



Forest / Forêt

Association CNVC00080

***Populus tremuloides* – *P. balsamifera* / *Lonicera involucrata* – *Cornus stolonifera* / *Rubus pubescens***

**Trembling Aspen – Balsam Poplar / Bracted Honeysuckle – Red-osier Dogwood / Dwarf Raspberry  
 Peuplier faux-tremble – Peuplier baumier / Chèvrefeuille involucre – Cornouiller stolonifère / Ronce pubescente**

**Subassociations:** none

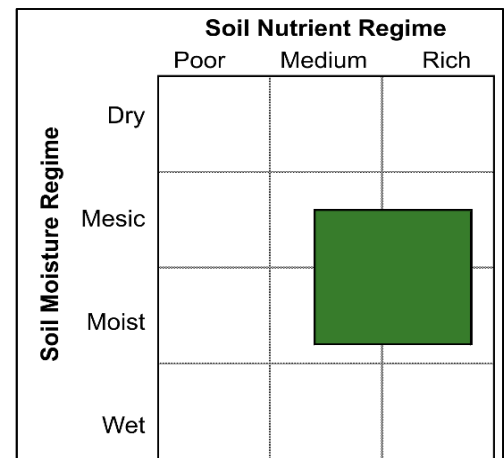
**CNVC Alliance:** CA00038 *Populus tremuloides* – *P. balsamifera* / *Lonicera involucrata* / *Mertensia paniculata*

**CNVC Group:** CG0015 Cordilleran Boreal Moist White Spruce – Trembling Aspen (Balsam Poplar) Forest

### Type Description

**Concept:** CNVC00080 is a boreal hardwood forest Association that ranges from British Columbia to western Manitoba. It has variable canopy cover, from open to closed, comprising mainly trembling aspen (*Populus tremuloides*) and/or balsam poplar (*P. balsamifera*) sometimes with paper birch (*Betula papyrifera*) as an associate. The understory is relatively species rich, with well-developed shrub and herb layers. Prickly rose (*Rosa acicularis*), squashberry (*Viburnum edule*), bracted honeysuckle (*Lonicera involucrata*), and red-osier dogwood (*Cornus stolonifera*) are common in the shrub layer. Green alder (*Alnus viridis*) and/or mountain alder (*A. incana*) may be dominant on some sites. Bluejoint reedgrass (*Calamagrostis canadensis*) and wild sarsaparilla (*Aralia nudicaulis*) can be abundant in the herb and dwarf shrub layer. This layer typically also includes dwarf raspberry (*Rubus pubescens*), fireweed (*Chamerion angustifolium*), arctic sweet coltsfoot (*Petasites frigidus*), bunchberry (*Cornus canadensis*), tall bluebells (*Mertensia paniculata*), cream-coloured vetchling (*Lathyrus ochroleucus*) and pink pyrola (*Pyrola asarifolia*). Broad-leaf and grass litter typically covers the forest floor, so mosses are virtually nonexistent. CNVC00080 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 is an early seral condition that typically establishes after stand-replacing fire or harvesting.

**Vegetation:** CNVC00080 is a hardwood forest Association dominated by *Populus tremuloides*, *P. balsamifera*, or a mixture of the two. Canopy closure can vary from open to closed. 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 *Rosa acicularis*, *Viburnum edule*, *Lonicera involucrata* and/or *Cornus stolonifera* usually dominant, but *Alnus viridis* or *A. incana* (see Comments) can also be abundant when present. The well-developed herb and dwarf shrub layer commonly includes *Rubus pubescens*, *Chamerion angustifolium*, *Petasites frigidus*, *Cornus canadensis*, *Mertensia paniculata*, *Lathyrus ochroleucus* and *Pyrola asarifolia*. *Aralia nudicaulis* or *Calamagrostis canadensis* can be dominant. Forest floor cover is predominantly broad-leaf, and sometimes grass, litter so the moss layer is virtually nonexistent.





***Populus tremuloides* – *P. balsamifera* / *Lonicera involucrata* – *Cornus stolonifera* / *Rubus pubescens* CNVC00080**

### Type Description (cont'd)

**Environment:** CNVC00080 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 or east-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 forest Associations, moders are relatively frequent.

