



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

<http://cnvc-cnvc.ca>

Forest / Forêt

Association CNVC00263

Picea glauca* – *Populus tremuloides* / *Rosa acicularis* / *Aralia nudicaulis

White Spruce – Trembling Aspen / Prickly Rose / Wild Sarsaparilla

Épinette blanche – Peuplier faux-tremble / Rosier aciculaire / Aralie à tige nue

Subassociations: none

CNVC Alliance: CA00025 *Picea glauca* – *Abies balsamea* – *Populus tremuloides* / *Rosa acicularis* / *Aralia nudicaulis*

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



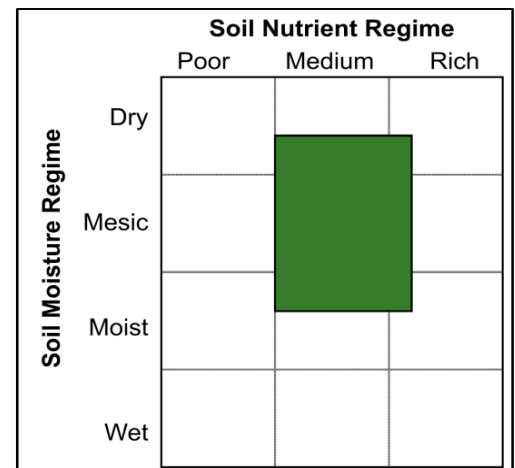
Source: M. McLaughlan

Type Description

Concept: CNVC00263 is a boreal mixedwood forest Association that ranges from Alberta to Manitoba. It has a closed canopy of white spruce (*Picea glauca*) and trembling aspen (*Populus tremuloides*), sometimes with paper birch (*Betula papyrifera*) as a minor associate. The moderately developed shrub layer commonly includes low abundance of prickly rose (*Rosa acicularis*) and squashberry (*Viburnum edule*), along with lower constancy of several other shrub species. The herb layer is moderately developed and commonly includes bunchberry (*Cornus canadensis*), twinflower (*Linnaea borealis*), wild lily-of-the-valley (*Maianthemum canadense*), wild sarsaparilla (*Aralia nudicaulis*), dwarf raspberry (*Rubus pubescens*), arctic sweet coltsfoot (*Petasites frigidus*), wild strawberry (*Fragaria virginiana*) and northern bedstraw (*Galium boreale*). 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*) and stairstep moss (*Hylocomium splendens*). CNVC00263 typically succeeds an early seral, post-fire Association. It occurs in a region with a subhumid continental boreal climate and is most frequently found on mesic, nutrient-medium sites. Disturbance type and history, as well as site conditions, affect the relative dominance of trembling aspen and white spruce in each stand of this Association.

Vegetation: CNVC00263 is a mixedwood forest Association with a closed canopy of *Picea glauca* and *Populus tremuloides*, sometimes with *Betula papyrifera* as a minor canopy associate. The shrub layer is moderately developed and typically includes low abundance of *Rosa acicularis* and *Viburnum edule*, although *Corylus cornuta* can be abundant where present. The moderately developed herb layer commonly includes *Cornus canadensis*, *Linnaea borealis*, *Maianthemum canadense*, *Aralia nudicaulis*, *Rubus pubescens*, *Petasites frigidus*, *Fragaria virginiana* and *Galium boreale*. Forest floor cover is predominantly broad-leaf litter so the moss layer is poorly developed, with only *Pleurozium schreberi* and *Hylocomium splendens* common, mainly on fallen logs and at the base of trees.

Environment: CNVC00263 occurs in a subhumid continental boreal climate where regional fire cycles are intermediate (100-270 years) or short (<100 years). Although found on a wide range of site conditions, it occurs most frequently on level sites with mesic moisture and medium nutrient status. Soils are typically deep, but textures and parent materials are variable (lacustrine, fluvial, morainal and eolian primarily). Mor humus forms are typical.





