

SH3

Red spruce – Hemlock / Wild lily-of-the-valley

Picea rubens – *Tsuga canadensis* /
Maianthemum canadense

n=47



West Branch Lake,
Pictou County

Concept: This late successional Vegetation Type (VT) has an overstory dominated by red spruce with hemlock as a co-dominant. Scattered white pine can also be found, especially in western Nova Scotia. Due to the long-lived and shade-tolerant characteristics of the dominant tree species, this VT will develop old forest features that are maintained by gap disturbances. However, infrequent hurricanes and/or fires may periodically renew this VT at a stand-level. SH3 is a typical Acadian softwood VT found on zonal sites throughout mainland Nova Scotia and parts of Cape Breton.

Vegetation: Red spruce and hemlock are the dominant overstory trees. The shrub layer is primarily regenerating tree species such as hemlock, balsam fir, red spruce and red maple. Regeneration can be extensive depending on crown closure. Herb layer density is usually low, but species richness can be relatively high. Typical species include wild lily-of-the-valley, bluebead lily, partridge-berry, starflower and painted trillium. Schreber's moss and stair-step moss are the main bryophytes, but occurrence of bazzania can also be significant where coarse woody debris (CWD) has accumulated on the forest floor.

Environmental Setting: SH3 is mainly associated with fresh to moist, nutrient medium soils of glacial origin. This VT

can be found throughout mainland Nova Scotia and on lower slopes in Cape Breton. However, it is mostly associated with the Western ecoregion due to the preference of hemlock for warmer temperatures. This VT is uncommon in both New Brunswick and Prince Edward Island.

Successional Dynamics: SH3 is a late successional climatic climax VT dominated by red spruce and hemlock. It can develop from several early and mid-successional VTs including IH3 (Large-tooth aspen / Christmas fern – New York fern), IH4 (Trembling aspen / Wild raisin / Bunchberry), IH5 (Trembling aspen – White ash / Beaked hazelnut / Christmas fern), IH6 (White birch – Red maple / Sarsaparilla – Bracken), MW4 (Balsam fir – Red maple / Wood sorrel – Goldthread), SH5 (Red spruce – Balsam fir / Schreber's moss), SH6 (Red spruce – Balsam fir / Stair-step moss – Sphagnum) and SH8 (Balsam fir / Wood fern / Schreber's moss). Early successional stages can be by-passed if, at the time of disturbance, advanced red spruce and hemlock regeneration is retained (as could happen after a stand-level disturbance such as windthrow or harvesting). Depending on disturbance history this VT can be even-aged, but it will develop an uneven-aged structure as it matures. Between large-scale disturbance events this unit will continue or transition to SH1 (Hemlock / Pin cushion moss / Needle carpet) through gap replacement.

Ecological Features

This closed canopy forest typically occurs over hundreds of hectares forming matrix and large-patch ecosystems. The longevity of the dominant tree species creates opportunities for old growth. The oldest forests support lichens, such as coral lichen and Methuselah's beard lichen--indicators of ecological continuity. Both red spruce and hemlock are very shade-

tolerant and respond well to release after decades of suppression. Mature forests provide large diameter cavity trees, snags and coarse woody material. Hemlock is very decay resistant and large dead trees persist for many decades. This forest may provide habitat for marten and flying squirrels, and cover for moose and deer. Coarse woody debris can provide cover

for red-backed salamanders and small mammals, while large trees may provide pileated woodpecker, barred owl and northern goshawk nest sites. Boreal chickadee, pine siskin and both the white-winged and red crossbills eat hemlock and red spruce seeds. Creeping rattlesnake plantain is the only known plant species of conservation concern.

