

SP1	Jack pine / Bracken – Teaberry	SP1a	Black spruce variant
SP2	Red pine / Blueberry / Bracken	SP2a	Black spruce variant
SP3	Red pine – White pine / Bracken – Mayflower	SP3a	Black spruce variant
SP4	White pine / Blueberry / Bracken.	SP4a	Black spruce variant
		SP4b	Huckleberry variant
SP5	Black spruce / Lambkill / Bracken		
SP6	Black spruce – Red maple / Bracken – Sarsaparilla		
SP7	Black spruce / False holly / Ladies' tresses sphagnum		
SP8	Black spruce – Aspen / Bracken – Sarsaparilla		
SP9	Red oak – White pine / Teaberry		
SP10	Tamarack / Wild raisin / Schreber's moss		

Concept: These are nutrient poor forest ecosystems often associated with fire disturbance. They are generally dominated by black spruce and pines with an understory of plants tolerant of acidic (nutrient poor) soils. Soils and sites are often very to excessively stony, especially when associated with granitic glacial till deposits. Soil moisture deficits are also common on many sites. All Vegetation Types (VT) in this group are found in the Acadian Ecosite group, with several also found in the Maritime Boreal Ecosite group.

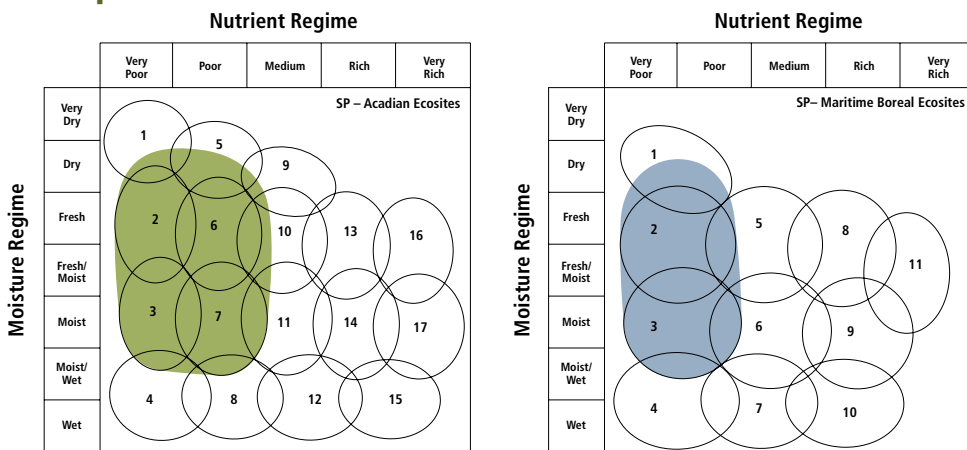
Vegetation: Crown closure can vary within and between VTs of this group. Black spruce and pines (white, red, jack) are the main overstory species. Red oak is also commonly associated with white pine in western Nova Scotia. The shrub layer is usually dominated by ericaceous species such as lambkill, blueberry and huckleberry along with black spruce regeneration (often through layering). Herb cover is dependent on the amount of light reaching the ground, but bracken and teaberry are almost always present. Bryophyte/lichen coverage is usually moderate to extensive and includes Schreber's moss and broom moss. Reindeer lichens can be abundant on drier sites.

Environmental Setting: Vegetation types in this group are found on a range of slope positions, and are often associated with shallow soils on bedrock ridges and outcrops. Soils are mainly derived from coarse textured glacial till or glaciofluvial deposits. A wide range of moisture levels can be found, but fertility is generally low throughout.

This group is found throughout the province, but is less prominent in the Nova Scotia Uplands (300), Cape Breton Highlands (200) and Cape Breton Taiga (100) ecoregions.

Successional Dynamics: Spruce Pine VTs cover a range of successional stages, but all lead to an edaphic climax dominated by black spruce. Frequent natural disturbances include fire and windthrow. Stand-level disturbances are often intense leaving only scattered residuals, particularly fire-scarred pine. As the interval between stand-level disturbances increases, so does content of black spruce and/or white pine. If fire is restricted from the disturbance regime, the occurrence of red and jack pine ecosystems may decrease.

Edatopic Grids



Ecological Features

Forests in this group occur as small to large patches or matrix forests on sites that are nutrient poor and prone to seasonal drying. They are often associated with barrens, ericaceous vegetation, reindeer lichen and/or crowberry vegetation. Historically, wildfire was the predominant disturbance agent in these forests, at stand and landscape scales. Burn intensities varied greatly, ranging from severe crown to low intensity ground fires, each strongly shaping canopy and understory structure. Fires ensured these forests were maintained at early to mid successional stages, with open or closed canopies. Depending on burn intensity and fire return interval, post-fire stands may be simple and even aged, or more complex with uneven aged canopies, fire scarred trees, legacy patches and large deadwood. Ericaceous shrubs, especially lambkill, create thick duff layers with alleo-pathic properties (chemical interference with growth and germination) and an aggressive vegetative growth, limit black spruce regeneration on many sites. Productivity and species richness are generally low, but these forests can support several faunal and fungal species. Fire suppression is reducing the fundamental process supporting many VTs in this group.

SP1

Jack pine / Bracken – Teaberry

Pinus banksiana / *Pteridium aquilinum* –
Gaultheria procumbens

SP1a

Black spruce variant

Picea mariana

n=15



Chase Lake,
Cumberland County

Concept: This early successional Vegetation Type (VT) has abundant jack pine, lesser but frequent black spruce, and a small suite of shade-intolerant understory associates. Occurrences dominated by black spruce, with lesser jack pine, are defined by the SP1a variant. SP1a stands either occur at a later successional stage or are characterized by less jack pine at the time of stand establishment. SP1 (Jack pine / Bracken – Teaberry) usually follows stand-replacing disturbance events such as fire or harvesting.

Vegetation: Jack pine is typically the dominant overstory tree, with lesser amounts of black spruce and shade intolerant hardwood species. The shrub layer may be densely occupied by black spruce and ericaceous species such as lambkill, lowbush blueberry and rhodora. (The presence of rhodora is particularly indicative of low site fertility). Herb layer diversity is low and dominated by bracken and teaberry. Schreber’s moss dominates the bryophyte layer, with patches of reindeer lichens in more open areas.

Environmental Setting: SP1 occurs on dry, nutrient very poor to poor soils associated with glaciofluvial deposits or shallow, gravelly and/or coarse textured glacial tills. The

majority of this VT is found in the Cumberland County portion of the Northumberland Lowlands ecoregion. The black spruce variant can be found scattered throughout the Eastern and Atlantic Coastal ecoregions and is often interspersed with OW1 (Jack pine / Huckleberry – Black crowberry) on hummocky topography. This VT is more common in New Brunswick but mostly localized to the northeast. It is rare on Prince Edward Island.

Successional Dynamics: Dry, nutrient poor soils and stand-replacing disturbances strongly shape both the canopy structure and successional patterns of SP1. Historically SP1 stands originated from high intensity fires that initiated new, even-aged stands dominated by jack pine. The presence of jack pine decreases between disturbance events as it is replaced by black spruce (a species which has both greater longevity and the flexibility to regenerate either by seed or vegetative layering). As the potential impacts of fire are reduced through management, white pine and black spruce dominance will increase and the stand could transition to SP4a (White pine / Blueberry / Bracken variant Black spruce) or directly to SP5 (Black spruce / Lambkill / Bracken), the edaphic climax for this successional pathway.

Ecological Features

This closed canopy forest occurs as small to large patches. Jack pine is a shade-intolerant, fire-dependent species. This feature of the tree’s life history means that fire suppression practices will likely reduce the abundance and frequency of

this ecosystem in the landscape. Fire scars on residual pine are often found scattered through SP1 stands. Jack pine retains most of its seed in tightly closed cones that open to release large seed crops, after they are heated by fire. The acidity

(low nutrient content) of the forest floor, due to the abundance of pine needles and ericaceous vegetation, reduces soil fauna, plant diversity, and vertebrate diversity and abundance. However, needles are an important food source for spruce grouse.

