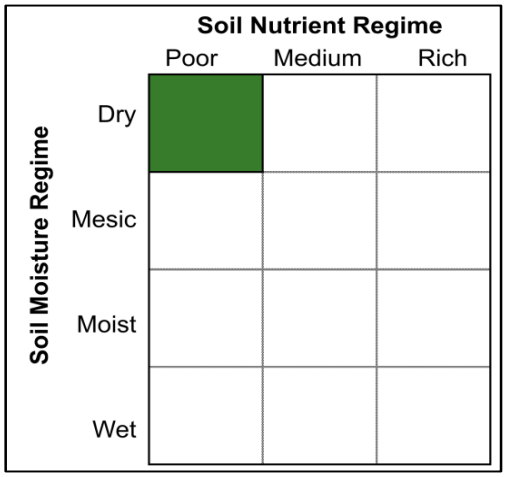
Forest / Forêt **Association CNVC00246**

Picea mariana / Rhododendron groenlandicum – Vaccinium angustifolium / Cladina spp.

Black Spruce / Common Labrador Tea – Early Lowbush Blueberry / Reindeer Lichens
Épinette noire / Thé du Labrador – Bleuet à feuilles étroites / Cladonies

Subassociations: none
CNVC Alliance: CA00010 *Picea mariana / Vaccinium angustifolium / Cladina* spp.
CNVC Group: CG0005 Ontario-Quebec Boreal Dry-Mesic Black Spruce – Jack Pine Forest

Source: Natural Resources Canada - Canadian Forest Service



Type Description

Concept: CNVC00246 is a boreal coniferous forest Association that occurs in Ontario. It has a sparse tree layer of black spruce (*Picea mariana*) but a well-developed shrub layer comprising abundant black spruce and ericaceous species, including common Labrador tea (*Rhododendron groenlandicum*), velvet-leaved blueberry (*Vaccinium myrtilloides*) and early lowbush blueberry (*V. angustifolium*). The herb layer is virtually nonexistent. The moss and lichen layer is continuous and dominated by reindeer lichens (*Cladina rangiferina*, *C. mitis* and *C. stellaris*). Patches of red-stemmed feathermoss (*Pleurozium schreberi*) and *Cladonia* lichens are also present. CNVC00246 occurs on dry, nutrient-poor sites in a region with a continental boreal climate that is subhumid in the western part of its range and becomes increasingly humid eastward. These are the driest, most nutrient-impoverished sites capable of supporting tree-dominated vegetation in the region. The dynamics of CNVC00246 are closely tied to fire, but it can be a stable, self-perpetuating community.

Vegetation: CNVC00246 is a coniferous forest Association with a sparse tree layer of *Picea mariana.* The shrub layer is well developed, comprising *P. mariana* and abundant ericaceous shrubs, including *Rhododendron groenlandicum, Vaccinium myrtilloides* and *V. angustifolium.* The herb layer is virtually nonexistent; there are no common species. The moss and lichen layer is continuous and characterized by abundant drought-tolerant lichens, including *Cladina rangiferina, C. mitis* and *C. stellaris,* with some *Cladonia* spp. Patches of *Pleurozium schreberi* and minor amounts of *Dicranum polysetum* are often present on moister microsites (e.g., shady areas and depressions).

Environment: CNVC00246 occurs in a continental boreal climate that is subhumid in the western part of its range, becoming increasingly humid farther east. Where it occurs, regional fire cycles are intermediate (100-270 years). It is found on very dry to dry, nutrient-poor sites; these are the driest, poorest sites capable of supporting tree-dominated vegetation in the region. Stands are usually on level sites or gentle to moderate slopes on water-shedding, crest or upper-slope topopositions. On slopes, stands are more frequently on warmer (often drier) aspects, either west or south-facing. Stands usually occur in small patches on bedrock knobs and ridges, but they can be more extensive on large areas of wave-washed bedrock, abandoned beach ridges, eskers and boulder tills. Soils are usually coarse-textured and rapidly drained. Mor humus forms are typical.

Picea mariana / Rhododendron groenlandicum – Vaccinium angustifolium / Cladina spp. CNVC00246

Type Description (cont'd)

Dynamics: CNVC00246 usually develops on edaphically limited sites where fire is the primary disturbance. *Picea mariana* has thin bark with low tolerance to fire, but its semi-serotinous cones open when heated and disperse seeds, so it is well adapted to recolonize after fire.

CNVC00246 typically occurs on sites that do not support a closed canopy forest, but it can also result from regeneration failure in a closed stand (e.g., CNVC00208 [*Picea mariana – Pinus banksiana / Vaccinium angustifolium / Pleurozium schreberi*]). This could happen when successive fires occur before trees have reached reproductive maturity, when fire follows a spruce budworm (*Choristoneura fumiferana*) outbreak that has diminished the seed crop or viability or when seedling mortality is unusually high. The resulting open canopy promotes an increase in *Cladina* cover. Lichens dry out quickly, becoming a highly flammable and continuous fuel source, contributing to more frequent ignitions and faster-burning but lower severity fires that perpetuate the openness of the stand. Lichen cover can also inhibit conifer germination and seedling survival.

