

- WD1** White ash / Sensitive fern – Christmas fern
- WD2** Red maple / Cinnamon fern / Sphagnum
- WD3** Red maple / Sensitive fern – Lady fern / Sphagnum
- WD4** Red maple / Poison ivy / Sphagnum **WD4a** Huckleberry – Inkberry variant
- WD5** Trembling aspen / Beaked hazelnut / Interrupted fern / Sphagnum
- WD6** Red maple – Balsam fir / Wood aster / Sphagnum
- WD7** Balsam fir – White ash / Cinnamon fern – New York fern / Sphagnum
- WD8** Red spruce – Red maple / Wood sorrel – Sensitive fern / Sphagnum

Concept: These are wet forest ecosystems with water at or near the surface for most of the year. They are generally dominated by hardwood species such as red maple and white ash, but also include mixedwood forests with balsam fir. The shrub layer is mainly regenerating tree species, while the well-developed herb layer includes many species of ferns and sedges. Moss abundance is low to moderate. Vegetation Types (VT) are associated with moderate to high nutrient availability with increasing richness indicated by white ash presence. They occur primarily on level to depressional topography with soils derived from either mineral or organic parent material. All VTs in this group are found in the Acadian Ecosite group, with some red maple and balsam fir dominated VTs also found in the Maritime Boreal Ecosite group.

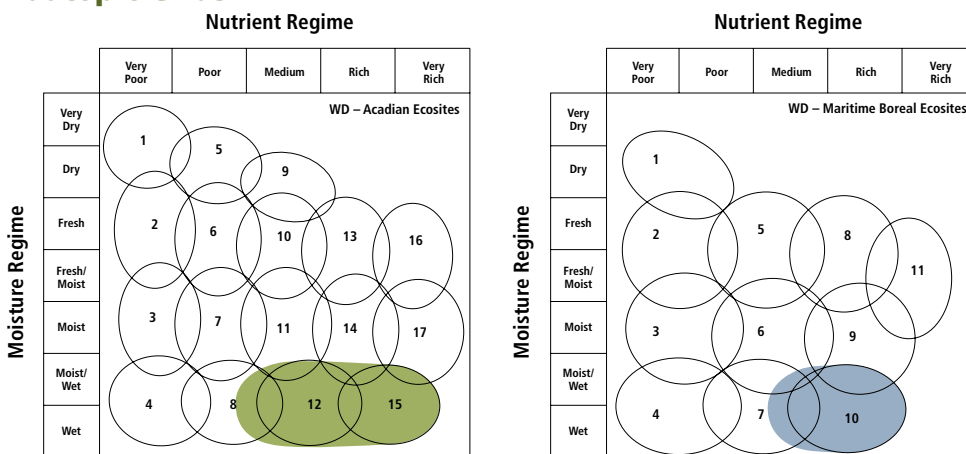
Vegetation: Crown closure can be moderate to high in VTs of this group, but some stands only support widely spaced trees. Red maple is the main overstory species, with other VTs distinguished by trembling aspen and white ash cover. Mixedwood VTs in this group are dominated by red maple with balsam fir or red spruce. Yellow birch, sugar maple, white pine and hemlock can sometimes be found on better drained hummocks. The shrub layer mainly contains regenerating tree species, alder, winterberry and false holly. The herb layer is dominated by sensitive fern, cinnamon fern, lady fern and dewberry. Poison ivy is also found in western Nova Scotia. Sphagnum moss coverage is often extensive.

Environmental Setting: Vegetation types in this group are found on upper and lower flats, lower and toe positions of gentle slopes, shallow depressions and riparian zones. Most sites have little (if any) surface stoniness or exposed bedrock. Soils are generally derived from glacial till, fluvial, lacustrine and/or organic deposits, with

fertility enhanced by ground water or seepage inputs. Rooting depth is strongly limited by high water levels. Various VTs form small to large patches on the landscape. This group is found throughout the province, but is prominent in the Northumberland Bras d'Or Lowlands (500), Valley and Central Lowlands (600) and Western (700) ecoregions.

Successional Dynamics: These wet hardwood and mixedwood forests are mainly edaphic climax associations maintained by excessive moisture. Fluctuating water levels, windthrow, insects and disease are significant disturbance agents. Stands within a given VT may display a range of development stages depending on disturbance history and natural senescence.

Edatopic Grids



Ecological Features

Most ecosystems from this group occur on wet soils but some are infrequently found on moist upland sites. Wet deciduous forests are relatively common small patch ecosystems, making unique contributions to landscape structure, hydrologic regime and habitat diversity. Stands often feature small pools of standing water, irregular surface topography and slow moving streams. Organic accumulation in wet deciduous forests is usually lower than in wet coniferous forests, while water flow and nutrient availability is generally higher. Especially wet stands may persist as woodlands, with stunted trees and marsh and/or fen understory species. Wet deciduous forests may provide habitat for invertebrates, lichens, amphibians (e.g. wood frogs, yellow and blue spotted salamander), reptiles (e.g. wood turtles, ribbon snakes), mammals (e.g. moose, water shrew), plants and birds (swamp sparrow, common yellow throat, woodcock, wood thrush, Canada warbler and northern waterthrush). Edaphic climax forests in this group are self sustaining, and many express long term ecological continuity. However, stand dynamics and old growth development are not well understood.

WD1

White ash / Sensitive fern – Christmas fern

Fraxinus americana / *Onoclea sensibilis* –
Polystichum acrostichoides

n=11



Angevine Lake,
Cumberland County

Concept: White ash / Sensitive fern - Christmas fern forest is characterized by prominent white ash and a species-rich herbaceous understory. It is typically found on imperfectly to poorly drained mineral deposits with high nutrient availability, and is one of the richest wet forests in the province.

Vegetation: The well-developed canopy is co-dominated by white ash and red maple, but the latter species occurs with lower cover. Yellow birch and sugar maple are also frequent but seldom abundant and often restricted to the understory. Some stands support moderate to high balsam fir in the overstory, but these stands are uncommon. Black ash has also been recorded as an infrequent and minor component of stand structure. Shrub cover and species richness is reduced. The herbaceous layer is well developed and diverse, frequently including sensitive fern, lady fern, dwarf raspberry, New York fern and Christmas fern, among other species. Bryophyte development is low to moderate, composed of small pockets of upland species and nutrient demanding wetland mosses (e.g. prickly sphagnum).

Environmental Setting: This is primarily a wet forest although it may develop on moist sites. Ground and surface water flow and/or seepage contribute to high moisture and nutrient input. Both mineral and organic soils can be found, but fine to medium textured mineral substrates are most common. It occurs at very low elevation on flats and lower topographic positions of gentle slopes, in shallow depressions, and adjacent to streams and other water bodies. Surface microtopography and exposed bedrock are typically low. Organic matter accumulation is low to moderate. WD1 is rare on Prince Edward Island and unreported from New Brunswick.

Successional Dynamics: The ecosystem is a type of edaphic climax and is expected to persist as described. Stand composition and structure are usually maintained by small- to intermediate-sized disturbance events and limiting site conditions. Due to its ecological setting, WD1 does not shift to other vegetation types after disturbance, but it does change in development stage. Red maple cover can also fluctuate over time. Excluding harvesting, stand-level disturbance events are rare, with gaps or small patches usually created by individual tree mortality through senescence, wind or ice scour.

