



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

<http://cnvc-cnvc.ca>

Forest / Forêt

Association CNVC00234

Picea mariana* – *Betula papyrifera* – *Abies balsamea* / *Clintonia borealis

Black Spruce – Paper Birch – Balsam Fir / Yellow Clintonia

Épinette noire – Bouleau à papier – Sapin baumier / Clintonie boréale

Subassociations: 234a *typic*, 234b *Pteridium aquilinum*, 234c *Acer rubrum*

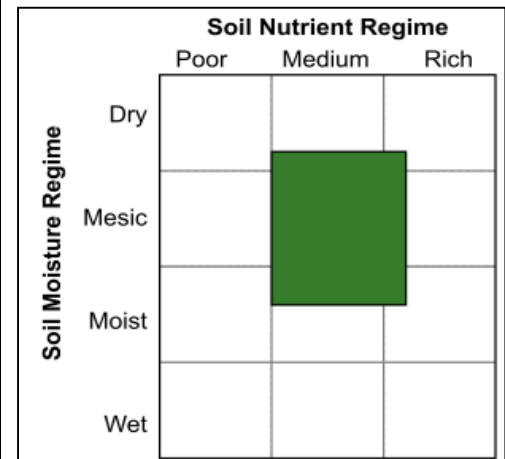
CNVC Alliance: CA00014 *Betula papyrifera* – *Populus tremuloides* – *Abies balsamea* / *Clintonia borealis*

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

Type Description

Concept: CNVC00234 is a boreal mixedwood forest Association that occurs in Ontario and Quebec. It has a closed canopy dominated by black spruce (*Picea mariana*) and paper birch (*Betula papyrifera*), usually with a smaller component of balsam fir (*Abies balsamea*) and sometimes trembling aspen (*Populus tremuloides*). Regeneration of these tree species, especially balsam fir and black spruce, dominates the well-developed shrub layer. Less abundant but constant shrub species include velvet-leaved blueberry (*Vaccinium myrtilloides*), serviceberries (*Amelanchier* spp.), early lowbush blueberry (*V. angustifolium*), American mountain-ash (*Sorbus americana*) and sheep laurel (*Kalmia angustifolia*). The herb layer is moderately developed and usually includes bunchberry (*Cornus canadensis*), yellow clintonia (*Clintonia borealis*), wild lily-of-the-valley (*Maianthemum canadense*), creeping snowberry (*Gaultheria hispida*), twinflower (*Linnaea borealis*), northern starflower (*Lysimachia borealis*), goldthread (*Coptis trifolia*) and wild sarsaparilla (*Aralia nudicaulis*). The forest floor cover is mainly broad-leaf litter, so the moss layer is poorly developed, with only minor cover of red-stemmed feathermoss (*Pleurozium schreberi*). CNVC00234 is a mid-seral condition that typically succeeds an early seral, post-fire Association. It is most frequently found on mesic, nutrient-medium sites and occurs in a region with a humid continental boreal climate. As the fire cycle lengthens in the eastern portion of its range, outbreaks of spruce budworm (*Choristoneura fumiferana*) play a greater role in the dynamics of this Association. Three subassociations are distinguished: *typic*, *Pteridium aquilinum* and *Acer rubrum*.

Vegetation: CNVC00234 is a mixedwood forest Association with a closed canopy that is dominated by *Picea mariana* and *Betula papyrifera*, frequently with a smaller amount of *Abies balsamea*. *Populus tremuloides* is sometimes present in the canopy. The shrub layer is well developed and usually dominated by regenerating *A. balsamea* and *P. mariana*, with *B. papyrifera* occasionally abundant where canopy openings are large enough to provide adequate light. *Vaccinium myrtilloides*, *Amelanchier* spp., *V. angustifolium*, *Sorbus americana* and *Kalmia angustifolia* are common shrub species. The herb layer is moderately developed, commonly including *Cornus canadensis*, *Clintonia borealis*, *Maianthemum canadense*, *Gaultheria hispida*, *Linnaea borealis*, *Lysimachia borealis*, *Coptis trifolia* and *Aralia nudicaulis*. Forest floor cover is predominantly broad-leaf litter, so the moss layer is poorly developed, with only *Pleurozium schreberi* common, mainly on fallen logs and at the base of trees. In the *Pteridium aquilinum* subassociation, *Diervilla lonicera* and *P. aquilinum* are abundant in the shrub and herb layers respectively. The *Acer rubrum* subassociation has *A. rubrum* in the tree and shrub layers. Both of these subassociations are further distinguished from the *typic* by greater constancy of temperate species, like *Viburnum nudum* (see Comments) and *Ilex mucronata*.





