

- SH1 Hemlock / Pin cushion moss / Needle carpet
- SH2 Hemlock – White pine / Sarsaparilla
- SH3 Red spruce – Hemlock / Wild lily-of-the-valley
- SH4 Red spruce – White pine / Lambkill / Bracken. SH4a Red spruce variant
- SH5 Red spruce – Balsam fir / Schreber’s moss
- SH6 Red spruce – Balsam fir / Stair-step moss – Sphagnum
- SH7 White spruce – Red spruce / Blueberry / Schreber’s moss
- SH8 Balsam fir / Wood fern / Schreber’s moss
- SH9 Balsam fir – Black spruce / Blueberry
- SH10 White spruce – Balsam fir / Broom moss

Concept: This group represents mid to late successional softwood Vegetation Types (VT) found on zonal sites within the Acadian Ecosite group. Red spruce, hemlock and white pine are the dominant trees. Balsam fir is usually associated with earlier successional stages, but is present in all stands at some stage of development. Regenerating overstory species, herbs typical of upland softwood forests and an extensive moss layer make up the understory. Mid successional stages are usually even-aged whereas late successional stages can develop uneven-aged characteristics due to the longevity of hemlock and red spruce.

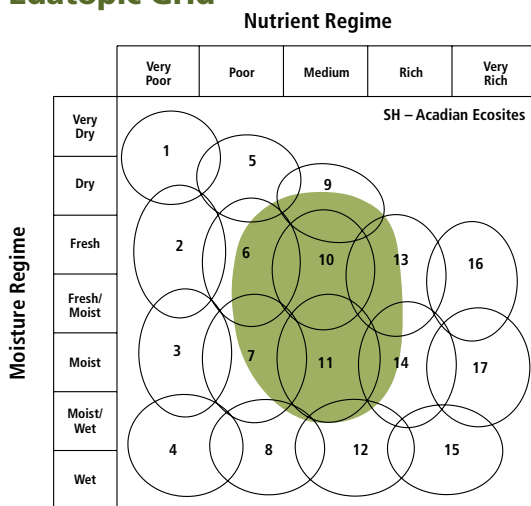
Vegetation: Shade tolerant softwoods (red spruce, hemlock, balsam fir) and to a lesser extent shade intermediate softwoods (white pine, white spruce) dominate these closed canopy forests. The shrub layer is mainly regenerating overstory species, but on the poorer sites lambkill and blueberry are also common. Typical woodland flora (e.g. bunchberry, sarsaparilla, wild lily-of-the-valley) are common in the herb layer, with bracken also found on poorer sites. The bryophyte/lichen layer is dominated by Schreber’s moss and stair-step moss. *Bazzania* is also common where coarse woody debris is high.

Environmental Setting: Vegetation types in this group are found on a range of slope positions. Most sites are non-rocky, but surface stoniness can be variable. Soils are mainly derived from glacial till deposits. A wide range of moisture levels can be found,

but fertility is generally in the medium range. Various VTs form the matrix forest or large patches in many ecodistricts. This group is found throughout the province except in the Cape Breton Taiga (100) and Atlantic Coastal (800) ecoregions, with limited occurrence in the Cape Breton Highlands (200) ecoregion.

Successional Dynamics: This group is associated with mid and late successional zonal VTs. Mid-successional stages usually have a significant component of balsam fir in the overstory along with red spruce, black and white spruce and are typically even-aged. Late successional stages are dominated by hemlock, red spruce and white pine and will develop an uneven-aged structure between infrequent stand-level disturbance events. Disturbance agents include hurricanes (windthrow), fire, insects and harvesting.

Edatopic Grid



Ecological Features

These Acadian ecosystems occur as large patch or matrix forests over much of mainland Nova Scotia's lowland and upland ecoregions. The high shade tolerance and longevity of the dominant trees support well developed canopies, large and/or tall boles and snags, complex vertical structures and abundant coarse woody debris. Many VTs in this group can persist as climax forests with inherent mechanisms of self renewal and old growth development. The group can dominate some landscapes, providing large expanses of interior habitat and high landscape connectedness. Flying squirrels, American marten, fisher, deer and moose, snowshoe hare, bear, bats and diverse communities of birds and invertebrates use these forests for shelter, foraging and/or reproduction. Rare plants are somewhat uncommon but high invertebrate diversity, extensive fungal networks and rare lichens may occur, particularly in older forests.

SH1

Hemlock / Pin cushion moss / Needle carpet

Tsuga canadensis / *Leucobryum glaucum*

n=46



Alma,
Pictou County

Concept: This late successional Vegetation Type (VT) has an overstory dominated by hemlock, with only scattered red spruce, white pine and/or yellow birch. Hemlock dominance persists because of its ability to shade out other trees once it becomes established in the canopy. Due to the long-lived and shade-tolerant nature of hemlock, this VT will develop old forest characteristics that are maintained by gap disturbances. However, infrequent hurricanes and/or fires may periodically renew this VT at a stand-level. SH1 is a typical Acadian softwood VT found on zonal sites throughout mainland Nova Scotia and parts of Cape Breton.

Vegetation: Hemlock is the dominant overstory tree. The shrub layer is primarily regenerating conifers, especially hemlock, red spruce and balsam fir. Herb cover can be diverse, but coverage is usually low. Typical species include evergreen wood fern, rose twisted stalk and starflower. The forest floor is mostly needle carpet with low bryophyte coverage. Pin cushion moss is often found in this VT, and occurrence of bazzania can be significant where coarse woody debris (CWD) has accumulated on the forest floor.

Environmental Setting: SH1 is mainly associated with dry to fresh/moist, nutrient medium soils of glacial or glaciofluvial origin. This VT can be found throughout mainland

Nova Scotia and parts of Cape Breton. In Cape Breton it is only found on steep slopes of major rivers and along the Bras d'Or Lakes. On the mainland, SH1 is most often found within the Western ecoregion due to hemlock's preference for warmer climatic conditions. Across the Acadian Forest region, most occurrences of this VT are in Nova Scotia.

Successional Dynamics: SH1 is a late successional climatic climax VT dominated by 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), IH6 (White birch – Red maple / Sarsaparilla – Bracken), 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). SH1 can also transition from the climax unit SH3 (Red spruce – Hemlock / Wild lily-of-the-valley) depending on disturbance patterns. Early successional stages can be by-passed if at the time of disturbance advanced 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 SH1 will be maintained through gap replacement.

Ecological Features

Stands typically form large patches in the Western ecoregion and small patches elsewhere. Hemlock is the province's longest-lived softwood species promoting old growth development. The oldest forests support lichens, such as coral lichen, indicators of ecological continuity. This tree is also very shade-tolerant, responding

well to release after decades of understory suppression. Mature stands provide large diameter cavity trees and very decay-resistant snags and coarse woody material. This forest may provide cover for moose and deer, and habitat for marten, flying squirrels and diverse fungi. Downed coarse woody debris may provide cover for red-

backed salamanders and small mammals, while large trees can provide pileated woodpecker, barred owl and northern goshawk nest sites. Boreal chickadee, pine siskin, and both white-winged and red crossbills eat hemlock seeds. Downy and creeping rattlesnake plantains are the only known rare plants.

