Although these are seral forests, eventually replaced by Engelmann spruce and subalpine fir forests, they are long-lived seral stages due to slow tree growth in this very cold, very dry climate. Spruce and subalpine fir regeneration is common in the understory. The undergrowth vegetation is typically dominated by dwarf shrubs, low- to medium-height forbs, mosses, and lichens. Common shrub or semi-shrub species are black crowberry, grouseberry, and mountain-heather. In contrast to other ESSF units in the Region except the ESSFxc, white-flowered rhododendron occurs primarily on north-facing slopes and is seldom abundant.

***ESSFxv1 Variant*** The ESSFxv1 is the most extensive of the two ESSFxv variants, extending from the east side of Taseko Lakes west to Tweedsmuir Park on the Pacific Ranges. It also includes the ESSF in the Itcha and Ilgachuz mountains. Precipitation amounts are estimated to be somewhat greater than in the ESSFxv2 and are probably highest in western parts of the variant. The terrain is more rugged, the summits higher, and slopes generally steeper than in the ESSFxv2. The vegetation on zonal sites has more abundant subalpine fir in both the canopy and regeneration layers. The herbaceous layer also has more abundant grouseberry.

***ESSFxv2 Variant*** The ESSFxv2 extends from the east slopes of Anvil Mountain eastward to the east slopes of the Camelsfoot Range, overlooking the Fraser River valley. It includes the highest forested elevations of the Chilcotin and Camelsfoot ranges. Precipitation is probably less in general than in the ESSFxv1. The terrain is largely rounded summits with many slopes of gentle to moderate gradients. Mature forests are dominated by lodgepole pine with relatively little tree regeneration. Subalpine fir is much less abundant than in the ESSFxv1, and stands are more often single-layered.

***ESSFxc Subzone*** The ESSFxc occurs primarily in the Kamloops Forest Region (Lloyd *et al*. 1990) and has a very small area (115 km$^2$) within the Cariboo Forest Region on the Marble Range, west of Clinton. Here and in the Kamloops Forest Region it occurs above the MSxk Subzone. Vegetation similarities to the ESSFxv include the presence of grouseberry and kinnikinnick and the relatively sparse occurrence of white-flowered rhododendron.

Compared to the ESSFxv, however, the forests are dominated primarily by Engelmann spruce and subalpine fir, feathermosses are more prevalent, ground lichens are less abundant, and pinegrass is present on south-facing slopes. Douglas-fir is also present within the ESSFxc on the Marble Range.

***ESSFdc2 Variant*** The ESSFdc2 occurs primarily on the Thompson Plateau in the Kamloops Forest Region (Lloyd *et al*. 1990) but has a small extent along the southeast border of the Cariboo Forest Region in the Bowers Lake to Bonaparte Lake area. Here, it occurs on relatively low, rounded summits above the SBSmc and SBSmm, at elevations of 1400–1900 m.

The ESSFdc2 has a climate drier than that of the ESSFwk1 and ESSFwc3 but wetter than that of the ESSFxc or ESSFxv. Mean annual temperatures are similar to the ESSFwk1.

Vegetation of the ESSFdc2 is distinguished from other ESSF units of the Region by the presence of grouseberry and abundant white-flowered rhododendron and by the absence of black crowberry. Seral stands of lodgepole pine cover the ESSFdc2 landscape in the Cariboo Forest Region. Subalpine fir and Engelmann spruce are common in the understory. The shrubby undergrowth includes white-flowered rhododendron, black huckleberry, and grouseberry.

***ESSFmv1 Variant*** The ESSFmv1 occurs primarily in the Prince George Forest Region and has only a very small extent (12 $km^2$) within the Cariboo Forest Region. It is present on the relatively low, rounded summits in the Blackwater–Nazko area west of Pantage Lake at elevations above 1400 m. The climate is drier than that of the ESSFwk and ESSFwc but wetter than all other ESSF climates in the Region. Refer to DeLong *et al.*(1993) for a description of this variant.