Ecological Features

The White ash / Sensitive fern – Christmas fern is a productive ecosystem, with high species richness, complex stand structures, and a broad diversity of habitat values. This mature small patch forest is characterized by temperate tree and herbaceous species (e.g. white ash,

Christmas fern). Documented rare plants include black ash, but numerous other species may be supported. In spring and early summer, sites are inundated with water, most of which is concentrated in small pools or channels, providing habitat for amphibians and other wildlife.

Later in the growing season, surface and ground water levels fall below the rooting zone. Old growth potential is moderate but may be higher in sheltered areas, or on drier soils.

Characteristic Plants

WD1

	Freq. (%)	Cover (%)
White ash	100	38.0
Red maple	100	20.9
Yellow birch	82	7.8
Balsam fir	55	16.2
White spruce	36	13.3
Sugar maple	27	11.0
Red oak	18	8.0
Trembling aspen	18	6.0
Red spruce	18	5.0
Tree Layer (Mean % Cover)		87
Balsam fir	100	5.2
White ash	100	4.3
Sugar maple	64	3.3
Striped maple	64	2.2
Yellow birch	55	1.9
Mountain maple	55	1.0
Red maple	45	2.5
Beaked hazelnut	45	2.4
Shrub Layer (Mean % Cover)		21
Dwarf raspberry	91	5.9
Sensitive fern	82	20.8
Violets	82	4.1
Cinnamon fern	82	3.1
Sarsaparilla	82	2.4
Lady fern	73	4.5
Wild lily-of-the-valley	73	1.1
Starflower	73	0.1
New York fern	64	4.2
Evergreen wood fern	64	3.2
Christmas fern	64	1.1
Northern beech fern	55	13.0
Jewelweed	55	6.5
Bladder sedge	55	3.7
Goldthread	55	3.2
Interrupted fern	55	2.3
Bunchberry	55	0.7
Wood aster	55	0.7
Partridge-berry	55	0.2
Bluebead lily	55	0.1
Lions paw	55	0.1
Oak fern	45	5.8
Water-horehound	45	1.9
Short husk	45	0.8
Wood-sorrel	45	0.6
Rose twisted stalk	45	0.1
Tall white aster	45	0.1
Wood reed	45	0.1
Crested wood fern	36	0.5
Bristle stalked sedge	36	0.1
Mitrewort	36	0.1
Fringed sedge	27	14.0
Herb Layer (Mean % Cover)		70
Fern moss	64	2.2
Stair-step moss	64	1.4
Prickly sphagnum	55	4.0
Bazzania	55	1.3
Common green sphagnum	45	9.7
Hypnum moss	45	1.1
Bryo-Lichen Layer (Mean % Cover)		26

Distinguishing Features

This is a poorly drained hardwood forest dominated by white ash with lesser levels of red maple. The herb layer is well developed and diverse, often dominated by high fern cover including sensitive fern, lady fern, New York fern and Christmas fern.



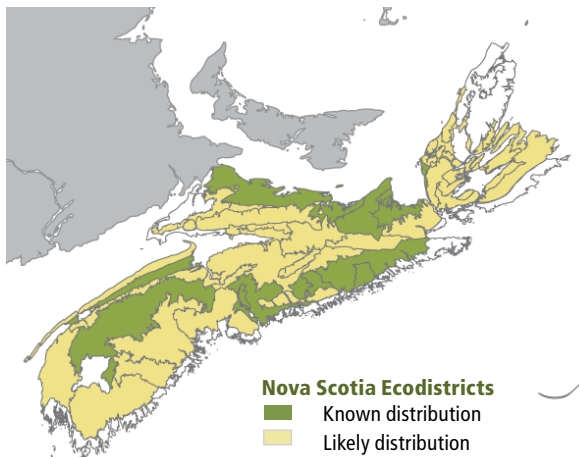
Dwarf raspberry

Site Characteristics

Slope Position:	Level ⁸ Lower ²
Surface Stoniness:	(Non - Slightly) ⁷ (Very - Excessively) ² nd ¹
Bedrock Outcrop:	(Non-rocky) ¹⁰
Elevation Range:	24 - 199m
Slope Gradient:	Level ⁷ Gentle ³
Aspect:	North ¹ East ¹ West ² None ⁶
Exposure:	Moderate ⁶ Mod. sheltered ⁴
Microtopography:	Level ⁵ Slightly ⁴ Moderately ¹
Drainage:	Imperfect ⁴ Poor ⁴ Very poor ²

Soil Characteristics

Soil Type:	ST9 ³ ST10 ³ ST13 ² ST12 ¹ ST14 ¹
Parent Material:	Glacial till ⁵ Alluvium ² Lacustrine ² Organic ¹
Rooting Depth (cm):	(<30) ³ (30-45) ⁵ nd ²
Duff Thickness (cm):	(0-5) ³ (6-10) ³ (11-20) ² (21-40) ¹ nd ¹



Nova Scotia Ecodistricts
■ Known distribution
■ Likely distribution

WD2

Red maple / Cinnamon fern / Sphagnum

Acer rubrum / *Osmunda cinnamomea* /
Sphagnum spp.

n=8



Burnt Dam Flowage,
Kings County

Concept: This common and widespread ecosystem is one of three wet red maple forests (WD2, WD3 and WD4) classified from Nova Scotia. It has lower tree and herbaceous species richness and soil fertility than WD3, and it lacks the Atlantic Coastal Plain flora that sets it apart from WD4. The Red maple / Cinnamon fern / Sphagnum forest is found on peat or poorly drained mineral soil, with low to moderate nutrient availability. It persists as an edaphic climax.

Vegetation: Canopy development is intermediate to high and almost entirely dominated by red maple. Other tree species are far less frequent and seldom abundant. The woody understory supports moderate cover but is species-poor and largely occupied by regenerating trees with scattered wild raisin and speckled alder. The herbaceous layer is better developed but also species-poor; only cinnamon fern and goldthread are frequent. Bryophyte development is moderate, composed of sphagnum and lesser amounts of common upland moss and liverwort species. Flat topped sphagnum is characteristic.

Ecological Features

WD2 is the most common deciduous wet forest in Nova Scotia. It is found in small to moderate sized basins or depressions, usually featuring small pools or narrow channels of standing or slowly moving water. Sites rarely support notable microrelief, and trees on those with more pronounced surface topography are often limited to hummocks. This is a

moderately productive ecosystem, but few rare plants, other than black ash, are documented. Similar to other wet deciduous forests, WD2 supports unique habitat values (e.g. as an important early source of nectar and pollen), complex stand structures, and important biogeochemical and landscape functions. Wet deciduous forests generally

Environmental Setting: Soils are usually organic deposits or poorly drained mineral soils, of varying texture. Low ground and surface water flow and poorly-decomposed organic material limit nutrient availability, but some sites provide at least moderate soil richness. Flats, shallow depressions and lower topographic positions of gentle slopes provide suitable habitat across lowland and upland ecoregions of Nova Scotia. Microtopography, surface stoniness and exposed bedrock are minimal. WD2 is common on Prince Edward Island and across south and central New Brunswick.

