



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

<http://cnvc-cnvc.ca>

Forest / Forêt

Association CNVC00256

Picea glauca* – *Abies balsamea* / *Streptopus lanceolatus* / *Pleurozium schreberi
White Spruce – Balsam Fir / Rose Twisted-stalk / Red-stemmed Feathermoss
Épinette blanche – Sapin baumier / Streptope rose / Pleurozie dorée

Subassociations: 256a *typic*, 256b *Acer spicatum*

CNVC Alliance: CA00015 *Betula papyrifera* – *Populus tremuloides* – *Abies balsamea* / *Acer spicatum*

CNVC Group: CG0007 Ontario-Quebec Boreal Mesic Paper Birch – Balsam Fir – Trembling Aspen Forest



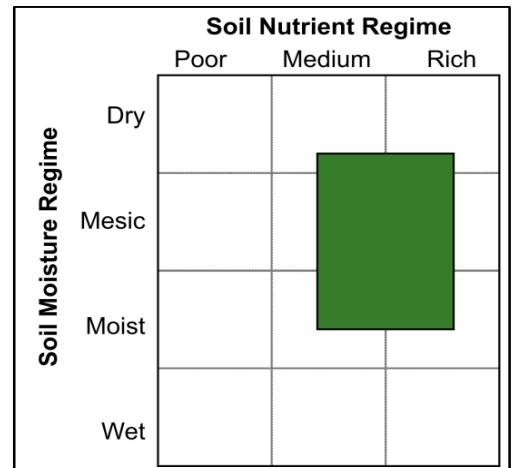
Source: Natural Resources Canada - Canadian Forest Service

Type Description

Concept: CNVC00256 is a boreal coniferous forest Association that occurs in Manitoba and Ontario. It has a moderately closed canopy dominated by white spruce (*Picea glauca*) and/or balsam fir (*Abies balsamea*) and a moderately to well-developed shrub layer that usually includes regenerating balsam fir, showy mountain-ash (*Sorbus decora*) and mountain maple (*Acer spicatum*). The herb layer is moderately developed and commonly includes bunchberry (*Cornus canadensis*), yellow clintonia (*Clintonia borealis*), wild lily-of-the-valley (*Maianthemum canadense*), wild sarsaparilla (*Aralia nudicaulis*), twinflower (*Linnaea borealis*), dwarf raspberry (*Rubus pubescens*), rose twisted-stalk (*Streptopus lanceolatus*), northern starflower (*Lysimachia borealis*), three-flowered bedstraw (*Galium triflorum*), naked mitrewort (*Mitella nuda*) and goldthread (*Coptis trifolia*). The moss layer is usually well developed and dominated by red-stemmed feathermoss (*Pleurozium schreberi*), with lower cover of knight's plume moss (*Ptilium crista-castrensis*) and stairstep moss (*Hylocomium splendens*). CNVC00256 occurs 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 most frequently found on mesic to moist, nutrient-medium to rich sites. It is a late seral condition that tends to occur as small patches in areas that have escaped fire for a long period. Insect outbreaks and windthrow are the primary natural disturbances. The canopy gaps or large patches that result from disturbance can promote self-replacement of this Association by the release of balsam fir regeneration. Two subassociations are recognized, *typic* and *Acer spicatum*.

Vegetation: CNVC00256 is a coniferous forest Association with a moderately closed canopy of *Picea glauca* and/or *Abies balsamea*. *P. mariana* is sometimes a minor canopy associate. The shrub layer is moderately to well developed and is usually dominated by regenerating *A. balsamea* and/or *Acer spicatum*. *Sorbus decora* is often present. The herb layer is moderately developed and relatively diverse, with low abundance of a large number of species, including *Cornus canadensis*, *Clintonia borealis*, *Maianthemum canadense*, *Aralia nudicaulis*, *Linnaea borealis*, *Rubus pubescens*, *Streptopus lanceolatus*, *Lysimachia borealis*, *Galium triflorum*, *Mitella nuda* and *Coptis trifolia*. The moss layer is typically well developed and dominated by *Pleurozium schreberi*, with lower cover of *Ptilium crista-castrensis* and *Hylocomium splendens*.