***ESSFwk1 Variant*** The ESSFwk1 includes the largest portion of the ESSF Zone (3610 $km^2$) within the Quesnel Highland. It occurs between 1200 and 1500 m elevation from the northern limits of the Quesnel Highland in the Prince George Forest Region south to about Canim and Mahood lakes. South of the Cariboo River, it occurs above the ICHwk, while to the north it occurs above the SBSwk. Throughout its range, it occurs below the ESSFwc3. Topography of the ESSFwk1 ranges from

# ESSFxc
# ENGELMANN SPRUCE–SUBALPINE FIR VERY DRY COLD SUBZONE

The ESSFxc has a very small area (115 km$^2$) in the Cariboo Forest Region, occurring on upper slopes and summits of the Marble Range. Elevations are generally 1550–2000 m. The ESSFxc is more extensive in the Kamloops Forest Region on the Graystokes Plateau, Okanagan Ranges, and some high elevations northwest of Kamloops. It also occurs in the Camelsfoot, Chilcotin, and Lillooet ranges.

**Distinguishing Adjacent Units from the ESSFxc** (Cariboo Forest Region only)

The **MSxk** occurs below the ESSFxc, and the **AT,** including parkland, occurs above the ESSFxc.

In the **MSxk**, zonal sites have:
- pinegrass;
- little or no Sitka valerian, mountain arnica, or five-leaved bramble;
- little or no white-flowered rhododendron.

In the **AT** (and parkland), zonal sites have:
- predominantly non-forest (meadow, shrubland, etc.) vegetation;
- trees rarely more than 8 m tall.

**Site Units of the ESSFxc**

A site classification for the Kamloops Forest Region portion of the ESSFxc is presented by Lloyd *et al.* (1990). Preliminary surveys indicate that this classification generally applies to the ESSFxc in the Cariboo Forest Region as well. It should also be noted that, due to calcareous soil parent materials, vegetation of the Marble Range in the Cariboo and Kamloops forest regions differs somewhat from vegetation in the remainder of the ESSFxc.

## Distribution of ESSFxc Subzone in the Cariboo Forest Region

TABLE A1.1. Site units (shaded) in the Cariboo Forest Region and their precorrelation equivalents (unshaded).

| Current (correlated) BEC unit code | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| BEC Unit | | Site unit | | | | | | | | | | |
| | | /01 | /02 | /03 | /04 | /05 | /06 | /07 | /08 | /09 | /10 | /11 |
| | | Equivalent precorrelation code | | | | | | | | | | |
| | BEC Unit | Ecosystem unit | | | | | | | | | | |
| AT | AT | (site units not yet described) | | | | | | | | | | |
| BGxh3 | PPBGg | (see Iverson and Coupé 1996a) | | | | | | | | | | |
| BGxw2 | PPBGe | (see Iverson and Coupé 1996b) | | | | | | | | | | |
| CWHds1 | CWHc | see Guide for Vancouver Region (Green and Klinka 1994) | | | | | | | | | | |
| ESSFdc2 | ESSFe1 | see Guide for Kamloops Forest Region (Lloyd et al. 1990) | | | | | | | | | | |
| ESSFwc3 | ESSFh2 | /01 | /02 | /03 | | | | | | | | |
| ESSFwk1 | ESSFh1 | /01 | /02 | /03 | /05 | /04 | /07 in part | /07 in part | | | | |
| ESSFxc | ESSFd | see Guide for Kamloops Forest Region (Lloyd et al. 1990) | | | | | | | | | | |
| ESSFxv1 | ESSFg, ESSF undif | npe | npe | npe | npe | npe | npe | npe | npe | | | |
| ESSFxv2 | ESSFg, ESSF undif | npe | npe | npe | npe | npe | npe | npe | npe | | | |
| ICHdk | ICHe3 | /01 | /02 | /03 | /04 | /05 | /06 | /07 | /08 | /09 | | |
| ICHmk3 | ICHe2 | /01,/04 | /02 | /03 | /05 | /06 | /07 | /08 | | | | |
| ICHmw3 | ICHm1 | see Guide for Kamloops Forest Region (Lloyd et al. 1990) | | | | | | | | | | |
| ICHwk2 | ICHh1 | /01,/05 | /02 | /03 | /04 | /06 in part | /06 in part | /07 | /08 | | | |
| ICHwk4 | ICHh2 | /01,/06 | /02 | /03 | /04 | /05 | /07 | /08 | /09 | | | |
| IDFdk3 | IDFb2 | /01 | /03 | /02 | /05 | /04 | /06 | /07 | /08 | /09, /10 | | |
| IDFdk4 | IDFb5 | /01 | /02 | /03 | /04 | /05 | /06 | /07 | /08 | /09 | /10 | |
| IDFdw | IDFundiff. | npe | npe | npe | npe | npe | npe | npe | npe | | | |
| IDFmw2 | IDFj1 | see Guide for Kamloops Forest Region (Lloyd et al. 1990) | | | | | | | | | | |
| IDFxm | IDFa4 | /01 | /02 | /03 | /04 | /05 | /06 | /07 | /08 | /09 | | |
| IDFxw | IDFa2 | /01,/05,/07 | /02 | /03 | /04 | /06 | /08 | /09 | | | | |