***Picea glauca* – *Populus tremuloides* / *Rosa acicularis* / *Aralia nudicaulis* CNVC00263**

Type Description (cont'd)

Dynamics: CNVC00263 usually succeeds early seral Associations that establish after stand-replacing fire or harvesting (e.g., CNVC00094 [*Populus tremuloides* / *Rosa acicularis* – *Viburnum edule*]) but can also form the first cohort after disturbance. *Populus tremuloides* is a pioneer species that can reproduce vegetatively from root suckers following any disturbance that does not kill its roots. It also produces abundant, light, wind-dispersed seeds that can readily colonize mineral soil seedbeds exposed by disturbance. It grows rapidly in full-light conditions but is intolerant of shade so does not replace itself 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 CNVC00263 as the *P. tremuloides* declines. If seed sources are available, *P. glauca* sometimes re-colonizes at the same time as *P. tremuloides*, but *P. glauca* grows more slowly, so it usually requires several decades to attain canopy height. *Abies balsamea* can also establish by seed and may grow into the canopy leading to CNVC00093 [*Picea glauca* – *Abies balsamea* – *Betula papyrifera* – *Populus tremuloides* / *Rosa acicularis* / *Aralia nudicaulis*].

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. *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 *Picea glauca* in the understory or, conversely, provide opportunities for *P. tremuloides* to regenerate from seeds or suckers, maintaining the mixedwood condition.

Range: CNVC00263 occurs on the boreal plains of western Canada, from Alberta to 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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Distribution

Countries: Canada

Provinces / Territories / States: Alberta, Manitoba, Saskatchewan

Terrestrial Ecozones and Ecoregions of Canada: Boreal Plains: Boreal Transition, Mid-Boreal Lowland, Mid-Boreal Uplands

Rowe's Forest Regions and Sections of Canada: Boreal: Aspen Grove, Manitoba Lowlands, Mixedwood, Upper Churchill

NAAEC CEC Ecoregions of North America (Levels I & II): Northern Forests: Boreal Plains

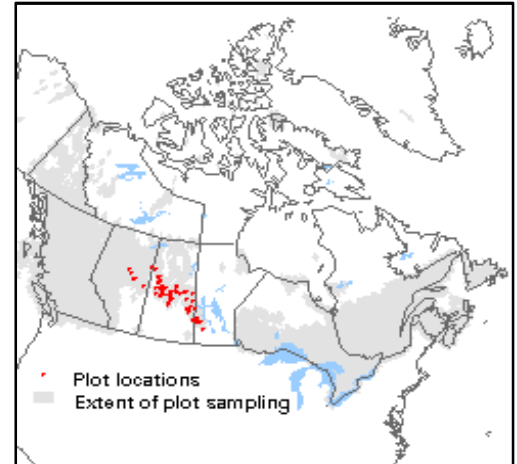
Nature Conservancy of Canada Ecoregions: Boreal Plains

Natural Regions and Subregions of Alberta: Boreal Forest: Central Mixedwood, Dry Mixedwood

Ecozones and Ecoregions of Saskatchewan: Boreal Plain: Boreal Transition, Mid-Boreal Lowland, Mid-Boreal Upland

Ecozones and Ecoregions of Manitoba: Boreal Plains

Manitoba Protected Areas Initiative Natural Regions: Manitoba Lowlands, Western Upland



Corresponding Types and Associations

CNVC00263	Alberta	NN/BM/D/02/02	Aw - Sw / beaked hazelnut
	Saskatchewan	BP10	Trembling aspen - white spruce / feathermoss: Fresh silty loam
		BP7	Trembling aspen - white birch / sarsaparilla: Fresh loamy sand
		BP9	White spruce - trembling aspen / feathermoss: Fresh sand