Characteristic Plants

SH1

	Freq. (%)	Cover (%)
Hemlock	100	73.7
Red spruce	70	9.0
Red maple	65	5.2
Yellow birch	50	4.7
White birch	39	4.2
White pine	37	3.1
Balsam fir	17	2.5
Red oak	13	2.7
White ash	11	2.0
Tree Layer (Mean % Cover)		90
Hemlock	83	3.1
Balsam fir	70	3.1
Red spruce	70	2.7
Red maple	70	0.3
White pine	43	0.3
Red oak	33	0.1
Yellow birch	33	0.1
Striped maple	30	0.5
Fly-honeysuckle	24	0.2
Serviceberry	22	0.1
Wild raisin	22	0.1
Shrub Layer (Mean % Cover)		8
Wild lily-of-the-valley	83	0.4
Starflower	63	0.3
Evergreen wood fern	50	0.5
Partridge-berry	43	0.4
Bluebead lily	43	0.1
Indian pipe	41	0.1
Sarsaparilla	30	1.0
Painted trillium	26	0.1
Rose twisted stalk	26	0.1
Goldthread	24	3.4
Bracken	24	0.6
Bunchberry	24	0.4
New York fern	24	0.4
Teaberry	22	3.0
Twinflower	22	0.2
Wood aster	22	0.1
Christmas fern	20	0.7
Indian cucumber root	20	0.1
Herb Layer (Mean % Cover)		5
Stair-step moss	83	14.6
Schreber's moss	74	11.0
Bazzania	72	7.4
Hypnum moss	70	1.6
Broom moss	63	1.3
Pin cushion moss	28	0.1
Bryo-Lichen Layer (Mean % Cover)		28

Distinguishing Features

This is a softwood forest dominated by hemlock on well drained sites. Shrub and herb layers are very sparse. The forest floor is typically needle carpet with low moss coverage. Pin cushion moss is common.



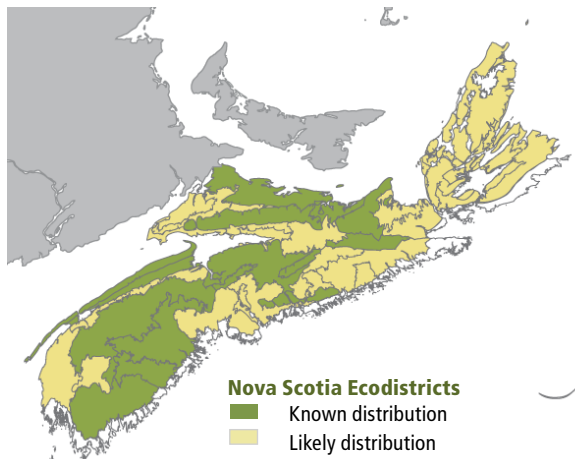
Pin cushion moss

Site Characteristics

Slope Position:	Middle ³ Level ² Lower ² Upper ² Other ¹
Surface Stoniness:	(Non - Slightly) ⁵ (Moderately) ³ (Very - Excessively) ²
Bedrock Outcrop:	(Non-rocky) ¹⁰
Elevation Range:	12 - 200m
Slope Gradient:	Gentle ⁴ Level ² Moderate ² Other ¹ nd ¹
Aspect:	North ¹ East ² South ³ West ² None ²
Exposure:	Moderate ⁶ Mod. exposed ² Mod. sheltered ²
Microtopography:	Moderately ³ Slightly ³ Strongly ² Other ²
Drainage:	Well ⁵ Moderately well ⁴ Imperfect ¹

Soil Characteristics

Soil Type:	ST2 ⁵ ST2-G ¹ ST2-L ¹ ST6 ¹ ST8 ¹ Other ¹
Parent Material:	Glacial till ⁷ Glaciofluvial ¹ Other ¹ nd ¹
Rooting Depth (cm):	(<30) ¹ (30-45) ⁴ (>45) ⁴ nd ¹
Duff Thickness (cm):	(0-5) ² (6-10) ⁴ (11-20) ² nd ²



SH2

Hemlock – White pine / Sarsaparilla

Tsuga canadensis – *Pinus strobus* /
Aralia nudicaulis

n=9



4th Christopher Lake,
Queens County

Concept: This late successional Vegetation Type (VT) has an overstory dominated by hemlock and white pine, with minor components of many other species. White pine may occur as a super canopy position. Red spruce presence has been reduced in this VT by partial stand-level disturbances from windthrow, bark beetle and/or harvesting. Due to the long-lived and shade-tolerant nature of the dominant tree species, this VT will develop old forest characteristics that are maintained by gap disturbances. However, infrequent hurricanes and/or fires may periodically renew this VT at a stand-level. SH2 is a typical Acadian softwood VT found on zonal sites that have experienced partial stand-level disturbance.

Vegetation: Hemlock and white pine are the dominant overstory trees, with lesser amounts of red spruce, red maple, white birch and balsam fir. The shrub layer is primarily regenerating tree species such as balsam fir, hemlock and red spruce. Regeneration coverage can be extensive depending on crown closure. Herb coverage is usually low and includes typical upland species such as wild lily-of-the-valley, partridge-berry, starflower and sarsaparilla. Schreber's moss, stair-step moss and hypnum moss are common in the bryophyte layer along with bazzania.

Ecological Features

This VT typically forms large patches in the Western ecoregion, and small patches elsewhere. The longevity of hemlock and white pine promote old growth development. The oldest forests support lichens, such as coral lichen, indicators of ecological continuity. Hemlock is very shade-tolerant, responding to release after decades of understory suppression, whereas

white pine (which has only intermediate shade tolerance) will not thrive for long without release. Mature forests provide large cavity trees, decay resistant snags and coarse woody material and supercanopy pine. This forest may provide cover for moose and deer, and habitat for marten, flying squirrels and various fungi (e.g. hemlock varnish shelf and pine mushrooms). Downed

Environmental Setting: SH2 is mainly associated with fresh to fresh-moist, nutrient medium soils of glacial origin. This VT can be found throughout mainland Nova Scotia and parts of Cape Breton. However, it is mostly associated with the Western ecoregion because of hemlock's preference for warmer temperatures. Across the Acadian Forest region, most occurrences of this VT are in Nova Scotia. The VT is rare in New Brunswick and unconfirmed for Prince Edward Island.

Successional Dynamics: SH2 is a late successional climatic climax VT dominated by hemlock and white pine and shaped by partial stand-level disturbance. It can develop from several mid-successional VTs including 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). This VT develops an uneven-aged structure as it matures with gaps created by the loss of red maple, white birch and balsam fir. These species are replaced by longer-lived hemlock, red spruce, yellow birch and white pine. Between large scale disturbance events SH2 will continue or transition to SH3 (Red spruce – Hemlock / Wild lily-of-the-valley) or SH1 (Hemlock / Pin cushion moss / Needle carpet) through gap replacement.

coarse woody debris may provide cover for red-backed salamanders and small mammals, while large trees can provide pileated woodpecker, barred owl and northern goshawk nest sites. Boreal chickadee, pine siskin and both white-winged and red crossbills eat hemlock and white pine seeds. Downy rattlesnake plantain is the only known rare plant.

Characteristic Plants

SH2

	Freq. (%)	Cover (%)
Hemlock	100	44.2
White pine	100	26.3
Red maple	89	10.8
Red spruce	78	6.3
White birch	33	4.3
Yellow birch	33	2.3
Balsam fir	22	5.0
Black spruce	11	15.0
Beech	11	7.0
Red pine	11	5.0
Tamarack	11	3.0
Ironwood	11	1.0
Large-tooth aspen	11	0.1
Red oak	11	0.1
Sugar maple	11	0.1
Trembling aspen	11	0.1
White spruce	11	0.1
Tree Layer (Mean % Cover)		91
Red maple	89	0.2
Red spruce	78	1.2
Hemlock	67	1.6
Red oak	67	0.1
Serviceberry	56	0.1
White pine	56	0.1
Balsam fir	44	6.8
Beech	44	0.4
Striped maple	44	0.1
Ironwood	22	1.1
Sugar maple	22	0.5
Trembling aspen	22	0.1
White birch	22	0.1
Shrub Layer (Mean % Cover)		7
Wild lily-of-the-valley	89	0.8
Starflower	78	0.5
Sarsaparilla	67	0.9
Indian pipe	56	0.1
Partridge-berry	44	1.9
New York fern	44	0.3
Rose twisted stalk	33	0.2
Bracken	33	0.1
Bunchberry	33	0.1
Christmas fern	22	0.9
Hay-scented fern	22	0.8
Evergreen wood fern	22	0.5
Painted trillium	22	0.3
Bluebead lily	22	0.2
Common speedwell	22	0.1
Indian cucumber root	22	0.1
Lady fern	22	0.1
Pine-sap	22	0.1
Teaberry	22	0.1
Twinflower	22	0.1
Herb Layer (Mean % Cover)		5
Stair-step moss	78	5.4
Bazzania	67	5.4
Schreber's moss	67	2.4
Broom moss	56	1.1
Hypnum moss	44	3.4
Bryo-Lichen Layer (Mean % Cover)		12

Distinguishing Features

Hemlock and white pine (sometimes in a super canopy position) dominate this softwood forest on well drained sites. The forest floor is typically needle carpet with low moss coverage.



