



Canadian National Vegetation Classification (CNVC) Classification nationale de la végétation du Canada (CNVC)

<http://cnvc-cnvc.ca>

Forest / Forêt

Association CNVC00207

Pinus banksiana (Picea mariana) / Vaccinium angustifolium / Pleurozium schreberi
Jack Pine (Black Spruce) / Early Lowbush Blueberry / Red-stemmed Feathermoss
Pin gris (Épinette noire) / Bleuets à feuilles étroites / Pleurozie dorée

Subassociations: none

CNVC Alliance: CA00012 *Picea mariana (Pinus banksiana) / Vaccinium angustifolium / Pleurozium schreberi*

CNVC Group: CG0006 Ontario-Quebec Boreal Mesic-Moist Black Spruce (Jack Pine) Forest



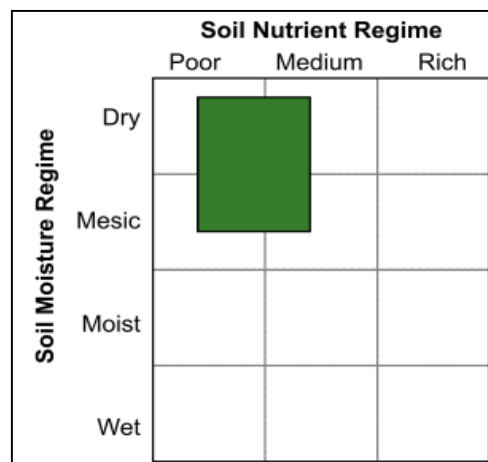
Source: Natural Resources Canada - Canadian Forest Service

Type Description

Concept: CNVC00207 is a boreal coniferous forest Association that occurs in Manitoba and Ontario. It has an open to moderately closed canopy of jack pine (*Pinus banksiana*), sometimes with a minor component of black spruce (*Picea mariana*). The moderately developed shrub layer includes regenerating black spruce and the heath species velvet-leaved blueberry (*Vaccinium myrtilloides*), early lowbush blueberry (*V. angustifolium*) and occasionally common Labrador tea (*Rhododendron groenlandicum*). The herb layer is usually sparse; only wild lily-of-the-valley (*Maianthemum canadense*), bunchberry (*Cornus canadensis*) and twinflower (*Linnaea borealis*) are common. A well-developed moss layer dominated by red-stemmed feathermoss (*Pleurozium schreberi*) further characterizes this Association. CNVC00207 occurs on dry to mesic, nutrient-poor to medium sites in a region with a continental boreal climate that grades from subhumid in the western portion of its range to humid in the east. It is an early seral condition with dynamics that are driven by fire.

Vegetation: CNVC00207 is a coniferous forest Association with an open to moderately closed canopy dominated by *Pinus banksiana*, often with a minor component of *Picea mariana*. The shrub layer is usually moderately developed but can vary depending on the patchiness of shrubs. It includes regenerating *P. mariana* and the heath species *Vaccinium myrtilloides*, *V. angustifolium* and sometimes *Rhododendron groenlandicum*. The herb layer is usually poorly developed, with only *Maianthemum canadense*, *Cornus canadensis* and *Linnaea borealis* common. The moss layer is well-developed and dominated by *Pleurozium schreberi*, with minor amounts of *Dicranum polysetum* and *Cladina rangiferina*.

Environment: CNVC00207 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 generally intermediate (100-270 years), but the fire cycle is longer near the north shore of Lake Superior. It is mainly found on dry, sometimes mesic, nutrient-poor to medium sites. Stands are usually on level sites or gentle to moderate slopes on water-shedding, crest or upper to middle-slope topositions. On slopes, stands are more frequently on warmer (often drier) aspects, either west or south-facing. Soils are usually deep and rapidly or well drained. Often they are sands or coarse loams in glacioluvial or morainal surficial deposits, but stands also occur on fine-textured lacustrine and glaciolacustrine sediments. Mor humus forms are common, but compared to other boreal Associations, moders are relatively frequent.





Pinus banksiana (Picea mariana) / Vaccinium angustifolium / Pleurozium schreberi
CNVC00207

Type Description (cont'd)

Dynamics: CNVC00207 is an early seral Association that is naturally perpetuated by stand-replacing fire. *Pinus banksiana* has medium thick bark, with only moderate tolerance to fire, but it reaches reproductive maturity at a young age and produces abundant seeds in serotinous cones. Moderate and high severity fires melt the resin of cones to release their seeds. These fires also improve seedbed quality by reducing organic matter and exposing mineral soil. Maximum seed release can therefore coincide with optimal conditions for seedling establishment, survival and growth.

Picea mariana is often a component of these stands. It also recolonizes fire-prepared sites as part of the first cohort. *P. banksiana* grows more rapidly than *P. mariana*, so it usually forms the initial stand with *P. mariana* in the understory or subcanopy. *P. mariana* is longer lived, more shade tolerant and better able to regenerate in the absence of fire, so it can become dominant on these sites over time, forming CNVC00208 [*Picea mariana* – *Pinus banksiana* / *Vaccinium angustifolium* / *Pleurozium schreberi*].