There are two subassociations. The *typic* subassociation usually has greater abundance of *P. mariana* in the overstory. It has lower shrub cover overall, but *Diervilla lonicera* and *Vaccinium myrtilloides* are more common. This subassociation also has greater feathermoss cover, sometimes including large patches of *Sciuro-hypnum oedipodium*. The *Acer spicatum* subassociation is slightly richer and has a better developed shrub layer with abundant *A. spicatum* and/or *Corylus cornuta*, and sometimes *Alnus incana*. The herb layer often includes more nutrient-demanding species, such as *Viola renifolia*. Because of greater shrub cover and thus broad-leaf litter, the moss layer is less developed but typically includes *Rhytidiadelphus triquetrus* in addition to the feathermosses.





***Picea glauca* – *Abies balsamea* / *Streptopus lanceolatus* / *Pleurozium schreberi*
CNVC00256**

Type Description (cont'd)

Environment: CNVC00256 occurs in a continental boreal climate that grades from subhumid in the western part of its range to humid in the east. It is most frequently found on sites that are mesic to moist and relatively rich in nutrients, often near rivers or lakes; these are some of the most productive sites in the boreal region of Ontario. Stands are usually on level sites or gentle slopes on middle to upper-slope topopositions. On middle and lower slopes, seepage often enhances site moisture and nutrient availability. Soils are usually deep and can be fine-textured silts, clays or fine loams of lacustrine origin, or coarse loams and sands derived from morainal or glaciofluvial parent materials. Mor humus forms are common, but compared to other boreal Associations, moders and mulls are more likely to develop. Compared to the *typic*, the *Acer spicatum* subassociation is more frequently found on middle rather than upper-slope topopositions and on slightly moister and richer sites.

CNVC00256 occurs where regional fire cycles are intermediate (100-270 years) to very long (>500 years). Where the regional fire cycle is intermediate, stands likely occur on sites that have escaped fire for an extended period, such as on islands or in topographic breaks near rivers or lakes.

Dynamics: CNVC00256 is a self-perpetuating, late successional forest Association. Natural disturbance processes are primarily insect outbreaks, windthrow, or natural mortality of individual or small groups of trees by disease and other factors. Outbreaks of spruce budworm (*Choristoneura fumiferana*) occur periodically across the range of this Association, causing canopy mortality of *Abies balsamea* and, to a lesser extent, *Picea glauca*. Following disturbance, stands tend to recover rapidly through the release of abundant *A. balsamea* in the understory. Small-scale gap or patch disturbances typically result in an uneven-age structure within stands. Outbreaks can enhance the proportions of *P. glauca*, *P. mariana* and *Betula papyrifera* in the canopy since these species are less vulnerable to spruce budworm, but ultimately the highly shade tolerant *A. balsamea* re-establishes canopy dominance.

When fires do occur, *A. balsamea* is eliminated. Instead, *B. papyrifera* or *P. mariana* are likely to dominate the initial post-fire stand on these sites because they are adapted to disturbance (e.g., CNVC00239 [*Betula papyrifera* (*Populus tremuloides*) / *Acer spicatum* / *Clintonia borealis*]). Over time, however, the stand is likely to return to *A. balsamea* dominance, typically with intermediate stages characterized by mixedwoods (e.g., CNVC00235 [*Abies balsamea* – *Betula papyrifera* / *Acer spicatum*]).

Acer spicatum can form dense thickets in canopy openings, sometimes significantly delaying tree regeneration. Its deep roots can survive even high-severity fires and it responds quickly after disturbance by suckering. Being semi-shade tolerant, *A. spicatum* persists as the canopy closes, limiting available light for plants beneath it.

Range: CNVC00256 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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Épinette blanche – Sapin baumier / Streptope rose / Pleurozie dorée

Distribution

Countries: Canada

Provinces / Territories / States: Manitoba, Ontario

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

Rowe's Forest Regions and Sections of Canada: Boreal: Central Plateau, Lower English River, Missinaibi-Cabonga, Northern Clay, Northern Coniferous, Superior, Upper English River; Great Lakes-St. Lawrence: Algoma, Algonquin-Pontiac, 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-Lake of the Woods

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): 2E-2, 2E-4, 2W-3, 3E-1, 3E-2, 3E-4, 3E-5, 3E-7, 3S-5, 3W-1, 3W-2, 3W-3, 3W-4, 3W-5, 4E-3, 4S-1, 4S-2, 4S-3, 4S-4, 4S-5, 4S-6, 4W-1, 4W-2



