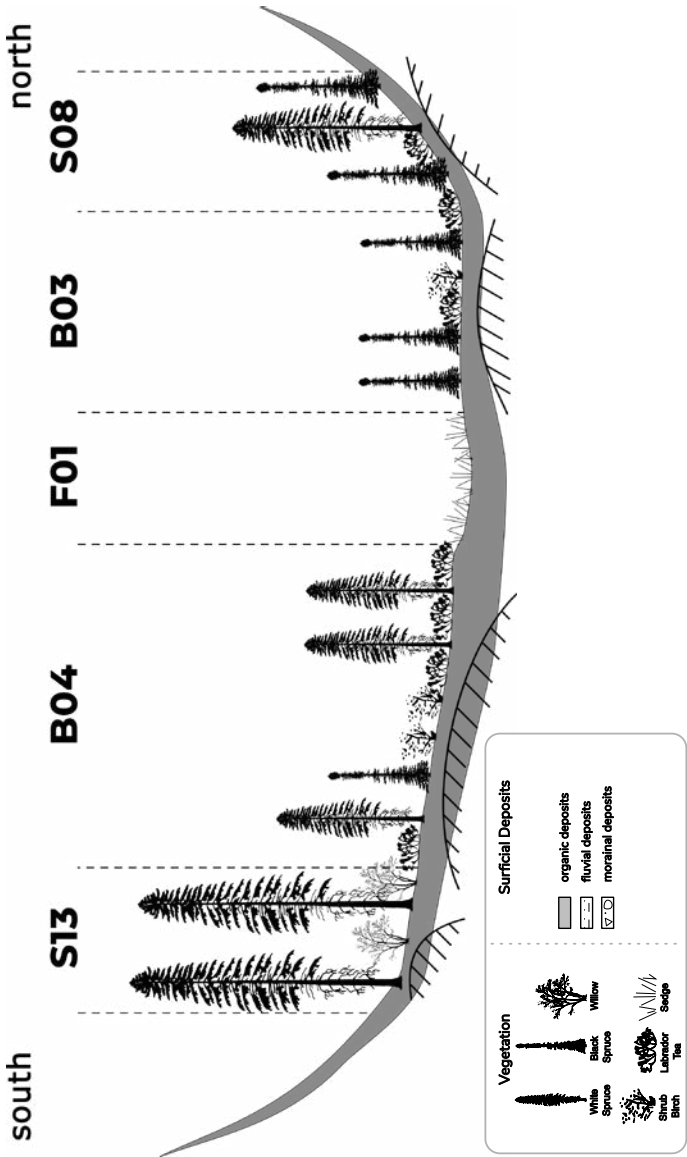


Table 2-7. Fen ecosites – Ecosite identification table (table continues onto next page)

Fen Ecosites	Moisture	Site/Soils	Overstorey/Shrubs	Ground Cover
F01 Water sedge fen	SMR: 7-8 water table at/near ground surface	cool, valley bottom sites; level site or depression; 30-150+ cm of mesic or fibric peat; permafrost possible	tree cover <10%; shrub birch dominant, along with willows	<b>water sedge</b> dominant and characteristic; brown and peat mosses common
F02 Shrub birch – Water sedge fen	SMR: 7-8 water table at/near ground surface	cool, valley bottom sites; level site or depression; 30-150+ cm of mesic or fibric peat; permafrost possible	tree cover <10%; <b>shrub birch</b> dominant, along with willows	<b>water sedge</b> dominant and characteristic; brown and peat mosses common
F03 Willow – Water sedge fen	SMR: 7-8 water table at/near ground surface	level site or depression (lower/toe slopes); 30-100 cm of mesic or fibric peat; permafrost possible	tree cover <10%; <b>willows</b> (including blueberry, tea-leaved, grey-leaved, or Athabasca willow) dominant	<b>water sedge</b> usually dominates; beaked sedge can dominate; peat and brown mosses common
F04 SbSw – Water sedge fen	SMR: 6-7 water table at surface or within 40 cm	level site or depression (lower/toe slopes); 30-170 cm of mesic or fibric peat; permafrost possible	<b>black spruce</b> dominated, often with some white spruce; <b>willows</b> , often blueberry willow, <b>shrub birch</b> , and Labrador tea common	sedges, mostly <b>water sedge</b> , dominate; <b>brown mosses</b> of high cover
F05 Sb – Tussock sedge fen	SMR: 6-7 seepage/water table usually within 40 cm, at surface of permafrost	level or gently sloping (lower/toe); 30-70 cm of mesic or fibric peat; permafrost present	<b>spruce</b> dominated (white and/or black); shrub birch, leatherleaf, <b>Labrador tea</b> , and willow common	<b>tussock cottongrass</b> and/or <b>spruce muskeg sedge</b> are characteristic; peat mosses, feathermosses, and brown mosses common
F06 Shrub birch – Tussock sedge fen	SMR: 6-7 seepage/water table at surface, or within 40 cm at surface of permafrost	level or gentle to moderate sloping (mid/lower/toe); 30-60+ cm of mesic peat; permafrost present	trees <10%; <b>shrub birch</b> dominates, usually with willow	<b>tussock cottongrass</b> and/or <b>spruce muskeg sedge</b> are characteristic; <b>peat mosses</b> usually dominate; feathermosses and brown mosses common
F13 Water horsetail – Sedge fen	SMR: 8 water table at the surface	level site or depression; > 40 cm (sometimes 30 cm) of mesic or fibric peat; permafrost absent	tree cover <10%; shrub cover <10%	<b>water horsetail</b> moderate to high cover; water sedges common; brown mosses can be of high cover

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Fen Ecosites	Moisture	Site/Soils	Overstorey/Shrubs	Ground Cover
F15 Mud sedge – Buckbean fen	SMR: 7-8 water table at or near the surface	thermokarst depression in peat plateau; usually >100 cm of fibric (mesic) peat; permafrost possible	tree cover <10%; shrub cover <10%	<b>mud sedge</b> and <b>buckbean</b> characteristic; marsh scheincheria can be abundant
F17 Peat moss fen	SMR: 7-8 water table at or near the surface	thermokarst depression or oxbow pond; deep fibric or mesic peat; permafrost possible at depth (>100 cm)	tree cover <10%; shrub cover <10%	<b>peat mosses</b> strongly dominate
F18 Russet cottongrass fen	SMR: 7 (8) water table at or near the surface	thermokarst depression or patterned fen; deep fibric or mesic peat; permafrost possible at depth	tree cover <10%; shrub cover <10%	<b>russet cottongrass</b> characteristic; peat mosses abundant
F20 Wild calla fen	SMR: 8 water table at or near the surface	thermokarst depression or along shorelines; deep fibric or mesic peat; permafrost possible at depth	tree cover <10%; shrub cover <10%	<b>wild calla</b> dominates; marsh-cinquefoil and water sedges common

Table 2-8. Treed fen and shrubby fen ecosites – Vegetation table

Layer	Ecosite No. of plots	F02	F03	F04	F05	F06	English Name
Trees	<i>Picea glauca</i>	■ ■	□	■ ■ ■ ■	□ □ □	□	white spruce
	<i>Picea mariana</i>			□ □ □	■ ■ ■ ■ ■ ■	■ ■	black spruce
Shrubs	<i>Rhododendron</i> spp.	□ □	□	■ ■ ■ ■	■ ■ ■ ■ ■ ■	■ ■ ■ ■ ■ ■	Labrador teas
	<i>Betula glandulosa</i>	■ ■ ■ ■ ■ ■	■ ■ ■ ■	■ ■ ■ ■ ■ ■	■ ■ ■ ■ ■ ■	■ ■ ■ ■ ■ ■	shrub birch
	<i>Dasiphora fruticosa</i>	□ □	□	■ ■	□		shrubby cinquefoil
	<i>Salix myrtilifolia</i>	□ □ □		■ ■ ■ ■	■ ■ ■ ■	■ ■ ■ ■	blueberry willow
	<i>Salix</i> spp.	■ ■ ■ ■	■ ■ ■ ■ ■ ■	■ ■ ■ ■ ■ ■	■ ■ ■ ■	■ ■ ■ ■	willows
	<i>Vaccinium uliginosum</i>	□		□ □	■ ■ ■ ■	□ □ □ □	blueberry
Ground shrubs	<i>Arctous rubra</i>			■ ■ ■ ■	□ □		red bearberry
	<i>Empetrum nigrum</i>	□		■ ■ ■ ■	□ □	□ □	crowberry
	<i>Rubus chamaemorus</i>				■ ■ ■ ■	■ ■ ■ ■	cloudberry
	<i>Vaccinium vitis-idaea</i>			■ ■	■ ■ ■ ■	■ ■ ■ ■	lowbush cranberry
				■ ■ ■ ■ ■ ■	■ ■ ■ ■ ■ ■	■ ■ ■ ■ ■ ■	water sedge
Graminoids	<i>Carex aquatilis</i>	■ ■ ■ ■ ■ ■	■ ■ ■ ■ ■ ■	■ ■ ■ ■ ■ ■	■ ■ ■ ■ ■ ■	■ ■ ■ ■ ■ ■	spruce muskeg sedge
	<i>Carex bigelowii</i> ssp. <i>lugens</i>			■ ■ ■ ■ ■ ■	■ ■ ■ ■ ■ ■	■ ■ ■ ■ ■ ■	tussock cottongrass
Mosses	<i>Eriophorum vaginatum</i>	■ ■ ■ ■ ■ ■	■ ■ ■ ■ ■ ■	■ ■ ■ ■ ■ ■	■ ■ ■ ■ ■ ■	□ □ □ □	brown mosses
	<i>Amblystegiaceae</i> (mostly)	■ ■ ■ ■ ■ ■	■ ■ ■ ■ ■ ■	■ ■ ■ ■ ■ ■	■ ■ ■ ■ ■ ■	■ ■ ■ ■ ■ ■	feathermosses
	<i>Hylocomium</i> / <i>Pleurozium</i>	□ □		□ □ □ □	■ ■ ■ ■ ■ ■	■ ■ ■ ■ ■ ■	peat mosses
Lichens	<i>Sphagnum</i> spp.	■ ■ ■ ■ ■ ■	■ ■ ■ ■ ■ ■	□ □ □ □	■ ■ ■ ■ ■ ■	■ ■ ■ ■ ■ ■	
	<i>Claudia</i> spp.			□ □	■ ■ ■ ■	□ □	reindeer lichens

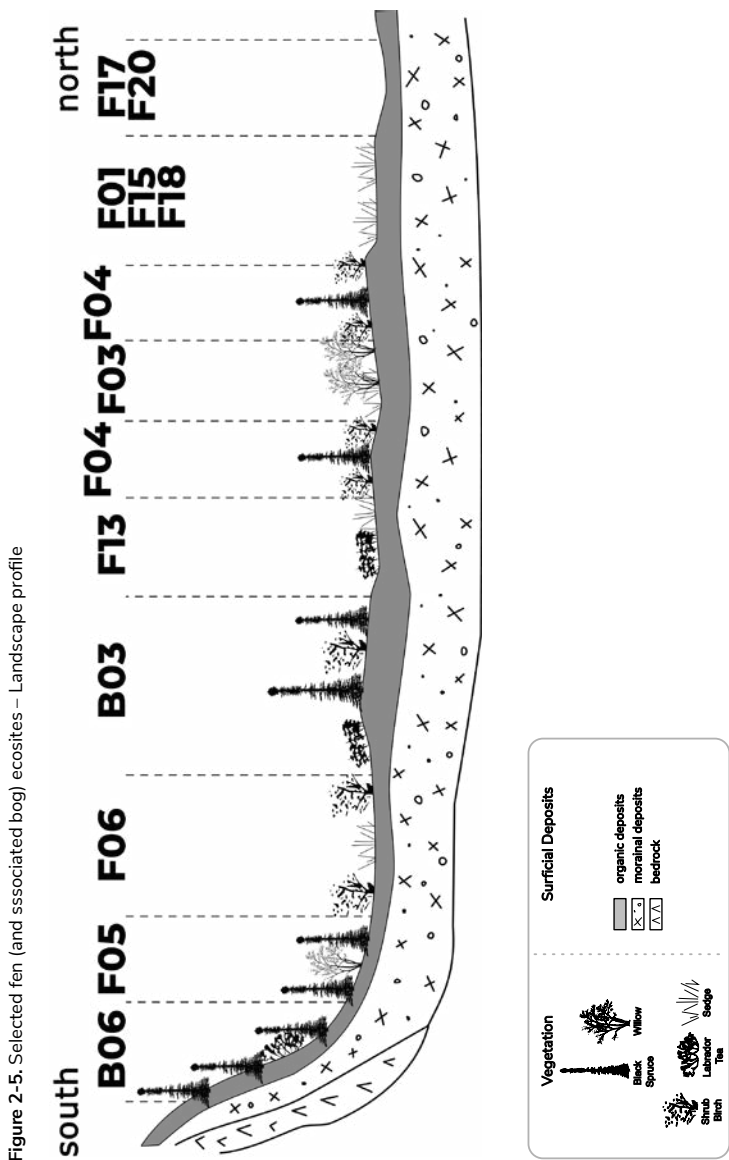
Note: gold cells highlight key diagnostic species Frequency (%) □ 25-50% ■ 50-70 ■ 70-100 | Mean cover (%) ■ <1 ■ 1-3 ■ 10-25 ■ >25

WETLAND ECOSITES

Table 2-9. Mossy fen and graminoid fen ecosites – Vegetation table

Layer	Ecosite	F01	F13	F15	F17	F18	F20	English Name
	No. of plots	135	10	73	9	6	4	
Shrubs	<i>Chamaedaphne calyculata</i>		■	□	□	■ ■	□	leatherleaf
Ground shrubs	<i>Andromeda polifolia</i>		□ □	□ □	□	■ ■		bog rosemary
	<i>Vaccinium oxycoccos</i>				■	■		bog cranberry
Forbs	<i>Equisetum fluviatile</i>		■ ■ ■ ■ ■					water horsetail
	<i>Calla palustris</i>						■ ■ ■ ■ ■	wild calla
	<i>Cicuta bulbifera</i>						■	bulbous water-hemlock
	<i>Comarum palustre</i>	□ □	□ □ □				■ ■ ■ ■ ■	marsh-cinquefoil
	<i>Menyanthes trifoliata</i>			■ ■ ■ ■ ■		□ □ □	□ □	bog buckbean
Graminoids	<i>Carex aquatilis / utriculata</i>	■ ■ ■ ■ ■	■ ■ ■	■ ■ ■ ■ ■	□ □	■ ■	■ ■ ■ ■ ■	water / beaked sedge
	<i>Carex limosa</i>			■ ■ ■ ■ ■		□		mud sedge
	<i>Eriophorum russeolum</i>				□	■ ■ ■ ■ ■		russet cottongrass
Mosses	<i>Sphagnum</i> spp.	□ □ □ □		■ ■ ■ ■ ■	■ ■ ■ ■ ■	■ ■ ■ ■ ■	■ ■ ■ ■ ■	peat mosses
	Amblystegiaceae (mostly)	■ ■ ■		□ □ □ □				brown mosses

Note: gold cells highlight key diagnostic species Frequency (%) □ 25-50% ■ 50-70 ■ 70-100 | Mean cover (%) ■ <1 ■ 1-3 ■ 10-25 ■ >25



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Table 2-10. Swamp ecosites – Ecosite identification table

Swamp Ecosites	Moisture	Site/soils	Overstorey/shrubs	Ground Cover
S01 Willow – Bluejoint swamp	SMR: 6-7 fluctuating water table within 50 cm	level or lower/toe slopes; 10–30 cm of fibric or mesic peat over fluvial (or lacustrine); permafrost possible at depth	<10% tree cover, <b>willow</b> dominated (often tea-leaved, grey-leaved, or Alaska willow)	<b>reedgrasses</b> (or other grasses) dominate; mosses present
S03 Willow – Water sedge swamp	SMR: 6-7 water table close to surface; flooding common	level or toe slopes; 10–30 cm of fibric or mesic peat over fluvial or lacustrine; permafrost common	<10% tree cover, <b>willow</b> dominated (usually tea-leaved; sometimes grey-leaved or Barclay's willow)	<b>water sedge</b> or <b>beaked sedge</b> dominate; brown or leafy mosses usually of high cover
S05 Willow – Shrub birch – Water sedge swamp	SMR: 6-7 fluctuating water table	level or lower/toe slopes subject to cold air drainage; 0–40 cm of fibric or mesic peat over various parent materials; permafrost possible at depth	<10% tree cover, <b>shrub birch</b> and <b>willow</b> dominated (tea-leaved, grey-leaved, Barclay's, or blueberry willow)	<b>water sedge</b> or other sedges; <b>peat mosses</b> and <b>brown mosses</b>
S07 Sb – Labrador tea – Peat moss swamp	SMR: 6-7 fluctuating water table	level or mid to lower/toe slopes; 5–30(40) cm of fibric or mesic peat over various parent materials; permafrost common	<b>black spruce</b> dominated; <b>Labrador tea</b> and shrub birch	ground shrubs of moderate cover; <b>feathermosses</b> and <b>peat mosses</b> dominate with some brown mosses
S08 SbSw – Red bearberry – Brown moss swamp	SMR: 6-7 fluctuating water table	level or lower/toe slopes; 10–40 cm of fibric or mesic peat over various parent materials; permafrost common (within 60 cm)	spruce dominated (white and/or black); <b>Labrador tea</b> ; willows, often blueberry willow	ground shrubs of low to moderate cover; <b>red bearberry</b> and <b>brown mosses</b> characteristic; feathermosses common
S10 SbSw – Shrub birch – Feathermoss – Brown moss swamp	SMR: 6-7 fluctuating water table	level or lower/toe slopes on cool aspects or subject to cold air drainage; 10–30(40) cm of fibric or mesic peat over various parent materials; permafrost likely at depth	spruce dominated (white and/or black); Labrador tea, <b>shrub birch</b> and willows common	ground shrubs of low to moderate cover including <b>red bearberry</b> and crowberry; <b>brown mosses</b> characteristic; feathermosses common
S13 Sw – Willow – Horsetail swamp	SMR: 6-7 fluctuating water table	level fluvial sites or toe slopes; 10–25(35) cm of mesic peat over fluvial, eolian or glaciolacustrine; permafrost likely at depth; richer in nutrients than other treed swamps	<b>white spruce</b> dominated, often with black spruce; moderate cover of <b>willows</b> , including blueberry willow; some Labrador tea	<b>horsetails</b> and <b>brown mosses</b> are characteristic; red bearberry common; feathermosses common
S15 SbSw – Alder – Labrador tea – Peat moss swamp	SMR: 6-7 fluctuating water table	lower or mid slopes, often on cool aspects; fibric or mesic peat over various parent materials; permafrost at 30–60 cm	spruce dominated (white and/or black); <b>alder</b> and <b>Labrador tea</b> characteristic; shrub birch common	ground shrubs of low to moderate cover; <b>peat mosses</b> dominate, often with feathermosses
S20 Diamond-leaved willow – Water sedge swamp	SMR: 6-7 fluctuating water table	level or lower/toe slopes in valleys subject to cold air drainage; 1–15 cm of peat over fluvial or other parent materials; permafrost likely present	<10% tree cover, <b>diamond-leaved willow</b> dominates; shrub birch common	<b>reed grasses</b> or <b>water sedges</b> common; <b>brown mosses</b> dominate; leafy, peat mosses common

Table 2-11. Swamp ecosites – Vegetation table

Layer	Ecosite	Shrub swamps						Treed swamps						English Name
		S01	S03	S05	S07	S08	S10	S13	S15	S17	S19	S21	S23	
Trees	No. of plots	40	81	17	28	39	46	39	24	30	40			
	<i>Picea glauca</i>	□	■	■	□	■	■	■	■	■	■	■	■	white spruce
	<i>Picea mariana</i>						■	■	■	■	■	■	black spruce	
Shrubs	<i>Rhododendron groenlandicum</i>						■	■	■	■	■	■	common Labrador tea	
	<i>Alnus alnobetula / incana</i>				■	■	■	■	■	■	■	■	green / river alder	
	<i>Betula glandulosa</i>		■	■	■	■	■	■	■	■	■	■	shrub birch	
	<i>Dasiphora fruticosa</i>		□	□	□	□	□	□	□	□	□	□	shrubby cinquefoil	
	<i>Salix myrtilifolia</i>	■	■	■	■	■	■	■	■	■	■	■	blueberry willow	
	<i>Salix</i> spp.	■	■	■	■	■	■	■	■	■	■	■	willows	
	<i>Salix pulchra</i>		□	□	□	□	□	□	□	□	□	□	diamond-leaved willow	
	<i>Vaccinium uliginosum</i>		□	□	□	□	□	□	□	□	□	□	blueberry	
	<i>Arctostaphylos</i>													
	<i>Arctostaphylos</i>													
Ground shrubs	<i>Arctostaphylos</i>						■	■	■	■	■	■	red bearberry	
	<i>Empetrum nigrum</i>			□	□	□	■	■	■	■	■	■	crowberry	
	<i>Rubus arcticus</i>			■	■	■	■	■	■	■	■	■	arctic raspberry	
	<i>Rubus chamaemorus</i>				□	□	□	□	□	□	□	□	cloudberry	
	<i>Vaccinium oxycoccos</i>						■	■	■	■	■	■	bog cranberry	
	<i>Vaccinium vitis-idaea</i>						■	■	■	■	■	■	lowbush cranberry	
Forbs	<i>Equisetum arvense</i>				□	□	□	□	□	□	□	□	common horsetail	
	<i>Equisetum scirpoides</i>						■	■	■	■	■	■	dwarf scouring-rush	
Graminoids	<i>Calamagrostis</i> spp.	■	■	■	■	■	■	■	■	■	■	■	reedgrasses	
	<i>Carex aquatilis / utriculata</i>	□	□	□	□	□	□	□	□	□	□	□	water / beaked sedge	
Mosses	<i>Amblystegiaceae</i>	□	□	□	□	□	■	■	■	■	■	■	brown mosses	
	<i>Bryophyta</i>	■	■	■	■	■	■	■	■	■	■	■	mosses	
	<i>Hylocomium / Pleurozium</i>	■	■	■	■	■	■	■	■	■	■	■	feathermosses	
	<i>Sphagnum</i> spp.	□	□	□	□	□	□	□	□	□	□	□	peat mosses	
Lichens	<i>Cladonia</i> spp.				■	■	■	■	■	■	■	■	reindeer lichens	
	<i>Cladonia</i> spp.				□	□	□	□	□	□	□	□	clad lichens	
	<i>Peltigera</i> spp.		□	□	□	□	□	□	□	□	□	□	peit lichens	

Note: gold cells highlight key diagnostic species. Frequency (%) □ 25-50% ■ 50-70 ■ 70-100 | Mean cover (%) ■ <1 ■ 1-3 ■ 3-10 ■ 10-25 ■ 25-50 ■ >50

Figure 2-6. Floodplain and selected marsh and swamp ecosites – Landscape profile

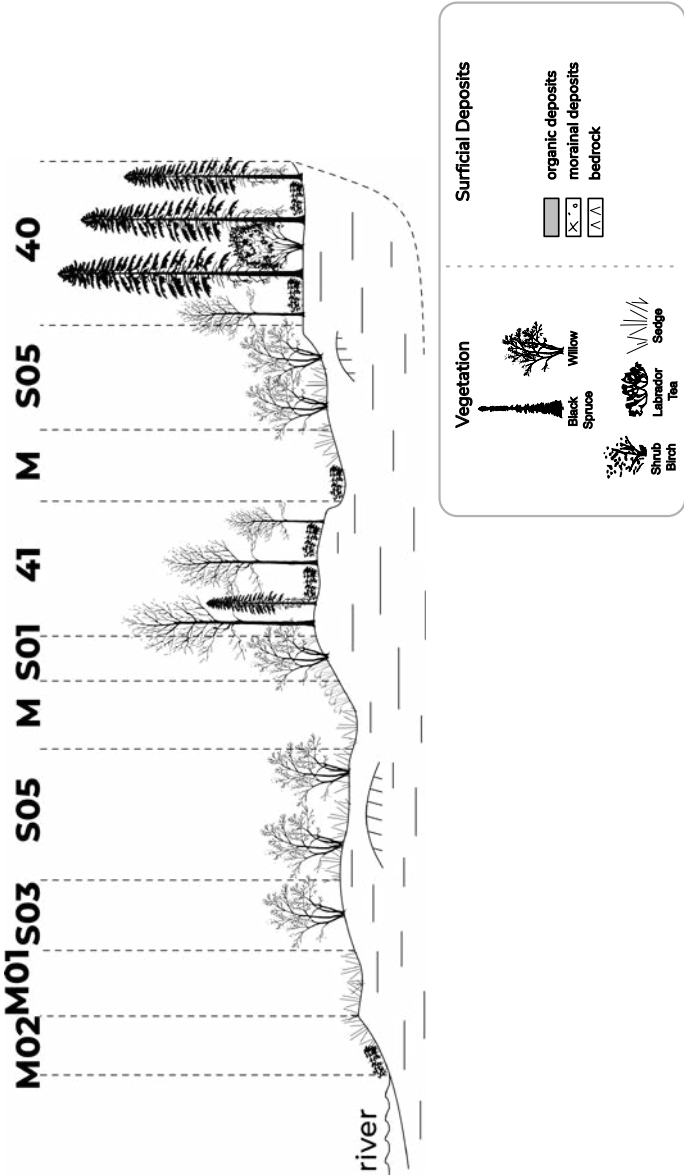


Table 2-12. Marsh ecosites – Ecosite identification table

Marsh ecosites	Moisture	Site/soils	Overstorey/ shrubs	Ground Cover
M01 Beaked sedge – Water sedge marsh	SMR: 6-8 fluctuating water table; frequent flooding	fluvial or lacustrine; humus 0–10 cm	tree cover < 10%; shrub cover < 10%	<b>water sedge</b> and/or <b>beaked sedge</b> dominate
M02 Water horsetail marsh	SMR: 7-8 frequent flooding	usually fluvial, sometimes lacustrine; humus 0–10 cm	tree cover < 10%; shrub cover < 10%	<b>water horsetail</b> and <b>water sedge</b> dominate
M04 Short-awned foxtail marsh	SMR: 6-7 fluctuating water table	open water at surface early in season; fluvial or lacustrine	tree cover < 10%; shrub cover < 10%	<b>short-awned foxtail</b> dominates
M08 Awned sedge marsh	SMR: 7-8 fluctuating water table	organic veneer up to 50 cm; permafrost present	tree cover < 10%; shrub cover < 10%	<b>awned sedge</b> dominates, often with beaked sedge and/or water horsetail
M09 Bulrush marsh	SMR: 8 fluctuating water table; frequent flooding	fluvial or lacustrine; humus 0–5 cm	tree cover < 10%; shrub cover < 10%	<b>soft- or hard-stemmed bulrush</b> dominates
M10 Reedgrass marsh	SMR: 6-7 fluctuating water table	fluvial or lacustrine; humus up to 35 cm	tree cover < 10%; shrub cover < 10%	<b>reedgrasses</b> dominate, often with water sedge
M56% Baltic rush saline marsh	SMR: 6 fluctuating water table	saline	tree cover < 10%; shrub cover < 10%	<b>Baltic rush</b> dominates, often with tufted hairgrass

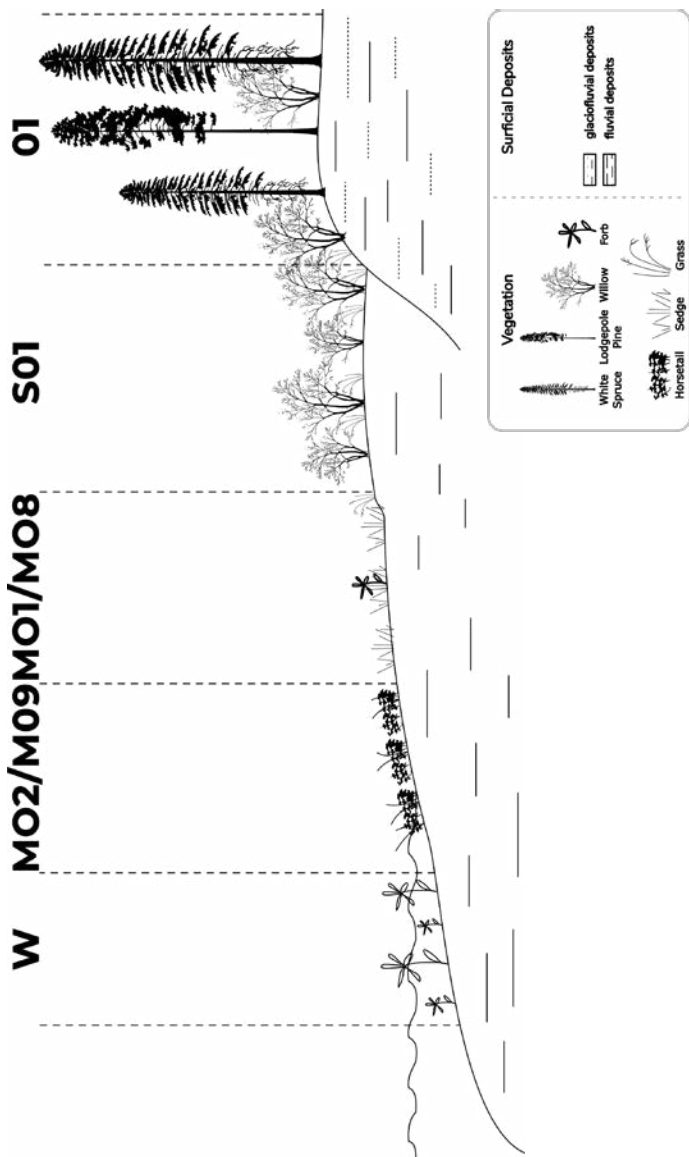
WETLAND ECOSITES

Table 2-13. Marsh ecosites – Vegetation table

Layer	Ecosite No. of plots	M01 142	M02 58	M04 6	M08 6	M09 3	M10 17	M56% 1	English Name
Graminoids	<i>Alopecurus aequalis</i>	■ ■ ■ ■ ■ ■ ■ ■					■ ■ ■ ■ ■ ■ ■ ■		short-awned foxtail
	<i>Calamagrostis canadensis / stricta</i>	■ ■ ■ ■ ■ ■ ■ ■					■ ■ ■ ■ ■ ■ ■ ■		bluejoint / slim-stemmed reedgrass
	<i>Carex aquatilis</i>	■ ■ ■ ■ ■ ■ ■ ■	□ □ □ □				■ ■ ■ ■		water sedge
	<i>Carex atherodes</i>	■ ■ ■ ■ ■ ■ ■ ■			■ ■ ■ ■ ■ ■ ■ ■				awned sedge
	<i>Carex utriculata</i>	■ ■ ■ ■ ■ ■ ■ ■	□ □ □ □		■ ■ ■ ■ ■ ■ ■ ■				beaked sedge
	<i>Deschampsia cespitosa</i>	■ ■ ■ ■ ■ ■ ■ ■					■ ■ ■ ■ ■ ■ ■ ■		tufted hairgrass
	<i>Juncus balticus</i>	■ ■ ■ ■ ■ ■ ■ ■					■ ■ ■ ■ ■ ■ ■ ■		Baltic rush
	<i>Schoenoplectus tabernaemontani</i>	■ ■ ■ ■ ■ ■ ■ ■					■ ■ ■ ■ ■ ■ ■ ■		soft-stemmed bulrush
	<i>Schoenoplectus acutus</i>	■ ■ ■ ■ ■ ■ ■ ■				■ ■ ■ ■ ■ ■ ■ ■			hard-stemmed bulrush
	<i>Achillea millefolium</i>							■ ■ ■ ■ ■ ■ ■ ■	common yarrow
Forbs	<i>Antennaria rosea</i>							■ ■ ■ ■ ■ ■ ■ ■	rosy pussytoes
	<i>Comarum palustre</i>	□ □					■ ■ ■ ■ ■ ■ ■ ■		marsh-cinquefoil
	<i>Equisetum fluviatile</i>		■ ■ ■ ■ ■ ■ ■ ■		■ ■ ■ ■ ■ ■ ■ ■				water horsetail
	<i>Penstemon procerus</i>							■ ■ ■ ■ ■ ■ ■ ■	small-flowered penstemon
	<i>Pericarica amphibia</i>				■ ■ ■ ■ ■ ■ ■ ■				water smartweed
	<i>Thuidium</i> spp.							■ ■ ■ ■ ■ ■ ■ ■	tamarisk mosses

Note: gold cells highlight key diagnostic species Frequency (%) □ 25-50% ■ 50-70 ■ 70-100 | Mean cover (%) ■ <1 ■ 1-3 ■ 10-25 ■ >25

Figure 2-7. Selected marsh and associated ecosites – Landscape profile





## 3.0 Guide to BOLyc ecosites

**BOLyc/01**

**PS – Twinflower – Step moss forest**

### General description

The PS – Twinflower – Step moss forest ecosite occurs primarily on level to middle slopes. Soils are well to moderately well drained, with a submesic and mesic moisture regime. This is the reference ecosite for the BOLyc subzone.