Range: CNVC00246 occurs in the boreal region of Ontario.

Conservation Status (NatureServe)

Global Conservation Rank: no applicable rank
National Conservation Rank: not yet determined
Subnational Conservation Rank: not yet determined

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Black Spruce / Common Labrador Tea – Early Lowbush Blueberry / Reindeer Lichens
Épinette noire / Thé du Labrador – Bleuet à feuilles étroites / Cladonies

Distribution

Countries: Canada

Provinces / Territories / States: Ontario

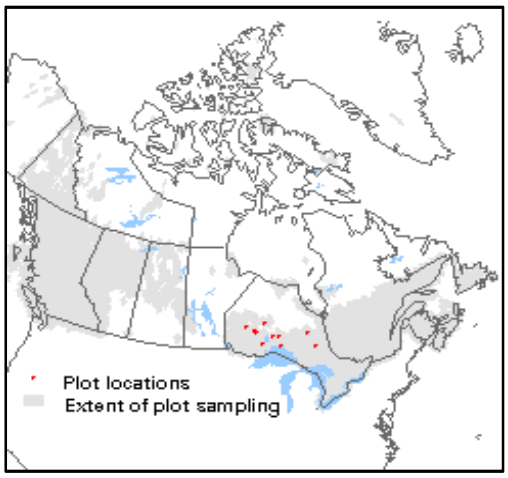
Terrestrial Ecozones and Ecoregions of Canada: Boreal Shield: Abitibi Plains, Big Trout Lake, Lac Seul Upland, Lake Nipigon, Lake Timiskaming Lowland

Rowe's Forest Regions and Sections of Canada: Boreal: Central Plateau, Missinaibi-Cabonga, Northern Clay, Northern Coniferous, Superior, Upper English River

NAAEC CEC Ecoregions of North America (Levels I & II): Northern Forests: Mixed Wood Shield, Softwood Shield

Nature Conservancy of Canada Ecoregions: Boreal Shield, Great Lakes

Ecological Land Classification of Ontario (ecoregions and ecodistricts): 2W-3, 3E-1, 3E-2, 3E-5, 3S-1, 3S-2, 3S-3, 3S-4, 3S-5, 3W-1, 3W-2, 3W-3, 3W-4, 3W-5



Corresponding Types and Associations

CNVC00246	Ontario	BTr1-1	Picea mariana / Rhododendron groenlandicum - Vaccinium angustifolium / Cladonia spp. Woodland

Forest / Forêt **Association CNVC00246**

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Vegetation Summary*

	Association CNVC00246 12 plots	
Species Name†	% Cover±	% Presence^
Overstory Trees		
Picea mariana	**15**	**100**
Tree Stratum Cover (P_{10} P_{25} Mean P_{75} P_{90})‡	**(7 8 16 21 28)**	
Understory Woody Shrubs and Regenerating Trees		
Picea mariana	17	100
Rhododendron groenlandicum	**18**	**75**
Vaccinium myrtilloides	7	67
Vaccinium angustifolium	**20**	**58**
Sorbus decora	1	25
Alnus viridis	1	25
Shrub Stratum Cover (P_{10} P_{25} Mean P_{75} P_{90})‡	**(24 31 47 66 81)**	
Understory Herbs and Dwarf Shrubs		
Gaultheria hispidula	1	50
Chamerion angustifolium	1	25
Cornus canadensis	1	25
Vaccinium vitis-idaea	1	25
Herb Stratum Cover (P_{10} P_{25} Mean P_{75} P_{90})‡	**(0 1 2 3 4)**	
Bryophytes and Lichens		
Pleurozium schreberi	23	100
Cladina rangiferina	**23**	**100**
Cladina mitis	**18**	**92**
Cladina stellaris	**18**	**92**
Dicranum polysetum	2	92
Cladonia sp.	4	83
Ptilium crista-castrensis	2	58
Peltigera aphthosa	< 1	42
Sphagnum capillifolium	3	33
Ptilidium ciliare	1	33
Bucklandiella heterosticha	1	25
Polytrichum commune	1	25
Bryo-Lichen Stratum Cover (P_{10} P_{25} Mean P_{75} P_{90})‡	**(81 88 92 100 100)**	

* species present in > 20% of sample plots are listed

† see **Botanical Nomenclature** link at http://cnvc-cnvc.ca for botanical sources, synonyms and common names

± average percent cover of a species within the plots in which it occurs (i.e., characteristic cover)

^ percent frequency occurrence for a species within the total plots

‡ $P_x = X^{th}$ percentile (e.g., $P_{10} = 10^{th}$ percentile)

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Forest / Forêt **Association CNVC00246**

Picea mariana / *Rhododendron groenlandicum – Vaccinium angustifolium* / *Cladina* spp.