Successional Dynamics: This early to mid-successional ecosystem is a type of edaphic climax, largely maintained by saturated soil and reduced rooting potential. It is expected to persist as described, but after disturbance, it could transition to WD8 (Red spruce – Red maple / Wood sorrel – Sensitive fern / Sphagnum) or, on better sites, WD7 (Balsam fir – White ash / Cinnamon fern – New York fern / Sphagnum). Windthrow and harvesting are the main stand-level disturbance agents but in their absence, mortality of individuals and patches of trees through senescence, ice scour, flooding and/or other minor events, can create uneven-aged stands.

occur on sites that are richer than mixedwood or coniferous wet forests, but some exceptions occur. Canopy tree senescence and uprooting are relatively common and are often followed by vigorous stump sprouting. This process may support a uniquely persistent and poorly understood form of old growth.

Characteristic Plants	WD2	
	Freq. (%)	Cover (%)
Red maple	100	49.1
Black spruce	44	6.3
Grey birch	33	1.0
White birch	22	20.0
Yellow birch	22	7.5
White pine	22	5.0
Balsam fir	22	3.5
Red oak	11	10.0
Large-tooth aspen	11	2.0
Mountain-ash	11	2.0
Trembling aspen	11	2.0
Black ash	11	0.1
Tamarack	11	0.1
White ash	11	0.1
White spruce	11	0.1
Tree Layer (Mean % Cover)		62
Red maple	100	7.2
Black spruce	89	3.4
Wild raisin	89	3.1
Speckled alder	67	3.0
Lambkill	67	1.9
Balsam fir	67	1.5
Huckleberry	56	11.6
Velvet-leaf blueberry	56	3.0
White pine	56	1.9
Winterberry	44	3.0
False holly	33	0.5
Grey birch	33	0.3
Meadow-sweet	33	0.3
Labrador tea	22	1.1
Shrub Layer (Mean % Cover)		32
Cinnamon fern	89	26.4
Bunchberry	78	0.8
Goldthread	67	1.4
Three seeded sedge	56	10.4
Bracken	56	7.2
Starflower	56	0.1
New York fern	44	14.0
Sarsaparilla	44	0.7
Wild lily-of-the-valley	44	0.2
Crested wood fern	44	0.1
Teaberry	33	6.2
Tall white aster	33	3.3
Dwarf raspberry	33	1.0
Bluebead lily	33	0.5
Violets	33	0.3
Trailing blackberry	33	0.2
Wood aster	33	0.2
Herb Layer (Mean % Cover)		60
Flat topped sphagnum	67	14.5
Hypnum moss	67	3.1
Schreber's moss	67	0.6
Pale fat-leaved sphagnum	56	19.2
Common green sphagnum	44	3.3
Red fat-leaved sphagnum	33	13.3
Ladies' tresses	33	5.4
Hair-cap moss	33	1.7
Wavy dicranum	33	0.4
Bryo-Lichen Layer (Mean % Cover)		32

Distinguishing Features

Red maple dominates this poorly drained hardwood forest. Cinnamon fern is well developed in the understory. The shrub and herb layers are poorly developed and contain species of low nutrient requirement. This shrub/herb layer difference helps separate WD2 from WD3.



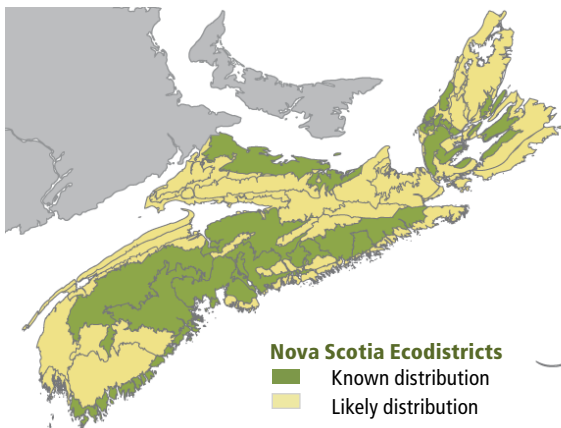
Wild raisin

Site Characteristics

Slope Position:	Level ⁷ Depression ¹ Middle ¹ Upper ¹
Surface Stoniness:	(Non - Slightly) ⁸ (Very - Excessively) ²
Bedrock Outcrop:	(Non-rocky) ¹⁰
Elevation Range:	18 - 195m
Slope Gradient:	Level ⁸ Gentle ²
Aspect:	North ¹ West ¹ None ⁸
Exposure:	Moderate ⁴ Mod. exposed ⁴ Exposed ¹ Mod. sheltered ¹
Microtopography:	Level ⁶ Slightly ³ Strongly ¹
Drainage:	Poor ⁶ Imperfect ³ Very poor ¹

Soil Characteristics

Soil Type:	ST14 ⁵ ST7 ¹ ST12 ¹ nd ³
Parent Material:	Organic ⁶ Glacial till ¹ Lacustrine ¹ Till/Bedrock ¹ nd ¹
Rooting Depth (cm):	(<30) ¹ (30-45) ¹ (>45) ³ nd ⁵
Duff Thickness (cm):	(0-5) ¹ (11-20) ¹ (>40) ⁴ nd ⁴



Nova Scotia Ecodistricts
■ Known distribution
■ Likely distribution

WD3

Red maple / Sensitive fern – Lady fern / Sphagnum

Acer rubrum / *Onoclea sensibilis* –
Athyrium filix-femina / *Sphagnum* spp.

n=11



Wallace Bay,
Cumberland County

Concept: The relatively common Red maple / Sensitive fern - Lady fern / Sphagnum is one of three wet red maple forests (WD2, WD3 and WD4) in Nova Scotia. This low elevation ecosystem is more nutrient and species rich than WD2, and it lacks the Atlantic Coastal Plain flora that characterize WD4. It is usually found on peat or poorly to very poorly drained mineral deposits, persisting as an edaphic climax. The forest is characterized by red maple canopy dominance and a species-rich herbaceous understory.

Vegetation: The closed canopy is strongly dominated by red maple with far less prominent amounts of black spruce, white birch and balsam fir. The woody understory is sparse and largely comprised of regenerating canopy species with frequent but low levels of balsam fir and wild raisin. Herbaceous and bryophyte cover are less than levels reported for other deciduous wet forests of Nova Scotia, but moderately species-rich. Notable species include sensitive fern, lady fern, dwarf raspberry and pale fat-leaved sphagnum.

Environmental Setting: Flats, shallow depressions and, less often, lower positions of gentle slopes provide suitable habitat. Sites have low to moderate exposure with little

Ecological Features

This is the richest red maple wet forest in Nova Scotia, and the second richest among all wet deciduous forests, after WD1. Productivity is high but this potential may not be fully expressed by either tree height or age, both of which tend to be limited by saturated conditions. Like all wet deciduous forests, soil and

groundwater nutrient richness increases understory development, species diversity and associated habitat structures. Few rare plants (e.g. meadow horsetail, black ash) are documented but the ecosystem provides valuable habitat for numerous species (e.g. as an important early source of nectar and pollen). Small pools or

microtopography, exposed bedrock or surface stoniness. The low elevation ecosystem develops on both organic deposits and poorly drained mineral soil of varied origin and texture. Glacial and post-glacial river and lake plains are common landforms. Enriched surface and/or ground water inputs provide moderate to high nutrient availability. This Vegetation Type (VT) is found scattered throughout provincial lowlands and uplands, but is particularly prominent in the Northumberland/Bras d'Or and Eastern ecoregions. WD3 is common on Prince Edward Island and across south and central New Brunswick.

