

## TH2

### Sugar maple / New York fern – Northern beech fern

*Acer saccharum* / *Thelypteris noveboracensis* –  
*Phegopteris connectilis*

#### TH2a

#### Yellow birch variant

*Betula alleghaniensis*

n=48



Lake George,  
Yarmouth County

**Concept:** This late successional Vegetation Type (VT) has an overstory dominated by sugar maple and yellow birch accompanied by a mix of mostly shade-tolerant trees. It is similar to TH1 (Sugar maple / Hay-scented fern), but is generally associated with moister and/or slightly more fertile sites. There is one variant (TH2a) where yellow birch is dominant in the overstory, often originating after disturbance has exposed mineral soil seedbeds. Due to the long-lived and shade-tolerant nature of dominant overstory trees, this VT will develop old forest characteristics that are maintained by gap disturbance. TH2 is one of several Acadian hardwood VTs found on zonal sites throughout Nova Scotia.

**Vegetation:** Sugar maple and yellow birch are the dominant overstory trees with lesser red maple and scattered red spruce, white spruce, beech and balsam fir. The shrub layer contains regenerating tree species along with striped maple, fly-honeysuckle, beaked hazelnut and mountain maple. Dense striped maple coverage in this layer can sometimes exclude other species. Herb coverage is diverse, but generally dominated by New York fern, evergreen wood fern and northern beech fern. Other common species may include rose twisted stalk, Indian cucumber root, wood sorrel, drooping wood sedge and wood aster. Spring ephemerals may include spring-beauty, Dutchman's-breeches and dog tooth violet. The bryophyte layer is poorly developed, with moss cover generally restricted to tree trunks, stones and downed woody material.

#### Ecological Features

This matrix hardwood forest typically occurs over hundreds of hectares. The longevity, shade tolerance and deep roots of sugar maple and beech promote stand continuity, high old growth potential and uneven age structure. Stands on high elevation (greater than 200 m) crests and upper slopes are exposed to strong

winds and are susceptible to ice storms, blowdown and crown breakage. Vernal pools, seeps and springs are common and may provide habitat for several amphibians (e.g. wood frogs). This forest may provide habitat for warblers, thrushes, woodpeckers, southern flying squirrels and small mammals. Large trees

provide nest sites for barred owls and northern goshawks. Downed coarse woody debris may provide cover for red-backed salamanders and small mammals. Hard mast from beech and beaked hazelnut provides a significant food source for bears, small mammals and birds. These forests host a variety of spring ephemeral plants.

**Environmental Setting:** TH2 is mainly associated with fresh-moist, nutrient medium to rich soils of glacial origin. This VT is found throughout the province in the Cobequid Hills, North Mountain and Cape Breton Hills ecodistricts and on the upper slopes of drumlins. However, TH2 is relatively uncommon on lowland ecodistricts, and does not occur in the Atlantic coastal ecoregion. The variant TH2a (Yellow birch) usually occurs on slightly moister sites and/or where past disturbance events have created suitable mineral soil seedbeds for regeneration. It is widespread and abundant across New Brunswick but somewhat rare on Prince Edward Island.

**Successional Dynamics:** TH2 is a late successional, uneven-aged climatic climax VT dominated by shade-tolerant hardwood. Excluding harvesting, stand level disturbance events are rare, with gaps or small patches usually created by individual tree mortality, wind or ice damage. Following stand level disturbance, TH2 can develop from early and mid-successional VTs including IH3 (Large-tooth aspen / Christmas fern – New York fern), IH5 (Trembling aspen – White ash / Beaked hazelnut / Christmas fern), IH7 (Red maple / Hay-scented fern – Wood sorrel), TH7 (Yellow birch – White birch / Evergreen wood fern) and TH8 (Red maple – Yellow birch / Evergreen wood fern). Early successional stages can also be by-passed if, at the time of disturbance, advanced sugar maple and yellow birch regeneration is retained.

