

OW4

Red pine – White pine / Broom crowberry / Grey reindeer lichen

Pinus resinosa – *Pinus strobus* / *Corema conradii* /
Cladina rangiferina

n=13



Hibernia,
Queens County

Concept: This sparsely treed coniferous woodland is a transitional successional stage, encompassing species of both open heathland and closed canopy pine forest usually SP2 (Red pine / Blueberry / Bracken). The ecosystem is characterized by low crown closure, frequent red pine, and high broom crowberry cover; reindeer lichens are abundant in some occurrences. The Red pine – White pine / Broom crowberry / Grey reindeer lichen woodland is found on dry sandy or coarse loamy soils with low humus accumulation and reduced nutrient availability. Many occurrences originate with fire.

Vegetation: The open evergreen canopy is dominated by red pine and/or white pine, but the latter condition is less common. On somewhat moister soils, black spruce and/or larch may be prominent, while pine is absent or sparse. Deciduous tree species may be found scattered but most are uncommon. Non-native trees species (e.g. Scotch pine, Black locust) are rapidly spreading in some occurrences and threatening ecosystem persistence. Lower strata are dominated by low shrubs. Broom crowberry is abundant in all occurrences but is typically excluded under denser tree crowns. Herbaceous cover is reduced except near exposed sand and around disturbed sites (i.e. often caused by all-terrain vehicle traffic). Forest species (e.g. wild lily-of-the-valley, starflower, pink lady's slipper, bluebead lily and checkered

rattlesnake plantain) occur under tree or tall shrub cover. Reindeer lichen abundance is moderate to high.

Environmental Setting: OW4 is mainly found on dry, sandy, nutrient very poor soils associated with glaciofluvial deposits or shallow, gravelly and/or coarse textured glacial tills. Most soils are deep and well drained but the presence of cemented (orstein) soil horizons in some sites can impede drainage and increase available moisture in the rooting zone. This Vegetation Type (VT) is found in warmer areas and is excluded from the coast. It is found in the Valley and Central Lowlands and Western ecoregions. This VT is nationally, if not globally, unique. It is not found outside Nova Scotia.

Successional Dynamics: This is an early successional woodland community. It is the first treed successional stage expressed in broom crowberry heathland on mainland Nova Scotia. The ecosystem often occurs on the edges of open barrens as a transition to closed forest. In other sites, trees may be more evenly and widely scattered. Fire is a component of stand history in most occurrences, but long-standing fire suppression programs have promoted higher tree presence, contributing to the loss of open broom crowberry heathland. In the absence of fire or other disturbances, the woodland will succeed to SP2 (Red pine / Blueberry / Bracken).

Ecological Features

Global occurrences of this provincially uncommon ecosystem are limited to Nova Scotia. The often sandy small patch woodland's most remarkable features include its rarity, restricted distribution, and relatively specific environmental requirements (including a potential dependency on fire for establishment and maintenance). These collectively contribute to OW4's

high vulnerability, which presents unique conservation challenges. Unlike some of the other rare woodlands in Nova Scotia (e.g. OW1, OW2 and OW5) many occurrences of this ecosystem are critically threatened by human activities, including aggregate mining, commercial and residential development, fire suppression and some types of logging. OW4 supports

extraordinarily unique habitat conditions, but most associated species are undocumented. Some exceptions include: vesper sparrow, arrowleaved violet, Case's ladies'-tresses, Canada mountain-ricegrass, rock-rose, pine barren goldenheather and dixie reindeer lichen. Many of these are species of high conservation concern.

Characteristic Plants

OW4

	Freq. (%)	Cover (%)
Red pine	75	13.8
White pine	67	9.1
Grey birch	58	5.3
Black spruce	50	9.5
Tamarack	17	2.5
Red oak	17	2.1
Scotch pine	8	10.0
Red maple	8	3.0
Smooth serviceberry	8	2.0
Pin cherry	8	1.0
Jack pine	8	0.1
Black cherry	8	0.1
Tree Layer (Mean % Cover)		26
Broom crowberry	100	61.3
Lowbush blueberry	100	3.3
Lambkill	75	9.2
Black spruce	67	3.1
White pine	67	2.5
Sweetfern	67	0.8
Grey birch	58	2.5
Red pine	58	1.7
Ground juniper	42	1.0
Smooth serviceberry	42	0.6
Wild raisin	42	0.6
Huckleberry	33	2.9
Rhodora	33	1.3
Bayberry	25	5.0
Tamarack	25	1.1
Red maple	25	0.9
Inkberry	25	0.2
Black cherry	25	0.1
Shrub Layer (Mean % Cover)		80
Bracken	75	3.5
Teaberry	75	1.2
Bearberry	67	14.4
Umbel-like sedge	50	0.4
Old-field goldenrod	50	0.4
Common hair grass	50	0.3
Starflower	50	0.1
Ground cedar	42	0.3
Hudsonia	42	0.1
Cow-wheat	33	0.4
Lions paw	33	0.3
White goldenrod	33	0.2
Wild lily-of-the-valley	33	0.1
Hair fescue	25	0.2
Rice grass	25	0.1
Kentucky bluegrass	25	0.1
Herb Layer (Mean % Cover)		16
Grey reindeer lichen	100	11.7
Schreber's moss	67	1.1
Star-tipped reindeer lichen	58	3.9
Green reindeer lichen	33	1.5
Juniper polytrichum	33	0.8
Hair-cap moss	33	0.3
Bryo-Lichen Layer (Mean % Cover)		16

Distinguishing Features

This softwood woodland is characterized by open growing red pine. Broom crowberry is abundant but is typically excluded under denser tree crowns. Soils are very dry and sandy. Reindeer lichen can be extensive.



Broom crowberry

Site Characteristics

Slope Position:	Level ⁸ Middle ¹ Upper ¹
Surface Stoniness:	(Non - Slightly) ⁴ (Very - Excessively) ² (Moderately) ¹ nd ³
Bedrock Outcrop:	(Non-rocky) ⁵ (Very - Excessively) ¹ nd ⁴
Elevation Range:	10 - 140m
Slope Gradient:	Level ⁸ Gentle ²
Aspect:	South ¹ None ⁸ nd ¹
Exposure:	Moderate ⁴ Mod. exposed ¹ nd ⁵
Microtopography:	Level ³ Slightly ² Moderately ¹ nd ⁴
Drainage:	Well ⁴ Rapid ² nd ⁴

Soil Characteristics

Soil Type:	ST1 ⁴ ST15 ² nd ⁴
Parent Material:	Glaciofluvia ⁸ Glacial till ²
Rooting Depth (cm):	(<30) ² (30-45) ² (>45) ¹ nd ⁵
Duff Thickness (cm):	(6-10) ³ (11-20) ² nd ⁵

