

WC3

Jack pine – Black spruce / Rhodora / Sphagnum

Pinus banksiana – *Picea mariana* /
Rhododendron canadense / *Sphagnum* spp.

WC3a

Black spruce variant

Picea mariana

n=9



Thomson Station,
Cumberland County

Concept: The Jack pine – Black spruce / Rhodora / Sphagnum is the wettest jack pine forest in Nova Scotia. Most occurrences are on poorly to very poorly drained soil, derived from acidic glacial till or, less commonly, organic deposits. The overstory is dominated by jack pine, or co-dominated by jack pine and black spruce; the latter condition described by WC3a, the black spruce variant.

Vegetation: Canopy layers are dominated by jack pine (or co-dominated by jack pine and black spruce). Tamarack and/or balsam fir are infrequent associates. Limiting site conditions and the prevalence of inherently small crowned conifers reduces canopy closure and promotes shrub abundance. Rhodora is present and usually dominant in most stands, with admixtures of lambkill and/or Labrador tea. Huckleberry is less common but abundant in some occurrences. Jack pine regeneration is low or absent from the understory. Herbaceous cover is reduced, largely comprised of scattered teaberry, mayflower and other common upland forest species. Bracken fern, mayflower, hair-cap moss and wavy dicranum are more frequent than in any other wet coniferous forest in Nova Scotia. Sphagnum moss, particularly ladies' tresses, and small patches of upland species are typical in the well-developed bryophyte layer.

Ecological Features

An open canopy of narrow-crowned conifers characterizes this very uncommon small patch ecosystem. The woody understory is dense with ericaceous shrubs and black spruce. Productivity is low, few rare plant species are expected, and old growth potential is low. This wet forest is often

a transition between open wetlands and upland coniferous forest, providing important hydrologic and biogeochemical functions. Reduced productivity and the presence of allelopathic plants (those that produce biochemicals that affect nearby plants) like lambkill can negatively influence black spruce regeneration and

growth, resulting in lower canopy cover. Occurrences may provide locally if not provincially important habitat for various invertebrates, birds, amphibians, small mammals, reptiles and lichens. By virtue of its rarity, restricted Canadian range and fire dependency, this ecosystem may present unique conservation challenges.

Environmental Setting: The Jack pine - Black spruce / Rhodora / Sphagnum forest usually occurs on poorly drained mineral soil, but may be found on peat deposits. Mineral soils are acidic loams with reduced rooting potential. Some stands are on imperfectly drained sites but most are poorly or very poorly drained; organic soils are found on the wettest sites. This low elevation ecosystem is usually on moderately exposed flats but may be found in lower topographic positions of gentle slopes or in shallow depressions with very little microtopography. Sloped occurrences are usually found on cooler aspects. This uncommon forest is largely limited to northern and central parts of the mainland and parts of Cape Breton. WC3 extends into lowlands of eastern New Brunswick, where it is relatively common, and onto Prince Edward Island where it is extremely rare.

Successional Dynamics: This early to mid-successional forest usually originates with fire, promoting jack pine regeneration. Extreme weather events can dry litter, surface soil horizons, and the somewhat flammable ericaceous plant layer to allow these normally wet stands to burn. Such conditions are uncommon however and many stands form through seed-in from adjacent uplands. The Jack pine – Black spruce / Rhodora / Sphagnum forest will succeed to WC2 (Black spruce / Lambkill – Labrador tea / Sphagnum).