***Picea mariana* – *Betula papyrifera* – *Abies balsamea* / *Clintonia borealis* CNVC00234**

Type Description (cont'd)

Environment: CNVC00234 occurs in a humid continental boreal climate that becomes increasingly humid farther east and more temperate in the southern portion of its range. It primarily occurs on mesic, nutrient-medium sites. Stands are commonly on gentle to moderately steep slopes on water-shedding, middle to upper-slope topopositions. They are often on warmer (often drier) aspects, either west or south-facing. Soils are usually moderately deep, well drained and coarse-textured, derived from morainal parent materials. Typically, humus forms are mors but moders are slightly more common in the *Pteridium aquilinum* and *Acer rubrum* subassociations.

CNVC00234 occurs where regional fire cycles are very long (>500 years), long (270-500 years) or intermediate (100-270 years). Fire cycle length and site conditions influence the relative dominance of *Picea mariana* and *Abies balsamea* in each stand of this Association. Longer fire cycles favour the late seral species *A. balsamea*. More extreme site conditions, either drier or wetter (and usually poorer), tend to favour the less nutrient-demanding species *P. mariana*. Conversely, *A. balsamea* is more competitive on sites with better nutrient status.

Dynamics: CNVC00234 is a mid-seral condition that can succeed an early seral Association, such as CNVC00213 [*Populus tremuloides* – *Betula papyrifera* – *Picea mariana* – *Pinus banksiana* / *Diervilla lonicera* / *Pleurozium schreberi*] that forms after fire or harvesting. Disturbance type, severity and history affect stand composition. *Abies balsamea* is usually eliminated by fire, but *Betula papyrifera* and *Picea mariana* are adapted to disturbance. *B. papyrifera* can reproduce vegetatively from stump sprouts. It is a pioneer species that also produces abundant, light, wind-dispersed seeds that can readily colonize mineral soil seedbeds exposed by disturbance. *P. mariana* has cones that open when heated to release seeds. Although its seeds can germinate on a variety of substrates, seedbeds are usually improved by a fire that reduces organic matter and exposes mineral soil. *B. papyrifera* grows rapidly in full-light conditions and is intolerant of shade, whereas *P. mariana* grows more slowly and is self-replacing in a stand because of its shade tolerance. *Abies balsamea* becomes established in these stands, forming CNVC00234, when seeds are disseminated from nearby areas, with trees growing into the canopy with *P. mariana* as *B. papyrifera* declines.

Harvesting and natural disturbances, such as outbreaks of spruce budworm (*Choristoneura fumiferana*) or windthrow events, help to maintain CNVC00234 on the landscape. Canopy openings that result from these disturbances can release *A. balsamea* or *P. mariana* regeneration in the understory or conversely, provide opportunities for *B. papyrifera* to regenerate from seeds or sprouts, maintaining the mixedwood condition. *A. balsamea* is more vulnerable to spruce budworm than is *P. mariana*, so outbreaks of this insect can favour *P. mariana*.

Range: CNVC00234 occurs mainly in the boreal region of Quebec. It is most common in western Quebec, but its range extends west into northeastern Ontario and east to the Lower North Shore of the Gulf of Saint Lawrence near the Little Mecatina River. It also occurs in the Gaspé region and on Anticosti Island. The *typic* subassociation is recognized in Ontario and Quebec. It extends farther north and east than do the *Pteridium aquilinum* and *Acer rubrum* subassociations, which tend to be on slightly moister, more nutrient-rich and warmer sites in Quebec. These two subassociations occur sporadically farther south, in the northern temperate region, usually on sites that are cooler than normal for that region (e.g., at higher elevations or on north aspects).