[a]No previous equivalent (npe)

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 mosss | | 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  xx = minor; 5–25% of wetlands  xxx = major; >25% of wetlands
i = inland areas only  s = southern subzones only

TABLE 5.2.2 *Fen Species Importance Table*

| | Species | Wf01 | Wf02 | Wf03 | Wf04 | Wf05 | Wf06 | Wf07 | Wf08 |
|---|---|---|---|---|---|---|---|---|---|
| **Shrubs** | *Betula nana* | | | | | | | | |
| | *Salix barclayi* | | | | | | | | |
| | *Salix pedicellaris* | | | | | | | | |
| | *Spiraea douglasii* | | | | | | | | |
| | *Myrica gale* | | | | | | | | |
| **Herbs and Dwarf Shrubs** | *Carex utriculata* | | | | | | | | |
| | *Carex aquatilis* | | | | | | | | |
| | *Comarum palustre* | | | | | | | | |
| | *Calamagrostis canadensis* | | | | | | | | |
| | *Carex lasiocarpa* | | | | | | | | |
| | *Menyanthes trifoliata* | | | | | | | | |
| | *Carex limosa* | | | | | | | | |
| | *Carex chordorrhiza* | | | | | | | | |
| | *Eleocharis quinqueflora* | | | | | | | | |
| | *Trichophorum alpinum* | | | | | | | | |
| | *Trichophorum cespitosum* | | | | | | | | |
| | *Eriophorum angustifolium* | | | | | | | | |
| | *Caltha leptosepala* | | | | | | | | |
| | *Carex anthoxanthea* | | | | | | | | |
| | *Equisetum fluviatile* | | | | | | | | |
| | *Carex magellanica* | | | | | | | | |
| | *Carex sitchensis* | | | | | | | | |
| | *Rhynchospora alba* | | | | | | | | |
| | *Carex livida* | | | | | | | | |
| | *Eriophorum chamissonis* | | | | | | | | |
| | *Vahlodea atropurpurea* | | | | | | | | |
| | *Drosera anglica* | | | | | | | | |
| | *Hypericum anagalloides* | | | | | | | | |
| | *Triantha glutinosa* | | | | | | | | |
| | *Schoenoplectus tabernaemontani* | | | | | | | | |
| | *Fauria crista-galli* | | | | | | | | |
| | *Senecio triangularis* | | | | | | | | |
| | *Andromeda polifolia* | | | | | | | | |
| | *Kalmia microphylla* | | | | | | | | |
| | *Oxycoccus oxycoccos* | | | | | | | | |
| | *Triglochin maritima* | | | | | | | | |
| | *Drosera rotundifolia* | | | | | | | | |
| | *Leptarrhena pyrolifolia* | | | | | | | | |
| | *Platanthera dilatata* | | | | | | | | |
| | *Sanguisorba canadensis* | | | | | | | | |
| | *Utricularia intermedia* | | | | | | | | |
| | *Viola palustris* | | | | | | | | |
| **Lichens and Mosses** | *Sphagnum* Group I | | | | | | | | |
| | *Aulacomnium palustre* | | | | | | | | |
| | *Drepanocladus* spp. | | | | | | | | |
| | *Sphagnum* Group II | | | | | | | | |
| | *Tomentypnum nitens* | | | | | | | | |
| | *Philonotis fontana* | | | | | | | | |
| | *Calliergon stramineum* | | | | | | | | |
| | *Scorpidium* spp. | | | | | | | | |
| | *Campylium stellatum* | | | | | | | | |
| | *Warnstorfia* spp. | | | | | | | | |
| | *Meesia triquetra* | | | | | | | | |

## 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 watertable fluctuation and the surface becomes aerated by mid-season. These sites are often hummocked, with shrubs rooting on elevated microsites.

