

TABLE 5.7.1 Distribution of Flood Site Associations by biogeoclimatic zone

	BG PP	BWBS SWB	ESSF	ICH	IDF	MS	SBPS SBS	CDF	CWH	MH
FI01 Mountain alder – Common horsetail		xxx	x	xx	xx	xx	xxx		x	
FI02 Mountain alder – Red-osier dogwood – Lady fern				xx			xx <sup>w</sup>		x	
FI03 Pacific willow – Red-osier dogwood – Horsetail	x	x			x		x		x	
FI04 Sitka willow – Red-osier dogwood – Horsetail				xx			x <sup>w</sup>		x	
FI05 Drummond's willow – Bluejoint		x		x	x		xxx			
FI06 Sandbar willow	x	x								
FI07 Water birch – Rose	x				x <sup>h</sup>					
Fm01 Cottonwood – Snowberry – Rose	x				xx		x			
Fm02 Cottonwood – Spruce – Red-osier dogwood	x	xx		xx	xx	xx	xx			
Fm03 Cottonwood – Subalpine fir – Devil's club				xx			x <sup>w</sup>			
FI50 Sitka willow – False lily-of-the-valley									x	
FI51 Red alder – Salmonberry – Horsetail								xx	xx	
Fm50 Cottonwood – Red alder – Salmonberry								xx	xx <sup>xoc</sup>	

x = incidental; &lt; 5% of flood sites

w = wet/very wet subzones only

xx = minor; 5–25% of flood sites

h = warm/hot subzones only

xxx = major; &gt;25% of flood sites

xoc = not on outer coast (hypermaritime)

TABLE 5.7.2 Flood Species Importance Table

Species		FI04	FI05	FI06	FI03	FI07	FI01	FI02
<b>Trees</b>								
	<i>Populus balsamifera</i> ssp. <i>trichocarpa</i>			██			██	
	<i>Picea</i> X						██	██
	<i>Abies lasiocarpa</i>							
	<i>Alnus rubra</i>							
	<i>Picea sitchensis</i>							
<b>Shrubs</b>								
	<i>Salix sitchensis</i>	██████						██
	<i>Salix drummondiana</i>	██	██████					
	<i>Salix exigua</i>			██████	██			
	<i>Salix lucida</i>	██			██████			
	<i>Betula occidentalis</i>					██████		
	<i>Salix bebbiana</i>					██		
	<i>Alnus incana</i>	██		██	██████	██	██████	██████
	<i>Cornus stolonifera</i>	███			██████	██	██████	██████
	<i>Lonicera involucrata</i>	██	███				██	████
	<i>Rosa woodsii</i>					███		
	<i>Rosa nutkana</i>					██		
	<i>Symphoricarpos albus</i>					██		
	<i>Acer glabrum</i>					██		
	<i>Rosa acicularis</i>		██					
	<i>Oplopanax horridus</i>							
	<i>Rubus parviflorus</i>							██
	<i>Viburnum edule</i>	██						██
	<i>Sambucus racemosa</i>						██	████
	<i>Rubus spectabilis</i>							
	<i>Ribes bracteosum</i>							
<b>Herbs and Dwarf Shrubs</b>								
	<i>Calamagrostis canadensis</i>	██	██████		██		██	██
	<i>Equisetum arvense</i>	███	██		████	██	██████	████
	<i>Equisetum hyemale</i>			███				
	<i>Athyrium filix-femina</i>	██					██	████
	<i>Urtica dioica</i>						██	████
	<i>Heracleum maximum</i>		██				██	████
	<i>Matteuccia struthiopteris</i>							██████
	<i>Poa pratensis</i>					██		
	<i>Osmorhiza berteroi</i>							
	<i>Pyrola asarifolia</i>							
	<i>Actaea rubra</i>							██
	<i>Gymnocarpium dryopteris</i>						██	
	<i>Circaea alpina</i>							██
	<i>Streptopus amplexifolius</i>						██	██
	<i>Aster subspicatus</i>							
	<i>Stachys mexicana</i>							
	<i>Elymus glaucus</i>							
	<i>Maianthemum dilatatum</i>							
<b>Mosses and Lichens</b>								
	<i>Brachythecium</i> spp.	██					██	██
	<i>Mnium</i> spp.	██	██				██	██
	<i>Rhytidiadelphus squarrosus</i>							

*Betula occidentalis* – *Rosa*

**General Description**

Water birch – Rose ecosystems occur in warm and dry climates of the Southern Interior at low elevations. They occur in the riparian zone of ponds, lakes, and creeks often as a narrow band where flooding is minimal but the watertable remains within the rooting zone for much of the year.