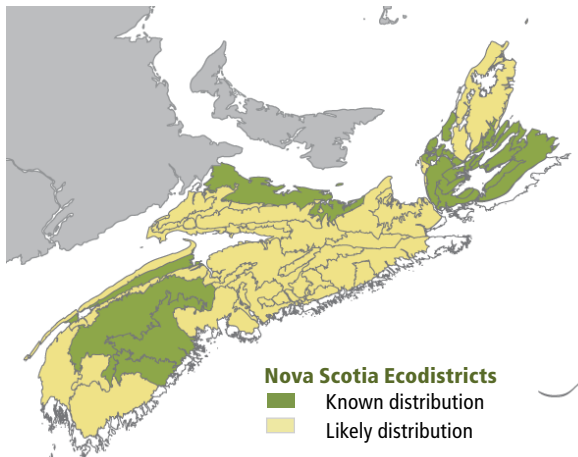
Hemlock branch

Site Characteristics

Slope Position:	Level ⁷ Crest ¹ Lower ¹ Upper ¹
Surface Stoniness:	(Non - Slightly) ⁷ (Very - Excessively) ³
Bedrock Outcrop:	(Non-rocky) ⁹ (Slightly - Moderately) ¹
Elevation Range:	20 - 114m
Slope Gradient:	Level ⁶ Gentle ¹ Moderate ¹ Steep ¹ nd ¹
Aspect:	North ¹ South ² West ¹ None ⁶
Exposure:	Moderate ⁷ Mod. sheltered ² Mod. exposed ¹
Microtopography:	Slightly ⁵ Moderately ² Strongly ² Severely ¹
Drainage:	Moderately well ⁷ Well ³

Soil Characteristics

Soil Type:	ST2 ⁶ ST3-L ¹ ST5 ¹ ST6 ¹ ST8-C ¹
Parent Material:	Glacial till ⁷ Alluvium ¹ Colluvium ¹ nd ¹
Rooting Depth (cm):	(30-45) ³ (>45) ⁶ nd ¹
Duff Thickness (cm):	(0-5) ³ (6-10) ¹ (11-20) ⁵ nd ¹



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.

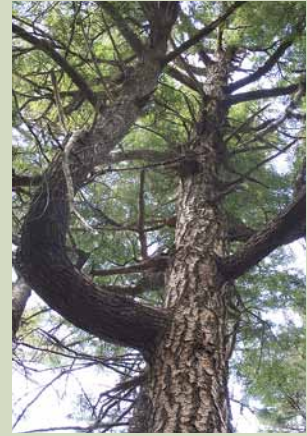
Characteristic Plants

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.



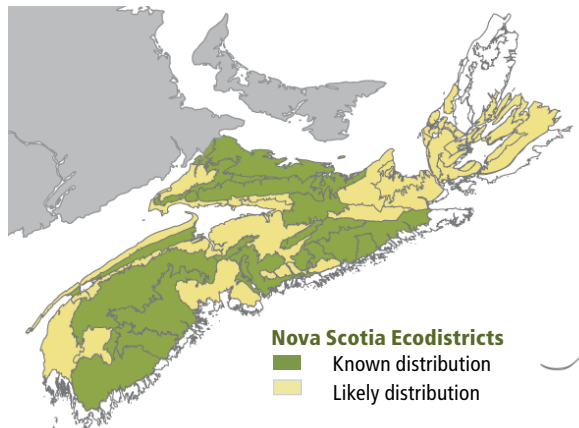
Hemlock crown

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



SH4

Red spruce – White pine / Lambkill / Bracken

Picea rubens – *Pinus strobus* / *Kalmia angustifolium* /
Pteridium aquilinum

SH4a

Red spruce variant

Picea rubens

n=39



Sherbrooke Lake,
Lunenburg County

Concept: This late successional Vegetation Type (VT) has abundant red spruce and white pine with minor coverage of other species such as red maple, white birch, black spruce and balsam fir (hemlock is usually absent from this VT). There is one variant (SH4a) where red spruce cover is dominant with only scattered white pine. Red spruce – White pine / Lambkill / Bracken is a typical Acadian softwood VT found on dryer, poorer sites which are bordering on zonal conditions.

Vegetation: Red spruce and white pine are the dominant overstory trees with red maple, balsam fir, and black spruce occasionally co-dominant. Hybridization of red and black spruce is common and creates difficulty in distinguishing these two species. Regenerating balsam fir and red spruce are prominent in the shrub layer along with ericaceous species such as lambkill and blueberry. Overall coverage and diversity of herbs is low with bracken the most prevalent species. (Coverage may be higher in the red spruce variant SH4a.) *Bazzania* and Schreber's moss are the dominant bryophytes, with small patches of reindeer mosses occurring on drier sites.

Ecological Features

This matrix forest typically occurs over hundreds of hectares. The longevity of red spruce supports old growth development. This tree is very tolerant of understory shade, responding well to release after decades of suppression, whereas white pine, which has only intermediate shade tolerance, requires release at a young age. In old forests, white pine may outlive red

spruce, developing a supercanopy, and sometimes hollow, large stemmed trees. Mature forests provide large diameter cavity trees, snags and downed coarse woody material. This forest may provide cover for moose and deer, and habitat for fisher, flying squirrels and red squirrels. Coarse woody debris may provide cover for red-backed salamanders and small

mammals, while large trees can provide pileated woodpecker, barred owl and northern goshawk nest sites. Boreal chickadee, pine siskin and both the white-winged and red crossbills eat red spruce and white pine seeds. Creeping rattlesnake plantain is the only known rare plant.

Characteristic Plants	SH4		SH4a	
	Freq. (%)	Cover (%)	Freq. (%)	Cover (%)
Red spruce	100	43.2	100	51.5
White pine	100	19.8	67	4.4
Red maple	78	6.0	75	5.0
Balsam fir	44	8.7	58	12.4
White birch	33	3.6	33	6.5
Black spruce	30	9.5	33	23.3
Red oak	11	4.3		
Large-tooth aspen	11	4.0	8	3.0
Hemlock	11	3.7	17	2.5
Tree Layer (Mean % Cover)		78		76
Balsam fir	93	3.3	92	5.0
Red maple	85	0.4	92	0.3
Red spruce	81	3.9	92	3.6
Lambkill	70	2.7	92	3.1
White pine	63	0.1	42	0.8
Velvet-leaf blueberry	56	2.9	67	1.0
Wild raisin	52	0.1	67	0.1
Huckleberry	30	0.7		
Red oak	30	0.7	8	0.1
Witch-hazel	30	0.4		
False holly	30	0.1	50	0.3
Lowbush blueberry	26	0.1	33	0.9
Serviceberry	22	0.1	17	0.1
Shrub Layer (Mean % Cover)		12		14
Bracken	70	2.1	100	14.1
Wild lily-of-the-valley	70	0.3	67	2.0
Starflower	59	0.4	75	0.2
Bluebead lily	56	0.2	58	0.4
Bunchberry	52	0.9	58	1.6
Indian pipe	52	0.1	25	0.1
Goldthread	44	1.0	42	3.8
Painted trillium	41	0.1	92	0.4
Partridge-berry	33	1.1	8	0.1
Teaberry	33	0.4	42	0.6
Sarsaparilla	30	1.3	42	1.2
Indian cucumber root	30	0.2	25	0.1
Mayflower	26	0.1	17	0.1
Pink lady's slipper	22	0.1	33	0.1
Twinflower	19	0.4	25	0.4
Creeping snowberry	19	0.1	42	0.8
Herb Layer (Mean % Cover)		5		21
Bazzania	96	16.3	100	5.7
Schreber's moss	93	23.1	100	67.4
Broom moss	78	1.1	42	0.8
Hypnum moss	74	2.1	42	2.0
Stair-step moss	59	5.2	92	5.1
Wavy dicranum	56	2.3	75	4.4
Grey reindeer lichen	44	1.0	58	0.4
Cup lichens	41	0.1	17	0.1
Pin cushion moss	37	0.2	25	0.2
Ladies' tresses	22	1.1	25	0.7
Hair-cap moss	19	0.3	25	0.4
Bryo-Lichen Layer (Mean % Cover)		45		83

Distinguishing Features

Red spruce and white pine are the dominant overstory species in this softwood forest. Hybridization of red and black spruce is common. Bracken and ericaceous shrubs such as lambkill and blueberry are indicative of poor and dry conditions. Hemlock is absent. The variant SH4a is similar with reduced levels of white pine.