Corresponding Types and Associations

256a typic	Ontario	BT5-4	<i>Picea glauca</i> - <i>Abies balsamea</i> (<i>Picea mariana</i>) / <i>Rubus pubescens</i> / <i>Pleurozium schreberi</i>
256b <i>Acer spicatum</i>	Ontario	BT8-8	<i>Picea glauca</i> - <i>Abies balsamea</i> / <i>Acer spicatum</i> / <i>Rubus pubescens</i> / <i>Rhytidadelphus triquetrus</i>



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Épinette blanche – Sapin baumier / Streptope rose / Pleurozie dorée

Vegetation Summary*

Species Name [†]	Association CNVC00256 82 plots		Subassociation 256a <i>typic</i> 49 plots		Subassociation 256b <i>Acer spicatum</i> 33 plots	
	% Cover [‡]	% Presence [^]	% Cover [‡]	% Presence [^]	% Cover [‡]	% Presence [^]
Overstory Trees						
<i>Picea glauca</i>	27	91	26	94	27	88
<i>Abies balsamea</i>	19	73	20	71	19	76
<i>Picea mariana</i>	13	45	15	57	7	27
<i>Betula papyrifera</i>	3	20	4	20	2	18
Tree Stratum Cover (P₁₀ P₂₅ Mean P₇₅ P₉₀)[‡]	(18 28 46 64 80)		(22 35 50 65 77)		(15 23 40 48 85)	
Understory Woody Shrubs and Regenerating Trees						
<i>Abies balsamea</i>	10	94	11	96	9	91
<i>Sorbus decora</i>	1	65	1	57	1	76
<i>Acer spicatum</i>	18	62	2	41	28	94
<i>Rosa acicularis</i>	1	57	1	61	1	52
<i>Diervilla lonicera</i>	4	54	4	67	3	33
<i>Betula papyrifera</i>	3	49	3	51	3	45
<i>Corylus cornuta</i>	9	45	2	35	16	61
<i>Vaccinium myrtilloides</i>	1	41	1	61	1	12
<i>Picea glauca</i>	3	40	3	41	2	39
<i>Lonicera canadensis</i>	2	39	2	35	2	45
<i>Ribes triste</i>	1	37	1	41	1	30
<i>Viburnum edule</i>	1	34	1	27	2	45
<i>Picea mariana</i>	4	33	4	39	3	24
<i>Vaccinium angustifolium</i>	3	33	4	45	1	15
<i>Rubus idaeus</i>	3	32	1	29	4	36
<i>Populus tremuloides</i>	1	29	2	33	1	24
<i>Alnus incana</i>	11	28	4	20	17	39
<i>Cornus stolonifera</i>	3	24	2	18	4	33
<i>Ribes lacustre</i>	1	23	1	24	1	21
<i>Rhododendron groenlandicum</i>	2	16	2	24	1	3
<i>Amelanchier alnifolia</i>	2	16	2	12	2	21
Shrub Stratum Cover (P₁₀ P₂₅ Mean P₇₅ P₉₀)[‡]	(11 17 41 58 86)		(11 15 29 43 54)		(18 30 58 87 100)	
Understory Herbs and Dwarf Shrubs						
<i>Cornus canadensis</i>	5	89	6	94	4	82
<i>Clintonia borealis</i>	3	87	3	88	2	85
<i>Maianthemum canadense</i>	2	85	3	94	2	73
<i>Aralia nudicaulis</i>	2	83	2	78	2	91
<i>Linnaea borealis</i>	2	82	2	92	1	67
<i>Rubus pubescens</i>	4	77	4	69	5	88
<i>Streptopus lanceolatus</i>	1	74	1	63	1	91
<i>Lysimachia borealis</i>	1	72	1	73	1	70



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Vegetation Summary (cont'd)*