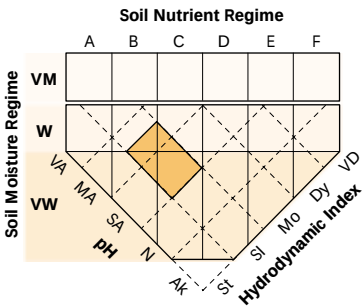
*Betula nana* and *Carex aquatilis* are the characteristic species but *Salix pedicellaris* and *Carex utriculata* dominate on wetter sites. The moss layer is variable and can be diverse, absent, or dominated by *Tomentypnum nitens*, *Sphagnum*, or *Drepanocladus*. Some drier sites will have scattered, 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 occassionally 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[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 mosss | | 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  xx = minor; 5–25% of wetlands  xxx = major; >25% of wetlands
i = inland areas only  s = southern subzones only

TABLE 5.2.2 *Fen Species Importance Table*

| | Species | Wf01 | Wf02 | Wf03 | Wf04 | Wf05 | Wf06 | Wf07 | Wf08 |
|---|---|---|---|---|---|---|---|---|---|
| **Shrubs** | *Betula nana* | | | | | | | | |
| | *Salix barclayi* | | | | | | | | |
| | *Salix pedicellaris* | | | | | | | | |
| | *Spiraea douglasii* | | | | | | | | |
| | *Myrica gale* | | | | | | | | |
| **Herbs and Dwarf Shrubs** | *Carex utriculata* | | | | | | | | |
| | *Carex aquatilis* | | | | | | | | |
| | *Comarum palustre* | | | | | | | | |
| | *Calamagrostis canadensis* | | | | | | | | |
| | *Carex lasiocarpa* | | | | | | | | |
| | *Menyanthes trifoliata* | | | | | | | | |
| | *Carex limosa* | | | | | | | | |
| | *Carex chordorrhiza* | | | | | | | | |
| | *Eleocharis quinqueflora* | | | | | | | | |
| | *Trichophorum alpinum* | | | | | | | | |
| | *Trichophorum cespitosum* | | | | | | | | |
| | *Eriophorum angustifolium* | | | | | | | | |
| | *Caltha leptosepala* | | | | | | | | |
| | *Carex anthoxanthea* | | | | | | | | |
| | *Equisetum fluviatile* | | | | | | | | |
| | *Carex magellanica* | | | | | | | | |
| | *Carex sitchensis* | | | | | | | | |
| | *Rhynchospora alba* | | | | | | | | |
| | *Carex livida* | | | | | | | | |
| | *Eriophorum chamissonis* | | | | | | | | |
| | *Vahlodea atropurpurea* | | | | | | | | |
| | *Drosera anglica* | | | | | | | | |
| | *Hypericum anagalloides* | | | | | | | | |
| | *Triantha glutinosa* | | | | | | | | |
| | *Schoenoplectus tabernaemontani* | | | | | | | | |
| | *Fauria crista-galli* | | | | | | | | |
| | *Senecio triangularis* | | | | | | | | |
| | *Andromeda polifolia* | | | | | | | | |
| | *Kalmia microphylla* | | | | | | | | |
| | *Oxycoccus oxycoccos* | | | | | | | | |
| | *Triglochin maritima* | | | | | | | | |
| | *Drosera rotundifolia* | | | | | | | | |
| | *Leptarrhena pyrolifolia* | | | | | | | | |
| | *Platanthera dilatata* | | | | | | | | |
| | *Sanguisorba canadensis* | | | | | | | | |
| | *Utricularia intermedia* | | | | | | | | |
| | *Viola palustris* | | | | | | | | |
| **Lichens and Mosses** | *Sphagnum* Group I | | | | | | | | |
| | *Aulacomnium palustre* | | | | | | | | |
| | *Drepanocladus* spp. | | | | | | | | |
| | *Sphagnum* Group II | | | | | | | | |
| | *Tomentypnum nitens* | | | | | | | | |
| | *Philonotis fontana* | | | | | | | | |
| | *Calliergon stramineum* | | | | | | | | |
| | *Scorpidium* spp. | | | | | | | | |
| | *Campylium stellatum* | | | | | | | | |
| | *Warnstorfia* spp. | | | | | | | | |
| | *Meesia triquetra* | | | | | | | | |

| 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 |

*Eleocharis quinqueflora – Drepanocladus*

## General Description

The Few-flowered spike-rush – Hook-moss Fen Site Association occurs on small sloping peatlands at high elevations (mostly above 1200 m) throughout the Sub-Boreal, Central, and Southern Interior. It is rare throughout most of its range, occurring only in slope positions with continual slow surface seepage.

