Forest / Forêt **Association CNVC00083**

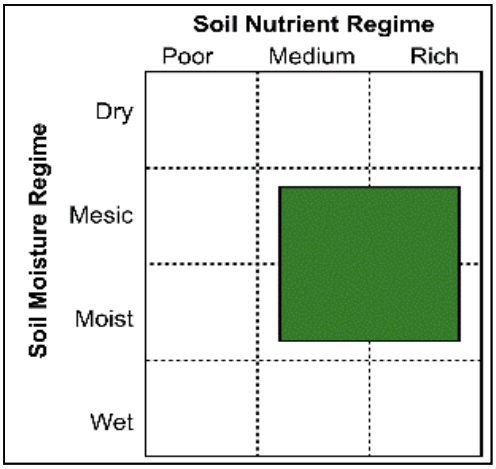
Picea glauca – Populus tremuloides – P. balsamifera / Lonicera involucrata / Rubus pubescens

White Spruce – Trembling Aspen – Balsam Poplar / Bracted Honeysuckle / Dwarf Raspberry

Épinette blanche – Peuplier faux-tremble – Peuplier baumier / Chèvrefeuille involucré / Ronce pubescente

Subassociations: none
CNVC Alliance: CA00038 *Populus tremuloides – P. balsamifera / Lonicera involucrata / Mertensia paniculata*
CNVC Group: CG0015 Cordilleran Boreal Moist White Spruce – Trembling Aspen (Balsam Poplar) Forest

Source: Yukon government



Type Description

Concept: CNVC00083 is a boreal mixedwood forest Association that occurs in Yukon, Alberta, Saskatchewan and likely British Columbia (BC). It has a moderately closed canopy that is usually dominated by white spruce (*Picea glauca*) and trembling aspen (*Populus tremuloides*). Balsam poplar (*Populus balsamifera*), paper birch (*Betula papyrifera*) and, in the Rocky Mountain foothills, lodgepole pine (*Pinus contorta*), are common overstory associates. The understory is relatively species rich. The well-developed shrub layer usually includes squashberry (*Viburnum edule*), prickly rose (*Rosa acicularis*) and bracted honeysuckle (*Lonicera involucrata*), although red-osier dogwood (*Cornus stolonifera*) and green alder (*Alnus viridis*) can be abundant when present. Wild sarsaparilla (*Aralia nudicaulis*) often dominates the moderately developed to dense herb and dwarf shrub layer. This layer typically also includes bunchberry (*Cornus canadensis*), dwarf raspberry (*Rubus pubescens*), twinflower (*Linnaea borealis*), naked mitrewort (*Mitella nuda*), arctic sweet coltsfoot (*Petasites frigidus*), fireweed (*Chamerion angustifolium*), tall bluebells (*Mertensia paniculata*) and in the BC and Alberta portions of the range, bluejoint reedgrass (*Calamagrostis canadensis*). The forest floor cover is mainly broad-leaf and grass litter so the moss layer is sparse with only minor cover of feathermosses (*Pleurozium schreberi*, *Hylocomium splendens* and *Ptilium crista-castrensis*). CNVC0083 occurs in a region with a subhumid continental boreal climate. It is found on moist to mesic, nutrient-rich to medium sites; these are among the most productive sites in the region. It can succeed an early seral, post-fire Association or be the first cohort following disturbance. Disturbance type and history affect the relative dominance of trembling aspen and white spruce in each stand of this Association.

Vegetation: CNVC00083 is a mixedwood forest Association with a moderately closed canopy that is usually dominated by *Picea glauca* and *Populus tremuloides. Populus balsamifera* and/or *Betula papyrifera,* and in the Cordilleran part of the range, *Pinus contorta* (see Comments) are often significant canopy components. Both the shrub and herb layers are relatively diverse and include species that are indicative of rich sites. The shrub layer is well developed with *Viburnum edule, Rosa acicularis* and, in the BC and Alberta part of the range, *Lonicera involucrata* dominant. *Alnus viridis* and *Cornus stolonifera* can also be abundant when present. The herb and dwarf shrub layer is dense and often dominated by *Aralia nudicaulis*. This layer typically also includes *Cornus canadensis, Rubus pubescens, Linnaea borealis, Mitella nuda*, *Petasites frigidus, Chamerion angustifolium, Mertensia paniculata*, *Maianthemum canadense* and in BC and Alberta, *Calamagrostis canadensis*. Forest floor cover is predominantly broad-leaf, and sometimes grass, litter so the moss layer is poorly developed, with only *Pleurozium schreberi*, *Hylocomium splendens* and *Ptilium crista-castrensis* common, mainly on fallen logs and at tree bases.