Characteristic Plants	SP1		SP1a	
	Freq. (%)	Cover (%)	Freq. (%)	Cover (%)
Jack pine	100	40.1	100	21.4
Black spruce	63	6.2	100	37.6
Red pine	38	2.0	43	0.1
Red maple	25	2.5	14	5.0
White birch	25	0.5	14	0.1
White pine			43	10.3
Tree Layer (Mean % Cover)		47		64
Lambkill	100	38.3	100	14.3
Black spruce	100	3.7	100	5.7
Lowbush blueberry	88	12.8	86	2.1
Wild raisin	88	0.1	71	1.1
Red maple	63	1.5	86	2.1
Rhodora	50	27.8	14	20.0
Velvet-leaf blueberry	50	18.3	29	8.5
False holly	50	0.2	43	0.9
Grey birch	50	0.2		
Serviceberry	38	0.3	29	0.3
Huckleberry	25	5.0	14	0.1
White pine	25	0.3	57	0.2
Sweetfern	25	0.1		
Balsam fir	13	0.1	43	0.8
White birch			29	0.1
Shrub Layer (Mean % Cover)		77		31
Teaberry	100	13.6	71	2.3
Bracken	63	24.2	86	25.7
Mayflower	63	0.1	57	0.3
Bunchberry	38	1.1	57	0.5
Pink lady's slipper	25	0.8	43	0.1
Painted trillium	13	0.1	29	0.3
Creeping snowberry			29	1.3
Herb Layer (Mean % Cover)		30		25
Schreber's moss	100	41.3	100	81.7
Grey reindeer lichen	88	3.0	57	1.1
Wavy dicranum	75	1.8	100	3.8
Star-tipped reindeer lichen	38	12.0	14	0.1
Hair-cap moss	25	2.0	71	0.1
Broom moss	25	1.0	29	1.0
Cup lichens	25	0.1	57	0.1
Plume moss	25	0.1	29	0.2
Dicranums	13	0.1	29	0.8
Stair-step moss	13	0.1	57	1.6
Hypnum moss			57	0.3
Naugehyde liverwort			43	1.5
Ladies' tresses			29	5.0
Bryo-Lichen Layer (Mean % Cover)		53		91

Distinguishing Features

Jack pine is diagnostic for this vegetation type found on dry, poor soils. Ericaceous species such as lambkill, blueberry and rhodora

are common. Reindeer mosses are common. The variant SP1a is dominated by black spruce with lesser jack pine.



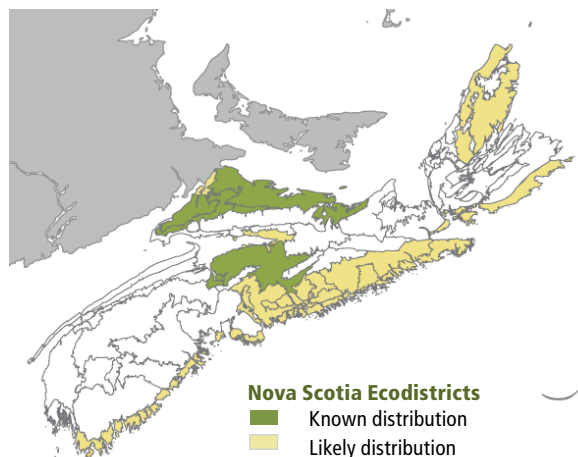
Teaberry

Site Characteristics

Slope Position:	Upper ⁶ Level ² Crest ¹ Middle ¹
Surface Stoniness:	(Non - Slightly) ⁸ (Moderately) ¹ nd ¹
Bedrock Outcrop:	(Non-rocky) ⁹ nd ¹
Elevation Range:	21 - 82m
Slope Gradient:	Gentle ⁶ Level ² nd ²
Aspect:	East ² South ¹ West ³ None ³ nd ¹
Exposure:	Moderate ⁸ Mod. exposed ¹ nd ¹
Microtopography:	Slightly ⁴ Moderately ³ Level ¹ Strong ¹ nd ¹
Drainage:	Moderately well ³ Rapid ³ Well ³ nd ¹

Soil Characteristics

Soil Type:	ST ² ST ¹ ST ³ nd ¹
Parent Material:	Glacial till ⁹ Glaciofluvial ¹
Rooting Depth (cm):	(30-45) ² (>45) ⁷ nd ¹
Duff Thickness (cm):	(0-5) ¹ (6-10) ⁶ (11-20) ² nd ¹



Nova Scotia Ecodistricts

- Known distribution
- Likely distribution

SP2

Red pine / Blueberry / Bracken

Pinus resinosa / *Vaccinium* spp. / *Pteridium aquilinum*



Aldershot,
Kings County

Concept: This early to mid-successional Vegetation Type (VT) has significant red pine in the overstory and black spruce in one or more layers. Occurrences dominated by black spruce with lesser red pine are defined by the SP2a variant. These variant stands either occur at a later successional stage or are characterized by less red pine at the time of stand establishment. SP2 is similar to SP3 (Red Pine - White pine / Bracken - Mayflower), but is distinguished by the nearly homogeneous overstory of red pine. SP2 usually follows stand-replacing disturbance events such as fire or harvesting.

Vegetation: Red pine is typically the dominant overstory tree, although black spruce cover can be significant. The shrub layer consists mainly of ericaceous species such as lambkill, velvet-leaf blueberry and lowbush blueberry, along with wild raisin. Black spruce and red maple regeneration can also be extensive. Herb layer diversity is low, typically dominated by bracken and teaberry. Abundant Schreber's moss characterizes the bryophyte layer, but a needle carpet can also be found in dense stands.

Environmental Setting: SP2 occurs on dry to moist, nutrient very poor to poor soils. Drier sites are generally associated with glaciofluvial deposits or shallow, gravelly

and/or coarse textured glacial tills found in the Western ecoregion. Moist sites are mainly associated with finer textured soils (e.g. sandy clay loam) found in the Central Lowlands and Northumberland Lowlands ecodistricts. SP2 may be interspersed with OW3 (Red pine / Broom crowberry / Reindeer lichen) in some areas. This VT is very rare on Prince Edward Island and somewhat uncommon in New Brunswick.

Successional Dynamics: Dry, nutrient poor soils and stand-replacing disturbances strongly shape both the canopy structure and successional patterns of SP2. Historically SP2 stands originated from a few residual trees that survived high intensity fires. (Fire scars can often be found on the older trees at a site). Occasional, low intensity fires would have maintained red pine presence by eliminating or reducing undergrowth competition. SP2 stands are predominantly even-aged until red pine succumbs to senescence and is gradually replaced by black spruce, balsam fir, red oak and/or white pine. Dominance of these latter tree species increases over time, especially as the potential impacts of fire are reduced through management. Later successional stages may include SP4 (White pine / Blueberry / Bracken) or advance directly to SP5 (Black spruce / Lambkill / Bracken), the edaphic climax for this successional pathway.

Ecological Features

This closed canopy forest occurs as small to large patches. Red pine is shade-intolerant and usually requires fire to regenerate to near-pure forests. As such, fire suppression practices may reduce the abundance of this ecosystem. Fire scars

on residual pine are often found scattered through SP2 stands and can lead to the formation of hollow trunks. The acidity (low nutrient content) of the forest floor (due to the abundance of pine needles and ericaceous vegetation) reduces soil fauna,

plant diversity, and vertebrate diversity and abundance. Seeds of red pine may provide food for pine siskins, nuthatches and chickadees. Saffron milkcap is a well-known edible mushroom that forms a mycorrhizal relationship with red pine.

Characteristic Plants	SP2		SP2a	
	Freq. (%)	Cover (%)	Freq. (%)	Cover (%)
Red pine	100	64.5	100	27.0
Black spruce	53	9.8	100	33.3
White pine	53	3.6	40	5.5
Red maple	33	2.6	30	1.7
Large-tooth aspen	20	3.3		
White birch	20	0.1		
Jack pine	13	3.0	20	4.0
Balsam fir	7	4.0	20	7.5
Tamarack	7	0.1	20	2.5
Tree Layer (Mean % Cover)		74		66
Red maple	87	2.0	90	3.0
Black spruce	80	9.2	100	6.7
Velvet-leaf blueberry	80	7.3	80	12.4
Lambkill	73	12.3	100	20.3
Serviceberry	73	0.5	60	0.1
Wild raisin	67	1.2	80	1.0
White pine	60	0.1	30	0.1
Lowbush blueberry	53	2.2	70	5.1
Red oak	40	0.1	20	0.1
Rhodora	33	5.6	40	2.5
Balsam fir	33	2.2	30	2.0
Huckleberry	33	1.2	20	2.1
False holly	27	1.4	50	2.4
Grey birch	13	0.5	40	0.1
Labrador tea	13	0.1	20	2.5
Shrub Layer (Mean % Cover)		30		49
Bracken	87	20.2	90	33.9
Teaberry	73	1.3	90	2.1
Bunchberry	53	5.8	80	12.8
Wild lily-of-the-valley	47	3.1	20	0.3
Mayflower	47	0.2	60	1.3
Sarsaparilla	33	0.2		
Pink lady's slipper	33	0.1	30	0.1
Cow-wheat	27	0.1	30	0.2
Partridge-berry	27	0.1	20	0.1
Starflower	27	0.1	30	0.1
False violet	13	0.1	40	0.2
Indian pipe	13	0.1	20	0.1
Painted trillium	13	0.1	20	0.1
Goldthread	7	0.1	30	0.6
Herb Layer (Mean % Cover)		24		40
Schreber's moss	87	27.8	100	64.7
Wavy dicranum	87	4.9	100	3.3
Bazzania	33	0.7	30	1.1
Hypnum moss	27	0.3		
Broom moss	27	0.1	30	0.3
Stair-step moss	20	1.7	30	4.7
Ladies' tresses	20	0.4	50	2.2
Grey reindeer lichen	13	0.1	60	0.7
Cup lichens	7	0.1	20	0.3
Flat topped sphagnum			20	1.5
Bryo-Lichen Layer (Mean % Cover)		30		72

Distinguishing Features

Red pine is diagnostic for this vegetation type found with scattered black spruce. Ericaceous species such as lambkill, blueberry and rhodora are common. In the variant, SP2a, black spruce is co-dominant with red pine. A needle carpet condition exists in stands with closed canopies.