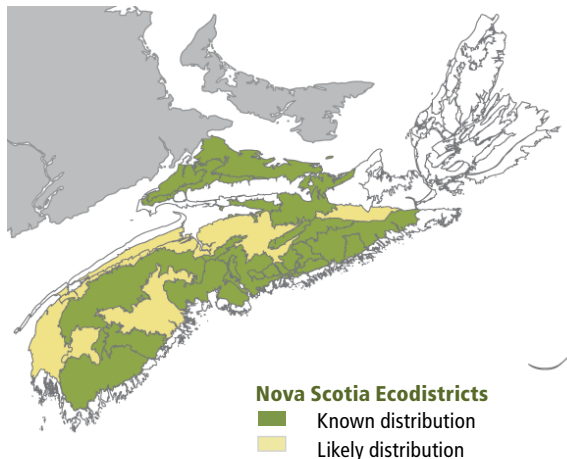
Blueberry

Site Characteristics

Slope Position: Upper⁴ Crest² Level² Lower¹ Middle¹
 Surface Stoniness: (Non - Slightly)⁴ (Very - Excessively)⁴ (Moderately)²
 Bedrock Outcrop: (Non-rocky)⁷ (Slightly - Moderately)³
 Elevation Range: 20 - 255m
 Slope Gradient: Gentle⁴ Level² Moderate² Steep¹ nd¹
 Aspect: North² East² South¹ West² None³
 Exposure: Moderate⁷ Mod. exposed¹ Exposed¹ nd¹
 Microtopography: Slightly⁵ Moderately³ Other²
 Drainage: Well⁵ Moderately well² Rapid² Imperfect¹

Soil Characteristics

Soil Type: ST2⁵ ST1¹ ST2-G¹ ST2-L¹ ST6¹ ST15¹
 Parent Material: Glacial till⁸ Till/Bedrock¹ nd¹
 Rooting Depth (cm): (<30)¹ (30-45)⁵ (>45)³ nd¹
 Duff Thickness (cm): (6-10)² (11-20)⁶ (21-40)¹ nd¹



SH5

Red spruce – Balsam fir / Schreber's moss

Picea rubens – *Abies balsamea* /
Pleurozium schreberi

n=83



Big Indian Lake,
Hants County

Concept: This mid-successional Vegetation Type (VT) has abundant red spruce with varying amounts of balsam fir. Typically minor amounts of red maple and white birch indicate recent disturbance events, whereas yellow birch, white pine and hemlock indicate development toward a later successional stage. Red spruce – Balsam fir / Schreber's moss is a typical Acadian softwood VT found on zonal sites in Nova Scotia.

Vegetation: Red spruce is usually the dominant overstory tree, although balsam fir may be abundant in some stands. Both species are often well represented as regeneration in the shrub layer. Hybrid (red/black) spruce can also be found on more marginal sites. Low light availability often reduces the abundance of common woodland flora such as wild lily-of-the-valley, goldthread and bunchberry. A needle carpet is common under many stands, but coverage by Schreber's moss, stair-step moss and bazzania can be extensive in some.

Environmental Setting: SH5 is mainly associated with dry to fresh, nutrient poor to medium soils of glacial origin.

Ecological Features

This closed canopy coniferous forest typically occurs over hundreds of hectares, forming matrix in many ecoregions. Balsam fir and red spruce are very shade-tolerant in the understory. Good seed crops in red

spruce start at age 35-45, and the species does not regenerate well before age 50. Forests may provide habitat for marten, spruce grouse, black-backed woodpecker, red and flying squirrels. South facing slopes may provide winter

These soils are generally medium to coarse textured and often stony. This VT is found throughout mainland Nova Scotia and parts of Cape Breton. It is relatively common in New Brunswick but absent from Prince Edward Island.

Successional Dynamics: SH5 is a predominantly even-aged, mid-successional VT dominated by red spruce. Usually SH5 develops from advanced regeneration present at the time of stand-level disturbance. If advanced regeneration is not present (or has been destroyed), SH5 can also develop from other 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) and MW4 (Balsam fir – Red maple / Wood sorrel – Goldthread). This VT may succeed to later successional types such as SH1 (Hemlock / Pin cushion moss / Needle carpet), SH2 (Hemlock – White pine / Sarsaparilla), SH3 (Red spruce – Hemlock / Wild lily-of-the-valley) and SH4 (Red spruce – White pine / Lambkill / Bracken).

cover for deer. Sapling stage forests are preferred habitat for snowshoe hare. Creeping rattlesnake plantain is the only plant species of conservation concern known from this VT.

Characteristic Plants

SH5

	Freq. (%)	Cover (%)
Red spruce	98	63.1
Red maple	67	5.7
Balsam fir	53	12.9
White birch	33	4.7
Yellow birch	32	4.1
White pine	21	6.4
Hemlock	13	4.2
Tree Layer (Mean % Cover)		80
Balsam fir	92	4.7
Red spruce	82	6.7
Red maple	82	0.5
Velvet-leaf blueberry	41	0.8
Yellow birch	31	0.5
Wild raisin	28	0.1
White pine	27	0.7
False holly	27	0.1
Lambkill	25	1.0
Lowbush blueberry	20	0.3
Shrub Layer (Mean % Cover)		12
Wild lily-of-the-valley	62	0.4
Goldthread	61	1.7
Painted trillium	53	0.1
Starflower	52	0.3
Bunchberry	41	2.4
Bluebead lily	41	0.4
Bracken	33	1.8
Sarsaparilla	32	1.0
Evergreen wood fern	29	0.3
Hay-scented fern	26	0.2
Wood-sorrel	24	0.4
Indian cucumber root	22	0.1
Indian pipe	20	0.1
Herb Layer (Mean % Cover)		5
Schreber's moss	93	32.6
Stair-step moss	93	9.9
Bazzania	88	15.7
Broom moss	75	2.0
Hypnum moss	73	1.9
Wavy dicranum	47	2.7
Grey reindeer lichen	36	0.5
Hair-cap moss	34	0.9
Ladies' tresses	22	0.1
Pin cushion moss	22	0.1
Bryo-Lichen Layer (Mean % Cover)		59

Distinguishing Features

A softwood forest of abundant red spruce with varying amounts of balsam fir occurring on well drained sites.

The absence of sphagnum moss (minor amounts in depressions) is diagnostic for identification of this unit.