Jack pine budworm (*Choristoneura pinus pinus*) can reduce growth and cause top kill of *P. banksiana* but does not usually result in widespread tree mortality. Dead wood and needle litter may increase the flammability of these stands.

Range: CNVC00207 occurs in the boreal region of Ontario and likely extends into southeastern Manitoba as far west as Lake Winnipeg.

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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Distribution

Countries: Canada

Provinces / Territories / States: Manitoba, Ontario

Terrestrial Ecozones and Ecoregions of Canada: Boreal Shield: Abitibi Plains, Lac Seul Upland, Lake Nipigon, Lake Timiskaming Lowland, Lake of the Woods, Thunder Bay-Quetico

Rowe's Forest Regions and Sections of Canada: Boreal: Central Plateau, Lower English River, Missinaibi-Cabonga, Nipigon, Northern Clay, Northern Coniferous, Superior, Upper English River; Great Lakes-St. Lawrence: Quetico, Timagami

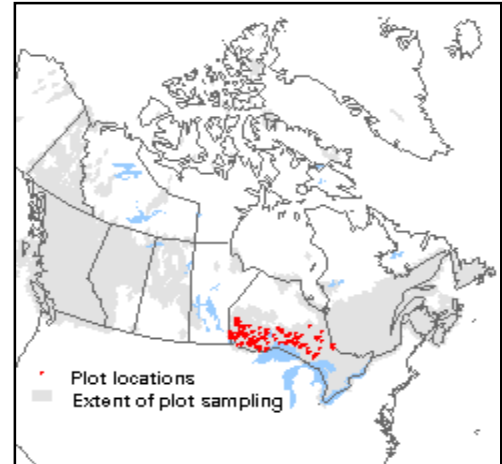
NAAEC CEC Ecoregions of North America (Levels I & II): Northern Forests: Mixed Wood Shield, Softwood Shield

Nature Conservancy of Canada Ecoregions: Boreal Shield, Great Lakes, Superior Mixed Forest

Ecozones and Ecoregions of Manitoba: Boreal Shield

Manitoba Protected Areas Initiative Natural Regions: Manitoba Lowlands: Lake of the Woods; Precambrian Boreal Forest: Lac Seul Upland

Ecological Land Classification of Ontario (ecoregions and ecodistricts): 3E-1, 3E-2, 3E-4, 3E-5, 3E-6, 3S-1, 3S-2, 3S-5, 3W-1, 3W-2, 3W-3, 3W-4, 3W-5, 4E-3, 4E-4, 4S-1, 4S-2, 4S-3, 4S-4, 4S-5, 4S-6, 4W-1, 4W-2



Corresponding Types and Associations

CNVC00207

Ontario

Btr4-4

Pinus banksiana (Picea mariana) / Vaccinium angustifolium / Pleurozium schreberi



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Vegetation Summary*

Species Name [†]	Association CNVC00207	
	266 plots	
	% Cover [‡]	% Presence [^]
Overstory Trees		
<i>Pinus banksiana</i>	30	100
<i>Picea mariana</i>	12	53
Tree Stratum Cover (P₁₀ P₂₅ Mean P₇₅ P₉₀)[‡]	(14 22 36 46 64)	
Understory Woody Shrubs and Regenerating Trees		
<i>Vaccinium myrtilloides</i>	7	85
<i>Picea mariana</i>	9	82
<i>Vaccinium angustifolium</i>	9	73
<i>Abies balsamea</i>	4	44
<i>Diervilla lonicera</i>	3	44
<i>Rosa acicularis</i>	1	42
<i>Rhododendron groenlandicum</i>	10	41
<i>Alnus viridis</i>	9	37
<i>Betula papyrifera</i>	3	37
<i>Pinus banksiana</i>	3	25
<i>Populus tremuloides</i>	2	23
Shrub Stratum Cover (P₁₀ P₂₅ Mean P₇₅ P₉₀)[‡]	(8 16 34 44 71)	
Understory Herbs and Dwarf Shrubs		
<i>Maianthemum canadense</i>	4	89
<i>Cornus canadensis</i>	5	81
<i>Linnaea borealis</i>	2	80
<i>Gaultheria hispidula</i>	2	53
<i>Aralia nudicaulis</i>	2	45
<i>Clintonia borealis</i>	1	42
<i>Melampyrum lineare</i>	1	30
<i>Chamerion angustifolium</i>	1	30
<i>Lysimachia borealis</i>	1	29
<i>Arctostaphylos uva-ursi</i>	8	26
<i>Epigaea repens</i>	3	26
<i>Goodyera repens</i>	1	22
<i>Cypripedium acaule</i>	1	21
<i>Coptis trifolia</i>	1	20
Herb Stratum Cover (P₁₀ P₂₅ Mean P₇₅ P₉₀)[‡]	(5 10 19 24 37)	