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: Ontario, Quebec

Terrestrial Ecozones and Ecoregions of Canada: Atlantic Highlands: Appalachians; Boreal Shield: Abitibi Plains, Anticosti Island, Central Laurentians, Lake Timiskaming Lowland, Mecatina Plateau, Rivière Rupert Plateau, Southern Laurentians

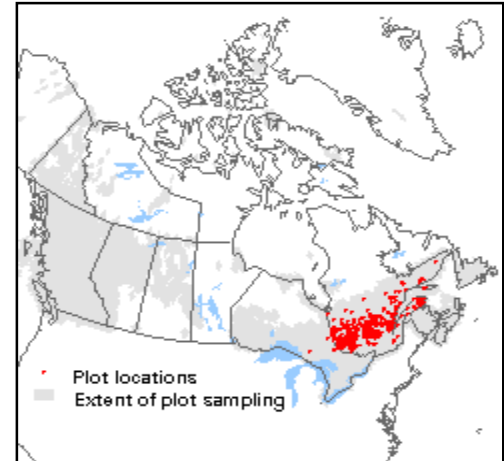
Rowe's Forest Regions and Sections of Canada: Boreal: Anticosti, Chibougamau-Natashquan, Gaspé, Gouin, Laurentide-Onatchiway, Missinaibi-Cabonga, Newfoundland-Labrador Barrens, Northern Clay; Great Lakes-St. Lawrence: Algonquin-Pontiac, Eastern Townships, Haileybury Clay, Laurentian, Saguenay, Temiscouata-Restigouche, Timagami

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

Nature Conservancy of Canada Ecoregions: Boreal Shield, Great Lakes, Northern Appalachians-Acadia

Ecological Land Classification of Ontario (ecoregions and ecodistricts): 3E-5, 3E-6, 3E-7, 4E-3, 4E-4

Bioclimatic Domains and Subdomains of Québec: 3 Est, 3 Ouest, 4 Est, 4 Ouest, 5 Est, 5 Ouest, 6 Est, 6 Ouest



Corresponding Types and Associations

234a <i>typica</i>	Ontario	BTr4-13	<i>Picea mariana</i> - <i>Betula papyrifera</i> / <i>Clintonia borealis</i>
	Quebec	QC063A	<i>Picea mariana</i> - <i>Betula papyrifera</i> (<i>Abies balsamea</i>) / <i>Cornus canadensis</i> [Typique]
		QC087A	<i>Populus tremuloides</i> - <i>Picea mariana</i> (<i>Betula papyrifera</i>) / <i>Cornus canadensis</i> [Typique]
234b <i>Pteridium aquilinum</i>	Quebec	QC063B	<i>Picea mariana</i> - <i>Betula papyrifera</i> (<i>Abies balsamea</i>) / <i>Cornus canadensis</i> [<i>Pteridium aquilinum</i>]
		QC087B	<i>Populus tremuloides</i> - <i>Picea mariana</i> (<i>Betula papyrifera</i>) / <i>Cornus canadensis</i> [<i>Pteridium aquilinum</i>]
234c <i>Acer rubrum</i>	Quebec	QC063C	<i>Picea mariana</i> - <i>Betula papyrifera</i> (<i>Abies balsamea</i>) / <i>Cornus canadensis</i> [<i>Acer rubrum</i>]



