

TABLE 5.1.1 Distribution of Bog Site Associations by biogeoclimatic zone

| | BG PP | BWBS SWB | ESSF | ICH | IDF | MS | SBPS SBS | CDF | CWH | MH |
|--|----------|-------------|------|----------------|-----|----|----------------|-----|-------------------|----|
| Wb01 Black spruce – Creeping-snowberry – Peat-moss | | | | | | | X | | | |
| Wb02 Lodgepole pine – Bog rosemary – Peat-moss | | | | X | | | X ^w | | | |
| Wb03 Black spruce – Lingonberry – Peat-moss | | xxx | | | | | | | | |
| Wb04 Western hemlock – Cloudberry – Peat-moss | | | | x ⁿ | | | | | | |
| Wb05 Black spruce – Water sedge – Peat-moss | | xx | | X | | X | xxx | | | |
| Wb06 Tamarack – Water sedge – Fen moss | | xxx | | | | | X | | | |
| Wb07 Lodgepole pine – Water sedge – Peat-moss | | | X | X | X | X | | | | |
| Wb08 Black spruce – Soft-leaved sedge – Peat-moss | | | | X | X | X | xx | | | |
| Wb09 Black spruce – Common horsetail – Peat-moss | | xx | | | | | X | | | |
| Wb10 Lodgepole pine – Few-flowered sedge – Peat-moss | | | X | X | | | X | | | |
| Wb11 Black spruce – Buckbean – Peat-moss | | | | X | | | X ^w | | | |
| Wb12 Scheuchzeria – Peat-moss | | X | | X | | | X | | | |
| Wb13 Shore sedge – Buckbean – Peat-moss | | | X | X | | | X | | | |
| Wb50 Labrador tea – Bog-laurel – Peat-moss | | | | | | | | X | X ^s | |
| Wb51 Shore pine – Crowberry – Tough peat-moss | | | | | | | | | xx | |
| Wb52 Common juniper – Tufted clubrush – Rock moss | | | | | | | | | xxx ^{oc} | |
| Wb53 Shore pine – Yellow-cedar – Tufted clubrush | | | | | | | | | xxx ^{oc} | |

x = incidental; < 5% of wetlands

w = wet/very wet subzones only

s = southern subzones only

xx = minor; 5–25% of wetlands

n = northern subzones only

xxx = major; >25% of wetlands

oc = outer coast (hypermaritime) only

TABLE 5.1.2 Bog Species Importance Table

| Species | | Wb01 | Wb02 | Wb03 | Wb04 | Wb05 | Wb06 | Wb07 | Wb08 |
|---------------------------------|---|------|------|------|------|------|------|------|------|
| Trees | <i>Picea mariana</i> | | | | | | | | |
| | <i>Larix laricina</i> | | | | | | | | |
| | <i>Tsuga heterophylla</i> | | | | | | | | |
| | <i>Pinus contorta</i> var. <i>latifolia</i> | | | | | | | | |
| | <i>Picea</i> X | | | | | | | | |
| | <i>Thuja plicata</i> | | | | | | | | |
| | <i>Pinus contorta</i> var. <i>contorta</i> <i>Chamaecyparis nootkatensis</i> | | | | | | | | |
| Shrubs | <i>Ledum groenlandicum</i> | | | | | | | | |
| | <i>Betula nana</i> | | | | | | | | |
| | <i>Salix myrtilifolia</i> | | | | | | | | |
| | <i>Lonicera involucrata</i> | | | | | | | | |
| | <i>Salix pedicellaris</i> | | | | | | | | |
| | <i>Myrica gale</i> | | | | | | | | |
| | <i>Vaccinium uliginosum</i> <i>Juniperus communis</i> | | | | | | | | |
| Herbs and Dwarf Shrubs | <i>Oxycoccus oxycoccos</i> | | | | | | | | |
| | <i>Gaultheria hispidula</i> | | | | | | | | |
| | <i>Vaccinium vitis-idaea</i> | | | | | | | | |
| | <i>Rubus chamaemorus</i> | | | | | | | | |
| | <i>Carex aquatilis/sitchensis</i> | | | | | | | | |
| | <i>Carex disperma</i> | | | | | | | | |
| | <i>Carex tenuiflora</i> | | | | | | | | |
| | <i>Comarum palustre</i> | | | | | | | | |
| | <i>Equisetum arvense</i> | | | | | | | | |
| | <i>Carex pauciflora</i> | | | | | | | | |
| | <i>Andromeda polifolia</i> | | | | | | | | |
| | <i>Empetrum nigrum</i> | | | | | | | | |
| | <i>Carex limosa</i> | | | | | | | | |
| | <i>Menyanthes trifoliata</i> | | | | | | | | |
| | <i>Eriophorum angustifolium</i> | | | | | | | | |
| | <i>Kalmia microphylla</i> | | | | | | | | |
| | <i>Scheuchzeria palustris</i> | | | | | | | | |
| | <i>Drosera anglica</i> | | | | | | | | |
| | <i>Drosera rotundifolia</i> | | | | | | | | |
| | <i>Coptis trifolia</i> | | | | | | | | |
| | <i>Carex pluriflora</i> | | | | | | | | |
| | <i>Fauria crista-galli</i> | | | | | | | | |
| | <i>Carex livida</i> | | | | | | | | |
| | <i>Sanguisorba officinalis</i> | | | | | | | | |
| | <i>Triantha glutinosa</i> | | | | | | | | |
| | <i>Trichophorum cespitosum</i> | | | | | | | | |
| | <i>Rhynchospora alba</i> | | | | | | | | |
| <i>Agrostis aequivalvis</i> | | | | | | | | | |
| Lichens and Mosses | <i>Sphagnum</i> Group I | | | | | | | | |
| | <i>Pleurozium schreberi</i> | | | | | | | | |
| | <i>Hylocomium splendens</i> | | | | | | | | |
| | <i>Aulacomnium palustre</i> | | | | | | | | |
| | <i>Tomentypnum nitens</i> | | | | | | | | |
| | <i>Sphagnum</i> Group III | | | | | | | | |
| | <i>Cladina</i> spp. | | | | | | | | |
| | <i>Cladonia</i> spp. | | | | | | | | |
| | <i>Sphagnum</i> Group IV | | | | | | | | |
| | <i>Racomitrium lanuginosum</i> | | | | | | | | |
| | <i>Siphula ceratites</i> | | | | | | | | |
| | <i>Campylopus atrovirens</i> | | | | | | | | |