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Vegetation Summary*

Species Name ^T	Association CNVC00263 111 plots	
	% Cover [±]	% Presence [^]
Overstory Trees		
<i>Picea glauca</i>	33	92
<i>Populus tremuloides</i>	34	83
<i>Betula papyrifera</i>	12	44
Tree Stratum Cover (P₁₀ P₂₅ Mean P₇₅ P₉₀)[‡]	(35 47 67 84 100)	
Understory Woody Shrubs and Regenerating Trees		
<i>Rosa acicularis</i>	3	91
<i>Viburnum edule</i>	2	64
<i>Populus tremuloides</i>	2	56
<i>Picea glauca</i>	2	47
<i>Amelanchier alnifolia</i>	2	46
<i>Corylus cornuta</i>	18	45
<i>Ribes triste</i>	1	40
<i>Symphoricarpos albus</i>	2	38
<i>Lonicera dioica</i>	1	35
<i>Abies balsamea</i>	6	29
<i>Salix sp.</i>	4	29
<i>Alnus viridis</i>	9	28
<i>Vaccinium myrtilloides</i>	4	27
<i>Rubus idaeus</i>	2	27
<i>Betula papyrifera</i>	2	26
<i>Ribes oxycanthoides</i>	1	26
<i>Rhododendron groenlandicum</i>	4	25
<i>Cornus stolonifera</i>	1	23
<i>Prunus virginiana</i>	1	23
Shrub Stratum Cover (P₁₀ P₂₅ Mean P₇₅ P₉₀)[‡]	(5 10 26 36 61)	
Understory Herbs and Dwarf Shrubs		
<i>Cornus canadensis</i>	4	86
<i>Linnaea borealis</i>	3	85
<i>Maianthemum canadense</i>	1	81
<i>Aralia nudicaulis</i>	6	76
<i>Rubus pubescens</i>	2	75
<i>Petasites frigidus</i>	1	66
<i>Fragaria virginiana</i>	1	63
<i>Galium boreale</i>	1	60
<i>Mertensia paniculata</i>	2	59
<i>Mitella nuda</i>	2	58
<i>Lysimachia borealis</i>	1	58
<i>Poaceae</i>	5	54



***Picea glauca* – *Populus tremuloides* / *Rosa acicularis* / *Aralia nudicaulis* CNVC00263**

Vegetation Summary (cont'd)*

Species Name ^T	Association CNVC00263	
	Cover ^z	Presence ^A
<i>Chamerion angustifolium</i>	1	42
<i>Orthilia secunda</i>	< 1	42
<i>Viola renifolia</i>	< 1	42
<i>Lathyrus ochroleucus</i>	1	40
<i>Pyrola asarifolia</i>	1	40
Asteraceae	1	33
<i>Viola canadensis</i>	1	32
<i>Galium tricorutum</i>	1	32
<i>Symphyotrichum ciliolatum</i>	1	31
<i>Actaea rubra</i>	1	31
<i>Lathyrus venosus</i>	< 1	28
<i>Achillea millefolium</i>	< 1	26
<i>Prosartes trachycarpa</i>	1	24
<i>Carex</i> sp.	1	23
<i>Vicia americana</i>	1	23
<i>Taraxacum officinale</i>	< 1	23
<i>Pyrola chlorantha</i>	< 1	22
<i>Lycopodium annotinum</i>	2	21
<i>Equisetum arvense</i>	2	21
Herb Stratum Cover (P₁₀ P₂₅ Mean P₇₅ P₉₀)[‡]	(5 12 29 39 56)	
Bryophytes and Lichens		
<i>Pleurozium schreberi</i>	5	84
<i>Hylocomium splendens</i>	8	71
<i>Cladonia</i> sp.	1	69
<i>Parmelia sulcata</i>	1	66
<i>Peltigera</i> sp.	1	58
<i>Pylaisia polyantha</i>	1	55
<i>Brachythecium salebrosum</i>	1	53
<i>Ptilium crista-castrensis</i>	1	46
<i>Evernia mesomorpha</i>	1	46
<i>Eurhynchium pulchellum</i>	1	42
<i>Plagiomnium cuspidatum</i>	1	42
<i>Dicranum</i> sp.	1	40
<i>Sanionia uncinata</i>	1	38
<i>Hypogymnia physodes</i>	1	34
<i>Dicranum polysetum</i>	1	30
<i>Amblystegium serpens</i>	1	29
<i>Physcia adscendens</i>	1	27
<i>Haplocladium microphyllum</i>	1	23
<i>Physcia aipolia</i>	1	23
<i>Ptilidium pulcherrimum</i>	1	23
<i>Usnea lapponica</i>	1	23
<i>Brachythecium campestre</i>	1	22
<i>Usnea subfloridana</i>	1	22
<i>Polycauliona polycarpa</i>	1	21
Bryo-Lichen Stratum Cover (P₁₀ P₂₅ Mean P₇₅ P₉₀)[‡]	(4 7 20 28 47)	