Stands are often of mixedwood overstorey, with varying dominance, consisting of white spruce (*Picea glauca*), black spruce (*Picea mariana*), trembling aspen (*Populus tremuloides*), and/or pine (*Pinus contorta*). The understorey consists of tree regeneration and a variety of shrubs and herbs, including prickly rose (*Rosa acicularis*), kinnikinnick (*Arctostaphylos uva-ursi*), twinflower (*Linnaea borealis*), lowbush cranberry (*Vaccinium vitis-idaea*), and bastard toadflax (*Geocaulon lividum*). On some sites, shrubs can be moderately abundant, dominated by one of willows (*Salix* spp.), green alder (*Alnus alnobetula*), or soapberry (*Shepherdia canadensis*). Feathermosses, typically step moss (*Hylocomium splendens*), are generally abundant, especially in conifer stands. Aspen and aspen-conifer stands, usually successional to conifer-dominated stands, typically have a higher cover of understorey grasses and forbs than mature conifer stands.

Edatopic Grid

	A	B	C	D	E	F
0						
1						
2						
3						
4						
5						
6						
7						



**BOLyc/01-A29**  
(Aspen / Prickly rose/  
Fireweed)

Ecosite 01 is found on various parent materials including lacustrine, fluvial, morainal, eolian, colluvial and glaciofluvial deposits. Soils are typically Brunisols. The forest floor humus depth is usually not deep, but can be up to 20 cm.

### Comments

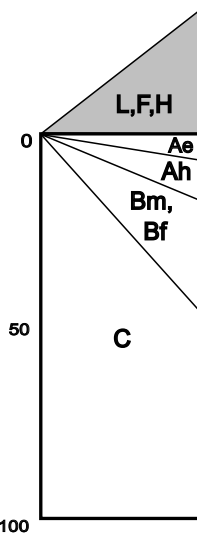
Ecosite 01 is very diverse in terms of soils and vegetation cover. This ecosite can be differentiated from other broadly circum-mesic ecosites as follows:

- Ecosite 10 occurs on drier and poorer sites. Moss cover is lower but there is a higher cover of reindeer, cladonia and cetraria lichens.
- Ecosite 21 is drier with an aspen-dominated canopy. It occurs on moderate to steep slopes with warm aspects and is often associated with warm, sloping grasslands. Ecosite 21 has high ground shrub cover and low lichen cover.
- Ecosite 30 has moderate to high cover of common Labrador tea and occurs on poorer sites—cool aspect slopes with a deep organic surface mat. Small patches of common Labrador tea may occur within ecosite 01 sites.
- Ecosite 31 is found on slightly moister sites, usually on level, lower slope or toe positions with some influence of cold air drainage. Stands are conifer-dominated and characterized by associates such as red bearberry, willows and dwarf scouring rush.
- Ecosite 40 is found on floodplains with subsurface seepage and occasional flooding, leading to an influx of nutrients, giving these sites a richer nutrient regime. Stands are predominately conifer-dominated with a mossy understorey. River alder, horsetail and highbush cranberry are common; balsam poplar may be present.

## Site and soils

### Site and soil characteristics

<b>Plots in unit</b>	<b>83</b> (12 with detailed soils information)
Moisture regime	mesic, submesic (4, 3)
Nutrient regime	poor, medium (B, C)
Meso slope position	level or midslope
Aspect	variable
Slope gradient	level to moderate
Surficial material	variable
Soil texture	variable
Soil classification	usually Eutric Brunisols, some Melanic or Dystric Brunisols
Humus form	mostly mor, moder
Humus depth	0-20 cm
Soil drainage	well to moderately well
Seepage / water table	none
Permafrost	occasional, may be present on cool aspects



## Vegetation summary

Tables showing the relative abundance of species for each vegetation association are presented by overstorey dominance.

### Aspen-dominated and mixed aspen with pine or spruce stands

The following vegetation associations characterize the variation in species composition for aspen, or aspen–pine–spruce, or aspen–white spruce–dominated stands on this ecosite:

**A29** Aspen / Prickly rose / Fireweed

**APSw25** Aspen – Pine – White spruce / Soapberry

**ASw26** Aspen – White spruce / Fireweed – Kinnikinnick

The relative abundance of species of these associations is shown in the BOLyc/01 Aspen or aspen mixed wood stands vegetation table.

**Pine-dominated stands**

The following vegetation associations characterize the variation in species composition for pine-dominated stands on this ecosite:

- P21** Pine / Lowbush cranberry – Twinflower
- P22** Pine / Soapberry
- P23** Pine / Alder / Feathermoss

The relative abundance of species of these associations is shown in the BOLyc/01 Pine-dominated stands vegetation table.

**Pine – spruce co-dominated stands**

The following Vegetation associations characterize the variation in species composition for pine – spruce co-dominated stands on this ecosite.

- PSb23** Pine – Black spruce / Alder / Feathermoss
- PSbSw22** Pine – Black spruce – White spruce / Lowbush cranberry
- PSbSw23** Pine – Black spruce – White spruce /  
Lowbush cranberry / Feathermoss
- PSw26** Pine – White spruce / Soapberry / Feathermoss

The relative abundance of species of these associations is shown in the BOLyc/01 Pine – spruce co-dominated stands vegetation table.

**Spruce-dominated stands**

The following Vegetation associations characterize the variation in species composition for spruce-dominated stands on this ecosite.

- SbSw22** Black spruce – White spruce / Lowbush cranberry /  
Feathermoss
- Sw27** White spruce / Feathermoss

The relative abundance of species of these associations is shown in the BOLyc/01 Spruce-dominated stands vegetation table.



BOLyc/01 Pine-dominated stands – Vegetation table

Layer	Vegetation association	No. of plots	P21	P22	P23	English name
			1	2	4	
Trees	<i>Picea glauca</i>		■	■ ■ ■ ■	■ ■	white spruce
	<i>Picea mariana</i>				■ ■	black spruce
	<i>Pinus contorta</i>		■ ■ ■ ■ ■ ■	■ ■ ■ ■ ■ ■	■ ■ ■ ■ ■ ■	lodgepole pine
Shrubs	<i>Alnus alnobetula</i>			■ ■	■ ■ ■ ■ ■ ■	green alder
	<i>Picea glauca</i>			■	■ ■	white spruce
	<i>Picea mariana</i>			■	■ ■ ■ ■	black spruce
	<i>Rhododendron groenlandicum</i>		■ ■		■ ■	common Labrador tea
	<i>Rosa acicularis</i>		■	■ ■ ■ ■	□	prickly rose
	<i>Salix</i> spp.		■ ■ ■ ■	■ ■	■ ■ ■ ■	willows
	<i>Shepherdia canadensis</i>		■	■ ■ ■ ■ ■ ■		soapberry
Ground shrubs	<i>Arctostaphylos uva-ursi</i>		■ ■			kinnikinnick
	<i>Linnaea borealis</i>		■ ■ ■ ■	■ ■	■ ■	twinflower
	<i>Vaccinium vitis-idaea</i>		■ ■ ■ ■	■ ■ ■ ■	■	lowbush cranberry
Forbs	<i>Chamaenerion angustifolium</i>		■	■ ■		fireweed
	<i>Geocalium lividum</i>		■	■ ■		bastard toadflax
Graminoids	Poaceae		■ ■		□	grasses
Mosses	<i>Dicranum</i> sp.			■	■	heron's-bill moss
	<i>Hylocomium splendens</i>		■	■ ■ ■ ■ ■ ■	■ ■ ■ ■	step moss
	<i>Polytrichum juniperinum</i>		■ ■	■	□	Juniper haircap moss
Lichens	<i>Cladonia</i> spp.		■	■ ■ ■ ■	■ ■	reindeer lichens
	<i>Cladonia</i> spp.		■ ■ ■ ■	■	■	cladonia lichens
	<i>Peltigera</i> spp.		■ ■ ■ ■	■ ■ ■ ■	■	pelt lichens

Frequency (%) □ 25-50% ■ 50-70 ■ 70-100 | Mean cover (%) ■ <1 ■ 1-3 ■ 10-25 ■ >25



BOLyc/01 Spruce-dominated stands – Vegetation table

Layer	Vegetation association No. of plots	sbsw22	sw27	English name
Trees	<i>Picea glauca</i>	■■■■■	■■■■■	white spruce
	<i>Picea mariana</i>	■■■■■		black spruce
Shrubs	<i>Rhododendron groenlandicum</i>	■		common Labrador tea
	<i>Salix</i> spp.	■■	□	willows
Ground Shrubs	<i>Arctous rubra</i>	■		red bearberry
	<i>Empetrum nigrum</i>	■		crowberry
	<i>Vaccinium vitis-idaea</i>	■	□	lowbush cranberry
Forbs	<i>Geocaulon lividum</i>	□	■	bastard toadflax
Graminoids	Poaceae		■■	grasses
Mosses	<i>Dicranum</i> spp.	■	■	heron's-bill mosses
	<i>Hylacomium splendens</i>	■■■■■	■■■■■	step moss
Lichens	<i>Cladina</i> spp.	■■	■	reindeer lichens
	<i>Peltigera</i> spp.	■■	■■	pett lichens

Frequency (%) □ 25-50% ■ 50-70 ■ 70-100 | Mean cover (%) ■ <1 ■ 1-3 ■ 3-10 ■ 10-25 ■ 25-50 ■ >25

Aspen-dominated and mixed aspen with pine or spruce stands



**BOLyc/01-A29**  
(Aspen / Prickly rose / Fireweed)



**BOLyc/01-APSw25**  
(Aspen – Pine – White spruce / Soapberry)



**BOLyc/01-ASw26**  
(Aspen – White spruce / Fireweed –  
kinnikinnick)



**BOLyc/01-P21**  
(Pine / Lowbush cranberry – Twinflower)

Pine-dominated stands



**BOLyc/01-P22**  
(Pine / Soapberry)



**BOLyc/01-P23**  
(Pine / Alder / Feathermoss)

No photo available

**BOLyc/01-PSbSw22**  
(Pine – Black spruce – White spruce /  
Lowbush cranberry)



**BOLyc/01-PSb23**  
(Pine – Black spruce / Alder /  
Feathermoss)

**Spruce-dominated stands**



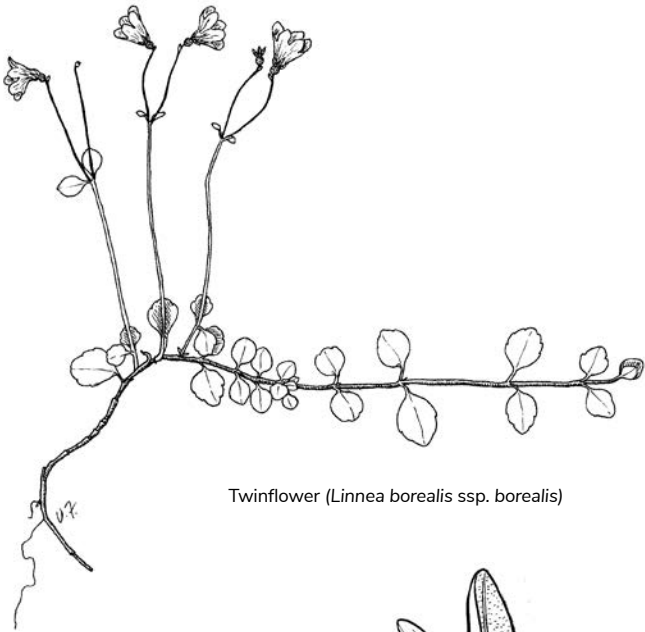
**BOLyc/01-PSw26**  
(Pine – White spruce / Soapberry / Feathermoss)



**BOLyc/01-SbSw22**  
(Black spruce – White spruce / Lowbush cranberry / Feathermoss)



**BOLyc/01-SbSw22**  
(Black spruce – White spruce / Lowbush cranberry / Feathermoss)



Twinflower (*Linnaea borealis* ssp. *borealis*)



Soapberry (*Shepherdia canadensis*)

## BOLyc/10

PSw – Lowbush cranberry –  
Lichen woodland

## General description

The PSw – Lowbush cranberry – Lichen woodland ecosite occurs on the driest and most nutrient-poor of the treed sites on the landscape in the BOLyc.

Conifer stands predominate and are characterized by either pine or a mix of pine and spruce; black spruce co-dominates with pine and white spruce on many sites. Dominant shrubs typically include lowbush cranberry (*Vaccinium vitis-idaea*) and twinflower (*Linnaea borealis*); however, shrubs and herbs tend to be sparse. Grasses, if present, are generally less than 5% cover but may be as high as 10%. Purple reedgrass (*Calamagrostis purpurascens*) is the most common grass.

The lichen ground cover is key in characterizing this ecosite but may be absent or of low cover on some sites where it is replaced by ground shrubs or high litter cover. Lichen cover is usually dominated by reindeer lichens (*Cladina* spp.). A significant cover of cetraria, cladonia, and pelt lichens (*Peltigera* spp.), or a lichen crust on the soil surface, may be present. Moss cover is low and is typically comprised of dry-site mosses like haircap moss (*Polytrichum* sp.) and feathermoss (primarily *Hylocomium splendens* and *Pleurozium schreberi*).

Early successional aspen stands with high kinnikinnick (*Arctostaphylos uva-ursi*) cover and low lichen cover can occur. The cover of ground shrubs is typically higher in younger stands as ground shrubs regenerate quickly after a fire. Lichen dominance increases with length of time since disturbance.

Ecosite 10 sites are typically situated on level ground or on gentle to moderate slopes with a warm aspect. Soils are well to rapidly drained, occurring mostly on coarse-textured glaciofluvial and morainal surficial materials, and are commonly classified as Eutric or Dystric Brunisols.

		Edatopic Grid					
		A	B	C	D	E	F
0							
1							
2							
3							
4							
5							
6							
7							



**BOLyc/10-P01**  
(Pine / Kinnikinnick / Lichen)

## Comments

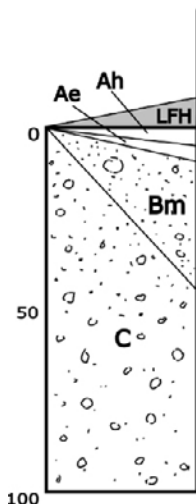
Ecosite 10 is differentiated from other dry-site, treed ecosites as follows:

- Ecosite 11 has higher grass cover (> 15%, commonly 20% or higher), dominated by purple reedgrass, and lower lichen cover (typically < 10%). Aspen-dominated or aspen co-dominated canopies are common in ecosite 11, whereas ecosite 10 typically has a conifer-dominated canopy.
- Ecosite 21 has an aspen-dominated canopy, occurs on moderate to steep warm aspects, and is often associated with warm, sloping grasslands. In addition, ecosite 21 typically has high ground shrub cover and low lichen cover. Aspen-dominated stands in ecosite 10 occur on level slope positions.
- Ecosite 01 occurs on moister, richer sites and generally has better tree growth and higher moss cover; where lichen cover is high, it is composed primarily of pelt lichens. Reindeer, cladonia, and cetraria lichens are typically sparse.
- Ecosite 30 occurs on moister sites and has a higher cover of common Labrador tea (typically > 15%) and mosses.

## Site and soils

### Site and soil characteristics

<b>Plots in unit</b>	<b>16</b> (3 with detailed soils information)
Moisture regime	xeric to submesic (1 – 3)
Nutrient regime	very poor, poor (A, B)
Meso slope position	usually level, mid slope, upper slope or crest
Aspect	warm, neutral
Slope gradient	level, gentle – moderate
Surficial material	glaciofluvial, morainal, sandy and gravelly fluvial terraces and fans
Soil texture	sandy, gravelly
Soil classification	usually Eutric Brunisols or Dystric Brunisols
Humus form	mor
Humus depth	0 – 5 cm
Soil drainage	well to rapid
Seepage / water table	none
Permafrost	none



## Vegetation summary

The following Vegetation associations characterize the variation in species composition on ecosite 10.

- A03** Aspen / Kinnikinnick
- P01** Pine / Kinnikinnick / Lichen
- PSw03** Pine – White spruce / Lowbush cranberry / Lichen
- PSbSw03** Pine – Black spruce – White spruce / Lowbush cranberry / Lichen

BOLyc/10 Vegetation table

Layer	Vegetation association No. of plots	A03 1	P01 1	PSW03 8	PSBsw03 6	English name
Trees	<i>Picea glauca</i>	■ ■	■ ■	■ ■ ■ ■	■ ■ ■ ■	white spruce
	<i>Picea mariana</i>		■ ■ ■ ■ ■ ■	□	■ ■ ■ ■	black spruce
	<i>Pinus contorta</i>		■ ■ ■ ■ ■ ■	■ ■ ■ ■	■ ■ ■ ■	lodgepole pine
	<i>Populus tremuloides</i>	■ ■ ■ ■ ■ ■		□	□	trembling aspen
Shrubs	<i>Picea glauca</i>			■ ■ ■ ■	□	white spruce
	<i>Picea mariana</i>	■ ■		□	■ ■ ■ ■	black spruce
	<i>Rhododendron groenlandicum</i>	■ ■		□		common Labrador tea
	<i>Rosa acicularis</i>	■ ■	■ ■	■ ■		prickly rose
	<i>Salix</i> spp.	■ ■	■ ■	□		willows
	<i>Shepherdia canadensis</i>	■ ■		□		soapberry
Ground shrubs	<i>Arctostaphylos uva-ursi</i>	■ ■ ■ ■ ■ ■	■ ■	□		kinnikinnick
	<i>Linnaea borealis</i>	■ ■	■ ■ ■ ■	□ □	■ ■	twinflower
	<i>Vaccinium vitis-idaea</i>	■ ■		■ ■ ■ ■	■ ■ ■ ■	lowbush cranberry
Forbs	<i>Chamaenerion angustifolium</i>	■ ■		□		fireweed
	<i>Equisetum scirpoides</i>	■ ■		□	■ ■	dwarf scouring-rush
	<i>Geocalium lividum</i>			■ ■	■ ■	bastard toadflax
	<i>Lupinus arcticus</i>	■ ■		□		arctic lupine
Graminoids	<i>Calamagrostis purpurascens</i>		■ ■	■ ■ ■ ■	■ ■ ■ ■	purple reedgrass
Mosses	<i>Hylacomium</i> / <i>Pleurozium</i>		■ ■ ■ ■	■ ■	■ ■	feathermosses
	<i>Polytrichum juniperinum</i>	■ ■	■ ■	■ ■ ■ ■	■ ■	juniper haircap moss
	<i>Dicranum</i> spp.			■ ■	■ ■	heron's-bill mosses
Lichens	<i>Cetraria</i> spp.	■ ■	■ ■	■ ■ ■ ■	■ ■	cetraria lichens
	<i>Cladonia</i> spp.	■ ■	■ ■	■ ■ ■ ■	■ ■ ■ ■	reindeer lichens
	<i>Cladonia</i> spp.	■ ■	■ ■ ■ ■	■ ■ ■ ■	■ ■ ■ ■	cladonia lichens
	<i>Peltigera</i> spp.	■ ■	■ ■	■ ■ ■ ■	■ ■ ■ ■	pelt lichens
	<i>Stereocaulon</i> spp.	■ ■		■ ■	■ ■	foam lichens

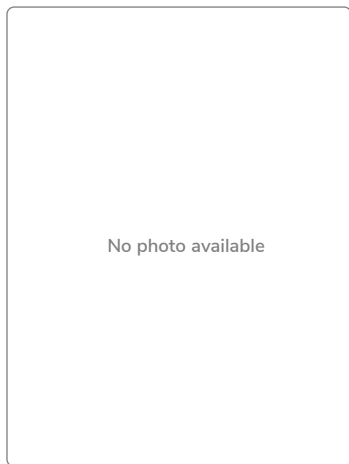
Frequency (%) □ 25-50% ■ 50-70 ■ 70-100 | Mean cover (%) ■ <1 ■ 1-3 ■ 3-10 ■ 10-25 ■ 25-50 ■ 50-75 ■ 75-100



**BOLyc/10-A03**  
(Aspen / Kinnikinnick)



**BOLyc/10-P01**  
(Pine / Kinnikinnick / Lichen)



**BOLyc/10-PSw03**  
(Pine – White spruce / Lowbush  
cranberry / Lichen)



**BOLyc/10-PSbSw03**  
(Pine – Black spruce – White spruce /  
Lowbush cranberry / Lichen)



Kinnikinnick (*Arctostaphylos uva-ursi*)



Trembling aspen (*Populus tremuloides*)

## BOLyc/11

## APSw – Grass forest

## General description

The APSw – Grass forest ecosite occurs primarily on level but also gently sloping sites, across a range of aspects.

Stands can be dominated by aspen (*Populus tremuloides*), pine (*Pinus contorta*) or white spruce (*Picea glauca*), or characterized by a mix of these species; black spruce (*P. mariana*) is present in some stands. Shrub cover is generally low and can include prickly rose (*Rosa acicularis*), soapberry (*Shepherdia canadensis*) or willow (*Salix* spp.).

High grass cover is characteristic of this ecosite and is typically dominated by purple reedgrass (*Calamagrostis purpurascens*); however, Pumpelly brome (*Bromus pumpellianus*) and fescue (*Festuca* sp.) can also occur.

Ground shrubs are of low to moderate cover, with kinnikinnick (*Arctostaphylos uva-ursi*) being the most prevalent. The cover of forbs, mosses and lichens is typically low.

Aspen and aspen-conifer stands in this ecosite, usually successional to conifer-dominated stands, commonly have a higher cover of understorey grasses and ground shrubs, primarily kinnikinnick, than mature conifer stands. Conversely, conifer stands tend to have a higher cover of lichens and mosses.

Ecosite 11 soils are well to rapidly drained, occurring mostly on medium- to coarse-textured glaciofluvial materials, but also on fluvial, morainal and lacustrine surficial materials. Soils are commonly classified as Eutric or Dystric Brunisols.

Edatopic Grid

	A	B	C	D	E	F
0						
1						
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BOLyc/11-APSw06

(Aspen – Pine – White spruce /  
Purple reedgrass – Kinnikinnick)

### Comments

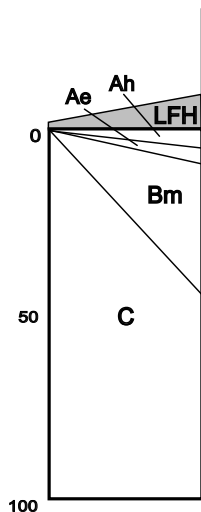
Ecosite 11 is differentiated from other dry, treed ecosites as follows:

- Ecosite 10 has higher lichen cover (typically > 20%) and lower grass cover (< 15%). Ecosite 10 typically has a conifer-dominated canopy, whereas aspen-dominated or aspen co-dominated canopies are common in ecosite 11. Where ecosite 10 sites have an aspen canopy with low lichen cover, they have no to low cover of grasses.
- Ecosite 21 occurs on gentle to steep warm aspects and is often associated with warm sloping grasslands; ecosite 11 typically occurs on level or gently sloping sites. Ecosite 21 has an aspen canopy; ecosite 11 commonly has an aspen mixedwood or conifer-dominated canopy. Where ecosite 11 sites have an aspen canopy, they have a higher grass cover and lower ground shrub cover than ecosite 21.
- BOLyc plots in vegetation associations A20 (Aspen / Grass – Kinnikinnick) and Sw20 (White spruce / Grass – Kinnikinnick) have lower kinnikinnick cover than typically described for these associations; however, the number of plots for BOLyc is low. Vegetation association descriptions for the Yukon are developed using data collected across subzones.

## Site and soils

### Site and soil characteristics

<b>Plots in unit</b>	<b>58</b> (6 with detailed soils information)
Moisture regime	subxeric, submesic (2, 3)
Nutrient regime	poor, medium (B, C)
Meso slope position	mostly level and midslope
Aspect	variable
Slope gradient	level to moderate
Surficial material	usually glaciofluvial or sandy and gravelly fluvial terraces and fans
Soil texture	variable; commonly loam, sandy loam or loamy sand
Soil classification	usually Eutric Brunisols or Dystric Brunisols
Humus form	mor and moder
Humus depth	2 – 10 cm
Soil drainage	well to rapid
Seepage / water table	none
Permafrost	none



### Vegetation summary

The tables showing the relative abundance of species for each vegetation association are presented by overstorey dominance.

#### Aspen-dominated and aspen mixed wood stands

The following vegetation associations characterize the variation in species composition for aspen, or aspen – pine – spruce, or aspen – white spruce dominated stands on this ecosite.

- A20** Aspen / Grass – Kinnikinnick
- APSw06** Aspen – Pine – White spruce / Purple reedgrass – Kinnikinnick
- ASw07** Aspen – White spruce / Purple reedgrass – Kinnikinnick

The relative abundance of species of these associations is shown in the BOLyc/11 Aspen and aspen mixedwood stands vegetation table.

**Pine-dominated and pine – spruce co-dominated stands**

The following vegetation associations characterize the variation in species composition for pine – spruce co-dominated stands on this ecosite.

- P25** Pine / Purple reedgrass
- PSw05** Pine – White spruce / Purple reedgrass
- Sw20** White spruce / Grass – Kinnikinnick

The relative abundance of species of these associations is shown in the BOLyc/11 Pine and Pine – Spruce-dominated stands vegetation table.

BOLyc/11 Aspen and aspen mixed wood stands – Vegetation table

Layer	Vegetation association No. of plots	A20 10	APSw06 2	ASw07 24	English name
Trees	<i>Picea glauca</i>	■ ■	■ ■ ■ ■	■ ■ ■ ■ ■ ■	white spruce
	<i>Picea mariana</i>		■ ■		black spruce
	<i>Pinus contorta</i>		■ ■ ■ ■ ■ ■		lodgepole pine
	<i>Populus tremuloides</i>	■ ■ ■ ■ ■ ■	■ ■ ■ ■ ■ ■	■ ■ ■ ■ ■ ■	trembling aspen
Shrubs	<i>Rosa acicularis</i>	■ ■	■	□	prickly rose
	<i>Salix</i> spp.	■ ■ ■ ■	■	□ □	willows
	<i>Shepherdia canadensis</i>	■ ■	■	■ ■	soapberry
Ground shrubs	<i>Arctostaphylos uva-ursi</i>	■ ■	■ ■ ■ ■	■ ■ ■ ■	kinnikinnick
	<i>Linnaea borealis</i>	■	■	■	twinflower
	<i>Vaccinium vitis-idaea</i>	□	■	□ □	lowbush cranberry
	<i>Anemone</i> spp.	□	■	□	anemones
Forbs	<i>Chamaenerion angustifolium</i>	■	■	■	fireweed
	<i>Lupinus arcticus</i>	■ ■	■	□	arctic lupine
	<i>Anticlea elegans</i>	■	■		mountain death-camas
	<i>Calamagrostis purpurascens</i>	■ ■ ■ ■ ■ ■	■ ■ ■ ■ ■ ■	■ ■ ■ ■ ■ ■	purple reedgrass
Mosses	<i>Hylacomium / Pleurozium</i>		■ ■	■ ■	feathermosses
	<i>Polytrichum juniperinum</i>		■	□	juniper haircap moss
Lichens	<i>Cladonia</i> spp.	■	■		reindeer lichens
	<i>Peltigera</i> spp.		■	■	pelt lichens

Frequency (%) □ 25-50% ■ 50-70 ■ 70-100 | Mean cover (%) ■ <1 ■ 1-3 ■ 3-10 ■ 10-25 ■ 25-50 ■ >25

BOLyc/11 Pine and pine – spruce-dominated stands – Vegetation table

Layer	Vegetation association No. of plots	p25 10	pSw05 11	Sw20 1	English name
Trees	<i>Picea glauca</i>	■ ■	■ ■ ■ ■ ■ ■	■ ■ ■ ■ ■ ■	white spruce
	<i>Pinus contorta</i>	■ ■ ■ ■ ■ ■	■ ■ ■ ■ ■ ■		lodgepole pine
	<i>Populus tremuloides</i>	□	■ ■	■ ■	trembling aspen
Shrubs	<i>Picea glauca</i>		■ ■		white spruce
	<i>Rosa acicularis</i>	■ ■	□		prickly rose
	<i>Salix</i> spp.	■ ■	■	■	willows
	<i>Shepherdia canadensis</i>	■ ■	■ ■		soapberry
Ground shrubs	<i>Linnaea borealis</i>	■ ■	■	■	twinflower
	<i>Vaccinium vitis-idaea</i>	□ □		■	lowbush cranberry
Forbs	<i>Chamaenerion angustifolium</i>	■	□	■ ■	fireweed
	<i>Solidago glutinosa</i>	■	□		sticky goldenrod
	<i>Anticlia elegans</i>		□		mountain death-camas
		■ ■ ■ ■ ■ ■	■ ■ ■ ■ ■ ■	■ ■ ■ ■ ■ ■	purple reedgrass
Graminoids	<i>Calamagrostis purpurascens</i>	■ ■ ■ ■ ■ ■	■ ■ ■ ■ ■ ■	■ ■ ■ ■ ■ ■	feathermosses
	<i>Hylacomium / Pleurozium</i>	□ □			Juniper haircap moss
Mosses	<i>Polytrichum juniperinum</i>	■	□	■ ■	heron's-bill mosses
	<i>Dicranum</i> spp.	□	□		
Lichens	<i>Cetraria</i> spp.	■ ■	■	■	cetraria lichens
	<i>Cladonia</i> spp.	■ ■ ■ ■	□	■	reindeer lichens
	<i>Cladonia</i> spp.	■	■ ■	■	cladonia lichens
	<i>Peltigera</i> spp.	■ ■	■ ■ ■ ■	■ ■	pet lichens
	<i>Stereocaulon</i> spp.	□	■	■	foam lichens

Frequency (%) □ 25-50% ■ 50-70 ■ 70-100 | Mean cover (%) ■ <1 ■ 1-3 ■ 10-25 ■ 25-50 ■ >25



**BOLyc/11-A20**  
(Aspen / Grass – Kinnikinnick)



**BOLyc/11-APSw06**  
(Aspen – Pine – White spruce / Purple reedgrass – Kinnikinnick)



**BOLyc/11-ASw07**  
(Aspen – White spruce / Purple reedgrass – Kinnikinnick)



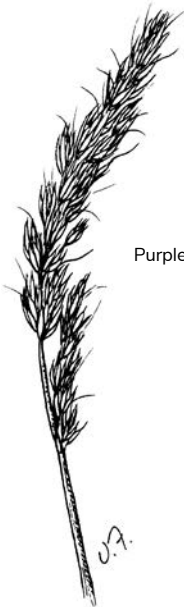
**BOLyc/11-P25**  
(Pine / Purple reedgrass)

No photo available

No photo available

**BOLyc/11-PSw05**  
(Pine – White spruce / Purple reedgrass)

**BOLyc/11-Sw20**  
(White spruce / Grass – Kinnikinnick)



Purple reedgrass (*Calamagrostis purpurascens*)

**BOLyc/20 Pasture sage – Purple reedgrass grassland****General description**

The Pasture sage – Purple reedgrass grassland ecosite is associated with moderate to steep warm-aspect slopes. These sites are the warmest and driest in the subzone and are typically on colluvial or glaciofluvial surficial materials.

The vegetation is characterized by a high cover of grasses and forbs. Trees are absent or scant. Creeping juniper (*Juniperus horizontalis*) or prickly rose (*Rosa acicularis*) can be present with moderate to high cover. Pasture sage (*Artemisia frigida*) and purple reedgrass (*Calamagrostis purpurascens*) are generally present and can dominate the ground cover on many sites. Other species that can dominate some sites include Yukon goldenweed (*Nestotus macleanii*), Gorman's beardtongue (*Penstemon gormanii*), curly sedge (*Carex rupestris*), slender wheatgrass (*Elymus trachycaulus*), glaucous bluegrass (*Poa glauca*) and bluebunch wheatgrass (*Pseudoroegneria spicata*). Considerable variation occurs within the ecosite, particularly in grass species dominance.

Fire is typically important to maintain these sites as grasslands. With long periods between fires, trembling aspen (*Populus tremuloides*) begins to encroach on the open slopes.

Ecosite 20 soils are very rapidly to well drained. Soil textures are variable, reflecting the range in parent materials, and are typically classified as Orthic Eutric or Melanic Brunisols, or Regosols.

		Edatopic Grid					
		A	B	C	D	E	F
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**BOLyc/20-Arfr02**

(Pasture sage – Purple reedgrass)

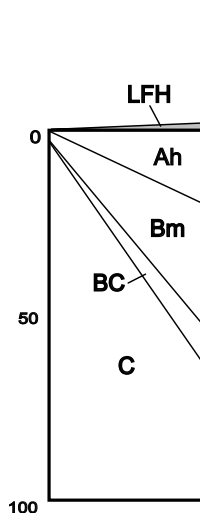
### Comments

- Ecosite 20 is the only dry, non-treed ecosite in the subzone; however, it commonly occurs in association with ecosite 21. Ecosite 21 also occurs on moderate, south-facing slopes but has an aspen-dominated overstorey (typically > 30%) and a ground shrub-dominated understorey. Scattered aspen can occur on ecosite 20; however, it is typically in the shrub layer and has low cover (< 5%).
- A study of graminoid-dominated grasslands in the Carmacks–Pelly Crossing area by Strong (2015) indicates variation in species dominance, with communities dominated by purple reedgrass, glaucous bluegrass, bluebunch wheatgrass or needle-and-thread grass (*Hesperostipa comata*) identified. Further work may elucidate the presence of other vegetation associations within this ecosite.