Pinus contorta – *Carex aquatilis* – *Sphagnum*

General Description

Lodgepole pine – Water sedge – Peat-moss bogs/poor fens are uncommon in the interior rainforest climates at elevations to 1600 m. They most commonly occur in closed basins or in peripheral areas of larger peatlands where there is some groundwater influence.



Pinus contorta, *Picea* X, and *Abies lasiocarpa* are all common in the low canopy. *Betula nana* and *Ledum groenlandicum* are generally present and often abundant. Abundant *Carex aquatilis* is characteristic but a diversity of bog-affiliated species occurs on hummocks. *Sphagnum capillifolium* and *S. angustifolium* form a nearly continuous moss layer.

Soils are deep (to 4 m), fibric or mesic peat blankets with a poorly decomposed, acidic, *Sphagnum* surface tier. Typical Mesisols and Fbrisols are common soil types. Microtopography is often strongly mounded with hummocks of *Sphagnum fuscum* and *S. capillifolium*.

Characteristic Vegetation

Tree layer (0 - 5 - 12)

Picea X, *Pinus contorta*

Shrub layer (15 - 37 - 85)

Abies lasiocarpa, *Betula nana*, *Ledum groenlandicum*, *Lonicera involucrata*, *Picea* X, *Pinus contorta*

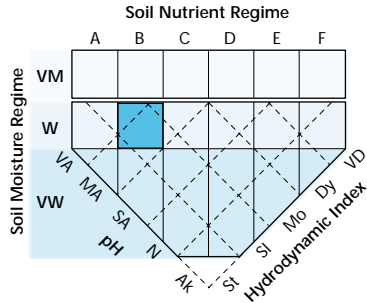
Herb layer (46 - 80 - 95)

Carex aquatilis, *Cornus canadensis*, *Empetrum nigrum*, *Equisetum arvense*, *Oxycoccus oxycoccus*

Moss layer (40 - 78 - 100)

Aulacomnium palustre, *Pleurozium schreberi*, ***Sphagnum* Group I**, *Tomentypnum nitens*

Wetland Edatopic Grid



Comments

The **Wb07** is the southern and wet-climate equivalent of the **Wb05** that occurs widely in the SBS and BWBS. The distribution of **Wb07** sites coincides with regions where *Picea mariana* does not occur.

TABLE 5.4.1 Distribution of Swamp Site Associations by biogeoclimatic zone

| | BG PP | BWBS SWB | ESSF | ICH | IDF | MS | SBPS SBS | CDF | CWH | MH |
|---|----------|-------------|------|-----|-----|----|-----------------|-----|----------------|----|
| Ws01 Mountain alder – Skunk cabbage – Lady fern | | | | XX | | | XX ^w | | | |
| Ws02 Mountain alder – Pink spirea – Sitka sedge | | X | X | XX | X | X | X ^w | | X | |
| Ws03 Bebb's willow – Bluejoint | X | XX | | | XX | X | XX | | | |
| Ws04 Drummond's willow – Beaked sedge | | | | X | X | X | XX | | | |
| Ws05 MacCalla's willow – Beaked sedge | | | | | X | | X | | | |
| Ws06 Sitka willow – Sitka sedge | | | | XX | | | X ^w | | | |
| Ws07 Spruce – Common horsetail – Leafy moss | | XX | X | XX | XX | XX | XXX | | | |
| Ws08 Subalpine fir – Sitka valerian – Common horsetail | | | XX | | | | | | | |
| Ws09 Black spruce – Skunk cabbage – Peat-moss | | | | XX | | | X ^w | | | |
| Ws10 Western redcedar – Spruce – Skunk cabbage | | | | XX | | | | | | |
| Ws11 Spruce – Subalpine fir – Skunk cabbage | | | | | | | X ^w | | | |
| Ws50 Pink spirea – Sitka sedge | | | | X | | | X ^w | XXX | XX | |
| Ws51 Sitka willow – Pacific willow – Skunk cabbage | | | | X | | | | X | X | |
| Ws52 Red alder – Skunk cabbage | | | | | | | | XX | XX | |
| Ws53 Western redcedar – Sword fern – Skunk cabbage | | | | | | | | X | X ^x | |
| Ws54 Western redcedar – Western hemlock – Skunk cabbage | | | | | | | | X | XX | |
| Ws55 Yellow-cedar – Mountain hemlock – Skunk cabbage | | | | | | | | | | XX |