Species Name ^T	Association CNVC00256		Subassociation 256a <i>typic</i>		Subassociation 256b <i>Acer spicatum</i>	
	% Cover [±]	% Presence ^A	% Cover [±]	% Presence ^A	% Cover [±]	% Presence ^A
<i>Galium triflorum</i>	1	65	1	51	1	85
<i>Mitella nuda</i>	2	63	2	51	3	82
<i>Coptis trifolia</i>	2	61	2	67	2	52
<i>Viola renifolia</i>	1	55	1	43	2	73
<i>Petasites frigidus</i>	1	45	1	39	1	55
<i>Anemone quinquefolia</i>	1	45	1	39	1	55
<i>Eurybia macrophylla</i>	5	44	6	39	4	52
<i>Lycopodium annotinum</i>	3	44	2	51	4	33
<i>Goodyera repens</i>	1	40	1	47	1	30
<i>Mertensia paniculata</i>	2	37	1	29	2	48
<i>Gymnocarpium dryopteris</i>	2	35	1	22	2	55
<i>Dryopteris expansa</i>	2	35	2	39	1	30
<i>Gaultheria hispidula</i>	2	33	2	39	1	24
<i>Moneses uniflora</i>	1	30	1	31	1	30
<i>Calamagrostis canadensis</i>	1	29	1	33	1	24
<i>Equisetum sylvaticum</i>	1	29	1	31	2	27
<i>Lycopodium obscurum</i>	1	29	1	35	1	21
<i>Orthilia secunda</i>	1	28	1	31	1	24
<i>Actaea rubra</i>	1	27	1	24	1	30
<i>Fragaria virginiana</i>	1	27	1	22	1	33
<i>Oryzopsis asperifolia</i>	1	26	1	24	1	27
<i>Symphyotrichum ciliolatum</i>	1	24	1	18	1	33
<i>Lycopodium clavatum</i>	1	22	1	27	1	15
<i>Carex pedunculata</i>	2	21	1	16	2	27
<i>Cinna latifolia</i>	1	20	1	12	1	30
<i>Chamerion angustifolium</i>	1	16	1	22	1	6
<i>Equisetum pratense</i>	2	15	1	6	2	27
<i>Athyrium filix-femina</i>	2	13	1	8	2	21
<i>Circaea alpina</i>	6	11	-	-	6	27
Herb Stratum Cover (P₁₀ P₂₅ Mean P₇₅ P₉₀)[‡]	(13 20 37 51 72)		(14 20 36 46 68)		(12 21 39 56 72)	
Bryophytes and Lichens						
<i>Pleurozium schreberi</i>	32	95	45	98	11	91
<i>Ptilium crista-castrensis</i>	4	83	4	88	5	76
<i>Hylocomium splendens</i>	7	72	6	76	9	67
<i>Rhytidiadelphus triquetrus</i>	10	57	3	47	16	73
<i>Dicranum polysetum</i>	1	55	1	71	1	30
<i>Sanionia uncinata</i>	2	43	3	37	1	52
<i>Dicranum fuscescens</i>	1	43	1	49	1	33
<i>Plagiomnium cuspidatum</i>	3	37	3	37	3	36
<i>Ptilidium pulcherrimum</i>	1	28	1	29	1	27
<i>Sciuro-hypnum oedipodium</i>	10	24	14	24	3	24
<i>Cladonia sp.</i>	2	24	2	29	2	18
<i>Dicranum scoparium</i>	1	24	1	27	1	21
<i>Brachythecium salebrosum</i>	3	23	4	20	1	27
<i>Brachythecium sp.</i>	2	22	5	12	1	36



***Picea glauca* – *Abies balsamea* / *Streptopus lanceolatus* / *Pleurozium schreberi*
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Vegetation Summary (cont'd)*

Species Name [†]	Association CNVC00256		Subassociation 256a <i>typic</i>		Subassociation 256b <i>Acer spicatum</i>	
	% Cover [‡]	% Presence [^]	% Cover [‡]	% Presence [^]	% Cover [‡]	% Presence [^]
<i>Plagiomnium drummondii</i>	2	22	1	18	4	27
<i>Cladina rangiferina</i>	1	20	1	29	1	6
<i>Polytrichum juniperinum</i>	1	20	1	24	1	12
<i>Peltigera canina</i>	1	20	1	20	1	18
<i>Polytrichum commune</i>	1	17	1	27	1	3
<i>Thuidium delicatulum</i>	1	15	2	4	1	30
<i>Polytrichum strictum</i>	7	11	5	4	8	21
Bryo-Lichen Stratum Cover						
(P₁₀ P₂₅ Mean P₇₅ P₉₀)[‡]	(12 30 58 85 96)		(32 46 69 89 98)		(6 14 41 63 83)	

* 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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Épinette blanche – Sapin baumier / Streptope rose / Pleurozie dorée

