



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

<http://cnvc-cnvc.ca>

Forest / Forêt

Association CNVC00333

***Populus tremuloides* – *P. balsamifera* / *Alnus incana* – *Cornus stolonifera***

**Trembling Aspen – Balsam Poplar / Speckled Alder – Red-osier Dogwood**

**Peuplier faux-tremble – Peuplier baumier / Aulne rugueux – Cornouiller stolonifère**

**Subassociations:** none

**CNVC Alliance:** CA00026 *Populus tremuloides* – *P. balsamifera* / *Alnus incana* – *Cornus stolonifera*

**CNVC Group:** CG0011 Central Boreal Mesic-Moist Trembling Aspen – White Spruce Forest

## Type Description

**Concept:** CNVC00333 is a boreal hardwood forest Association that is described from northwestern Ontario and likely ranges into Manitoba. It has a closed canopy of trembling aspen (*Populus tremuloides*) and/or balsam poplar (*P. balsamifera*) overtopping a dense tall shrub layer dominated by speckled alder (*Alnus incana*) and/or green alder (*A. viridis*) and red-osier dogwood (*Cornus stolonifera*). Squashberry (*Viburnum edule*), swamp red currant (*Ribes triste*), prickly rose (*Rosa acicularis*), showy mountain-ash (*Sorbus decora*), red raspberry (*Rubus idaeus*) and regenerating balsam poplar and black spruce (*Picea mariana*) are usually present. The herb layer is dense and typically includes dwarf raspberry (*Rubus pubescens*), bunchberry (*Cornus canadensis*), naked mitrewort (*Mitella nuda*), northern starflower (*Lysimachia borealis*), woodland horsetail (*Equisetum sylvaticum*), tall bluebells (*Mertensia paniculata*), yellow clintonia (*Clintonia borealis*), wild lily-of-the-valley (*Maianthemum canadense*), arctic sweet coltsfoot (*Petasites frigidus*) and lower constancy and cover of several other species. The forest floor cover is mainly broad-leaf litter, so the moss layer is sparse, with only minor cover of red-stemmed feathermoss (*Pleurozium schreberi*), knight's plume moss (*Ptilium crista-castrensis*) and stairstep moss (*Hylocomium splendens*). CNVC00333 occurs in a region with a subhumid continental boreal climate. It is primarily found on moist, nutrient-rich sites; these are some of the most productive sites in the region. It is an early seral condition that typically establishes after fire or flooding.

**Vegetation:** CNVC00333 is a hardwood forest Association with a closed canopy of *Populus tremuloides* and/or *P. balsamifera*. The shrub layer is dense and dominated by tall shrubs *Alnus incana* (see Comments) and/or *A. viridis*, with lower abundance of *Cornus stolonifera*. A variety of other shrubs, including *Viburnum edule*, *Ribes triste*, *Rosa acicularis*, *Sorbus decora* and *Rubus idaeus*, are common, as are regenerating *P. balsamifera* and *Picea mariana*. The herb layer is dense, usually including *Rubus pubescens*, *Cornus canadensis*, *Mitella nuda*, *Equisetum sylvaticum*, *Mertensia paniculata*, *Clintonia borealis*, *Maianthemum canadense*, *Petasites frigidus*, as well as several other less constant species. The moss layer is poorly developed because of abundant broad-leaf litter; typically *Pleurozium schreberi*, *Ptilium crista-castrensis* and *Hylocomium splendens* are present but limited to areas not covered by leaves, like fallen logs and the base of trees.



Source: Ontario Ministry of Natural Resources and Forestry

		Soil Nutrient Regime		
		Poor	Medium	Rich
Soil Moisture Regime	Dry			
	Mesic			
	Moist			
	Wet			



***Populus tremuloides* – *P. balsamifera* / *Alnus incana* – *Cornus stolonifera* CNVC00333**

**Type Description (cont'd)**

**Environment:** CNVC00333 occurs in a subhumid continental boreal climate on moist, nutrient-rich sites; these are some of the most productive sites in this region of the boreal. Stands are usually on the level terrain of glaciolacustrine deposits. Soils are typically deep and fine-textured with imperfect drainage. Even in the subhumid climate of the western part of its range, the fine-textured soils retain enough moisture to support *Alnus incana*, a shrub that fixes nitrogen thereby further enriching the soil. Mor humus forms are most common.

CNVC00333 occurs where the regional fire cycle is intermediate (100-270 years). However, these stands often exist where there are natural fire breaks (e.g., water bodies) and are less prone to fire than the surrounding landscape because of their moisture status.