## Site and soils

### Site and soil characteristics

<b>Plots in unit</b>	<b>71</b> (8 with detailed soils descriptions)
Plots in unit	very xeric, xeric (0, 1)
Moisture regime	poor to rich (B–D)
Nutrient regime	crest, upper and mid (lower)
Meso slope position	southerly (neutral)
Aspect	moderate to steep (usually gentle on crests)
Slope gradient	colluvial, glaciofluvial
Surficial material	sandy to loamy
Soil texture	usually Eutric or Melanic Brunisols, Regosols
Soil classification	mor, mull
Humus form	0 – 5 cm
Humus depth	rapid to very rapid
Soil drainage	none
Seepage / water table	none
Permafrost	slope colluviation
Site disturbance	insolation



### Vegetation summary

The following vegetation associations characterize the variation in species composition on ecosite 20.

- Arfr02** Pasture sage – Purple reedgrass
- Arfr03** Pasture sage – Curly sedge
- Juho02** Creeping juniper / Purple reedgrass
- Nema02** Yukon goldenweed – Purple reedgrass
- Roac04** Prickly rose / Purple reedgrass

BOLyc/20 Vegetation table

Layer	Vegetation association	No. of plots	Juh002	Roac04	Arfr02	Arfr03	Nema02	English name
Shrubs	<i>Populus tremuloides</i>	■ ■			□	■	3	trembling aspen
	<i>Juniperus horizontalis</i>	■ ■ ■ ■ ■ ■						creeping juniper
	<i>Rosa acicularis</i>	■ ■	■ ■ ■ ■ ■ ■			■		prickly rose
Forbs	<i>Achillea millefolium</i>		■				■	common yarrow
	<i>Antennaria rosea</i>	■ ■	■ ■				□	rosy pussytoes
	<i>Artemisia frigida</i>	■ ■ ■ ■	■ ■ ■ ■		■ ■ ■ ■ ■ ■	■ ■ ■ ■ ■ ■	■ ■ ■ ■ ■ ■	pasture sage
	<i>Boehera retrofracta</i>		■		□	■	■ ■ ■ ■ ■ ■	reflexed rock-ress
	<i>Bupleurum americanum</i>	■ ■ ■ ■ ■ ■	■ ■ ■ ■ ■ ■		■ ■ ■ ■ ■ ■	■ ■ ■ ■ ■ ■	■ ■ ■ ■ ■ ■	American thorough-wax
	<i>Castilleja pallascens</i>	■ ■ ■ ■ ■ ■	■ ■ ■ ■ ■ ■			■	□	palish paintbrush
	<i>Erigeron caespitosus</i>	■ ■ ■ ■ ■ ■	■ ■ ■ ■ ■ ■		■	■	■	tufted fleabane
	<i>Galium boreale</i>	■ ■ ■ ■ ■ ■	■ ■ ■ ■ ■ ■					northern bedstraw
	<i>Geum triflorum</i>	■ ■ ■ ■ ■ ■	■ ■ ■ ■ ■ ■					prairie smoke
	<i>Linum lewisii</i>	■ ■ ■ ■ ■ ■	■ ■ ■ ■ ■ ■		■		□	perennial blue flax
	<i>Nastotus macleanii</i>	■ ■ ■ ■ ■ ■	■ ■ ■ ■ ■ ■				■ ■ ■ ■ ■ ■	Yukon goldenweed
	<i>Odontarrhena obovatum</i>	■ ■ ■ ■ ■ ■	■ ■ ■ ■ ■ ■		■		□	American alyssum
	<i>Oxytropis splendens</i>	■ ■ ■ ■ ■ ■	■ ■ ■ ■ ■ ■		□	□	■ ■ ■ ■ ■ ■	showy locoweed
	<i>Penstemon gormanii</i>	■ ■ ■ ■ ■ ■	■ ■ ■ ■ ■ ■		■ ■ ■ ■ ■ ■	■ ■ ■ ■ ■ ■	□ □	Gorman's penstemon
	<i>Potentilla arenosa</i>	■ ■ ■ ■ ■ ■	■ ■ ■ ■ ■ ■		□	■ ■ ■ ■ ■ ■	■ ■ ■ ■ ■ ■	bluff cinquefoil
	<i>Potentilla pennsylvanica</i>	■ ■ ■ ■ ■ ■	■ ■ ■ ■ ■ ■		■ ■ ■ ■ ■ ■	■ ■ ■ ■ ■ ■	■ ■ ■ ■ ■ ■	Pennsylvania cinquefoil
	<i>Pulsatilla nuttalliana</i>	■ ■ ■ ■ ■ ■	■ ■ ■ ■ ■ ■		■ ■ ■ ■ ■ ■	■ ■ ■ ■ ■ ■	■ ■ ■ ■ ■ ■	prairie pasqueflower
	<i>Saxifraga tricuspidata</i>	■ ■ ■ ■ ■ ■	■ ■ ■ ■ ■ ■			■ ■ ■ ■ ■ ■	■ ■ ■ ■ ■ ■	prickly saxifrage
	<i>Solidago glutinosa</i>	■ ■ ■ ■ ■ ■	■ ■ ■ ■ ■ ■		□		■	sticky goldenrod
	Graminoids	<i>Calamagrostis purpurascens</i>	■ ■ ■ ■ ■ ■	■ ■ ■ ■ ■ ■		■ ■ ■ ■ ■ ■	■ ■ ■ ■ ■ ■	■ ■ ■ ■ ■ ■
<i>Carex rupestris</i>		■ ■ ■ ■ ■ ■	■ ■ ■ ■ ■ ■		□ □	■ ■ ■ ■ ■ ■	□	curly sedge
<i>Festuca saximontana</i>		■ ■ ■ ■ ■ ■	■ ■ ■ ■ ■ ■		□ □	■ ■ ■ ■ ■ ■	■ ■ ■ ■ ■ ■	Rocky Mountain fescue
<i>Poa glauca</i>		■ ■ ■ ■ ■ ■	■ ■ ■ ■ ■ ■		□ □ □ □	■ ■ ■ ■ ■ ■	■ ■ ■ ■ ■ ■	glaucous bluegrass
Mosses	<i>Pseudotsuga spicata</i>	■ ■ ■ ■ ■ ■	■ ■ ■ ■ ■ ■		□ □ □ □	□		bluebunch wheatgrass
	Bryophyta	■ ■ ■ ■ ■ ■	■ ■ ■ ■ ■ ■		□ □	■	□ □	mosses
	Lichen spp. (unidentified lichens)	■ ■ ■ ■ ■ ■	■ ■ ■ ■ ■ ■		□ □	■ ■ ■ ■ ■ ■	□ □ □ □	lichens
	Crustose lichen	■ ■ ■ ■ ■ ■	■ ■ ■ ■ ■ ■		□ □ □ □	■ ■ ■ ■ ■ ■	□	lichen crust

Frequency (%) □ 25-50% ■ 50-70 ■ 70-100 | Mean cover (%) ■ <1 ■ 1-3 ■ 10-25 ■ >25



**BOLyc/20-Arfr02**  
(Pasture sage – Purple reedgrass)



**BOLyc/20-Arfr03**  
(Pasture sage – Curly sedge)



**BOLyc/20-Juho02**  
(Creeping juniper / Purple reedgrass)



**BOLyc/20-Nema02**  
(Yukon goldenweed – Purple reedgrass)



**BOLyc/20-Roac04**  
(Prickly rose / Purple reedgrass)



Pasture sage (*Artemisia frigida*)



Yukon goldenweed (*Nestotus macleanii*)

## BOLyc/21

## A – Kinnikinnick forest

## General description

The A – Kinnikinnick forest ecosystem is associated with warm-aspect, moderate to steep slopes.

Aspen (*Populus tremuloides*) dominates the canopy, although white spruce (*Picea glauca*) can be present in minor amounts. A moderate to high cover of kinnikinnick (*Arctostaphylos uva-ursi*) and grass species, primarily purple reedgrass (*Calamagrostis purpurascens*), characterizes the understory. Other grasses can include Pumpelly brome (*Bromus pumpellianus*), glaucous bluegrass (*Poa glauca*) and/or fescues (*Festuca* spp.). Prickly rose (*Rosa acicularis*) and/or soapberry (*Shepherdia canadensis*) are also usually present and may be of moderate to high cover. Forbs are variable and are commonly low in cover. Moss and lichen cover is also typically low.

Most ecosystem 21 soils are well to rapidly drained. Surficial materials are varied and include morainal, colluvial and glaciofluvial deposits. Soils are commonly sandy in texture and are typically classified as Dystric Brunisols, Melanic Brunisols or Eutric Brunisols.

Edatopic Grid

	A	B	C	D	E	F
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**BOLyc/21-A04**  
(Aspen / Prickly rose / Grass)

## Comments

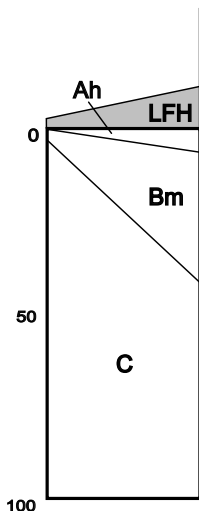
Ecosite 21 is differentiated from other dry, treed ecosites as follows:

- Ecosite 10 has either higher lichen cover or lower grass cover than ecosite 21. Ecosite 10 has a predominantly conifer-dominated canopy. Where ecosite 10 sites have an aspen-dominated canopy, the sites are level.
- Ecosite 11 commonly has an aspen mixedwood or conifer-dominated canopy. Where ecosite 11 has an aspen canopy, the sites are level or gently sloping and commonly have higher grass cover (> 15%) and lower prickly rose and/or soapberry cover than ecosite 21.
- Ecosite 01 aspen stands do not occur on warm slopes. Although the understorey vegetation of aspen stands may not differentiate between ecosite 01 and ecosite 21 sites, the successional development of ecosite 21 stands is restricted to aspen dominance due to location on warm slopes, association with grasslands of ecosite 20, and fire.

## Site and soils

### Site and soil characteristics

<b>Plots in unit</b>	<b>8</b> (2 with detailed soils information)
Moisture regime	subxeric, submesic (2, 3)
Nutrient regime	medium, rich (C, D)
Meso slope position	mid to lower slope
Aspect	southerly
Slope gradient	moderate to steep
Surficial material	colluvial, glaciofluvial and morainal
Soil texture	sandy loam to loamy sand
Soil classification	usually Dystric, Melanic or Eutric Brunisols
Humus form	moder and mull
Humus depth	3 – 10 cm
Soil drainage	well to rapid
Seepage / water table	none
Permafrost	none
Exposure	insolation



### Vegetation summary

The following vegetation associations characterize the variation in species composition on ecosite 21.

- A03**      Aspen / Kinnikinnick
- A04**      Aspen / Prickly rose / Grass
- A21**      Aspen / Soapberry / Kinnikinnick
- A29**      Aspen / Prickly rose / Fireweed

BOLyc/21 Vegetation table

Layer	Vegetation association	A03	A04	A21	A29	English name
	No. of plots	3	1	3	1	
Trees	<i>Picea glauca</i>	■	■ ■			white spruce
	<i>Populus tremuloides</i>	■ ■ ■ ■ ■ ■ ■ ■	■ ■ ■ ■ ■ ■ ■ ■	■ ■ ■ ■ ■ ■ ■ ■	■ ■ ■ ■ ■ ■ ■ ■	trembling aspen
	<i>Salix</i> spp.			■ ■		willows
Shrubs	<i>Populus tremuloides</i>	□ □ □		■ ■ ■	■ ■ ■	trembling aspen
	<i>Rosa acicularis</i>	■ ■	■ ■ ■	■ ■ ■ ■ ■ ■ ■ ■	■ ■ ■ ■ ■ ■ ■ ■	prickly rose
	<i>Salix</i> spp.			■ ■ ■ ■ ■ ■ ■ ■	■ ■	willows
	<i>Shepherdia canadensis</i>	■ ■		■ ■ ■ ■ ■ ■ ■ ■	■ ■	soapberry
	<i>Viburnum edule</i>	□		■ ■	■ ■	highbush cranberry
Ground shrubs	<i>Arctostaphylos uva-ursi</i>	■ ■ ■ ■ ■ ■ ■ ■	■ ■ ■ ■ ■ ■ ■ ■	■ ■ ■ ■ ■ ■ ■ ■	■ ■ ■ ■ ■ ■ ■ ■	kinnikinnick
	<i>Linnaea borealis</i>	■		□ □ □	■ ■ ■	twinflower
Forbs	<i>Achillea millefolium</i>			■	■	common yarrow
	<i>Chamaenerion angustifolium</i>	■	■	■ ■ ■ ■ ■ ■ ■ ■	■ ■ ■ ■ ■ ■ ■ ■	fireweed
	<i>Hedysarum alpinum</i>			□	■	alpine hedsarum
	<i>Lupinus arcticus</i>	■			■ ■ ■ ■ ■ ■ ■ ■	arctic lupine
	<i>Solidago</i> spp.			□	■	goldenrods
	<i>Anticlea elegans</i>	■		□	■	mountain death-camas
Graminoids	<i>Poaceae</i>	■ ■ ■ ■ ■ ■ ■ ■	■ ■ ■ ■ ■ ■ ■ ■	■ ■ ■ ■ ■ ■ ■ ■	■ ■ ■ ■ ■ ■ ■ ■	grasses
Mosses	<i>Bryophyta</i>	■	■			mosses

Frequency (%) □ 25-50% ■ 50-70 ■ 70-100 | Mean cover (%) ■ <1 ■ 1-3 ■ 3-10 ■ 10-25 ■ 25-50 ■ >25



**BOLyc/21-A03**  
(Aspen / Kinnikinnick)



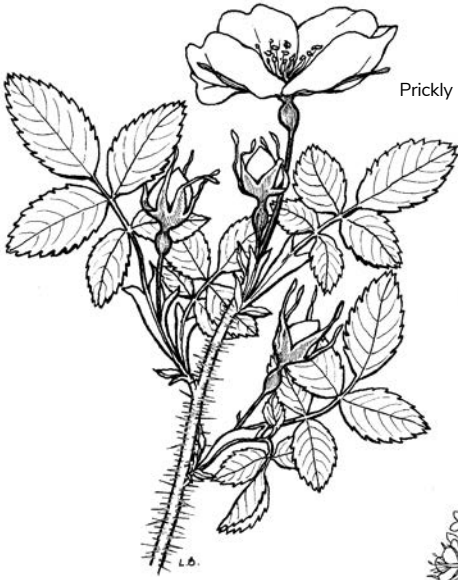
**BOLyc/21-A04**  
(Aspen / Prickly rose / Grass)



**BOLyc/21-A21**  
(Aspen / Soapberry / Kinnikinnick)



**BOLyc/21-A29**  
(Aspen / Prickly rose / Fireweed)



Prickly rose (*Rosa acicularis*)



Fireweed (*Chamaenerion angustifolium*)



**BOLyc/30****PS – Labrador tea –  
Feathermoss forest****General description**

The PS – Labrador tea – Feathermoss forest ecosite occurs on cold, nutrient-poor, submesic to mesic sites. Sites are level or gently sloped on cool to neutral aspects

The canopy is generally dominated by one or more of pine (*Pinus contorta*), white spruce (*Picea glauca*) or black spruce (*P. mariana*). Alaska birch (*Betula neoalaskana*) may also occur on some sites. Common Labrador tea (*Rhododendron groenlandicum*) of moderate to high cover is the key indicator in the understorey. Other ericaceous ground shrubs include twinflower (*Linnaea borealis*) and lowbush cranberry (*Vaccinium vitis-idaea*). Willows (*Salix* spp.) and/or green alder (*Alnus alnobetula*) can also be abundant. Feathermosses usually comprise a continuous ground cover, with some lichen species also present (*Cladina* spp., *Cladonia* spp., *Peltigera* spp.).

Ecosite 30 can occur on a variety of parent materials including glaciofluvial, morainal, eolian and colluvial, which are well to moderately well drained. Soils are usually classified as Eutric Brunisols. Cold soils appear to be a primary factor for the development of this ecosite on circum-mesic sites. These conditions occur on cool aspects and in areas of moderate cold-air drainage but may also occur on a wider range of sites at higher elevations of the subzone.

Edatopic Grid

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**BOLyc/30-P29**  
(Pine / Labrador tea /  
Feathermoss)

### Comments

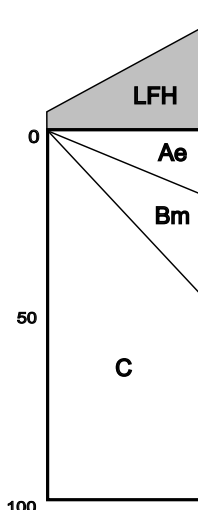
Ecosite 30 can be differentiated from other circum-mesic, treed ecosites as follows:

- Ecosite 01 occurs on richer sites, generally with low cover of common Labrador tea. Although small patches of common Labrador tea can occur on ecosite 01, patches on ecosite 30 sites are larger or continuous. Ecosite 30 is often on cooler sites than ecosite 01 with a deeper organic layer.
- Ecosite 31 occurs on slightly moister and richer sites than ecosite 30. If common Labrador tea occurs, it is of low cover. Red bearberry and dwarf scouring-rush, indicators of ecosite 31, are not common on ecosite 30.

## Site and soils

### Site and soil characteristics

<b>Plots in unit</b>	<b>24</b> (3 with detailed soils information)
Moisture regime	submesic, mesic (3, 4)
Nutrient regime	very poor, poor (A, B)
Meso slope position	mid slopes (lower to upper), some level
Aspect	northerly or neutral
Slope gradient	gentle to moderate, level
Surficial material	variable
Soil texture	variable
Soil classification	Eutric (Dystric) Brunisols
Humus form	mor
Humus depth	5-21 cm
Soil drainage	well to moderately well
Seepage / water table	none
Permafrost	may be present occasionally



### Vegetation summary

The following vegetation associations characterize the variation in species composition for ecosite 31.

**SwW29** White spruce – Alaska birch / Green alder / Labrador tea

**P24** Pine / Alder – Labrador tea / Feathermoss

**P29** Pine / Labrador tea / Feathermoss

**PSb25** Pine – Black spruce / Labrador tea / Feathermoss

**SbSw30** Black spruce – White spruce / Labrador tea / Feathermoss





**BOLyc/30-SwW29**  
(White spruce – Alaska birch /  
Green alder / Labrador tea)

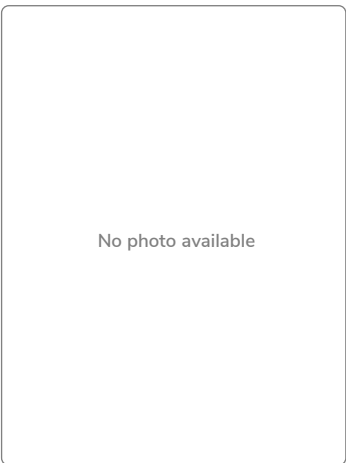


No photo available

**BOLyc/30-P24**  
(Pine / Alder – Labrador tea / Feathermoss)



**BOLyc/30-P29**  
(Pine / Labrador tea / Feathermoss)



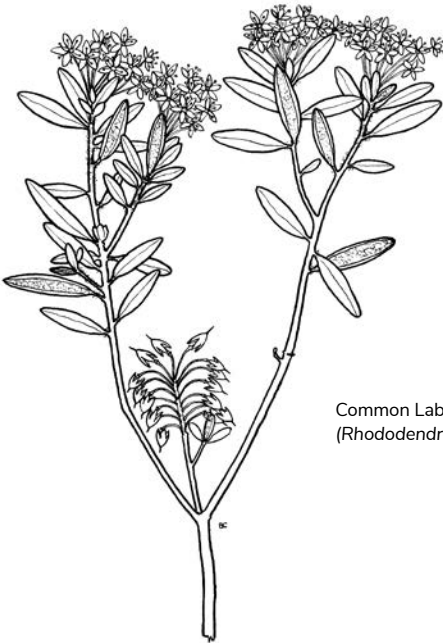
No photo available

**BOLyc/30-PSb25**  
(Pine – Black spruce / Labrador tea /  
Feathermoss)



**BOLyc/30-P29**

(Pine / Labrador tea / Feathermoss)



Common Labrador tea  
(*Rhododendron groenlandicum*)

**BOLyc/31****Sw – Willow – Red bearberry forest****General description**

The Sw – Willow – Red bearberry forest ecosite occurs on cool, mesic to subhygric sites with medium to poor nutrient regime. The sites are very gently sloping lower or toe slopes or level sites, influenced by cold air, on various parent materials.

Stands have a moderately well- to well-developed canopy of white spruce (*Picea glauca*), sometimes with black spruce (*Picea mariana*).

The characteristic understorey species are red bearberry (*Arctous rubra*), willows (*Salix* spp., often blueberry willow (*S. myrtilifolia*), and dwarf scouring-rush (*Equisetum scirpoides*). Feathermosses, primarily step moss (*Hylocomium splendens*), usually dominate the forest floor.

Soils are variable in texture, moderately well to imperfectly drained, and classified as Gleyed Eutric Brunisols, Humic Regosols or sometimes Cryosols.

Edatopic Grid

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**BOLyc/31-Sw31**  
(White spruce / Willow /  
Red bearberry / Feathermoss)

**Comments**

Ecosite 31 can be differentiated from other circum-mesic to moist-site, treed ecosites as follows:

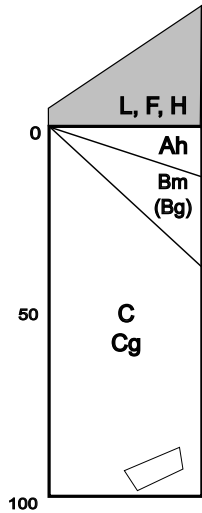
- Ecosite 30 occurs on drier or poorer sites and can be well drained. The moderate to high cover of common Labrador tea, as well as cool-aspect sites with a deep organic surface mat, differentiates it from ecosite 31
- Ecosite 01 sites are often drier and are typically found on mid-slope or level sites with pine often present; they are not influenced by cold air and therefore lack the characteristic species of ecosite 31.
- Ecosite 32 is strongly influenced by cold air and is often on moister sites; stands can be very open, with spruce, or open with pine or spruce and a moderate to high cover of shrub birch.

- Ecosite 40 and ecosite 41 sites occur on floodplains and are notably richer, often with balsam poplar, river alder, horsetails and highbush cranberry.

**Site and soils**

**Site and soil characteristics**

<b>Plots in unit</b>	<b>9</b> (2 with detailed soils information)
Moisture regime	mesic, subhygric (4, 5)
Nutrient regime	medium, poor (C, B)
Meso slope position	level, lower and toe slopes
Aspect	cool
Slope gradient	level to moderate slopes
Surficial material	variable
Soil texture	variable
Soil classification	Gleyed Eutric Brunisols, Humic Regosols, sometimes Cryosols
Humus form	mor
Humus depth	4-27 cm
Soil drainage	moderately well to imperfect
Seepage / water table	may have mottles at depth
Permafrost	may be present



**Vegetation summary**

The following vegetation associations characterize the variation in species composition for ecosite 31.

**SbSw31** Black spruce – White spruce / Blueberry willow / Feathermoss

**Sw31** White spruce / Willow / Red bearberry / Feathermoss





**BOLyc/31-SbSw31**  
(Black spruce – White spruce / Blueberry willow / Feathermoss)



**BOLyc/31-Sw31**  
(White spruce / Willow / Red bearberry / Feathermoss)



One sided wintergreen (*Orthilia secunda*)

## BOLyc/32

## Sw – Shrub birch – Willow forest

## General description

The Sw – Shrub birch – Willow forest ecosite occurs on level to gently sloping sites of varying parent material that are strongly influenced by cold air.

The overstorey, which can be very open, is usually dominated by white spruce (*Picea glauca*); however, pine (*Pinus contorta*) can sometimes occur as a dominant overstorey species. The vegetation is characterized by high cover of shrub birch (*Betula glandulosa*) and willow (*Salix* spp.) and can include common Labrador tea (*Rhododendron groenlandicum*).

The low-shrub understory can include various ground shrubs (*Arctous rubra*, *Arctostaphylos uva-ursi* or *Vaccinium vitis-idaea*). Grass species may also be present and can be of high cover—Altai fescue (*Festuca altaica*) is common on these cool sites. Lichens are often present and occasionally of high cover (*Cetraria* spp., *Cladina* spp., *Cladonia* spp., *Peltigera* spp.). Feathermosses are typically present but of low cover.

Soils are often sandy or loamy and may show signs of cryoturbation with evidence of the presence of permafrost or former permafrost. Soils are typically imperfectly to poorly drained and classified as Regosols, Gleysols or Cryosols.

## Comments

Ecosite 32 can be differentiated from other moist- to wet-site, treed ecosites as follows:

- Ecosite 31 is slightly drier, less influenced by cold air, and lacks shrub birch or common Labrador tea.
- Various swamp ecosites are wetter.
- Ecosite 40 and ecosite 41 occur on floodplains with a richer nutrient regime.

Edatopic Grid

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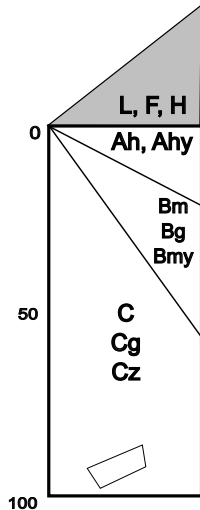
BOLyc/31-P30

(Pine / Shrub birch / Altai fescue)

**Site and soils**

**Site and soil characteristics**

<b>Plots in unit</b>	<b>1</b> (no detailed soils information)
Moisture regime	subhygric, hygric (5, 6)
Nutrient regime	medium, rich (C, D)
Meso slope position	level, depression, lower slope
Aspect	variable
Slope gradient	level to gently sloping
Surficial material	variable
Soil texture	clay, silt loam, sandy loam, loamy sand
Soil classification	Regosols, Gleysols, Cryosols
Humus form	moder, mor
Humus depth	3 – 18 cm
Soil drainage	imperfect to poor
Seepage / water table	mottles at depth
Permafrost	common, soils are often cryoturbated
Exposure	cold-air drainage, frost



**Vegetation summary**

The following vegetation association characterizes the variation in species composition for ecosite 32.

**P30** Pine / Shrub birch / Altai fescue

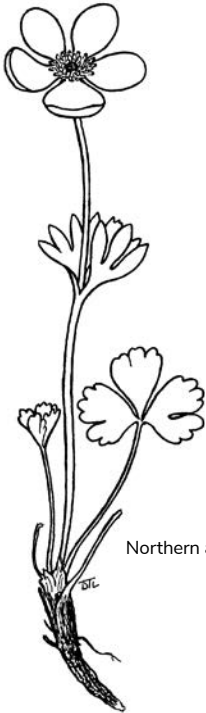
**BOLyc/32** Vegetation table

Layer	Vegetation association	No. of plots	p30	English name
Trees	<i>Picea glauca</i>	■ ■	■ ■	white spruce
	<i>Pinus contorta</i>	■ ■ ■ ■	■ ■ ■ ■	lodgepole pine
Shrubs	<i>Betula glandulosa</i>	■ ■ ■ ■ ■ ■	■ ■ ■ ■ ■ ■	shrub birch
	<i>Rhododendron groenlandicum</i>	■ ■ ■ ■	■ ■ ■ ■	common Labrador tea
	<i>Rosa acicularis</i>	■	■	prickly rose
	<i>Salix</i> sp.	■	■	willow
	<i>Vaccinium uliginosum</i>	■	■	blueberry
	<i>Arctostaphylos uva-ursi</i>	■ ■ ■ ■	■ ■ ■ ■	kinnikinnick
			■	red bearberry
Ground shrubs	<i>Arctous rubra</i>	■	■	twinflower
	<i>Linnaea borealis</i>	■ ■	■ ■	lowbush cranberry
	<i>Vaccinium vitis-idaea</i>	■ ■	■ ■	northern anemone
	<i>Anemone parviflora</i>	■	■	fireweed
	<i>Chamaenerion angustifolium</i>	■	■	lousewort
	<i>Pedicularis</i> sp. <i>Senecio</i> sp.	■	■	groundsel
Graminoids	Poaceae	■ ■ ■ ■ ■ ■	grasses	
Mosses	<i>Polytrichum juniperinum</i>	■	■	juniper haircap moss
Lichens	<i>Cetraria</i> spp.	■	■	cetraria lichens
	<i>Cladonia</i> spp.	■ ■	■ ■	reindeer lichens
	<i>Cladonia</i> spp.	■ ■	■ ■	cladonia lichens
	<i>Peltigera</i> spp.	■	■	pett lichens
	<i>Stereocaulon tomentosum</i>	■	■	woolly foam lichen

Frequency (%) □ 25-50% ■ 50-70 ■ 70-100 | Mean cover (%) ■ <1 ■ 1-3 ■ 10-25 ■ >25



**BOLyc/31-P30**  
(Pine / Shrub birch / Altai fescue)



Northern anemone (*Anemone parviflora*)



Altai fescue (*Festuca altaica*)

## Floodplain Ecosites

**BOLyc/40**

**Sw – Horsetail riparian forest**

### General description

The Sw – Horsetail riparian forest ecosite is found on moderately well- to well-drained, fluvial parent materials that occur on the higher benches along rivers and streams.

White spruce (*Picea glauca*) dominates, sometimes with a minor component of balsam poplar (*Populus balsamifera*). A variety of shrubs are found on these sites: river alder (*Alnus incana*), prickly rose (*Rosa acicularis*), and/or highbush cranberry (*Viburnum edule*) may be abundant. Willows (*Salix* spp.) are often present. Horsetails (*Equisetum arvense*, *E. pratense*) are characteristic of these floodplain sites but may be sparse. Feathermosses, generally step moss (*Hylocomium splendens*), dominate the forest floor.

These sites flood occasionally but are primarily influenced by subsurface water, which can lead to an influx of nutrients, giving these sites a richer nutrient regime. Soils are typically classified as Eutric Brunisols or Regosols.

### Comments

Ecosite 40 can be differentiated from other mesic to moist, nutrient-medium to rich ecosites as follows:

- Ecosite 01 sites are not influenced by flooding or subsurface water and typically do not occur on fluvial floodplains. Where ecosite 01 sites are on fluvial parent materials, they occur too high above the flood waters to have richer-site indicators like horsetails or river alder.
- Ecosite 31 sites are sometimes on fluvial parent materials, but the sites are not influenced by flooding or subsurface water and lack horsetails or river alder. Red bearberry and dwarf scouring-rush are common.

Edatopic Grid

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**BOLyc/40-Sw36**

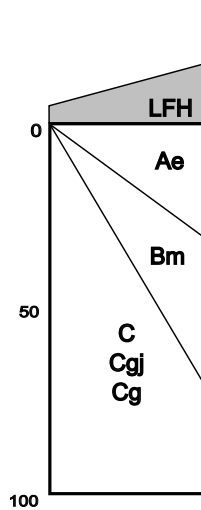
(White spruce / Highbush cranberry / Horsetail)

- Ecosite 41 also occurs along river floodplains but is dominated by balsam poplar. Ecosite 41 occurs on slightly lower fluvial benches closer to the subsurface waters and is subject to more regular flooding.

**Site and soils**

**Site and soil characteristics**

<b>Plots in unit</b>	<b>6</b> (1 detailed soils information)
Moisture regime	mesic, subhygric (4, 5)
Nutrient regime	rich, very rich (D, E)
Meso slope position	level
Aspect	none
Slope gradient	level
Surficial material	fluvial
Soil texture	loamy sand to sandy loam
Soil classification	Eutric Brunisols or Regosols
Humus form	mor, moder
Humus depth	1 – 12 cm
Soil drainage	moderately well- to well
Seepage / water table	usually mottles at depth
Permafrost	unlikely
Site disturbance	occasional flooding



**Vegetation summary**

The following vegetation associations characterize the variation in species composition for ecosite 40.