Site / Soil Characteristics

	Association CNVC00256 82 plots	Subassociation 256a <i>typic</i> 49 plots	Subassociation 256b <i>Acer spicatum</i> 33 plots
Elevation Range (min–mean–max meters)	136–330–491 missing data (1)	197–342–491 missing data (2)	136–314–483 missing data (0)
Slope Gradient (% frequency)	very steep (5) steep (6) moderately steep (7) moderate (5) gentle (28) level (43) missing data (6)	very steep (6) steep (6) moderately steep (4) moderate (6) gentle (22) level (47) missing data (8)	very steep (3) steep (6) moderately steep (12) moderate (3) gentle (36) level (36) missing data (3)
Aspect (% frequency)	north (17) east (9) south (23) west (26) level (26)	north (16) east (12) south (22) west (31) level (18)	north (18) east (3) south (24) west (18) level (36)
Meso Toposition (% frequency)	crest / upper (29) mid (35) lower / toe (15) depression (6) level (15)	crest / upper (39) mid (37) lower / toe (14) depression (2) level (8)	crest / upper (15) mid (33) lower / toe (15) depression (12) level (24)
Moisture Regime (% frequency)	very dry (1) dry (15) mesic (52) moist (27) wet (2) missing data (2)	very dry (2) dry (20) mesic (53) moist (20) wet (0) missing data (4)	very dry (0) dry (6) mesic (52) moist (36) wet (6) missing data (0)
Nutrient Regime (% frequency)	missing data (100)	missing data (100)	missing data (100)



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Site / Soil Characteristics (cont'd)

	Association CNVC00256	Subassociation 256a <i>typic</i>	Subassociation 256b <i>Acer spicatum</i>
Soil Parent Material (% frequency)	colluvium (1) moraine / till (22) fluvial (5) glaciofluvial (16) lacustrine (50) organic (1) missing data (5)	colluvium (0) moraine / till (20) fluvial (6) glaciofluvial (22) lacustrine (45) organic (0) missing data (6)	colluvium (3) moraine / till (24) fluvial (3) glaciofluvial (6) lacustrine (58) organic (3) missing data (3)
Soil Rooting Zone Substrate (% frequency)	non-soil (1) sandy (13) coarse loamy (26) fine loamy (7) silty (16) clayey (12) organic (2) missing data (22)	non-soil (0) sandy (16) coarse loamy (33) fine loamy (10) silty (16) clayey (10) organic (0) missing data (14)	non-soil (3) sandy (9) coarse loamy (15) fine loamy (3) silty (15) clayey (15) organic (6) missing data (33)
Root Restricting Depth (% frequency)	0 – 20 cm (2) 21 – 99 cm (20) ≥ 100 cm (65) missing data (13)	0 – 20 cm (2) 21 – 99 cm (24) ≥ 100 cm (63) missing data (10)	0 – 20 cm (3) 21 – 99 cm (12) ≥ 100 cm (67) missing data (18)
Humus Form (% frequency)	mor (57) moder (32) mull (6) peatymor (1) missing data (4)	mor (51) moder (41) mull (2) peatymor (0) missing data (6)	mor (67) moder (18) mull (12) peatymor (3) missing data (0)



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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:

CNVC00103 [*Picea glauca* – *Abies balsamea* / *Rosa acicularis* / *Aralia nudicaulis*] ranges from Alberta to northwestern Ontario and occurs on comparable boreal sites. It has less *Picea mariana*, *Acer spicatum*, *Clintonia borealis* and *Pleurozium schreberi*, and more *Viburnum edule*, *Rosa acicularis* and *Hylocomium splendens*.

CNVC00225 [*Abies balsamea* (*Picea glauca*) / *Acer spicatum* / *Oxalis montana*] ranges from Quebec to Nova Scotia and occurs on comparable boreal sites. It has more *Abies balsamea* and *Betula papyrifera* in the tree and shrub layers and more ferns (e.g., *Gymnocarpium dryopteris*, *Dryopteris* spp., *Phegopteris connectilis*) and *Oxalis montana* in the herb layer.

Related United States National Vegetation Classification Associations:

Relationships with Other Classifications:

Comments

Source Information

Number of source plots for CNVC00256: 82

Number of source plots for 256a typic: 49

Number of source plots for 256b *Acer spicatum*: 33

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: February, 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:

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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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