**Dynamics:** CNVC00333 is an early seral Association that typically establishes after fire or, particularly on floodplains of large rivers, severe disturbance by flooding or ice scouring. *Populus tremuloides* and *P. balsamifera* are pioneer species adapted to disturbance. Following any disturbance that does not kill their roots, they can reproduce vegetatively from root suckers. They also produce abundant, light, wind-dispersed seeds that can readily colonize mineral soil seedbeds exposed by disturbance. Both species grow rapidly in full-light conditions but are intolerant of shade so do not replace themselves in a stand without further disturbance. Conifers present in the understory (e.g., *Picea mariana* and *Abies balsamea*) that are slower growing, longer lived and more shade tolerant, can gradually grow into the canopy as the pioneer species decline, leading to a mid-seral mixedwood Association (e.g., CNVC00272 [*Populus tremuloides* – *Picea mariana* / *Alnus incana*]).

*Alnus incana*, *A. viridis* and *Cornus stolonifera* can form dense thickets in canopy openings that can significantly delay conifer ingress. Their deep roots can survive even high-severity fires and they can respond quickly after disturbance by sprouting or suckering. Being semi-shade tolerant, these tall shrubs persist as the canopy closes, limiting available light for plants beneath them.

Forest tent caterpillar (*Malacosoma disstria*) and *Armillaria* root disease (*Armillaria* spp.) can have significant impacts on *Populus* spp. Defoliation by the caterpillar can reduce growth, cause dieback and sometimes lead to mortality. *Armillaria* spp. can weaken or kill individual or small groups of trees. Canopy openings that result from insect or pathogen disturbance can promote forest succession by enhancing the growth of understory trees, such as *P. mariana* and *A. balsamea*.

**Range:** CNVC00333 is described from the boreal region of northwestern Ontario, north of approximately latitude 51°N. It likely extends into Manitoba.

**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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**Peuplier faux-tremble – Peuplier baumier / Aulne rugueux – Cornouiller stolonifère**

### Distribution

**Countries:** Canada

**Provinces / Territories / States:** Manitoba, Ontario

**Terrestrial Ecozones and Ecoregions of Canada:** Boreal Shield: Big Trout Lake, Lac Seul Upland

**Rowe's Forest Regions and Sections of Canada:** Boreal: Central Plateau, Northern Coniferous

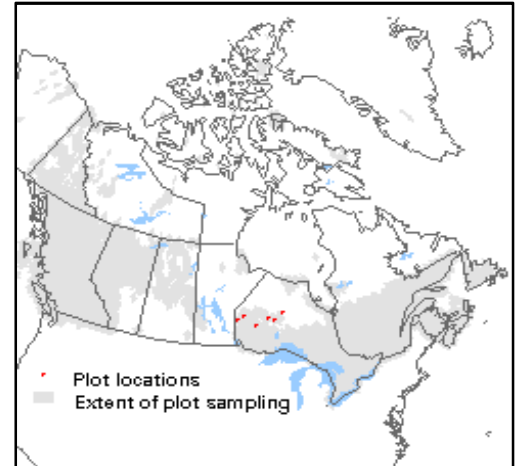
**NAAEC CEC Ecoregions of North America (Levels I & II):** Northern Forests: Softwood Shield

**Nature Conservancy of Canada Ecoregions:** Boreal Shield

**Ecozones and Ecoregions of Manitoba:** Boreal Shield: Lac Seul Upland

**Manitoba Protected Areas Initiative Natural Regions:** Precambrian Boreal Forest: Lac Seul Upland

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



### Corresponding Types and Associations

CNVC00333

Ontario

BTr9-1

*Populus tremuloides* - *P. balsamifera* / *Alnus incana* -  
*Viburnum edule* / *Rubus pubescens*



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**Peuplier faux-tremble – Peuplier baumier / Aulne rugueux – Cornouiller stolonifère**