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Vegetation Summary*

Species Name [†]	Association CNVC00234		Subassociation 234a <i>typic</i>		Subassociation 234b <i>Pteridium aquilinum</i>	
	309 plots		197 plots		99 plots	
	% Cover [‡]	% Presence [^]	% Cover [‡]	% Presence [^]	% Cover [‡]	% Presence [^]
Overstory Trees						
<i>Picea mariana</i>	23	99	23	99	24	100
<i>Betula papyrifera</i>	22	99	23	99	19	98
<i>Abies balsamea</i>	12	82	11	83	12	78
<i>Populus tremuloides</i>	15	47	14	41	16	63
<i>Picea glauca</i>	9	33	8	26	9	45
<i>Acer rubrum</i>	7	23	4	12	6	35
<i>Pinus banksiana</i>	9	18	9	14	9	28
<i>Prunus pensylvanica</i>	4	18	4	15	6	22
Tree Stratum Cover (P₁₀ P₂₅ Mean P₇₅ P₉₀)[‡]	(49 49 66 83 86)		(36 49 64 83 86)		(49 52 69 83 99)	
Understory Woody Shrubs and Regenerating Trees						
<i>Abies balsamea</i>	17	95	18	96	16	93
<i>Picea mariana</i>	10	95	10	95	10	97
<i>Betula papyrifera</i>	6	91	6	93	6	89
<i>Vaccinium myrtilloides</i>	5	80	4	80	6	82
<i>Amelanchier sp.</i>	5	68	5	65	5	73
<i>Vaccinium angustifolium</i>	4	66	4	59	6	77
<i>Sorbus americana</i>	4	66	4	64	4	69
<i>Kalmia angustifolia</i>	5	62	5	57	6	71
<i>Ilex mucronata</i>	4	55	4	46	4	71
<i>Viburnum nudum</i>	7	54	5	40	10	78
<i>Diervilla lonicera</i>	8	46	4	32	11	75
<i>Acer spicatum</i>	4	42	3	35	4	55
<i>Salix sp.</i>	4	40	3	37	4	49
<i>Acer rubrum</i>	5	36	4	23	7	55
<i>Populus tremuloides</i>	3	33	3	26	3	46
<i>Rhododendron groenlandicum</i>	4	32	5	33	3	33
<i>Picea glauca</i>	4	30	4	28	4	33
<i>Prunus pensylvanica</i>	4	29	3	25	4	34
<i>Ribes glandulosum</i>	3	26	3	30	2	20
<i>Alnus viridis</i>	10	24	11	25	7	17
<i>Sorbus decora</i>	4	21	4	24	5	12
<i>Corylus cornuta</i>	4	17	3	10	4	31
<i>Lonicera canadensis</i>	2	10	2	5	2	16
<i>Taxus canadensis</i>	2	6	2	4	2	7
<i>Acer pensylvanicum</i>	3	4	3	3	3	4
Shrub Stratum Cover (P₁₀ P₂₅ Mean P₇₅ P₉₀)[‡]	(32 32 55 66 86)		(32 32 53 66 86)		(32 36 60 83 99)	



***Picea mariana* – *Betula papyrifera* – *Abies balsamea* / *Clintonia borealis* CNVC00234**

Vegetation Summary (cont'd)*

Species Name [†]	Association CNVC00234		Subassociation 234a <i>typic</i>		Subassociation 234b <i>Pteridium aquilinum</i>	
	% Cover [‡]	% Presence [^]	% Cover [‡]	% Presence [^]	% Cover [‡]	% Presence [^]
Understory Herbs and Dwarf Shrubs						
<i>Cornus canadensis</i>	10	93	10	92	11	95
<i>Clintonia borealis</i>	5	86	4	86	7	85
<i>Maianthemum canadense</i>	5	85	4	80	7	94
<i>Gaultheria hispidula</i>	3	77	3	83	3	69
<i>Linnaea borealis</i>	4	73	4	73	4	74
<i>Lysimachia borealis</i>	3	73	3	69	3	81
<i>Coptis trifolia</i>	3	70	3	70	3	70
<i>Aralia nudicaulis</i>	4	67	4	61	6	78
<i>Pteridium aquilinum</i>	13	54	3	34	22	93
<i>Lycopodium obscurum</i>	2	44	3	42	2	48
<i>Dryopteris spinulosa</i> complex	3	43	3	51	3	27
<i>Lycopodium annotinum</i>	3	33	3	39	3	21
<i>Carex</i> sp.	3	23	2	26	3	18
<i>Eurybia macrophylla</i>	4	22	2	15	6	36
<i>Oxalis montana</i>	6	19	7	25	3	7
<i>Poaceae</i>	3	19	3	20	3	18
<i>Solidago macrophylla</i>	2	18	2	21	2	15
<i>Osmunda claytoniana</i>	4	13	3	13	4	12
<i>Oclemena acuminata</i>	2	13	2	10	2	20
<i>Cypripedium acaule</i>	2	13	2	8	2	21
<i>Trillium undulatum</i>	2	11	2	8	2	11
Herb Stratum Cover (P₁₀ P₂₅ Mean P₇₅ P₉₀)[‡]	(3 16 30 50 54)		(3 16 25 33 50)		(16 33 42 50 70)	
Bryophytes and Lichens						
<i>Pleurozium schreberi</i>	14	96	14	97	13	93
<i>Dicranum</i> sp.	4	91	4	92	4	86
<i>Cladina rangiferina</i>	3	64	2	63	3	67
<i>Polytrichum</i> sp.	3	62	3	65	3	57
<i>Cladonia</i> sp.	3	55	2	60	3	44
<i>Ptilium crista-castrensis</i>	3	48	3	54	3	38
<i>Sphagnum</i> sp.	6	39	6	47	4	22
<i>Hylocomium splendens</i>	3	32	3	41	2	17
<i>Bazzania trilobata</i>	3	29	3	28	3	28
<i>Cladina mitis</i>	2	26	2	30	2	16
<i>Sphagnum girgensohnii</i>	8	16	9	20	4	9
Bryo-Lichen Stratum Cover (P₁₀ P₂₅ Mean P₇₅ P₉₀)[‡]	(3 16 26 33 50)		(3 16 28 33 50)		(3 16 23 33 50)	