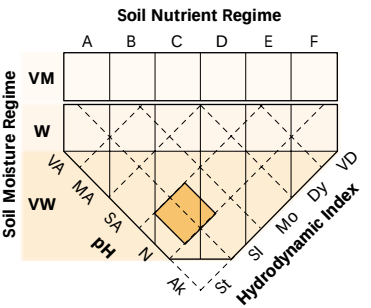
Plant diversity is low; *Eleocharis quinqueflora* is the site dominant, with lesser amounts of *Carex limosa*, *Eriophorum angustifolium*, and other forbs occasionally occurring. Hook-mosses such as *Homatocaulis vernicosus*, *Scorpidium revolvens*, and *Drepanocladus aduncus* usually comprise the moss layer but other brown mosses such as *Meesia triquetra* and *Tomentypnum nitens* can occur in high abundance.

Peat forms as a characteristically dense and tenacious mesic peat. Peat depths are frequently shallow but can be up to 2 m. Terric Mesisols and Humisols are common soil types.

## Characteristic Vegetation

**Tree layer** (0 - **0** - 0)
**Shrub layer** (0 - **.5** - 10)
**Herb layer** (30 - **60** - 100)
*Carex limosa*, ***Eleocharis quinqueflora***, *Eriophorum angustifolium*
**Moss layer** (1 - **50** - 95)
***Drepanocladus* spp.**, *Tomentypnum nitens*

## Wetland Edatopic Grid




## Comments

*The **Wf09** unit is similar in structure and hydroedatopic position to the **Wf11** of lower elevations. **Wf09** commonly occurs without adjacent wetland Site Associations or in complex with cotton-grass fens (**Wf12** or **Wf13**).*
*The tenacious peat of this unit is typically of similar composition throughout the profile, suggesting that this ecosystem can be stable and long-lived.*

*Peat is sufficiently dense on **Wf09** sites that soil water movements are impeded and most waterflow is at the surface as sheet flow. The specific conditions that give rise to the **Wf09** rather than other high-elevation fens are not well understood but may be partly initiated and maintained by the dense stems and roots of* Eleocharis quinqueflora.

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 mosss | | 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  xx = minor; 5–25% of wetlands  xxx = major; >25% of wetlands
i = inland areas only  s = southern subzones only