Successional Dynamics: This forest can be expressed at a variety of successional stages, but is typically mid-successional. It is a type of edaphic climax and is expected to persist as described, although, depending on disturbances and nearby seed sources, it could transition to WD7 (Balsam fir – White ash / Cinnamon fern – New York fern / Sphagnum) or WD8 (Red spruce – Red maple / Wood sorrel – Sensitive fern / Sphagnum). Windthrow and harvesting are the main stand-level disturbance agents but between these, tree senescence and other minor disturbances can promote development of uneven-aged stands.

tracts of standing water are common in the spring and early summer, but usually dry up later. Canopy tree senescence and uprooting are relatively common, and are often followed by vigorous stump sprouting. This process may support a uniquely persistent and poorly understood form of old growth.

Characteristic Plants

WD3

	Freq. (%)	Cover (%)
Red maple	100	49.5
Balsam fir	55	7.8
White ash	55	5.7
Yellow birch	36	6.8
White spruce	27	7.0
Red spruce	18	13.5
Black spruce	18	8.5
Sugar maple	18	8.5
White birch	18	3.5
Hemlock	18	2.5
Tree Layer (Mean % Cover)		69
Balsam fir	82	3.3
Red maple	73	4.5
Wild raisin	64	1.7
Speckled alder	55	11.8
White ash	45	1.4
Winterberry	36	4.3
Red oak	36	0.3
Yellow birch	27	2.6
White spruce	27	1.3
False holly	27	1.0
Serviceberry	27	1.0
Shrub Layer (Mean % Cover)		20
Sensitive fern	91	15.3
Cinnamon fern	91	3.3
Dwarf raspberry	73	3.6
Lady fern	73	2.4
Violets	64	3.2
Wood aster	64	2.4
Goldthread	64	0.6
Wild lily-of-the-valley	64	0.5
Crested wood fern	64	0.3
Starflower	55	0.9
Bladder sedge	55	0.3
New York fern	45	6.6
Sarsaparilla	45	0.3
Interrupted fern	36	2.4
Three seeded sedge	36	2.4
Jewelweed	36	1.9
Blue flag	36	1.5
Bunchberry	36	1.0
Sedges	36	0.8
Woodland horsetail	36	0.6
Bugleweed	27	4.8
Tall white aster	27	1.8
Northern beech fern	27	1.7
Spinulose wood fern	27	1.3
Herb Layer (Mean % Cover)		49
Pale fat-leaved sphagnum	73	4.1
Common green sphagnum	45	29.0
Fern moss	45	4.4
Stair-step moss	45	1.5
Brachythecium moss	36	0.9
Bazzania	36	0.5
Prickly sphagnum	27	6.0
Schreber's moss	27	3.3
Broom moss	27	1.4
Hypnum moss	27	0.9
Bryo-Lichen Layer (Mean % Cover)		26

Distinguishing Features

Red maple dominates this poorly drained hardwood forest which has a better developed herb layer compared to WD2. Nutrient demanding herbs in the understory include sensitive fern, lady fern and dwarf raspberry. Pale fat-leaved sphagnum and common green sphagnum are common.



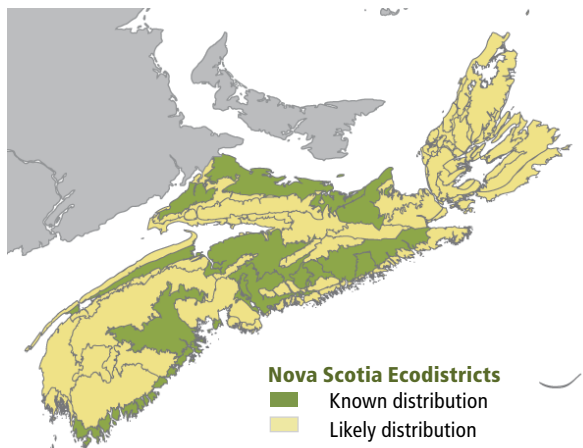
Lady fern

Site Characteristics

Slope Position:	Level ⁶ Depression ³ Middle ¹
Surface Stoniness:	(Non - Slightly) ¹⁰
Bedrock Outcrop:	(Non-rocky) ¹⁰
Elevation Range:	2 - 112m
Slope Gradient:	Level ⁹ nd ¹
Aspect:	West ¹ None ⁹
Exposure:	Moderate ⁵ Mod. sheltered ³ Mod. exposed ¹ nd ¹
Microtopography:	Level ⁵ Slightly ⁴ nd ¹
Drainage:	Poor ⁸ Very poor ²

Soil Characteristics

Soil Type:	ST4 ³ ST14 ³ ST10 ² ST7 ¹ ST9 ¹
Parent Material:	Organic ⁴ Glacial till ³ Lacustrine ² Alluvium ¹
Rooting Depth (cm):	(<30) ² nd ³
Duff Thickness (cm):	(0-5) ¹ (11-20) ² (21-40) ² (>40) ¹ nd ⁴



WD4

Red maple / Poison ivy / Sphagnum

Acer rubrum / *Toxicodendron radicans* /
Sphagnum spp.

WD4a

Huckleberry – Inkberry variant

Gaylussacia baccata – *Ilex glabra*

n=27



Sixth Lake Stream,
Queens County

Concept: This Vegetation Type (VT) is distinguished from other wet red maple forests (WD2 and WD3) by the presence of Atlantic Coastal Plain flora like poison ivy, catbriar, inkberry, Elliot's goldenrod and other plants. WD4 is found in wet organic depressions or on wet mineral flats, where it persists as an edaphic climax. Small- to intermediate-scale disturbances, including windthrow, flooding, ice-scour and timber harvest are common components of stand history.

Vegetation: Canopy layers are strongly dominated by red maple or co-dominated by red maple and black spruce. Mixedwood occurrences are defined by WD4a. In some stands, low to moderate levels of balsam fir, tamarack and/or hemlock may be supported. Black ash and/or white ash are infrequent canopy components. The well-developed woody understory is largely comprised of regenerating trees and poison ivy with scattered pockets of winterberry, speckled alder and/or huckleberry. Cinnamon fern is the only frequent wetland herb. Other coastal plain species (e.g. inkberry, catbriar, highbush blueberry, Elliot's goldenrod, Massachusetts fern, skunk cabbage, button sedge, Virginia chain fern, Torrey's Sphagnum, etc.) seldom co-occur with great frequency but at least one or more species is usually represented in each stand. Bryophyte cover is very high and usually dominated by pale fat-leaved sphagnum and flat top sphagnum.

Ecological Features

WD4 supports more Atlantic Coastal Plain flora (ACPF) than any other VT in Nova Scotia. ACPF are temperate plants largely known from an expansive and relatively flat area along the southeastern seaboard of the United States. Although the coastal plain only extends north to Massachusetts, many ACPF occur in small, isolated areas of

Canada including the Atlantic Coast and inland areas of western Nova Scotia. Productivity, surface water accumulation, and structural heterogeneity of this ecosystem are variable, but most occurrences are at least moderately productive, supporting well-developed canopy features, moist micro-depressions and tall patches of ferns. Stands along

Environmental Setting: WD4 is mainly found in western Nova Scotia, often adjacent to larger rivers and/or lakes. This low elevation ecosystem is usually on poorly drained flats or in shallow depressions, with moderate exposure. WD4 can be found on riverside or lakeside alluvium (floodplain) deposits or on glacial tills, but most stands develop on organic deposits. Low surface microtopography, exposed bedrock and surface stoniness are typical. This forest is not known outside Nova Scotia, but could occur in southwestern New Brunswick.

