

## 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
<b>Tree Layer (Mean % Cover)</b>		<b>69</b>
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
<b>Shrub Layer (Mean % Cover)</b>		<b>20</b>
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
<b>Herb Layer (Mean % Cover)</b>		<b>49</b>
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
<b>Bryo-Lichen Layer (Mean % Cover)</b>		<b>26</b>

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

## Soil Characteristics

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