x = incidental; < 5% of wetlands

w = wet subzones only

xx = minor; 5–25% of wetlands

x = very dry subzones only

xxx = major; >25% of wetlands

TABLE 5.4.2 Swamp Species Importance Table

| Species | | Ws03 | Ws04 | Ws05 | Ws02 | Ws06 | Ws07 | Ws08 | Ws01 |
|---|-----------------------------------|-----------------------|------|------|------|------|------|------|------|
| Trees | <i>Picea X</i> | | | | | | | | |
| | <i>Picea mariana</i> | | | | | | | | |
| | <i>Abies lasiocarpa</i> | | | | | | | | |
| | <i>Tsuga heterophylla</i> | | | | | | | | |
| | <i>Thuja plicata</i> | | | | | | | | |
| | <i>Picea sitchensis</i> | | | | | | | | |
| | <i>Alnus rubra</i> | | | | | | | | |
| | <i>Acer macrophyllum</i> | | | | | | | | |
| | <i>Chamaecyparis nootkatensis</i> | | | | | | | | |
| | <i>Tsuga mertensiana</i> | | | | | | | | |
| | <i>Abies amabilis</i> | | | | | | | | |
| | Shrubs | <i>Salix bebbiana</i> | | | | | | | |
| <i>Salix drummondiana</i> | | | | | | | | | |
| <i>Salix maccalliana</i> | | | | | | | | | |
| <i>Alnus incana</i> | | | | | | | | | |
| <i>Lonicera involucrata</i> | | | | | | | | | |
| <i>Spiraea douglasii</i> | | | | | | | | | |
| <i>Cornus stolonifera</i> | | | | | | | | | |
| <i>Vaccinium alaskaense/ovalifolium</i> | | | | | | | | | |
| <i>Salix sitchensis</i> | | | | | | | | | |
| <i>Salix lucida</i> | | | | | | | | | |
| <i>Rubus spectabilis</i> | | | | | | | | | |
| <i>Sambucus racemosa</i> | | | | | | | | | |
| <i>Gaultheria shallon</i> | | | | | | | | | |
| <i>Ribes bracteosum</i> | | | | | | | | | |
| <i>Elliottia pyroliflorus</i> | | | | | | | | | |
| Herbs and Dwarf Shrubs | <i>Calamagrostis canadensis</i> | | | | | | | | |
| | <i>Carex aquatilis/sitchensis</i> | | | | | | | | |
| | <i>Carex utriculata</i> | | | | | | | | |
| | <i>Gymnocarpium dryopteris</i> | | | | | | | | |
| | <i>Valeriana sitchensis</i> | | | | | | | | |
| | <i>Scirpus microcarpus</i> | | | | | | | | |
| | <i>Equisetum arvense</i> | | | | | | | | |
| | <i>Lysichiton americanus</i> | | | | | | | | |
| | <i>Athyrium filix-femina</i> | | | | | | | | |
| | <i>Tiarella trifoliata</i> | | | | | | | | |
| | <i>Streptopus lanceolatus</i> | | | | | | | | |
| | <i>Maianthemum dilatatum</i> | | | | | | | | |
| | <i>Oenanthe sarmentosa</i> | | | | | | | | |
| | <i>Polystichum munitum</i> | | | | | | | | |
| | <i>Equisetum telmateia</i> | | | | | | | | |
| | <i>Blechnum spicant</i> | | | | | | | | |
| | <i>Veratrum viride</i> | | | | | | | | |
| | <i>Fauria crista-galli</i> | | | | | | | | |
| Mosses and Lichens | <i>Drepanocladus spp.</i> | | | | | | | | |
| | <i>Mnium spp.</i> | | | | | | | | |
| | <i>Aulacomnium palustre</i> | | | | | | | | |
| | <i>Sphagnum spp.</i> | | | | | | | | |
| | <i>Hylocomium splendens</i> | | | | | | | | |
| | <i>Pleurozium schreberi</i> | | | | | | | | |
| | <i>Eurhynchium praelongum</i> | | | | | | | | |
| | <i>Rhytidiadelphus loreus</i> | | | | | | | | |

Salix drummondiana – *Carex utriculata*

General Description

Drummond's willow – Beaked sedge swamps/fens are common in the Central and Sub-Boreal Interior in back-levee depressions of low-gradient creeks or channel margins in peatland streams. **Ws04** sites can be deeply flooded during the spring freshet and after drawdown maintain a high watertable due to fine-textured soils or low-lying position relative to the watertable.

Salix drummondiana dominates these sites, with other shrubs such as *Lonicera involucrata* and *Spiraea douglasii* common in the low-shrub layer. The herb layer is moderately well developed and predominantly *Carex aquatilis* and *C. utriculata*.



Sedge peat veneers or blankets over fine- to medium-textured fluvial or lacustrine materials are typical. Flooding can result in buried organic layers, peat and mineral mixing, or reduced surface organic accumulation.

Characteristic Vegetation

Tree layer (0 - 5 - 10)

Shrub layer (10 - 52 - 100)

Lonicera involucrata, *Salix drummondiana*,
Spiraea douglasii

Herb layer (2 - 53 - 90)

Calamagrostis canadensis, *Carex aquatilis/sitchensis*, *C. utriculata*

Moss layer (0 - 14 - 80)

Mnium spp.

Comments

In wetter climates of the Interior, the **Ws04** is replaced by the **Ws06**.

The **Ws04** occurs along open water channels adjacent to **Wf01** and **Wm01** units. It also occurs in low sites along sluggish streams adjacent to the **F105**.

Drummond's willow is well adapted to fluvial sites; twigs and branches have brittle bases that readily break during flood events. These whips will readily root in mineral soils.