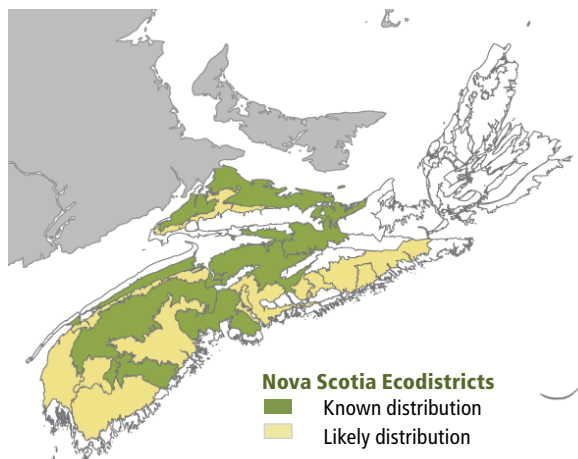
Bracken

Site Characteristics

Slope Position: Level³ Upper³ Middle² Other²
 Surface Stoniness: (Non - Slightly)⁸ (Moderately)¹ (Very - Excessively)¹
 Bedrock Outcrop: (Non-rocky)¹⁰
 Elevation Range: 9 - 199m
 Slope Gradient: Gentle⁵ Level³ Moderate¹ nd¹
 Aspect: North² East² South² West² None²
 Exposure: Moderate¹⁰
 Microtopography: Slightly⁶ Moderately² Level¹ Strongly¹
 Drainage: Well⁴ Imperfect² Moderately well² Rapid²

Soil Characteristics

Soil Type: ST¹ ST² Other²
 Parent Material: Glacial till⁶ Glaciofluvial³ Till/Bedrock¹
 Rooting Depth (cm): (<30)⁴ (30-45)¹ (>45)⁴ nd¹
 Duff Thickness (cm): (0-5)¹ (6-10)⁴ (11-20)⁴ nd¹



Nova Scotia Ecodistricts
 ■ Known distribution
 ■ Likely distribution

SP3

Red Pine – White pine / Bracken – Mayflower

Pinus resinosa – *Pinus strobus* /
Pteridium aquilinum – *Epigaea repens*

SP3a

Black spruce variant

Picea mariana

n=13



Tuskapeake Brook,
Annapolis County

Concept: This early to mid-successional Vegetation Type (VT) has an overstory dominated by both red and white pine. Occurrences co-dominated by black spruce and pine are defined by the SP3a variant. Red Pine – White pine / Bracken – Mayflower usually follows stand-replacing disturbance events such as fire or harvesting.

Vegetation: Red and white pine are the dominant overstory trees, usually occurring in similar amounts. Black spruce is the third most common species, with the occasional presence of red maple, large-tooth aspen and red oak. The shrub layer consists mainly of ericaceous species such as lambkill, velvet-leaf blueberry and lowbush blueberry, along with wild raisin. Black spruce and balsam fir regeneration can also be extensive in some stands. Herb layer diversity is relatively low, characterized by species such as pink lady's slipper, mayflower, starflower, bunchberry and sarsaparilla. Bryophyte cover is usually low except in the black spruce variant (SP3a) where heavy cover of Schreber's moss, broom moss and wavy dicranum is common. In dense stands, the forest floor may also be dominated by a needle carpet.

Ecological Features

This closed or open canopy forest occurs as large patches. Red pine is a shade-intolerant, fire-adapted species whose persistence in this ecosystem will be promoted by fire. Fire scars on residual pine are often found scattered through SP3 stands. White pine is a long-lived species of the Acadian Forest

and, as one of the region's largest trees, may provide valuable wildlife habitat for cavity nesting birds such as owls and woodpeckers and mammals such as fishers and porcupines. The acidity (low nutrient content) of the forest floor (due to the abundance of pine needles and ericaceous vegetation)

reduces soil fauna, plant diversity, and vertebrate diversity and abundance. Seeds of red pine may provide food for pine siskins, nuthatches and chickadees. Saffron milkcap, is a well-known edible mushroom that forms a mycorrhizal relationship with red pine.

Characteristic Plants	SP3		SP3a	
	Freq. (%)	Cover (%)	Freq. (%)	Cover (%)
Red pine	100	32.1	100	15.0
White pine	100	31.4	100	15.0
Red oak	50	7.5		
Red maple	50	6.5	60	3.3
Black spruce	50	5.8	80	30.8
Large-tooth aspen	50	5.8		
White birch	25	3.5	20	7.0
Grey birch	13	2.0	20	2.0
Red spruce	13	2.0	20	12.0
Trembling aspen			20	12.0
Balsam fir			20	10.0
Tree Layer (Mean % Cover)		78		65
Red maple	100	2.7	80	1.0
Lambkill	100	2.0	100	5.6
White pine	88	1.1	60	0.4
Velvet-leaf blueberry	75	4.3	80	8.9
Balsam fir	75	4.1	80	8.0
Black spruce	63	8.0	60	6.3
Lowbush blueberry	50	9.3	60	0.8
Wild raisin	50	1.7	100	0.1
Red oak	50	1.5	40	0.1
Serviceberry	38	0.1	80	0.1
Huckleberry	25	5.0	60	5.7
Smooth serviceberry	25	3.5		
Red spruce	25	2.1	20	1.0
Grey birch	25	0.6	20	0.1
Sweetfern	25	0.1		
White birch	25	0.1	20	2.0
False holly	13	0.1	60	2.2
Rhodora			40	0.5
Shrub Layer (Mean % Cover)		27		31
Bracken	100	17.7	100	25.2
Starflower	88	1.4	100	0.4
Teaberry	75	5.0	60	1.4
Wild lily-of-the-valley	63	4.8	60	10.2
Bunchberry	63	3.5	80	2.6
Sarsaparilla	63	2.1	60	1.0
Mayflower	63	1.1	80	0.8
Partridge-berry	63	0.2		
Indian pipe	50	0.1	40	0.1
Pink lady's slipper	50	0.1	80	0.1
Rice grass	38	0.5		
Round-leaved pyrola	38	0.1		
Cow-wheat	25	0.1	20	0.1
Painted trillium	25	0.1	60	0.1
Princes'-pine	25	0.1		
Interrupted fern			40	0.5
Herb Layer (Mean % Cover)		31		38
Schreber's moss	75	17.2	100	51.8
Wavy dicranum	63	1.2	80	3.4
Broom moss	50	0.8	60	0.6
Bazzania	50	0.5	80	0.8
Hypnum moss	38	1.8	60	8.0
Grey reindeer lichen	38	0.9	40	5.5
Stair-step moss	13	2.0	80	1.6
Hair-cap moss	13	0.5	40	3.3
Ladies' tresses			60	0.3
Bryo-Lichen Layer (Mean % Cover)		16		68

Distinguishing Features

Both red pine and white pine need to be present to classify this softwood forest found on dry, nutrient poor soils.

The variant SP3a has black spruce co-dominant with the pines.



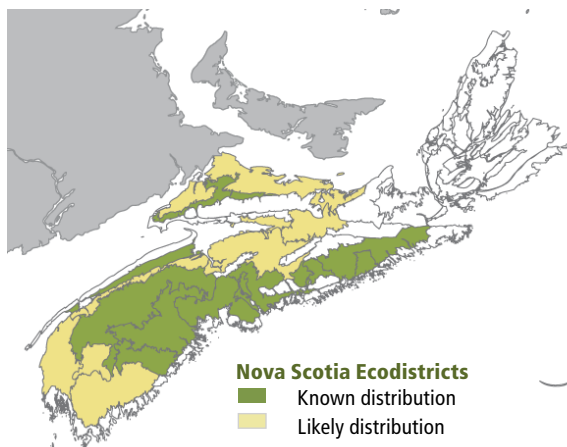
Mayflower

Site Characteristics

Slope Position:	Crest ³ Level ³ Upper ³ Middle ¹
Surface Stoniness:	(Very - Excessively) ³ (Moderately) ³ (Non - Slightly) ² nd ²
Bedrock Outcrop:	(Non-rocky) ⁵ (Slightly - Moderately) ² (Very-Excessively) ¹ nd ²
Elevation Range:	37 - 223m
Slope Gradient:	Level ⁵ Gentle ³ nd ²
Aspect:	North ¹ East ¹ South ² West ¹ None ⁵
Exposure:	Moderate ⁸ Mod. exposed ¹ nd ¹
Microtopography:	Slightly ⁴ Moderately ³ Level ¹ nd ²
Drainage:	Well ⁵ Imperfect ¹ Moderately well ¹ Rapid ¹ nd ²

Soil Characteristics

Soil Type:	ST2 ⁵ ST1 ¹ ST3-G ¹ ST15 ¹ nd ²
Parent Material:	Glacial till ¹⁰
Rooting Depth (cm):	(<30) ¹ (30-45) ² (>45) ³ nd ⁴
Duff Thickness (cm):	(0-5) ¹ (6-10) ³ (11-20) ³ nd ³



SP4

White pine / Blueberry / Bracken

Pinus strobus / *Vaccinium* spp. / *Pteridium aquilinum*

SP4a

Black spruce variant

Picea mariana

SP4b

Huckleberry variant

Gaylussacia baccata

n=47



Northeast Lake,
Queens County

Concept: This mid-successional Vegetation Type (VT) has abundant white pine, lesser but frequent black spruce and a small suite of shade-intolerant understory associates. In many stands, large diameter residual white pine are also present, having survived a previous disturbance or harvest. There are two variants: SP4a where black spruce is dominant in the overstory and SP4b where huckleberry is dominant in the understory. White pine / Blueberry / Bracken usually follows stand-replacing disturbance events such as fire or harvesting.