TABLE 5.2.2 *Fen Species Importance Table*

| | Species | Wf01 | Wf02 | Wf03 | Wf04 | Wf05 | Wf06 | Wf07 | Wf08 |
|---|---|---|---|---|---|---|---|---|---|
| **Shrubs** | *Betula nana* | | | | | | | | |
| | *Salix barclayi* | | | | | | | | |
| | *Salix pedicellaris* | | | | | | | | |
| | *Spiraea douglasii* | | | | | | | | |
| | *Myrica gale* | | | | | | | | |
| **Herbs and Dwarf Shrubs** | *Carex utriculata* | | | | | | | | |
| | *Carex aquatilis* | | | | | | | | |
| | *Comarum palustre* | | | | | | | | |
| | *Calamagrostis canadensis* | | | | | | | | |
| | *Carex lasiocarpa* | | | | | | | | |
| | *Menyanthes trifoliata* | | | | | | | | |
| | *Carex limosa* | | | | | | | | |
| | *Carex chordorrhiza* | | | | | | | | |
| | *Eleocharis quinqueflora* | | | | | | | | |
| | *Trichophorum alpinum* | | | | | | | | |
| | *Trichophorum cespitosum* | | | | | | | | |
| | *Eriophorum angustifolium* | | | | | | | | |
| | *Caltha leptosepala* | | | | | | | | |
| | *Carex anthoxanthea* | | | | | | | | |
| | *Equisetum fluviatile* | | | | | | | | |
| | *Carex magellanica* | | | | | | | | |
| | *Carex sitchensis* | | | | | | | | |
| | *Rhynchospora alba* | | | | | | | | |
| | *Carex livida* | | | | | | | | |
| | *Eriophorum chamissonis* | | | | | | | | |
| | *Vahlodea atropurpurea* | | | | | | | | |
| | *Drosera anglica* | | | | | | | | |
| | *Hypericum anagalloides* | | | | | | | | |
| | *Triantha glutinosa* | | | | | | | | |
| | *Schoenoplectus tabernaemontani* | | | | | | | | |
| | *Fauria crista-galli* | | | | | | | | |
| | *Senecio triangularis* | | | | | | | | |
| | *Andromeda polifolia* | | | | | | | | |
| | *Kalmia microphylla* | | | | | | | | |
| | *Oxycoccus oxycoccos* | | | | | | | | |
| | *Triglochin maritima* | | | | | | | | |
| | *Drosera rotundifolia* | | | | | | | | |
| | *Leptarrhena pyrolifolia* | | | | | | | | |
| | *Platanthera dilatata* | | | | | | | | |
| | *Sanguisorba canadensis* | | | | | | | | |
| | *Utricularia intermedia* | | | | | | | | |
| | *Viola palustris* | | | | | | | | |
| **Lichens and Mosses** | *Sphagnum* Group I | | | | | | | | |
| | *Aulacomnium palustre* | | | | | | | | |
| | *Drepanocladus* spp. | | | | | | | | |
| | *Sphagnum* Group II | | | | | | | | |
| | *Tomentypnum nitens* | | | | | | | | |
| | *Philonotis fontana* | | | | | | | | |
| | *Calliergon stramineum* | | | | | | | | |
| | *Scorpidium* spp. | | | | | | | | |
| | *Campylium stellatum* | | | | | | | | |
| | *Warnstorfia* spp. | | | | | | | | |
| | *Meesia triquetra* | | | | | | | | |

| 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 – Campylium 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.

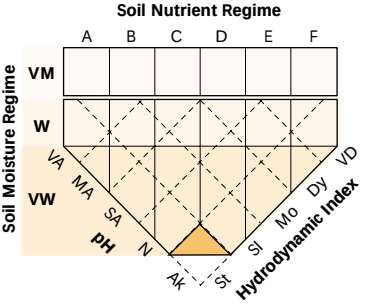
*Trichophorum cespitosum* and *Campylium stellatum* are constant dominants and occur mainly on drier microsites. *Menyanthes trifoliata* and calcium-encrusted *Scorpidium scorpioides* and *Scorpidium revolvens* are commonly found in very shallow pools.

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)
***Campylium stellatum***, *Sphagnum* Group II

## Wetland Edatopic Grid




## 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).*

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 mosss | | 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  xx = minor; 5–25% of wetlands  xxx = major; >25% of wetlands
i = inland areas only  s = southern subzones only

