

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.

Environmental Setting: SH4 is mainly associated with dry to fresh, nutrient poor to 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 Island. It is relatively common across southern and central New Brunswick but absent from Prince Edward Island.

Successional Dynamics: SH4 is a late successional climatic climax VT dominated by red spruce and white pine. It can develop from early successional VTs including IH1 (Large-tooth aspen / Lambkill / Bracken) and IH2 (Red oak – Red maple / Witch-hazel) and from mid-successional types such as SH5 (Red spruce - Balsam fir / Schreber's moss) and SH9 (Balsam fir - Black spruce / Blueberry). This VT is unlikely to shift to SH3 (Red spruce - Hemlock / Wild lily-of-the-valley) since hemlock prefers sites with greater moisture and fertility. Early successional stages can be by-passed if at the time of disturbance advanced red spruce and white pine 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 be maintained through gap replacement.

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 whitewinged and red crossbills eat red spruce and white pine seeds. Creeping rattlesnake plantain is the only known rare plant.

| Red spruce 100 43.2 100 51.5 White pine 100 43.2 100 51.5 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 4.8 3.0 Large-tooth aspen 11 4.0 8 3.0 Hemlock 11 3.7 17 2.5 Tree Layer (Mean % Cover) 78 76 76 Balsam fir 93 3.3 92 5.0 Red apple 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 <th rowspan="2">Characteristic Plants</th> <th colspan="2">SH4</th> <th colspan="2">SH4a</th> | Characteristic Plants | SH4 | | SH4a | | |
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| 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 | | 13 | | 72 | | |
| 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 | • , , , | 96 | | 100 | | |
| 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 | | | | | | |
| 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 | | | | | | |
| 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 | | | | | | |
| 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 | Stair-step moss | 59 | 5.2 | 92 | 5.1 | |
| 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 | Wavy dicranum | 56 | 2.3 | 75 | 4.4 | |
| 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 | | 44 | 1.0 | 58 | 0.4 | |
| Ladies' tresses 22 1.1 25 0.7 Hair-cap moss 19 0.3 25 0.4 | Cup lichens | 41 | 0.1 | 17 | 0.1 | |
| Hair-cap moss 19 0.3 25 0.4 | | 37 | 0.2 | 25 | 0.2 | |
| · · | Ladies' tresses | 22 | 1.1 | 25 | 0.7 | |
| Bryo-Lichen Layer (Mean % Cover) 45 83 | 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

20 - 255m Elevation Range:

Gentle⁴ Level² Moderate² Steep¹ nd¹ Slope Gradient: North² East² South¹ West² None³ Aspect: 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): $(<30)^1 (30-45)^5 (>45)^3 nd^1$ Duff Thickness (cm): (6-10)2 (11-20)6 (21-40)1 nd1