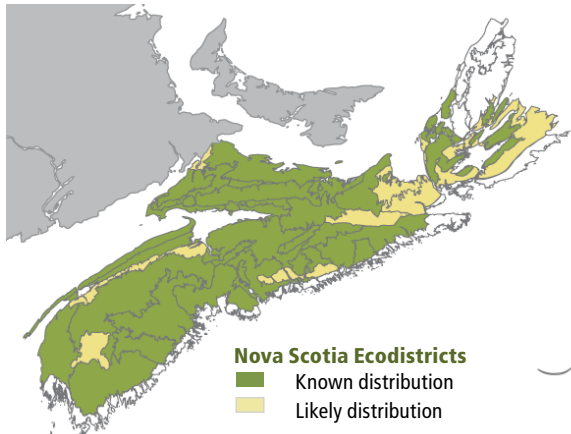
Schreber's moss

Site Characteristics

Slope Position:	Upper ³ Level ² Lower ² Middle ² Other ¹
Surface Stoniness:	(Non - Slightly) ⁶ (Moderately) ³ (Very - Excessively) ¹
Bedrock Outcrop:	(Non-rocky) ⁹ (Slightly - Moderately) ¹
Elevation Range:	9 - 268m
Slope Gradient:	Gentle ⁶ Level ² Moderate ¹ Other ¹
Aspect:	North ² East ² South ² West ³ None ¹
Exposure:	Moderate ⁶ Mod. exposed ² Mod. sheltered ²
Microtopography:	Moderately ⁵ Slightly ² Strongly ² Other ¹
Drainage:	Well ⁵ Moderately well ³ Imperfect ¹ Other ¹

Soil Characteristics

Soil Type:	ST2 ⁵ ST2-L ² ST6 ¹ Other ²
Parent Material:	Glacial till ⁸ Till/Bedrock ¹ Other ¹
Rooting Depth (cm):	(<30) ² (30-45) ⁴ (>45) ³ nd ¹
Duff Thickness (cm):	(6-10) ³ (11-20) ⁶ nd ¹



SH6

Red spruce – Balsam fir / Stair-step moss – Sphagnum

Picea rubens – *Abies balsamea* /
Hylocomium splendens – *Sphagnum* spp.

n=23



Castlereagh,
Colchester County

Concept: This mid-successional Vegetation Type (VT) is very similar to SH5 (Red spruce – Balsam fir / Schreber's moss), but occurs on moister sites. Tree cover is mainly red spruce with varying amounts of balsam fir. Typically minor amounts of red maple and white birch indicate recent disturbance events, whereas yellow birch, white pine and hemlock indicate development toward a later successional stage. Red spruce – Balsam fir / Stair-step moss – Sphagnum is a typical Acadian softwood VT found on moist, zonal sites in Nova Scotia.

Vegetation: Red spruce is usually the dominant overstory tree, although balsam fir may be abundant in some stands. Both species are usually well represented as regeneration in the shrub layer. Hybrid (red/black) spruce can also be found on more marginal sites. Low light availability often reduces the abundance of woodland flora, but moist soils associated with this VT generally support a higher diversity of species than drier red spruce types. In more moist sites, herbs like cinnamon fern, creeping snowberry, New York fern, interrupted fern and three seeded sedge will be present. The bryophyte layer is characterized by extensive coverage of mainly stair-step moss and Schreber's moss, with sphagnum moss present in wetter parts of the stand.

Ecological Features

This closed canopy forest typically occurs over hundreds of hectares, forming matrix in many ecoregions. Balsam fir and red spruce are very shade-tolerant in the understory. Good seed crops in red spruce start at age 35-45, and the species

does not regenerate well before age 50. Mature forests may provide habitat for spruce grouse, grey jays, red squirrels and flying squirrels. Large trees may provide nest sites for pileated and black-backed woodpeckers, barred owls and northern

goshawks. South facing slopes may provide winter cover for deer. Young forests are preferred habitat for snowshoe hare. Creeping rattlesnake plantain is the only plant species of conservation concern known from this VT.

Environmental Setting: SH6 is mainly associated with fresh-moist to moist, nutrient medium soils of glacial origin. These soils are generally medium to coarse textured and often stony. This VT is found throughout mainland Nova Scotia and parts of Cape Breton. It is common in New Brunswick but infrequent across Prince Edward Island.

Successional Dynamics: SH6 is a predominantly even-aged, mid-successional VT dominated by red spruce. Usually SH6 develops from advanced regeneration that was present at the time of stand-level disturbance. If advanced regeneration is not present (or has been destroyed), SH6 can also develop from other vegetation types 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) and MW4 (Balsam fir – Red maple / Wood sorrel – Goldthread). This VT may succeed to later successional types such as SH1 (Hemlock / Pin cushion moss / Needle carpet), SH2 (Hemlock – White pine / Sarsaparilla) and SH3 (Red spruce – Hemlock / Wild lily-of-the-valley).

Characteristic Plants

SH6

	Freq. (%)	Cover (%)
Red spruce	100	54.3
Balsam fir	78	17.4
Red maple	70	5.4
Yellow birch	17	5.5
White birch	17	1.9
Black spruce	13	16.0
White pine	13	2.0
Tree Layer (Mean % Cover)		76
Balsam fir	100	5.6
Red spruce	91	4.5
Red maple	74	0.5
Lambkill	70	1.2
Velvet-leaf blueberry	57	0.8
False holly	52	0.6
Wild raisin	39	0.1
Serviceberry	35	0.1
White pine	30	0.3
White birch	22	1.0
Lowbush blueberry	22	0.4
Shrub Layer (Mean % Cover)		13
Goldthread	83	2.5
Wild lily-of-the-valley	74	0.6
Cinnamon fern	70	2.8
Bunchberry	70	2.1
Bracken	57	3.3
Creeping snowberry	52	0.8
Starflower	52	0.4
Painted trillium	48	0.1
Bluebead lily	43	1.2
Sarsaparilla	43	0.7
New York fern	35	2.6
Three seeded sedge	30	0.5
Twinflower	30	0.2
Wood-sorrel	26	1.1
Hay-scented fern	22	3.1
Interrupted fern	22	2.1
Evergreen wood fern	22	0.2
Herb Layer (Mean % Cover)		13
Schreber's moss	96	41.2
Stair-step moss	96	19.9
Bazzania	91	11.9
Ladies' tresses	65	1.1
Wavy dicranum	57	7.5
Broom moss	57	2.6
Common green sphagnum	52	11.6
Hypnum moss	52	1.5
Hair-cap moss	30	0.1
Pale fat-leaved sphagnum	26	0.9
Plume moss	22	0.1
Bryo-Lichen Layer (Mean % Cover)		87

Distinguishing Features

A softwood forest of abundant red spruce with varying amounts of balsam fir occurring on imperfectly drained sites. Cinnamon fern, creeping snowberry, New York fern, interrupted fern and three seeded sedge indicate moister soils. The presence of sphagnum moss can be used to identify this vegetation type.



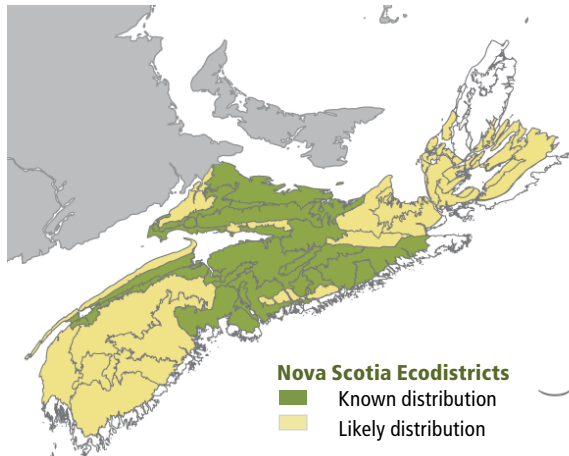
Stair-step moss

Site Characteristics

Slope Position:	Level ⁷ Lower ² Other ¹
Surface Stoniness:	(Non - Slightly) ⁹ (Very - Excessively) ¹
Bedrock Outcrop:	(Non-rocky) ⁹ (Slightly - Moderately) ¹
Elevation Range:	16 - 278m
Slope Gradient:	Level ⁷ Gentle ³
Aspect:	North ¹ East ² South ¹ None ⁶
Exposure:	Moderate ⁶ Mod. exposed ³ Mod. sheltered ¹
Microtopography:	Slightly ⁴ Moderately ³ Level ¹ Other ²
Drainage:	Imperfect ⁷ Moderately well ³

Soil Characteristics

Soil Type:	ST ⁴ ST6 ² ST3-G ¹ ST16 ¹ Other ²
Parent Material:	Glacial till ⁷ Till/Bedrock ¹ Other ²
Rooting Depth (cm):	(<30) ⁶ (30-45) ³ (>45) ¹
Duff Thickness (cm):	(6-10) ³ (11-20) ⁷



SH7

White spruce – Red spruce / Blueberry / Schreber's moss

Picea glauca – *Picea rubens* / *Vaccinium* spp. /
Pleurozium schreberi

n=6



Skinnners Cove,
Pictou County

Concept: This mid-successional Vegetation Type (VT) has an overstory of white and red spruce with lesser balsam fir. The absence of white spruce in the understory suggests this VT will advance to increased red spruce and balsam fir coverage over time. SH7 usually follows stand-replacing disturbance events such as fire, windthrow or harvesting.