Wetland Edatopic Grid

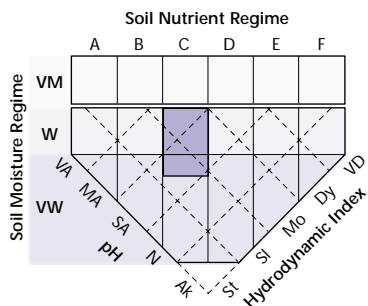


TABLE 5.3.1 Distribution of Marsh Site Associations by biogeoclimatic zone

| | BG PP | BWBS SWB | ESSF | ICH | IDF | MS | SBPS SBS | CDF | CWH | MH |
|--|----------|-------------|------|-----|-----|----|-------------|-----|----------------|----|
| Wm01 Beaked sedge – Water sedge | x | xx | x | xxx | xxx | xx | xx | | x | |
| Wm02 Swamp horsetail – Beaked sedge | | x | | x | x | x | xx | | | |
| Wm03 Awned sedge | x | | | | x | | | | | |
| Wm04 Common spike-rush | x | x | | xx | x | x | xx | | x | |
| Wm05 Cattail | xxx | x | | xx | xx | x | xx | xx | x ^s | |
| Wm06 Great bulrush | xxx | x | | x | xx | xx | x | x | x | |
| Wm07 Baltic rush | x | | | | xx | | | | | |
| Wm50 Sitka sedge – Hemlock-parsley | | | | | | | | xx | xx | |
| Wm51 Three-way sedge | | | | x | | | | x | x | |

x = incidental; < 5% of wetlands

xx = minor; 5–25% of wetlands

xxx = major; >25% of wetlands

s = southern subzones only

TABLE 5.3.2 Marsh Species Importance Table

| Species | | Wm01 | Wm02 | Wm03 | Wm04 | Wm05 |
|------------------------|--|------|------|------|------|------|
| Herbs and Dwarf Shrubs | <i>Carex utriculata</i> | | | | | |
| | <i>Carex aquatilis</i> | | | | | |
| | <i>Equisetum fluviatile</i> | | | | | |
| | <i>Comarum palustre</i> | | | | | |
| | <i>Sium suave</i> | | | | | |
| | <i>Carex exsiccata</i> | | | | | |
| | <i>Carex atherodes</i> | | | | | |
| | <i>Polygonum amphibium</i> | | | | | |
| | <i>Eleocharis palustris</i> | | | | | |
| | <i>Potamogeton richardsonii</i> | | | | | |
| | <i>Typha latifolia</i> | | | | | |
| | <i>Schoenoplectus acutus</i> | | | | | |
| | <i>Menyanthes trifoliata</i> | | | | | |
| | <i>Utricularia macrorhiza</i> | | | | | |
| | <i>Juncus balticus</i> | | | | | |
| | <i>Hordeum jubatum</i> | | | | | |
| | <i>Potentilla anserina</i> | | | | | |
| | <i>Calamagrostis canadensis</i> | | | | | |
| | <i>Cicuta douglasii</i> | | | | | |
| | <i>Lysichiton americanus</i> | | | | | |
| | <i>Oenanthe sarmentosa</i> | | | | | |
| | <i>Galium trifidum</i> | | | | | |
| | <i>Spiraea douglasii</i> | | | | | |
| | <i>Carex sitchensis</i> | | | | | |
| | <i>Nuphar lutea</i> ssp. <i>polysepala</i> | | | | | |
| | <i>Dulichium arundinaceum</i> | | | | | |
| Mosses | <i>Drepanocladus</i> spp. | | | | | |
| | <i>Wamstorfia</i> spp. | | | | | |

Carex utriculata – *Carex aquatilis*

General Description

Beaked sedge – Water sedge marshes constitute the most common and widespread Marsh Site Association in the province. The **Wm01** occurs in all subzones from low to sub-alpine elevations on sites that are inundated by shallow,

low-energy floodwaters and that experience some late-season drawdown. These marshes are found in a wide variety of landscape positions including flooded beaver ponds, lake margins, floodplains, and palustrine basins.



Species diversity is low and plant cover is strongly dominated by *Carex utriculata* and *C. aquatilis* with scattered forbs, aquatics, and mosses. On sites experiencing significant surface drying, species diversity increases and sites become more meadow-like. Species such as *Calamagrostis canadensis*, *Geum macrophyllum*, or *Deschampsia cespitosa* can become prominent.

The **Wm01** occurs over a wide range of site conditions on mineral substrates with thin peat veneers. Common soil types include Gleysols and Terric Humisols.

Characteristic Vegetation

- Tree layer (0 - 0 - 0)
- Shrub layer (0 - 0 - 5)
- Herb layer (13 - 80 - 100)
- Carex aquatilis*, *C. utriculata*
- Moss layer (0 - 5 - 100)

Comments

The **Wf01** and **Wm01** have similar plant communities, but, because these units are species-poor and the two dominant sedge species have a wide ecological amplitude, the plant community poorly differentiates between sites on peat (**Wf01**) and those on mineral soil (**Wm01**). In general, the **Wm01** is more deeply flooded, has more dynamic hydrology, and has a higher cover of *C. utriculata*.

The **Wm02** is another similar community that occurs on more hydrologically dynamic locations such as lake margins or floodplains. In cooler climates the **Wm01** frequently develops into **Wf01** on sites with less dynamic hydrology.

Some **Wm01** sites have scattered tall shrubs; those sites supporting > 10% shrub cover are described by Swamp Site Associations (Section 5.4).