**SwB28** White spruce – Balsam poplar / Step moss

**Sw36** White spruce / Highbush cranberry / Horsetail

BOLyc/40 Vegetation table

Layer	Vegetation association No. of plots	SwB28	Sw36	English name
		1	5	
Trees	<i>Picea glauca</i>	■■■■■	■■■■■	white spruce
	<i>Populus balsamifera</i>	■■■	■■	balsam poplar
Shrubs	<i>Alnus incana</i>	■■■	■■■■	river alder
	<i>Rosa acicularis</i>	■■■■	■■■	prickly rose
	<i>Salix</i> spp.		■■	willows
	<i>Viburnum edule</i>	■■■■	■■■	highbush cranberry
Ground shrubs	<i>Arctous rubra</i>		■	red bearberry
	<i>Linnaea borealis</i>	■■■	■■■	twinflower
	<i>Vaccinium vitis-idaea</i>	■■■		lowbush cranberry
Forbs	<i>Aconitum delphinifolium</i>	■		monkshood
	<i>Artemisia tilesii</i>	■■		Tilesius' wormwood
	<i>Astragalus americanus</i>	■		American milk-vetch
	<i>Cornus canadensis</i>	■■■		bunchberry
	<i>Cypripedium passerinum</i>		■	sparrow's-egg lady's-slipper
	<i>Equisetum arvense</i>	■■	■■■■	common horsetail
	<i>Equisetum pratense</i>	■■	□	meadow horsetail
	<i>Equisetum scirpoides</i>	■	□	dwarf scouring-rush
	<i>Eurybia sibirica</i>	■		Siberian aster
	<i>Geocaldon lividum</i>	■■■	■	bastard toadflax
	<i>Hedysarum alpinum</i>		■■	alpine hedysarum
	<i>Mertensia paniculata</i>	■■	□	tall bluebells
	<i>Mitella nuda</i>	■		common mitrewort
	<i>Orthilia secunda</i>	■	■	one-sided wintergreen
	<i>Petasites frigidus</i> var. <i>palmatus</i>	■■■		palmate coltsfoot
	<i>Platanthera obtusata</i>		■	blunt-leaved orchid
	<i>Pyrola asarifolia</i>		■	pink wintergreen
Graminoids	<i>Calamagrostis canadensis</i>	■		bluejoint reedgrass
	<i>Carex concinna</i>		■	low northern sedge
Mosses	<i>Hylocomium splendens</i>	■■■■■	■■■■■	step moss
	<i>Pleurozium schreberi</i>	■■		red-stemmed feathermoss
	<i>Ptilium crista-castrensis</i>	■■		knight's plume
Lichens	<i>Peltigera</i> spp.		■	pelt lichens

Frequency (%) □ 25-50% ■ 50-70 ■■■ 70-100

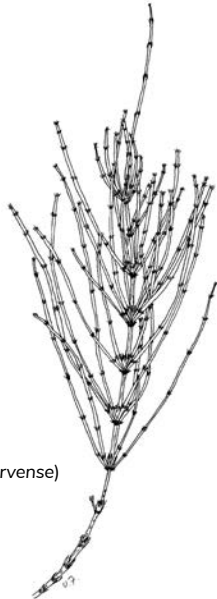
Mean cover (%) ■ &lt;1 ■■■ 1-3 ■■■■■ 10-25 ■■■■■■ &gt;25



**BOLyc/40-SwB28**  
(White spruce – Balsam poplar /  
Step moss)



**BOLyc/40-Sw36**  
(White spruce / Highbush cranberry /  
Horsetail)



Common horsetail (*Equisetum arvense*)

## BOLyc/41

## B – Horsetail riparian forest

## General description

The B – Horsetail riparian forest is a mid-bench floodplain ecosite found on fluvial parent materials.

Stands have a well-developed canopy dominated by young to maturing balsam poplar (*Populus balsamifera*), often with a component of white spruce (*Picea glauca*). A variety of shrubs are found on these sites: river alder (*Alnus incana*), willows (*Salix* spp.), prickly rose (*Rosa acicularis*), and highbush cranberry (*Viburnum edule*) may be abundant. Horsetails (*Equisetum arvense*, possibly *E. pratense*) are characteristic of these floodplain ecosites but may be sparse. Moss cover is sparse or absent due to high leaf litter and/or frequent flooding.

Ecosite 41 sites vary in the frequency of surface flooding and depth of subsurface water. They commonly occur along the banks of larger rivers but may occasionally be found on smaller drainages and have been observed along the Pelly and Yukon Rivers. These sites are generally moister than the Sw – Horsetail riparian forest, with more frequent flooding. Soils are typically sandy to loamy in texture and classified as Regosols. Sites usually have a rich to very rich nutrient regime due to flood deposition, decomposition of leaf litter, and/or subsurface seepage.

## Comments

Ecosite 41 can be differentiated from other moist, nutrient-medium to rich ecosites as follows:

- Ecosite 40 also occurs along river floodplains but occurs on slightly higher benches with less influence by subsurface water or flooding. Forest stands are dominated by white spruce.
- Ecosite 31 sites are sometimes on fluvial parent materials, but the sites are not influenced by flooding or subsurface water and lack balsam poplar. White spruce, red bearberry, and dwarf scouring-rush are common.

Edatopic Grid

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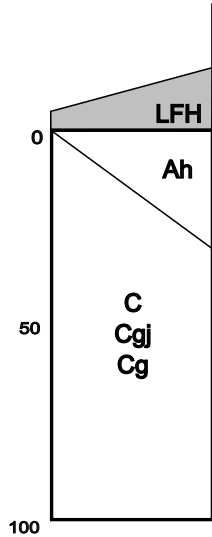
BOLyc/41-SwB29

(White spruce – Balsam poplar /  
Highbush cranberry / Horsetail)

**Site and soils**

**Site and soil characteristics**

<b>Plots in unit</b>	<b>5</b> (2 detailed soils information)
Moisture regime	subhygric (5)
Nutrient regime	rich, very rich (D, E)
Meso slope position	level
Aspect	none
Slope gradient	level
Surficial material	fluvial
Soil texture	loamy sand, sand, silt loam
Soil classification	Regosols
Humus form	mor, moder
Humus depth	2 – 6 cm
Soil drainage	moderately well- to well
Seepage / water table	mottles at depth
Permafrost	none
Site disturbance	flooding



**Vegetation summary**

The following vegetation associations characterize the variation in species composition for ecosite 41.

**B22** Balsam poplar / River alder – Red-osier dogwood / Horsetail

**SwB29** White spruce – Balsam poplar / Highbush cranberry / Horsetail

BOLyc/41 Vegetation table

Layer	Vegetation association No. of plots	B22 1	SwB29 5	English name
Trees	<i>Picea glauca</i>	■ ■ ■ ■ ■	■ ■ ■ ■ ■	white spruce
	<i>Populus balsamifera</i>	■ ■ ■ ■ ■	■ ■ ■ ■ ■	balsam poplar
Shrubs	<i>Alnus incana</i>	■ ■ ■	□ □	river alder
	<i>Alnus alnobetula</i>	■ ■ ■ ■ ■	■ ■	green alder
	<i>Cornus sericea</i>	■ ■ ■ ■ ■	□ □	red-osier dogwood
	<i>Picea glauca</i>	■ ■ ■ ■ ■		white spruce
	<i>Populus balsamifera</i>	■ ■ ■ ■ ■	■ ■ ■ ■ ■	balsam poplar
	<i>Rosa acicularis</i>	■ ■ ■ ■ ■	■ ■	prickly rose
	<i>Salix spp.</i>	■ ■ ■ ■ ■	■ ■	willows
	<i>Viburnum edule</i>	■ ■ ■ ■ ■	■ ■ ■ ■ ■	highbush cranberry
Forbs	<i>Artemisia tylesii</i>	■ ■		Tilesius' wormwood
	<i>Chamaenerion angustifolium</i>	■ ■ ■ ■ ■	■ ■	fireweed
	<i>Equisetum arvense</i>	■ ■ ■ ■ ■	■ ■ ■ ■ ■	common horsetail
	<i>Eurybia sibirica</i>	■ ■ ■ ■ ■		Siberian aster
	<i>Fragaria virginiana</i>	■ ■ ■ ■ ■	□	wild strawberry
	<i>Galium boreale</i>	■ ■ ■ ■ ■	□	northern bedstraw
	<i>Geocalium lividum</i>	■ ■ ■ ■ ■	■ ■ ■ ■ ■	bastard toadflax
	<i>Hedysarum alpinum</i>	■ ■ ■ ■ ■		alpine hedsarum
	<i>Mertensia paniculata</i>	■ ■ ■ ■ ■	■ ■	tall bluebells
	Graminoids	■ ■ ■ ■ ■		bluejoint reedgrass
Mosses	■ ■ ■ ■ ■		sickle-moss	

Frequency (%) □ 25-50% ■ 50-70 ■ 70-100 | Mean cover (%) ■ <1 ■ 1-3 ■ 10-25 ■ >25



**BOLyc/41-SwB29**

(White spruce – Balsam poplar /  
Highbush cranberry / Horsetail)



Balsam poplar (*Populus balsamifera*)



Red-osier dogwood (*Cornus sericea*)

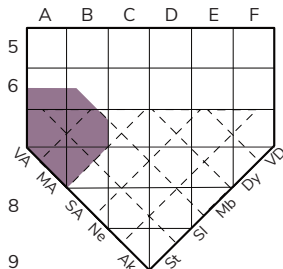
## Bog Ecosites

### BOLyc/B03

### Sb – Labrador tea – Peat moss bog

#### General description

The Sb – Labrador tea – Peat moss bog is a common bog ecosystem that develops primarily on more than 40 cm of poorly decomposed peat, with permafrost starting at 20–55 cm in depth. Soils are usually organic Cryosols. Sites are level or nearly so and occur in wetland complexes on sites that are slightly raised above other wetlands.



#### Vegetation summary

The following vegetation associations characterize the species composition on this ecosite.

**Sb41** Black spruce / Labrador tea / Sedge / Peat moss

**Sb43** Black spruce / Labrador tea / Feathermoss – Peat moss

**Sb44** Black spruce / Labrador tea / Cloudberry – Lowbush cranberry / Peat moss

#### BOLyc/B03 Vegetation table

Layer	Vegetation association No. of plots	Sb41 1	Sb43 5	Sb44	English name
Trees	<i>Picea mariana</i>	■■■■	■■■■	■■■■	black spruce
Shrubs	<i>Salix</i> spp.	■■■■	■■■■	□□	willows
	<i>Rhododendron</i> spp.	■■■■■	■■■■■	■■■■■	Labrador teas
	<i>Betula glandulosa</i>		■■■	■■■	shrub birch
	<i>Vaccinium uliginosum</i>	■■■	■■■	■■	blueberry
Ground shrubs	<i>Empetrum nigrum</i>	■■■■	■■	■■■	crowberry
	<i>Rubus chamaemorus</i>	■■■	■■■■■	■■■■■	cloudberry
	<i>Vaccinium oxycoccus</i>	■■	■	■■	bog cranberry
	<i>Vaccinium vitis-idaea</i>	■■■	■■■	■■■	lowbush cranberry
Graminoids	<i>Carex</i> spp.	■■■■			sedges
	<i>Hylocomium</i> / <i>Pleurozium</i>	■■■	■■■■■	■■■	feathermosses
Mosses	<i>Sphagnum</i> spp.	■■■■■	■■■■	■■■■■	peat mosses
Lichens	<i>Cladina</i> spp.	■■■■	■■■■	■■■■	reindeer lichens

Frequency (%) □ 25-50% ■ 50-70 ■■■ 70-100

Mean cover (%) ■ <1 ■■■ 1-3 ■■■■■ 10-25 ■■■■■■ >25



**BOLyc/B03-Sb41**

(Black spruce / Labrador tea / Sedge /  
Peat moss)



**BOLyc/B03-Sb43**

(Black spruce / Labrador tea /  
Feathermoss – Peat moss)



**BOLyc/B03-Sb44**

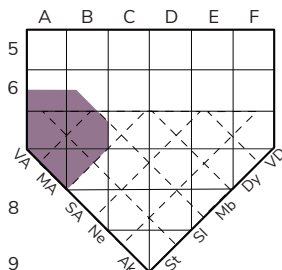
(Black spruce / Labrador tea / Cloudberry – Lowbush  
cranberry / Peat moss)

**BOLyc/B04**

**Sb – Lichen bog**

**General description**

The Sb – Lichen bog is a common permafrost bog. It occurs on hygric or subhydric sites with a poor nutrient regime. Soils are organic with 30–40 cm or more of fibric peat and permafrost at 30–55 cm in depth. Soils are mostly Terric Organic Cryosols, although Static Cryosols also occur.



**Vegetation summary**

The following vegetation associations characterize the species composition on this ecosite.

**Rhto51** Northern Labrador tea / Reindeer lichen – Peat moss

**Sb42** Black spruce / Labrador tea / Reindeer lichen – Peat moss

**BOLyc/B04** Vegetation table

Layer	Vegetation association No. of plots	Rhto51 9	Sb42 43	English name
Trees	<i>Picea mariana</i>	■■■	■■■■■	black spruce
Shrubs	<i>Rhododendron</i> spp.	■■■■■	■■■■■	Labrador teas
	<i>Betula glandulosa</i>	■■■	■■■	shrub birch
Ground shrubs	<i>Andromeda polifolia</i>	■	□	bog rosemary
	<i>Rubus chamaemorus</i>	■■■	■■■	cloudberry
	<i>Vaccinium oxycoccus</i>	□	■	bog cranberry
	<i>Vaccinium vitis-idaea</i>	■■	■■■	lowbush cranberry
Mosses	<i>Sphagnum</i> spp.	■■■■■	■■■■■	peat mosses
	<i>Hylocomium/Pleurozium</i>		■■■	feathermosses
Lichens	<i>Cladina</i> spp.	■■■■■	■■■■■	reindeer lichens
	<i>Cladonia</i> spp.	□	■■	cladonia lichens
	<i>Cetraria</i> spp.	□□□	■■	Iceland lichens

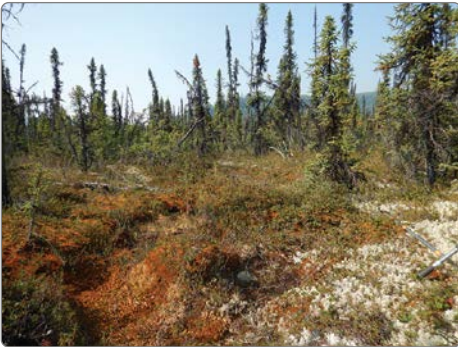
Frequency (%) □ 25-50% ■ 50-70 ■■ 70-100

Mean cover (%) ■ <1 ■■ 1-3 ■■■ 10-25 ■■■■ >25



**BOLyc/B04-Rhto51**

(Northern Labrador tea / Reindeer lichen – Peat moss)



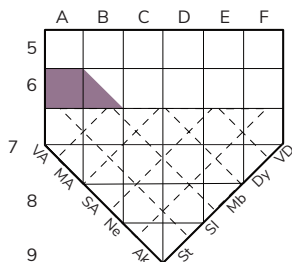
**BOLyc/B04-Sb42**

(Black spruce / Labrador tea / Reindeer lichen – Peat moss)

**BOLyc/B06**      **Sb – Sloping bog**

**General description**

The Sb – Sloping bog occurs on moderate to steep, cool-aspect slopes. Although B06 has vegetation that fits Sb43 in ecosite B03, it occurs on very different site conditions—on slopes instead of level or depressional sites—so it is classified as a separate ecosite. It develops on more than 30–40 cm of poorly decomposed peat, with permafrost usually starting at a depth of 40–50 cm. Soils are usually Terric Organic Cryosols with shallow, fibric organic material.



**Vegetation summary**

The following vegetation association characterizes the species composition on this ecosite.

**Sb43s**      Black spruce / Labrador tea / Feathermoss – Peat moss; slope phase

**BOLyc/B06** Vegetation table

Layer	Vegetation association	Sb43s	English name
	No. of plots	14	
Trees	<i>Picea mariana</i>	■■■■■	black spruce
Shrubs	<i>Betula occidentalis</i> .	■■	water birch
	<i>Rhododendron</i> spp.	■■■■■	Labrador teas
	<i>Betula glandulosa</i>	■■■■■	shrub birch
	<i>Vaccinium uliginosum</i>	■■■	blueberry
Ground shrubs	<i>Vaccinium vitis-idaea</i>	■■■	lowbush cranberry
	<i>Empetrum nigrum</i>	■■	crowberry
	<i>Rubus chamaemorus</i>	■■■	cloudberry
	<i>Vaccinium oxycoccos</i>	■	bog cranberry
Mosses	<i>Hylocomium / Pleurozium</i>	■■■■■	feathermosses
	<i>Sphagnum</i> spp.	■■■■■	peat mosses
Lichens	<i>Cladina</i> spp.	■■■■■	reindeer lichens

Frequency (%) □ 25-50% ■ 50-70 ■■ 70-100

Mean cover (%) ■ <1 ■■■ 1-3 ■■■■■ 10-25 ■■■■■■ >25



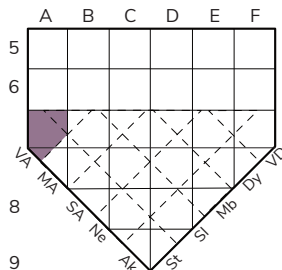
**BOlyc/B06-Sb43s**

(Black spruce / Labrador tea / Feathermoss –  
Peat moss; slope phase)

**BOLyc/B09 Peat moss bog**

**General description**

B09 develops in thermokarst depressions or collapse scars, within peat plateau bogs with abundant ice. The collapse scars are small depressions that are much wetter than the surrounding peat plateau. Soils are composed of greater than 1 metre of loose fibric peat and water and are classified as organic. Because collapse scars are isolated from surrounding water drainage flow, the water pH is commonly 4–4.5.



**Vegetation summary**

The following vegetation association characterizes the species composition on this ecosite.

**Spfu52** Bog rosemary / Brown peat moss

**BOLyc/B09** Vegetation table

Layer	Vegetation association No. of plots	Spfu52	English name
Ground Shrubs	<i>Andromeda polifolia</i>	■■■	bog rosemary
Forbs	<i>Drosera anglica</i>	■■	English sundew
Mosses	<i>Sphagnum</i> spp.	■■■■■	peat mosses

Frequency (%) □ 25-50% ■ 50-70 ■ 70-100

Mean cover (%) ■ <1 ■■■ 1-3 ■■■■■ 10-25 ■■■■■■ >25



**BOLyc/B09-Spfu52**  
(Bog rosemary / Brown peat moss)

## Fen Ecosites

BOLyc/F01

Water sedge fen

### General description

F01 is one of the most common fen ecosystems, occurring on peaty sites where the water table is at, near, or above the ground surface, depending on the season and runoff. Organic layers are variable in depth—greater than 30 cm and often exceeding 100 cm. Soils are often classified as Fibrisols or Mesisols, but soils in the BOLyc are more likely to have permafrost and be classified as Organic Cryosols.

### Comments

- Beaked sedge or water sedge also dominate wetland M01, but it occurs on mineral soils with little to no peat accumulation and usually has a fluctuating water table.

### Vegetation summary

The following vegetation associations display the species composition on this ecosite.

**Caaq55** Water sedge – Beaked sedge

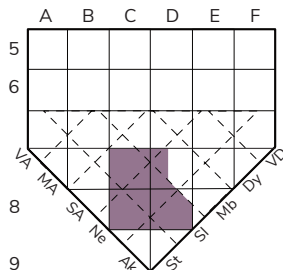
**Caut55** Beaked sedge – Marsh cinquefoil

### BOLyc/F01 Vegetation table

Layer	Vegetation association	Caaq55	Caut55	English name
	No. of plots	110	25	
Forbs	<i>Comarum palustre</i>	□	■ ■ ■	marsh cinquefoil
Graminoids	<i>Carex aquatilis</i>	■ ■ ■ ■ ■	□ □	water sedge
	<i>Carex utriculata</i>		■ ■ ■ ■ ■	beaked sedge
Mosses	<i>Sphagnum</i> spp.	■ ■ ■ ■ ■		peat mosses
	Amblystegiaceae (mostly)	■ ■ ■	■ ■ ■ ■ ■	brown mosses

Frequency (%) □ 25-50% ■ 50-70 ■ 70-100

Mean cover (%) ■ <1 ■ ■ 1-3 ■ ■ ■ ■ 10-25 ■ ■ ■ ■ ■ >25





**BOLyc/F01-Caaq55**  
(Water sedge – Beaked sedge)

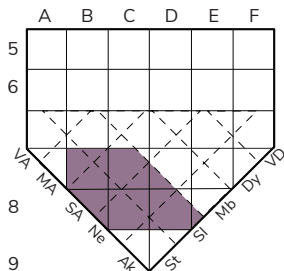


**BOLyc/F01-Caut55**  
(Beaked sedge – Marsh cinquefoil)

**BOLyc/F02 Shrub birch – Water sedge fen**

**General description**

The Shrub birch – Water sedge fen is a common shrub fen. It occurs on cool valley-bottom sites with subhydryc to hydric moisture regimes and poor to rich nutrient regimes. Organic layers are more than 30 cm deep and are often greater than 50 or 100 cm. The poorly to very poorly drained soils are usually classified as Fibrisols or Mesisols, but when frozen within 1–2 metres of the surface, they are classified as Cryosols.



**Vegetation summary**

The following vegetation association displays the species composition on this ecosite.

**Beg150 Shrub birch – Willow / Water sedge**

**BOLyc/F02 Vegetation table**

Layer	Vegetation association	Beg150	English name
	No. of plots	46	
Shrubs	<i>Betula glandulosa</i>	■■■■■	shrub birch
	<i>Salix</i> spp.	■■■	willows
Graminoids	<i>Carex aquatilis</i>	■■■■■	water sedge
Mosses	Amblystegiaceae (mostly)	■■■■■	brown mosses
	<i>Sphagnum</i> spp.	■■■■■	peat mosses

Frequency (%) □ 25-50% ■ 50-70 ■■■ 70-100

Mean cover (%) ■ <1 ■■■ 1-3 ■■■■■ 10-25 ■■■■■■ >25



**BOLyc/F02-Beg150**  
(Shrub birch – Willow / Water sedge)

**BOLyc/F03**

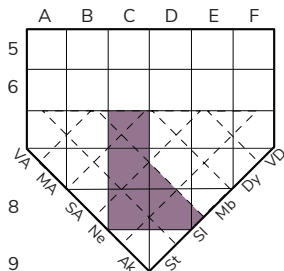
**Willow – Water sedge fen**

**General description**

The Willow – Water sedge fen is a shrub fen that most frequently develops on organic soils. Soils are likely classified as Fibrisols, Mesisols, or Gleysols (with peaty surface horizons) and occasionally Cryosols. Permafrost may be present.

**Comments**

- Ecosite S03 also has a willow shrub overstorey and sedge groundcover but does not have the organic soils that typify F03.



**Vegetation summary**

The following Vegetation associations display the species composition on this ecosite.

**Sasp58** Willow / Water sedge

**Sasp59** Willow / Beaked sedge

**BOLyc/F03** Vegetation table

Layer	Vegetation association No. of plots	Sasp58 44	Sasp59 4	English name
Shrubs	<i>Salix</i> spp.	■■■■■	■■■■■	willows
	<i>Betula glandulosa</i>	■■■	□	shrub birch
	<i>Chamaedaphne calyculata</i>		■■	leatherleaf
Forbs	<i>Comarum palustre</i>		■■■	marsh cinquefoil
	<i>Scheuchzeria palustris</i>		■■	marsh scheuchzeria
Graminoids	<i>Carex aquatilis</i>	■■■■■		water sedge
	<i>Carex utriculata</i>		■■■■■	beaked sedge
Mosses	Amblystegiaceae (mostly)	■■■■■	■■■■■	brown mosses
	<i>Sphagnum</i> spp.	■■■■	□□	peat mosses

Frequency (%) □ 25-50% ■ 50-70 ■ 70-100

Mean cover (%) ■ <1 ■ 1-3 ■ 10-25 ■ >25



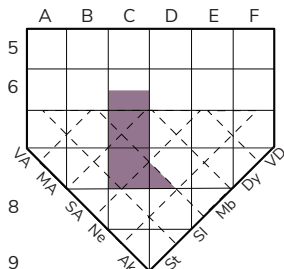
**BOLyc/F03-Sasp58**  
(Willow / Water sedge)



**BOLyc/F03-Sasp59**  
(Willow / Beaked sedge)

**BOLyc/F04****SbSw – Water sedge fen****General description**

The SbSw – Water sedge fen is a treed fen that often occurs in channels between uplands and along the margins of larger wetland complexes. It is found on hygric to subhydric sites with a medium nutrient regime. Parent materials are deep peat or organic veneers over fluvial or lacustrine materials. Soils are organic and classified as Typic or Terric Mesisols and Fbrisols, or sometimes Cryosols or Gleysols. Permafrost is occasionally present.

**Vegetation summary**

The following vegetation associations display the species composition on this ecosite.

- Sb54** Black spruce / Water sedge / Brown moss
- SbSw56** Black spruce – White spruce / Water sedge / Brown moss
- Sw50** White spruce / Labrador tea / Water sedge
- Sw51** White spruce / Shrub birch / Water sedge

### BOLyc/F04 Vegetation table

Layer	Vegetation association No. of plots	Sb54 8	SbSw56 4	Sw50 8	Sw51 13	English name
Trees	<i>Picea mariana</i> <i>Picea glauca</i>	■■■■	■■■■	■■■■	■■■■	black spruce white spruce
Shrubs	<i>Betula glandulosa</i> <i>Salix</i> spp. <i>Salix myrtillifolia</i> <i>Rhododendron groenlandicum</i> <i>Dasiphora fruticosa</i> <i>Vaccinium uliginosum</i>	■■■■	■■■■	■■■■	■■■■	shrub birch willows blueberry willow common Labrador tea shrubby cinquefoil blueberry
Ground shrubs	<i>Arctous rubra</i> <i>Empetrum nigrum</i> <i>Vaccinium vitis-idaea</i>	■■	■■■■	■■■■	■■■■	red bearberry crowberry lowbush cranberry
Forbs	<i>Equisetum arvense</i> <i>Equisetum scirpoides</i> <i>Toffieldia pusilla</i>	□□	■■■■	□□	□	common horsetail dwarf scouring rush small toffieldia
Graminoids	<i>Carex aquatilis</i>	■■■	■■■■	■■■■	■■■■	water sedge
Mosses	<i>Aulacomnium / Tomentypnum</i> <i>Sphagnum</i> spp. <i>Hylocomium splendens</i>	■■■■	■■■■	■■■■	■■■■	brown mosses peat mosses step moss
Lichens	<i>Cladonia</i> spp.	■■	■■■■	■■■■	■■■■	reindeer lichens

Frequency (%) □ 25-50% ■ 50-70 ■ 70-100 | Mean cover (%) ■ <1 ■ 1-3 ■ 3-10 ■ 10-25 ■ 25-50 ■ >25



**BOLyc/F04-Sb54**

(Black spruce / Water sedge /  
Brown moss)



**BOLyc/F04-SbSw56**

(Black spruce – White spruce /  
Water sedge / Brown moss)



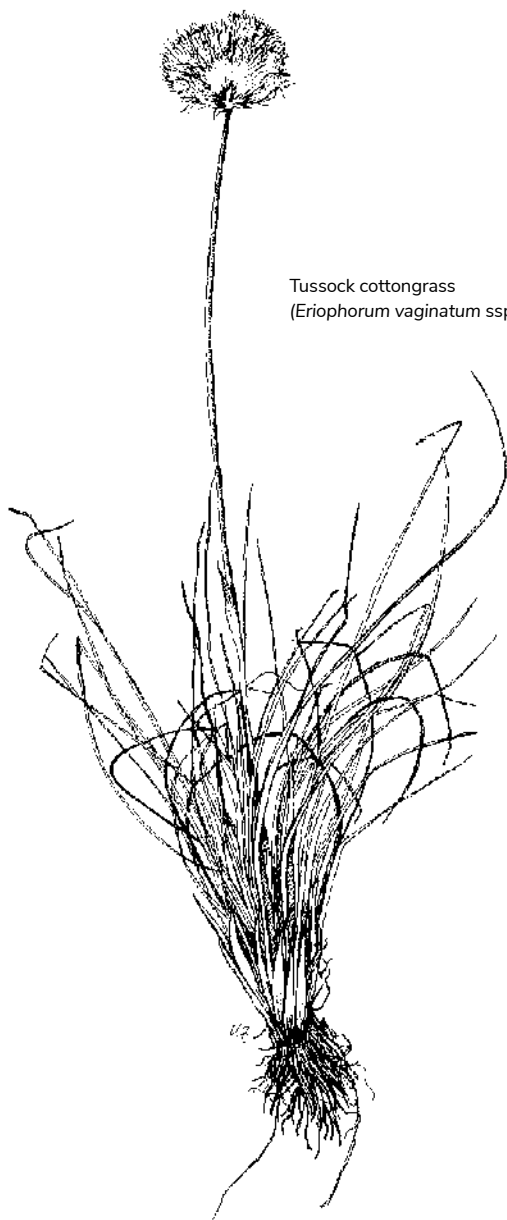
**BOLyc/F04-Sw50**

(White spruce / Labrador tea /  
Water sedge)



**BOLyc/F04-Sw51**

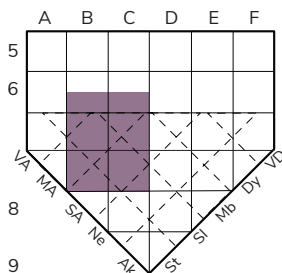
(White spruce / Shrub birch /  
Water sedge)



Tussock cottongrass  
(*Eriophorum vaginatum* ssp. *vaginatum*)

**BOLyc/F05****Sb – Tussock sedge fen****General description**

The Sb – Tussock sedge fen is a treed fen that occurs primarily on level to gently sloping sites with hygric to subhydric moisture regimes, underlain by shallow permafrost. F05 sometimes occurs on moderate to steep slopes on cool aspects. Soils are usually Turbic Cryosols or Organic Cryosols, often consisting of a 30–40 cm (sometimes 20 cm) organic surface horizon over mineral soil, with greater depth under tussocks and less between tussocks, although deeper peat is also found. The active layer is usually about the same depth, with seepage often present on top of the permafrost, sometimes reaching the surface. Seepage often increases during and following precipitation events.

**Vegetation summary**

The following vegetation associations display the species composition on this ecosite.