Vegetation: White spruce, red spruce and balsam fir are the main overstory trees, but stands may also contain white, yellow or grey birch – the presence of which indicates recent disturbance events. Hybrid (red/black) spruce can also be found on poorer sites. The shrub layer is dominated by regenerating softwoods, primarily red spruce and balsam fir. Other shrubs include mountain-ash, wild raisin and lowbush blueberry. The herb layer is comprised of typical woodland flora (e.g. wild lily-of-the-valley and bunchberry), but species richness and coverage are both low. The bryophyte layer also has low species richness, but Schreber's moss and stair-step moss coverage is high in some stands.

Environmental Setting: SH7 is mainly associated with fresh, nutrient medium soils of glacial origin. These soils are generally medium to coarse textured and are sometimes shallow

to bedrock. This VT is most common in the Northumberland Lowlands and Cumberland Hills ecodistricts. This VT is uncommon in both Prince Edward Island and New Brunswick.

Successional Dynamics: SH7 is a predominantly even-aged, mid-successional VT dominated by white and red spruce. This VT usually follows stand-replacing disturbances from fire, windthrow or harvesting. Possible early successional VTs include IH3 (Large-tooth aspen / Christmas fern – New York fern), IH4 (Trembling aspen / Wild raisin / Bunchberry), IH5 (Trembling aspen – White ash / Beaked hazelnut / Christmas fern) and IH6 (White birch – Red maple / Sarsaparilla – Bracken). In the absence of stand-level disturbance, white spruce and balsam fir in this VT will eventually succumb to agents (such as bark beetle, tussock moth and disease) allowing red spruce and sometimes yellow birch to increase in dominance. Possible later successional VTs include SH5 (Red spruce – Balsam fir / Schreber's moss), SH6 (Red spruce – Balsam fir / Stair-step moss – Sphagnum) and MW1 (Red spruce – Yellow birch / Evergreen wood fern). Hemlock is unlikely to be a major component of later successional stages.

Ecological Features

This is a large patch closed canopy forest with limited distribution in northern Nova Scotia. Red spruce is very shade-tolerant and white spruce slightly less tolerant in the understory. Good seed crops in red spruce start at age 35-45, and the species

does not regenerate well before age 50. Mature forests may provide habitat for red squirrels and flying squirrels. Spruce seeds provide food for finches, crossbills and kinglets. South facing slopes may provide winter cover for deer.

These forests may support abundant mycorrhizal mushrooms including chanterelles and boletes. No plant or lichen species of conservation concern were found in available plot data.

Characteristic Plants

SH7

	Freq. (%)	Cover (%)
Red spruce	100	26.3
White spruce	100	24.0
Balsam fir	100	11.8
Red maple	83	3.4
White birch	83	1.4
Yellow birch	33	9.0
Black spruce	33	8.5
Grey birch	17	4.0
Tree Layer (Mean % Cover)		73
Balsam fir	100	2.6
Red spruce	83	0.9
Red maple	83	0.1
Wild raisin	50	0.7
Lowbush blueberry	50	0.1
Mountain-ash	50	0.1
Velvet-leaf blueberry	33	3.5
Black spruce	33	0.5
Lambkill	33	0.5
False holly	33	0.1
Yellow birch	33	0.1
Shrub Layer (Mean % Cover)		7
Wild lily-of-the-valley	100	1.0
Starflower	67	0.3
Evergreen wood fern	67	0.2
Painted trillium	67	0.1
Bluebead lily	50	1.4
Bunchberry	50	1.0
Bracken	50	0.9
Sarsaparilla	50	0.3
Goldthread	50	0.1
Cinnamon fern	33	0.3
Interrupted fern	33	0.3
Wood aster	33	0.3
Ground pine	33	0.1
Indian pipe	33	0.1
Partridge-berry	33	0.1
Pink lady's slipper	33	0.1
Rose twisted stalk	33	0.1
Herb Layer (Mean % Cover)		4
Schreber's moss	100	31.8
Stair-step moss	100	10.5
Wavy dicranum	83	3.5
Broom moss	83	0.7
Hair-cap moss	67	0.3
Bazzania	50	2.5
Hypnum moss	50	0.3
Ladies' tresses	33	0.3
Grey reindeer lichen	33	0.1
Bryo-Lichen Layer (Mean % Cover)		48

Distinguishing Features

White spruce growing with red spruce and lesser balsam fir is diagnostic of this softwood forest usually found in northern Nova Scotia. Schreber's moss and stair-step moss coverage is high in many stands.



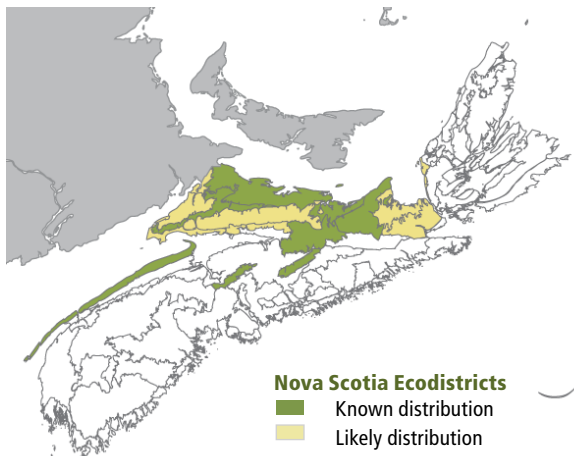
Wild raisin

Site Characteristics

Slope Position:	Upper ⁵ Level ³ Crest ²
Surface Stoniness:	(Non - Slightly) ⁷ (Moderately) ³
Bedrock Outcrop:	(Non-rocky) ⁸ (Slightly - Moderately) ²
Elevation Range:	30 - 228m
Slope Gradient:	Level ⁵ Gentle ⁵
Aspect:	North ² East ² South ² West ² None ²
Exposure:	Moderate ⁸ Mod. exposed ³ Mod. sheltered ²
Microtopography:	Moderately ³ Slightly ³ Strongly ³
Drainage:	Well ⁷ Moderately well ² Imperfect ¹

Soil Characteristics

Soil Type:	ST2 ³ ST6 ³ ST2-L ² ST15 ²
Parent Material:	Glacial till ⁸ Till/Bedrock ²
Rooting Depth (cm):	(<30) ³ (30-45) ⁵ (>45) ²
Duff Thickness (cm):	(0-5) ² (6-10) ³ (11-20) ⁵



SH8

Balsam fir / Wood fern / Schreber's moss

Abies balsamea / *Dryopteris* spp. /
Pleurozium schreberi

n=23



MacInnis Lake,
Cape Breton County

Concept: This early to mid-successional Vegetation Type (VT) has abundant balsam fir with minor amounts of other softwood and hardwood species. Due to the short-lived nature of balsam fir, this VT is often associated with significant coarse wood debris (CWD) and/or snags, as well as extensive balsam fir regeneration. Balsam fir / Wood fern / Schreber's moss usually follows stand-replacing disturbance events such as insect infestation, windthrow or harvesting.

Vegetation: Balsam fir is the dominant overstory tree, with varying amounts of red maple, red spruce, white spruce, black spruce, white birch and yellow birch (although not usually all found in one stand). Balsam fir regeneration can be extensive, with red maple usually present in lesser amounts. Other shrubs include false holly, wild raisin and mountain-ash. Typical herb species include evergreen wood fern, starflower, wild lily-of-the-valley, bunchberry, goldthread and wood sorrel. The often extensive bryophyte layer is made up of Schreber's moss, stair-step moss, wavy dicranum, broom moss, hypnum moss and bazzania.

