

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
<b>Wm01</b> 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 <sup>s</sup>	
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; &lt; 5% of wetlands

xx = minor; 5–25% of wetlands

xxx = major; &gt;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**

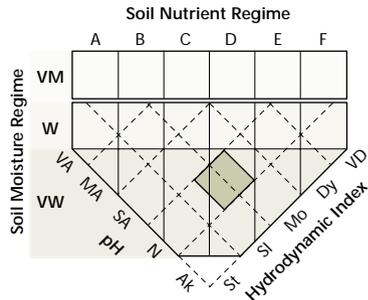


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Wm01 Beaked sedge – Water sedge	x	xx	x	xxx	xxx	xx	xx		x	
Wm02 Swamp horsetail – Beaked sedge		x		x	x	x	xx			
Wm03 Awned sedge	x				x					
Wm04 Common spike-rush	x	x		xx	x	x	xx		x	
Wm05 Cattail	xxx	x		xx	xx	x	xx	xx	x <sup>s</sup>	
Wm06 Great bulrush	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; &lt; 5% of wetlands

xx = minor; 5–25% of wetlands

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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>					
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	<i>Comarum palustre</i>					
	<i>Sium suave</i>					
	<i>Carex exsiccata</i>					
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	<i>Polygonum amphibium</i>					
	<i>Eleocharis palustris</i>					
	<i>Potamogeton richardsonii</i>					
	<i>Typha latifolia</i>					
	<i>Schoenoplectus acutus</i>					
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	<i>Juncus balticus</i>					
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	<i>Potentilla anserina</i>					
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	<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.					

*Typha latifolia*

**General Description**

Cattail marshes are common throughout the Coast and Interior at low elevations in subzones with warm summers. They occur most commonly in protected lake embayments and potholes or even roadside ditches, where the surface substrate remains saturated for most of the growing season.

*Typha latifolia* dominates, often with few other rooted plants present, especially where nutrient levels are high and *T. latifolia* growth profuse. Occasionally there is significant cover of *Carex utriculata*, *Schoenoplectus acutus*, or *Lemna* spp.

These sites often have organic veneers of well-decomposed, odiferous muck. Soil types can be Humisols or Humic Gleysols. Water depths may be up to 1 m in the spring but recede in late summer, sometimes to the surface.



**Characteristic Vegetation**

- Tree layer (0 - 0 - 0)
- Shrub layer (0 - 0 - 10)
- Herb layer (40 - 80 - 100)
- Typha latifolia*
- Moss layer (0 - 0 - 90)

**Comments**

*Typha latifolia* effectively turns high nutrient levels (N and P) into biomass and often dominates wetlands experiencing nutrient loading. Addition of agricultural or human waste to most wetlands will lead to an increase and eventual dominance by *T. latifolia* if climatic conditions are favourable. Initial *T. latifolia* establishment requires substrate exposure for seedling establishment and germination, though once established it spreads extensively by rhizomes so that large stands may consist of only a few individual plants.

Similar sites with more dynamic hydrology or lower N and P are usually occupied by Wm06. Patches of *S. acutus* in Wm05 marshes can be a result of intensive grazing by Muskrat. *S. acutus* stores nutrients in the root mass and can more rapidly recover from removal of its stem than can *T. latifolia*.

**Wetland Edatopic Grid**

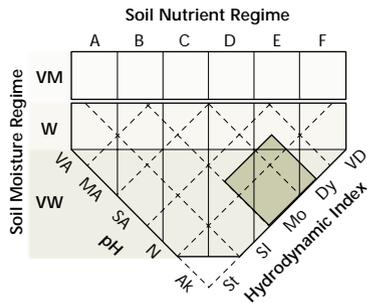


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Wm02 Swamp horsetail – Beaked sedge		x		x	x	x	xx			
Wm03 Awned sedge	x				x					
Wm04 Common spike-rush	x	x		xx	x	x	xx		x	
Wm05 Cattail	xxx	x		xx	xx	x	xx	xx	x <sup>s</sup>	
Wm06 Great bulrush	xxx	x		x	xx	xx	x	x	x	
Wm07 Baltic rush	x				xx					
Wm50 Sitka sedge – Hemlock-parsley								xx	xx	
Wm51 Three-way sedge				x				x	x	

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	<i>Typha latifolia</i>					
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	<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.					

Wm06	Wm07	Wm50	Wm51	Common Name
				beaked sedge
				water sedge
				swamp horsetail
				marsh cinquefoil
				hemlock water-parsnip
				inflated sedge
				awned sedge
				water smartweed
				common spike-rush
				Richardson's pondweed
				common cattail
				great bulrush
				buckbean
				greater bladderwort
				Baltic rush
				foxtail barley
				common silverweed
				bluejoint
				Douglas' water-hemlock
				skunk cabbage
				Pacific water-parsley
				small bedstraw
				pink spirea
				Sitka sedge
				yellow pond-lily
				three-way sedge
				hook-mosses: intermediate
				hook-mosses: poor



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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 <sup>s</sup>	
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	

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				Baltic rush
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				common silverweed
				bluejoint
				Douglas' water-hemlock
				skunk cabbage
				Pacific water-parsley
				small bedstraw
				pink spirea
				Sitka sedge
				yellow pond-lily
				three-way sedge
				hook-mosses: intermediate
				hook-mosses: poor

*Juncus balticus*

**General Description**

Baltic rush saline meadows/marshes are common in the Chilcotin Plateau and uncommon in the dry climates of the Southern Interior and Southern Interior Mountains. The **Wm07** occurs in alkaline or saline potholes, primarily closed basins, where there is early-season inundation followed by gradual watertable drop to below the surface.



*Juncus balticus* is always dominant on **Wm07** sites. Other saline-tolerant species such as *Carex praegracilis*, *Potentilla anserina*, and *Puccinellia nuttalliana* may occur, especially on drier sites.

Soils are fine textured, and poorly to imperfectly drained, with up to 10 cm of surface organic accumulation. The upper horizons remain wet throughout most of the growing season. When these sites dry out, a salt or alkali crust is often evident.

**Characteristic Vegetation**

- Tree layer** (0 - 0 - 0)
- Shrub layer** (0 - 0 - 2)
- Herb layer** (15 - 70 - 100)
- Hordeum jubatum*, *Juncus balticus*, *Potentilla anserina*
- Moss layer** (0 - 5 - 20)

**Comments**

The **Wm07**, along with other communities of saline or alkaline soils conditions, requires site conditions that concentrate salts. These conditions are found in closed basins of semi-arid climates, where high evaporation rates and limited freshwater inflow lead to salt concentration. These same conditions also result in variable watertables within and between years, reflecting a changing balance of inflows and evaporation. Under these variable conditions the optimum environment for Site Associations changes location within the basin between years. *Juncus balticus* occupies those zones where flooding is shallow but soils do not completely dry out in the summer. **Wm07** can form extensive stands in seasonally flooded depressions or as peripheral communities in the drawdown zone around permanent ponds and **Wm06** marshes. Drier sites are **Gs03** or **Gs02**.

**Wetland Edatopic Grid**