Successional Dynamics: This forest is usually expressed at mid-successional stages and persists as an edaphic climax. It is maintained by small- to intermediate-scale canopy disturbances (e.g. windthrow, flooding, ice-scour and timber harvest) and limiting site conditions. Depending on disturbance history and local conditions, WD4a could also transition to WC7a (Tamarack – Black spruce / Lambkill / Sphagnum variant Huckleberry – Inkberry) or even CE1a (Eastern white cedar / Speckled alder / Cinnamon fern / Sphagnum variant poison ivy). Windthrow, harvesting and flooding are potential stand-level disturbance agents, while natural senescence can create uneven age class and stand structures between larger disturbance events.

slow moving rivers are prone to ice scour as well as longer periods of flooding and soil saturation. Numerous rare plants have been documented from this small patch ecosystem. Canopy tree senescence and uprooting are often followed by vigorous stump sprouting, which may support a uniquely persistent and poorly understood form of old growth.

Characteristic Plants	WD4		WD4a	
	Freq. (%)	Cover (%)	Freq. (%)	Cover (%)
Red maple	100	55.1	100	42.4
Balsam fir	53	3.0	70	8.7
Black spruce	41	4.4	90	13.2
Yellow birch	29	9.2	10	4.0
White pine	29	3.2	40	2.3
White ash	18	10.7	10	16.0
Tamarack	18	10.3	60	6.3
Black ash	12	6.5	10	1.0
Tree Layer (Mean % Cover)		69		70
Red maple	82	6.0	90	4.0
Balsam fir	82	1.9	90	4.1
Winterberry	76	4.3	40	2.8
Speckled alder	71	11.4	60	2.5
Wild raisin	59	1.3	50	1.6
Red oak	53	0.5	50	1.5
White pine	53	0.4	70	3.3
Poison ivy	47	16.0	30	1.7
Huckleberry	47	3.2	60	3.1
Black spruce	41	1.9	90	5.0
Meadow-sweet	41	0.8	20	0.4
Western poison ivy	35	5.5	20	1.6
Lambkill	35	0.7	70	11.9
Lowbush blueberry	29	1.7	50	9.0
Serviceberry	24	0.1	40	0.3
False holly	18	1.0	60	2.1
Labrador tea	12	0.1	50	0.9
Shrub Layer (Mean % Cover)		36		41
Cinnamon fern	88	11.6	100	25.2
Marsh fern	71	0.7	20	0.8
Wild lily-of-the-valley	71	0.2	80	0.5
Blue joint	65	11.8	40	0.8
Stiff sedge	59	34.1	30	34.7
Blue flag	59	0.2	40	0.6
Goldthread	53	0.9	90	1.9
Starflower	53	0.3	90	0.7
Sensitive fern	47	4.6	10	1.0
Bugleweed	47	4.3		
Dwarf raspberry	41	3.3	30	2.8
Massachusetts fern	41	0.9	10	6.0
Trailing blackberry	41	0.8	50	2.5
Spinulose wood fern	41	0.7		
Crested wood fern	41	0.4	20	0.1
Sarsaparilla	41	0.2	70	1.2
Bunchberry	29	2.1	50	1.5
Partridge-berry	18	0.1	60	0.4
Creeping snowberry	12	0.5	70	2.0
Teaberry		40	4.9	
Herb Layer (Mean % Cover)		62		54
Pale fat-leaved sphagnum	65	18.0	50	25.4
Flat topped sphagnum	47	28.1	60	20.8
Hypnum moss	47	1.0	70	5.0
Bazzania	47	0.7	80	2.0
Broom moss	41	0.3	70	1.3
Red fat-leaved sphagnum	29	21.5	50	21.7
Ladies' tresses	18	15.3	60	2.5
Schreber's moss	18	2.4	40	2.3
Stair-step moss	18	0.7	40	3.4
Bryo-Lichen Layer (Mean % Cover)		43		65

Distinguishing Features

This wet red maple forest is typically found only in the western counties with a moderate to highly developed woody shrub component including poison ivy, speckled alder, huckleberry and meadow-sweet. Atlantic Coastal Plain plants are often present; usually found next to lakes, rivers and large streams. Cinnamon fern and sphagnum mosses are common.



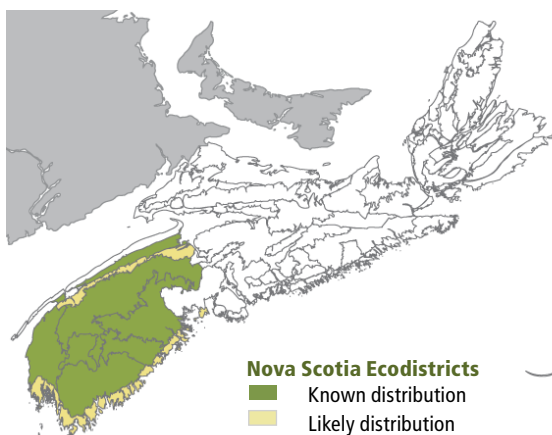
Winterberry

Site Characteristics

Slope Position:	Level ⁸ Depression ¹ Lower ¹
Surface Stoniness:	(Non - Slightly) ⁸ (Moderately) ¹ (Very - Excessively) ¹
Bedrock Outcrop:	(Non-rocky) ¹⁰
Elevation Range:	21 - 155m
Slope Gradient:	Level ⁹ Gentle ¹
Aspect:	None ⁹ Other ¹
Exposure:	Moderate ⁹ Mod. sheltered ² Mod. exposed ² nd ¹
Microtopography:	Level ⁷ Slightly ² nd ¹
Drainage:	Very poor ⁷ Poor ³

Soil Characteristics

Soil Type:	ST14 ⁸ ST4 ²
Parent Material:	Organic ³ Alluvium ¹ Glacial till ¹
Rooting Depth (cm):	(<30) ⁴ (30-45) ³ nd ³
Duff Thickness (cm):	(6-20) ¹ (21-40) ² (>40) ² nd ⁵



WD5

Trembling aspen / Beaked hazelnut / Interrupted fern / Sphagnum

Populus tremuloides / *Corylus cornuta* /
Osmunda claytoniana / *Sphagnum* spp.

n=7



Wallace Bay,
Cumberland County

Concept: Poorly drained flats and gentle slopes support this relatively uncommon wet forest, which is characterized by trembling aspen canopy dominance and high sphagnum cover. This is the wettest trembling aspen forest in Nova Scotia. Red maple is a frequent but lesser canopy component, while balsam fir and/or spruce are occasionally present with low cover.

Vegetation: Canopy layers are strongly dominated by trembling aspen or co-dominated by trembling aspen and red maple. Small patches or scattered balsam fir and spruce (usually red) are not uncommon. Black ash is infrequently a component of this forest type, but may be restricted to the understory. Lower woody layers are moderately well developed but largely dominated by regenerating canopy species; beaked hazelnut is the only characteristic shrub. Interrupted fern, wood aster, dwarf raspberry and several common upland forest species comprise the sometimes sparse herbaceous layer. Bryophyte abundance is similar, and only common green sphagnum is prominent.

Ecological Features

Despite its relative scarcity, this small-patch VT has somewhat low conservation value. Most stands originate through farming and show signs of fertilizer pollution, erosion and hydrologic alteration. However, in many agricultural landscapes, young seral forests, such as WD5, provide the only notable habitat for some wildlife.