Vegetation: White pine is the dominant overstory tree (often in a super canopy position), along with frequent black spruce. Balsam fir, if present, is limited to the understory and is often damaged by balsam fir woolly adelgid (especially in western Nova Scotia). The shrub layer may be densely occupied by ericaceous species such as lambkill, velvet-leaf blueberry and lowbush blueberry, along with wild raisin and black spruce. Herb layer diversity is relatively low, characterized by species such as bracken, mayflower, teaberry, sarsaparilla and pink lady's slipper. Bryophyte cover is often extensive and includes Schreber's moss, broom moss and wavy dicranum.

Ecological Features

This closed-canopy forest typically forms large patches or matrix ecosystems. White pine has intermediate shade tolerance and may form an understory of young cohorts in early successional red maple, white birch and aspen forests. This life history strategy may reduce tree deformation by the white pine weevil. White pine is a long-lived species (greater than 200

years) of the Acadian Forest and, as one of the region's largest trees, may provide valuable wildlife habitat for cavity nesting birds such as owls and woodpeckers and mammals such as fishers and porcupines. Older pines found in SP4 often have fire scars and frequently contain hollow trunks. Larger white pine may develop a super canopy, increasing susceptibility

Environmental Setting: SP4 occurs on dry to fresh-moist nutrient poor soils. The deep rooting capability of white pine allows this species to access moisture on sites where water deficits occur during the growing season. This VT is usually associated with granitic tills in western Nova Scotia, but can be found scattered throughout the province wherever similar soil types occur. In north central Nova Scotia, SP4 can also be found on finer textured soils. This VT is very rare on Prince Edward Island but relatively common in New Brunswick.

Successional Dynamics: Relatively dry, nutrient poor soils and stand-replacing disturbances strongly shape both VT canopy structure and successional patterns. Historically SP4 stands originated from fire disturbance and are typically even-aged, although scattered white pine can be significantly older due to this species' greater longevity and resistance to windthrow and fire. Earlier successional stages may include a jack pine (SP1) or red pine (SP2) component. Between stand-level disturbance events, senescence and patch disturbances create opportunities for balsam fir, black spruce, red maple, red oak and white birch. This VT can persist for a relatively long time, but stands will eventually succeed to SP5 (Black spruce / Lambkill / Bracken), the edaphic climax for this successional pathway.

to lightning strikes, especially on higher relief. The acidity (low nutrient content) of the forest floor (due to the abundance of pine needles and ericaceous vegetation) reduces soil fauna, plant diversity, and vertebrate diversity and abundance. Following fire, the decay-resistant snags may stand for many decades, providing perch and cavity sites in the new forest.

Characteristic Plants	SP4		SP4a		SP4b	
	Freq. (%)	Cover (%)	Freq. (%)	Cover (%)	Freq. (%)	Cover (%)
White pine	100	58.5	100	10.7	100	37.3
Red maple	68	10.2	43	3.7	100	10.0
Black spruce	53	11.6	100	35.7	57	6.3
Red oak	37	3.4	4	3.0	57	7.3
Balsam fir	26	14.0	65	12.2	14	15.0
White birch	26	6.0	30	0.7	57	4.8
Red spruce	16	7.3	17	18.3		
Red pine	16	5.7	17	3.8	86	9.3
Large-tooth aspen	11	1.5	4	0.1	71	7.8
Grey birch	11	0.1	13	2.7	14	0.1
Tamarack			13	1.7		
Tree Layer (Mean % Cover)	80		61		74	
Red maple	89	3.7	78	0.5	100	3.1
Balsam fir	79	7.7	74	4.4	43	3.4
White pine	79	2.6	70	0.2	100	0.6
Lambkill	79	1.7	96	8.3	100	11.9
Black spruce	68	6.3	78	7.3	100	2.7
Wild raisin	63	0.4	74	1.2	57	0.2
Velvet-leaf blueberry	58	5.1	74	5.1	86	14.0
Serviceberry	58	0.3	43	0.6	29	0.1
Red oak	53	1.8	9	0.1	100	3.1
Lowbush blueberry	47	3.9	39	2.7	57	4.3
False holly	42	0.1	61	1.3	57	0.3
Huckleberry	37	2.9	17	10.0	100	34.0
Red spruce	21	0.8	9	0.2		
Witch-hazel	16	0.2	13	0.1	86	4.3
Bayberry	5	9.0			29	0.1
Grey birch	5	0.2	22	0.9		
White birch	5	0.1	22	0.4	14	0.1
Shrub Layer (Mean % Cover)	26		26		74	
Bracken	95	10.8	96	12.3	100	13.4
Starflower	84	0.6	61	0.2	86	1.4
Bunchberry	79	4.6	74	4.6	71	8.0
Wild lily-of-the-valley	79	3.2	52	0.3	57	0.1
Sarsaparilla	63	2.0	30	0.2	86	1.3
Teaberry	58	8.0	35	0.1	86	1.3
Mayflower	53	0.5	65	0.3	86	0.8
Pink lady's slipper	53	0.1	57	0.1	71	0.1
Twinflower	47	2.7	17	0.2	14	0.1
Partridge-berry	47	1.9	26	0.1	29	0.1
Indian pipe	47	0.1	13	0.1	57	0.1
Bluebead lily	42	0.7	26	0.8		
Goldthread	26	0.2	26	5.3		
Indian cucumber root	26	0.1	4	0.1	29	0.1
Painted trillium	26	0.1	26	0.1	29	0.1
Interrupted fern	21	0.2	4	0.2		
Herb Layer (Mean % Cover)	30		18		24	
Schreber's moss	100	21.1	100	67.7	86	8.4
Bazzania	63	2.3	43	1.4	71	1.0
Broom moss	63	1.0	39	1.4	43	1.2
Wavy dicranum	58	1.1	96	6.6	43	1.1
Hypnum moss	53	1.1	30	1.5	71	2.0
Stair-step moss	32	4.2	74	9.7	29	4.0
Hair-cap moss	32	1.9	17	0.1		
Pin cushion moss	26	0.1	9	0.1	43	0.1
Grey reindeer lichen	16	0.1	39	3.2	29	0.6
Ladies' tresses	11	0.2	48	2.3	14	0.1
Bryo-Lichen Layer (Mean % Cover)	27		86		12	

Distinguishing Features

This is a softwood forest dominated by white pine with lesser amounts of black spruce and red maple. Variant SP4a has dominant black spruce. Variant SP4b exhibits high cover to huckleberry in the understory. Lambkill and blueberry are common.



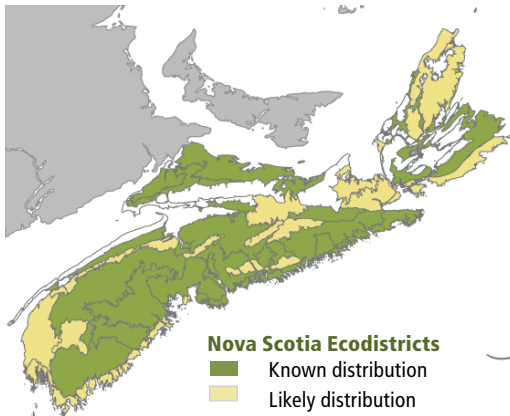
Pink lady's slipper
[Reg Newell]

Site Characteristics

Slope Position: Level³ Middle³ Upper³ Other¹
 Surface Stoniness: (Non - Slightly)⁶ (Very - Excessively)³ (Moderately)¹
 Bedrock Outcrop: (Non-rocky)⁸ (Slightly - Moderately)²
 Elevation Range: 13 - 207m
 Slope Gradient: Level⁶ Level³ Other¹
 Aspect: North³ East¹ South² West¹ None³
 Exposure: Moderate⁹ Other¹
 Microtopography: Slightly⁵ Level² Moderately² Strongly¹
 Drainage: Well⁵ Moderately well² Imperfect¹ Other²

Soil Characteristics

Soil Type: ST2³ ST1² ST3² ST2-L¹ ST15-L¹ ST6¹
 Parent Material: Glacial till⁹ Glaciofluvial¹
 Rooting Depth (cm): (<30)² (30-45)³ (>45)⁴ nd¹
 Duff Thickness (cm): (0-5)¹ (6-10)⁶ (11-20)³



Nova Scotia Ecodistricts
 ■ Known distribution
 ■ Likely distribution

SP5

Black spruce / Lambkill / Bracken

Picea mariana / *Kalmia angustifolium* /
Pteridium aquilinum

n=11



Jersey,
Cumberland County

Concept: This early to late successional Vegetation Type (VT) has a coniferous tree canopy dominated by black spruce and a well-developed woody shrub layer. Black spruce / Lambkill / Bracken usually follows stand-replacing disturbance such as fire, windthrow or harvesting.

