

Balsam fir / Cinnamon fern – Three seeded sedge / Sphagnum

Abies balsamea / *Osmunda cinnamomea* –
Carex trisperma / *Sphagnum* spp.

n=18



Mount Thom,
Pictou County

Concept: This coniferous forest is characterized by balsam fir canopy dominance and high sphagnum moss cover. The early to mid-successional ecosystem is generally associated with wet soils, but may occur on imperfectly drained sites. Low to moderate nutrient availability is typical but this Vegetation Type (VT) is usually on richer sites than wet black spruce – pine forests (WC1 - WC4).

Vegetation: Canopy layers are usually well developed, but some stands are open with stunted and/or more widely-spaced trees. The canopy is heavily dominated by balsam fir. Other important co-dominants may include white spruce, black spruce and/or red maple. The shrub layer is variably developed but usually supports low to moderate cover. Few woody shrubs are frequent. False holly, wild raisin and/or lambkill may be sparsely scattered but they are not especially prominent. Herbaceous cover is moderate, largely comprised of wet site species (e.g. cinnamon fern, three seeded sedge) and common upland coniferous forest plants. Sphagnum species dominate the dense bryophyte layer. Common green and ladies' tresses sphagnum mosses are typical.

Ecological Features

The Balsam fir / Cinnamon fern – Three seeded sedge / Sphagnum forest occurs as a small patch in larger upland conifer or mixedwood forests, at the edge of open wetlands, or adjacent to other types of wet forest. The ecosystem is characterized by moderate to high canopy development, usually sparse woody understory cover

but generally dense herbaceous and bryophyte cover. Old growth potential is low but may be higher in cooler or sheltered areas, less prone to patch and stand-replacing disturbance. In cooler areas, this ecosystem may persist as a type of edaphic climax, representing an important component of landscape structure, but

Environmental Setting: The Balsam fir / Cinnamon fern - Three seeded sedge / Sphagnum forest occurs on poorly drained flats, in shallow depressions and on gentle to moderate slopes. Most sites are at least moderately exposed and have very little microtopography. Cooler slopes are favoured, but aspect is somewhat variable. Soils are usually derived from glacial tills, but organic deposits also provide suitable habitat. Low to moderate nutrient availability is typical. The VT is primarily found scattered throughout central and eastern Nova Scotia. WC6 is widespread throughout the Maritime Provinces.

Successional Dynamics: In cooler highland and coastal ecoregions, the forest may persist as a type of edaphic climax but elsewhere, it will succeed to WC5 (Red spruce – Balsam fir / Cinnamon fern / Sphagnum) or WC8 (Hemlock / Cinnamon fern – Sensitive fern / Sphagnum). Depending on disturbance regime and the local ecological context, WC6 could also transition to WD2 (Red maple / Cinnamon fern / Sphagnum), WD6 (Red maple – Balsam fir / Wood aster / Sphagnum), WD8 (Red spruce – Red maple / Wood sorrel – Sensitive fern / Sphagnum) or even CE1 (Eastern white cedar / Speckled alder / Cinnamon fern / Sphagnum). Common disturbance agents are tree mortality caused by windthrow, timber harvest and spruce budworm defoliation.

successional dynamics are not completely understood. Similar to all wet forests, this ecosystem supports valuable habitat, distinct ecological features and unique biogeochemical functions. Documented rare plant associates include: creeping rattlesnake plantain, showy lady's slipper, meadow horsetail and foamflower.

Characteristic Plants

WC6

	Freq. (%)	Cover (%)
Balsam fir	100	42.3
Black spruce	67	12.3
Red maple	61	4.1
White spruce	33	11.7
White birch	28	5.2
White pine	17	2.0
White ash	11	3.0
Hemlock	11	1.5
Red spruce	11	1.5
Tamarack	11	1.5
Tree Layer (Mean % Cover)		60
Balsam fir	83	12.8
False holly	61	3.8
Red maple	61	1.0
Black spruce	50	3.9
Wild raisin	50	0.3
Lambkill	39	0.5
White birch	33	3.4
Velvet-leaf blueberry	33	2.8
Serviceberry	33	0.1
Fly-honeysuckle	28	0.6
Yellow birch	28	0.3
Mountain-ash	28	0.2
Lowbush blueberry	22	0.1
Striped maple	22	0.1
Shrub Layer (Mean % Cover)		20
Cinnamon fern	89	26.4
Bunchberry	89	3.3
Starflower	83	0.4
Sarsaparilla	78	4.0
Goldthread	78	3.7
Twinflower	72	4.4
Wood-sorrel	67	3.3
Three seeded sedge	67	3.2
Creeping snowberry	61	6.8
Wild lily-of-the-valley	44	1.0
New York fern	33	14.2
Bluebead lily	33	4.6
Dwarf raspberry	33	1.4
Evergreen wood fern	33	1.1
Crested wood fern	33	0.2
Lady fern	22	0.4
Violets	22	0.3
Teaberry	22	0.2
Indian pipe	22	0.1
Rough goldenrod	22	0.1
Wood aster	22	0.1
Herb Layer (Mean % Cover)		60
Schreber's moss	94	10.0
Stair-step moss	89	18.5
Bazzania	83	2.8
Common green sphagnum	61	39.2
Ladies' tresses	44	6.8
Broom moss	44	1.8
Plume moss	39	0.8
Pale fat-leaved sphagnum	28	34.8
Wavy dicranum	28	0.7
Flat topped sphagnum	22	24.9
Bryo-Lichen Layer (Mean % Cover)		92

Distinguishing Features

This is a poorly drained softwood forest dominated by balsam fir with occasional spruces and red maple.

Cinnamon fern and three seeded sedge are common herbs, while sphagnum mosses dominate the groundcover.



Common green sphagnum

Site Characteristics

Slope Position:	Level ⁷ Middle ² Lower ¹
Surface Stoniness:	(Non - Slightly) ⁸ (Moderately) ¹ (Very - Excessively) ¹
Bedrock Outcrop:	(Non-rocky) ¹⁰
Elevation Range:	6 - 445m
Slope Gradient:	Level ⁷ Gentle ³
Aspect:	North ² South ² None ⁶
Exposure:	Moderate ⁴ Exposed ³ Mod. exposed ² Other ¹
Microtopography:	Level ⁶ Slightly ³ nd ¹
Drainage:	Poor ³ Very poor ³ Imperfect ¹

Soil Characteristics

Soil Type:	ST4 ³ ST14 ³ ST3 ¹ ST6 ¹ ST7 ¹ ST13 ¹
Parent Material:	Glacial till ⁶ Organic ³ Lacustrine ¹
Rooting Depth (cm):	(<30) ⁶ (30-45) ² (>45) ¹ nd ¹
Duff Thickness (cm):	(6-10) ¹ (11-20) ² (21-40) ² (>40) ² nd ³