Picea glauca – Populus tremuloides – P. balsamifera / Lonicera involucrata / Rubus pubescens CNVC00083

Type Description (cont'd)

Environment: CNVC00083 occurs in a subhumid continental boreal climate where regional fire cycles are short (<100 years) or intermediate (100-270 years). It is typically found on moist to mesic, nutrient-rich to medium sites; these are some of the most productive sites in this region of the boreal. Stands are usually on level or gentle slopes, often on water-receiving middle to lower or toe-slope topopositions. Seepage often enhances moisture and nutrient availability on these sites. On slopes, stands are most common on cooler, north-facing aspects. Soils are usually fine textured (e.g., clays or fine loams), derived from a variety of parent materials. Mor humus forms are common, but compared to other boreal Associations, moders are relatively frequent.

Dynamics: CNVC00083 usually succeeds early seral Associations that establish after stand-replacing fire or harvesting (e.g., CNVC00080 [*Populus tremuloides – P. balsamifera / Lonicera involucrata – Cornus stolonifera / Rubus pubescens*]) but can also form the first cohort after disturbance. *Populus tremuloides* and *P. balsamifera* are pioneer species that can reproduce vegetatively from root suckers following any disturbance that does not kill their roots. They also produce abundant light, wind-dispersed seeds that can readily colonize mineral soil seedbeds exposed by disturbance. They grow rapidly in full-light conditions but are intolerant of shade so do not self-replace in a stand without further disturbance.

Picea glauca becomes established in these stands when seeds are disseminated from nearby areas, with trees growing into the canopy and forming CNVC00083 as the *Populus* species decline. If seed sources are available, *P. glauca* sometimes re-colonizes at the same time as the *Populus,* but *P. glauca* grows more slowly, so it usually requires several decades to attain canopy height. Succession is often re-initiated by fire before a stand reaches the mid-successional stage, but in the prolonged absence of disturbance *P. glauca* can gradually dominate the overstory. A late successional *P. glauca*-dominated condition (e.g., CNVC00097 [*Picea glauca / Lonicera involucrata / Rubus pubescens*] could develop after approximately 125 years.

After fire or harvesting, species such as *Calamagrostis canadensis, Alnus viridis, Cornus stolonifera* and *Rubus idaeus* can be highly competitive with regenerating conifers on these sites and delay stand re-establishment.

Forest tent caterpillar (*Malacosoma disstria*) and *Armillaria* root disease (*Armillaria* spp.) can have significant impacts on *P. tremuloides.* Defoliation by the caterpillar can reduce growth, cause dieback and sometimes lead to mortality if infestation occurs over successive years. *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 *P. glauca* in the understory or, conversely, providing opportunities for *P. tremuloides* to regenerate from seeds or suckers, maintaining the mixedwood condition.

Range: CNVC00083 occurs in the boreal regions of Yukon, Alberta, Saskatchewan and likely British Columbia, as well as the Rocky Mountain foothills of Alberta.

Conservation Status (NatureServe)

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

Forest / Forêt **Association CNVC00083**

Picea glauca – Populus tremuloides – P. balsamifera / Lonicera involucrata / Rubus pubescens

White Spruce – Trembling Aspen – Balsam Poplar / Bracted Honeysuckle / Dwarf Raspberry

Épinette blanche – Peuplier faux-tremble – Peuplier baumier / Chèvrefeuille involucré / Ronce pubescente

Distribution

Countries: Canada

Provinces / Territories / States: Alberta, British Columbia, Saskatchewan, Yukon

Terrestrial Ecozones and Ecoregions of Canada: Boreal Cordillera: Hyland Highland, Liard Basin; Boreal Plains: Clear Hills Upland, Mid-Boreal Uplands, Muskwa Plateau, Peace Lowland, Wabasca Lowland, Western Alberta Upland, Western Boreal

Rowe's Forest Regions and Sections of Canada: Boreal: Alpine Forest - Tundra, Aspen Grove, Lower Foothills, Mixedwood, Upper Foothills, Upper Liard

NAAEC CEC Ecoregions of North America (Levels I & II): Northern Forests: Boreal Plains; Northwestern Forested Mountains: Boreal Cordillera; Taiga: Taiga Plains

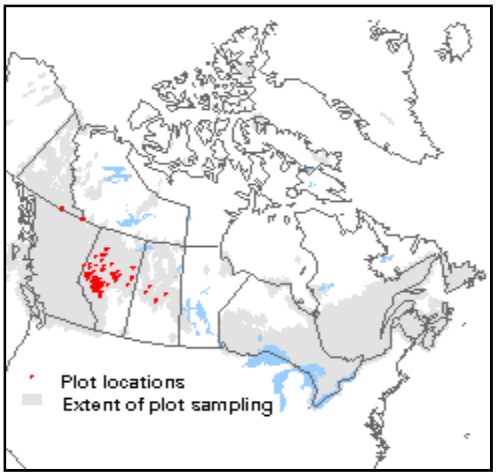
Nature Conservancy of Canada Ecoregions: Boreal Cordillera, Boreal Plains, Taiga Plains