- Sb50**      Black spruce / Spruce muskeg sedge
- Sb51**      Black spruce / Shrub birch / Spruce muskeg sedge
- Sb52**      Black spruce / Leatherleaf / Spruce muskeg sedge
- W54**        Alaska birch / Leatherleaf / Spruce muskeg sedge
- Sb56**      Black spruce / Close-sheathed cottongrass
- Sb55**      Black spruce / Tussock cottongrass
- SbSw55**   Black spruce – White spruce / Leatherleaf /  
Tussock cottongrass
- SbW50**    Black spruce – Alaska birch / Tussock cottongrass
- W55**        Alaska birch / Leatherleaf / Tussock cottongrass

BOLyc/F05 Vegetation table

Layer	Vegetation association	Sb50	Sb51	Sb52	Sb56	Sb55	SbSw55	SbW50	W54	W55	English name
	No. of plots	36	17	7	5	36	3	7	3	2	
Trees	<i>Picea mariana</i>	■■■■■	■■■■■	■■■■■	■■■■■	■■■■■	■■■■■	■■■■■	■■■■■	■■■■■	black spruce
	<i>Picea glauca</i>	□□□	□□□	□□□	□□□	■■■■■	■■■■■	■■■■■	■■■■■	■	white spruce
Shrubs	<i>Betula neolaskana</i>		□	□	□□		□	■■■■■	■■■■■	■■■■■	Alaska birch
	<i>Betula glandulosa</i>	■	■■■■■	■■■■■	■■■■■	■■■■■	■■■■■	□□	□□	■■■■■	shrub birch
	<i>Rhododendron</i> spp.	■■■■■	■■■■■	■■■■■	■■■■■	■■■■■	■■■■■	■■■■■	■■■■■	■■■■■	Labrador teas
	<i>Salix</i> spp.	■■■■■	■■■■■	■■■■■	■■■■■	■■■■■	■■■■■	■■■■■	■■■■■	■■■■■	willows
	<i>Vaccinium uliginosum</i>	■■■■■	■■■■■	■■■■■	■■■■■	■■■■■	■■■■■	■■■■■	■■■■■	■■■■■	blueberry
<i>Chamaedaphne calyculata</i>			■■■■■	■■■■■		■■■■■	□	■■■■■	■■■■■	■■■■■	leatherleaf
Ground shrubs	<i>Arctous rubra</i>	■■■■■	□	□□	■■■■■			■■■■■	■■■■■	■	red bearberry
	<i>Rubus chamaemorus</i>	■	■■■■■	□□	■■■■■	■		■■■■■	■	■■■■■	cloudberry
	<i>Vaccinium oxycoccos</i>	□			■■■■■	□		■		■	bog cranberry
	<i>Vaccinium vitis-idaea</i>	■■■■■	■■■■■	■■■■■	■■■■■	■■■■■	□□□	■■■■■	■■■■■	■■■■■	lowbush cranberry
Graminoids	<i>Carex bigelowii</i> ssp. <i>lugens</i>	■■■■■	■■■■■	■■■■■	■■■■■	■■■■■	■■■■■	■■■■■	■■■■■	■■■■■	spruce muskeg sedge
	<i>Eriophorum brachyantherum</i>				■■■■■						close-sheathed cottongrass
	<i>Eriophorum vaginatum</i>	□□			□□□	■■■■■	■■■■■	■■■■■	■■■■■	■■■■■	tussock cottongrass
Mosses	Poaceae	■	■	■	□□□	□□	□	□	□	■	grasses
	<i>Aulacomnium/Tomentypnum</i>	■■■■■	■■■■■	■■■■■	■■■■■	□□□	□□□	■■■■■	■■■■■	■	brown mosses
	<i>Sphagnum</i> spp.	■■■■■	■■■■■	■■■■■	■■■■■	■■■■■	■	■■■■■	□□□	■■■■■	peat mosses
Lichens	<i>Hylocomium/Pleurozium</i>	■■■■■	■■■■■	■■■■■	■■■■■	■■■■■	■■■■■	■■■■■	■■■■■	■■■■■	feathermosses
	<i>Cladonia</i> spp.	■■■■■	■■■■■	□	□	■■■■■		■■■■■			reindeer lichens

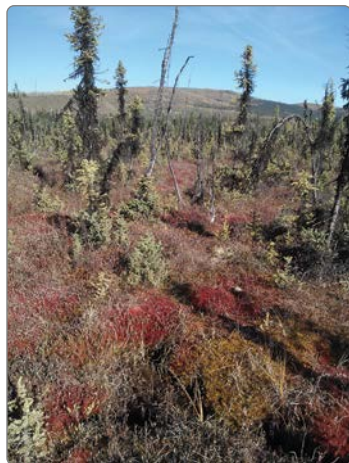
Frequency (%) □25-50% ■50-70 ■70-100 | Mean cover (%) ■<1 ■1-3 ■10-25 ■>25



**BOLyc/F05-Sb50**  
(Black spruce / Spruce muskeg sedge)



**BOLyc/F05-Sb51**  
(Black spruce / Shrub birch /  
Spruce muskeg sedge)



**BOLyc/F05-Sb52**  
(Black spruce / Leatherleaf /  
Spruce muskeg sedge)



**BOLyc/F05-W54**  
(Alaska birch / Leatherleaf /  
Spruce muskeg sedge)



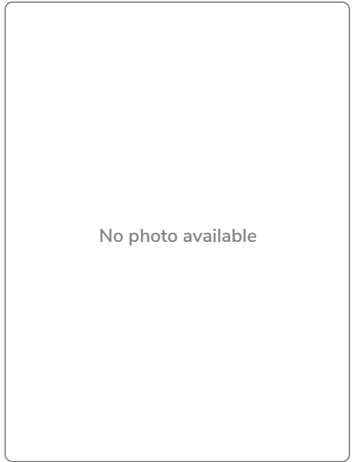
**BOLyc/F05-Sb56**  
(Black spruce / Close-sheathed cottongrass)




**BOLyc/F05-Sb55**  
(Black spruce / Tussock cottongrass)



**BOLyc/F05-SbSw55**  
(Black spruce – White spruce /  
Leatherleaf / Tussock cottongrass)



**BOLyc/F05-SbW50**  
(Black spruce – Alaska birch /  
Tussock cottongrass)



No photo available

**BOLyc/F05-W55**

(Alaska birch / Leatherleaf / Tussock cottongrass)

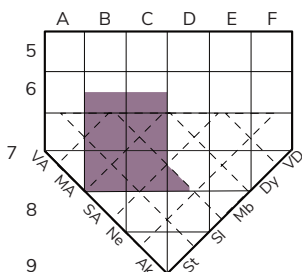


Tilesius' wormwood (*Artemisia tilesii*)

**BOLyc/F06****Shrub birch – Tussock sedge fen****General description**

The Shrub birch – Tussock sedge fen is a shrub fen. F06 occurs mostly on level or gently to moderately sloped, hygric to subhygric sites with poor to very poor drainage. Permafrost is always present, usually within 25–40 cm of the ground surface. Soils are Turbic, Static, or Organic Cryosols with peat at shallow to moderate depths (usually 30–60 cm but sometimes deeper) overlying silty reworked loess or fluvial deposits.

F06 may occupy the centre of a wetland surrounded by F05.

**Vegetation summary**

The following vegetation associations display the species composition on this ecosite.

- Begl51** Shrub birch / Tussock cottongrass / Peat moss
- Begl52** Shrub birch / Spruce muskeg sedge
- Begl53** Shrub birch – Leatherleaf / Spruce muskeg sedge
- Begl54** Shrub birch / Spruce muskeg sedge –  
Bluejoint reedgrass
- Sasp56** Willow / Tussock cottongrass
- Sasp57** Willow / Spruce muskeg sedge

BOLyc/F06 Vegetation table

Layer	Vegetation association No. of plots	Beg151	Sasp56	Beg152	Sasp57	Beg154	Beg153	English name
Trees		33	3	27	5	5	5	
	<i>Picea mariana</i>	□	■	■		□	■	black spruce
Shrubs								
	<i>Betula glandulosa</i>	■	■	■	■	■	■	shrub birch
	<i>Salix</i> spp.	■	■	■	■	■	■	willows
	<i>Chamaedaphne calyculata</i>		□					leatherleaf
	<i>Rhododendron</i> spp.	■	■	■	□		□	Labrador teas
	<i>Vaccinium uliginosum</i>	□	□	■	□		■	blueberry
Ground shrubs								
	<i>Rubus chamaemorus</i>	■	□	□			■	cloudberry
	<i>Vaccinium vitis-idaea</i>	■	■	■				lowbush cranberry
	<i>Vaccinium oxycoccos</i>	□	□				■	bog cranberry
Graminoids								
	<i>Calamagrostis canadensis</i>		□	□	□	■	■	bluejoint reedgrass
	<i>Carex bigelowii</i> ssp. <i>lugens</i>	□	■	■	■	■	■	spruce muskeg sedge
	<i>Eriophorum vaginatum</i>	■	■	■	■	■	■	tussock cottongrass
Mosses								
	<i>Sphagnum</i> spp.	■	■	■	■		■	peat mosses
	Amblystegiaceae (mostly)		■		□		□	brown mosses
	<i>Hylocomium</i> / <i>Pleurozium</i>	■	■	■	□	□	□	feathermosses
Lichens								
	<i>Cladonia</i> spp.	■	■	■				reindeer lichens

Note: gold cells highlight key diagnostic species Frequency (%) □ 25-50% ■ 50-70 ■ 70-100 | Mean cover (%) ■ <1 ■ 1-3 ■ 10-25 ■ >25



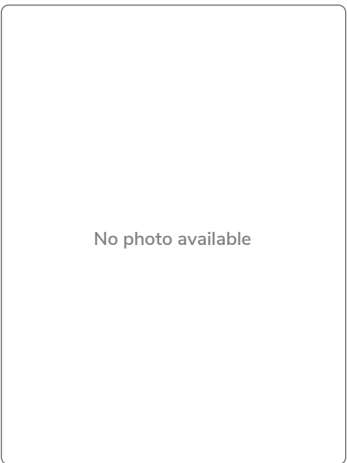
**BOLyc/F06-Beg151**  
(Shrub birch / Tussock cottongrass /  
Peat moss)



**BOLyc/F06-Beg152**  
(Shrub birch / Spruce muskeg sedge)



**BOLyc/F06-Beg153**  
(Shrub birch – Leatherleaf /  
Spruce muskeg sedge)



**BOLyc/F06-Beg154**  
(Shrub birch / Spruce muskeg sedge –  
Bluejoint reedgrass)



**BOLyc/F06-Sasp56**  
(Willow / Tussock cottongrass)

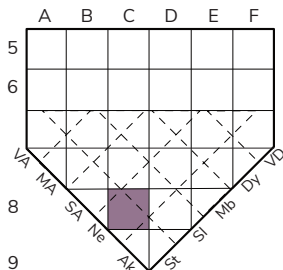


**BOLyc/F06-Sasp57**  
(Willow / Spruce muskeg sedge)

**BOLyc/F13 Water horsetail – Sedge fen**

**General description**

The Water horsetail – Sedge fen is a graminoid fen that occurs on hydric, nutrient-medium sites. The surface organic layer is greater than 30 cm, usually more than 40 cm; rooting appears to be primarily within the organic horizons. Soils are classified as Mesisols, Fibrisols, or peaty Gleysols.



**Comments**

- Water horsetail is also a dominant plant in M02, but M02 sites are on mineral soils, whereas F13 is on peaty (organic) soils.

**Vegetation summary**

The following vegetation association displays the species composition on this ecosite.

**Eqf156 Water horsetail – Sedge**

**BOLyc/F13 Vegetation table**

Layer	Vegetation association No. of plots	Eqf156 10	English name
Forbs	<i>Equisetum fluviatile</i>	■■■■■	water horsetail
Graminoids	<i>Carex aquatilis / utriculata</i>	■■■	water / beaked sedge

Frequency (%) □ 25-50% ■ 50-70 ■ 70-100  
 Mean cover (%) ■ <1 ■ 1-3 ■ 10-25 ■ >25

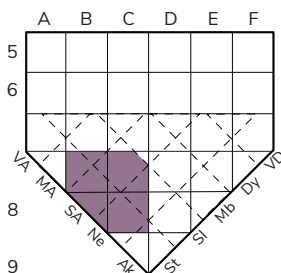


**BOLyc/F13-Eqfl56**  
(Water horsetail – Sedge)

**BOLyc/F15** Mud sedge – Bog buckbean fen

**General description**

The Mud sedge – Bog buckbean fen ecosite is a graminoid fen that occurs on subhydic to hydric sites, often in thermokarst depressions surrounded by peat plateau, with medium to poor nutrient status. The water table is usually at or close to the surface. Soils are usually classified as Fibrisols, and occasionally Organic Cryosols.



**Vegetation summary**

The following vegetation association displays the species composition on this ecosite

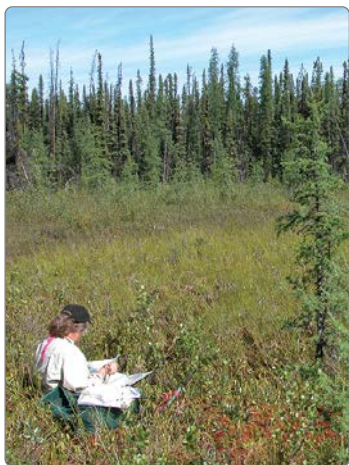
- Cali58** Mud sedge / Peat moss
- Metr55** Buckbean – Mud sedge
- Scpa55** Marsh scheuchzeria – Mud sedge

BOLyc/F15 Vegetation table

Layer	Vegetation association	Cali58	Metr55	Scpa55	English name
	No. of plots	49	21	3	
Forbs	<i>Menyanthes trifoliata</i>	■■■	■■■■■	■■	bog buckbean
	<i>Scheuchzeria palustris</i>			■■■■■	marsh scheuchzeria
Graminoids	<i>Carex limosa</i>	■■■■	■■■	■■■■	mud sedge
	<i>Carex aquatilis</i>	■■■	■■■	□	water sedge
Mosses	<i>Sphagnum</i> spp.	■■■■	□□□□		peat mosses

Frequency (%) □ 25-50% ■ 50-70 ■ 70-100

Mean cover (%) ■ <1 ■■■ 1-3 ■■■■ 10-25 ■■■■■ >25



**BOLyc/F15-Cali58**  
(Mud sedge / Peat moss)



**BOLyc/F15-Metr55**  
(Buckbean – Mud sedge)



**BOLyc/F15-Scpa55**  
(Marsh scheuchzeria – Mud sedge)

## BOLyc/F17

## Peat moss fen

## General description

F17 is a mossy fen that occurs in thermokarst depressions and oxbows, where the peat mat is often “floating.” Permafrost is likely present at depth, although not within 100 cm of the surface.

## Vegetation summary

The following vegetation association displays the species composition on this ecosite.

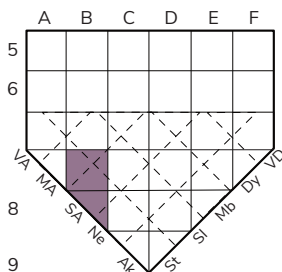
## Spha57 Peat moss

## BOLyc/F17 Vegetation table

Layer	Vegetation association	Spha57	English name
	No. of plots	9	
Ground shrubs	<i>Vaccinium oxycoccos</i>	■	bog cranberry
Graminoids	<i>Carex</i> spp.	■■■	sedges
	<i>Eriophorum</i> spp.	■■	cottongrasses
Mosses	<i>Sphagnum</i> spp.	■■■■■	peat mosses

Frequency (%) □ 25-50% ■ 50-70 ■ 70-100

Mean cover (%) ■ <1 ■■ 1-3 ■■■ 10-25 ■■■■■ >25





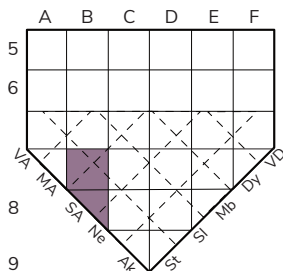
**BOLyc/F17-Spha57**  
(Peat moss)

## BOLyc/F18

## Russet cottongrass fen

## General description

F18 is a graminoid fen that occurs in thermokarst depressions, as shore fens, and in patterned fens.



## Vegetation summary

The following vegetation association displays the species composition on this ecosite.

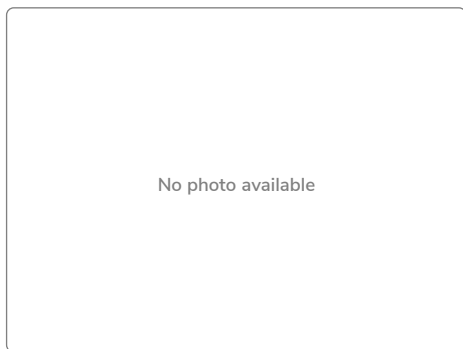
**Erru55** Russet cottongrass / Peat moss

## BOLyc/F18 Vegetation table

Layer	Vegetation association No. of plots	Spha57	English name
Shrubs	<i>Chamaedaphne calyculata</i>	■ ■	leatherleaf
Ground shrubs	<i>Andromeda polifolia</i>	■ ■	bog rosemary
	<i>Vaccinium oxycoccos</i>	■	bog cranberry
Graminoids	<i>Eriophorum russeolum</i>	■ ■ ■ ■	russet cottongrass
	<i>Carex aquatilis</i>	■ ■	water sedge
Mosses	<i>Sphagnum</i> spp.	■ ■ ■ ■ ■	peat mosses

Frequency (%) □ 25-50% ■ 50-70 ■ 70-100

Mean cover (%) ■ <1 ■ ■ 1-3 ■ ■ ■ ■ 10-25 ■ ■ ■ ■ ■ >25



**BOLyc/F18-Erru55**  
(Russet cottongrass / Peat moss)

## BOLyc/F20

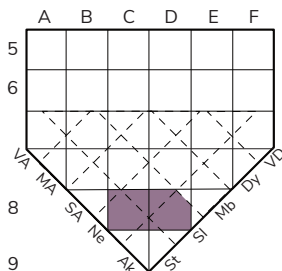
## Wild calla fen

## General description

The Wild calla fen is a graminoid fen that occurs in thermokarst depressions and along shorelines.

## Vegetation summary

The following vegetation association displays the species composition on this ecosite.



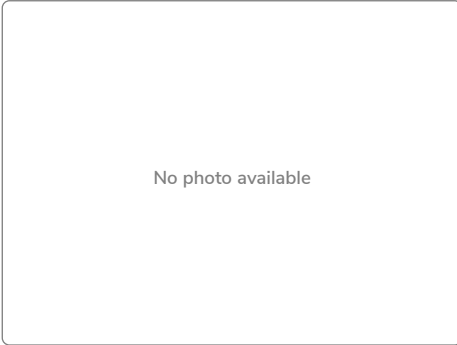
## Capa59 Wild calla – Marsh cinquefoil

## BOLyc/F20 Vegetation table

Layer	Vegetation association No. of plots	Capa59	English name
Forbs	<i>Calla palustris</i>	■ ■ ■ ■ ■	wild calla
	<i>Comarum palustre</i>	■ ■ ■ ■ ■	marsh cinquefoil
	<i>Cicuta bulbifera</i>	■	bulbous water-hemlock
	<i>Hippuris vulgaris</i>	■	common mare's-tail
Graminoids	<i>Carex aquatilis</i>	■ ■ ■ ■	water sedge
	<i>Carex utriculata</i>	■ ■ ■ ■	beaked sedge
Mosses	<i>Sphagnum</i> spp.	■ ■ ■ ■	peat mosses

Frequency (%) □ 25-50% ■ 50-70 ■ 70-100

Mean cover (%) ■ <1 ■ ■ 1-3 ■ ■ ■ 10-25 ■ ■ ■ ■ ■ >25



**BOLyc/F20-Capa59**  
(Wild calla – Marsh cinquefoil)

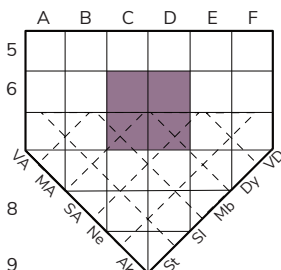
## Swamp Ecosites

**BOLyc/S01**

**Willow – Bluejoint swamp**

### General description

The Willow – Bluejoint swamp ecosite is associated with poorly drained, loamy or sandier fluvial soils on lower-bench fluvial sites, but it also occurs on disturbed sites, both natural and anthropogenic. The variable loamy or sandy soils are often flooded and are classified as Gleysols, Cryosols, and rarely Organic.



### Vegetation summary

The following vegetation association displays the species composition on this ecosite.

**Sasp50** Willow / Bluejoint reedgrass

**Sasp52** Willow / Grass

### BOLyc/S01 Vegetation table

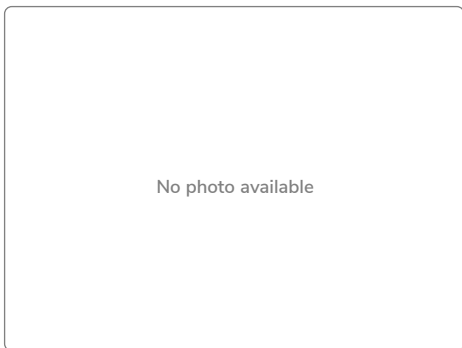
Layer	Vegetation association No. of plots	Sasp50 33	Sasp52 8	English name
Shrubs	<i>Salix planifolia</i>	■ ■ ■ ■ ■	□ □	tea-leaved willow
	<i>Salix</i> spp.	■ ■ ■ ■ ■	■ ■ ■ ■ ■	willows
Graminoids	<i>Calamagrostis canadensis</i>	■ ■ ■ ■ ■		bluejoint reedgrass
	Poaceae		■ ■ ■ ■ ■	grasses
Mosses	Bryophyta	■ ■ ■ ■ ■	■ ■ ■ ■ ■	mosses

Frequency (%) □ 25-50% ■ 50-70 ■ 70-100

Mean cover (%) ■ <1 ■ ■ 1-3 ■ ■ ■ ■ 10-25 ■ ■ ■ ■ ■ >25



**BOLyc/S01-Sasp50**  
(Willow / Bluejoint reedgrass)



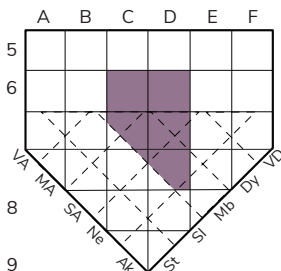
**BOLyc/S01-Sasp52**  
(Willow / Grass)

**BOLyc/S03**

**Willow – Water sedge swamp**

**General description**

The Willow – Water sedge swamp is a commonly occurring swamp that occurs along smaller creeks and drainages. The water table is usually close to the surface, sometimes at the surface and flooding is common. Soils are Gleysols, Regosols, and sometimes Cryosols. A higher moss cover is often associated with near-surface permafrost and Cryosolic soils.



**Vegetation summary**

The following vegetation association displays the species composition on this ecosite.

- Sapl57** Tea-leaved willow / Water sedge
- Saba57** Barclay's willow / Water sedge
- Sagl57** Grey-leaved willow / Water sedge
- Sasp60** Willow / Water sedge

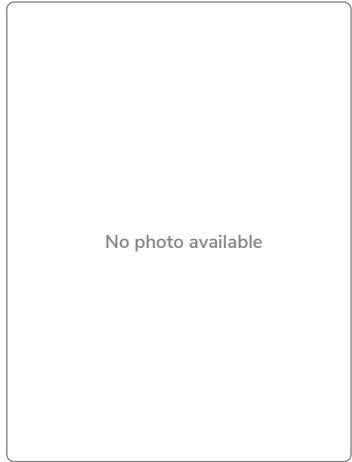
**BOLyc/S03 Vegetation table**

Layer	Vegetation association	Saba57	Sagl57	Sapl57	Sasp60	English name
	No. of plots	9	8	36	26	
Shrubs	<i>Salix barclayi</i>	■■■■■				Barclay's willow
	<i>Salix glauca</i>	□	■■■■■			grey-leaved willow
	<i>Salix planifolia</i>		■■	■■■■■		tea-leaved willow
	<i>Salix</i> spp.	□□□			■■■■■	willows
Forbs	<i>Comarum palustre</i>	□□	□	■■■	□□□	marsh cinquefoil
Graminoids	<i>Carex aquatilis / utriculata</i>	■■■■■	■■■■■	■■■■■	■■■■■	water / beaked sedge
Mosses	<i>Bryophyta</i>	■■■■■	■■■■■	■■■■■	■■■■■	mosses

Frequency (%) □ 25-50% ■ 50-70 ■ 70-100  
 Mean cover (%) ■ <1 ■■ 1-3 ■■■ 10-25 ■■■■■ >25



**BOLyc/S03-SapI57**  
(Tea-leaved willow / Water sedge)



**BOLyc/S03-Saba57**  
(Barclay's willow / Water sedge)



**BOLyc/S03-SagI57**  
(Grey-leaved willow / Water sedge)

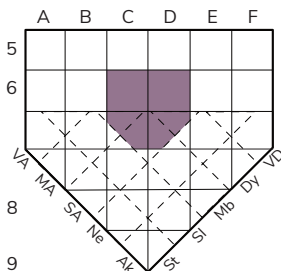


**BOLyc/S03-Sasp60**  
(Willow / Water sedge)

**BOLyc/S05 Willow – Shrub birch – Water sedge swamp**

**General description**

The Willow – Shrub birch – Water sedge swamp occurs on a variety of parent materials. The texture of the rooting zone can vary from fine loamy to sandy and gravelly soils under a peaty surface layer 0–40 cm deep. Soils are usually classified as Gleysols.



**Vegetation summary**

The following vegetation association displays the species composition on this ecosite.

- Begl62** Shrub birch – Willow / Water sedge
- Sasp65** Willow – Shrub birch / Water sedge / Brown moss
- Sasp67** Willow – Shrub birch / Water sedge / Peat moss

BOLyc/S05 Vegetation table

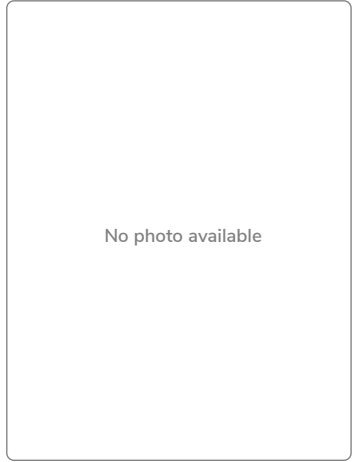
Layer	Vegetation association	Begl62	Sasp65	Sasp67	English name
	No. of plots	5	7	5	
Trees	<i>Picea glauca</i>	■	■■	□	white spruce
Shrubs	<i>Betula glandulosa</i>	■■■■■	■■■■■	■■■■■	shrub birch
	<i>Salix</i> spp.	■■■■■	■■■■■	■■■■■	willows
	<i>Dasiphora fruticosa</i>	■■■	□□□		shrubby cinquefoil
	<i>Vaccinium uliginosum</i>	■■■		■■■■■	blueberry
	<i>Salix planifolia</i>	□		□□□	tea-leaved willow
Ground shrubs	<i>Rubus arcticus</i>	□	■■	□□	arctic raspberry
	<i>Rubus chamaemorus</i>			■■	cloudberry
Forbs	<i>Comarum palustre</i>		■	□□	marsh cinquefoil
Graminoids	<i>Carex aquatilis</i>	■■■	■■■■■	□□□	water sedge
	<i>Carex</i> spp.	■■■■■		■■■■■	sedges
Mosses	Bryophyta	□□□	■■■■■	■■■	mosses
	Amblystegiaceae	□□	■■■	■■■	brown mosses
	<i>Sphagnum</i> spp.	□□□	□□	■■■■■	peat mosses

Frequency (%) □ 25-50% ■ 50-70 ■ 70-100

Mean cover (%) ■ <1 ■■■ 1-3 ■■■■■ 10-25 ■■■■■■ >25



**BOLyc/S05-Begl62**  
(Shrub birch – Willow / Water sedge)



No photo available

**BOLyc/S05-Sasp65**  
(Willow – Shrub birch / Water sedge /  
Brown moss)



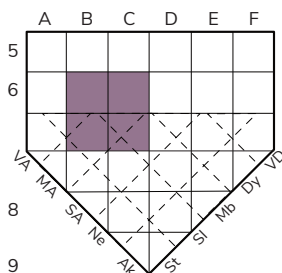
No photo available

**BOLyc/S05-Sasp67**  
(Willow – Shrub birch / Water sedge / Peat moss)

## BOLyc/S07

Sb – Labrador tea – Blueberry –  
Peat moss swamp**General description**

Sb – Labrador tea – Blueberry – Peat moss swamp is a common wetland ecosite of nutrient-poor to mesotrophic sites on level terraces and on gentle to moderate slopes at low to middle elevations. Shallow fibric to mesic peat develops on a variety of parent materials. Permafrost is usually found within 50–60 cm of the surface and soils are classified as Turbic or Static Cryosols, and occasionally as Gleysols or Organic Cryosols.

**Vegetation summary**

The following vegetation association displays the species composition on this ecosite.

- Sb34** Black spruce / Labrador tea / Lowbush cranberry / Feathermoss – Peat moss
- Sb36** Black spruce / Labrador tea / Lowbush cranberry / Reindeer lichen – Peat moss
- SbW35** Black spruce – Alaska birch / Labrador tea / Feathermoss – Peat moss

BOLyc/S07 Vegetation table

Layer	Vegetation association No. of plots	Sb34 23	Sb36 21	SbW35 2	English name
Trees	<i>Picea mariana</i> <i>Betula neoalaskana</i>	■■■■	■■■■■■	■■■■	black spruce Alaska birch
Shrubs	<i>Rhododendron groenlandicum</i> <i>Rhododendron tomentosum</i> <i>Betula glandulosa</i> <i>Vaccinium uliginosum</i> <i>Salix</i> spp.	■■■■ □□□ ■■■■ ■■■■ ■■■■	■■■■ ■■■■ ■■■■ ■■■■ □□	■■■■ ■■■■ ■■■■ ■■■■ ■■■■	common Labrador tea northern Labrador tea shrub birch blueberry willows
Ground shrubs	<i>Vaccinium vitis-idaea</i> <i>Empetrum nigrum</i> <i>Rubus chamaemorus</i> <i>Vaccinium oxycoccos</i>	■■■■ ■■■■ ■■■■ ■	■■■■ ■■■■ ■■■■ □	■■■■ ■■■■ ■■■■ ■	lowbush cranberry crowberry cloudberry bog cranberry
Forbs	<i>Petasites frigidus</i> <i>Equisetum sylvaticum</i>	■■ □□□	□ □	■■ ■■	arctic sweet coltsfoot woodland horsetail
Graminoids	<i>Carex bigelowii</i> ssp. <i>lugens</i> / <i>Carex</i> spp.	■■	■■■■	■■	spruce muskeg sedge / sedges
Mosses	<i>Hylocomium splendens</i> <i>Pleurozium schreberi</i> <i>Sphagnum</i> spp. Bryophyta	■■■■ ■■■■ ■■■■ ■■■■	■■■■ ■■■■ ■■■■ □□	■■■■ ■■■■ ■■■■ ■	step moss red-stemmed feathermoss peat mosses other mosses
Lichens	<i>Aulacomnium</i> / <i>Tomentypnum</i> <i>Cladonia</i> spp.	□□□ ■■■	■■■■ ■■■■	■■■ ■■■	brown mosses reindeer lichens

Frequency (%) □ 25-50% ■ 50-70 ■ 70-100 | Mean cover (%) ■ <1 ■ 1-3 ■ 10-25 ■ >25



**BOLyc/S07-Sb34**

(Black spruce / Labrador tea / Lowbush  
cranberry / Feathermoss – Peat moss)



**BOLyc/S07-Sb36**

(Black spruce / Labrador tea / Lowbush  
cranberry / Reindeer lichen – Peat moss)



**BOLyc/S07-SbW35**

(Black spruce – Alaska birch / Labrador tea /  
Feathermoss – Peat moss)



Red bearberry (*Arctous rubra*)

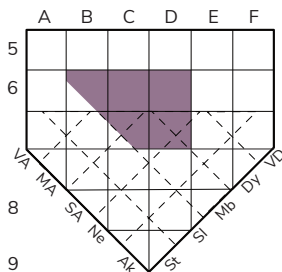
**BOLyc/S08****SbSw – Red bearberry –  
Brown moss swamp****General description**

The SbSw – Red bearberry – Brown moss swamp is a mesotrophic wetland that is common on lower and toe slopes of various aspects, and on level valley floors. The hummocky and mounded surface provides varied habitat for plants. Soils usually consist of more than 15 cm of peat on fine-textured silt and clay loams sometimes overlying gravelly loams.

Acidity (pH) is usually 7 or greater. Soils are most often frozen within 60 cm of the surface but sometimes deeper and are classified as Turbic, Static or Organic Cryosols. Gleysols are common, especially in more southern locations. Seepage is common within the rooting zone.

Acidity (pH) is usually 7 or greater. Soils

are most often frozen within 60 cm of the surface but sometimes deeper and are classified as Turbic, Static or Organic Cryosols. Gleysols are common, especially in more southern locations. Seepage is common within the rooting zone.

**Vegetation summary**

The following vegetation association displays the species composition on this ecosite.

