

Balsam poplar – White spruce / Ostrich fern – Cow-parsnip

Populus balsamifera – *Picea glauca* /
Matteuccia struthiopteris – *Heracleum lanatum*

n=7



Skye Glen,
Inverness County

Concept: The Balsam poplar – White spruce / Ostrich fern – Cow-parsnip forest is an early to mid-successional Vegetation Type (VT) characterized by prominent levels of balsam poplar in the canopy, lesser but frequent white spruce, and a well-developed understory. The ecosystem has some boreal affinity, but temperate species like white ash, sugar maple, sensitive fern and alternate-leaved dogwood differentiate it from true boreal floodplains. Many stands have been disturbed and/or reduced in size by human activity, resulting in relatively high shrub density and the frequent presence of plants like wild apple and coltsfoot.

Vegetation: This closed canopy forest is dominated by balsam poplar, with lesser white spruce, white ash and sugar maple. These spruce, ash and maple have a low cover and may be restricted to the understory. Balsam poplar trees have a relatively small crown and most stands have been disturbed. Both these factors increase available light and promote shrub development. Average choke cherry cover is one of the highest of any flooded forest in Nova Scotia. Alternate-leaved dogwood, red-osier dogwood and cow-parsnip also occur more frequently than in other flooded forests. The herbaceous layer is well

developed with high fern cover. Ostrich fern, wood goldenrod and cow-parsnip are characteristic. Bryophyte cover is reduced.

Environmental Setting: FP4 is mainly associated with fresh to moist, deep nutrient rich alluvium. It occurs on actively-flooded floodplains and low riparian slopes. This VT is usually found in Cape Breton, but can also occur in central and northern areas of the mainland. Annual or biannual flooding is typical, but longer return intervals have been observed. FP4 is found in southeastern New Brunswick but is absent from Prince Edward Island.

Successional Dynamics: The Balsam poplar – White spruce / Ostrich fern – Cow-parsnip forest is an early to mid-successional VT. In cooler areas of the province it may persist as a late successional stage, but elsewhere it will succeed to FP1 (Sugar maple – White ash / Ostrich fern – Wood goldenrod). On less active floodplains, the VT may transition to FP6 (White spruce / Wood goldenrod / Shaggy moss). This dynamic ecosystem follows herb and shrub dominated vegetation types on newly formed floodplains. Disturbance agents include flood events, ice scour, insects and disease, agriculture, cottage development and tree harvesting.

Ecological Features

This northern pioneer floodplain ecosystem provides some of the richest forest habitat in Nova Scotia. It supports numerous rare plants, many of which are largely limited to Cape Breton. These include northern wild licorice, small flowered wood rush, male fern, long-bracted green orchid, squash berry, horse-gentian and giant rattlesnake plantain, among others. The small patch

ecosystem may cover several hectares, but most historically large stands have been reduced by past land use activity. Woody understory layers are especially well developed, providing cover, forage and/or nesting habitat for numerous vertebrates. Balsam from poplar buds provides an important source of tree resin collected by bees. Sites are often broken

by small channels, shallow depressions, and variable micro-relief; this contributes to the site's structural complexity and important microhabitat. Like other floodplain forests, this ecosystem promotes riparian connectivity, stream bank stability, and helps maintain climatic conditions along the land-water interface.

Characteristic Plants

FP4

	Freq. (%)	Cover (%)
Balsam poplar	100	41.4
White spruce	100	12.1
Sugar maple	71	6.4
White ash	57	17.3
Elm	29	8.5
Red maple	29	5.0
Ironwood	29	0.5
Tree Layer (Mean % Cover)		72
Choke cherry	100	12.9
White ash	86	9.5
Sugar maple	86	8.5
Balsam poplar	86	5.4
Speckled alder	57	8.8
Wild apple	57	3.5
Alternate-leaved dogwood	57	1.1
Elm	43	6.3
White spruce	43	2.4
Red raspberry	43	0.7
Ironwood	29	1.5
Meadow-sweet	29	0.8
Red-osier dogwood	29	0.5
Serviceberry	29	0.3
Balsam fir	29	0.1
Virgins bower	29	0.1
Shrub Layer (Mean % Cover)		46
Ostrich fern	100	35.5
Sensitive fern	86	11.4
Wood goldenrod	71	1.9
Cow-parsnip	57	8.3
Meadow-rue	57	2.9
Coltsfoot	57	2.0
Creeping buttercup	57	0.8
Jewelweed	43	3.0
Small enchanter's nightshade	43	3.0
Tall white aster	43	1.0
Late goldenrod	43	0.8
Dwarf raspberry	43	0.4
Calico aster	43	0.1
Field horsetail	43	0.1
Lady fern	43	0.1
Long-stalked sedge	43	0.1
Ribless woodland sedge	43	0.1
Large enchanter's nightshade	29	2.6
Agrimony	29	2.3
Bittersweet	29	1.0
White avens	29	1.0
Hooked agrimony	29	0.5
Horse-gentian	29	0.5
Dandelion	29	0.3
Bladder sedge	29	0.1
Blue joint	29	0.1
Brome-like sedge	29	0.1
Common speedwell	29	0.1
Sweet-scented bedstraw	29	0.1
Tall buttercup	29	0.1
Yellow violet	29	0.1
Herb Layer (Mean % Cover)		56
Shaggy moss	57	12.8
Bryo-Lichen Layer (Mean % Cover)		7

Distinguishing Features

A dominant balsam poplar overstory with a strong understory of shrubs and herbs is typical. Evidence of regular flooding is apparent with debris piles. Choke cherry and alder are usually abundant; red-osier and alternate-leaved dogwoods typically present. Meadow rue, ostrich fern and sensitive fern are very common.



Ostrich fern

Site Characteristics

Slope Position:	Level ¹⁰
Surface Stoniness:	(Non - Slightly) ¹⁰
Bedrock Outcrop:	(Non-rocky) ¹⁰
Elevation Range:	9 - 60m
Slope Gradient:	Level ¹⁰
Aspect:	None ¹⁰
Exposure:	Mod. sheltered ⁷ Moderate ³
Microtopography:	Level ¹⁰
Drainage:	Rapid ⁶ Well ² Moderately well ¹ Imperfect ¹

Soil Characteristics

Soil Type:	ST8 ⁶ ST8 ³ ST9 ¹
Parent Material:	Alluvium ¹⁰
Rooting Depth (cm):	(30-45) ³ (>45) ⁷
Duff Thickness (cm):	(0-5) ⁴ nd ⁶