* 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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Vegetation Summary (cont'd)*

Subassociation
 234c *Acer rubrum*

13 plots

Species Name [†]	% Cover [‡]	% Presence [^]
Overstory Trees		
<i>Picea mariana</i>	22	100
<i>Betula papyrifera</i>	27	100
<i>Abies balsamea</i>	13	100
<i>Populus tremuloides</i>	17	15
<i>Picea glauca</i>	9	38
<i>Acer rubrum</i>	17	100
<i>Pinus banksiana</i>	5	8
<i>Prunus pensylvanica</i>	3	38
Tree Stratum Cover (P₁₀ P₂₅ Mean P₇₅ P₉₀)[‡]	(52 66 76 86 99)	

Understory Woody Shrubs and Regenerating Trees

<i>Abies balsamea</i>	16	100
<i>Picea mariana</i>	6	77
<i>Betula papyrifera</i>	3	77
<i>Vaccinium myrtilloides</i>	5	69
<i>Amelanchier sp.</i>	3	85
<i>Vaccinium angustifolium</i>	2	77
<i>Sorbus americana</i>	3	69
<i>Kalmia angustifolia</i>	4	69
<i>Ilex mucronata</i>	5	77
<i>Viburnum nudum</i>	6	85
<i>Diervilla lonicera</i>	2	38
<i>Acer spicatum</i>	5	62
<i>Salix sp.</i>	2	23
<i>Acer rubrum</i>	6	92
<i>Populus tremuloides</i>	3	23
<i>Rhododendron groenlandicum</i>	2	8
<i>Picea glauca</i>	3	31
<i>Prunus pensylvanica</i>	3	46
<i>Ribes glandulosum</i>	2	15
<i>Alnus viridis</i>	3	54
<i>Sorbus decora</i>	3	38
<i>Corylus cornuta</i>	3	23
<i>Lonicera canadensis</i>	3	38
<i>Taxus canadensis</i>	2	23
<i>Acer pensylvanicum</i>	3	23
Shrub Stratum Cover (P₁₀ P₂₅ Mean P₇₅ P₉₀)[‡]	(22 32 45 66 66)	



***Picea mariana* – *Betula papyrifera* – *Abies balsamea* / *Clintonia borealis* CNVC00234**

Vegetation Summary (cont'd)*

Species Name [†]	Subassociation 234c <i>Acer rubrum</i>	
	% Cover [‡]	% Presence [^]
Understory Herbs and Dwarf Shrubs		
<i>Cornus canadensis</i>	9	85
<i>Clintonia borealis</i>	6	92
<i>Maianthemum canadense</i>	3	92
<i>Gaultheria hispidula</i>	3	54
<i>Linnaea borealis</i>	7	69
<i>Lysimachia borealis</i>	3	77
<i>Coptis trifolia</i>	3	77
<i>Aralia nudicaulis</i>	3	85
<i>Pteridium aquilinum</i>	3	77
<i>Lycopodium obscurum</i>	3	46
<i>Dryopteris spinulosa</i> complex	2	46
<i>Lycopodium annotinum</i>	2	23
<i>Carex</i> sp.	2	8
<i>Eurybia macrophylla</i>	2	23
<i>Oxalis montana</i>	3	15
Poaceae	-	-
<i>Solidago macrophylla</i>	2	8
<i>Osmunda claytoniana</i>	2	23
<i>Oclemena acuminata</i>	-	-
<i>Cypripedium acaule</i>	2	23
<i>Trillium undulatum</i>	2	54
Herb Stratum Cover (P₁₀ P₂₅ Mean P₇₅ P₉₀)[‡]	(3 16 23 33 50)	
Bryophytes and Lichens		
<i>Pleurozium schreberi</i>	7	100
<i>Dicranum</i> sp.	7	100
<i>Cladina rangiferina</i>	2	62
<i>Polytrichum</i> sp.	2	46
<i>Cladonia</i> sp.	2	54
<i>Ptilium crista-castrensis</i>	2	31
<i>Sphagnum</i> sp.	2	38
<i>Hylocomium splendens</i>	2	8
<i>Bazzania trilobata</i>	4	54
<i>Cladina mitis</i>	2	46
<i>Sphagnum girgensohnii</i>	3	8
Bryo-Lichen Stratum Cover (P₁₀ P₂₅ Mean P₇₅ P₉₀)[‡]	(3 3 18 33 33)	