Vegetation: Black spruce is the dominant overstory tree with lesser balsam fir. Hybrid (red/black) spruce may also form a significant portion of the canopy. Red maple, white birch, white pine and tamarack are scattered throughout some stands. The shrub layer is dominated by balsam fir and black spruce with lesser red maple. Other characteristic species include wild raisin, lambkill, velvet-leaf blueberry and false holly. Herb and bryophyte diversity is generally low, with bracken the most common herb and smaller amounts of pink lady's slipper, cow-wheat and teaberry. Schreber's moss, wavy dicranum and stair-step moss usually dominate the bryophyte layer. The presence of creeping snowberry, cinnamon fern, stair-step moss and patches of sphagnum moss indicate elevated moisture levels.

Ecological Features

The canopy of this large-patch and sometimes matrix forest can be closed or open depending on past disturbances and site conditions. Excessive surface stoniness is common for this vegetation type, limiting the extent of canopy development. Black spruce has intermediate shade tolerance and does not seed well under closed canopies.

Vegetative regeneration by layering is common in black spruce, especially on sites where there is a thick duff layer and adequate soil moisture. The accumulation of spruce and pine needles on the ground results in a poorly-developed humus layer and impoverished soil fauna. Spruce grouse eat conifer needles in winter and may be found in this habitat. Dwarf

Environmental Setting: SP5 is associated with fresh to moist, nutrient poor soils. Thick, ericaceous duff layers are common which limit regeneration by seed unless disturbance creates more exposed micro-sites. Without disturbance, black spruce regeneration is usually by vegetative layering. This VT can be found throughout Nova Scotia on a variety of soils with low nutrient status. This VT is widespread and common across the Maritime Provinces.

Successional Dynamics: Nutrient poor soils associated with this VT lead to an edaphic climax community dominated by black spruce. Historically SP5 stands originated from fire disturbance creating mainly even-aged stands. With less frequent disturbance events, white pine may become more prominent in the overstory, possibly leading to a SP4 (White pine / Blueberry / Bracken) community. White pine may also develop a super canopy overtopping an even-aged forest condition of black spruce. SP5 is the successional endpoint for many VTs in the SP group.

mistletoe sometimes creates dense witches brooms that are important nest and rest areas for small mammals. Mature forests develop abundant old man's beard, a lichen, sought for nest material by northern parula warblers and other species, and for winter food by deer foraging on fallen trees.

Characteristic Plants

SP5

	Freq. (%)	Cover (%)
Black spruce	100	51.1
White pine	55	1.0
Balsam fir	36	16.5
White birch	36	3.3
Red spruce	27	3.3
Red maple	18	6.0
Tamarack	18	0.1
Tree Layer (Mean % Cover)		62
Lambkill	91	12.2
Black spruce	82	10.8
Wild raisin	64	0.3
Red maple	64	0.2
Balsam fir	55	3.0
Lowbush blueberry	55	1.9
Velvet-leaf blueberry	55	1.4
False holly	36	0.5
White birch	27	0.1
Shrub Layer (Mean % Cover)		26
Bunchberry	82	0.9
Bracken	73	12.8
Teaberry	55	0.6
Mayflower	45	0.1
Painted trillium	36	0.1
Wild lily-of-the-valley	36	0.1
Cow-wheat	27	0.1
Herb Layer (Mean % Cover)		11
Schreber's moss	100	74.0
Wavy dicranum	91	2.8
Grey reindeer lichen	73	1.2
Broom moss	64	3.6
Bazzania	55	4.3
Stair-step moss	45	11.0
Hypnum moss	45	3.8
Plume moss	45	2.8
Ladies' tresses	36	0.8
Bryo-Lichen Layer (Mean % Cover)		92

Distinguishing Features

This softwood forest of black spruce is found on poor, dry to fresh-moist soils. Most shrubs and herbs represent these site conditions, but in moist depressions small patches of sphagnum, creeping snowberry and cinnamon fern are present.



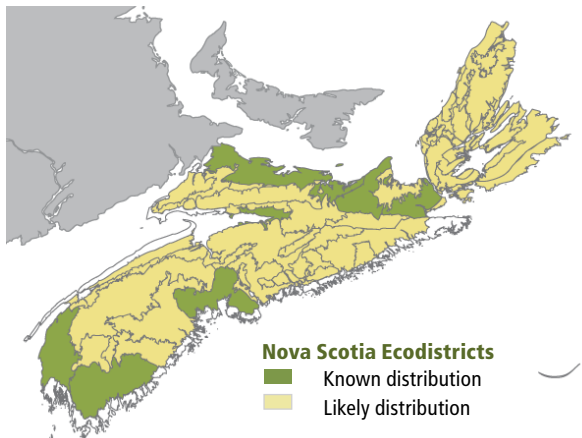
Lambkill

Site Characteristics

Slope Position:	Level ⁴ Upper ⁴ Crest ¹ Middle ¹
Surface Stoniness:	(Non - Slightly) ⁷ (Moderately) ² (Very - Excessively) ¹
Bedrock Outcrop:	(Non-rocky) ⁷ (Very - Excessively) ² (Slightly - Moderately) ¹
Elevation Range:	20 - 232m
Slope Gradient:	Level ⁴ Gentle ⁴ Moderate ¹ nd ¹
Aspect:	North ² East ¹ South ¹ West ¹ None ⁵
Exposure:	Moderate ⁷ Mod. exposed ² Exposed ¹
Microtopography:	Level ⁵ Slightly ³ Moderately ²
Drainage:	Moderately well ³ Rapid ³ Well ³ Imperfect ¹

Soil Characteristics

Soil Type:	ST1 ³ ST2 ³ ST15 ² ST2-L ¹ ST6 ¹
Parent Material:	Glacial till ⁶ Glaciofluvial ³ Till/Bedrock ¹
Rooting Depth (cm):	(<30) ² (30-45) ⁴ (>45) ³ nd ¹
Duff Thickness (cm):	(0-5) ¹ (6-10) ² (11-20) ⁵ (21-40) ¹ nd ¹



SP6

Black spruce – Red maple / Bracken – Sarsaparilla

Picea mariana – *Acer rubrum* /
Pteridium aquilinum – *Aralia nudicaulis*

n=7



Thomson Station,
Cumberland County

Concept: This early to mid-successional Vegetation Type (VT) supports a mixedwood canopy and a relatively broad suite of herbaceous plants compared to other black spruce dominated VTs. Black spruce – Red maple / Bracken – Sarsaparilla usually follows stand-replacing disturbance events such as fire, windthrow or harvesting.

Vegetation: Black spruce is the dominant overstory tree, but red maple (with its greater potential for crown expansion) also occupies a large proportion of the canopy. White birch, balsam fir, hybrid (red/black) spruce, trembling aspen and white pine can also be found in this VT. Regenerating black spruce and balsam fir dominate the shrub layer along with wild raisin, lambkill, velvet-leaf blueberry and false holly. Bracken and bunchberry are the main species in the herb layer, but a variety of other plants can also be found including sarsaparilla, teaberry and starflower. Bryophyte coverage is generally low with leaf litter dominating the forest floor.

Ecological Features

This forest occurs as small to large patches in many parts of the province. It can exhibit closed or open canopies, depending on past disturbances and the degree of surface stoniness, which is often excessive in this ecosystem. Black spruce has intermediate shade

tolerance and does not seed well under closed canopies; however vegetative regeneration by layering is common especially where there is a thick duff layer and adequate moisture. Dwarf mistletoe sometimes creates dense witches brooms, providing important

nest and rest areas for small mammals. Mature forests develop abundant old man's beard, a lichen sought for nest material by northern parula warblers and other species, and for winter food by deer foraging on fallen trees.

Environmental Setting: SP6 is associated with fresh to moist, nutrient poor soils. This VT can be found throughout Nova Scotia on a variety of soils with low nutrient status. This VT is widespread and common across the Maritime provinces.

Successional Dynamics: Nutrient poor soils and stand-replacing disturbances strongly shape both VT canopy structure and successional patterns. This generally even-aged VT usually follows stand-replacing disturbances, with harvesting the most common cause. In the absence of similar disturbance events, SP6 may succeed to a more softwood dominant stand with SP4a (White pine / Blueberry / Bracken variant Black spruce) and SP5 (Black spruce / Lambkill / Bracken) possible outcomes. SP5 is the edaphic climax for this successional pathway.