Ecozones and Ecoregions of the Yukon: Boreal Cordillera: Hyland Highland, Liard Basin; Boreal Plains: Muskwa Plateau

Biogeoclimatic Ecosystem Classification of British Columbia (zones and subzones): BWBS

Natural Regions and Subregions of Alberta: Boreal Forest: Central Mixedwood, Dry Mixedwood, Lower Boreal Highlands; Foothills: Lower Foothills, Upper Foothills

Ecozones and Ecoregions of Saskatchewan: Boreal Plain: Mid-Boreal Upland



Corresponding Types and Associations

CNVC00083	Yukon	SwB25	*Picea glauca – Populus balsamifera / Viburnum edule – Cornus stolonifera / Aralia nudicaulis*
	Alberta	NN/BM/E/02/01	Pb - Sw /dogwood / fern
		NN/BM/E/02/02	Pb - Sw / bracted honeysuckle / fern
		NN/BM/E/02/03	Pb - Sw / river alder - green alder / fern
		WC/LF/F/03/01	Aw - Sw - Pl / bracted honeysuckle / fern
		WC/LF/F/03/02	Aw - Sw - Pl / green alder / fern
		WC/LF/F/03/03	Aw - Sw - Pl / dogwood / fern
		WC/LF/F/03/04	Aw - Sw - Pl / fir / fern
		WC/LF/F/03/06	Aw - Sw - Pl / fern /feather moss
		WC/UF/F/03/01	Pb - Sw - Pl / green alder - river alder / fern
	Saskatchewan	BP15	Balsam poplar - white spruce / feathermoss: Very moist silty loam

Forest / Forêt **Association CNVC00083**

Picea glauca – Populus tremuloides – P. balsamifera / Lonicera involucrata / Rubus pubescens

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Vegetation Summary*

Species Name†	Association CNVC00083 153 plots % Cover±	% Presence^
Overstory Trees		
Picea glauca	**20**	**90**
Populus tremuloides	**21**	**67**
Populus balsamifera	18	59
Betula papyrifera	11	38
Pinus contorta	17	26
Tree Stratum Cover (P_{10} P_{25} Mean P_{75} P_{90})‡	**(26 39 55 66 91)**	
Understory Woody Shrubs and Regenerating Trees		
Viburnum edule	9	95
Rosa acicularis	7	93
Lonicera involucrata	**8**	**69**
Picea glauca	3	54
Cornus stolonifera	12	46
Ribes lacustre	2	46
Alnus viridis	18	41
Rubus idaeus	3	39
Populus tremuloides	2	35
Betula papyrifera	3	31
Abies lasiocarpa	9	30
Amelanchier alnifolia	2	27
Populus balsamifera	3	26
Ribes triste	1	24
Ribes oxyacanthoides	3	23
Shrub Stratum Cover (P_{10} P_{25} Mean P_{75} P_{90})‡	**(24 32 49 62 85)**	
Understory Herbs and Dwarf Shrubs		
Cornus canadensis	9	88
Rubus pubescens	**8**	**85**
Linnaea borealis	5	80
Mitella nuda	4	80
Aralia nudicaulis	12	76
Petasites frigidus	2	70
Mertensia paniculata	3	65
Chamerion angustifolium	4	63
Calamagrostis canadensis	13	59
Maianthemum canadense	1	58
Pyrola asarifolia	3	56
Lathyrus ochroleucus	2	53
Fragaria virginiana	3	51

Picea glauca – Populus tremuloides – P. balsamifera / Lonicera involucrata / Rubus pubescens CNVC00083

Vegetation Summary (cont'd)*

	Association CNVC00083	
Species Name[†]	% Cover[±]	% Presence[^]
Equisetum sylvaticum	2	43
Galium trifidum	1	42
Actaea rubra	1	42
Galium boreale	1	41
Gymnocarpium dryopteris	4	39
Equisetum arvense	4	35
Orthilia secunda	1	33
Viola renifolia	1	32
Symphyotrichum ciliolatum	2	30
Streptopus amplexifolius	2	30
Lycopodium annotinum	5	28
Arnica cordifolia	3	23
Maianthemum racemosum	3	22
Eurybia conspicua	4	20
Herb Stratum Cover (P_{10} P_{25} Mean P_{75} P_{90})[‡]	**(22 37 59 87 100)**	
Bryophytes and Lichens		
Pleurozium schreberi	10	58
Hylocomium splendens	17	54
Ptilium crista-castrensis	7	52
Bryo-Lichen Stratum Cover (P_{10} P_{25} Mean P_{75} P_{90})[‡]	**(0 2 25 42 74)**	