- SbSw32** Black spruce (White spruce) / Red bearberry / Feathermoss – Brown moss
- SbSw38** Black spruce (White spruce) / Labrador tea / Red bearberry / Feathermoss – Brown moss
- Sw32** White spruce / Blueberry willow / Red bearberry / Brown moss

BOLyc/S08 Vegetation table

Layer	Vegetation association No. of plots	SbSw32 10	SbSw38 18	Sw32 10	English name
Trees	<i>Picea glauca</i>	■ ■	■ ■ ■ ■	■ ■ ■ ■ ■ ■	white spruce
	<i>Picea mariana</i>	■ ■ ■ ■	■ ■ ■ ■ ■ ■		black spruce
Shrubs	Rhododendron groenlandicum	■ ■ ■ ■	■ ■ ■ ■ ■ ■	■ ■ ■ ■	common Labrador tea
	<i>Betula glandulosa</i>	■ ■		□	shrub birch
	<i>Dasiphora fruticosa</i>	■	□	■ ■	shrubby cinquefoil
	<i>Salix glauca</i>	■ ■ ■ ■	■ ■	■ ■	grey-leaved willow
	<i>Salix myrtilifolia</i>	■ ■ ■ ■	□ □	■ ■ ■ ■	blueberry willow
	<i>Salix</i> spp.	■ ■ ■ ■	■ ■ ■ ■	■ ■ ■ ■	other willows
	<i>Vaccinium uliginosum</i>	■ ■ ■ ■	□ □		blueberry
Ground Shrubs	<i>Arctous rubra</i>	■ ■ ■ ■	■ ■ ■ ■	■ ■ ■ ■	red bearberry
	<i>Empetrum nigrum</i>	■		□	crowberry
	<i>Vaccinium vitis-idaea</i>	■ ■ ■ ■	■ ■ ■ ■	□ □	lowbush cranberry
Forbs	<i>Equisetum scirpoides</i>	■ ■	□ □	■ ■	dwarf scouring rush
	<i>Equisetum arvense</i>	□	■ ■	□	common horsetail
Graminoids	Poaceae	■ ■	■ ■	■ ■	grasses
Mosses	<i>Hylocomium / Pleurozium</i>	■ ■ ■ ■ ■ ■	■ ■ ■ ■ ■ ■	■ ■ ■ ■ ■ ■	feathermosses
	<i>Aulacomnium / Tomentypnum</i>	■ ■ ■ ■	■ ■ ■ ■	■ ■ ■ ■ ■ ■	brown mosses
	<i>Sphagnum</i> spp.	■ ■	□ □		peat mosses
	<i>Dicranum</i> spp.	□ □	■ ■ ■ ■	■ ■ ■ ■	broom mosses
Lichens	<i>Cladonia</i> spp.	■ ■ ■ ■	■ ■ ■ ■	□ □	reindeer lichens
	<i>Peltigera</i> spp.	■	■ ■	■ ■	pett lichens
Frequency (%) □ 25-50% ■ 50-70 ■ 70-100   Mean cover (%) ■ <1 ■ 1-3 ■ ■ ■ ■ ■ 10-25 ■ ■ ■ ■ ■ >25					



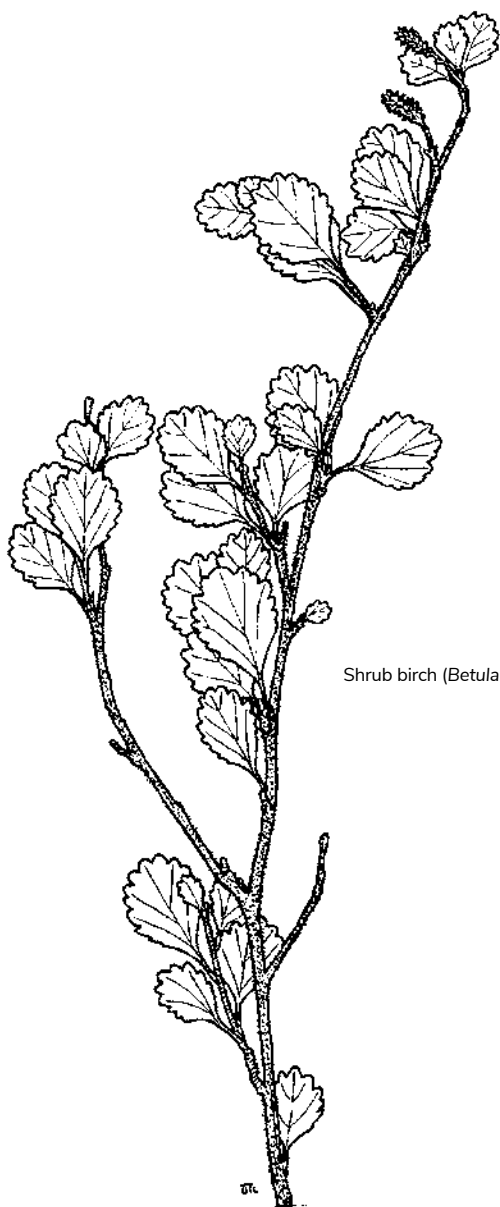
**BOLyc/S08-SbSw32**  
(Black spruce (White spruce) / Red bearberry / Feathermoss – Brown moss)



**BOLyc/S08-SbSw38**  
(Black spruce (White spruce) / Labrador tea / Red bearberry / Feathermoss – Brown moss)



**BOLyc/S08-Sw32**  
(White spruce / Blueberry willow / Red bearberry / Brown moss)

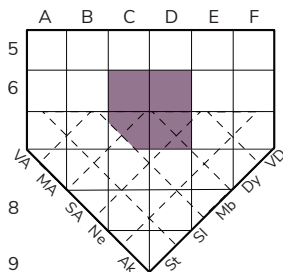


Shrub birch (*Betula glandulosa*)

## BOLyc/S10

**SbSw – Shrub birch – Feathermoss –  
Brown moss swamp****General description**

The SbSw – Shrub birch – Feathermoss – Brown moss swamp occurs on colder sites than many other swamps, located on a range of site positions and parent materials. They may be on cool aspects or be subject to cold air drainage, frost, or wind exposure. Sites are nutrient-medium, and hygic to subhygic. Seepage may be present. Soils often consist of clay and silt loams covered with 10–60 cm of peat which can make them slow to warm up during the summer, thus helping to create the colder site conditions. Soils are usually classified as Gleysols and Cryosols. Permafrost is likely present at depth on most sites.

**Vegetation summary**

The following vegetation association displays the species composition on this ecosite.

**SbSw41** Black spruce – White spruce / Shrub birch /  
Feathermoss – Brown moss

**Sw41** White spruce / Shrub birch / Feathermoss –  
Brown moss

### BOLyc/S10 Vegetation table

Layer	Vegetation association No. of plots	SbSw41 10	Sw41 14	English name
Trees	<i>Picea glauca</i>	□□□	■ ■ ■ ■ ■	white spruce
	<i>Picea mariana</i>	■ ■ ■ ■		black spruce
Shrubs	<i>Rhododendron groenlandicum</i>	■ ■ ■ ■	■ ■ ■	common Labrador tea
	<i>Betula glandulosa</i>	■ ■ ■ ■	■ ■ ■ ■	shrub birch
	<i>Dasiphora fruticosa</i>	■ ■	□ □	shrubby cinquefoil
	<i>Salix</i> spp.	■ ■ ■ ■	■ ■ ■ ■ ■	willows
	<i>Vaccinium uliginosum</i>	■ ■ ■	□ □ □	blueberry
Ground shrubs	<i>Arctous rubra</i>	■ ■ ■	□ □ □	red bearberry
	<i>Empetrum nigrum</i>	■ ■	■ ■ ■	crowberry
	<i>Rubus arcticus</i>	■	□	arctic raspberry
	<i>Vaccinium vitis-idaea</i>	□ □ □	■ ■ ■	lowbush cranberry
Forbs	<i>Equisetum scirpoides</i>	■	□	dwarf scouring rush
Mosses	<i>Hylocomium splendens</i>	■ ■ ■ ■	■ ■ ■ ■	step moss
	<i>Tomentypnum / Aulacomnium</i>	■ ■ ■ ■ ■	■ ■ ■	brown mosses
	<i>Sphagnum</i> spp.	■ ■ ■	□ □ □	peat mosses
Lichens	<i>Cladina</i> spp.	■ ■ ■	□ □ □	reindeer lichens

Note: gold cells highlight key diagnostic species Frequency (%) □ 25-50% ■ 50-70 ■ 70-100

Mean cover (%) ■ <1 ■ ■ 1-3 ■ ■ ■ ■ 10-25 ■ ■ ■ ■ ■ >25



**BOLyc/S10-SbSw41**  
(Black spruce – White spruce /  
Shrub birch / Feathermoss –  
Brown moss)

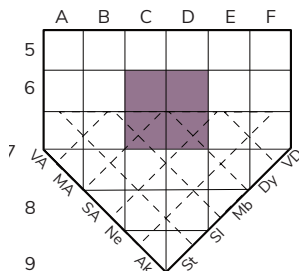


**BOLyc/S10-Sw41**  
(White spruce / Shrub birch /  
Feathermoss – Brown moss)

**BOLyc/S13 Sw – Willow – Horsetail swamp**

**General description**

The Sw – Willow – Horsetail swamp ecosite is a nutrient medium to rich ecosystem which commonly occurs on level river floodplains and toe and lower slopes on various parent materials. Soil texture can range from clay loam and silt loam to sandy loam and loamy sand. The hummocky and mounded microtopography creates varying microsites for plants. Soils are usually classified as Cryosols.



**Vegetation summary**

The following vegetation association displays the species composition on this ecosite.

**SbSw39** Black spruce – White spruce / Willow / Horsetail / Brown moss

**Sw39** White spruce / Willow / Horsetail / Brown moss

**BOLyc/S13 Vegetation table**

Layer	Vegetation association	SbSw39	Sw39	English name
	No. of plots	7	23	
Trees	<i>Picea glauca</i>	■■■■■	■■■■■	white spruce
	<i>Picea mariana</i>	■■■■		black spruce
Shrubs	<i>Salix</i> spp.	■■■■■	■■■■	willows
	<i>Salix myrtilifolia</i>	□□	■■■	blueberry willow
	<i>Rhododendron groenlandicum</i>	■■■■	■■	common Labrador tea
	<i>Dasiphora fruticosa</i>	□□	■	shrubby cinquefoil
	<i>Vaccinium uliginosum</i>	■■	□□	blueberry
Ground Shrubs	<i>Empetrum nigrum</i>	■■	■■	crowberry
	<i>Vaccinium vitis-idaea</i>	■■	■■	lowbush cranberry
	<i>Arctous rubra</i>	□□	■■■	red bearberry
Forbs	<i>Equisetum arvense</i>	■■■■	■■■■	common horsetail
	<i>Geocalaon lividum</i>	■■	□□	bastard toadflax
Graminoids	Poaceae	■■■	■■	grasses
Mosses	<i>Aulacomnium / Tomentypnum</i>	■■■■	■■■■■	brown mosses
	<i>Hylocomium / Pleurozium</i>	■■■■■	■■■■■	feathermosses
	Bryophyta	■■■■	■■■	other mosses

Frequency (%) □ 25-50% ■ 50-70 ■■■ 70-100

Mean cover (%) ■ <1 ■■■ 1-3 ■■■■■ 10-25 ■■■■■■ >25



**BOLyc/S13-SbSw39**

(Black spruce – White spruce / Willow /  
Horsetail / Brown moss)

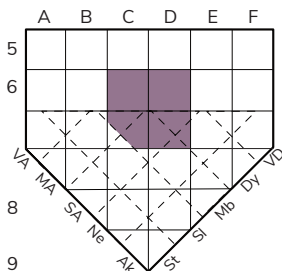


**BOLyc/S13-Sw39**

(White spruce / Willow / Horsetail / Brown moss)

**BOLyc/S15****SbSw – Alder – Labrador tea –  
Peat moss swamp****General description**

The SbSw – Alder – Labrador tea – Peat moss swamp occurs on level to moderately sloping sites on valley floors and on some steeper slopes. Soils are characterized by a peaty surface layer over morainal, colluvial, or lacustrine parent materials. Soils are usually classified as Turbic or Organic Cryosols with permafrost within 30–60 cm of the surface, creating a hummocky and mounded microtopography. Some soils are classified as Gleysols, but permafrost is likely present at depth.

**Vegetation summary**

The following vegetation association displays the species composition on this ecosite.

- Sb35** Black spruce / Alder – Labrador tea / Peat moss
- SbW36** Black spruce – Alaska birch / Alder – Labrador tea / Peat moss
- Sw37** White spruce / Alder – Lowbush cranberry / Lichen – Peat moss
- SwW37** White spruce – Alaska birch / Alder / Peat moss

BOLyc/S15 Vegetation table

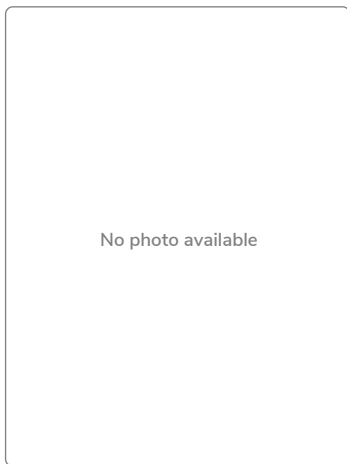
Layer	Vegetation association No. of plots	Sb35 22	SbW36 5	Sw37 8	SwW37 5	English name
Trees	<i>Picea mariana</i>	■■■■■	■■■■■	■■■■■	■■■■■	black spruce
	<i>Picea glauca</i>			■■■■■	■■■■■	white spruce
	<i>Betula neoalaskana</i>		■■■■■	□	■■■■■	Alaska birch
Shrubs	<i>Alnus alnobetula / incana</i>	■■■	■■■■■	■■■■■	■■■■■	green / river alder
	Rhododendron spp.	■■■■■	■■■■■	■■■	■■■■■	Labrador teas
	<i>Betula glandulosa</i>	■■■		□□	■■■■■	shrub birch
	<i>Salix</i> spp.	■■■	■■■■■	■■■■■	■■■■■	willows
	<i>Dasiphora fruticosa</i>	□		■■■	■■■	shrubby cinquefoil
Ground shrubs	<i>Rosa acicularis</i>		■■■	■■■	□□	prickly rose
	<i>Vaccinium uliginosum</i>	■■■	■■■	■■■	■■■■■	blueberry
	<i>Vaccinium vitis-idaea</i>	■■■■■	■■■■■	■■■■■	■■■■■	lowbush cranberry
	<i>Rubus chamaemorus</i>	■■■■■	■■■	□	□	cloudberry
	<i>Empetrum nigrum</i>	■■■	□□	□□□	□□□	crowberry
	<i>Linnaea borealis</i>			■■■		twinflower
Forbs	<i>Equisetum arvense</i>		□□	■■■■■		common horsetail
Graminoids	<i>Calamagrostis canadensis</i>			■■■■■	■■■■■	bluejoint reedgrass
	<i>Carex</i> spp.			■	■■■	sedges
Mosses	<i>Sphagnum</i> spp.	■■■■■	■■■■■	■■■■■	■■■■■	peat mosses
	<i>Hylocomium splendens</i>	□□□□	□□□	■■■■■	■■■■■	step moss
	<i>Pleurozium schreberi</i>	□□□		□□□	■■■■■	red-stemmed feathermoss
	Amblystegiaceae	■■■		■■■■■	■■■■■	brown mosses
Lichens	<i>Cladonia</i> spp.	■■■■■	□□□		■■■■■	reindeer lichens

Frequency (%) □ 25-50% ■ 50-70 ■ 70-100 | Mean cover (%) ■ <1 ■ 1-3 ■ 10-25 ■ >25



**BOLyc/S15-Sb35**

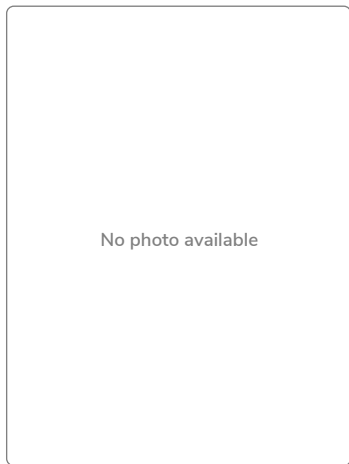
(Black spruce / Alder – Labrador tea / Peat moss)



No photo available

**BOLyc/S15-SbW36**

(Black spruce – Alaska birch / Alder – Labrador tea / Peat moss)



No photo available

**BOLyc/S15-Sw37**

(White spruce / Alder – Lowbush cranberry / Lichen – Peat moss)



**BOLyc/S15-SwW37**

(White spruce – Alaska birch / Alder / Peat moss)



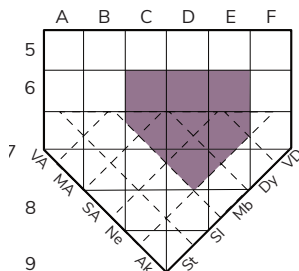
Water sedge (*Carex aquatilis*)

## BOLyc/S20

Diamond-leaved willow –  
Water sedge swamp

## General description

The Diamond-leaved willow – Water sedge swamp ecosite occurs along smaller creeks and other drainages. Soils are usually Gleysols or Cryosols, or sometimes Gleyed Regosols. A humus surface layer may or may not be present; if present, its thickness is variable. Soil texture can vary from fibric organic soils to fine loamy and sandy soils. Permafrost may be present at depth when soils are Gleysols or Regosols.



## Vegetation summary

The following vegetation association displays the species composition on this ecosite.

**Sapu58** Diamond-leaved willow / Water sedge

**Sapu59** Diamond-leaved willow / Reedgrass

**Sapu60** Diamond-leaved willow / Moss

## BOLyc/S20 Vegetation table

Layer	Vegetation association	Sapu58 No. of plots	Sapu59	Sapu60	English name
Trees	<i>Picea glauca</i>	15	5	8	white spruce
Shrubs	<i>Betula glandulosa</i>	■ ■ ■ ■	■ ■	■ ■ ■ ■	shrub birch
	<i>Salix pulchra</i>	■ ■ ■ ■ ■ ■	■ ■ ■ ■ ■ ■	■ ■ ■ ■ ■ ■	diamond-leaved willow
	<i>Vaccinium uliginosum</i>			■	blueberry
Ground shrubs	<i>Rubus arcticus</i>	□ □	■ ■		arctic raspberry
	<i>Rubus chamaemorus</i>			■ ■ ■ ■	cloudberry
Graminoids	<i>Calamagrostis</i> spp.	□ □	■ ■ ■ ■ ■ ■		reedgrasses
	<i>Carex aquatilis</i>	■ ■ ■ ■ ■ ■			water sedge
	<i>Carex</i> spp.		■ ■		sedges
Mosses	<i>Sphagnum</i> spp.			■ ■ ■ ■ ■ ■	peat mosses
	Amblystegiaceae	■ ■ ■ ■	■ ■ ■ ■	■ ■ ■ ■	brown mosses

Frequency (%) □ 25-50% ■ 50-70 ■ 70-100

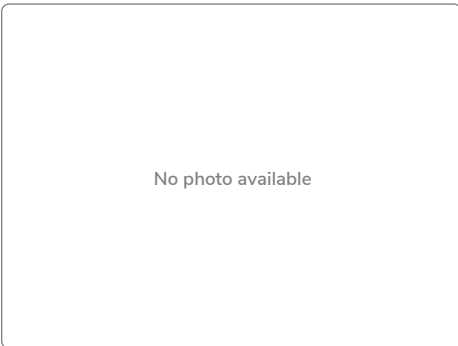
Mean cover (%) ■ <1 ■ ■ 1-3 ■ ■ ■ ■ 10-25 ■ ■ ■ ■ ■ ■ >25



**BOLyc/S20-Sapu58**  
(Diamond-leaved willow / Water sedge)



**BOLyc/S20-Sapu59**  
(Diamond-leaved willow / Reedgrass)



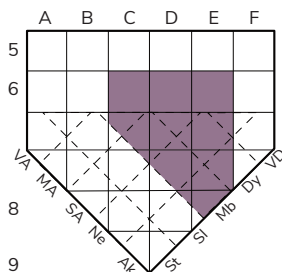
**BOLyc/S20-Sapu60**  
(Diamond-leaved willow / Moss)

## Marsh Ecosites

### BOLyc/M01 Beaked sedge – Water sedge marsh

#### General description

The Beaked sedge – Water sedge marsh is a common wetland ecosystem. M01 is usually subject to fluctuating water levels and frequent flooding. Soils are poor or very poorly drained and on fluvial or lacustrine parent materials. Soils are usually classified as Gleysols, but some Static Cryosols do occur on sites with permafrost.



#### Comments

- F01 also has dominant beaked sedge or water sedge but it develops on peaty soils and usually with a relatively stable water table.

#### Vegetation summary

The following vegetation association displays the species composition on this ecosite.

**Caaq57** Water sedge – Moss

**Caut56** Beaked sedge – Water sedge

**Caut57** Beaked sedge

#### BOLyc/M01 Vegetation table

Layer	Vegetation association	Caaq57 No. of plots	Caut56	Caut57	English name
Shrubs	<i>Salix</i> spp.	■ ■	□ □	■ ■	willows
Forbs	<i>Comarum palustre</i>	□ □	■ ■	□	marsh cinquefoil
Graminoids	<i>Carex aquatilis</i>	■ ■ ■ ■ ■ ■	■ ■ ■ ■ ■ ■		water sedge
	<i>Carex utriculata</i>		■ ■ ■ ■ ■ ■	■ ■ ■ ■ ■ ■	beaked sedge
Mosses	Bryophyta	■ ■ ■ ■	■ ■ ■	■ ■ ■	mosses

Frequency (%) □ 25-50% ■ 50-70 ■ 70-100  
 Mean cover (%) ■ <1 ■ ■ 1-3 ■ ■ ■ 10-25 ■ ■ ■ ■ >25



**BOLyc/M01-Caaq57**  
(Water sedge – Moss)



**BOLyc/M01-Caut56**  
(Beaked sedge – Water sedge)



**BOLyc/M01-Caut57**  
(Beaked sedge)

## BOLyc/M02

## Water horsetail marsh

## General description

The Water horsetail marsh has a high-water table, and sites are characterized by frequent flooding and erosion and deposition processes. The very poorly drained soils are usually classified as Gleysols, although sometimes permafrost is present, and soils are Static Cryosols.

## Comments

- M02 has a slightly higher water table and is flooded for slightly longer than the M01.

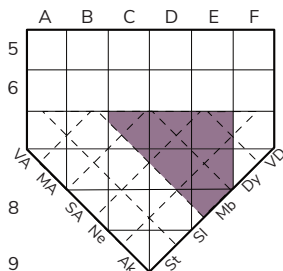
## Vegetation summary

The following vegetation association displays the species composition on this ecosite.

**Eqfl55** Water horsetail – Water sedge

**Eqfl56** Water horsetail – Beaked sedge

**Eqfl59** Water horsetail



## BOLyc/M02 Vegetation table

Layer	Vegetation association	Eqfl55	Eqfl56	Eqfl59	English name
	No. of plots	12	22	24	
Forbs	<i>Equisetum fluviatile</i>	■■■■■	■■■■■	■■■■■	water horsetail
Graminoids	<i>Carex aquatilis</i>	■■■■■	□□		water sedge
	<i>Carex utriculata</i>	□□	■■■■■		beaked sedge

Frequency (%) □ 25-50% ■ 50-70 ■ 70-100

Mean cover (%) ■ <1 ■■■ 1-3 ■■■■■ 10-25 ■■■■■■ >25



**BOLyc/M02-Eqf155**  
(Water horsetail – Water sedge)



**BOLyc/M02-Eqf156**  
(Water horsetail – Beaked sedge)



**BOLyc/M02-Eqf159**  
(Water horsetail)

## BOLyc/M04

## Short-awned foxtail marsh

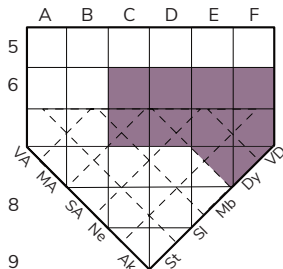
## General description

The Short-awned foxtail marsh occurs on poorly to very poorly drained sites with a fluctuating water table. Open water occurs on the surface, usually at the start of the growing season, with the sites generally drying out over the summer.

## Vegetation summary

The following vegetation association displays the species composition on this ecosite.

**Alae55** Short-awned foxtail



## BOLyc/M04 Vegetation table

Layer	Vegetation association No. of plots	Alae55 6	English name
Graminoids	<i>Alopecurus aequalis</i>	■■■■■	short-awned foxtail
	Poaceae	■■	grasses
	<i>Carex aquatilis / utriculata</i>	■■■	water / beaked sedge

Frequency (%) □ 25-50% ■ 50-70 ■ 70-100

Mean cover (%) ■ <1 ■ 1-3 ■■■ 10-25 ■■■■■ >25



**BOLyc/M04-Alae55**  
(Short-awned foxtail)

## BOLyc/M08

## Awned sedge marsh

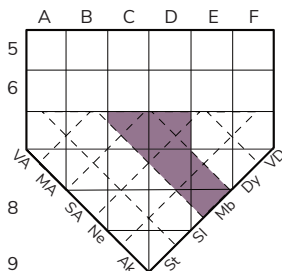
## General description

The Awned sedge marsh occurs on very poorly drained, nutrient-rich sites with a high-water table. The organic layer in these marshes can be up to 50 cm thick. Permafrost is present (based on limited data). Soils are classified as Static Cryosols.

## Vegetation summary

The following vegetation association displays the species composition on this ecosite.

**Caat55** Awned sedge – Water smartweed



## BOLyc/M08 Vegetation table

Layer	Vegetation association No. of plots	Caat55	English name
Forbs	<i>Equisetum fluviatile</i>	■ ■ ■ ■	water horsetail
	<i>Persicaria amphibia</i>	■ ■	water smartweed
Graminoids	<i>Carex atherodes</i>	■ ■ ■ ■ ■	awned sedge
	<i>Carex utriculata / aquatilis</i>	■ ■ ■ ■	water / beaked sedges

Frequency (%) □ 25-50% ■ 50-70 ■ 70-100

Mean cover (%) ■ <1 ■ ■ 1-3 ■ ■ ■ ■ 10-25 ■ ■ ■ ■ ■ >25



**BOLyc/M08-Caat55**  
(Awned sedge – Water smartweed)

**BOLyc/M09**      **Bulrush marsh**

**General description**

The Bulrush marsh occurs on hydric sites. Soils are likely Gleysols or Humic Gleysols.

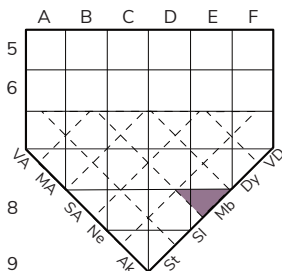
**Vegetation summary**

The following vegetation association displays the species composition on this ecosite.

**Scac58%**    Hard-stemmed bulrush

**Scta55**      Soft-stemmed bulrush

% indicates provisional association.



**BOLyc/M09** Vegetation table

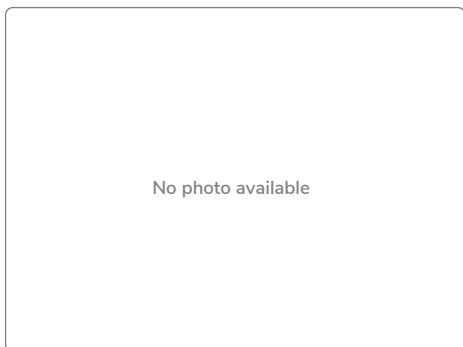
Layer	Vegetation association No. of plots	Scac58% 1	Scta55 2	English name
Graminoids	Schoenoplectus acutus Schoenoplectus tabernaemontani	■■■	■■■■■	hard-stemmed bulrush soft-stemmed bulrush

Frequency (%) □ 25-50% ■ 50-70 ■ 70-100

Mean cover (%) ■ <1 ■■ 1-3 ■■■ 10-25 ■■■■■ >25



**BOLycM09-Scac58%**  
(Hard-stemmed bulrush)



**BOLycM09-Scta55**  
(Soft-stemmed bulrush)

## BOLyc/M10

## Reedgrass marsh

## General description

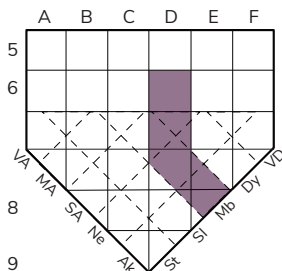
The Reedgrass marsh develops on poorly drained fluvial or lacustrine deposits. Soils are classified as Gleysols. These wetlands typically have a fluctuating water table but are slightly drier, on average, than most other marshes.

## Vegetation summary

The following vegetation association displays the species composition on this ecosite.

**Caca54** Bluejoint reedgrass

**Cast54** Slim-stemmed reedgrass



## BOLyc/M10 Vegetation table

Layer	Vegetation association No. of plots	Caca54 15	Cast54 2	English name
Graminoids	<i>Calamagrostis canadensis</i>	■■■■■		bluejoint reedgrass
	<i>Calamagrostis stricta</i>		■■■■■	slim-stemmed reedgrass
	<i>Carex aquatilis</i>	■■■	■■■	water sedge

Frequency (%) □ 25-50% ■ 50-70 ■ 70-100

Mean cover (%) ■ <1 ■ 1-3 ■■■ 10-25 ■■■■■ >25



**BOLyc/M10-Caca54**  
(Bluejoint reedgrass)



**BOLyc/M10-Cast54**  
(Slim-stemmed reedgrass)

**BOLyc/M56%** **Baltic rush saline marsh**

**General description**

The Baltic rush saline marsh is based on limited data (% sign is appended to provisional ecosites). The silt and clay soils are usually classified as Gleyed Regosols or Gleysols.

**Vegetation summary**

The following vegetation association displays the species composition on this ecosite.

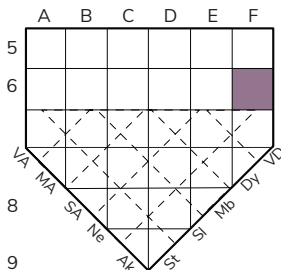
**Juba51** Baltic rush

BOLyc/M56% Vegetation table

Layer	Vegetation association No. of plots	Juba51 1	English name
Forbs	<i>Penstemon procerus</i>	■■■■■	small-flowered beardtongue
	<i>Achillea millefolium</i>	■■■	common yarrow
	<i>Antennaria rosea</i>	■■■	rosy pussytoes
Graminoids	<i>Deschampsia cespitosa</i>	■■■■■	tufted hairgrass
	<i>Juncus balticus</i>	■■■■■	Baltic rush
Mosses	<i>Thuidium</i> sp.	■■■■■	Fern moss

Frequency (%) □ 25-50% ■ 50-70 ■ 70-100

Mean cover (%) ■ <1 ■■ 1-3 ■■■■ 10-25 ■■■■■ >25





**BOLyc/M56%-Juba51**  
(Baltic rush)

## Shallow Water Ecosites

### BOLyc/W04 Mare's-tail shallow water

#### General description

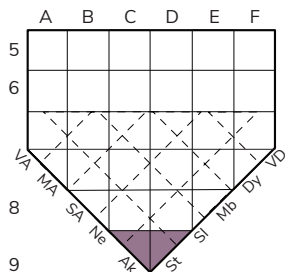
The Mare's-tail shallow water ecosite occurs on mudflats of larger rivers throughout Yukon and is visible during periods of low water.

#### Vegetation summary

The following vegetation association displays the species composition on this ecosite.

**Hivu71** Mare's-tail – Pondweed

**Hivu72** Mare's-tail – Sago pondweed



#### BOLyc/W04 Vegetation table

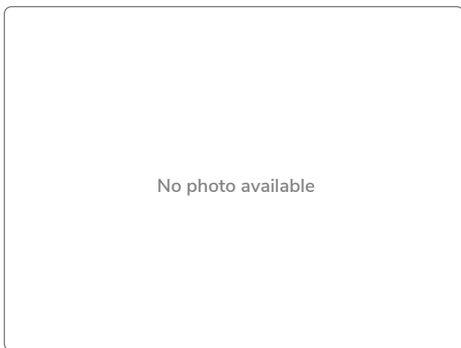
Layer	Vegetation association	Hivu71	Hivu72	English name
	No. of plots	14	5	
Aquatics	<i>Hippuris vulgaris</i>	■■■■■	■■■■■	common mare's-tail
	<i>Potamogeton</i> spp.	■■■	■■■	pondweeds
	<i>Stuckenia pectinata</i>		■■■■	sago pondweed
	<i>Utricularia vulgaris</i>		■■■	common bladderwort

Frequency (%) □ 25-50% ■ 50-70 ■ 70-100

Mean cover (%) ■ <1 ■ 1-3 ■ 10-25 ■ >25



**BOLyc/W04-Hivu71**  
(Mare's-tail – Pondweed)



**BOLyc/W04-Hivu72**  
(Mare's-tail – Sago pondweed)

**BOLyc/W09**

**Pond-lily shallow water**

**General description**

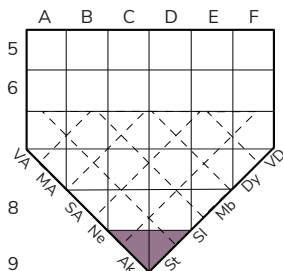
The Pond-lily shallow water ecosite is an aquatic ecosystem that generally occupies shallow waters (usually less than 2 m in depth) of ponds and lake margins.

**Vegetation summary**

The following vegetation associations display the species composition on this ecosite.

**Nupo70** Rocky Mountain pond-lily

**Nuva70** Variegated pond-lily



**BOLyc/W09** Vegetation table

Layer	Vegetation association No. of plots	Nupo70 12	Nuva70 5	English name
Aquatics	<i>Nuphar polysepala</i>	■■■■■		Rocky Mountain pond-lily
	<i>Nuphar variegata</i>		■■■	variegated pond-lily
	<i>Sparganium</i> spp.		■■■	burreeds
	<i>Callitriche hermaphroditica</i>		■■■	northern water-starwort
	<i>Hippuris vulgaris</i>		■■■	common mare's-tail
	<i>Potamogeton</i> spp.		■■	pondweeds
	<i>Utricularia vulgaris</i>			■

Frequency (%) □ 25-50% ■ 50-70 ■ 70-100

Mean cover (%) ■ <1 ■■■ 1-3 ■■■■■ 10-25 ■■■■■■ >25



**BOLyc/W09-Nupo70**  
(Rocky Mountain pond-lily)



**BOLyc/W09-Nuva70**  
(Variegated pond-lily)

**BOLyc/W12 Giant water moss shallow water**

**General description**

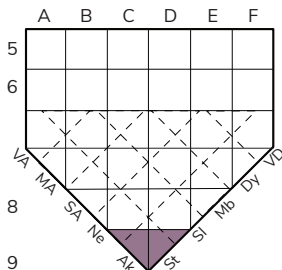
The Giant water moss shallow water ecosite occurs in shallow waters of slow-moving streams or small ponds.

**Vegetation summary**

The following vegetation association displays the species composition on this ecosite.

**Cagi75** Giant water moss

**BOLyc/W12** Vegetation table



Layer	Vegetation association No. of plots	Cagi75	English name
Mosses	<i>Calliergon giganteum</i>	6	giant water moss

Frequency (%) □ 25-50% ■ 50-70 ■ 70-100

Mean cover (%) ■ <1 ■ 1-3 ■ 10-25 ■ >25



**BOLyc/W12-Cagi75**  
(Giant water moss)

**BOLyc/W13 Slimy macroalgae shallow water**

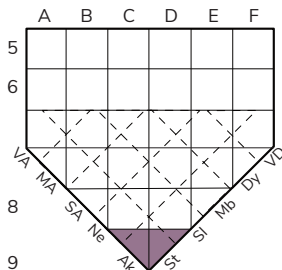
**General description**

The Slimy macroalgae shallow water ecosite occurs in small ponds associated with peatlands, including thermokarst depressions.