Characteristic Plants

SP6

	Freq. (%)	Cover (%)
Black spruce	100	34.0
Red maple	100	19.7
White birch	86	3.7
White pine	57	6.8
Balsam fir	43	8.7
Large-tooth aspen	29	6.0
Grey birch	14	15.0
Red oak	14	8.0
Jack pine	14	5.0
Red pine	14	3.0
Red spruce	14	3.0
White spruce	14	0.1
Tree Layer (Mean % Cover)		71
Black spruce	100	7.9
Balsam fir	86	14.9
Lambkill	86	11.3
Red maple	86	2.0
Wild raisin	86	0.5
Velvet-leaf blueberry	71	2.5
Red oak	71	0.1
Lowbush blueberry	57	6.4
White pine	43	0.7
False holly	43	0.2
Serviceberry	43	0.1
Striped maple	29	0.4
Willows	29	0.1
Shrub Layer (Mean % Cover)		46
Bunchberry	100	5.2
Starflower	100	0.3
Bracken	86	6.2
Wild lily-of-the-valley	71	1.0
Pink lady's slipper	71	0.1
Teaberry	57	4.6
Sarsaparilla	57	1.1
Goldthread	43	0.5
Bluebead lily	43	0.1
Ground pine	43	0.1
Mayflower	43	0.1
Partridge-berry	43	0.1
Twinflower	43	0.1
Interrupted fern	29	1.8
Bristly club-moss	29	0.1
Indian cucumber root	29	0.1
New York fern	29	0.1
Herb Layer (Mean % Cover)		16
Schreber's moss	100	10.2
Hypnum moss	71	5.5
Bazzania	71	5.1
Wavy dicranum	71	2.5
Broom moss	71	1.0
Hair-cap moss	71	1.0
Ladies' tresses	43	9.0
Stair-step moss	43	5.5
Grey reindeer lichen	43	0.1
Bryo-Lichen Layer (Mean % Cover)		28

Distinguishing Features

A mixedwood forest usually dominated by black spruce with a significant component of red maple and scattered other species. The shrub and herb layer is indicative of poor and dry to fresh conditions represented by lambkill and bracken. Moss cover is reduced as red maple cover increases.



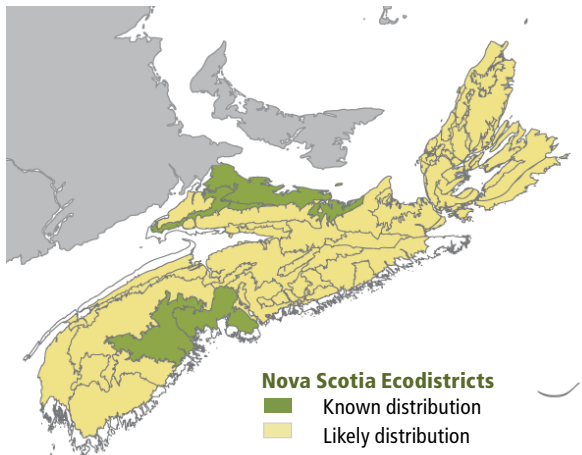
Black spruce cones

Site Characteristics

Slope Position:	Upper ⁴ Lower ³ Middle ³
Surface Stoniness:	(Non - Slightly) ⁴ (Very - Excessively) ⁴ (Moderately) ²
Bedrock Outcrop:	(Non-rocky) ⁷ (Slightly - Moderately) ³
Elevation Range:	46 - 187m
Slope Gradient:	Gentle ⁶ Moderate ³ nd ¹
Aspect:	North ⁴ East ² West ⁴
Exposure:	Moderate ¹⁰
Microtopography:	Moderately ⁸ Slightly ³ Level ¹
Drainage:	Well ⁸ Imperfect ¹ Moderately well ¹

Soil Characteristics

Soil Type:	ST2 ⁸ ST3-G ¹ ST16 ¹
Parent Material:	Glacial till ⁸ Till/Bedrock ¹ nd ¹
Rooting Depth (cm):	(<30) ³ (30-45) ² (>45) ⁴ nd ¹
Duff Thickness (cm):	(0-5) ¹ (6-10) ⁵ (11-20) ³ nd ¹



SP7

Black spruce / False holly / Ladies' tresses sphagnum

Picea mariana / *Nemopanthus mucronata* /
Sphagnum capillifolium

n=39



Black Lake,
Cumberland County

Concept: This edaphic Vegetation Type (VT) has abundant black spruce and a well-developed woody shrub layer. Trees often have a hybridized appearance with traits of both black and red spruce expressed. Black spruce / False holly / Ladies' tresses occupies moister site conditions between drier upland spruce-pine types (SP1, SP2, SP3, SP4, SP5) and wet black spruce types (WC1, WC2, WC3, WC4).

Vegetation: Black spruce is the dominant overstory tree along with tamarack, red maple and balsam fir. Hybrid (red/black) spruce occurs on sites with slightly higher fertility. The shrub layer is occupied by ericaceous species such as lambkill, velvet-leaf blueberry and lowbush blueberry, along with false holly and wild raisin. A variety of herb species are possible, but the dominant plants are bunchberry, bracken and goldthread. Scattered sedges, creeping snowberry and cinnamon fern indicate the presence of increased moisture; while bracken, lady slipper and mayflower indicate low nutrient status. Bryophyte cover is dominated by Schreber's moss, wavy dicranum and stair-step moss. Pockets of sphagnum moss indicate elevated moisture levels.

Ecological Features

This forest occurs as large-patch and sometimes matrix in many parts of the province. It can exhibit closed or open canopies, depending on past disturbances and the degree of surface stoniness, which is often excessive in this ecosystem. Black spruce has intermediate shade tolerance and does not seed well under

closed canopies. Vegetative regeneration by layering is common especially where there is a thick duff layer. Spruce grouse eat conifer needles in winter and may be found in this habitat. This forest may provide habitat for wetland associated species such as olive-sided flycatchers, mourning warblers, star-nosed moles and

Environmental Setting: SP7 is found throughout Nova Scotia on a variety of moist, nutrient poor soil types. Thick, ericaceous duff layers are common, limiting tree regeneration by seed unless disturbance creates more exposed micro-sites. Without disturbance, black spruce regeneration is usually by vegetative layering. Sites supporting this VT tend to have minimal mounding due to the shallow rooted nature of the overstory spruce. This VT is widespread and common across the Maritime Provinces.

Successional Dynamics: Moist, nutrient poor soils associated with this VT lead to an edaphic climax community dominated by black spruce. This generally even-aged VT follows stand-replacing disturbances such as fire, windthrow and harvesting. Due to its unique ecological setting, this VT does not shift to other vegetation types after disturbance, but does change in development stage. Under less frequent disturbance events, natural senescence can create some unevenness in both age class and stand structure.

four-toed salamanders. Dwarf mistletoe sometimes creates dense witches brooms that may provide nest and rest areas for small mammals. Mature forests develop abundant old man's beard, lichen that provides important nest and forage material for some species.

Characteristic Plants

SP7

	Freq. (%)	Cover (%)
Black spruce	95	51.6
Balsam fir	56	10.9
Red maple	41	2.3
Tamarack	36	6.6
White pine	23	1.2
White spruce	10	7.0
Tree Layer (Mean % Cover)		66
Lambkill	90	7.5
Balsam fir	90	5.2
Black spruce	77	9.0
False holly	77	1.6
Velvet-leaf blueberry	74	4.3
Wild raisin	74	0.7
Red maple	74	0.5
Lowbush blueberry	41	0.9
Serviceberry	26	0.1
Shrub Layer (Mean % Cover)		25
Bunchberry	90	8.7
Bracken	69	11.4
Goldthread	67	1.2
Wild lily-of-the-valley	64	0.5
Cinnamon fern	49	1.5
Creeping snowberry	44	2.4
Starflower	44	0.2
Mayflower	36	0.3
Twinflower	33	2.2
Pink lady's slipper	26	0.1
Teaberry	23	0.2
Bluebead lily	21	0.8
Three seeded sedge	21	0.7
Herb Layer (Mean % Cover)		21
Schreber's moss	100	63.6
Wavy dicranum	92	4.2
Stair-step moss	79	17.2
Ladies' tresses	79	4.3
Bazzania	62	6.6
Broom moss	51	4.1
Grey reindeer lichen	49	2.4
Cup lichens	41	0.4
Hair-cap moss	36	0.3
Common green sphagnum	33	0.1
Plume moss	28	1.0
Hypnum moss	26	6.8
Bryo-Lichen Layer (Mean % Cover)		95

Distinguishing Features

This softwood forest of black spruce occurs on imperfectly drained soils. Species indicative of moist soils should be present, especially sphagnum in the depressions, cinnamon fern and/or creeping snowberry. False holly and sedges are common.