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Vegetation Summary*

* 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

‡ $P_x = X^{\text{th}}$ percentile (e.g., $P_{10} = 10^{\text{th}}$ percentile)



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Site / Soil Characteristics

Association

CNVC00263

111 plots

Elevation Range (min–mean–max meters)

270–485–732

missing data (5)

Slope Gradient (% frequency)

moderately steep (4)

moderate (5)

gentle (12)

level (79)

missing data (1)

Aspect (% frequency)

north (14)

east (19)

south (14)

west (10)

level (41)

missing data (1)

Meso Toposition (% frequency)

crest / upper (29)

mid (21)

lower / toe (10)

level (41)

Moisture Regime (% frequency)

dry (26)

mesic (48)

moist (25)

wet (1)

Nutrient Regime (% frequency)

medium (5)

missing data (95)



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Site / Soil Characteristics (cont'd)

Association
CNVC00263

Soil Parent Material (% frequency)

eolian (11)
moraine / till (23)
fluvial (24)
glaciofluvial (5)
lacustrine (32)
glaciolacustrine (3)
organic (2)

Soil Rooting Zone Substrate (% frequency)

sandy (2)
fine loamy (2)
clayey (1)
organic (2)
missing data (94)

Root Restricting Depth (% frequency)

21 – 99 cm (1)
≥ 100 cm (95)
missing data (5)

Humus Form (% frequency)

mor (90)
moder (1)
mull (5)
missing data (4)



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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:

CNVC00083 [*Picea glauca* – *Populus tremuloides* / *Lonicera involucrata*] occurs on moister, richer sites in the same range and has more *Populus balsamifera* in the overstory and *Lonicera involucrata* and *Calamagrostis canadensis* in the understory.

CNVC00090 [*Populus tremuloides* – *Picea glauca* / *Vaccinium myrtilloides* / *V. vitis-idaea*] occurs in Alberta on drier, poorer sites and has more *Vaccinium myrtilloides*, *Arctostaphylos uva-ursi*, *Leymus innovatus* and *V. vitis-idaea* in the understory.

CNVC00093 [*Picea glauca* – *Abies balsamea* – *Betula papyrifera* – *Populus tremuloides* / *Rosa acicularis* / *Aralia nudicaulis*] occurs on similar sites in the same range but has *Abies balsamea* and more *Betula papyrifera* in the overstory.

CNVC00095 [*Populus tremuloides* – *Picea glauca* / *Rosa acicularis* – *Viburnum edule*] occurs in Alberta on similar sites but has more *Calamagrostis canadensis*, *Chamerion angustifolium*, *Lathyrus ochroleucus* and *Leymus innovatus* in the herb layer.

CNVC00103 [*Picea glauca* – *Abies balsamea* / *Rosa acicularis* / *Aralia nudicaulis*] is a similar conifer Association that occurs on comparable sites in the same range. It has less *Populus tremuloides* and *Betula papyrifera* and more *Abies balsamea*.

CNVC00261 [*Populus tremuloides* – *Picea glauca* – *Picea mariana* / *Shepherdia canadensis*] occurs in Alberta, north of the range of CNVC00263, on comparable sites. It has more *Picea mariana* in the overstory and understory and greater *Shepherdia canadensis*, *Chamerion angustifolium* and *Vaccinium vitis-idaea* in the understory.

Related United States National Vegetation Classification Associations:

Relationships with Other Classifications:

In southwestern Manitoba, CNVC00263 best matches the concepts of ES23 [Trembling Aspen - White Spruce Mixedwood on Fresh Coarse Loamy to Silty Soil], ES31 [Trembling Aspen Hardwood - Mixedwood on Fresh Clayey Soil] and ES33 [Trembling Aspen - Balsam Poplar Mixedwood on Fresh Fine Loamy Soil] in Arnup et al. 2006.

Comments

Source Information

Number of source plots for CNVC00263: 111

Information Sources:

Alberta Environment and Parks. 2014. Ecological Site Information System (ESIS). Govt. AB, Edmonton, AB.

McLaughlan, M.S.; Wright, R.A.; Jiricka, R.D. 2010. Saskatchewan forest ecosystem classification [data set]. Sask. Min. Environ. For. Serv., Prince Albert, SK.