**Vegetation summary**

The following vegetation association displays the species composition on this ecosite.

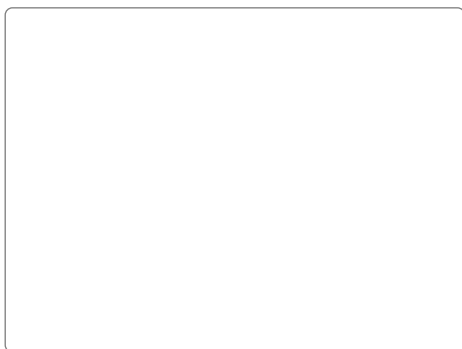
- Macr75** Slimy macroalgae
- Metr75** Slimy macroalgae – Buckbean



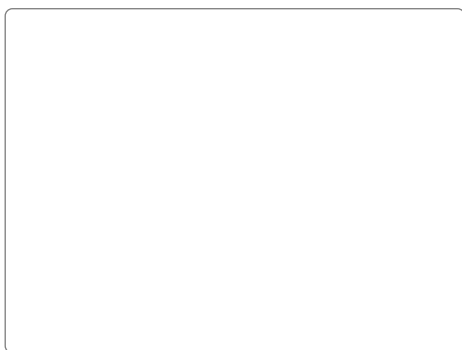
**BOLyc/W13 Vegetation table**

Layer	Vegetation association	Macr75	Metr75	English name
	No. of plots	3	2	
Aquatics	Macroalgae	■■■■■	■■■■■	slimy macroalgae
	Menyanthes trifoliata		■■■■	buckbean

Frequency (%) □ 25-50% ■ 50-70 ■ 70-100  
 Mean cover (%) ■ <1 ■■ 1-3 ■■■■ 10-25 ■■■■■ >25



**BOLyc/W13-Macr75**  
(Slimy macroalgae)



**BOLyc/W13-Metr75**  
(Slimy macroalgae – Buckbean)

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Table A-1. Terms used in the guide

Term	Definition
<b>Ridge crest</b>	Comprises the meso-scale height of land and the strongly water-shedding convex slopes immediately adjacent.
<b>Upper slope</b>	The uppermost portion of a meso-scale slope; slope profile generally convex; soil water mostly shedding but some water-receiving from crest.
<b>Middle slope</b>	The portion of a slope between the upper and lower slopes; soil water is shedding and receiving more or less equally.
<b>Lower slope</b>	The moisture-receiving area towards the base of a slope; the slope profile is usually somewhat concave. Sites located near the base of a slope that are not moisture-receiving are treated as middle slope positions in the keys.
<b>Toe slope</b>	Gently sloped areas directly below the lower slope, transitioning to the level area or depression at the base of the slope.
<b>Level</b>	Any broad level area; the surface profile is generally more or less horizontal, with no distinct aspect and minimal slope (< 5%).
<b>Depression</b>	Profile concave in all directions; usually in flat or subdued topography or at the base of a slope.
<b>Alluvium/fluvial landforms</b>	Post-glacial, active floodplain deposits along rivers and streams in valley bottoms; usually a series of low benches and channels.
<b>Southerly aspect</b>	SW, S and SE aspects inclusive for slopes greater than 5%.
<b>Average soil texture</b>	Soil texture class occupying the majority of the upper 50 cm of the mineral soil or to bedrock contact. Where contrasting textures are both present in equal amounts, the texture of the materials combined. Where rooting is restricted to the organic horizons, use the organic material codes. Use soil texture keys to determine soil texture.
<b>Coarse fragment content</b>	The coarse fragment content (% by volume) of the upper 50 cm of mineral soil profile, or rooting zone where it extends deeper, or to bedrock contact.
<b>Soil coarse</b>	Soil contains > 70% coarse fragments; or soil texture is sandy (LS, S); or loamy (SL, L) with > 50% volume of coarse fragments.
<b>Soil fine</b>	Soil is silty (SiL, Si) or clayey (SiCL, CL, SC, SiC, C) with < 20% volume of coarse fragments.
<b>Soil medium</b>	Includes the remaining soils i.e., SL, L with ≤ 50% volume of coarse fragments; or fine-textured soils with ≥ 20% coarse fragments.

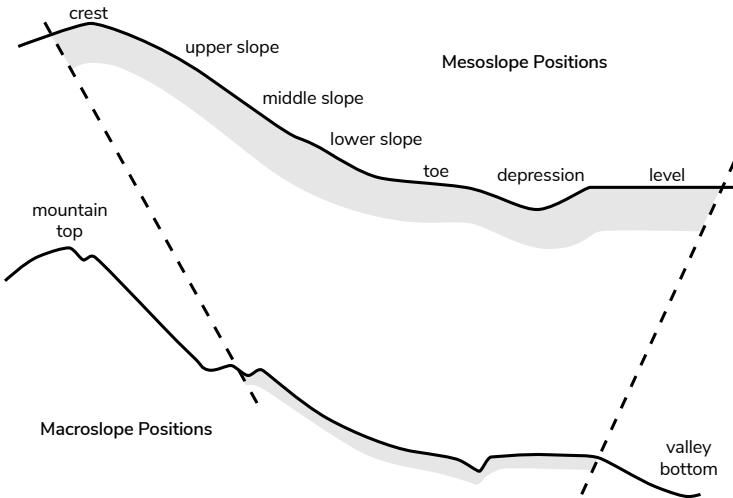
Table A-1. Terms used in the guide (continued)

Term	Definition
<b>Gleyed, gleying</b>	Soils that have orange-coloured mottles indicative of periodic oxidation and reduction due to a fluctuating water table (this includes faint, distinct and prominent mottles); or soils that are dull yellowish, blue or olive in colour indicative of permanent saturation.
<b>Prominent mottles</b>	Mottles that differ by three or more hues from the matrix, or by $\geq 2$ units of value or chroma when hue varies by two pages (using Munsell soil colour charts), by $\geq 3$ units of value or chroma, or both chroma and value differ by two when hue differs by one, or by four units of value or chroma if hue is the same.
<b>Distinct mottles</b>	Mottles that differ by two or more hues from the matrix or by two units of chroma and/or value when hue is the same or differs by one page (using Munsell soil colour charts).
<b>Faint mottles</b>	Mottles that do not meet the above criteria.
<b>Organic soils</b>	Soils of Organic Order, specifically those that are water saturated — have greater than 40 cm of organic material on surface if mesic or humic peat, or greater than 60 cm if fibric peat. Fibric peat consists of well-preserved fibre ( $\geq 40\%$ ), identified after rubbing; mesic peat is intermediate composition between fibric and humic; and humic peat consists of decomposed organic material ( $\leq 10\%$ ), identified after rubbing. See Canadian System of Soil Classification for details.
<b>Mor humus form</b>	Soil characterized by matted Fm horizon and abundant fungal mycelia. Insect droppings absent. For keying purposes, includes soil where no F or organic accumulation is present.
<b>Moder humus form</b>	Soil characterized by Fa or Fz horizon with loosely arranged, often granular structure reflecting insect activity; insect droppings present; fungal mycelia may also be present but not dominant; or soil characterized by having both F and Ah horizons greater than 2 cm.
<b>Mull humus form</b>	Soil characterized by well-developed Ah (dark coloured, organically enriched) mineral horizon reflecting active mixing of mineral and organic horizons.
<b>Restricting layer</b>	Layer that restricts the downward movement of soil water; includes bedrock, cemented or very compacted horizon, or permafrost.
<b>Soil depth</b>	Depth from the ground (forest floor) surface to bedrock, or other impermeable layer, but not including permafrost.
<b>Near-surface permafrost</b>	Soil layer that is “permanently” frozen; this can be difficult to distinguish from “seasonal frost,” but date of observation and features of the ecosystem can provide clues as to whether ice is permafrost or seasonal.
<b>Calcareous</b>	Soils that fizz/effervesce when dilute hydrochloric acid is applied. For these purposes, soils that are calcareous in the rooting zone have an impact on soil nutrition.
<b>High salinity</b>	Saline sites are recognizable by the white salts on the soil surface, or in the rooting zone when the soils are dry. Salinity can also be measured: saline soils have an electrical conductivity $> 4$ dS/m.

**Table A-1.** Terms used in the guide (continued)

Term	Definition
Water table	The surface of groundwater-saturated materials in a soil.
Depth to water table	Depth to water table determined by the depth below the soil surface to the level of standing water in a soil pit. However, the water table is dynamic and may not be present when observing the soil.
Depth to gleying	Depth from the surface to mottles or gley colours. These mottles are an indication of a fluctuating water table resulting in alternating reducing and oxidizing conditions. Gley colour, with no mottles, indicates permanent saturation.
Seepage	Seepage is subsurface flowing water, which may be observed on sloping sites receiving soil water. It may not form a stable water table, particularly in coarse-textured materials.
Soil shallow	Soils where soil depth limits available moisture; generally less than 25 cm.

Level slope	Gradient $\leq$ 2%.
Gentle slope	Gradient 2–10 %.
Moderate slope	Gradient 10–30 %.
Strong slope	Gradient 30–45%.
Steep	Gradient $>$ 45%.



**Figure A-1.** Mesoslope position

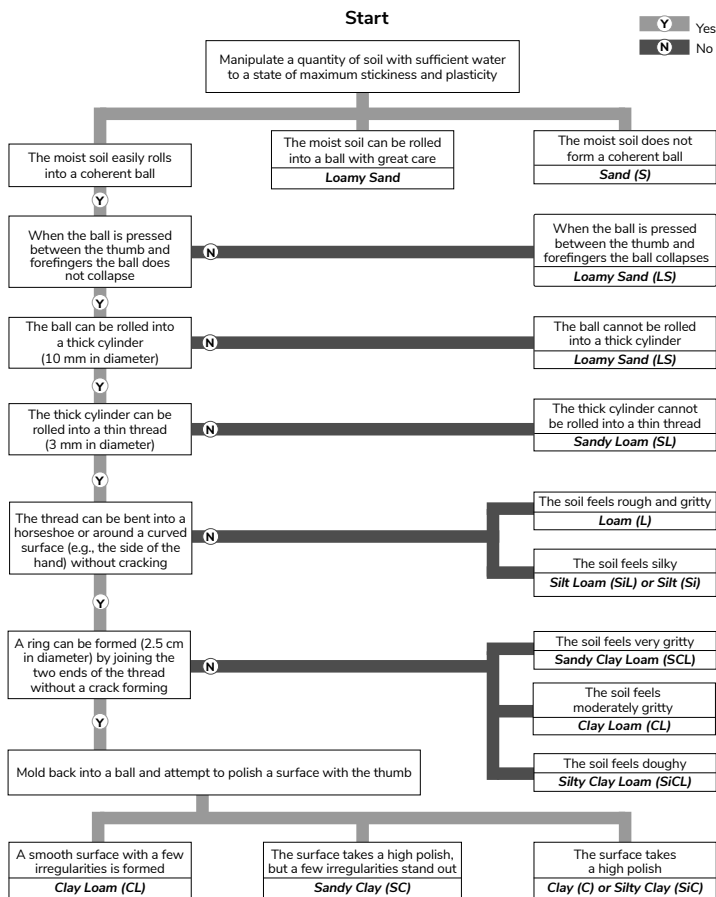
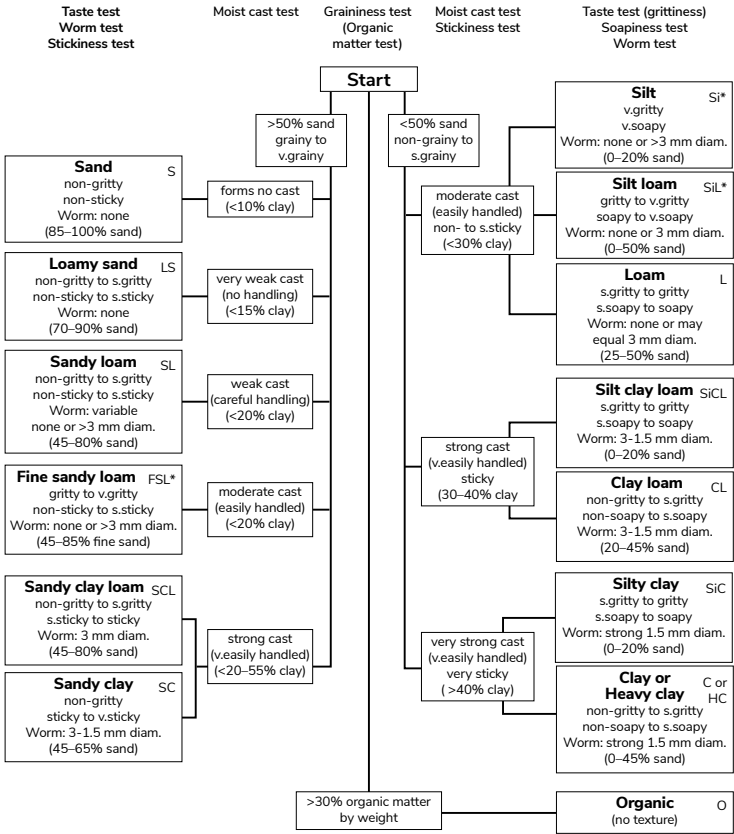


Figure A-2. Soil texturing flow chart using the ball test



\*Silt feels slippery or soapy when wet; fine sand feels stiffer, like grinding compound or fine sandpaper

**Key to abbreviations**

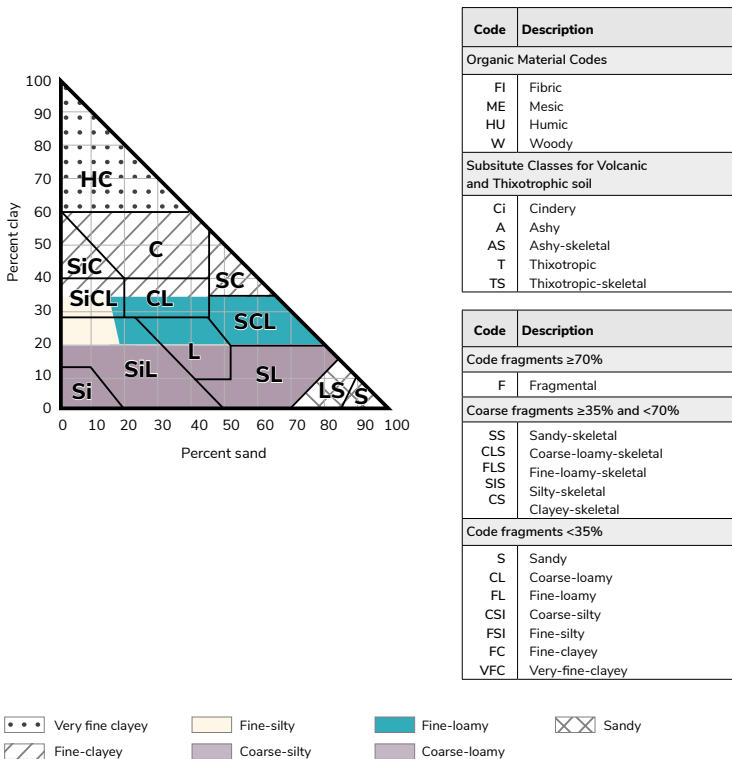
s = slightly v = very diam. = diameter

**Measurement conversions**

3.0 mm = 1/8" 1.5 mm = 1/16"

**Figure A-3.** Soil texturing flow chart using the graininess test

## Family Particle Size



Note: Triangle shows soil texture classes and rooting zone particle size when coarse fragments are  $< 35\%$ . Percentages of clay and sand determine the textural classes of soil; the remaining proportion of each class is silt.

Figure A-4. Soil texture classes

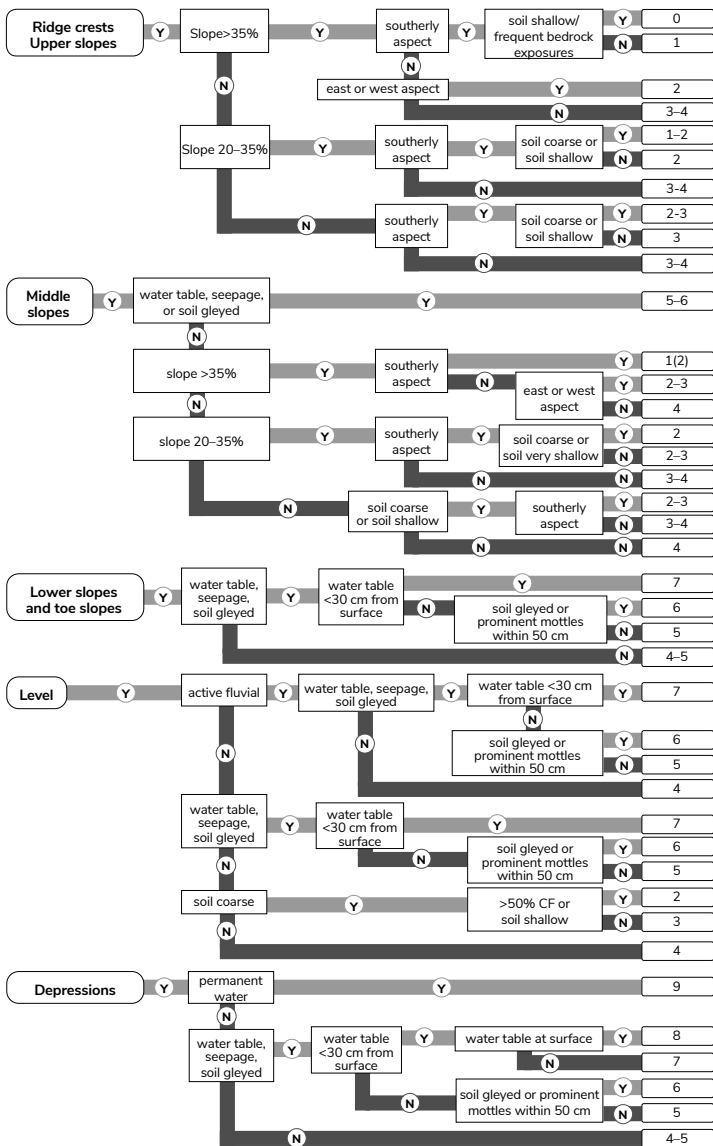
Table A-2. Key to humus form

Note: If no humus is present, treat as MOR in SNR key.

- 1a.** Rapid to imperfectly drained sites; humus form not saturated for prolonged periods. Soil is mineral or upland Folisol.
- 2a.** Ah horizon <2 cm and combined thickness of F and H horizons if present  $\geq$ Ah.
- 3a.** >50% thickness of F horizon(s) is Fm.....MORS (R)
- 4a.** Decaying wood >35% of organic matter volume in humus form profile.....Lignomor (LR)
- 4b.** Decaying wood  $\leq$  35% of organic matter volume in humus form profile.
- 5a.** F horizon >50% of thickness of F and H horizon .....Hemimor (HR)
- 5b.** Hh horizon >50% of thickness of F and H horizons.....Humimor (UR)
- 5c.** Hr horizon >50% of thickness of F and H horizons.....Resimor (RR)
- 3b.** F horizon(s) includes Fz and/or Fa..... MODERS (D)
- 6a.** Decaying wood >35% of organic matter volume in humus form profile..... Lignomoder (LD)
- 6b.** Decaying wood  $\leq$  35% of organic matter volume in humus form profile.
- 7a.** Fa horizon >50% of thickness of F horizons;  
or Fm horizon present. ....Mormoder (RD)
- 7b.** Fz (or Hz) horizon >50% of thickness of F horizons ..... Leptomoder (TD)
- 2b.** Ah horizon  $\geq$ 2cm and combined thickness of F and H horizons  $\geq$ 2 ..... MODERS (D)
- 8a.** Ah horizon formed by infiltration or accumulation of organic materials by mechanical intermixing (gravity, wind, flooding, ice churning or root churning) ..... Paramoder (PD)
- 8b.** Ah formed by soil fauna activity or root decomposition; Fa and/or Fz horizons present.
- 9a.** F and H horizons greater than or equal to thickness of Ah horizon;..... Leptomoder (TD)
- 9b.** Ah >combined F and H horizons;..... Mullmoder (MD)
- 2c.** Combined thickness of F and H horizons <2cm and Ah horizon  $\geq$ 2cm .....MULLS (L)
- 10a.** Rhizogenous Ah horizon formed from decomposition of dense fine roots....Rhizomull (ZL)
- 10b.** Zoogenous Ah horizon formed through actions of abundant earthworms ..Vermimull (VL)
- 10c.** Ah formed by infiltration or accumulation of organic materials by mechanical intermixing (gravity, wind, flooding, ice-frost churning or root-churning).....Paramull (PL)
- 1b.** Poor to very poorly drained sites; Humus is saturated for prolonged periods. Soils are Gleysols, Fibrisols, Mesisols, Humisols, Organic Cryosols, or Gleysolic or Histic subgroups of Turbic or Static Cryosols
- 11a.** Combined thickness of F, H, and O horizons <2 cm and Ah horizon >2cm.....Hydromull (YL)
- 11b.** Combined thickness of F, H, and O horizons  $\geq$  2 cm.
- 12a.** Thickness of F and H horizons  $\geq$ O horizons.
- 13a.** F horizon(s) is Fm. .... Hydromor (YR)
- 13b.** F horizon(s) includes Fz and/or Fa, F is not present or Ah  $\geq$ 2..... Hydromoder (YD)
- 12b.** Combined thickness of O horizons greater than F and H horizons.
- 14a.** O horizons  $\leq$  40cm and Ah horizon >2cm .....Moder (D)
- 14b.** Of horizon >50% of thickness of O horizons ..... Fibrimor (FR)
- 14c.** Om horizon >50% of thickness of O horizons.....Mesimor (MR)
- 14d.** Oh horizon >50% of thickness of O horizons..... Saprmoder (SD)

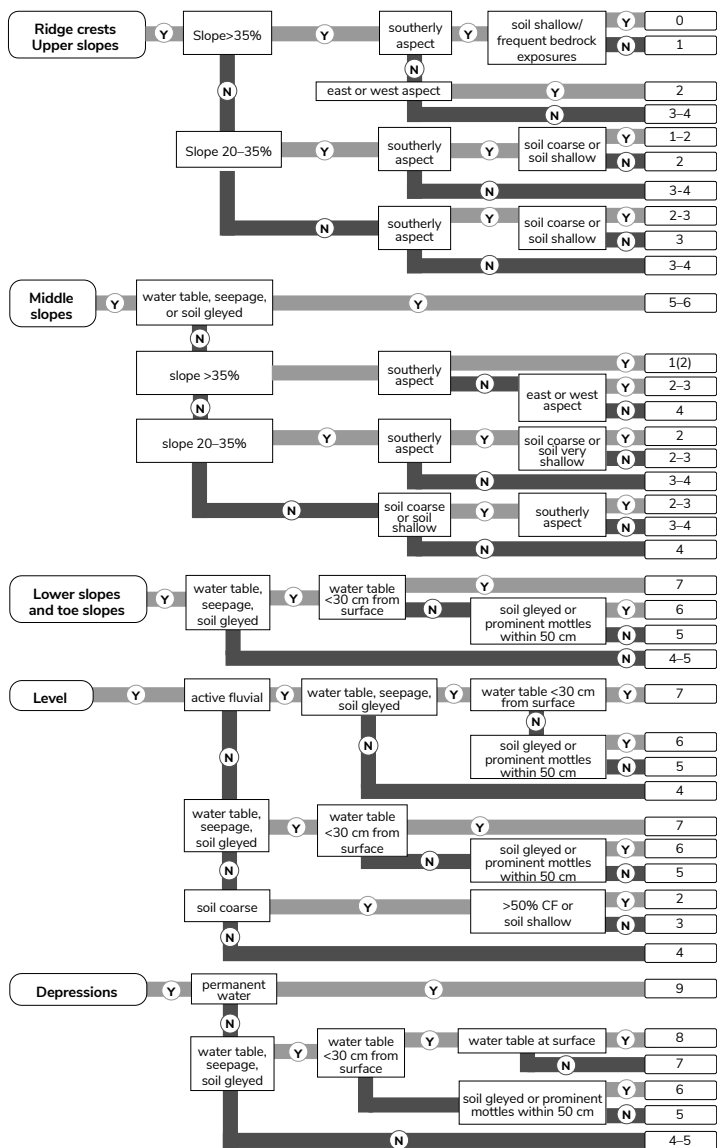
**Table A-3.** Relative soil moisture regime (SMR) — codes and classes

Code	Class	Description	Water source
0	Very xeric	Water removed extremely rapidly in relation to supply; soil is moist for a negligible time after precipitation.	Precipitation
1	Xeric	Water removed very rapidly in relation to supply; soil is moist for brief periods following precipitation.	Precipitation
2	Subxeric	Water removed rapidly in relation to supply; soil is moist for short periods following precipitation.	Precipitation
3	Submesic	Water removed readily in relation to supply; water available for moderately short periods following precipitation.	Precipitation
4	Mesic	Water removed somewhat slowly in relation to supply; soil may remain moist for a significant, but sometimes short period of the year. Available soil moisture reflects climatic inputs.	Precipitation in moderate- to fine-textured soils; limited seepage in coarse-textured soils
5	Subhygric	Water removed slowly enough to keep soil wet for a significant part of growing season; some temporary seepage and possibly mottling below 20 cm.	Precipitation and seepage
6	Hygric	Water removed slowly enough to keep soil wet for most of growing season; permanent seepage and mottling; gleyed colours common.	Seepage
7	Subhydric	Water removed slowly enough to keep water table at or near surface for most of year; gleyed mineral or organic soils; permanent seepage <30 cm below surface.	Seepage or permanent water table
8	Hydric	Water removed so slowly that water table is at or above soil surface all year; gleyed mineral or organic soils.	Permanent water table
9	Aquatic	Water is well above the sediment bed all year.	Water body



Y Yes  
N No

Figure A-5. Soil Moisture Regime (SMR) flow chart



Y Yes  
N No

Figure A-5. Soil Moisture Regime (SMR) flow chart

**Table A-4.** Soil nutrient regime (SNR) factors and relationship of factors

	Oligotrophic	Submeso-trophic	Mesotrophic	Permo-trophic	Eutrophic	Hypereu-trophic
	<b>A</b> very poor	<b>B</b> poorer than average	<b>C</b> medium	<b>D</b> richer than average	<b>E</b> very rich	<b>F</b> saline
Available nutrients	very low	low	average	plentiful	abundant	excess salt accumulations
Humus form	Mor			Moder		Mull
A horizon	Ae horizon present		A horizon present or absent		Ah horizon present	
Organic matter content	low (light coloured)		medium (intermediate in colour)		high (dark coloured)	
Soil depth	extremely shallow		very shallow to deep			
Soil texture	coarse textured		medium to fine textured			
% coarse fragments	high		moderate to low			
Parent material mineralogy	base-low		base-medium		base-high	
Soil pH	extremely-moderately acid		moderately acid-neutral		slightly acid-mildly alkaline	
					mildly alkaline to alkaline	
Water pH (wetlands)	<4-5	4.5-5.5	5.5-6.5	6.5-7.4	7.4+	
			temporary ≥ permanent			
Seepage						

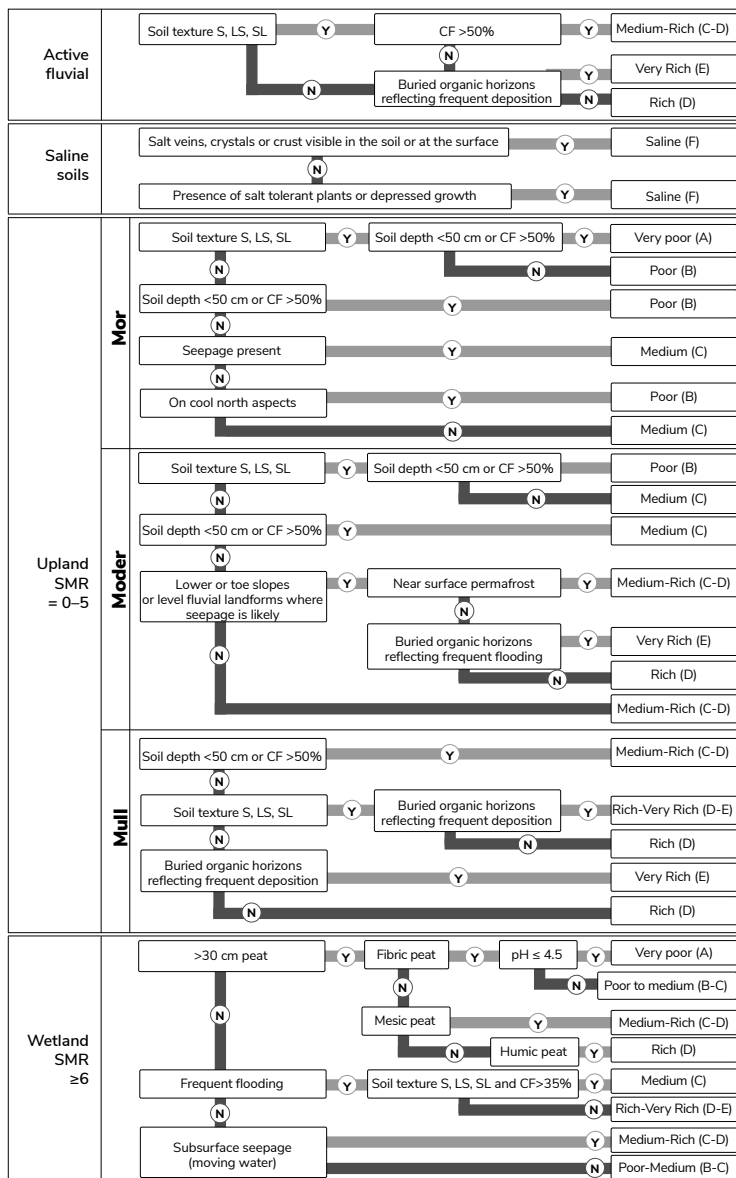


Figure A-7. Soil Nutrient Regime (SNR) flow chart

Y Yes  
N No

*Site factors	Factors that reduce available nutrients		Intermediate nutrients	Factors that increase available nutrients		
Site position	Crest	Upper slope, depression	Level or mid slope	Lower slope	Toe, Fluvial	
Soil depth (cm)	<10 -7	10-25 -5	>50 0	+3	+5	
Soil texture	S,LS -6	fS,SL -3	SiL,LSi 0	SCL,CL,SLCL +1	SC, SiC, C +2	
Coarse fragment content	>70% -6	35-70% -2	10-35% -1	0-10% +1	Organic +3	
Humus form	Mor; Fm or Of >24 cm -8	Mor; Fm or Of <10 cm -2			Mull +6	
A horizon	Ae >3 cm -3	Ae 1-3 cm -1	Thin or Absent 0	Ah 1-5 cm +3	Moder +3	
pH of rooting zone	Acid <4.5 -4	Med acid 4.5-5.4 -2	Neutral pH 5.5-6.5 0	Slightly alkaline 6.5-7.4 +3	Ah >5 cm +6	
Calcareous or saline soil	Calcareous at surface -2	Calcareous within rooting zone -1	Calcareous below rooting zone 0		Alkaline ≥7.5 See calcareous or saline soil +3	
Water table within 50 cm			Absent 0	Temporary seepage +3	Salts present within 50 cm +35	
Coarse fragment geology	Light colour -3	Hard -1	Medium 0	Continuous seepage +5	Alluvial +7	
*Totalling the values for each site factor gives an estimate of soil nutrient regime						
Nutrient regime classes and codes		Very Poor A	Medium C	Rich D	Very Rich E	Saline F
Class ranges		≤ -13	-5 to +5	+6 to +12	+13 to +16	≥ +17

Figure A-8. Soil nutrient regime (SNR) for upland soils additive chart

Site factors	Factors that reduce available nutrients -	Intermediate nutrients 0	Factors that increase available nutrients +
Soil Texture	LS, S -2	SIL, L, Si 0	SCL, CL, SICL +1
Organic materials	Fibric -2	Mesic 0	Humic +3
Depth to mineral soil	>100 cm -3	10-29cm 0	<2 cm +3
Humus form	Mor -2	Moder 0	Mull +2
Depth water table	>30 cm -3	Intermediate 0	At surface +3
Water source	Precipitation/ permafrost -3		Ground-water +3
Water pH	≤ 4.5 -3	5.5-6.4 0	Rare-occasional flooding; stream subirrigation +5
Permafrost at <1 m	Present -2	Absent +2	Frequent-flooding; stream subirrigation +8
			Saline +35
			Check for salinity

SNR classes	Very Poor A	Poor B	Medium C	Rich D	Very Rich E	Saline F
SNR codes						
Class ranges	≤ -13	-12 to -6	-5 to +5	+6 to +12	+13 to +29	>+30

Figure A-9. Soil nutrient regime (SNR) for wetland soils additive chart

Table A-5. Drainage class – codes and descriptions

Code	Drainage class	Description
VR	<b>Very rapidly drained</b>	Water is removed from the soil very rapidly in relation to supply. Water source is precipitation, and available water storage capacity following precipitation is essentially nil. Soils are typically fragmental or skeletal, shallow, or both.
R	<b>Rapidly drained</b>	Water is removed from the soil rapidly in relation to supply. Excess water flows downward if underlying material is pervious. Subsurface flow may occur on steep gradients during heavy rainfall. Water source is precipitation. Soils are generally coarse-textured or shallow.
W	<b>Well drained</b>	Water is removed from the soil readily, but not rapidly. Excess water flows downward readily into underlying pervious material or laterally as subsurface flow. Water source is precipitation. On slopes, subsurface flow may occur for short durations, but additions are equaled by losses. Soils are generally intermediate in texture and lack restricting layers.
MW	<b>Moderately well drained</b>	Water is removed from the soil somewhat slowly in relation to supply because of imperviousness or lack of gradient. Precipitation is the dominant water source in medium-to-fine-textured soils; precipitation and significant additions by subsurface flow are necessary in coarse-textured soils.
I	<b>Imperfectly drained</b>	Water is removed from the soil sufficiently slowly in relation to supply to keep the soil wet for a significant part of the growing season. Excess water moves slowly downward if precipitation is the major source. If subsurface water or groundwater (or both) is the main source, the flow rate may vary but the soil remains wet for a significant part of the growing season. Precipitation is the main source if available water storage capacity is high; contribution by subsurface or groundwater flow (or both) increases as available water storage capacity decreases. Soils generally have a wide range of texture, and some mottling is common.
P	<b>Poorly drained</b>	Water is removed so slowly in relation to supply that the soil remains wet for much of the time that it is not frozen. Excess water is evident in the soil for a large part of the time. Subsurface or groundwater flow (or both), in addition to precipitation, are the main water sources. A perched water table may be present. Soils are generally mottled and/or gleyed or organic and are often associated with wetlands.
VP	<b>Very poorly drained</b>	Water is removed from the soil so slowly that the water table remains at or near the surface for most of the time the soil is not frozen. Groundwater flow and subsurface flow are the major water sources. Precipitation is less important, except where there is a perched water table with precipitation exceeding evapotranspiration. Typically associated with wetlands. Soils are gleyed or organic.