*Betula occidentalis* is consistently a dominant component of the shrub layer, but a variety of other shrub species including *Cornus stolonifera*, *Rosa* spp., *Salix bebbiana*, and *Symphoricarpos albus* usually occur. The herb layer is often well developed but variable in composition.

Soils are fine-textured morainal, lacustrine, or fluvial deposits, often with an organically enriched surface horizon. Gleyed Brunisols and Gleysols are common soil types.

**Characteristic Vegetation**

- Tree layer (0 - 10- 30)**  
*Betula occidentalis*
- Shrub layer (20 - 70 - 85)**  
*Betula occidentalis*, *Cornus stolonifera*, *Rosa nutkana*, *R. woodsii*, *Salix bebbiana*, *Symphoricarpos albus*
- Herb layer (3 - 35 - 70)**  
*Aster* spp., *Poa pratensis*, *Maianthemum stellatum*
- Moss layer (0 - 1 - 10)**

**Comments**

FI07 is different from most Low Bench Site Associations described in this guide; it does occur in classic low bench locations (along watercourses where there is flooding and sedimentation), but also frequently establishes as a fringe habitat around lakes and ponds, where flooding is minimal but the watertable is maintained at depth.

**Wetland Edatopic Grid**

		Soil Nutrient Regime					
		A	B	C	D	E	F
Soil Moisture Regime	M						
	VM						
	W						
	VW						

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
<b>Wf01</b> Water sedge – Beaked sedge		xx	x	xx	xxx	xxx	xxx		x <sup>i</sup>	
<b>Wf02</b> Scrub birch – Water sedge		xxx	x	xx	xx	xx	xx			
<b>Wf03</b> Water sedge – Peat-moss			xx				x			
<b>Wf04</b> Barclay's willow – Water sedge – Glow mosses		x	xxx			x	x			
<b>Wf05</b> Slender sedge – Common hook-moss		x		xx	xx	xx	xx			
<b>Wf06</b> Slender sedge – Buckbean		x		x	x		x			
<b>Wf07</b> Scrub birch – Buckbean – Shore sedge		x		x	x		x			
<b>Wf08</b> Shore sedge – Buckbean – Hook-moss		x	x		x	x	x			
<b>Wf09</b> Few-flowered spike-rush – Hook-moss			x			x	x			
<b>Wf10</b> Hudson Bay clubrush – Red hook-moss							x			
<b>Wf11</b> Tufted clubrush – Star moss		x	x	x		x	x			
<b>Wf12</b> Narrow-leaved cotton-grass – Marsh-marigold			xxx							
<b>Wf13</b> Narrow-leaved cotton-grass – Shore sedge			xx			x				
<b>Wf50</b> Narrow-leaved cotton-grass – Peat-moss									x	xxx
<b>Wf51</b> Sitka sedge – Peat-moss				x				xx	xx	
<b>Wf52</b> Sweet gale – Sitka sedge								xx	xx <sup>s</sup>	
<b>Wf53</b> Slender sedge – White beak-rush								x	xx <sup>s</sup>	

x = incidental; &lt; 5% of wetlands

i = inland areas only

xx = minor; 5–25% of wetlands

s = southern subzones only

xxx = major; &gt;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>								

*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**

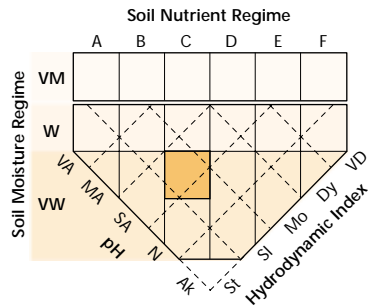


TABLE 5.2.1 Distribution of Fen Site Associations by biogeoclimatic zone

	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 <sup>i</sup>	
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 <sup>s</sup>	
Wf53 Slender sedge – White beak-rush								x	xx <sup>s</sup>	

x = incidental; &lt; 5% of wetlands

i = inland areas only

xx = minor; 5–25% of wetlands

s = southern subzones only

xxx = major; &gt;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>								
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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>Campyllum 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*

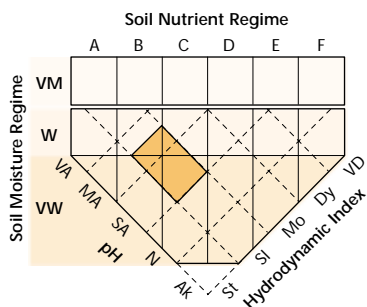
**Herb layer** (5 - 60 - 100)

*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 5.2.1 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 <sup>i</sup>	
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 <sup>s</sup>	
Wf53 Slender sedge – White beak-rush								x	xx <sup>s</sup>	

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Lichens and Mosses	<i>Scorpidium spp.</i>								
	<i>Campyllum stellatum</i>								
Lichens and Mosses	<i>Warnstorfia spp.</i>								
	<i>Meesia triquetra</i>								

*Salix barclayi* – *Carex aquatilis* – *Aulacomnium palustre*

### General Description

Barclay's willow – Water sedge – Glow moss fen/swamps are common at subalpine elevations of the Sub-Boreal Interior, Southern Interior Mountains, and Northern Boreal Mountains. They occur on subalpine seepage slopes, along glacier-fed creeks, and in frost-prone basins.