Characteristic Plants	TH2		TH2a	
	Freq. (%)	Cover (%)	Freq. (%)	Cover (%)
Sugar maple	100	58.2	100	19.9
Yellow birch	87	16.5	100	53.8
Red maple	39	22.9	40	11.3
Balsam fir	26	9.9	50	6.2
Beech	21	6.8	40	9.3
White spruce	21	4.1	20	9.0
White birch	5	5.0	20	4.0
<b>Tree Layer (Mean % Cover)</b>	<b>87</b>		<b>88</b>	
Striped maple	84	5.4	70	2.6
Sugar maple	82	8.9	80	1.6
Balsam fir	82	4.3	90	3.8
Fly-honeysuckle	76	1.8	50	0.9
Beech	63	5.5	60	7.9
Yellow birch	63	1.7	40	0.1
Red maple	55	2.3	70	3.9
Mountain maple	45	1.2	20	1.1
Beaked hazelnut	37	1.8		
White spruce	37	0.8	50	6.1
Red spruce	32	1.4	10	7.0
White ash	29	0.5	10	0.1
Mountain-ash	13	0.1	40	0.1
<b>Shrub Layer (Mean % Cover)</b>	<b>25</b>		<b>19</b>	
Evergreen wood fern	89	7.8	100	11.8
Starflower	76	0.4	90	0.7
Rose twisted stalk	71	0.1	30	0.1
New York fern	68	34.6	90	26.2
Violets	66	1.2	40	1.1
Northern beech fern	63	2.9	60	0.9
Wood-sorrel	63	1.2	80	6.1
Wild lily-of-the-valley	61	1.1	60	5.8
Sarsaparilla	58	1.6	40	1.3
Christmas fern	55	1.9	20	10.3
Wood aster	55	0.5	30	0.4
Hay-scented fern	45	15.2	30	11.7
Indian cucumber root	45	0.2	30	0.2
Dwarf raspberry	39	1.2	10	0.3
Drooping wood sedge	39	0.1		
Wood reed	37	0.1	20	0.1
Eastern spreading wood fern	32	14.1	50	8.5
Shinleaf	29	0.2	30	0.2
Spinulose wood fern	26	9.6	40	3.1
Bunchberry	24	1.8	70	11.2
Lady fern	24	0.7	10	2.5
Goldthread	21	2.8	80	1.3
Interrupted fern	11	1.3	30	1.1
Cinnamon fern	11	0.7	30	1.8
Twinflower	8	0.9	50	1.0
<b>Herb Layer (Mean % Cover)</b>	<b>59</b>		<b>70</b>	
Broom moss	66	0.8	90	1.7
Hypnum moss	39	1.0	60	1.4
Fern moss	26	0.5	40	1.8
Stair-step moss	21	3.3	80	2.6
Hair-cap moss	21	0.4	40	0.2
Bazzania	16	0.4	70	1.0
Schreber's moss	16	0.4	60	2.0
Common green sphagnum	11	0.5	30	1.1
Shaggy moss	8	0.2	30	0.2
<b>Bryo-Lichen Layer (Mean % Cover)</b>	<b>2</b>		<b>8</b>	

## Distinguishing Features

Soils are slightly moister in this sugar maple dominated hardwood forest on upper and middle slopes. New York fern and northern beech fern are usually present in quantity; other plants include fly-honeysuckle, wood ferns, rose twisted stalk. Yellow birch is dominant in TH2a.



Northern beech fern

## Site Characteristics

Slope Position:	Upper <sup>4</sup> Middle <sup>3</sup> Lower <sup>2</sup> Other <sup>1</sup>
Surface Stoniness:	(Non - Slightly) <sup>5</sup> (Moderately) <sup>4</sup> (Very - Excessively) <sup>1</sup>
Bedrock Outcrop:	(Non-rocky) <sup>9</sup> (Slightly - Moderately) <sup>1</sup>
Elevation Range:	36 - 304m
Slope Gradient:	Gentle <sup>7</sup> Moderate <sup>2</sup> Level <sup>1</sup>
Aspect:	North <sup>3</sup> East <sup>3</sup> South <sup>1</sup> West <sup>3</sup>
Exposure:	Mod. exposed <sup>4</sup> Moderate <sup>3</sup> Exposed <sup>2</sup> Other <sup>1</sup>
Microtopography:	Moderately <sup>5</sup> Strongly <sup>2</sup> Slightly <sup>1</sup> Other <sup>2</sup>
Drainage:	Moderately well <sup>5</sup> Well <sup>4</sup> Imperfect <sup>1</sup>

## Soil Characteristics

Soil Type:	ST2-L <sup>4</sup> ST2 <sup>2</sup> ST8 <sup>2</sup> ST9 <sup>1</sup> Other <sup>1</sup>
Parent Material:	Glacial till <sup>9</sup> Colluvium <sup>1</sup>
Rooting Depth (cm):	(<30) <sup>2</sup> (30-45) <sup>3</sup> (>45) <sup>5</sup>
Duff Thickness (cm):	(0-5) <sup>2</sup> (6-10) <sup>6</sup> (11-20) <sup>2</sup>