For example, aspen leaves, twigs and bark are highly nutritious, providing an important food source, while the tree's soft wood is easily excavated by cavity nesters. This ecosystem's potential for self-renewal from root suckering is high, provided that erosion and pollution inputs are minimized. The VT occurs in small to medium sized basins or in

Environmental Setting: WD5 is mainly found in the Northumberland/Bras d'Or ecoregion, but can occur in other parts of the mainland Nova Scotia. This low elevation ecosystem is usually on poorly drained flats or lower slopes, with moderate exposure. Most sites have little surface stoniness or exposed bedrock, but slight microtopography. WD5 sites are associated with low to moderate nutrient availability, shallow to moderate rooting potential and moderate humus accumulation. Both mineral and organic soils can be found, but mineral substrates (of variable texture) are more common. WD5 is widespread in northern Prince Edward Island and across both southwestern and eastern New Brunswick.

Successional Dynamics: This is an early-successional forest but wet soils limit its potential for successional development. Depending on disturbance history, site fertility and nearby seed sources, WD5 could maintain itself or succeed to WD3 (Red maple / Sensitive fern – Lady fern / Sphagnum), WD7 (Balsam fir – White ash / Cinnamon fern – New York fern / Sphagnum) or WD8 (Red spruce – Red maple / Wood sorrel – Sensitive fern / Sphagnum). Windthrow and harvesting are the main stand-level disturbance agents. This Vegetation Type (VT) usually originates from agricultural land clearing or clearcutting.

small perched depressions. Stands are usually very productive, but no species of conservation concern were found in available plot data. Similar to other wetlands, WD5 contributes to carbon, nitrogen and water budgets and helps regulate groundwater quality and flow.

Characteristic Plants

WD5

	Freq. (%)	Cover (%)
Trembling aspen	100	47.4
Red maple	100	15.4
Balsam fir	43	14.7
Black spruce	43	4.0
White spruce	43	2.7
Red spruce	14	20.0
Red pine	14	15.0
Grey birch	14	10.0
Large-tooth aspen	14	5.0
White ash	14	5.0
Tree Layer (Mean % Cover)		79
Red maple	100	2.7
Beaked hazelnut	86	0.4
Balsam fir	71	5.9
Wild raisin	57	1.3
Trembling aspen	57	0.5
Serviceberry	57	0.1
Black spruce	43	12.3
Lambkill	43	9.7
Lowbush blueberry	29	20.5
Speckled alder	29	14.5
White ash	29	2.1
Grey birch	29	1.1
Willows	29	1.1
White spruce	29	0.8
Shrub Layer (Mean % Cover)		33
Sarsaparilla	100	1.0
Interrupted fern	86	2.6
Wild lily-of-the-valley	86	1.6
Bunchberry	71	2.4
Starflower	71	0.3
Wood aster	71	0.3
Bracken	57	14.8
Dwarf raspberry	57	10.0
Goldthread	57	1.4
Cinnamon fern	43	5.7
Evergreen wood fern	43	0.1
New York fern	29	6.5
Teaberry	29	3.6
Strawberry	29	1.6
Ground pine	29	0.1
Lady fern	29	0.1
Shinleaf	29	0.1
Short husk	29	0.1
White lettuce	29	0.1
Herb Layer (Mean % Cover)		31
Hair-cap moss	86	1.1
Schreber's moss	86	1.1
Common green sphagnum	71	19.5
Stair-step moss	57	4.3
Broom moss	57	1.8
Pale fat-leaved sphagnum	43	5.0
Shaggy moss	43	1.3
Hypnum moss	43	0.8
Flat topped sphagnum	43	0.5
Fern moss	29	3.0
Wavy dicranum	29	0.3
Bryo-Lichen Layer (Mean % Cover)		24

Distinguishing Features

This is a poorly drained forest dominated by trembling aspen. Beaked hazelnut is characteristic of the shrub understory. Bracken, dwarf raspberry and common green sphagnum are the most abundant of an otherwise sparsely-developed herb and moss layers.



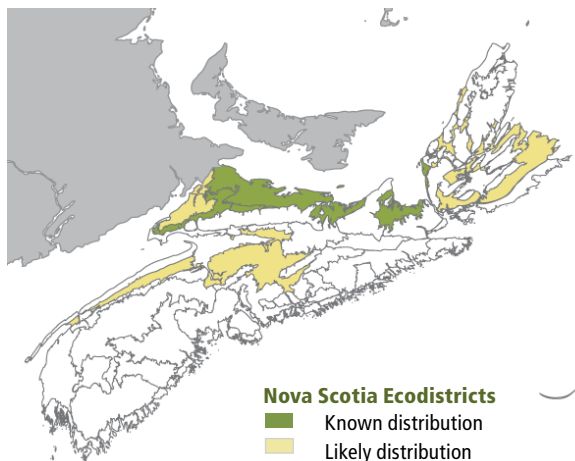
Interrupted fern

Site Characteristics

Slope Position:	Level ⁶ Lower ⁴
Surface Stoniness:	(Non - Slightly) ¹⁰
Bedrock Outcrop:	(Non-rocky) ¹⁰
Elevation Range:	9 - 87m
Slope Gradient:	Level ⁶ Gentle ⁴
Aspect:	North ³ East ³ None ⁴
Exposure:	Moderate ¹⁰
Microtopography:	Level ⁵ Slightly ⁴ Strongly ¹
Drainage:	Poor ⁷ Imperfect ³

Soil Characteristics

Soil Type:	ST4 ⁴ ST7 ⁴ ST10 ²
Parent Material:	Glacial till ⁹ Lacustrine ¹
Rooting Depth (cm):	(<30) ³ (30-45) ⁶ nd ¹
Duff Thickness (cm):	(0-5) ³ (6-10) ⁴ (11-20) ³



WD6

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.

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-leaved buckthorn and black ash were found in available plot data.

Characteristic Plants

WD6

	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	3.0
White spruce	29	5.0
Tamarack	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	71	0.2
Speckled alder	43	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	29	0.1
Shrub Layer (Mean % Cover)		14
Cinnamon fern	100	17.1
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	57	2.8
Twinflower	57	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	29	6.5
Oak fern	29	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	15.0
Schreber's moss	43	13.7
Shaggy moss	43	6.7
Hypnum moss	43	5.8
Flat topped sphagnum	29	12.0
Ladies' tresses	29	6.5
Bryo-Lichen Layer (Mean % Cover)		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.