Wetland Edatopic Grid

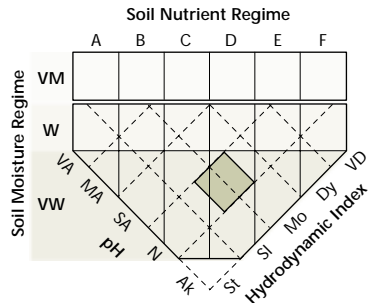


TABLE 5.2.1 Distribution of Fen Site Associations by biogeoclimatic zone

| | BG PP | BWBS SWB | ESSF | ICH | IDF | MS | SBPS SBS | CDF | CWH | MH |
|--|----------|-------------|------|-----|-----|-----|-------------|-----|-----------------|-----|
| Wf01 Water sedge – Beaked sedge | | xx | x | xx | xxx | xxx | xxx | | x ⁱ | |
| Wf02 Scrub birch – Water sedge | | xxx | x | xx | xx | xx | xx | | | |
| Wf03 Water sedge – Peat-moss | | | xx | | | | x | | | |
| Wf04 Barclay's willow – Water sedge – Glow mosses | | x | xxx | | | x | x | | | |
| Wf05 Slender sedge – Common hook-moss | | x | | xx | xx | xx | xx | | | |
| Wf06 Slender sedge – Buckbean | | x | | x | x | | x | | | |
| Wf07 Scrub birch – Buckbean – Shore sedge | | x | | x | x | | x | | | |
| Wf08 Shore sedge – Buckbean – Hook-moss | | x | x | | x | x | x | | | |
| Wf09 Few-flowered spike-rush – Hook-moss | | | x | | | x | x | | | |
| Wf10 Hudson Bay clubrush – Red hook-moss | | | | | | | x | | | |
| Wf11 Tufted clubrush – Star moss | | x | x | x | | x | x | | | |
| Wf12 Narrow-leaved cotton-grass – Marsh-marigold | | | xxx | | | | | | | |
| Wf13 Narrow-leaved cotton-grass – Shore sedge | | | xx | | | x | | | | |
| Wf50 Narrow-leaved cotton-grass – Peat-moss | | | | | | | | | x | xxx |
| Wf51 Sitka sedge – Peat-moss | | | | x | | | | xx | xx | |
| Wf52 Sweet gale – Sitka sedge | | | | | | | | xx | xx ^s | |
| Wf53 Slender sedge – White beak-rush | | | | | | | | x | xx ^s | |

x = incidental; < 5% of wetlands

i = inland areas only

xx = minor; 5–25% of wetlands

s = southern subzones only

xxx = major; >25% of wetlands

TABLE 5.2.2 Fen Species Importance Table

| Species | | WF01 | WF02 | WF03 | WF04 | WF05 | WF06 | WF07 | WF08 |
|------------------------|---------------------------------------|------|------|------|------|------|------|------|------|
| Shrubs | <i>Betula nana</i> | | | | | | | | |
| | <i>Salix barclayi</i> | | | | | | | | |
| | <i>Salix pedicellaris</i> | | | | | | | | |
| | <i>Spiraea douglasii</i> | | | | | | | | |
| | <i>Myrica gale</i> | | | | | | | | |
| Herbs and Dwarf Shrubs | <i>Carex utriculata</i> | | | | | | | | |
| | <i>Carex aquatilis</i> | | | | | | | | |
| | <i>Comarum palustre</i> | | | | | | | | |
| | <i>Calamagrostis canadensis</i> | | | | | | | | |
| | <i>Carex lasiocarpa</i> | | | | | | | | |
| | <i>Menyanthes trifoliata</i> | | | | | | | | |
| | <i>Carex limosa</i> | | | | | | | | |
| | <i>Carex chordorrhiza</i> | | | | | | | | |
| | <i>Eleocharis quinqueflora</i> | | | | | | | | |
| | <i>Trichophorum alpinum</i> | | | | | | | | |
| | <i>Trichophorum cespitosum</i> | | | | | | | | |
| | <i>Eriophorum angustifolium</i> | | | | | | | | |
| | <i>Caltha leptosepala</i> | | | | | | | | |
| | <i>Carex anthoxanthea</i> | | | | | | | | |
| | <i>Equisetum fluviatile</i> | | | | | | | | |
| | <i>Carex magellanica</i> | | | | | | | | |
| | <i>Carex sitchensis</i> | | | | | | | | |
| | <i>Rhynchospora alba</i> | | | | | | | | |
| | <i>Carex livida</i> | | | | | | | | |
| | <i>Eriophorum chamissonis</i> | | | | | | | | |
| | <i>Vahlodea atropurpurea</i> | | | | | | | | |
| | <i>Drosera anglica</i> | | | | | | | | |
| | <i>Hypericum anagalloides</i> | | | | | | | | |
| | <i>Triantha glutinosa</i> | | | | | | | | |
| | <i>Schoenoplectus tabernaemontani</i> | | | | | | | | |
| | <i>Fauria crista-galli</i> | | | | | | | | |
| | <i>Senecio triangularis</i> | | | | | | | | |
| | <i>Andromeda polifolia</i> | | | | | | | | |
| | <i>Kalmia microphylla</i> | | | | | | | | |
| | <i>Oxycoccus oxycoccus</i> | | | | | | | | |
| | <i>Triglochin maritima</i> | | | | | | | | |
| | <i>Drosera rotundifolia</i> | | | | | | | | |
| | <i>Leptarrhena pyrolifolia</i> | | | | | | | | |
| | <i>Platanthera dilatata</i> | | | | | | | | |
| | <i>Sanguisorba canadensis</i> | | | | | | | | |
| | <i>Utricularia intermedia</i> | | | | | | | | |
| | <i>Viola palustris</i> | | | | | | | | |
| Lichens and Mosses | <i>Sphagnum</i> Group I | | | | | | | | |
| | <i>Aulaacomnium palustre</i> | | | | | | | | |
| | <i>Drepanocladus</i> spp. | | | | | | | | |
| | <i>Sphagnum</i> Group II | | | | | | | | |
| | <i>Tomentypnum nitens</i> | | | | | | | | |
| | <i>Philonotis fontana</i> | | | | | | | | |
| | <i>Calliergon stramineum</i> | | | | | | | | |
| | <i>Scorpidium</i> spp. | | | | | | | | |
| | <i>Campyllum stellatum</i> | | | | | | | | |
| | <i>Warnstorfia</i> spp. | | | | | | | | |
| | <i>Meesia triquetra</i> | | | | | | | | |