Concept Authors: L. Allen, K. Baldwin, K. Chapman, M. McLaughlan

Description Authors: K. Chapman, D. Downing and K. Baldwin

Date of Concept: November, 2011

Date of Description: March, 2016



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Classification References:

Beckingham, J.D.; Archibald, J.H. 1996. Field guide to ecosites of northern Alberta. Nat. Resour. Can., Can. For. Serv., North. For. Cent., Edmonton, AB. Spec. Rep. 5.

McLaughlan, M.S.; Wright, R.A.; Jiricka, R.D. 2010. Field guide to the ecosites of Saskatchewan's provincial forests. Sask. Min. Environ., For. Serv., Prince Albert, SK.

Characterization References:

Abrahamson, I. 2015. *Picea glauca*. In: Fire Effects Information System. U.S. Dept. Agric., For. Serv., Rocky Mt. Res. Stn., Fire Sci. Lab., Missoula, MT, US. Available: <http://www.fs.fed.us/database/feis/plants/tree/picgla/all.html> (accessed: October 2, 2015).

Arnpur, R.W.; LeBlanc, P.A.; Becker, G. 2006. Field guide to ecosites of the Mid-Boreal Upland ecoregion of Manitoba. Louisiana-Pacific Canada Ltd, For. Resour. Div. and Man. Conserv., For. Branch, Swan River and Winnipeg, MB.

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.

Boulanger, Y.; Gauthier, S.; Burton, P.J. 2014. A refinement of models projecting future Canadian fire regimes using homogeneous fire regime zones. *Can. J. For. Res.* 44(4):365-376.

Brandt, J.P.; Cerezke, H.F.; Mallett, K.I.; Volney, W.J.; Weber, J.D. 2003. Factors affecting trembling aspen (*Populus tremuloides* Michx.) health in the boreal forest of Alberta, Saskatchewan, and Manitoba, Canada. *For. Ecol. Manage.* 178:287-300.

Caners, R.T.; Kenkel, N.C. 2003. Forest stand structure and dynamics at Riding Mountain National Park, Manitoba, Canada. *Community Ecology* 4(2):185-204.

Greene, D.F.; Zasada, J.C.; Sirois, L.; Kneeshaw, D.; Morin, H.; Charron, I.; Simard, M.J. 1999. A review of the regeneration dynamics of North American boreal forest tree species. *Can. J. For. Res.* 29:824-839.

Hamel, C.; Kenkel, N. 2001. Structure and dynamics of boreal forest stands in the Duck Mountains, Manitoba. Sustainable Forest Management Network, Edmonton, AB. 2001-4.

Hildahl, V.; Campbell, A.E. 1975. Forest tent caterpillar in the prairie provinces. Canadian Forestry Service, Northern Forestry Centre, Edmonton, AB. Inf. Rep. NOR-X-135.

Howard, J.L. 1996. *Populus tremuloides*. In: Fire Effects Information System. U.S. Dept. Agric., For. Serv., Rocky Mt. Res. Stn., Fire Sci. Lab., Missoula, MT, US. Available: <http://www.fs.fed.us/database/feis/plants/tree/poptre/all.html> (accessed: May 27, 2015).

Kabzems, A.; Kosowan, A.L.; Harris, W.C. 1986. Mixedwood section in an ecological perspective: Saskatchewan. 2nd ed. Can. For. Serv., Northwest Reg., Edmonton, AB. Canada-Saskatchewan For. Resour. Dev. Agreement Tech. Bull. No. 8.

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.

Parisien, M.A.; Hirsch, K.G.; Lavoie, S.G.; Todd, J.B.; Kafka, V.G. 2004. Saskatchewan fire regime analysis. Can. For. Serv., North. For. Cent., Edmonton, AB. Info. Rep. NOR-X-394.

Peters, V.S.; Macdonald, E.; Dale, M.R.T. 2006. Patterns of initial versus delayed regeneration of white spruce in boreal mixedwood succession. *Can. J. For. Res.* 36:1597-1609.

Stockdale, C. 2014. Fire regimes of western boreal Canada and the foothills of Alberta. A discussion document and literature review for the LANDWEB Project.

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.



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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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