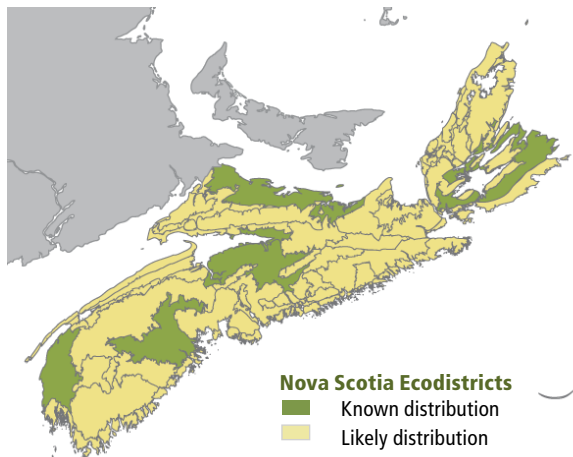
Creeping snowberry

Site Characteristics

Slope Position:	Level ⁸ Lower ¹ Toe ¹
Surface Stoniness:	(Non - Slightly) ¹⁰
Bedrock Outcrop:	(Non-rocky) ¹⁰
Elevation Range:	5 - 124m
Slope Gradient:	Level ⁹ Gentle ¹
Aspect:	North ¹ West ¹ None ⁸
Exposure:	Moderate ⁹ Mod. Sheltered ¹
Microtopography:	Level ⁷ Slightly ³
Drainage:	Poor ⁴ Very poor ⁴ Imperfect ²

Soil Characteristics

Soil Type:	ST7 ⁶ ST4 ¹ ST9 ¹ ST10 ¹ ST14 ¹
Parent Material:	Glacial till ⁷ Organic ¹ Glaciofluvial ¹ nd ¹
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



Nova Scotia Ecodistricts

- Known distribution
- Likely distribution

WD7

Balsam fir – White ash / Cinnamon fern – New York fern / Sphagnum

Abies balsamea – *Fraxinus americana* /
Osmunda cinnamomea – *Thelypteris noveboracensis* /
Sphagnum spp.

n=12



Sherbrooke Lake,
Lunenburg County

Concept: Balsam fir – White ash / Cinnamon fern – New York fern / Sphagnum Vegetation Type (VT) is the wettest and richest of the three wet mixedwood forests (WD6, WD7 and WD8) found in the province. This closed canopy forest occurs on wet mineral soils or peat, with intermediate or high nutrient availability. The unit is co-dominated by white ash and one or more coniferous tree species. Balsam fir is particularly prominent, but most stands also feature low levels of spruce and yellow birch. The understory is largely dominated by herbaceous and sphagnum cover.

Vegetation: The closed canopy is co-dominated by white ash and balsam fir, with lesser spruce (usually red) and yellow birch. Low to moderate cover is typical in the woody understory, where regenerating trees and fly-honeysuckle are characteristic. The well-developed herbaceous layer includes frequent cinnamon fern, dwarf raspberry, sensitive fern and New York fern, among other species. Bryophyte development is moderate, composed of sphagnum, shaggy moss and lesser amounts of common upland species. Common green sphagnum is prominent.

Ecological Features

Rich temperate mixedwood forests are uncommon in Nova Scotia, partly because nutrient demanding conifer species (e.g. cedar) are seldom present. By virtue of its rarity and restricted Canadian range, lesser disturbed examples of this unusual

ecosystem present a conservation opportunity. WD7 may support a mix of wet coniferous and deciduous forest values, including important wildlife habitat structures, hydrologic and biogeochemical functions. Few species of conservation

Environmental Setting: This moderately exposed wet forest is invariably found on level sites with slight microtopography and little exposed bedrock or surface stones. Soils have intermediate to high nutrient availability, largely maintained by enriched seepage, ground and/or surface water inputs. It occurs at low elevation across level to undulating landscapes on organic deposits or fine to medium textured mineral soils. Most stands are in upland regions of mainland Nova Scotia and across lower elevations of Cape Breton. The WD7 ecosystem has not been documented in New Brunswick or Prince Edward Island, but it likely occurs in southern New Brunswick.

Successional Dynamics: This ecosystem can be expressed at a variety of successional stages, but most stands are mid-successional, persisting as an edaphic climax. It is maintained by limiting site conditions and small- to intermediate-scaled disturbances. Tree senescence, windthrow and smaller scaled timber harvest events are the primary mechanisms of renewal. WD7 does not generally shift to other vegetation types after disturbance, but a transition to WD1 (White ash / Sensitive fern – Christmas fern) is possible on higher fertility sites. Excluding harvesting, stand-level disturbance events are rare but insect infestation may cause a significant reduction of balsam fir in some stands.

concern were found in available plot data. Similar to other wetlands, WD7 contributes to carbon and nitrogen budgets, helps regulate groundwater quality and flow, and represents an important component of landscape structure.

Characteristic Plants

WD7

	Freq. (%)	Cover (%)
Balsam fir	100	18.6
White ash	100	10.8
Red maple	83	16.5
Yellow birch	83	12.2
Red spruce	58	14.4
Black spruce	42	13.4
White spruce	25	14.0
Sugar maple	17	8.5
Hemlock	17	4.5
Tree Layer (Mean % Cover)		75
Balsam fir	83	8.7
Fly-honeysuckle	83	0.7
Yellow birch	75	0.6
White ash	58	4.1
Red maple	58	0.9
Red spruce	50	0.7
Sugar maple	50	0.4
Serviceberry	50	0.1
Striped maple	42	0.1
Winterberry	33	12.7
Mountain maple	25	18.0
Shrub Layer (Mean % Cover)		25
Cinnamon fern	92	17.2
Dwarf raspberry	92	9.4
Sarsaparilla	83	2.4
Bunchberry	83	1.7
New York fern	67	25.4
Sensitive fern	67	4.1
Wild lily-of-the-valley	67	2.4
Goldthread	67	1.7
Northern beech fern	67	1.2
Starflower	67	0.4
Three seeded sedge	58	3.3
Wood-sorrel	58	1.3
Bladder sedge	58	0.6
Wood aster	58	0.4
Partridge-berry	58	0.3
Twinflower	58	0.3
Crested wood fern	58	0.1
Woodland horsetail	50	2.4
Lady fern	50	1.9
Bluebead lily	50	0.1
Evergreen wood fern	42	0.6
Creeping snowberry	42	0.1
Interrupted fern	33	10.5
Oak fern	33	9.6
Blue joint	33	2.7
Meadow-rue	33	2.0
Short husk	25	5.0
Herb Layer (Mean % Cover)		76
Stair-step moss	83	6.7
Shaggy moss	75	8.3
Bazzania	75	4.3
Common green sphagnum	58	42.1
Schreber's moss	42	9.5
Pale fat-leaved sphagnum	25	28.3
Flat topped sphagnum	25	17.7
Prickly sphagnum	25	9.2
Bryo-Lichen Layer (Mean % Cover)		62

Distinguishing Features

White ash is diagnostic of this wet mixedwood forest. Fly-honeysuckle is characteristic along with a well developed herbaceous layer that often includes cinnamon fern, dwarf raspberry, sensitive fern, sensitive fern and New York fern.



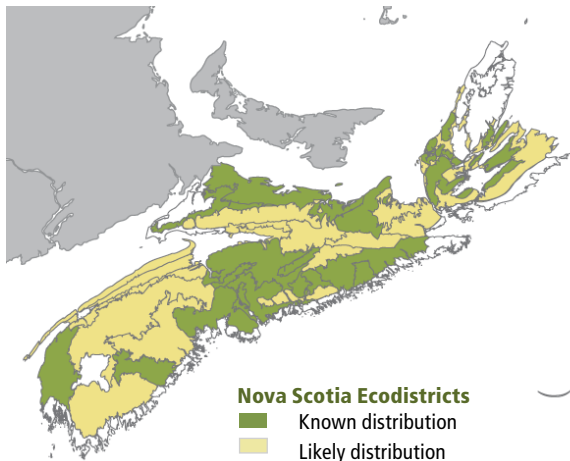
Fly-honeysuckle

Site Characteristics

Slope Position:	Level ⁷ Depression ¹ Lower ¹ Toe ¹
Surface Stoniness:	(Non - Slightly) ⁹ (Moderately) ¹
Bedrock Outcrop:	(Non-rocky) ¹⁰
Elevation Range:	50 - 189m
Slope Gradient:	Level ¹⁰
Aspect:	East ¹ South ¹ West ¹ None ⁷
Exposure:	Moderate ⁷ Mod. exposed ² Mod. sheltered ¹
Microtopography:	Slightly ⁵ Level ³ nd ²
Drainage:	Poor ⁵ Very poor ⁵