Ecological Features

This closed canopy forest occurs primarily on mainland Nova Scotia, where it typically forms matrix and large-patch ecosystems. Balsam fir acts as a nurse species, promoting red spruce and hemlock regeneration. The short life-span of balsam fir contributes substantial

coarse woody material to the ecosystem, often in pulses following insect outbreaks, disease or wind storms. Balsam fir is very shade-tolerant in the understory and can sustain a significant presence throughout successional development. Mature forests may provide habitat for

numerous mammals (including flying squirrels, moose, deer), numerous bird species, and lichens (including abundant old man's beard, an important food and nest material). No plant or lichen species of conservation concern were found in available plot data.

Characteristic Plants

SH8

	Freq. (%)	Cover (%)
Balsam fir	100	60.5
White birch	57	3.3
Red maple	48	6.5
Red spruce	35	6.8
White spruce	30	12.9
Yellow birch	30	2.6
Black spruce	22	2.8
Hemlock	13	11.7
Trembling aspen	13	6.0
Tree Layer (Mean % Cover)		75
Red maple	91	0.5
Balsam fir	87	2.4
Yellow birch	30	0.9
White birch	30	0.8
False holly	30	0.1
Wild raisin	30	0.1
Red spruce	22	0.8
Mountain-ash	22	0.3
Shrub Layer (Mean % Cover)		4
Evergreen wood fern	65	1.4
Starflower	61	1.0
Wild lily-of-the-valley	57	1.5
Bunchberry	52	1.6
Wood-sorrel	48	2.1
Goldthread	39	1.3
Sarsaparilla	35	0.4
Indian pipe	35	0.1
Painted trillium	26	0.1
Bluebead lily	22	0.4
Twinflower	22	0.3
Pink lady's slipper	22	0.1
Herb Layer (Mean % Cover)		7
Schreber's moss	96	30.1
Stair-step moss	87	22.0
Bazzania	87	5.8
Broom moss	83	3.1
Hypnum moss	52	1.9
Hair-cap moss	48	0.5
Wavy dicranum	35	2.3
Plume moss	26	0.5
Bryo-Lichen Layer (Mean % Cover)		59

Distinguishing Features

This softwood forest primarily of balsam fir usually follows a stand-level disturbance such as harvesting. This unit is not associated with coastal areas or the Cape Breton highland plateau.



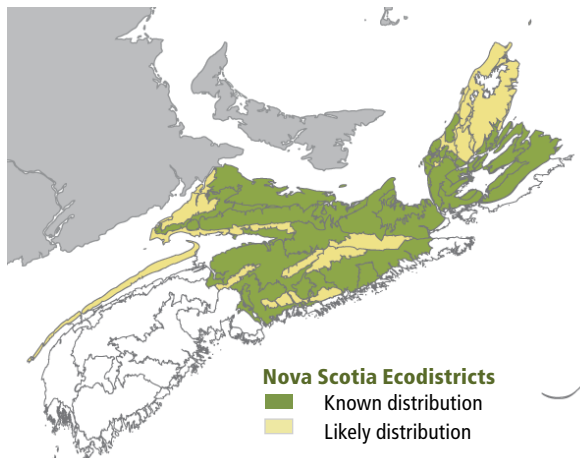
Ground hemlock (Yew)

Site Characteristics

Slope Position:	Upper ⁴ Level ² Lower ² Middle ¹ Crest ¹
Surface Stoniness:	(Non - Slightly) ⁶ (Moderately) ³ (Very - Excessively) ¹
Bedrock Outcrop:	(Non-rocky) ⁹ (Slightly - Moderately) ¹
Elevation Range:	23 - 226m
Slope Gradient:	Gentle ⁴ Level ² Moderate ² Other ¹ nd ¹
Aspect:	North ¹ East ² South ¹ West ² None ⁴
Exposure:	Moderate ⁵ Mod. exposed ³ Other ²
Microtopography:	Slightly ⁵ Moderately ³ Strongly ¹ Other ¹
Drainage:	Well ⁴ Moderately well ³ Imperfect ² Other ¹

Soil Characteristics

Soil Type:	ST2 ⁵ ST3 ² ST2-L ¹ ST3-L ¹ ST6 ¹
Parent Material:	Glacial till ⁷ Glaciofluvial ² Till/Bedrock ¹
Rooting Depth (cm):	(<30) ² (30-45) ⁴ (>45) ³ nd ¹
Duff Thickness (cm):	(0-5) ² (6-10) ⁵ (11-20) ² nd ¹



SH9

Balsam fir – Black spruce / Blueberry

Abies balsamea – *Picea mariana* / *Vaccinium* spp.

n=4



Mount Uniacke,
Hwy 101, Hants County

Concept: This early to mid-successional Vegetation Type (VT) has abundant balsam fir with minor coverage of black spruce, red maple and white pine. Due to the short-lived nature of balsam fir, this VT is often associated with significant coarse woody debris (CWD) and/or snags, as well as extensive balsam fir regeneration. Balsam fir – Black spruce / Blueberry usually follows stand-replacing disturbance events such as insect infestation, windthrow or harvesting.

Vegetation: Balsam fir is the dominant overstory tree along with varying amounts of black spruce, hybrid (red/black) spruce, red maple and white pine. White pine residuals can also be found in a super canopy. Understory layers have low species diversity, with the shrub layer providing the greatest coverage (mostly regenerating balsam fir, red maple and black spruce along with velvet-leaf blueberry and lambkill). Bracken and bunchberry are the most abundant herbs with Schreber's moss and stair-step moss the dominant bryophytes. Coverage of bazzania is influenced by the amount of CWD.

Ecological Features

This closed canopy forest occurs as small to large patches within broader spruce-fir matrix forests. The short life-span of balsam fir contributes substantial coarse woody material to the ecosystem, often occurring in pulses following insect outbreaks, disease or destructive wind

storms. Balsam fir is very shade-tolerant, regenerating well in the understory. On moist sites black spruce typically regenerates by layering, forming small clonal groups. Mature forests may provide habitat for red and flying squirrels, deer, moose, salamanders,

songbirds and small mammals, among other groups of wildlife. Old man's beard lichen is often abundant in old forests, providing important food and nest material. No plant or lichen species of conservation concern were found in available plot data.

Environmental Setting: SH9 is mainly associated with dry to fresh, nutrient poor soils of glacial origin. These soils are generally medium to coarse textured and often very stony. This VT is found throughout Nova Scotia, but is most common in the western ecoregion.

Successional Dynamics: SH9 is a predominantly even-aged, early to mid-successional VT dominated by balsam fir. This VT usually follows stand-replacing disturbances such as insect infestation, windthrow or harvesting. In the absence of disturbances that promote balsam fir cover, SH9 can succeed to SP4 (White pine / Blueberry / Bracken) and SP5 (Black spruce / Lambkill / Bracken) on poorer sites and to SH4 (Red spruce – White pine / Lambkill / Bracken) on more zonal sites.

Characteristic Plants

SH9

	Freq. (%)	Cover (%)
Balsam fir	100	43.0
Black spruce	75	12.7
Red maple	75	7.3
White pine	75	3.3
White birch	50	3.0
Yellow birch	25	5.0
Red spruce	25	3.0
Tree Layer (Mean % Cover)		64
Red maple	100	2.2
Velvet-leaf blueberry	75	5.7
Lambkill	75	2.6
Balsam fir	75	2.1
Black spruce	75	0.4
False holly	75	0.2
White pine	50	0.1
Yellow birch	50	0.1
Red spruce	25	3.0
Wild raisin	25	0.3
Huckleberry	25	0.2
Lowbush blueberry	25	0.1
Red oak	25	0.1
Serviceberry	25	0.1
Shrub Layer (Mean % Cover)		12
Bracken	75	11.3
Bunchberry	75	2.8
Starflower	75	0.7
Wild lily-of-the-valley	75	0.7
Bluebead lily	50	0.5
Twinflower	50	0.3
Hay-scented fern	50	0.2
Mayflower	50	0.1
Partridge-berry	50	0.1
Goldthread	25	8.0
New York fern	25	1.0
Cinnamon fern	25	0.1
Indian cucumber root	25	0.1
Indian pipe	25	0.1
Interrupted fern	25	0.1
Painted trillium	25	0.1
Shinleaf	25	0.1
Herb Layer (Mean % Cover)		15
Schreber's moss	100	59.5
Bazzania	100	12.0
Stair-step moss	100	8.0
Ladies' tresses	75	2.2
Wavy dicranum	75	1.4
Plume moss	50	0.4
Hair-cap moss	25	3.0
Russ's sphagnum	25	2.5
Broom moss	25	2.0
Hypnum moss	25	2.0
Pale fat-leaved sphagnum	25	0.3
Grey reindeer lichen	25	0.3
Common green sphagnum	25	0.1
Bryo-Lichen Layer (Mean % Cover)		85

Distinguishing Features

This balsam fir softwood forest occurs on well drained, nutrient poor soils. Black spruce and hybridized spruce are common with white pine often in a super canopy. Bracken is the most abundant herb.