Carex aquatilis – *Carex utriculata*

General Description

The Water sedge – Beaked sedge Fen Site Association is the most common and widespread Fen Site Association in the province. It occurs in all but the warmest and driest subzones from low to subalpine elevations on sites that are annually inundated by shallow, low-energy flood waters and that experience some late-season drawdown.

Wf01 fens are found in a wide variety of landscape positions but most commonly palustrine basins. They occupy wetter zones in larger peatland complexes but also form extensive pure “meadows.”



Species diversity is low; *Carex*

aquatilis and *Carex utriculata* cover is often continuous, with scattered forbs, aquatics, and mosses in the understorey. On sites that dry out at the surface, *Calamagrostis canadensis* or *C. stricta* can become prominent, species diversity increases, and sites become more meadow-like.

Peat depths range from 30 to > 300 cm. Common soil types include typic and terric Fibrisols and Mesisols. This Site Association tolerates variable hydrology.

Characteristic Vegetation

- Tree layer (0 - 0 - 0)
- Shrub layer (0 - 0 - 10)
- Herb layer (13 - 80 - 100)
- Carex aquatilis*, *C. utriculata*
- Moss layer (0 - 5 - 100)
- Drepanocladus aduncus*

Comments

Sites dominated by *C. utriculata* and *C. aquatilis* but with mineral or humic soils are described by the **Wm01**. Because **Wf01** and **Wm01** sites are species-poor and the two dominant sedge species have a wide ecological amplitude, the plant community poorly differentiates between sites on peat (**Wf01**) and those on mineral soil (**Wm01**). **Wf01** sites typically have less *C. utriculata* and fewer aquatics than **Wm01** sites. The **Wf01** develops from the **Wm01** in most circumstances.

Sites that are drier or at least have more pronounced microtopography than the **Wf01** are usually occupied by communities with low shrubs and high moss cover (most commonly, the **Wf02**). However, at higher elevations few shrubs occur and only moss cover increases (**Wf03**). Sites with greater waterflow are characterized by tall-shrub swamps dominated by willows or alders, and water sedges, and have mineral or humic peat soils.

Wetland Edatopic Grid

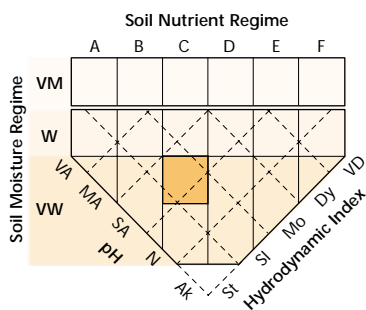


TABLE 5.2.1 Distribution of Fen Site Associations by biogeoclimatic zone

| | | BG PP | BWBS SWB | ESSF | ICH | IDF | MS | SBPS SBS | CDF | CWH | MH |
|------|--|----------|-------------|------|-----|-----|-----|-------------|-----|-----------------|-----|
| Wf01 | Water sedge – Beaked sedge | | xx | x | xx | xxx | xxx | xxx | | x ⁱ | |
| Wf02 | Scrub birch – Water sedge | | xxx | x | xx | xx | xx | xx | | | |
| Wf03 | Water sedge – Peat-moss | | | xx | | | | x | | | |
| Wf04 | Barclay's willow – Water sedge – Glow mosses | | x | xxx | | | x | x | | | |
| Wf05 | Slender sedge – Common hook-moss | | x | | xx | xx | xx | xx | | | |
| Wf06 | Slender sedge – Buckbean | | x | | x | x | | x | | | |
| Wf07 | Scrub birch – Buckbean – Shore sedge | | x | | x | x | | x | | | |
| Wf08 | Shore sedge – Buckbean – Hook-moss | | x | x | | x | x | x | | | |
| Wf09 | Few-flowered spike-rush – Hook-moss | | | x | | | x | x | | | |
| Wf10 | Hudson Bay clubrush – Red hook-moss | | | | | | | x | | | |
| Wf11 | Tufted clubrush – Star moss | | x | x | x | | x | x | | | |
| Wf12 | Narrow-leaved cotton-grass – Marsh-marigold | | | xxx | | | | | | | |
| Wf13 | Narrow-leaved cotton-grass – Shore sedge | | | xx | | | x | | | | |
| Wf50 | Narrow-leaved cotton-grass – Peat-moss | | | | | | | | | x | xxx |
| Wf51 | Sitka sedge – Peat-moss | | | | x | | | | xx | xx | |
| Wf52 | Sweet gale – Sitka sedge | | | | | | | | xx | xx ^s | |
| Wf53 | Slender sedge – White beak-rush | | | | | | | | x | xx ^s | |