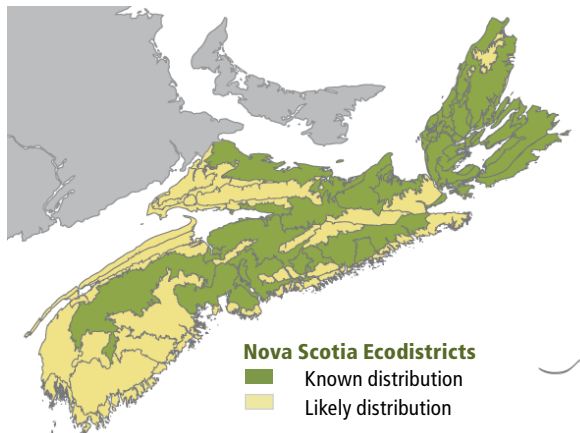
Imperfectly drained soil

Site Characteristics

Slope Position:	Level ⁶ Middle ² Lower ¹ Upper ¹
Surface Stoniness:	(Non - Slightly) ⁸ (Very - Excessively) ¹ (Moderately) ¹
Bedrock Outcrop:	(Non-rocky) ⁹ (Slightly - Moderately) ¹
Elevation Range:	12 - 407m
Slope Gradient:	Level ⁷ Gentle ³
Aspect:	North ¹ East ² South ¹ None ⁶
Exposure:	Moderate ⁸ Mod. exposed ¹ Exposed ¹
Microtopography:	Slightly ⁴ Level ³ Moderately ² Strongly ¹
Drainage:	Imperfect ⁹ Poor ¹

Soil Characteristics

Soil Type:	ST6 ⁵ ST3 ³ ST16 ¹ Other ¹
Parent Material:	Glacial till ⁸ Till/Bedrock ¹ Glaciofluvial ¹
Rooting Depth (cm):	(<30) ⁸ (30-45) ¹ (>45) ¹
Duff Thickness (cm):	(6-10) ³ (11-20) ⁵ (21+) ¹ nd ¹



Nova Scotia Ecodistricts
 ■ Known distribution
 ■ Likely distribution

SP8

Black spruce – Aspen / Bracken – Sarsaparilla

Picea mariana – *Populus tremuloides* –
Populus grandidentata / *Pteridium aquilinum* –
Aralia nudicaulis

n=6



Mount William,
Pictou County

Concept: This early successional Vegetation Type (VT) supports a mixedwood canopy of black spruce and pioneer hardwoods including large-tooth aspen and trembling aspen. Residual trees having survived past disturbances are often present, including large over-topping white pine and red oak. These residuals have important ecological value, but their presence has minimal significance in classifying this VT. Black spruce – Aspen / Bracken – Sarsaparilla usually follows stand-replacing disturbance events such as fire, windthrow or harvesting.

Vegetation: Black spruce, large-tooth aspen and trembling aspen are the dominant overstory trees, along with white and grey birch, red maple and red oak. The shrub layer is dominated by lambkill, velvet-leaf blueberry and wild raisin. Black spruce, white pine, balsam fir and red maple regeneration can also be extensive. The herb layer consists primarily of sarsaparilla, bracken, bunchberry and wild lily-of-the-valley. Schreber's moss and wavy dicranum are the dominant bryophytes.

Ecological Features

This closed or open forest forms large-patch ecosystems following stand-level disturbances in many parts of the province. It provides several ecological functions including nutrient cycling, rapid site regeneration, and nurse crop protection for later successional species such as white pine and red spruce. Excessive surface stoniness

is common, limiting the extent of canopy development. Black spruce has intermediate shade tolerance and does not seed well under closed canopies. Vegetative regeneration by layering is common in black spruce, producing small clonal groups. However aspen regenerates profusely from root suckers when disturbed, producing extensive

Environmental Setting: SP8 is associated with dry to fresh-moist, nutrient poor soils. This VT is commonly found in the Northumberland Bras d'Or ecoregion but can be found throughout Nova Scotia on a variety of soils with low nutrient status. This VT is widespread and common across the Maritime Provinces, although large-tooth aspen is found less frequently outside Nova Scotia and southern New Brunswick.

Successional Dynamics: Nutrient poor soils and stand-replacing disturbances strongly shape both VT canopy structure and successional patterns. SP8 is primarily an even-aged, early successional VT that follows stand-level disturbances such as fire, windthrow or harvesting. Possible successional stages include SP4a (White pine / Blueberry / Bracken variant Black spruce), SP5 (Black spruce / Lambkill / Bracken), SP6 (Black spruce – Red maple / Bracken – Sarsaparilla) and SP9 (Red oak – White pine / Teaberry).

clonal colonies which may also support large fungal associates such as shoe-string root rot (honey mushroom). Aspen is an important tree for cavity nesting birds, and its buds provide winter food for ruffed grouse. Other bird species that may be found in this habitat are vireos, ovenbirds and veery.

Characteristic Plants

SP8

	Freq. (%)	Cover (%)
Black spruce	100	27.8
Red maple	83	8.2
Balsam fir	83	6.0
Large-tooth aspen	67	29.5
Trembling aspen	33	13.0
Red oak	33	6.5
Hemlock	33	0.1
White pine	17	20.0
White spruce	17	20.0
Red spruce	17	8.0
Grey birch	17	3.0
Tamarack	17	0.1
White birch	17	0.1
Tree Layer (Mean % Cover)		74
Balsam fir	100	8.8
Lambkill	83	10.9
Velvet-leaf blueberry	83	4.2
Black spruce	83	1.8
Wild raisin	83	0.9
Red maple	83	0.7
White pine	67	3.2
Fly-honeysuckle	50	0.1
Large-tooth aspen	50	0.1
Serviceberry	50	0.1
Lowbush blueberry	33	1.3
Red oak	33	0.6
Striped maple	33	0.2
False holly	33	0.1
Trembling aspen	33	0.1
White birch	33	0.1
Shrub Layer (Mean % Cover)		28
Wild lily-of-the-valley	100	6.4
Sarsaparilla	100	1.5
Bracken	83	8.1
Twinflower	83	1.5
Starflower	83	1.1
Bunchberry	67	3.1
Partridge-berry	67	1.4
Teaberry	50	5.8
Interrupted fern	50	3.2
Bluebead lily	50	0.3
Wood aster	50	0.2
Cow-wheat	33	0.1
Goldthread	33	0.1
Ground pine	33	0.1
Indian cucumber root	33	0.1
Rice grass	33	0.1
Herb Layer (Mean % Cover)		25
Schreber's moss	100	4.9
Wavy dicranum	83	1.4
Bazzania	83	0.3
Broom moss	67	0.2
Stair-step moss	50	0.7
Hypnum moss	50	0.2
Common green sphagnum	33	0.8
Shaggy moss	33	0.1
Bryo-Lichen Layer (Mean % Cover)		8

Distinguishing Features

A mixedwood forest of black spruce on well drained nutrient poor soils, with either large-tooth or trembling aspen as the dominant hardwood species. Sarsaparilla, bracken and bunchberry give a leafy appearance to the understory. Lambkill and blueberry are extensive.



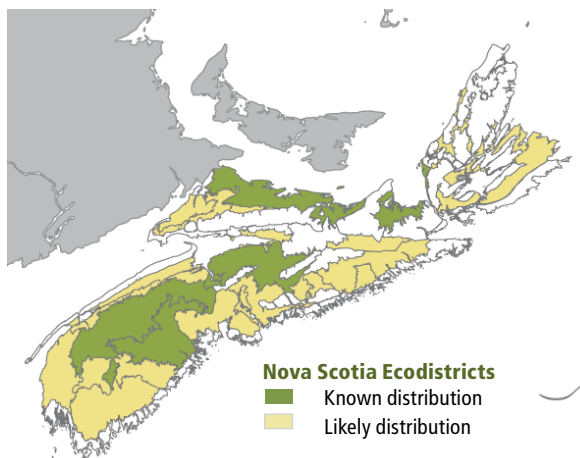
Round-leaved pyrola

Site Characteristics

Slope Position:	Level ³ Middle ³ Lower ² Upper ²
Surface Stoniness:	(Non - Slightly) ⁸ (Moderately) ²
Bedrock Outcrop:	(Non-rocky) ¹⁰
Elevation Range:	33 - 153m
Slope Gradient:	Gentle ⁸ Level ²
Aspect:	North ⁵ South ² West ³
Exposure:	Moderate ⁸ Mod. sheltered ¹ Mod. exposed ¹
Microtopography:	Moderately ⁵ Strongly ³ Level ²
Drainage:	Imperfect ⁵ Well ³ Moderately well ²

Soil Characteristics

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



SP9

Red oak – White pine / Teaberry

Quercus rubra – *Pinus strobus* / *Gaultheria procumbens*

n=11



Round Lake,
Queens County

Concept: This early to late successional mixedwood Vegetation Type (VT) has abundant white pine and red oak, a significant component of shade-intolerant hardwoods and a well-developed woody shrub layer. Red oak – White pine / Teaberry usually follows stand-replacing disturbances such as fire, windthrow or harvesting.

Vegetation: White pine and red oak are the dominant overstory trees along with red maple, white birch and both aspen species. White pine may also occur in a super canopy position – residual survivors from past disturbance events. The shrub layer is primarily ericaceous species such as velvet-leaf blueberry, lowbush blueberry and lambkill along with regenerating white pine, red oak, black spruce and red maple. Other woody shrubs may include serviceberry, witch-hazel and wild raisin. The herb layer includes many species associated with dry, poor sites such as teaberry, bracken, mayflower, cow-wheat, princes'-pine, poverty grass and round-leaved pyrola. The bryophyte layer is poorly developed.

Ecological Features

This closed-canopy, small- to large-patch forest occurs on sites underlain by dry, nutrient poor, coarse soils derived from granites and quartzites. The longevity of the dominant tree species supports development opportunities for old growth forests, depending on

the interval between stand initiating disturbances. Red oak is a valuable mast tree for wildlife species including squirrels, bear, ruffed grouse and deer. This tree has intermediate shade tolerance and will occur in both the understory and overstory. Regeneration of red oak is

difficult; however young trees sprout vigorously following understory fire, providing a competitive advantage where this gap disturbance occurs. Oak is the preferred host of maitake, or hen-of-the-woods, a prized edible mushroom.