* 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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Site / Soil Characteristics

	Association CNVC00083
	153 plots
Elevation Range (min–mean–max meters)	
	274–854–1330
	missing data (22)
Slope Gradient (% frequency)	
	very steep (1)
	steep (1)
	moderately steep (4)
	moderate (7)
	gentle (16)
	level (50)
	missing data (21)
Aspect (% frequency)	
	north (24)
	east (15)
	south (14)
	west (11)
	level (10)
	missing data (25)
Meso Topoposition (% frequency)	
	crest / upper (11)
	mid (16)
	lower / toe (13)
	depression (1)
	level (12)
	missing data (47)
Moisture Regime (% frequency)	
	dry (1)
	mesic (36)
	moist (42)
	wet (3)
	missing data (18)
Nutrient Regime (% frequency)	
	poor (2)
	medium (33)
	rich (43)
	missing data (22)

Picea glauca – Populus tremuloides – P. balsamifera / Lonicera involucrata / Rubus pubescens CNVC00083

Site / Soil Characteristics (cont'd)

	Association CNVC00083
Soil Parent Material (% frequency)	
	bedrock (1)
	colluvium (5)
	eolian (5)
	moraine / till (33)
	fluvial (12)
	glaciofluvial (8)
	lacustrine (2)
	glaciolacustrine (12)
	organic (1)
	missing data (20)
Soil Rooting Zone Substrate (% frequency)	
	non-soil (6)
	sandy (2)
	coarse loamy (6)
	fine loamy (21)
	silty (7)
	clayey (19)
	organic (1)
	missing data (38)
Root Restricting Depth (% frequency)	
	≥ 100 cm (3)
	missing data (97)
Humus Form (% frequency)	
	mor (12)
	moder (3)
	mull (1)
	missing data (84)

Forest / Forêt **Association CNVC00083**

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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:

CNVC00079 [*Picea glauca - Betula papyrifera (Populus tremuloides) / Equisetum arvense – E. pratense*] occurs on moist, nutrient-rich boreal sites in Alberta, Yukon and likely British Columbia. It has more *Betula papyrifera* in the overstory and dominance of *Equisetum arvense* and *E. pratense* in the understory and is more typically associated with riparian areas such as the margins of lakes and ponds and along streams.

CNVC00080 [*Populus tremuloides – P. balsamifera / Lonicera involucrata – Cornus stolonifera / Rubus pubescens*] is a similar hardwood Association that occurs on comparable boreal sites in British Columbia, Alberta and Saskatchewan (see Dynamics).

CNVC00081 [*Populus tremuloides / Lonicera involucrata / Gymnocarpium dryopteris*] is a similar hardwood Association that occurs on comparable boreal sites in British Columbia.

CNVC00091 [*Populus tremuloides – Picea glauca – Pinus contorta / Leymus innovatus*] occurs on mesic, nutrient-medium boreal sites in the Cordilleran portion of the range. It has *Pinus contorta* codominant in the overstory and abundant *Shepherdia canadensis* and *Leymus innovatus* in the understory, rather than the more nutrient-demanding species of CNVC00083.

CNVC00095 [*Populus tremuloides – Picea glauca / Rosa acicularis – Viburnum edule*] occurs mainly on mesic, nutrient-medium sites in the same range.

CNVC00097 [*Picea glauca / Lonicera involucrata / Rubus pubescens*] is a similar coniferous Association that occurs on comparable boreal sites in Alberta, British Columbia and Yukon.

CNVC00263 [*Picea glauca – Populus tremuloides / Rosa acicularis / Aralia nudicaulis*] occurs on mesic, nutrient-medium sites on the boreal plains of Alberta, Saskatchewan and Manitoba. It lacks *Lonicera involucrata* and has less developed shrub and herb layers.

Related United States National Vegetation Classification Associations:

Relationships with Other Classifications:

Comments

Pinus contorta here refers to var. *latifolia* (lodgepole pine).

Picea glauca – Populus tremuloides – P. balsamifera / Lonicera involucrata / Rubus pubescens CNVC00083

Source Information

Number of source plots for CNVC00083: 153

Information Sources:

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Concept Authors: L. Allen, J. Archibald, K. Baldwin, K. Chapman, N. Flynn, C. Kennedy, K. McKenna, M. McLaughlan, D. Meidinger
Description Authors: K. Chapman, K. Baldwin and D. Downing
Date of Concept: March, 2012
Date of Description: August, 2017

Classification References:

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Picea glauca – Populus tremuloides – P. balsamifera / Lonicera involucrata / Rubus pubescens CNVC00083

Characterization References (cont'd):

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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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