

## Birch / Wood fern – Wood sorrel

*Betula* spp. / *Dryopteris* spp. – *Oxalis acetosella*

n=10



Cape Clear,  
Inverness County

**Concept:** This mid to late successional Vegetation Type (VT) has an overstory dominated by birch (yellow, white and occasionally heart-leaf) and an extensive herb layer featuring high wood fern cover. Birch / Wood fern – Wood sorrel often co-occurs with HL3 in the transition zone, an informal ecological term used to describe the blended area where Acadian hardwood slopes and the balsam fir plateau meet in the Cape Breton Highlands ecoregion.

**Vegetation:** One or more birch species are the dominant overstory trees. Common canopy associates include balsam fir, white spruce and red maple – with fir and spruce sometimes occupying small evergreen pockets established after patch-size disturbances. The shrub layer includes regenerating trees, mountain maple, striped maple and mountain-ash. High red raspberry cover may indicate a relatively recent stand-level disturbance. The diverse and well-developed herb layer includes extensive coverage of three wood ferns – eastern spreading, evergreen and spinulose. Sarsaparilla, wood sorrel, wood aster and bunchberry are also commonly found. The bryophyte layer is poorly developed.

### Ecological Features

Mixtures of white and yellow birch create a mid-successional matrix forest occurring in the transition zone between the Maritime Boreal Cape Breton plateau and adjacent temperate hardwood slopes. Differences in turn-over rates between short-lived white birch and longer-lived yellow birch may result in an uneven-aged stand structure. Yellow

birch in this ecosystem can produce stems 17 meters tall with diameters of 75 cm. Large diameter, living, hollow trees are common and provide good denning and cavity nesting sites. They continue to provide valuable wildlife habitat (as large coarse woody debris) after they fall. Yellow birch is an abundant source of seed during the winter for many species

of birds and small mammals. Yellow-bellied sapsuckers drill both species of birch, eating the sap and the insects attracted to it. At times ruby-throated hummingbirds may work in partnership, defending the holes from other birds. Vireos may be found in this habitat using small strips of birch bark to construct their nests.

**Environmental Setting:** HL4 is mainly associated with fresh to fresh-moist, nutrient medium to rich soils derived from glacial till and/or colluvium deposits. Richer versions of this VT occur where seepage enhances moisture and nutrient status. HL4 is generally confined to well drained upper slopes within the Cape Breton Highlands ecoregion, usually at elevations ranging from 250-350 meters. Wind and exposure may significantly limit tree growth. This VT is common in northern New Brunswick and in both the Saguenay and Gaspé regions of Quebec.

**Successional Dynamics:** HL4 is a mid to late successional VT usually dominated by yellow birch and white birch. Besides harvesting, the main stand-level disturbance agents are windthrow, storm damage and dieback associated with freeze-thaw cycles. An earlier successional stage may include HL2 (White spruce / Wood aster). Depending on disturbance history and the availability of advanced regeneration, transition to HL3 (Yellow birch – Balsam fir / Eastern spreading wood fern – Wood sorrel) is possible. HL4 stands are usually even-aged, but they may show age class breaks, depending on disturbance history.

## Characteristic Plants

HL4

	Freq. (%)	Cover (%)
Yellow birch	64	47.9
White birch	64	21.3
Balsam fir	64	9.6
White spruce	55	9.0
Heart-leaf birch	27	66.3
Red maple	27	9.0
White pine	18	4.5
Pin cherry	18	4.0
Sugar maple	9	5.0
<b>Tree Layer (Mean % Cover)</b>		<b>78</b>
Balsam fir	91	3.4
Mountain maple	64	3.2
White spruce	64	1.2
Yellow birch	55	2.6
Red maple	55	1.3
Red raspberry	45	1.4
Mountain-ash	45	1.1
Sugar maple	45	0.1
Fly-honeysuckle	27	1.1
Red-berried elder	27	0.7
Pin cherry	27	0.2
<b>Shrub Layer (Mean % Cover)</b>		<b>11</b>
Bunchberry	91	7.3
Wood-sorrel	82	13.1
Eastern spreading wood fern	73	27.6
Evergreen wood fern	73	27.3
Wood aster	73	5.4
Starflower	73	0.3
Sarsaparilla	64	2.5
Northern beech fern	64	1.3
Spinulose wood fern	55	17.7
Wild lily-of-the-valley	55	2.5
Bluebead lily	55	2.0
Goldthread	55	1.4
Large-leaved goldenrod	55	0.7
Violets	55	0.6
White twisted stock	45	0.4
Bracken	36	8.3
New York fern	36	3.6
Hay-scented fern	36	3.5
Cinnamon fern	36	1.2
Wood goldenrod	27	0.7
Drooping wood sedge	27	0.1
<b>Herb Layer (Mean % Cover)</b>		<b>72</b>
Broom moss	55	0.7
Schreber's moss	55	3.9
Shaded wood moss	55	0.8
Hair-cap moss	55	0.2
Stair-step moss	45	8.4
Hypnum moss	36	0.2
Bazzania	27	3.7
<b>Bryo-Lichen Layer (Mean % Cover)</b>		<b>9</b>

## Distinguishing Features

Yellow birch, white birch and heart-leaf birch create the overstory of this hardwood forest restricted to the upper slopes of the Cape Breton Highlands ecoregion. Three wood ferns (evergreen, eastern spreading and spinulose) provide extensive coverage.



Fern layer

## Site Characteristics

Slope Position:	Middle <sup>6</sup> Upper <sup>4</sup>
Surface Stoniness:	(Non - Slightly) <sup>6</sup> (Moderately) <sup>2</sup> (Very - Excessively) <sup>2</sup>
Bedrock Outcrop:	(Non-rocky) <sup>9</sup> (Slightly - Moderately) <sup>1</sup>
Elevation Range:	127 - 439m
Slope Gradient:	Gentle <sup>4</sup> Moderate <sup>3</sup> Steep <sup>2</sup> nd <sup>1</sup>
Aspect:	North <sup>2</sup> East <sup>2</sup> South <sup>4</sup> West <sup>2</sup>
Exposure:	Exposed <sup>9</sup> Mod. exposed <sup>1</sup>
Microtopography:	Moderately <sup>5</sup> Slightly <sup>4</sup> Level <sup>1</sup>
Drainage:	Well <sup>6</sup> Moderately well <sup>4</sup>

## Soil Characteristics

Soil Type:	ST2 <sup>3</sup> ST3 <sup>2</sup> ST8 <sup>2</sup> ST2-G <sup>1</sup> ST2-L <sup>1</sup> ST15 <sup>1</sup>
Parent Material:	Glacial till <sup>7</sup> Till/Bedrock <sup>2</sup> Colluvium <sup>1</sup>
Rooting Depth (cm):	(<30) <sup>3</sup> (30-45) <sup>4</sup> (>45) <sup>3</sup>
Duff Thickness (cm):	(6-10) <sup>5</sup> (11-20) <sup>4</sup> (21-40) <sup>1</sup>