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Site / Soil Characteristics

	Association CNVC00246
	12 plots
Elevation Range (min–mean–max meters)	
	232–356–465
	missing data (8)
Slope Gradient (% frequency)	
	moderate (25)
	gentle (17)
	level (50)
	missing data (8)
Aspect (% frequency)	
	north (8)
	south (8)
	west (25)
	level (58)
Meso Topoposition (% frequency)	
	crest / upper (75)
	mid (8)
	level (17)
Moisture Regime (% frequency)	
	very dry (50)
	dry (50)
Nutrient Regime (% frequency)	
	missing data (100)

Picea mariana / *Rhododendron groenlandicum – Vaccinium angustifolium* / *Cladina* spp. CNVC00246

Site / Soil Characteristics (cont'd)

	Association CNVC00246
Soil Parent Material (% frequency)	
	bedrock (25)
	moraine / till (42)
	glaciofluvial (8)
	lacustrine (17)
	missing data (8)
Soil Rooting Zone Substrate (% frequency)	
	non-soil (25)
	sandy (25)
	coarse loamy (8)
	organic (8)
	missing data (33)
Root Restricting Depth (% frequency)	
	0 – 20 cm (50)
	21 – 99 cm (25)
	≥ 100 cm (8)
	missing data (17)
Humus Form (% frequency)	
	mor (83)
	moder (8)
	peatymor (8)

Forest / Forêt **Association CNVC00246**

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Additional Characteristics

Species of High Conservation Concern:

Non-native Species:

Management Issues:

Type Statistics

Internal Similarity: **Confidence:**
Strength:

Related Concepts

Similar CNVC Associations:

CNVC00204 [*Picea mariana / Rhododendron groenlandicum – Kalmia angustifolia / Cladina* spp.] occurs in Quebec on comparable boreal sites but has *Kalmia angustifolia* in the shrub layer and more abundant ericaceous shrubs overall.

CNVC00206 [*Picea mariana / Betula glandulosa / Cladina* spp.] occurs on a wide range of sites in northern Quebec and Labrador. It has more *Betula glandulosa, Vaccinium uliginosum* and *Empetrum nigrum.*

CNVC00208 [*Picea mariana – Pinus banksiana / Vaccinium angustifolium / Pleurozium schreberi*] occurs on better sites in the same range and has greater canopy cover. It also has greater cover of feathermosses and less of *Cladina* lichens (see Dynamics).

CNVC00244 [*Picea mariana – Pinus banksiana / Vaccinium myrtilloides / V. vitis-idaea / Cladina* spp.] ranges from Saskatchewan to northwestern Ontario and occurs on comparable boreal sites. It has more *Pinus banksiana* in the tree layer, less *Rhododendron groenlandicum* and no *Vaccinium angustifolium* in the shrub layer and more *V. vitis-idaea* in the herb and dwarf shrub layer.

CNVC00245 [*Pinus banksiana / Vaccinium angustifolium / Cladina* spp.] occurs on similar sites in the same range but is dominated by *Pinus banksiana* rather than *Picea mariana*.

Related United States National Vegetation Classification Associations:

Relationships with Other Classifications:

Comments

CNVC00246 has physiognomic affinities to subarctic *Picea mariana* – lichen woodlands but is readily distinguished by the absence of northern species, such as *Betula glandulosa, Vaccinium uliginosum* and *Empetrum nigrum*.

Source Information

Number of source plots for CNVC00246: 12

Information Sources:

McMurray, S.C., Johnson, J.A., Zhou, K., Uhlig, P.W.C. 2015. Ontario ecological land classification program - Ecological Data Repository (EDR). Ont. Min. Nat. Resour. & For., Sci.& Info. Branch, Sault Ste. Marie, ON.

Concept Authors: K. Baldwin, K. Chapman, P. Uhlig, M. Wester
Description Authors: K. Chapman and K. Baldwin
Date of Concept: November, 2011
Date of Description: March, 2016

Picea mariana / Rhododendron groenlandicum – Vaccinium angustifolium / Cladina spp. CNVC00246

Classification References:

Uhlig, P.W.C., Chapman, K., Baldwin, K., Wester, M., Yanni, S. 2016. Draft boreal treed vegetation type factsheets. Ecol. Land Class. Prog., Ont. Min. Nat. Resour. & For., Sci. & Info Branch, Sault Ste. Marie, ON.

Characterization References:

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Senici, D.; Chen, H.Y.H.; Bergeron, Y.; Cyr, D. 2010. Spatiotemporal variations of fire frequency in central boreal forest. Ecosystems 13(8):1227-1238.

Simard, M.; Payette, S. 2005. Reduction of black spruce seed bank by spruce budworm infestation compromises postfire stand regeneration. Can. J. For. Res. 35:1686-1696.

Van Sleeuwen, M. 2006. Natural fire regimes in Ontario. Ont. Min. Nat. Resour., Queen's Printer for Ont., Toronto, ON.

The information contained in this factsheet is based on data and expert knowledge that is current to the date of description. As new information becomes available, the factsheet will be updated.

For more information about the contents of this factsheet and definitions of attribute names and data classes, see the **Understanding the Factsheet** link at http//cnvc-cnvc.ca.

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