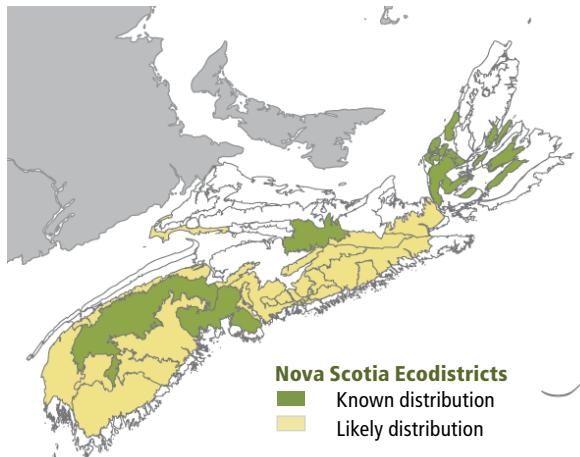
Broom moss

Site Characteristics

Slope Position:	Middle ⁵ Level ³ Upper ²
Surface Stoniness:	(Very - Excessively) ⁵ (Non - Slightly) ³ (Moderately) ²
Bedrock Outcrop:	(Non-rocky) ⁷ (Slightly - Moderately) ³
Elevation Range:	37 - 198m
Slope Gradient:	Level ⁵ Gentle ⁵
Aspect:	West ⁵ None ² nd ³
Exposure:	Moderate ⁷ Exposed ³
Microtopography:	Slightly ⁵ Level ² Moderately ²
Drainage:	Well ⁴ Imperfect ³ Moderately well ³

Soil Characteristics

Soil Type:	ST15 ⁴ ST2 ³ ST3 ³
Parent Material:	Glacial till ⁸ Till/Bedrock ²
Rooting Depth (cm):	(<30) ³ (30-45) ⁷
Duff Thickness (cm):	(6-10) ³ (11-20) ⁷



SH10

White spruce – Balsam fir / Broom moss

Picea glauca – *Abies balsamea* /
Dicranum scoparium

n=3



Georgeville,
Antigonish County

Concept: This mid-successional Vegetation Type (VT) has an overstory of white spruce and balsam fir along with a component of white birch (its relative abundance reflects time since disturbance). The absence of white spruce in the understory suggests this species will not form a significant part of later successional stages. White spruce – Balsam fir / Broom moss usually follows stand-replacing disturbance events such as insect infestation, windthrow or harvesting.

Vegetation: White spruce, balsam fir and white birch are the main overstory trees, but stands may also contain minor amounts of red maple and yellow birch. The shrub layer is completely made up of regenerating tree species, especially balsam fir. Both the herb and bryophyte layers have low species diversity and abundance. Typical upland forest flora are present including wild lily-of-the-valley, bunchberry, Schreber's moss and wavy dicranum.

Ecological Features

This is a large-patch closed canopy forest with limited distribution in eastern Nova Scotia. Balsam fir is very shade-tolerant and capable of regenerating extensively in the understory, while white spruce is slightly less tolerant.

Mature forests may provide habitat for red squirrels and flying squirrels. South facing slopes may provide winter cover for deer. Understory fir snags are favoured habitat for small cavity nesting songbirds. Young forests are preferred

habitat for snowshoe hare. These forests may support abundant fruiting of mycorrhizal mushrooms, including chanterelles and boletes. No plant or lichen species of conservation concern were found in available plot data.

Environmental Setting: SH10 is mainly associated with fresh to fresh-moist, nutrient medium soils of glacial origin. These soils are generally medium to coarse textured. This VT is most common in eastern Nova Scotia, particularly the Eastern Interior ecoregion where white spruce often replaces red spruce in spruce-fir stands.

Successional Dynamics: SH10 is a predominantly even-aged, mid-successional VT dominated by white spruce and balsam fir. This VT usually follows stand-replacing disturbances from insect infestation, windthrow or harvesting. Early successional stages may have an increased proportion of white birch. In the absence of stand-level disturbance, white spruce and balsam fir in this VT will eventually succumb to agents such as bark beetle, tussock moth and disease allowing red maple and yellow birch to increase in dominance. Possible later successional VTs include MW1 (Red spruce – Yellow birch / Evergreen wood fern) and TH7 (Yellow birch – White birch / Evergreen wood fern).

Characteristic Plants

SH10

	Freq. (%)	Cover (%)
White spruce	100	33.0
White birch	100	9.7
Balsam fir	67	50.0
Red maple	33	10.0
Trembling aspen	33	8.0
Black spruce	33	7.0
Large-tooth aspen	33	4.0
Yellow birch	33	3.0
Tamarack	33	0.1
Tree Layer (Mean % Cover)		87
Red maple	100	0.4
Balsam fir	67	4.0
White birch	67	4.0
White spruce	33	2.0
Silver poplar	33	1.0
Trembling aspen	33	1.0
Mountain-ash	33	0.5
White ash	33	0.5
Yellow birch	33	0.1
Shrub Layer (Mean % Cover)		7
Wild lily-of-the-valley	67	8.5
Bunchberry	67	5.5
Bracken	67	0.5
Starflower	67	0.5
Indian pipe	67	0.3
Goldthread	67	0.1
Sarsaparilla	33	3.0
Twinflower	33	1.0
Wood aster	33	1.0
Eastern spreading wood fern	33	0.5
Hawkweeds	33	0.3
Running club-moss	33	0.3
Cinnamon fern	33	0.1
Creeping snowberry	33	0.1
Evergreen wood fern	33	0.1
Ground pine	33	0.1
New England sedge	33	0.1
Herb Layer (Mean % Cover)		13
Schreber's moss	100	12.2
Broom moss	100	0.8
Hair-cap moss	67	1.5
Wavy dicranum	67	1.5
Hypnum moss	67	1.1
Stair-step moss	33	37.0
Plume moss	33	2.0
Grey reindeer lichen	33	1.0
Bazzania	33	0.8
Fern moss	33	0.1
Pin cushion moss	33	0.1
Shaggy moss	33	0.1
Bryo-Lichen Layer (Mean % Cover)		29

Distinguishing Features

White spruce growing with balsam fir and lesser white birch is diagnostic of this softwood forest usually found in eastern Nova Scotia.



Partridge-berry

Site Characteristics

Slope Position:	Upper ³ Middle ³ Lower ³
Surface Stoniness:	(Non - Slightly) ¹⁰
Bedrock Outcrop:	(Non-rocky) ¹⁰
Elevation Range:	100 - 159m
Slope Gradient:	Gentle ¹⁰
Aspect:	North ⁷ South ³
Exposure:	Moderate ⁷ Mod. exposed ³
Microtopography:	Moderately ⁷ Slightly ³
Drainage:	Moderately well ⁷ Well ³

Soil Characteristics

Soil Type:	ST2-L ³ ST3 ³ ST5 ³
Parent Material:	Glacial till ¹⁰
Rooting Depth (cm):	(<30) ³ (30-45) ³ (>45) ³
Duff Thickness (cm):	(6-10) ⁷ (11-20) ³