### Vegetation Summary\*

Species Name <sup>T</sup>	Association CNVC00333	
	8 plots	
	% Cover <sup>±</sup>	% Presence <sup>^</sup>
<b>Overstory Trees</b>		
<i>Populus tremuloides</i>	51	88
<i>Populus balsamifera</i>	33	75
<i>Picea mariana</i>	8	38
<i>Betula papyrifera</i>	11	25
<b>Tree Stratum Cover (P<sub>10</sub> P<sub>25</sub> Mean P<sub>75</sub> P<sub>90</sub>)<sup>‡</sup></b>	<b>(41 50 69 85 94)</b>	
<b>Understory Woody Shrubs and Regenerating Trees</b>		
<i>Viburnum edule</i>	3	100
<i>Cornus stolonifera</i>	12	88
<i>Alnus incana</i>	57	75
<i>Alnus viridis</i>	27	75
<i>Ribes triste</i>	5	75
<i>Rosa acicularis</i>	3	75
<i>Populus balsamifera</i>	3	75
<i>Sorbus decora</i>	1	75
<i>Picea mariana</i>	7	63
<i>Rubus idaeus</i>	1	63
<i>Rhododendron groenlandicum</i>	10	50
<i>Populus tremuloides</i>	8	50
<i>Amelanchier alnifolia</i>	1	50
<i>Vaccinium myrtilloides</i>	1	50
<i>Abies balsamea</i>	15	38
<i>Betula papyrifera</i>	7	25
<i>Amelanchier sp.</i>	4	25
<i>Lonicera involucrata</i>	3	25
<i>Rhamnus alnifolia</i>	2	25
<i>Ribes glandulosum</i>	2	25
<i>Ribes hudsonianum</i>	1	25
<i>Ribes lacustre</i>	1	25
<i>Ribes hirtellum</i>	1	25
<i>Lonicera dioica</i>	0	25
<i>Lonicera villosa</i>	0	25
<b>Shrub Stratum Cover (P<sub>10</sub> P<sub>25</sub> Mean P<sub>75</sub> P<sub>90</sub>)<sup>‡</sup></b>	<b>(80 97 94 100 100)</b>	
<b>Understory Herbs and Dwarf Shrubs</b>		
<i>Rubus pubescens</i>	24	100
<i>Cornus canadensis</i>	11	100
<i>Mitella nuda</i>	5	100
<i>Lysimachia borealis</i>	1	100
<i>Equisetum sylvaticum</i>	2	88
<i>Mertensia paniculata</i>	5	75



***Populus tremuloides* – *P. balsamifera* / *Alnus incana* – *Cornus stolonifera* CNVC00333**

**Vegetation Summary\***

Species Name <sup>†</sup>	Association CNVC00333	
	% Cover <sup>‡</sup>	% Presence <sup>^</sup>
<i>Clintonia borealis</i>	3	75
<i>Maianthemum canadense</i>	2	75
<i>Petasites frigidus</i>	1	75
<i>Symphytotrichum ciliolatum</i>	1	75
<i>Linnaea borealis</i>	1	75
<i>Viola renifolia</i>	1	75
<i>Galium trifidum</i>	< 1	75
<i>Fragaria virginiana</i>	5	63
<i>Aralia nudicaulis</i>	5	50
<i>Pyrola asarifolia</i>	3	50
<i>Lycopodium annotinum</i>	2	38
<i>Viola blanda</i>	1	38
<i>Goodyera repens</i>	0	38
<i>Chamerion angustifolium</i>	2	25
<i>Actaea rubra</i>	2	25
<i>Gymnocarpium dryopteris</i>	1	25
<i>Actaea sp.</i>	1	25
<i>Lycopodium dendroideum</i>	1	25
<i>Equisetum pratense</i>	0	25
<b>Herb Stratum Cover (P<sub>10</sub> P<sub>25</sub> Mean P<sub>75</sub> P<sub>90</sub>)<sup>‡</sup></b>	<b>(28 36 60 83 90)</b>	
<b>Bryophytes and Lichens</b>		
<i>Pleurozium schreberi</i>	1	75
<i>Ptilium crista-castrensis</i>	1	75
<i>Hylocomium splendens</i>	2	63
<i>Dicranum polysetum</i>	< 1	63
<i>Brachythecium acuminatum</i>	< 1	50
<i>Campyliadelphus chrysophyllus</i>	0	50
<i>Plagiomnium cuspidatum</i>	7	38
<i>Rhytiadelphus triquetrus</i>	3	38
<i>Brachythecium salebrosum</i>	2	38
<i>Cladonia sp.</i>	0	38
<i>Plagiothecium laetum</i>	0	38
<i>Sanionia uncinata</i>	0	38
<i>Sciuro-hypnum oedipodium</i>	0	38
<i>Plagiomnium medium</i>	2	25
<i>Brachythecium sp.</i>	0	25
<i>Callicladium haldanianum</i>	0	25
<i>Geocalyx graveolens</i>	0	25
<i>Jamesoniella autumnalis</i>	0	25
<b>Bryo-Lichen Stratum Cover</b>		
<b>(P<sub>10</sub> P<sub>25</sub> Mean P<sub>75</sub> P<sub>90</sub>)<sup>‡</sup></b>	<b>(1 1 8 9 17)</b>	