*Salix barclayi* dominates the shrub layer with a scattering of other low shrub species. *Carex aquatilis* dominates the herb layer but is often accompanied by scattered high-elevation species such as *Caltha leptosepala*, *Eriophorum angustifolium*, and *Leptarrhena pyrolifolia*. The moss layer can be absent or moderately well developed.



Continuous (often copious) groundwater or snowmelt seepage is typical, and soils are cold. Peat is often shallow because of low biomass production but occasionally deep sedge peat deposits are encountered.

Common soil types include terric Mesisols, Humisols, and Fibrisols

### Characteristic Vegetation

**Tree layer** (0 - .5 - 3)

**Shrub layer** (10 - 35 - 95)

*Salix barclayi*

**Herb layer** (26 - 65 - 99)

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

**Moss layer** (0 - 15 - 95)

*Aulacomnium palustre*, *Mnium* spp.,  
*Philonotis fontana*

### Comments

Wf04 can occur alone or surrounding sedge or cotton-grass fens (Wf03 or Wf12), or in wet depressions within forb-rich subalpine meadows or carrs. The similar Sc03 is also common at high elevations in the Interior. However, the Sc03's low shrub physiognomy is the result of cold-air drainage not wet soils, and it is characterized by subalpine forbs with few hydrophytes.

### Wetland Edatopic Grid

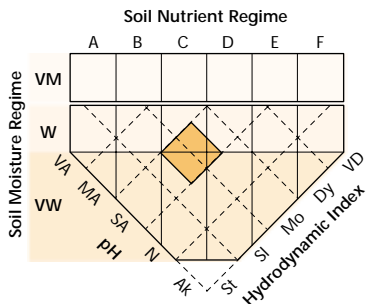


TABLE 5.2.1 Distribution of Fen Site Associations by biogeoclimatic zone

	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 <sup>i</sup>	
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 <sup>s</sup>	
Wf53 Slender sedge – White beak-rush								x	xx <sup>s</sup>	

x = incidental; &lt; 5% of wetlands

i = inland areas only

xx = minor; 5–25% of wetlands

s = southern subzones only

xxx = major; &gt;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</i> Group I								
Lichens and Mosses	<i>Aulaconnium palustre</i>								
	<i>Drepanocladus</i> spp.								
Lichens and Mosses	<i>Sphagnum</i> Group II								
	<i>Tomentypnum nitens</i>								
Lichens and Mosses	<i>Philonotis fontana</i>								
	<i>Calliergon stramineum</i>								
Lichens and Mosses	<i>Scorpidium</i> spp.								
	<i>Campyllum stellatum</i>								
Lichens and Mosses	<i>Warnstorfia</i> spp.								
	<i>Meesia triquetra</i>								

Wf09	Wf10	Wf11	Wf12	Wf13	Wf50	Wf51	Wf52	Wf53	Common Name
									scrub birch
									Barclay's willow
									bog willow
									pink spirea
									sweet gale
									beaked sedge
									water sedge
									marsh cinquefoil
									bluejoint reedgrass
									slender sedge
									buckbean
									shore sedge
									cordroot sedge
									few-flowered spike-rush
									Hudson Bay clubrush
									tufted clubrush
									narrow-leaved cotton-grass
									white mtn. marsh-marigold
									yellow-flowered sedge
									swamp horsetail
									poor sedge
									Sitka sedge
									white beak-rush
									pale sedge
									Chamisso's cotton-grass
									mountain hairgrass
									great sundew
									bog St. John's-wort
									sticky asphodel
									great bulrush
									deer-cabbage
									arrow-leaved groundsel
									bog-rosemary
									western bog-laurel
									bog cranberry
									seaside arrow-grass
									round-leaved sundew
									leatherleaf saxifrage
									fragrant white rein orchid
									Sitka burnet
									flat-leaved bladderwort
									marsh violet
									peat-moss Group I
									glow moss
									hook-mosses
									peat-moss Group II
									golden fuzzy fen moss
									spring moss
									straw spear-moss
									sausage-moss
									yellow star-moss
									hook-mosses
									three-ranked hump-moss

*Trichophorum cespitosum* – *Campyllum stellatum*

**General Description**

The Tufted clubrush – Star moss Fen Site Association is scattered throughout the Interior at middle to subalpine elevations, most commonly in regions underlain with base-rich parent materials. These fens occur on level and gently sloping, groundwater-fed peatlands that are permanently saturated but rarely inundated. Sites have smooth, ribbed, or slightly hummocked topography and any depressions are water-filled.