Pinus banksiana (Picea mariana) / Vaccinium angustifolium / Pleurozium schreberi
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Vegetation Summary (cont'd)*

Species Name†	Association CNVC00207	
	% Cover‡	% Presence^
Bryophytes and Lichens		
<i>Pleurozium schreberi</i>	64	99
<i>Dicranum polysetum</i>	5	93
<i>Cladina rangiferina</i>	3	69
<i>Ptilium crista-castrensis</i>	8	56
<i>Cladina mitis</i>	2	39
<i>Hylocomium splendens</i>	2	33
<i>Cladina stellaris</i>	2	33
<i>Dicranum fuscescens</i>	1	25
<i>Cladonia</i> sp.	2	22
<i>Polytrichum juniperinum</i>	1	22
Bryo-Lichen Stratum Cover		
(P₁₀ P₂₅ Mean P₇₅ P₉₀)‡	(40 73 79 96 99)	

* 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 = Xth percentile (e.g., P₁₀ = 10th percentile)



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Site / Soil Characteristics

Association

CNVC00207

266 plots

Elevation Range (min–mean–max meters)

200–387–515

missing data (5)

Slope Gradient (% frequency)

very steep (1)

steep (2)

moderately steep (7)

moderate (18)

gentle (20)

level (46)

missing data (7)

Aspect (% frequency)

north (13)

east (9)

south (24)

west (26)

level (24)

missing data (5)

Meso Toposition (% frequency)

crest / upper (44)

mid (24)

lower / toe (10)

depression (1)

level (21)

missing data (0)

Moisture Regime (% frequency)

very dry (5)

dry (61)

mesic (29)

moist (6)

Nutrient Regime (% frequency)

missing data (100)



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Site / Soil Characteristics (cont'd)

Association

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Soil Parent Material (% frequency)

- bedrock (0)
- eolian (5)
- moraine / till (23)
- fluvial (2)
- glaciofluvial (53)**
- lacustrine (11)
- glaciolacustrine (1)
- organic (0)
- missing data (5)

Soil Rooting Zone Substrate (% frequency)

- non-soil (0)
- sandy (52)**
- coarse loamy (28)
- fine loamy (2)
- silty (3)
- clayey (0)
- organic (1)
- missing data (14)

Root Restricting Depth (% frequency)

- 0 – 20 cm (6)
- 21 – 99 cm (15)
- ≥ 100 cm (63)**
- missing data (16)

Humus Form (% frequency)

- mor (68)**
- moder (18)
- mull (2)
- peatymor (0)
- missing data (12)



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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:

CNVC00208 [*Picea mariana* – *Pinus banksiana* / *Vaccinium angustifolium* / *Pleurozium schreberi*] occurs on similar or slightly moister sites in the same range but is usually dominated by *Picea mariana*, or if dominated by *Pinus banksiana*, then has a better-developed understory with more *Diervilla lonicera*, *Eurybia macrophylla*, *Clintonia borealis*, *Aralia nudicaulis* and *Lysimachia borealis* (see Dynamics).

CNVC00209 [*Pinus banksiana* – *Picea mariana* / *Kalmia angustifolia* / *Pleurozium schreberi*] occurs on comparable boreal sites in northeastern Ontario and western Quebec but has more abundant ericaceous shrubs including *Kalmia angustifolia*.

CNVC00245 [*Pinus banksiana* / *Vaccinium angustifolium* / *Cladina* spp.] occurs on drier, poorer sites in the same range and has a more open tree layer and a moss layer with lower cover of feathermosses and more of *Cladina* lichens.

CNVC00248 [*Pinus banksiana (Picea mariana) / Vaccinium myrtilloides / Pleurozium schreberi*] ranges from Saskatchewan to northwestern Ontario and occurs on comparable boreal sites. It has more *Vaccinium vitis-idaea* in the understory but has little to no *Vaccinium angustifolium*, *Diervilla lonicera* and *Gaultheria hispidula*.

Related United States National Vegetation Classification Associations:

Relationships with Other Classifications:

Comments

Source Information

Number of source plots for CNVC00207: 266

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. Baldwin and K. Chapman

Date of Concept: November, 2011

Date of Description: March, 2016



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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:

Bergeron, Y.; Chen, H.Y.H.; Kenkel, N.C.; Leduc, A.; Macdonald, S.E. 2014. Boreal mixedwood stand dynamics: ecological processes underlying multiple pathways. *For. Chron.* 90(2):202-213.

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Ontario Ministry of Natural Resources. 2009. Ecological land classification ecosites field manual – operational draft, April 20th, 2009 – boreal. Ecol. Land Class. Working Grp, Ont. Min. Nat. Resour., Sci. & Info Branch, Inven. Monit. Assess. Sect., Sault Ste. Marie, ON.

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.

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

Zoladeski, C.A.; Wickware, G.M.; Delorme, R.J.; Sims, R.A.; Corns, I.G.W. 1995. Forest ecosystem classification for Manitoba: field guide. Nat. Res. Can., Can. For. Serv., North. For. Centre, Edmonton, AB. Special Rep. 2.

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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