TABLE 5.2.2 *Fen Species Importance Table*

| | Species | Wf01 | Wf02 | Wf03 | Wf04 | Wf05 | Wf06 | Wf07 | Wf08 |
|---|---|---|---|---|---|---|---|---|---|
| **Shrubs** | *Betula nana* | | | | | | | | |
| | *Salix barclayi* | | | | | | | | |
| | *Salix pedicellaris* | | | | | | | | |
| | *Spiraea douglasii* | | | | | | | | |
| | *Myrica gale* | | | | | | | | |
| **Herbs and Dwarf Shrubs** | *Carex utriculata* | | | | | | | | |
| | *Carex aquatilis* | | | | | | | | |
| | *Comarum palustre* | | | | | | | | |
| | *Calamagrostis canadensis* | | | | | | | | |
| | *Carex lasiocarpa* | | | | | | | | |
| | *Menyanthes trifoliata* | | | | | | | | |
| | *Carex limosa* | | | | | | | | |
| | *Carex chordorrhiza* | | | | | | | | |
| | *Eleocharis quinqueflora* | | | | | | | | |
| | *Trichophorum alpinum* | | | | | | | | |
| | *Trichophorum cespitosum* | | | | | | | | |
| | *Eriophorum angustifolium* | | | | | | | | |
| | *Caltha leptosepala* | | | | | | | | |
| | *Carex anthoxanthea* | | | | | | | | |
| | *Equisetum fluviatile* | | | | | | | | |
| | *Carex magellanica* | | | | | | | | |
| | *Carex sitchensis* | | | | | | | | |
| | *Rhynchospora alba* | | | | | | | | |
| | *Carex livida* | | | | | | | | |
| | *Eriophorum chamissonis* | | | | | | | | |
| | *Vahlodea atropurpurea* | | | | | | | | |
| | *Drosera anglica* | | | | | | | | |
| | *Hypericum anagalloides* | | | | | | | | |
| | *Triantha glutinosa* | | | | | | | | |
| | *Schoenoplectus tabernaemontani* | | | | | | | | |
| | *Fauria crista-galli* | | | | | | | | |
| | *Senecio triangularis* | | | | | | | | |
| | *Andromeda polifolia* | | | | | | | | |
| | *Kalmia microphylla* | | | | | | | | |
| | *Oxycoccus oxycoccos* | | | | | | | | |
| | *Triglochin maritima* | | | | | | | | |
| | *Drosera rotundifolia* | | | | | | | | |
| | *Leptarrhena pyrolifolia* | | | | | | | | |
| | *Platanthera dilatata* | | | | | | | | |
| | *Sanguisorba canadensis* | | | | | | | | |
| | *Utricularia intermedia* | | | | | | | | |
| | *Viola palustris* | | | | | | | | |
| **Lichens and Mosses** | *Sphagnum* Group I | | | | | | | | |
| | *Aulacomnium palustre* | | | | | | | | |
| | *Drepanocladus* spp. | | | | | | | | |
| | *Sphagnum* Group II | | | | | | | | |
| | *Tomentypnum nitens* | | | | | | | | |
| | *Philonotis fontana* | | | | | | | | |
| | *Calliergon stramineum* | | | | | | | | |
| | *Scorpidium* spp. | | | | | | | | |
| | *Campylium stellatum* | | | | | | | | |
| | *Warnstorfia* spp. | | | | | | | | |
| | *Meesia triquetra* | | | | | | | | |

| 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 |

## General Description

The Narrow-leaved cotton-grass – Marsh-marigold Site Association is common at subalpine elevations (above 1200 m) throughout the Sub-Boreal and Central Interior. It occurs on gently sloping peatlands where there is continual seepage from snowmelt and groundwater.

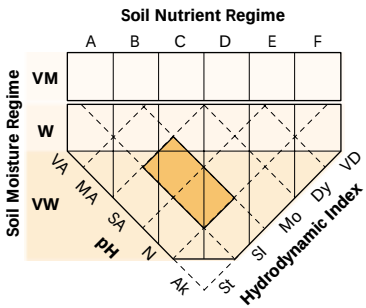
*Eriophorum angustifolium* occurs on most sites with high cover. Sites with abundant surface seepage will also have a high cover of *Caltha leptosepala* and/or *Leptarrhena pyrolifolia*. Other graminoids such as *C. anthoxanthea*, *C. aquatilis*, or *C. nigricans* may also occur with high cover on some sites. The moss layer is usually well developed but compositionally variable.

Soils are usually deep, mushy sedge peat. Typic Mesisols and Fibrisols are the most common soil types.

## Characteristic Vegetation

**Tree layer** (0 - **0** - 0)
**Shrub layer** (0 - **1** - 10)
**Herb layer** (12 - **80** - 100)
***Caltha leptosepala***, ***Eriophorum angustifolium***
**Moss layer** (0 - **75** - 95)
*Aulacomnium palustre*

## Wetland Edatopic Grid




## Comments

*The **Wf12** occurs on sites with more active seepage than the related **Wf13** Site Association. It also has similar site characteristics to the **Wf08**, but that unit is fed by groundwater with high levels of base cations and has dense peat deposits.*

*The **Wf12** occurs alone or in complex with the **Wf03**, on microsites with more active seepage.*

*Some **Wf12** sites in the upper Skeena drainage have high cover of* Carex anthoxanthea, *which is a common species of bog forests on the north Coast. The Interior distribution of this species is greatly restricted and could be limited to these high-elevation wetland ecosystems.*

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 mosss | | 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  xx = minor; 5–25% of wetlands  xxx = major; >25% of wetlands
i = inland areas only  s = southern subzones only

