

TH3

Sugar maple – White ash / Christmas fern

Acer saccharum – *Fraxinus americana* /
Polystichum acrostichoides

n=40



Lower Springfield,
Antigonish County

Concept: This late successional Vegetation Type (VT) has an overstory dominated by sugar maple and white ash with lesser amounts of other shade-tolerant hardwoods. TH3 primarily occurs as rich, seepage patches within larger TH1 and TH2 forests. Plant species richness is among the highest of any upland hardwood ecosystem in the province. Due to the long-lived and shade-tolerant nature of dominant overstory trees, this VT will develop old forest characteristics maintained by gap disturbance. Sugar maple – White ash / Christmas fern is one of several Acadian hardwood VTs found on zonal sites throughout Nova Scotia.

Vegetation: Sugar maple, white ash and yellow birch are the dominant overstory trees accompanied by lesser amounts of red maple, beech and red spruce. Scattered ironwood is typical in the lower canopy or high shrub layer. Although ironwood and sometimes white ash are not dominant in the canopy, their presence is used to distinguish this VT from other sugar maple/yellow birch VTs. The shrub layer is dominated by regenerating hardwood, balsam fir and striped maple, with less prominent amounts of alternate-leaved dogwood, hobblebush and beaked hazelnut. Herb coverage is diverse and may include several rich site indicators including Christmas fern, oak fern, lady fern, shining club-moss and northern beech fern. 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.

Environmental Setting: TH3 is mainly found on fresh-moist to moist, nutrient rich soils. These sites often occur in toe slope positions and mid-slope benches, but are sometimes also found on enriched upper slopes. This VT is typically associated with (and found embedded within) larger tracts of TH1 and TH2 matrix forest. TH3 is found throughout the province in the Cobequid Hills, North Mountain and Cape Breton Hills ecodistricts, and on some drumlin sites. It is very rare on Prince Edward Island but abundant and widespread in southern New Brunswick.

Successional Dynamics: TH3 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. Although TH3 sites generally maintain themselves through gap replacement, this VT can develop from other early and mid-successional VTs including IH3 (Large-tooth aspen / Christmas fern – New York fern) and IH5 (Trembling aspen – White ash / Beaked hazelnut / Christmas fern).

Ecological Features

This hardwood seepage forest typically occurs in small patches (from less than 1 hectare up to 50 hectares), infrequently scattered as inclusions within broader hardwood matrix forest. Longevity of the overstory tree species increases the potential for old growth development. Vernal pools and moist surface

depressions common in this seepage forest provides habitat for red-backed salamanders, yellow-spotted salamanders and wood frogs, while seeds of ash and maple trees may be eaten by evening grosbeaks. Plants that favour moist rich sites are common, including several rare species (e.g. lance-leaved and little

grapeferns, foamflower and anise-root). These forests host a variety of spring ephemeral plants, like spring beauty, dog tooth violet and Dutchman's breeches which take advantage of early spring sunlight before tree leaf out. In southwest Nova Scotia this community is home to southern flying squirrels.

Characteristic Plants

TH3

	Freq. (%)	Cover (%)
Sugar maple	100	38.4
White ash	93	16.0
Yellow birch	88	11.9
Beech	60	10.1
Red maple	45	21.1
Red spruce	28	7.9
Ironwood	23	6.2
Balsam fir	15	7.0
White spruce	15	1.2
Hemlock	13	9.2
White birch	10	4.3
Tree Layer (Mean % Cover)		86
Balsam fir	88	2.3
Sugar maple	85	8.9
White ash	83	3.5
Beech	78	15.6
Striped maple	73	4.6
Red spruce	53	2.9
Red maple	50	1.1
Fly-honeysuckle	50	0.7
White spruce	48	1.9
Yellow birch	43	1.8
Beaked hazelnut	30	1.4
Shrub Layer (Mean % Cover)		37
Christmas fern	93	6.0
Evergreen wood fern	93	4.1
Starflower	83	0.5
Wild lily-of-the-valley	68	1.6
Violets	60	2.4
Sarsaparilla	60	1.5
New York fern	55	14.8
Rose twisted stalk	53	0.1
Indian cucumber root	50	0.3
Northern beech fern	48	1.3
Partridge-berry	48	0.4
Wood aster	48	0.2
Lions paw	43	0.7
Hay-scented fern	40	7.8
Drooping wood sedge	38	0.1
Shining club-moss	35	1.0
Shinleaf	30	0.6
Indian pipe	30	0.1
Wood reed	30	0.1
Lady fern	25	1.3
Oak fern	25	1.3
Wood-sorrel	25	1.2
False Solomon's seal	25	0.1
White lettuce	23	0.6
Calico aster	23	0.3
Common speedwell	23	0.2
Herb Layer (Mean % Cover)		32
Broom moss	85	1.0
Hypnum moss	58	1.6
Fern moss	58	1.1
Hair-cap moss	45	0.3
Stair-step moss	38	1.3
Schreber's moss	33	0.5
Bryo-Lichen Layer (Mean % Cover)		4

Distinguishing Features

In this rich hardwood forest found on middle to lower slope positions the herb layer is diverse and usually includes Christmas fern, northern beech fern, shining club-moss, lady fern and oak fern. White ash, ironwood and Christmas fern are diagnostic for this forest.



Christmas fern

Site Characteristics

Slope Position:	Middle ⁴ Lower ³ Upper ² Other ¹
Surface Stoniness:	(Non - Slightly) ⁴ (Moderately) ³ (Very - Excessively) ³
Bedrock Outcrop:	(Non-rocky) ⁸ (Slightly - Moderately) ²
Elevation Range:	57 - 237m
Slope Gradient:	Gentle ⁵ Moderate ² Level ¹ Steep ¹ nd ¹
Aspect:	North ² East ³ South ³ West ²
Exposure:	Moderate ⁵ Mod. exposed ³ Mod. sheltered ¹ Sheltered ¹
Microtopography:	Moderately ⁵ Strongly ³ Slightly ¹ Other ¹
Drainage:	Moderately well ⁵ Well ³ Imperfect ²

Soil Characteristics

Soil Type:	ST8 ³ ST2-L ² ST2 ¹ ST9 ¹ ST11 ¹ ST2 ¹ Other ¹
Parent Material:	Glacial till ⁸ Colluvium ¹ Till/Bedrock ¹ nd ¹
Rooting Depth (cm):	(<30) ¹ (30-45) ⁴ (>45) ⁴ nd ¹
Duff Thickness (cm):	(0-5) ⁴ (6-10) ⁴ (11-40) ¹ nd ¹