x = incidental; < 5% of wetlands

i = inland areas only

xx = minor; 5–25% of wetlands

s = southern subzones only

xxx = major; >25% of wetlands

TABLE 5.2.2 Fen Species Importance Table

| Species | | WF01 | WF02 | WF03 | WF04 | WF05 | WF06 | WF07 | WF08 |
|------------------------|---------------------------------------|------|------|------|------|------|------|------|------|
| Shrubs | <i>Betula nana</i> | | | | | | | | |
| | <i>Salix barclayi</i> | | | | | | | | |
| | <i>Salix pedicellaris</i> | | | | | | | | |
| | <i>Spiraea douglasii</i> | | | | | | | | |
| | <i>Myrica gale</i> | | | | | | | | |
| Herbs and Dwarf Shrubs | <i>Carex utriculata</i> | | | | | | | | |
| | <i>Carex aquatilis</i> | | | | | | | | |
| Shrubs | <i>Comarum palustre</i> | | | | | | | | |
| | <i>Calamagrostis canadensis</i> | | | | | | | | |
| Shrubs | <i>Carex lasiocarpa</i> | | | | | | | | |
| | <i>Menyanthes trifoliata</i> | | | | | | | | |
| Shrubs | <i>Carex limosa</i> | | | | | | | | |
| | <i>Carex chordorrhiza</i> | | | | | | | | |
| Shrubs | <i>Eleocharis quinqueflora</i> | | | | | | | | |
| | <i>Trichophorum alpinum</i> | | | | | | | | |
| Shrubs | <i>Trichophorum cespitosum</i> | | | | | | | | |
| | <i>Eriophorum angustifolium</i> | | | | | | | | |
| Shrubs | <i>Caltha leptosepala</i> | | | | | | | | |
| | <i>Carex anthoxanthea</i> | | | | | | | | |
| Shrubs | <i>Equisetum fluviatile</i> | | | | | | | | |
| | <i>Carex magellanica</i> | | | | | | | | |
| Shrubs | <i>Carex sitchensis</i> | | | | | | | | |
| | <i>Rhynchospora alba</i> | | | | | | | | |
| Shrubs | <i>Carex livida</i> | | | | | | | | |
| | <i>Eriophorum chamissonis</i> | | | | | | | | |
| Shrubs | <i>Vahlodea atropurpurea</i> | | | | | | | | |
| | <i>Drosera anglica</i> | | | | | | | | |
| Shrubs | <i>Hypericum anagalloides</i> | | | | | | | | |
| | <i>Triantha glutinosa</i> | | | | | | | | |
| Shrubs | <i>Schoenoplectus tabernaemontani</i> | | | | | | | | |
| | <i>Fauria crista-galli</i> | | | | | | | | |
| Shrubs | <i>Senecio triangularis</i> | | | | | | | | |
| | <i>Andromeda polifolia</i> | | | | | | | | |
| Shrubs | <i>Kalmia microphylla</i> | | | | | | | | |
| | <i>Oxycoccus oxycoccus</i> | | | | | | | | |
| Shrubs | <i>Triglochin maritima</i> | | | | | | | | |
| | <i>Drosera rotundifolia</i> | | | | | | | | |
| Shrubs | <i>Leptarrhena pyrolifolia</i> | | | | | | | | |
| | <i>Platanthera dilatata</i> | | | | | | | | |
| Shrubs | <i>Sanguisorba canadensis</i> | | | | | | | | |
| | <i>Utricularia intermedia</i> | | | | | | | | |
| Shrubs | <i>Viola palustris</i> | | | | | | | | |
| | <i>Sphagnum Group I</i> | | | | | | | | |
| Lichens and Mosses | <i>Aulaconnium palustre</i> | | | | | | | | |
| | <i>Drepanocladus spp.</i> | | | | | | | | |
| Lichens and Mosses | <i>Sphagnum Group II</i> | | | | | | | | |
| | <i>Tomentypnum nitens</i> | | | | | | | | |
| Lichens and Mosses | <i>Philonotis fontana</i> | | | | | | | | |
| | <i>Calliergon stramineum</i> | | | | | | | | |
| Lichens and Mosses | <i>Scorpidium spp.</i> | | | | | | | | |
| | <i>Campylopus stellatum</i> | | | | | | | | |
| Lichens and Mosses | <i>Warnstorfia spp.</i> | | | | | | | | |
| | <i>Meesia triquetra</i> | | | | | | | | |

Betula nana – *Carex aquatilis*

General Description

The Scrub birch – Water sedge Fen Site Association is one of the most common peatland Site Associations throughout the Interior and is absent only from PP/BG and wet ESSF subzones. It is frequently a major component of large peatlands where there is some surfactable fluctuation and the surface becomes aerated by mid-season. These sites are often hummocked, with shrubs rooting on elevated microsites.

Betula nana and *Carex aquatilis* are the characteristic species but *Salix pedicellaris* and *Carex utriculata* dominate on wetter sites. The moss layer is variable and can be diverse, absent, or dominated by *Tomentypnum nitens*, *Sphagnum*, or *Drepanocladus*. Some drier sites will have scattered, stunted trees (spruce or black spruce most commonly).



Common soil types are terric and typic Mesisols and Fibrisols. Peat depths are frequently between 1 and 2 m but deep sedge-derived peat to 4 m occurs; this Site Association can occasionally occur on thin organic veneers.