\* 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<sub>x</sub> = X<sup>th</sup> percentile (e.g., P<sub>10</sub> = 10<sup>th</sup> percentile)



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## Site / Soil Characteristics

Association

CNVC00333

8 plots

### Elevation Range (min–mean–max meters)

303–345–383

missing data (25)

### Slope Gradient (% frequency)

moderate (13)

gentle (13)

**level (75)**

### Aspect (% frequency)

north (13)

west (13)

**level (75)**

### Meso Toposition (% frequency)

crest / upper (13)

lower / toe (25)

**level (63)**

### Moisture Regime (% frequency)

mesic (25)

**moist (75)**

### Nutrient Regime (% frequency)

missing data (100)



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**Site / Soil Characteristics (cont'd)**

Association  
CNVC00333

**Soil Parent Material (% frequency)**

moraine / till (25)  
**lacustrine (63)**  
missing data (13)

**Soil Rooting Zone Substrate (% frequency)**

coarse loamy (25)  
**fine loamy (38)**  
missing data (38)

**Root Restricting Depth (% frequency)**

0 – 20 cm (13)  
**≥ 100 cm (50)**  
missing data (38)

**Humus Form (% frequency)**

**mor (88)**  
peatymor (13)



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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:

CNVC00239 [*Betula papyrifera* (*Populus tremuloides*) / *Acer spicatum* / *Clintonia borealis*] ranges from southeastern Manitoba to Quebec and occurs on sites that are not as moist or rich. It has more *Betula papyrifera* and little to no *Populus balsamifera* in the canopy, more *Abies balsamea* in the overstory and understory, and less *Alnus* spp. and *Cornus stolonifera* in the shrub layer.

CNVC00241 [*Populus tremuloides* (*P. balsamifera*) / *Alnus incana* / *Eurybia macrophylla*] ranges from southeastern Manitoba to Quebec and occurs on comparable boreal sites. It has lower constancy of *Alnus viridis*, *Cornus stolonifera*, *Rosa acicularis* and *Viburnum edule* in the shrub layer and more *Eurybia macrophylla* in the herb layer.

CNVC00305 [*Populus tremuloides* / *Alnus viridis* (*Rosa acicularis*)] occurs on mesic, nutrient-medium sites in the same range and lacks the abundance of *Alnus incana* and *Cornus stolonifera*.

CNVC00306 [*Populus tremuloides* – *Betula papyrifera* / *Acer spicatum* (*Rosa acicularis*)] ranges from western Manitoba to eastern Saskatchewan and occurs on sites that are not as moist or rich. It has more *Betula papyrifera* in the overstory and less *Picea mariana*, *Alnus* spp., *Corylus cornuta* and *Cornus stolonifera* in the shrub layer.

Related United States National Vegetation Classification Associations:

Relationships with Other Classifications:

### Comments

*Alnus incana* here refers to ssp. *rugosa* (speckled alder).

### Source Information

Number of source plots for CNVC00333: 8

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: February, 2012

Date of Description: March, 2016

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.





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## ***Populus tremuloides* – *P. balsamifera* / *Alnus incana* – *Cornus stolonifera* CNVC00333**

### **Characterization References:**

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- Kenkel, N.C.; Walker, D.J.; Watson, P.R.; Caners, R.T.; Lastra, R.A. 1997. Vegetation dynamics in boreal forest ecosystems. *Coenoses* 12(2-3):97-108.
- Man, R.; Rice, J.A. 2010. Response of aspen stands to forest tent caterpillar defoliation and subsequent overstory mortality in northeastern Ontario, Canada. For. Ecol. Manage. 260:1853-1860.
- 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.
- Van Sleenwen, M. 2006. Natural fire regimes in Ontario. Ont. Min. Nat. Resour., Queen's Printer for Ont., Toronto, ON.
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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>.

**Suggested Citation:** K. Chapman and K. Baldwin. *Populus tremuloides* – *P. balsamifera* / *Alnus incana* – *Cornus stolonifera* [online]. Sault Ste. Marie, Ontario, Canada: Canadian National Vegetation Classification. March, 2016; generated Jun/24/2016; cited ENTER DATE ACCESSED. 9 p. Canadian National Vegetation Classification Association: CNVC00333. Available from <http://cnvc-cnvc.ca>. System Requirements: Adobe Acrobat Reader v. 7.0 or higher. ISSN 1916-3266.