Source of descriptions: Expert Committee on Soil Survey 1982



**Table A-6.** Community Structure

Structure is used to describe the appearance of a stand or community using the characteristic life form (stratum) and certain physical attributes. "Structure" can depict stand development features along a trajectory that is characteristic for the vegetation (e.g., development of a forest type), or refer to a certain type of vegetation (e.g., herb community).

Choose one of the following codes.

**1. Non-vegetated**

recent disturbance, e.g., fire, flood, and no vegetation, or less than 5% cover of vegetation has established.

**2. Sparse/cryptogram**

either the initial stages of primary succession or a cryptogram community maintained by environmental conditions (e.g., bedrock, talus). Sparse tree, shrub and herb cover. Either sparsely vegetated overall (low cover of vascular plants and cryptogams, if present), or dominated by cryptogams.

**2a Sparse** – 5–10% vegetation cover

**2b Bryoid** – bryophyte-dominated

**2c Lichen** – lichen-dominated

**3. Herb**

early successional stage (e.g., post-fire forest succession) or a herb community maintained by environmental conditions or disturbance. Vegetation dominated by herbs (forbs, graminoids, ferns), although herb cover can be low if sparsely vegetated overall as long as herbs characterize the vegetation. Trees and shrubs are usually absent or sparse; however, shrub cover and stature as compared to herb cover and stature determines whether the site is considered herbaceous.

**3a Forb-dominated** – includes non-graminoid herbs and ferns

**3b Graminoid-dominated** – includes grasses, sedges, reeds and rushes

**3c Aquatic** – floating or submerged plants dominate

**3d Ground shrub-dominated** – dominated by dwarf woody species such as kinnikinnick or dwarf willows

#### 4. **Shrub**

early successional stage of a forest or a shrub community maintained by environmental conditions or disturbance. Either dominated by shrubby vegetation, including tree seedlings/saplings, or if sparsely vegetated overall, the dominance of shrubs characterizes the community as a shrubland.

**4a Tall shrub** – dominated by woody plants  
>2 m and  $\leq 7$  cm dbh

**4b Low shrub** – dominated by woody plants <2 m

#### 5. **Treed: pole/sapling**

trees >5 m tall and >7 cm dbh, typically densely stocked. Self-thinning and vertical structure are not yet evident in the canopy. Younger stands are vigorous (usually >15–20 years old); older stagnated stands (up to 100 years old) are also included; time since disturbance usually <40 years; up to 100+ years for dense (5,000–15,000+ stems per ha) stagnant stands.

#### 6. **Treed: young forest**

self-thinning has become evident and the forest canopy has begun to differentiate into distinct layers. A more open stand than the pole/sapling stage.

#### 7. **Treed: mature forest**

trees established after the last stand-replacing disturbance have matured; a second cycle of shade-tolerant trees may have become established; shrub and herb understoreys become well developed as the canopy opens up.

#### 8. **Treed: old forest**

stands of old age with complex structure; patchy shrub and herb understoreys are typical; regeneration is usually of shade-tolerant species, with composition similar to the overstorey.

#### 9. **Treed: very old forest**

very old stands having complex structure with abundant large-sized trees, snags and coarse woody debris (CWD); snags and CWD occurring in all stages of decomposition; stands are comprised entirely of shade-tolerant overstorey species with well-established canopy gaps.

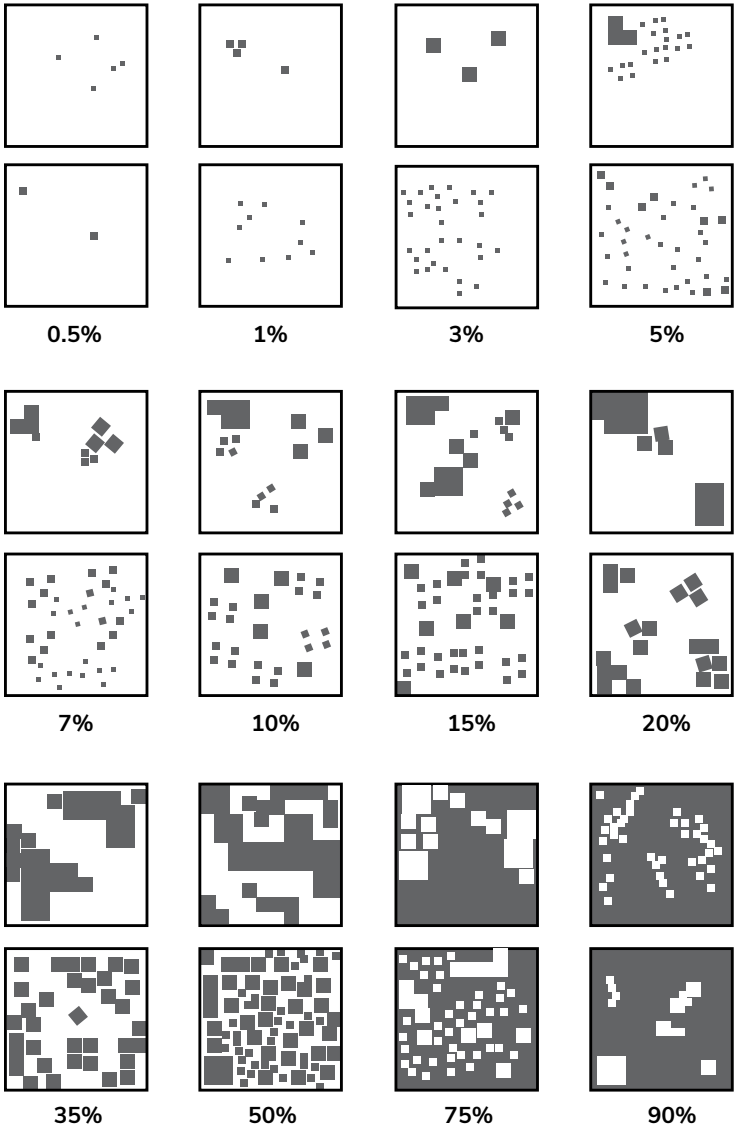
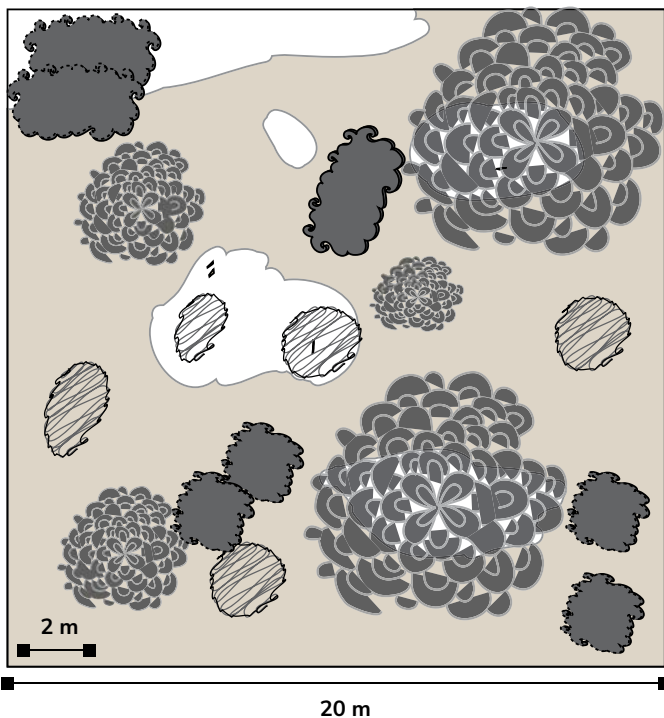


Figure A-11. Visual aid for determining percent cover of plant species







Stratum	 Tree	 Shrub	 Herb	 Moss
Cover	30%	5%	10%	80%

Figure A-12. Determining percent cover of plant species (example)

Table A-7. List of BOLyc ecosites and vegetation units

Association Code	Vegetation Association Name
<b>Dry to Mesic</b>	
<b>01 PS – Twinflower – Step moss forest</b>	
A29	Aspen / Prickly rose / Fireweed
APSw25	Aspen – Pine – White spruce / Soapberry
ASw26	Aspen – White spruce / Fireweed – Kinnikinnick
P21	Pine / Lowbush cranberry – Twinflower
P22	Pine / Soapberry
P23	Pine / Alder / Feathermoss
PSb23	Pine – Black spruce / Alder / Feathermoss
PSbSw22	Pine – Black spruce – White spruce / Lowbush cranberry
PSbSw23	Pine – Black spruce – White spruce / Lowbush cranberry / Feathermoss
PSw26	Pine – White spruce / Soapberry / Feathermoss
SbSw22	Black spruce – White spruce / Lowbush cranberry / Feathermoss
Sw27	White spruce / Feathermoss
<b>10 PS – Lowbush cranberry – Lichen woodland</b>	
A03	Aspen / Kinnikinnick
P01	Pine / Kinnikinnick / Lichen
PSw03	PSw03 Pine – White spruce / Lowbush cranberry / Lichen
PSbSw03	Pine – Black spruce – White spruce / Lowbush cranberry / Lichen
<b>11 APSw – Grass forest</b>	
A20	Aspen / Grass – Kinnikinnick
APSw06	Aspen – Pine – White spruce / Purple reedgrass – Kinnikinnick
ASw07	Aspen – White spruce / Purple reedgrass – Kinnikinnick
P25	Pine / Purple reedgrass
PSw05	Pine – White spruce / Purple reedgrass
Sw20	White spruce / Grass – Kinnikinnick
<b>20 Pasture sage – Purple reedgrass grassland</b>	
Arfr02	Pasture sage – Purple reedgrass
Arfr03	Pasture sage – Curly sedge
Juho02	Creeping juniper – Purple reedgrass
Nema02	Yukon goldenweed – Purple reedgrass
<b>21 At – Kinnikinnick forest</b>	
A03	Aspen / Kinnikinnick
A04	Aspen / Prickly rose / Grass
A21	Aspen / Soapberry / Kinnikinnick
A29	Aspen / Prickly rose / Fireweed
Roac04	Prickly rose – Purple reedgrass

Table A-7. List of BOLyc ecosites and vegetation units (continued)

Association Code	Vegetation Association Name
<b>Mesic to moist ecosites</b>	
<b>30 PS – Labrador tea – Feathermoss forest</b>	
P24	Pine – Alder / Labrador tea / Feathermoss
P29	Pine / Labrador tea / Feathermoss
PSb25	Pine – Black spruce / Labrador tea / Feathermoss
SbSw30	Black spruce – White spruce / Labrador tea / Feathermoss
SwW29	White spruce – Alaska birch / Green alder / Labrador tea
<b>31 Sw – Willow – Red bearberry forest</b>	
Sw31	White spruce / Willow / Red bearberry / Feathermoss
SbSw31	Black spruce – White spruce / Blueberry willow / Feathermoss
<b>32 Sw – Shrub birch – Willow forest</b>	
P30	Pine / Shrub birch / Altai fescue
<b>Floodplain ecosites</b>	
<b>40 Sw – Horsetail riparian forest</b>	
SwB28	White spruce – Balsam poplar / Step moss
Sw36	White spruce / Highbush cranberry / Horsetail
<b>41 B – Horsetail riparian forest</b>	
B22	Balsam poplar / River alder – Red-osier dogwood / Horsetail
SwB29	White spruce – Balsam poplar / Highbush cranberry / Horsetail
<b>Wetland ecosites</b>	
<b>Bog ecosites</b>	
<b>B03 Sb – Labrador tea – Peat moss bog</b>	
Sb41	Black spruce / Labrador tea / Sedge / Peat moss
Sb43	Black spruce / Labrador tea / Feathermoss – Peat moss
Sb44	Black spruce / Labrador tea / Cloudberry – Lowbush cranberry / Peat moss
<b>B04 Sb – Lichen bog</b>	
Sb42	Black spruce / Labrador tea / Reindeer lichen – Peat moss
Rhto51	Northern Labrador tea / Reindeer lichen – Peat moss
<b>B06 Sb – Sloping bog</b>	
Sb43s	Black spruce / Labrador tea / Feathermoss – Peat moss; slope phase
<b>B09 Peat moss bog</b>	
Spfu52	Bog rosemary / Brown peat moss
<b>Fen ecosites</b>	
<b>F01 Water sedge fen</b>	
Caaq55	Water sedge – Beaked sedge
Caut55	Beaked sedge – Marsh cinquefoil
<b>F02 Shrub birch – Water sedge fen</b>	
Begl50	Shrub birch – Willow / Water sedge

Table A-7. List of BOLyc ecosites and vegetation units (continued)

Association Code	Vegetation Association Name
<b>F03 Willow – Water sedge fen</b>	
Sasp58	Willow / Water sedge
Sasp59	Willow / Beaked sedge
<b>F04 SbSw – Water sedge fen</b>	
Sb54	Black spruce / Water sedge / Brown moss
SbSw56	Black spruce – White spruce / Water sedge / Brown moss
Sw50	White spruce / Labrador tea / Water sedge
Sw51	White spruce / Shrub birch / Water sedge
<b>F05 Sb – Tussock sedge fen</b>	
Sb50	Black spruce / Spruce muskeg sedge
Sb51	Black spruce / Shrub birch / Spruce muskeg sedge
Sb52	Black spruce / Leatherleaf / Spruce muskeg sedge
W54	Alaska birch / Leatherleaf / Spruce muskeg sedge
Sb55	Black spruce / Tussock cottongrass
SbSw55	Black spruce – White spruce / Leatherleaf / Tussock cottongrass
W55	Alaska birch / Leatherleaf / Tussock cottongrass
SbW50	Black spruce – Alaska birch / Tussock cottongrass
Sb56	Black spruce / Close-sheathed cottongrass
<b>F06 Shrub birch – Tussock sedge fen</b>	
Begl51	Shrub birch / Tussock cottongrass / Peat moss
Begl52	Shrub birch / Spruce muskeg sedge
Begl53	Shrub birch – Leatherleaf / Spruce muskeg sedge
Begl54	Shrub birch / Spruce muskeg sedge – Bluejoint reedgrass
Sasp57	Willow / Spruce muskeg sedge
Sasp56	Willow / Tussock cottongrass
<b>F13 Water horsetail – Sedge fen</b>	
Eqfl56	Water horsetail – Sedge
<b>F15 Mud sedge – Bog buckbean</b>	
Cali58	Mud sedge / Peat moss
Metr55	Bog buckbean – Mud Sedge
Scpa55	Marsh scheuchzeria – Mud sedge
<b>F17 Peat moss fen</b>	
Spha57	Peat moss
<b>F18 Russet cottongrass fen</b>	
Erru55	Russet Cottongrass / Peat moss
<b>F20 Wild calla fen</b>	
Capa59	Wild calla – Marsh cinquefoil

Table A-7. List of BOLyc ecosites and vegetation units (continued)

Association Code	Vegetation Association Name
<b>Marsh ecosites</b>	
<b>M01 Beaked sedge – Water sedge marsh</b>	
Caaq57	Water sedge – Moss
Caut56	Beaked sedge – Water sedge
Caut57	Beaked sedge
<b>M02 Water horsetail marsh</b>	
Eqfl55	Water horsetail – Water sedge
Eqfl56	Water horsetail – Beaked sedge
Eqfl59	Water horsetail
<b>M04 Short-awned foxtail marsh</b>	
Alae55	Short-awned foxtail
<b>M08 Awned sedge marsh</b>	
Caat55	Awned sedge – Water smartweed
<b>M09 Bulrush marsh</b>	
Scac58%	Hard-stemmed bulrush
Scta55	Soft-stemmed bulrush
<b>M10 Reedgrass marsh</b>	
Caca54	Bluejoint reedgrass
Cast54	Slim-stemmed reedgrass
<b>M56% Baltic rush saline marsh</b>	
Juba51	Baltic rush
<b>Swamp ecosites</b>	
<b>S01 Willow – Bluejoint swamp</b>	
Sasp50	Willow / Bluejoint reedgrass
Sasp52	Willow / Grass
<b>S03 Willow – Water sedge swamp</b>	
Saba57	Barclay's willow / Water sedge
Sagl57	Grey-leaved willow / Water sedge
Sapl57	Tea-leaved willow / Water sedge
Sasp60	Willow / Water sedge
<b>S05 Willow – Shrub birch – Water sedge swamp</b>	
Begl62	Shrub birch – Willow / Water sedge
Sasp65	Willow – Shrub birch / Water sedge / Brown moss
Sasp67	Willow – Shrub birch / Water sedge / Peat moss
<b>S07 Sb – Labrador tea – Blueberry – Peat moss swamp</b>	
Sb34	Black spruce / Labrador tea / Lowbush cranberry / Feathermoss – Peat moss
Sb36	Black spruce / Labrador tea / Lowbush cranberry / Reindeer lichen – Peat moss
SbW35	Black spruce – Alaska birch / Labrador tea / Feathermoss – Peat moss

Table A-7. List of BOLyc ecosites and vegetation units (continued)

Association Code	Vegetation Association Name
<b>S08 SbSw – Red bearberry – Brown moss swamp</b>	
SbSw32	Black spruce (White spruce) / Red bearberry / Feathermoss – Brown moss
SbSw38	Black spruce (White spruce) / Labrador tea / Red bearberry / Feathermoss – Brown moss
Sw32	White spruce / Blueberry willow / Red bearberry / Brown moss
<b>S10 SbSw – Shrub birch – Feathermoss – Brown moss swamp</b>	
SbSw41	Black spruce – White spruce / Shrub birch / Feathermoss – Brown moss
Sw41	White spruce / Shrub birch / Feathermoss – Brown moss
<b>S13 Sw – Willow – Horsetail swamp</b>	
Sw39	White spruce / Willow / Horsetail / Brown moss
SbSw39	Black spruce – White spruce / Willow / Horsetail / Brown moss
<b>S15 Sb – Alder – Labrador tea – Peat moss swamp</b>	
Sb35	Black spruce / Alder – Labrador tea / Peat moss
SbW36	Black spruce – Alaska birch / Alder – Labrador tea / Peat moss
Sw37	White spruce / Alder – Lowbush cranberry / Lichen – Peat moss
SwW37	White spruce – Alaska birch / Alder / Peat moss
<b>S20 Diamond-leaved willow – Water sedge swamp</b>	
Sapu58	Diamond-leaved willow / Water sedge
Sapu59	Diamond-leaved willow / Reedgrass
Sapu60	Diamond-leaved willow / Moss
<b>Shallow water ecosites</b>	
<b>W04 Mare's-tail shallow water</b>	
Hivu71	Mare's-tail – Pondweed
Hivu72	Mare's-tail – Sago pondweed
<b>W09 Pond-lily shallow water</b>	
Nupo70	Rocky Mountain pond-lily
Nuva70	Variegated pond-lily
<b>W12 Giant water moss shallow water</b>	
Cagi75	Giant water moss
<b>W13 Slimy macroalgae shallow water</b>	
Macr75	Slimy macroalgae
Metr75	Slimy macroalgae – Buckbean

**Table A-10.** Codes for soil orders, great groups and subgroups

Codes for soil orders, great groups and subgroups likely found in the Boreal Low Zone and which may be mentioned in this guide are listed here. The list is compiled from Soil Classification Working Group (SCWG 1998).

**Brunisolic Order (B)****Melanlic Brunisol MB**

Orthic O.MB  
Eluviated E.MB  
Gleyed GL.MB  
Gleyed Eluviated GLE.MB

**Eutric Brunisol EB**

Orthic O.EB  
Eluviated E.EB  
Gleyed GL.EB  
Gleyed Eluviated GLE.EB

**Sombric Brunisol SB**

Orthic O.SB  
Eluviated E.SB  
Duric DU.SB  
Gleyed GL.SB  
Gleyed Eluviated GLE.SB

**Dystric Brunisol DYB**

Orthic O.DYB  
Eluviated E.DYB  
Duric DU.DYB  
Gleyed GL.DYB  
Gleyed Eluviated GLE.DYB

**Chernozemic Order (CH)****Brown Chernozem BC**

Orthic O.BC  
Rego R.BC  
Calcareous CA.BC

**Dark Brown Chernozem DBC**

Eluviated E.DBC  
Gleyed GL.DBC  
Gleyed Rego GLR.DBC  
Gleyed Calcareous GLCA.DBC  
Gleyed Eluviated GLE.DBC

**Black Chernozem BLC**

Orthic O.BLC  
Rego R.BLC  
Calcareous CA.BLC  
Eluviated E.BLC  
Gleyed GL.BLC  
Gleyed Rego GLR.BLC  
Gleyed Calcareous GLCA.BLC  
Gleyed Eluviated GLE.BLC

**Cryosolic Order (CY)****Turbic Cryosol TC**

Orthic Eutric OE.TC  
Orthic Dystric OD.TC  
Brunisolic Eutric BRE.TC  
Brunisolic Dystric BRD.TC  
Histic Eutric HE.TC  
Histic Dystric HD.TC  
Histic Regosolic HR.TC  
Regosolic R.TC  
Gleysolic GL.TC

**Static Cryosol SC**

Orthic Eutric OE.SC  
Orthic Dystric OD.SC  
Brunisolic Eutric BRE.SC  
Brunisolic Dystric BRD.SC  
Histic Eutric HE.SC  
Histic Dystric HD.SC  
Histic Regosolic HR.SC  
Gleysolic Static Cryosol GL.SC  
Regosolic Static Cryosol R.SC

**Organic Cryosol OC**

Fibric FI.OC  
Mesic ME.OC  
Humic HU.OC  
Terric Fibric TFI.OC  
Terric Mesic TME.OC  
Terric Humic THU.OC  
Glacic GC.OC

**Gleysolic Order (G)****Luvic Gleysol LG**

Humic HU.LG  
Fera FE.LG  
Orthic O.LG

**Humic Gleysol HG**

Fera Humic FE.HG  
Orthic Humic O.HG  
Rego Humic R.HG

**Gleysol G**

Fera FE.G  
Orthic O.G  
Rego R.G

Table A-10. Codes for soil orders, great groups and subgroups (continued)

**Luvisolic Order (L)****Gray Luvisol GL**

Orthic O.GL

Brunisolic BR.GL

Gleyed GL.GL

Gleyed Brunisolic GLBR.GL

**Organic Order (O)****Humisol H**

Typic TY.H

Fibric FI.H

Mesic ME.H

Limnic LM.H

Cumulic CU.H

Terric T.H

Terric Fibric TFI.H

Terric Mesic TME.H

Hydric HY.H

**Folisol FO**

Hemic HE.FO

Humic HU.FO

Lignic LI.FO

Histic HI.FO

**Fbrisol F**

Typic TY.F

Mesic ME.F

Humic HU.F

Limnic LM.F

Cumulic CU.F

Terric T.F

Terric Mesic TME.F

Terric Humic THU.F

Hydric HY.F

**Mesisol M**

Typic TY.M

Fibric FI.M

Humic HU.M

Limnic LM.M

Cumulic CU.M

Terric T.M.

Terric Fibric TFI.M

Terric Humic THU.M

Hydric HY.M

**Podzolic Order (P)****Humo-Ferric Podzol HFP**

Orthic O.HFP

Sombric SM.HFP

Luvisolic L.HFP

Gleyed GL.HFP

Gleyed Sombric GLSM.HFP

**Regosolic Order (R)****Regosol R**

Orthic O.R

Cumulic CU.R

Gleyed GL.R

Gleyed Cumulic GLCU.R

**Humic Regosol HR**

Orthic O.HR

Cumulic CU.HR

Gleyed GL.HR

Gleyed Cumulic GLCU.HR

Table A-11. Soil horizon codes and modifiers

Codes	Major soil horizons and modifiers
L	An upland horizon consisting of relatively fresh organic residues that are readily identifiable as to origin.
F	An upland horizon comprised of partly decomposed plant residues in which fragmented plant structures are generally recognizable as to origin. <b>Fm</b> –(mycogenous): an F horizon in which plant residues are aggregated in a matted structure, with a tenacious consistency. The matted tenacious fabric typically features a felty character due to abundant fungal mycelia. Roots may be abundant, contributing to the formation of the matted fabric. <b>Fz</b> –(zoogenous): an F horizon in which plant residues are weakly aggregated with a loose or friable consistency. The friable fabric reflects the presence of active populations of soil meso- and microfauna. Faunal droppings are typically numerous and easily observed under magnification with a hand lens or binocular microscope. Fungal mycelia may be present, but rarely in large amounts. Root residues comprise a moderate proportion of plant residues and are typically less abundant than in Fm horizons (Babel 1975). <b>Fa</b> –(amph*): an F horizon in which plant residues are aggregated in a weak to moderate, noncompact matted structure. This is an intergrade between the Fm and Fz horizons, and as such, reflects properties of both.
H	An upland horizon comprised of well-decomposed plant residues in which plant structures are generally not recognizable. <b>Hh</b> –H horizon dominated by fine substances with few, if any, recognizable plant residues. <b>Hr</b> –H horizon dominated by fine substances but that also contains recognizable fine roots, wood or bark or other plant residues. <b>Hz</b> –H horizon dominated by fine substances with very few, if any, recognizable plant residues; faunal droppings constitute most of the fabric.
O	A wetland organic horizon comprised of materials in varying degrees of decomposition. <b>Of</b> –O horizon that consists largely of fibric material that are readily identifiable as to botanical origin. Contains more than or equal to 40% rubbed fibre by volume. Von Post scale of decomposition (VP) =1–4. <b>Om</b> –O horizon that consists of mesic material, intermediate in composition between fibric and humic materials. Rubbed fibre content ranges from 10–40%. VP=5–6. <b>Oh</b> –O horizon that consists of humic material at an advanced stage of decomposition. Rubbed fibre content is <10%. VP=7–10.
A	Mineral horizon, containing <17% organic C by mass, that has formed at or near the soil surface in the zone of leaching or eluviation of organic materials in solution or suspension (Ae), or of maximum in situ accumulation of organic matter (Ah), or both.
B	Mineral horizon characterized by enrichment in organic matter, sesquioxides, or clay; or by the development of soil structure; or by a change of colour denoting hydrolysis, reduction, or oxidation.
C	Mineral horizon comparatively unaffected by the pedogenic processes operative in the A and B horizons, except the process of gleying (Cg), and the accumulation of calcium and magnesium carbonates (Cca) and more soluble salts (Cs, Csa).

Table A-11. Soil horizon codes and modifiers (continued)

Codes	Mineral Horizon Modifiers
b	Buried soil horizon <sup>1</sup>
e	Horizon characterized by the eluviation of clay, Fe, Al, or organic matter alone or in combination.
g	Horizon characterized by grey colours, or prominent mottling, or both, which indicates permanent or periodic intense reduction. Chromas of the matrix are generally one or less. It is used with the Aeg, Bg, Bfg, Bgf, Bhfg, Btg, Cg, Ckg codes and others. When used with the Ae, Bf, Bhf, and Bt codes, the limits set for the other modifiers must be met. The Bgf horizons are usually prominently mottled; more than half of the soil material occurs as mottles of high chroma. The Bgf horizons occur in Fera Gleysols and Fera Humic Gleysols and possibly below the Bfg of gleyed Podzols.
h	Horizon enriched with organic matter. It is used with the Ah, Ahe, Bh, and Bhf codes. <b>Ah</b> - An A horizon enriched with humified organic matter; at least one colour value unit lower than the underlying horizon, or 0.5% more organic C than the C horizon or both.
j	Used with e, f, g, n, and t to denote an expression of, but failure to meet, the specified limits of the letter code it modifies. It is placed to the right of the letter it modifies.
k	Denotes the presence of carbonate as indicated by visible effervescence when a dilute HCl solution is added.
m	Horizon slightly altered by hydrolysis, oxidation, or solution, or all three to give a change in colour or structure, or both. It is used with the Bm, Bmgj, Bmk, and Bms codes. It has: <ol style="list-style-type: none"> <li>Evidence of one of or more of the following: <ul style="list-style-type: none"> <li>higher chromas and redder hues than the underlying horizons;</li> <li>enrichment or complete removal of carbonates either as Bmk or Bm; and/or</li> <li>change in structure from that of the original material.</li> </ul> </li> <li>Illuviation too slight to meet requirements of a Bt or podzolic B.</li> <li>No cementation or induration and lacks a brittle consistence when moist.</li> </ol>
s	Horizon with salts, including gypsum, which may be detected as crystal or veins, or as surface crusts of salt crystals. It is used with any combination of horizon codes.
sa	Horizon >10 cm thick with secondary enrichment of salts more soluble than Ca and Mg carbonates; the concentration of salts exceeds that in the unenriched parent material.
y	Horizon affected by cryoturbation. It is used with any combination of horizon codes. <sup>1</sup>
z	A frozen layer, it may be used with any horizon or layer code. <sup>1</sup>

1. This may also be used with organic horizons.

These are soil codes and modifiers used in this guide and in the keys. A complete list of soil horizons is available in the *Field Manual for Describing Yukon Ecosystems* (2017) and *Soil Classification Working Group* (1998).

### The von Post scale of decomposition (for wetland O horizons)

Peats are classified on the basis of their degree of decomposition (or aging). This indicates the layer they came from: a young peat is taken from nearer the surface, rather than from farther down. The von Post scale classifies peat decomposition from 1 (completely undecomposed, with all plant tissues identifiable) to 10 (completely humified with little or no plant tissue identifiable). Squeeze a sample of the O horizon between your fingers and observe the colour of the solution that is squeezed out, the nature of the fibre, and the proportion of the original sample that remains in your hand.

Record the class on the form, using Table A3-4 for reference.

**Table A-12.** von Post scale of decomposition

Code/Class	Description
1	Undecomposed; plant structure unaltered; yields only clear water that is coloured light yellow-brown
2	Almost undecomposed; plant structure distinct; yields only clear water that is coloured light yellow-brown
3	Very weakly decomposed; plant structure distinct; yields distinctly turbid brown water, no peat substance passes between the fingers, residue not mushy
4	Weakly decomposed; plant structure distinct; yields strongly turbid water, no peat substance escapes between the fingers, residue rather mushy
5	Moderately decomposed; plant structure evident, but becoming indistinct; yields much turbid brown water, some peat escapes between the fingers, residue very mushy
6	Strongly decomposed; plant structure somewhat indistinct, but more evident in the squeezed residue than in the undisturbed peat; about one-third of the peat escapes between the fingers, residue strongly mushy
7	Strongly decomposed; plant structure indistinct, but recognizable; about one-half of the peat escapes between the fingers
8	Very strongly decomposed; plant structure very indistinct; about two-thirds of the peat escapes between the fingers, residue almost entirely resistant remnants such as root fibres and wood
9	Almost completely decomposed; plant structure almost unrecognizable; nearly all the peat escapes between the fingers
10	Completely decomposed; plant structure unrecognizable; all the peat escapes between the fingers