Characteristic Plants	WC3		WC3a	
	Freq. (%)	Cover (%)	Freq. (%)	Cover (%)
Jack pine	100	27.0	100	18.5
Black spruce	100	5.2	100	34.8
Tamarack	40	3.5		
Balsam fir	20	3.0		
Red maple	20	0.1	25	2.0
Red pine	20	0.1	25	0.1
White pine	20	0.1		
Grey birch			25	0.1
White birch			25	0.1
Tree Layer (Mean % Cover)		34		54
Rhodora	100	28.6	75	34.3
Lambkill	100	19.6	100	18.3
Black spruce	100	9.4	100	2.5
Red maple	100	4.2	100	1.1
Serviceberry	100	0.7	25	0.2
Labrador tea	80	8.8	100	5.5
Velvet-leaf blueberry	80	6.4	50	1.0
Lowbush blueberry	80	3.5	75	2.0
Wild raisin	80	1.8	75	0.1
Huckleberry	60	26.7	50	5.1
False holly	60	7.3	100	4.9
Ground juniper	40	2.0		
Tamarack	40	2.0	25	0.1
Balsam fir	40	1.5		
Willows	40	1.5		
Jack pine	40	1.0		
Chokeberries	40	0.3	50	0.1
Downy alder	40	0.2		
Leather-leaf	20	3.0	25	0.1
Black chokeberry	20	0.5	25	1.0
Shrub Layer (Mean % Cover)		100		62
Bracken	100	7.4	50	10.0
Teaberry	80	13.5	75	3.7
Bunchberry	80	5.8	75	3.5
Starflower	60	0.4	25	0.1
Mayflower	60	0.1	75	0.2
Pink lady's slipper	60	0.1	75	0.4
Wild lily-of-the-valley	40	0.6	25	0.5
Goldthread	40	0.2	75	0.8
Three seeded sedge			75	1.4
Cinnamon fern			50	12.5
Creeping snowberry			50	3.1
Ground pine			50	0.1
Indian pipe			50	0.1
Herb Layer (Mean % Cover)		24		21
Schreber's moss	100	62.6	100	35.0
Ladies' tresses	80	12.5	100	31.3
Wavy dicranum	80	3.5	100	1.8
Flat topped sphagnum	40	18.5	25	43.0
Grey reindeer lichen	40	8.5	50	0.5
Russ's sphagnum	20	4.0		
Bazzania	20	3.0	25	5.0
Stair-step moss	20	2.0	25	0.1
Pale fat-leaved sphagnum	20	0.1	50	22.5
Common green sphagnum			25	20.0
Broom moss			25	5.0
Bryo-Lichen Layer (Mean % Cover)		90		98

Distinguishing Features

Jack pine is diagnostic of this poorly drained softwood forest. The woody shrub layer is well developed with rhodora, lambkill and Labrador tea. Sphagnum mosses dominate the groundcover.



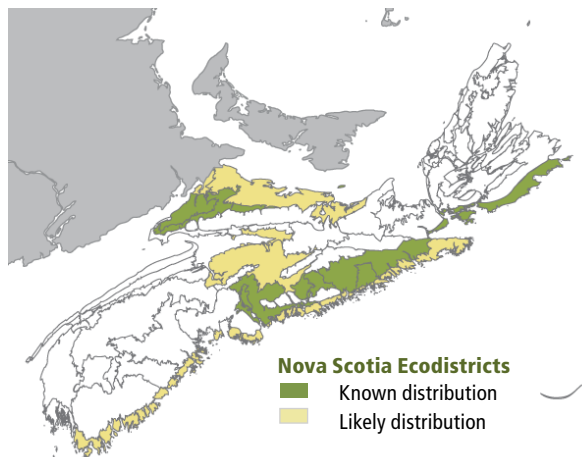
Rhodora

Site Characteristics

Slope Position: Level⁷ Lower² Upper¹
 Surface Stoniness: (Non - Slightly)¹⁰
 Bedrock Outcrop: (Non-rocky)⁹ (Slightly - Moderately)¹
 Elevation Range: 12 - 110m
 Slope Gradient: Level⁷ Gentle³
 Aspect: East¹ South³ Other⁶
 Exposure: Moderate⁸ Mod. exposed²
 Microtopography: Level⁹ Slightly¹
 Drainage: Poor⁶ Very poor² Imperfect²

Soil Characteristics

Soil Type: ST4⁶ ST6² ST7²
 Parent Material: Glacial till⁹ Glaciofluvial¹
 Rooting Depth (cm): (<30)⁹ (30-45)¹
 Duff Thickness (cm): (6-10)¹ (11-20)⁸ (21-40)¹



Nova Scotia Ecodistricts

■ Known distribution
 ■ Likely distribution