Characteristic Plants	SP9	
	Freq. (%)	Cover (%)
White pine	100	24.3
Red oak	100	24.0
Red maple	90	7.9
White birch	70	6.6
Large-tooth aspen	40	12.0
Black spruce	40	4.3
Beech	20	24.5
Balsam fir	20	6.0
Trembling aspen	10	5.0
Hemlock	10	4.0
White spruce	10	4.0
Hybrid spruce	10	2.0
Tamarack	10	2.0
Tree Layer (Mean % Cover)		74
Red oak	90	6.0
Velvet-leaf blueberry	80	13.6
Red maple	80	2.5
White pine	80	1.5
Lambkill	70	6.0
Black spruce	70	4.9
Wild raisin	70	0.8
Balsam fir	60	5.2
Witch-hazel	50	3.6
Serviceberry	50	0.1
Lowbush blueberry	40	5.0
Beech	40	4.3
Huckleberry	30	2.8
Large-tooth aspen	30	0.5
Striped maple	30	0.1
Shrub Layer (Mean % Cover)		39
Teaberry	90	4.3
Bracken	80	8.2
Bunchberry	80	4.8
Wild lily-of-the-valley	80	1.2
Mayflower	80	1.1
Starflower	80	0.1
Sarsaparilla	70	1.8
Partridge-berry	70	1.7
Pink lady's slipper	50	0.3
Indian cucumber root	40	0.1
Indian pipe	40	0.1
Rice grass	30	0.3
Round-leaved pyrola	30	0.2
Wood aster	30	0.2
Cow-wheat	30	0.1
Painted trillium	30	0.1
Princes'-pine	30	0.1
Rock polypody	30	0.1
Herb Layer (Mean % Cover)		20
Hypnum moss	90	7.5
Broom moss	90	1.3
Schreber's moss	80	2.0
Grey reindeer lichen	40	0.8
Wavy dicranum	40	0.6
Stair-step moss	40	0.5
Cup lichens	40	0.1
Bazzania	30	3.8
Pin cushion moss	30	0.3
Bryo-Lichen Layer (Mean % Cover)		12

Distinguishing Features

White pine and red oak are diagnostic of this hardwood-dominated mixedwood. Red maple, white birch and/or aspen are a significant component. The shrub and herb layer is indicative of poor and dry to fresh conditions. Round-leaved pyrola, princes'-pine, mayflower and teaberry are all good indicator species for this vegetation type.



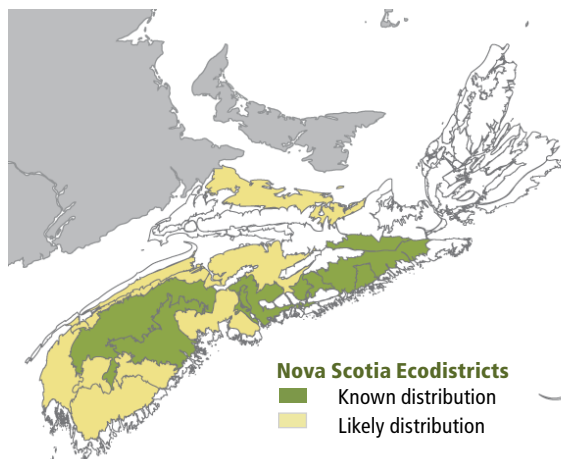
Princes'-pine

Site Characteristics

Slope Position:	Upper ⁶ Middle ³ Crest ¹
Surface Stoniness:	(Moderately) ⁶ (Very - Excessively) ³ (Non - Slightly) ¹
Bedrock Outcrop:	(Non-rocky) ⁹ (Slightly - Moderately) ¹
Elevation Range:	61 - 201m
Slope Gradient:	Gentle ⁵ Steep ² Level ¹ Moderate ¹ nd ¹
Aspect:	North ² East ² South ² West ³ None ¹
Exposure:	Moderate ⁷ Mod. exposed ³
Microtopography:	Level ⁴ Slightly ⁴ Moderately ²
Drainage:	Well ⁷ Rapid ³

Soil Characteristics

Soil Type:	ST2 ⁸ ST2-G ¹ ST5 ¹
Parent Material:	Glacial till ⁹ Till/Bedrock ¹
Rooting Depth (cm):	(30-45) ³ (>45) ⁴ nd ³
Duff Thickness (cm):	(0-5) ³ (6-10) ³ (11-20) ³ nd ¹



Nova Scotia Ecodistricts
 ■ Known distribution
 ■ Likely distribution

SP10

Tamarack / Wild raisin / Schreber's moss

Larix laricina / *Viburnum nudum* /
Pleurozium schreberi

n=3



Stubbart Road, Margaree,
Inverness County

Concept: This early successional Vegetation Type (VT) has an overstory dominated by tamarack along with scattered white spruce. The susceptibility of tamarack to several defoliating insects reduces the likelihood this VT will attain advanced maturity. Tamarack / Wild raisin / Schreber's moss usually follows stand-replacing disturbances such as fire, windthrow or harvesting.

Vegetation: Tamarack is the dominant overstory tree. The shrub layer consists mainly of wild raisin and regenerating black spruce. Typical woodland flora are found in the herb layer, along with species associated with past harvesting (e.g. asters, goldenrods, grasses and sedges). The bryophyte layer includes Schreber's moss, hair-cap moss, plume moss and broom moss. Moss coverage is often interspersed with needle carpet.

Ecological Features

This early successional ecosystem is a closed-canopy small-patch forest occurring in eastern Nova Scotia. Tamarack has a dense, strong wood, with high decay resistance, which contributes to the development of substantial coarse woody material, particularly when higher

mortality occurs after insect predation, disease, or blowdown and breakage in wind storms. Tamarack is very intolerant of shade and will not regenerate under a closed canopy. Tamarack seeds are eaten by purple finches, and red and white-winged crossbills. Small mammals

cache fallen cones, while porcupines and snowshoe hare eat tamarack bark. The larch sawfly periodically reaches epidemic levels, defoliating trees over successive years. The larch slippery jack fungus forms a mycorrhizal relationship with larch and often fruits abundantly in the fall.

Characteristic Plants

SP10

	Freq. (%)	Cover (%)
Tamarack	100	46.0
White spruce	100	3.3
White birch	67	4.0
Balsam fir	33	30.0
Black spruce	33	4.0
Tree Layer (Mean % Cover)		63
Black spruce	100	4.0
Wild raisin	100	1.0
False holly	67	0.8
Lowbush blueberry	67	0.1
Mountain-ash	67	0.1
Red maple	67	0.1
Balsam fir	33	7.0
Lambkill	33	5.0
Tamarack	33	3.0
White spruce	33	1.0
Pin cherry	33	0.1
Red-berried elder	33	0.1
Shrub Layer (Mean % Cover)		11
Starflower	100	0.1
Wild lily-of-the-valley	67	1.6
Goldthread	67	1.0
Evergreen wood fern	67	0.4
Bunchberry	33	7.0
Common speedwell	33	3.0
Brownish sedge	33	1.0
Three seeded sedge	33	1.0
Bladder sedge	33	0.1
Calico aster	33	0.1
Cinnamon fern	33	0.1
Common woodrush	33	0.1
Dwarf raspberry	33	0.1
Ground pine	33	0.1
Hair fescue	33	0.1
Hickey's club-moss	33	0.1
Ox-eye daisy	33	0.1
Pine-sap	33	0.1
Poverty grass	33	0.1
Rough goldenrod	33	0.1
Shinleaf	33	0.1
Spreading sedge	33	0.1
Tall white aster	33	0.1
Violets	33	0.1
Herb Layer (Mean % Cover)		7
Broom moss	100	0.2
Schreber's moss	100	43.3
Hair-cap moss	100	1.3
Plume moss	100	0.5
Stair-step moss	67	16.5
Wavy dicranum	67	2.0
Hypnum moss	33	2.0
Shaggy moss	33	0.5
Bazzania	33	0.1
Common green sphagnum	33	0.1
Dicranums	33	0.1
Pin cushion moss	33	0.1
Fine sphagnum	33	0.1
Bryo-Lichen Layer (Mean % Cover)		59

Distinguishing Features

A softwood forest dominated by tamarack on well to imperfectly drained soils and not found on old field sites. Asters, goldenrods, sedges and grasses are common in the understory.



Tamarack

Site Characteristics

Slope Position:	Level ¹⁰
Surface Stoniness:	(Non - Slightly) ⁷ (Very - Excessively) ³
Bedrock Outcrop:	(Non-rocky) ¹⁰
Elevation Range:	37 - 70m
Slope Gradient:	Level ¹⁰
Aspect:	East ³ None ⁷
Exposure:	Moderate ¹⁰
Microtopography:	Moderately ¹⁰
Drainage:	Imperfect ³ Moderately well ³ Well ³

Soil Characteristics

Soil Type:	ST2 ⁷ ST3 ³
Parent Material:	Glacial till ⁷ Glaciofluvial ³
Rooting Depth (cm):	(30-45) ⁷ (>45) ³
Duff Thickness (cm):	(0-5) ³ (6-10) ³ (11-20) ³

