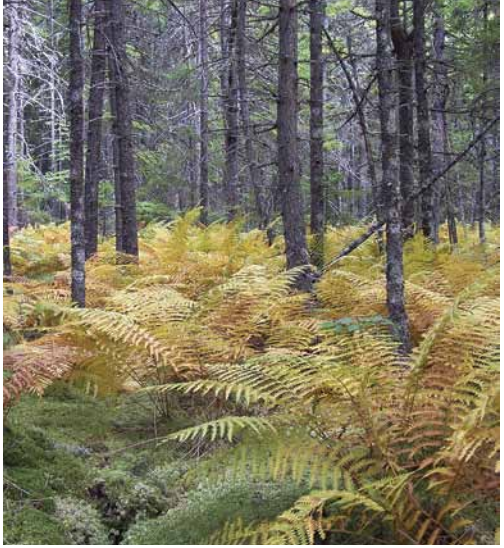

Tyndal Road, Cumberland County

WC1

Black spruce / Cinnamon fern / Sphagnum

Picea mariana / Osmunda cinnamomea / Sphagnum spp.

n=65

Concept: The Black spruce / Cinnamon fern / Sphagnum forest is characterized by black spruce canopy dominance, moderate to high herbaceous cover, and by a well-developed layer of sphagnum mosses. It is found on wet, nutrient poor soil, persisting as an edaphic climax. This Vegetation Type (VT) is similar to WC2 (Black spruce / Lambkill – Labrador tea / Sphagnum), which is an even more nutrient poor ecosystem found on sites with further reduced ground and surface water flow.

Vegetation: Crown closure is moderate to high, although some stands support more widely spaced trees. The canopy is heavily dominated by black spruce, or infrequently by hybrid black spruce-red spruce, with lesser balsam fir. Other trees are sparsely scattered with low cover. The understory supports low to moderate levels of woody species but higher herbaceous cover. Characteristic vascular plants include false holly, cinnamon fern, creeping snowberry, goldthread and three seeded sedge. Bryophyte development is high, composed of sphagnum moss and lesser amounts of common upland species. Ladies' tresses and/or pale fat-leaved sphagnum, with small pockets of common green or flat topped sphagnum, are common.

Environmental Setting: This is a nutrient poor wet forest that occasionally develops on moist sites. Soils are usually derived from glacial till or organic deposits with minor ground and/or surface water flow. It is found in shallow depressions and on flats and gentle slopes with very little microtopography. Sloped occurrences are usually cooler aspects. Rooting potential is strongly limited by high water levels. Most stands are in the Eastern and Northumberland/Bras d'Or ecoregions, with outliers scattered throughout the remainder of the province. WC1 is widespread and abundant across the Maritime Provinces.

Successional Dynamics: This ecosystem can be expressed at a variety of successional stages, but most stands are mid-successional. It is a type of edaphic climax, largely maintained by limiting site conditions. Tree windthrow and uprooting are the primary mechanisms of renewal, but many stands have a history of timber harvest. WC1 does not shift to other vegetation types after major disturbance, but does change in development stage. Between stand-level disturbance events, natural senescence can create uneven-aged stands. Vegetative layering is the dominant form of black spruce regeneration.

Ecological Features

This small-patch ecosystem has variable crown closure and height but dense herbaceous and bryophyte cover. Productivity is generally low, although stands on richer sites may support higher species richness, including some rare plants (e.g. showy lady's slipper, alder-leaved buckthorn, black ash, brittle stem sphagnum and golden ragwort). Vegetation is slow growing, limiting its forage value for herbivorous wildlife, although WC1 can provide summer thermal cover for moose, winter cover for deer, habitat for amphibians, and can support other unique habitat features. Wet forests contribute to carbon and nitrogen budgets and are often associated with headwaters, functioning to regulate water flow, provide filtration and recharge groundwater. These forests can sustain old growth conditions which are easily overlooked due to the generally small trees. It can support prominent levels of dwarf mistletoe and associated witches broom.

Characteristic Plants	WC1	
	Freq. (%)	Cover (%)
Black spruce	91	43.4
Balsam fir	60	9.3
Red maple	51	7.6
Tamarack	34	7.0
White pine	17	6.4
Tree Layer (Mean % Cover)		**57**
False holly	89	4.7
Black spruce	86	7.8
Lambkill	85	1.9
Balsam fir	82	4.8
Red maple	82	1.3
Wild raisin	65	1.6
Velvet-leaf blueberry	49	1.3
Labrador tea	38	1.6
Lowbush blueberry	35	1.1
Serviceberry	23	0.2
Mountain-ash	20	0.1
Shrub Layer (Mean % Cover)		**23**
Bunchberry	92	4.7
Cinnamon fern	88	26.0
Goldthread	82	3.6
Creeping snowberry	80	2.4
Three seeded sedge	65	8.4
Sarsaparilla	46	1.0
Wild lily-of-the-valley	43	0.9
Bracken	40	7.6
Twinflower	38	2.9
Starflower	38	0.4
Pink lady's slipper	34	0.1
Bluebead lily	29	0.6
Three-leaved false Solomon's seal	26	2.6
Painted trillium	25	0.1
Dwarf raspberry	22	1.0
Indian pipe	22	0.1
New York fern	20	8.7
Herb Layer (Mean % Cover)		**49**
Schreber's moss	98	25.5
Stair-step moss	75	7.1
Bazzania	75	4.3
Ladies' tresses	57	17.9
Pale fat-leaved sphagnum	48	32.7
Flat topped sphagnum	42	18.4
Wavy dicranum	42	2.2
Broom moss	37	1.4
Grey reindeer lichen	34	0.5
Common green sphagnum	32	26.2
Hair-cap moss	32	0.9
Plume moss	28	2.4
Hypnum moss	23	1.0
Cup lichens	22	0.6
Bryo-Lichen Layer (Mean % Cover)		**91**

Distinguishing Features

This poorly drained softwood forest of black spruce usually occurs in a peatland setting (peat deeper than 40 cm). High cover to cinnamon fern and other herbs such as creeping snowberry and three seeded sedge is common. The shrub layer is less developed compared to WC2. An abundance of sphagnum moss species are present.

Cinnamon fern

Site Characteristics

Slope Position:	Level[8] Other[2]
Surface Stoniness:	(Non - Slightly)[8] (Moderately)[1] (Very - Excessively)[1]
Bedrock Outcrop:	(Non-rocky)[10]
Elevation Range:	10 - 469m
Slope Gradient:	Level[8] Gentle[2]
Aspect:	North[1] None[8] Other[1]
Exposure:	Moderate[7] Exposed[1] Mod. exposed[1] Other[1]
Microtopography:	Level[7] Slightly[2] Other[1]
Drainage:	Poor[5] Very poor[4] Imperfect[1]

Soil Characteristics

Soil Type:	ST14[4] ST4[3] ST7[2] ST6[1]
Parent Material:	Glacial till[5] Organic[4] Other[1]
Rooting Depth (cm):	(<30)[7] (30-45)[2] nd[1]
Duff Thickness (cm):	(11-20)[3] (21-40)[3] (>40)[3] nd[1]