* 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 CNVC00234 309 plots	Subassociation 234a <i>typic</i> 197 plots	Subassociation 234b <i>Pteridium aquilinum</i> 99 plots
Elevation Range (min–mean–max meters)	50–388–945	50–402–945	60–363–590
Slope Gradient (% frequency)	very steep (1) steep (6) moderately steep (22) moderate (24) gentle (28) level (18)	very steep (2) steep (9) moderately steep (27) moderate (21) gentle (24) level (17)	very steep (0) steep (2) moderately steep (13) moderate (27) gentle (35) level (22)
Aspect (% frequency)	north (17) east (15) south (20) west (32) level (17)	north (19) east (15) south (16) west (35) level (16)	north (13) east (13) south (26) west (29) level (18)
Meso Toposition (% frequency)	crest / upper (23) mid (54) lower / toe (10) depression (2) level (11)	crest / upper (20) mid (59) lower / toe (9) depression (2) level (10)	crest / upper (30) mid (40) lower / toe (14) depression (1) level (14)
Moisture Regime (% frequency)	dry (6) mesic (79) moist (14) wet (1)	dry (8) mesic (75) moist (16) wet (2)	dry (2) mesic (86) moist (12) wet (0)
Nutrient Regime (% frequency)	missing data (100)	missing data (100)	missing data (100)



***Picea mariana* – *Betula papyrifera* – *Abies balsamea* / *Clintonia borealis* CNVC00234**

Site / Soil Characteristics (cont'd)

	Association CNVC00234	Subassociation 234a <i>typic</i>	Subassociation 234b <i>Pteridium aquilinum</i>
Soil Parent Material (% frequency)	bedrock (2) colluvium (3) eolian (0) moraine / till (80) glaciofluvial (8) glaciolacustrine (5) marine (2) organic (0)	bedrock (3) colluvium (3) eolian (1) moraine / till (79) glaciofluvial (8) glaciolacustrine (6) marine (1) organic (1)	bedrock (0) colluvium (4) eolian (0) moraine / till (80) glaciofluvial (10) glaciolacustrine (2) marine (4) organic (0)
Soil Rooting Zone Substrate (% frequency)	non-soil (5) sandy (6) coarse loamy (16) fine loamy (4) silty (1) clayey (0) organic (1) missing data (66)	non-soil (6) sandy (8) coarse loamy (15) fine loamy (5) silty (1) clayey (1) organic (1) missing data (64)	non-soil (4) sandy (4) coarse loamy (16) fine loamy (3) silty (2) clayey (0) organic (0) missing data (71)
Root Restricting Depth (% frequency)	0 – 20 cm (6) 21 – 99 cm (67) ≥ 100 cm (0) missing data (26)	0 – 20 cm (9) 21 – 99 cm (66) ≥ 100 cm (1) missing data (24)	0 – 20 cm (3) 21 – 99 cm (68) ≥ 100 cm (0) missing data (29)
Humus Form (% frequency)	mor (89) moder (8) peatymor (3)	mor (91) moder (6) peatymor (4)	mor (86) moder (12) peatymor (1)



Forest / Forêt

Association CNVC00234

Picea mariana – *Betula papyrifera* – *Abies balsamea* / *Clintonia borealis*

Black Spruce – Paper Birch – Balsam Fir / Yellow Clintonia

Épinette noire – Bouleau à papier – Sapin baumier / Clintonie boréale

Site / Soil Characteristics (cont'd)

Subassociation

234c *Acer rubrum*

13 plots

Elevation Range (min–mean–max meters)

80–373–560

Slope Gradient (% frequency)

very steep (0)
 steep (8)
 moderately steep (15)
moderate (38)
 gentle (31)
 level (8)

Aspect (% frequency)

north (15)
 east (15)
south (31)
 west (23)
 level (15)

Meso Toposition (% frequency)

crest / upper (15)
mid (77)
 lower / toe (0)
 depression (0)
 level (8)

Moisture Regime (% frequency)

dry (0)
mesic (92)
 moist (8)
 wet (0)