Soil Characteristics

Soil Type:	ST14 ⁶ ST4 ¹ ST7 ¹ ST10 ¹ ST13 ¹
Parent Material:	Organic ⁴ Glacial till ³ Alluvium ¹ Glaciofluvial ¹ Lacustrine ¹
Rooting Depth (cm):	(<30) ⁶ (30-45) ³ nd ¹
Duff Thickness (cm):	(6-10) ³ (11-20) ¹ (21-40) ² (>40) ³ nd ¹



WD8

Red spruce – Red maple / Wood sorrel – Sensitive fern / Sphagnum

Picea rubens – *Acer rubrum* / *Oxalis acetosella* –
Onoclea sensibilis / *Sphagnum* spp.

n=6



Tyndal Road,
Cumberland County

Concept: This ecosystem is one of three wet mixedwood forests in Nova Scotia. These Vegetation Types (VTs) are mostly distinguished by major differences in canopy composition and more minor differences in soil fertility and understory composition. This mature closed canopy forest ecosystem is characterized by red spruce and red maple co-dominance, moderate to high herbaceous cover and a well-developed sphagnum moss layer. It usually occurs on moist to wet mineral soils where it may persist as a type of edaphic climax.

Vegetation: The closed canopy is co-dominated by red spruce and red maple, with lesser balsam fir. Low to moderate cover is typical in the woody understory, where regenerating trees and false holly are characteristic. The well-developed herbaceous layer includes frequent cinnamon fern, wood sorrel, northern beech fern, wood aster, three seeded sedge, dwarf raspberry and sensitive fern, among other common upland plants. Bryophyte development is moderate, composed of sphagnum and lesser amounts of common upland moss and liverwort species.

Environmental Setting: This low elevation forest occurs on moist to wet sites. Most soils are poorly drained glacial tills of varying texture, with limited ground and/or surface water

inputs, and only intermediate nutrient availability. Flats, shallow depressions and gentle slopes with moderate microtopography are typical sites. Aspect is variable. Most occurrences are in the Nova Scotia Uplands and Western ecoregions. WD8 is uncommon on Prince Edward Island but widespread and abundant 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 maintained by limiting site conditions and typically small- to intermediate-scaled disturbances (e.g. tree mortality, windthrow and timber harvest events). Wet soils generally limit the potential for successional development, but depending on the ecological context and disturbance regime, WD8 could either maintain itself or transition to WC5 (Red spruce – Balsam fir/ Cinnamon fern / Sphagnum) or WC8 (Hemlock / Cinnamon fern – Sensitive fern / Sphagnum). Transition to WD3 (Red maple / Sensitive fern – Lady fern / Sphagnum) is also possible on richer sites. Stand-level disturbances are uncommon, but windthrow and timber harvest are possible mechanisms of renewal. Tree mortality through senescence can promote uneven-aged stands.

Ecological Features

This small patch forest often forms a transition between open wetland and upland forest, providing distinct if not important landscape functions. Mixedwood forests may support wildlife species associated with both coniferous and deciduous ecosystems. Wildlife that make use of either hardwood or softwood

structures will often seek small clumps of target canopy trees within broader matrices of different species. In WD8, hardwood canopy components are often associated with past disturbance events or areas with increased surface and/ or subsurface water. Sites are at least slightly mounded, providing increased

microhabitat variability. The Red spruce – Red maple / Wood sorrel – Sensitive fern / Sphagnum is a moderately productive mixedwood forest, with a well-developed canopy and often dense herbaceous and bryophyte layers. These forests may develop long-term continuity and an old growth character.

Characteristic Plants

WD8

	Freq. (%)	Cover (%)
Red spruce	100	37.8
Red maple	83	16.6
Balsam fir	83	7.8
Yellow birch	50	6.7
White spruce	33	17.5
Hemlock	33	12.0
Black spruce	17	10.0
Tree Layer (Mean % Cover)		73
Balsam fir	83	8.3
Red spruce	83	4.2
Red maple	67	2.1
False holly	67	0.5
Velvet-leaf blueberry	50	0.2
Yellow birch	50	0.1
Fly-honeysuckle	33	1.6
Mountain maple	33	0.6
Lambkill	33	0.3
Shrub Layer (Mean % Cover)		15
Cinnamon fern	100	5.1
Wood-sorrel	100	3.5
Bunchberry	100	1.6
Goldthread	100	1.6
Starflower	100	0.2
Northern beech fern	83	2.0
Sarsaparilla	83	1.7
Evergreen wood fern	83	1.5
Wood aster	83	0.5
Violets	83	0.2
Three seeded sedge	67	2.8
Twinflower	67	1.9
Dwarf raspberry	67	1.8
Woodland horsetail	67	1.2
Sensitive fern	67	1.1
Wild lily-of-the-valley	67	0.6
Creeping snowberry	67	0.3
New York fern	50	38.3
Interrupted fern	50	14.0
Partridge-berry	50	1.0
Bluebead lily	50	0.7
Indian pipe	50	0.1
Lady fern	33	4.5
Hay-scented fern	33	4.0
Oak fern	33	1.3
Crested wood fern	33	0.3
Herb Layer (Mean % Cover)		56
Bazzania	100	7.8
Schreber's moss	83	14.9
Stair-step moss	83	6.6
Hypnum moss	67	1.5
Common green sphagnum	50	13.3
Fern moss	50	6.0
Hair-cap moss	50	0.8
Rhizomniums	50	0.6
Pale fat-leaved sphagnum	33	25.0
Prickly sphagnum	33	3.5
Broom moss	33	2.6
Shaggy moss	33	2.5
Wavy dicranum	33	1.1
Bryo-Lichen Layer (Mean % Cover)		64

Distinguishing Features

Red maple and red spruce in the overstory layer define this wet mixedwood forest. False holly, cinnamon fern, three seeded sedge, dwarf raspberry and sensitive fern are good indicators of this vegetation type.



Woodland horsetail

Site Characteristics

Slope Position:	Level ³ Lower ³ Depression ² Toe ²
Surface Stoniness:	(Non - Slightly) ⁸ (Moderately) ¹ (Very - Excessively) ¹
Bedrock Outcrop:	(Non-rocky) ¹⁰
Elevation Range:	13 - 148m
Slope Gradient:	Level ⁵ Gentle ⁵
Aspect:	North ¹ East ¹ South ¹ West ¹ None ⁶
Exposure:	Moderate ⁷ Mod. exposed ¹ Mod. sheltered ¹ Sheltered ¹
Microtopography:	Level ³ Slightly ³ Moderately ² Strongly ²
Drainage:	Poor ⁷ Imperfect ³

Soil Characteristics

Soil Type:	ST4 ⁴ ST7 ³ ST10 ² ST14 ¹
Parent Material:	Glacial till ⁷ Organic ² Lacustrine ¹
Rooting Depth (cm):	(<30) ⁸ (30-45) ¹ nd ¹
Duff Thickness (cm):	(11-20) ⁵ (21-40) ³ nd ²