*Trichophorum cespitosum* and *Campyllum stellatum* are constant dominants and occur mainly on drier microsites. *Menyanthes trifoliata* and calcium-encrusted *Scorpidium scorpioides* and *Scorpidium revolvans* are commonly found in very shallow pools.

Most sites have a distinct dense and tenacious turfy peat. Deep peat is typical (to 5 m) but occasionally thin peat veneers occur. Fibrisols and Mesisols are typical soil types.

**Characteristic Vegetation**

- Tree layer** (0 - 0 - 0)
- Shrub layer** (0 - 1 - 10)
- Herb layer** (20 - 75 - 97)
- Carex limosa*, *Eriophorum angustifolium*, *Menyanthes trifoliata*, *Trichophorum cespitosum*
- Moss layer** (0 - 70 - 95)
- Campyllum stellatum*, *Sphagnum* Group II

**Comments**

The Wf11 occurs where extremely high pH limits the availability of phosphorous, making these sites nutrient-poor even though they have an abundance of cations. Tufted clubrush-dominated wetlands are also found in regions underlain by base-poor granitic parent material, such as coastal British Columbia, where phosphorus is also limited. These communities lack minerotrophic site indicators and have a *Sphagnum*-dominated moss layer. Tufted clubrush – Peat-moss ecosystems (Wb52) are very common in coastal British Columbia but several sites have been observed in interior locations where the local geology is of igneous intrusive origin (e.g., Monashee Ranges).

**Wetland Edatopic Grid**

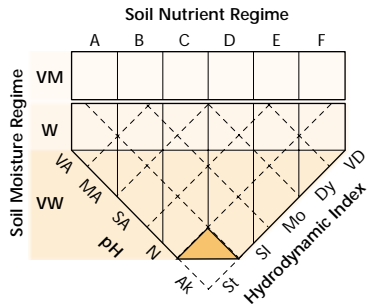




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Wf02 Scrub birch – Water sedge		xxx	x	xx	xx	xx	xx			
Wf03 Water sedge – Peat-moss			xx				x			
Wf04 Barclay's willow – Water sedge – Glow mosses		x	xxx			x	x			
Wf05 Slender sedge – Common hook-moss		x		xx	xx	xx	xx			
Wf06 Slender sedge – Buckbean		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 <sup>s</sup>	
Wf53 Slender sedge – White beak-rush								x	xx <sup>s</sup>	

x = incidental; &lt; 5% of wetlands

i = inland areas only

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	<i>Drepanocladus spp.</i>								
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Lichens and Mosses	<i>Warnstorfia spp.</i>								
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									peat-moss Group II
									golden fuzzy fen moss
									spring moss
									straw spear-moss
									sausage-moss
									yellow star-moss
									hook-mosses
									three-ranked hump-moss

*Eriophorum angustifolium* – *Carex limosa*

**General Description**

Narrow-leaved cotton-grass – Shore sedge fens occur at higher elevations (1200–1800 m) of the ESSF zone in depressions or gradual seepage slopes where standing water persists for most of the short growing season. The **Wf13** appears to be relatively common (at least locally) but has not been extensively sampled.



A community dominated by *Eriophorum angustifolium* with *Carex limosa* is typical but some sites may have poor sedge (*Carex magellanica*) instead of *C. limosa*. Grasses such as *Calamagrostis canadensis* and *Vahlodea atropurpurea* and the forb *Caltha leptosepala* are commonly abundant. The moss layer is well developed and is often diverse, with no one species dominating.

Soils are deep peat deposits of fibric or mesic cotton-grass remains. Typic Mesisols and Fibrisols are common soil types.

**Characteristic Vegetation**

- Tree layer** (0 - 0 - 0)
- Shrub layer** (0 - 2 - 10)
- Herb layer** (20 - 80 - 100)  
*Caltha leptosepala*, *Carex aquatilis*,  
*C. limosa*, *Eriophorum angustifolium*
- Moss layer** (0 - 40 - 99)  
*Aulacomnium palustre*, *Philonotis fontana*,  
*Sphagnum* Group I

**Comments**

The **Wf13** is wetter than the closely related **Wf12** and tends to be found more commonly in depressional areas where water ponds. The high-elevation fen units **Wf03**, **Wf04**, **Wf11**, **Wf12**, and **Wf13** often occur together in complex in extensive subalpine peatlands, each occurring in habitats differing in water flow and ponding (**Wf03** driest to **Wf13** wettest).

**Wetland Edatopic Grid**