Nutrient Regime (% frequency)

missing data (100)



***Picea mariana* – *Betula papyrifera* – *Abies balsamea* / *Clintonia borealis* CNVC00234**

Site / Soil Characteristics (cont'd)

Subassociation
 234c *Acer rubrum*

Soil Parent Material (% frequency)

bedrock (0)
 colluvium (0)
 eolian (0)
moraine / till (92)
 glaciofluvial (0)
 glaciolacustrine (8)
 marine (0)
 organic (0)

Soil Rooting Zone Substrate (% frequency)

non-soil (0)
 sandy (0)
 coarse loamy (31)
 fine loamy (8)
 silty (0)
 clayey (0)
 organic (0)
 missing data (62)

Root Restricting Depth (% frequency)

0 – 20 cm (0)
21 – 99 cm (77)
 ≥ 100 cm (0)
 missing data (23)

Humus Form (% frequency)

mor (85)
 moder (15)
 peatymor (0)



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Forest / Forêt

Association CNVC00234

Picea mariana – *Betula papyrifera* – *Abies balsamea* / *Clintonia borealis*

Black Spruce – Paper Birch – Balsam Fir / Yellow Clintonia

Épinette noire – Bouleau à papier – Sapin baumier / Clintonie boréale

Additional Characteristics

Species of High Conservation Concern:

Non-native Species:

Management Issues:

Type Statistics

Internal Similarity:

Confidence:

Strength:

Related Concepts

Similar CNVC Associations:

CNVC00213 [*Populus tremuloides* – *Betula papyrifera* – *Picea mariana* – *Pinus banksiana* / *Diervilla lonicera* / *Pleurozium schreberi*] occurs on similar sites in the same range but has more *Pinus banksiana* and less *Abies balsamea* (see Dynamics).

CNVC00214 [*Picea mariana* – *Betula papyrifera* / *Kalmia angustifolia* / *Pleurozium schreberi*] occurs on slightly poorer sites in Quebec. It has less *Abies balsamea*, more abundant ericaceous shrubs and a more developed moss layer.

CNVC00216 [*Picea mariana* – *Betula papyrifera* (*Abies balsamea*) / *Acer spicatum*] occurs on slightly richer sites in Quebec and has abundant *Acer spicatum* and *Corylus cornuta* in the shrub layer.

CNVC00218 [*Pinus banksiana* – *Abies balsamea* – *Betula papyrifera* / *Diervilla lonicera* / *Pleurozium schreberi*] occurs on similar sites in Quebec but has *Pinus banksiana* rather than *Picea mariana* codominant and higher cover of feathermosses.

CNVC00231 [*Abies balsamea* – *Betula papyrifera* – *Populus tremuloides* / *Clintonia borealis*] occurs on similar sites in the same range but does not have *Picea mariana* codominant in the canopy.

CNVC00232 [*Abies balsamea* – *Betula papyrifera* / *Pleurozium schreberi*] occurs on similar sites in Quebec but does not have *Picea mariana* codominant in the canopy.

CNVC00344 [*Picea mariana* – *Betula papyrifera* – *Abies balsamea* / *Pleurozium schreberi*] occurs on similar sites in Quebec but has a more developed moss layer.

Related United States National Vegetation Classification Associations:

Relationships with Other Classifications:

Comments

Viburnum nudum here refers to var. *cassinoides* (wild raisin).



***Picea mariana* – *Betula papyrifera* – *Abies balsamea* / *Clintonia borealis* CNVC00234**

Source Information

Number of source plots for CNVC00234: 309

Number of source plots for 234a typic: 197

Number of source plots for 234b *Pteridium aquilinum*: 99

Number of source plots for 234c *Acer rubrum*: 13

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.

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Concept Authors: K. Baldwin, K. Chapman, M. Major, C. Morneau, P. Uhlig, M. Wester

Description Authors: K. Chapman, K. Baldwin and J.-P. Saucier

Date of Concept: February, 2014

Date of Description: February, 2016

Classification References:

Bergeron, J.-F.; Grondin, P.; Blouin, J. 1999. Rapport de classification écologique du sous-domaine bioclimatique de la pessière à mousses de l'ouest. Min. des Res. nat. du Qué., Dir. des inv. for., Sainte-Foy, QC.

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***Picea mariana* – *Betula papyrifera* – *Abies balsamea* / *Clintonia borealis* CNVC00234**

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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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