

Red maple – Balsam fir / Wood aster / Sphagnum

Acer rubrum - Abies balsamea / Aster acuminatus / Sphagnum spp.

n=7



MacElmons Pond. Belmont, Colchester County

Concept: Red maple - Balsam fir / Wood aster / Sphagnum is one of three wet mixedwood forests (WD6, WD7 and WD8) recognized in Nova Scotia, each largely distinguished by important differences in canopy composition and more minor differences in soil fertility and understory composition. This relatively common Vegetation Type (VT) is characterized by red maple and balsam fir co-dominance, moderate to high herbaceous cover and a well-developed bryophyte layer of sphagnum moss. It is usually found on poorly drained mineral soil, with low to medium nutrient availability.

Vegetation: Crown closure is moderate to high, although some stands support more widely spaced trees. The canopy is co-dominated by red maple and balsam fir; other tree species are infrequent and seldom abundant. The understory supports low to moderate levels of woody species but higher herbaceous cover. Characteristic vascular plants include false holly, cinnamon fern, creeping snowberry, wood aster and three seeded sedge. Bryophyte development is moderate, composed of sphagnum moss and lesser amounts of common upland species. Small patches of pale fat-leaved sphagnum, common green and/ or flat topped sphagnum are sometimes present.

Environmental Setting: This is primarily a wet forest although occasionally it develops on moist sites. Soils are usually derived from glacial deposits, of varying texture, with at least some ground and/ or surface water flow (organic deposits are also possible); nutrient availability is low to medium. The ecosystem occurs at low elevation in shallow depressions and on flats and cool gentle slopes with little microtopography. Rooting potential is strongly limited by high water level and sometimes compacted soils. Most occurrences are in the Western and Valley/Central Lowland ecoregions but outlying stands are scattered throughout the remainder of the mainland and lowland areas of Cape Breton. The VT is common on Prince Edward Island and across south and central New Brunswick.

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 (i.e. largely persisting because of limiting site conditions). Depending on the ecological context and local disturbance regime, WD6 could maintain itself or transition to WD2 (Red maple / Cinnamon fern / Sphagnum) or WC6 (Balsam fir / Cinnamon fern – Three seeded sedge / Sphagnum) after disturbance. Tree senescence, windthrow and intermediate-scaled harvest events like firewood and pulpwood cutting, are the primary disturbance agents, but harvesting and insect infestation can also occur at the standlevel. Between disturbance events, uneven-aged stands can develop through tree mortality originating with senescence.

Ecological Features

Mixedwood forests may support vertebrate and invertebrate species associated with both coniferous and deciduous wetlands. Wildlife which utilize either hardwood or softwood structures will often seek small clumps of target canopy trees within broader matrices of dissimilar species. The Red maple - Balsam fir / Wood aster /

Sphagnum VT is a moderately productive mixedwood forest, with a well-developed canopy and often dense understory strata. Small pools or narrow channels of standing or very slowly moving water are typical, and may provide important habitat for amphibians and other wildlife. This small patch ecosystem supports

similar biodiversity values as WD2, but occurs in more sheltered areas with lower peat accumulations. These characteristics may influence the VT's ecology and contributions to local landscape structure and function. Observations of alder-leafed buckthorn and black ash were found in available plot data.

Characteristic	WD6	
Plants	Freq.	Cover (%)
Red maple	100	37.3
Balsam fir	100	27.3
Yellow birch	57	3.3
Red spruce	43	11.7
White birch	43 29	3.0 5.0
White spruce Tamarack	29 14	23.0
Black spruce	14	18.0
White ash	14	3.0
White pine	14	2.0
Tree Layer (Mean % Cover)		75
Balsam fir	86	2.9
Red maple	71	1.7
False holly Speckled alder	71 43	0.2 2.5
Winterberry	43	1.7
Lambkill	43	0.5
Mountain maple	29	11.5
Black spruce	29	6.5
Red spruce	29	2.3
Bristly black currant	29	0.3
Lowbush blueberry	29	0.1
Velvet-leaf blueberry	29	0.1
Wild raisin Shrub Layer (Mean % Cover)	29	0.1 14
	100	17.1
Cinnamon fern Goldthread	100	2.3
Wild lily-of-the-valley	100	0.4
Starflower	86	1.1
Bunchberry	71	2.3
Creeping snowberry	71	0.6
Wood aster	71	0.3
Dwarf raspberry	57	3.3
Sarsaparilla Twinflower	57 57	2.8 2.6
Violets	57	0.6
Bluebead lily	57	0.5
Three seeded sedge	57	0.1
New York fern	43	25.0
Mitrewort	43	0.8
Crested wood fern	43	0.2
Strawberry	43	0.1
Interrupted fern Oak fern	29 29	6.5 5.0
Woodland horsetail	29	1.0
Lady fern	29	0.5
Manna-grass	29	0.2
Herb Layer (Mean % Cover)		53
Stair-step moss	86	14.0
Bazzania	86	2.3
Broom moss	57	1.0
Common green sphagnum	43	20.0
Pale fat-leaved sphagnum	43 43	15.0 13.7
Schreber's moss Shaggy moss	43	13.7 6.7
Hypnum moss	43	5.8
Flat topped sphagnum	29	12.0
Ladies' tresses	29	6.5
Bryo-Lichen Layer (Mean % Cover) 55		55

Distinguishing Features

Red maple and balsam fir in the overstory layer define this wet mixedwood forest. Characteristic plants include false holly, cinnamon fern, creeping snowberry, wood aster and three seeded sedge. Common green sphagnum and pale fat-leaved sphagnum are common.



Creeping snowberry

Site Characteristics

Level⁸ Lower¹ Toe¹ Slope Position: Surface Stoniness: (Non - Slightly)10 Bedrock Outcrop: (Non-rocky)10 Elevation Range: 5 - 124m Level9 Gentle1 Slope Gradient: North¹ West¹ None8 Aspect: Moderate⁹ Mod. Sheltered¹ Exposure:

Microtopography: Level7 Slightly3

Poor⁴ Very poor⁴ Imperfect² Drainage:

Soil Characteristics

ST76 ST41 ST91 ST101 ST141 Soil Type:

Parent Material: Glacial till7 Organic1 Glaciofluvial1 nd1

Rooting Depth (cm): $(<30)^9(30-45)^1$

Duff Thickness (cm): $(0-5)^1(6-10)^1(11-20)^6(21-40)^1(>40)^1$