Characteristic Plants

SH3

	Freq. (%)	Cover (%)
Red spruce	100	38.4
Hemlock	100	31.2
Red maple	72	7.2
White birch	43	4.9
White pine	38	7.3
Balsam fir	38	5.1
Yellow birch	38	4.5
Black spruce	13	12.2
Large-tooth aspen	11	3.4
Tree Layer (Mean % Cover)		86
Balsam fir	89	5.0
Red maple	89	0.6
Hemlock	81	3.6
Red spruce	81	2.2
White pine	45	0.1
Serviceberry	34	0.1
Striped maple	32	1.1
Yellow birch	30	0.9
Wild raisin	30	0.1
Red oak	26	0.1
Velvet-leaf blueberry	21	0.3
Lowbush blueberry	21	0.1
Shrub Layer (Mean % Cover)		12
Wild lily-of-the-valley	77	1.4
Starflower	68	0.3
Painted trillium	51	0.1
Partridge-berry	49	0.2
Bluebead lily	47	0.3
Goldthread	43	0.4
Indian pipe	43	0.1
Bracken	34	3.3
Sarsaparilla	34	0.9
Hay-scented fern	26	1.6
Evergreen wood fern	26	1.4
Bunchberry	26	0.3
New York fern	21	0.6
Wood aster	21	0.4
Indian cucumber root	21	0.3
Ground pine	21	0.1
Pink lady's slipper	21	0.1
Herb Layer (Mean % Cover)		6
Schreber's moss	94	24.8
Stair-step moss	83	16.7
Bazzania	83	7.4
Hypnum moss	74	1.8
Broom moss	74	1.1
Wavy dicranum	45	1.6
Pin cushion moss	36	0.2
Hair-cap moss	26	0.6
Bryo-Lichen Layer (Mean % Cover)		47

Distinguishing Features

Red spruce and hemlock are the dominant overstory species in this softwood forest. Stands are often uneven-aged with large amounts of coarse woody debris. Moss can be extensive over the forest floor. Scattered white pines are often present, especially in western Nova Scotia.



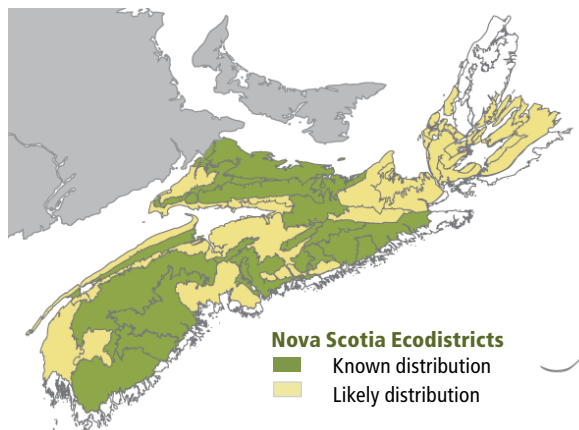
Hemlock crown

Site Characteristics

Slope Position:	Level ³ Middle ³ Lower ² Upper ¹ Other ¹
Surface Stoniness:	(Non - Slightly) ⁵ (Moderately) ³ (Very - Excessively) ²
Bedrock Outcrop:	(Non-rocky) ⁹ (Slightly - Moderately) ¹
Elevation Range:	28 - 189m
Slope Gradient:	Gentle ⁴ Level ³ Moderate ² Steep ¹
Aspect:	North ¹ East ² South ² West ³ None ²
Exposure:	Moderate ⁷ Mod. exposed ¹ Mod. Sheltered ¹ Other ¹
Microtopography:	Moderately ⁴ Slightly ³ Strongly ² Other ¹
Drainage:	Moderately well ⁴ Well ³ Imperfect ² Other ¹

Soil Characteristics

Soil Type:	ST2 ⁴ ST2-L ¹ ST2-G ¹ ST3 ¹ ST3-L ¹ ST6 ¹ Other ¹
Parent Material:	Glacial till ⁹ Other ¹
Rooting Depth (cm):	(<30) ¹ (30-45) ⁵ (>45) ⁴
Duff Thickness (cm):	(0-5) ¹ (6-10) ⁴ (11-20) ⁴ (21-40) ¹



Nova Scotia Ecodistricts

■ Known distribution
■ Likely distribution