TABLE 5.2.2 *Fen Species Importance Table*

| | Species | Wf01 | Wf02 | Wf03 | Wf04 | Wf05 | Wf06 | Wf07 | Wf08 |
|---|---|---|---|---|---|---|---|---|---|
| **Shrubs** | *Betula nana* | | | | | | | | |
| | *Salix barclayi* | | | | | | | | |
| | *Salix pedicellaris* | | | | | | | | |
| | *Spiraea douglasii* | | | | | | | | |
| | *Myrica gale* | | | | | | | | |
| **Herbs and Dwarf Shrubs** | *Carex utriculata* | | | | | | | | |
| | *Carex aquatilis* | | | | | | | | |
| | *Comarum palustre* | | | | | | | | |
| | *Calamagrostis canadensis* | | | | | | | | |
| | *Carex lasiocarpa* | | | | | | | | |
| | *Menyanthes trifoliata* | | | | | | | | |
| | *Carex limosa* | | | | | | | | |
| | *Carex chordorrhiza* | | | | | | | | |
| | *Eleocharis quinqueflora* | | | | | | | | |
| | *Trichophorum alpinum* | | | | | | | | |
| | *Trichophorum cespitosum* | | | | | | | | |
| | *Eriophorum angustifolium* | | | | | | | | |
| | *Caltha leptosepala* | | | | | | | | |
| | *Carex anthoxanthea* | | | | | | | | |
| | *Equisetum fluviatile* | | | | | | | | |
| | *Carex magellanica* | | | | | | | | |
| | *Carex sitchensis* | | | | | | | | |
| | *Rhynchospora alba* | | | | | | | | |
| | *Carex livida* | | | | | | | | |
| | *Eriophorum chamissonis* | | | | | | | | |
| | *Vahlodea atropurpurea* | | | | | | | | |
| | *Drosera anglica* | | | | | | | | |
| | *Hypericum anagalloides* | | | | | | | | |
| | *Triantha glutinosa* | | | | | | | | |
| | *Schoenoplectus tabernaemontani* | | | | | | | | |
| | *Fauria crista-galli* | | | | | | | | |
| | *Senecio triangularis* | | | | | | | | |
| | *Andromeda polifolia* | | | | | | | | |
| | *Kalmia microphylla* | | | | | | | | |
| | *Oxycoccus oxycoccos* | | | | | | | | |
| | *Triglochin maritima* | | | | | | | | |
| | *Drosera rotundifolia* | | | | | | | | |
| | *Leptarrhena pyrolifolia* | | | | | | | | |
| | *Platanthera dilatata* | | | | | | | | |
| | *Sanguisorba canadensis* | | | | | | | | |
| | *Utricularia intermedia* | | | | | | | | |
| | *Viola palustris* | | | | | | | | |
| **Lichens and Mosses** | *Sphagnum* Group I | | | | | | | | |
| | *Aulacomnium palustre* | | | | | | | | |
| | *Drepanocladus* spp. | | | | | | | | |
| | *Sphagnum* Group II | | | | | | | | |
| | *Tomentypnum nitens* | | | | | | | | |
| | *Philonotis fontana* | | | | | | | | |
| | *Calliergon stramineum* | | | | | | | | |
| | *Scorpidium* spp. | | | | | | | | |
| | *Campylium stellatum* | | | | | | | | |
| | *Warnstorfia* spp. | | | | | | | | |
| | *Meesia triquetra* | | | | | | | | |

## 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.

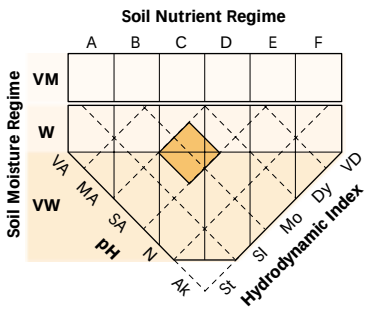
*Salix barclayi* dominates the shrub layer with a scattering of other low shrub species. *Carex aquatilis* dominates the herb layer but is often accompanied by scattered high-elevation species such as *Caltha leptosepala*, *Eriophorum angustifolium*, and *Leptarrhena pyrolifolia*. The moss layer can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

## Wetland Edatopic Grid




## 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.*