Characteristic Vegetation

Tree layer (0 - 0 - 10)

Shrub layer (10 - 35 - 100)

Betula nana, *Salix pedicellaris*

Herb layer (5 - 60 - 100)

Carex aquatilis, *C. utriculata*,

Comarum palustre

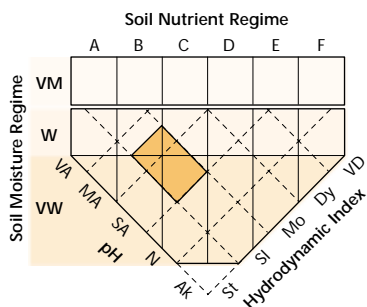
Moss layer (0 - 70 - 100)

Aulacomnium palustre, *Drepanocladus*

aduncus, *Sphagnum* Group I,

Tomentypnum nitens

Wetland Edatopic Grid



Comments

The Wf02 Site Association often occurs around the periphery of the wetter Wf01 or adjacent to the drier Wb05. These three Site Associations may represent a sequence of long-term peatland succession. Many sites have a moss layer with rich and poor site indicators, suggesting that they are in transition from fen to bog conditions.

The Wf02 is one of the most common Interior peatland community types at low to subalpine elevations. It is probably only absent from the AT, BG, and PP zones. In coastal areas, similar sites are occupied by the Wf52.

TABLE 5.3.1 Distribution of Marsh Site Associations by biogeoclimatic zone

| | BG PP | BWBS SWB | ESSF | ICH | IDF | MS | SBPS SBS | CDF | CWH | MH |
|-------------------------------------|----------|-------------|------|-----|-----|----|-------------|-----|----------------|----|
| Wm01 Beaked sedge – Water sedge | x | xx | x | xxx | xxx | xx | xx | | x | |
| Wm02 Swamp horsetail – Beaked sedge | | x | | x | x | x | xx | | | |
| Wm03 Awned sedge | x | | | | x | | | | | |
| Wm04 Common spike-rush | x | x | | xx | x | x | xx | | x | |
| Wm05 Cattail | xxx | x | | xx | xx | x | xx | xx | x ^s | |
| Wm06 Great bulrush | xxx | x | | x | xx | xx | x | x | x | |
| Wm07 Baltic rush | x | | | | xx | | | | | |
| Wm50 Sitka sedge – Hemlock-parsley | | | | | | | | xx | xx | |
| Wm51 Three-way sedge | | | | x | | | | x | x | |

x = incidental; < 5% of wetlands

xx = minor; 5–25% of wetlands

xxx = major; >25% of wetlands

s = southern subzones only

TABLE 5.3.2 Marsh Species Importance Table

| Species | | Wm01 | Wm02 | Wm03 | Wm04 | Wm05 |
|------------------------|--|------|------|------|------|------|
| Herbs and Dwarf Shrubs | <i>Carex utriculata</i> | | | | | |
| | <i>Carex aquatilis</i> | | | | | |
| | <i>Equisetum fluviatile</i> | | | | | |
| | <i>Comarum palustre</i> | | | | | |
| | <i>Sium suave</i> | | | | | |
| | <i>Carex exsiccata</i> | | | | | |
| | <i>Carex atherodes</i> | | | | | |
| | <i>Polygonum amphibium</i> | | | | | |
| | <i>Eleocharis palustris</i> | | | | | |
| | <i>Potamogeton richardsonii</i> | | | | | |
| | <i>Typha latifolia</i> | | | | | |
| | <i>Schoenoplectus acutus</i> | | | | | |
| | <i>Menyanthes trifoliata</i> | | | | | |
| | <i>Utricularia macrorhiza</i> | | | | | |
| | <i>Juncus balticus</i> | | | | | |
| | <i>Hordeum jubatum</i> | | | | | |
| | <i>Potentilla anserina</i> | | | | | |
| | <i>Calamagrostis canadensis</i> | | | | | |
| | <i>Cicuta douglasii</i> | | | | | |
| | <i>Lysichiton americanus</i> | | | | | |
| | <i>Oenanthe sarmentosa</i> | | | | | |
| | <i>Galium trifidum</i> | | | | | |
| | <i>Spiraea douglasii</i> | | | | | |
| | <i>Carex sitchensis</i> | | | | | |
| | <i>Nuphar lutea</i> ssp. <i>polysepala</i> | | | | | |
| | <i>Dulichium arundinaceum</i> | | | | | |
| Mosses | <i>Drepanocladus</i> spp. | | | | | |
| | <i>Wamstorfia</i> spp. | | | | | |

Equisetum fluviatile – *Carex utriculata*

General Description

The Swamp horsetail – Beaked sedge Marsh Site Association is uncommon at lower elevations throughout the Interior. Common locations are in back-levee depressions along sediment-laden, low-gradient streams, protected bays of large lakes, or hydrologically modified (flooded) fens. The **Wm02** also occurs along the Coast in tidal reaches of large rivers above saltwater influence.

Plant diversity is low. Sites are dominated by *Equisetum fluviatile* with *Carex utriculata* sometimes co-dominating; often there are scattered aquatics such as *Potamogeton* and *Myriophyllum* spp. The **Wm02** is similar to the **Wm01** but is distinguished by its higher hydrodynamic index and by the dominance of *E. fluviatile*.



Soils are derived from silty or fine-sandy fluvium, deep limnic deposits at open margins of lakes, or recently flooded peat. Rego Gleysols and Terric Humisols are common soil types.

Characteristic Vegetation

Tree layer (0 - 0 - 0)

Shrub layer (0 - 0 - 4)

Herb layer (18 - 85 - 100)

C. utriculata, *Equisetum fluviatile*

Moss layer (0 - 0 - 90)

Comments

E. fluviatile is tolerant of extreme variations in water depth and high rates of sedimentation and can colonize exposed mineral or peat soils. It has been used to revegetate the extreme environment of the drawdown zone in reservoirs.

On fluvial sites, the **Wm02** is usually adjacent to tall-willow swamps or low bench communities. In lake systems, **Wm02** commonly adjoins open water and other marsh communities.

Wetland Edatopic Grid