**Dynamics:** CNVC00080 is an early seral Association that typically establishes after stand-replacing fire or harvesting. *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* typically becomes established in these stands when seeds are disseminated from nearby areas, with trees growing into the canopy and forming a mid-seral condition such as CNVC00083 [*Picea glauca* – *Populus tremuloides* – *P. balsamifera* / *Lonicera involucrata* / *Rubus pubescens*] 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. A disturbance within this timeframe can facilitate CNVC00080 self-replacement.

After fire or harvesting, species such as *Cornus stolonifera*, *Alnus incana*, *A. viridis*, *Rubus idaeus* and *Calamagrostis canadensis* can form dense thickets, sometimes significantly delaying conifer ingress.

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 *Populus* spp. to regenerate from seeds or suckers.

**Range:** CNVC00080 occurs in the boreal regions of British Columbia, Alberta, Saskatchewan, and likely western Manitoba. It also occurs in 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



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

<http://cnvc-cnvc.ca>

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## Distribution

**Countries:** Canada

**Provinces / Territories / States:** Alberta, British Columbia, Manitoba, Saskatchewan

**Terrestrial Ecozones and Ecoregions of Canada:** Boreal Cordillera: Boreal Mountains and Plateaus, Hyland Highland; Boreal Plains: Boreal Transition, Clear Hills Upland, Mid-Boreal Lowland, Mid-Boreal Uplands, Muskwa Plateau, Peace Lowland, Wabasca Lowland, Western Alberta Upland, Western Boreal; Boreal Shield; Montane Cordillera: Central Canadian Rocky Mountains

**Rowe's Forest Regions and Sections of Canada:** Boreal: Aspen Grove, Hay River, Lower Foothills, Manitoba Lowlands, Mixedwood, Northern Foothills, Stikine Plateau, Upper Churchill, Upper Foothills, Upper Liard

**NAAEC CEC Ecoregions of North America (Levels I & II):** Northern Forests: Boreal Plains, Softwood Shield; Northwestern Forested Mountains: Boreal Cordillera, Western Cordillera

**Nature Conservancy of Canada Ecoregions:** Boreal Plains, Boreal Shield, Central Interior, Muskwa - Kechika

**Biogeoclimatic Ecosystem Classification of British Columbia (zones and subzones):** BWBSdk, BWBSmk, BWBSmw, BWBSwk

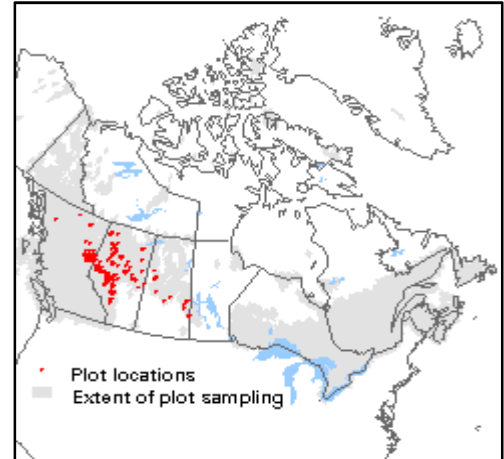
**British Columbia Ecoregion Classification (ecoregions):** Boreal Mountains and Plateaus, Central Alberta Uplands, Central Canadian Rocky Mountains, Hay-Slave Lowland, Hyland Highland, Muskwa Plateau, Peace River Basin, Southern Alberta Upland

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

**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





***Populus tremuloides* – *P. balsamifera* / *Lonicera involucrata* – *Cornus stolonifera* /  
*Rubus pubescens* CNVC00080**

**Corresponding Types and Associations**

CNVC00080	British Columbia	BWBSdk /110\$6B.1	<i>Populus tremuloides</i> – <i>Equisetum</i> spp. – <i>Hylocomium splendens</i>
		BWBSmk /110\$6B.1	<i>Populus tremuloides</i> – <i>Equisetum</i> spp. – <i>Hylocomium splendens</i>
		BWBSmw /111\$6B.1	<i>Populus balsamifera</i> – <i>Cornus stolonifera</i> – <i>Viburnum edule</i>
		BWBSmw /111\$6B.2	<i>Populus tremuloides</i> – <i>Heracleum maximum</i> – <i>Thalictrum occidentale</i>
		BWBSwk 1 /110\$6B.1	<i>Populus balsamifera</i> – <i>Populus tremuloides</i> – <i>Heracleum maximum</i>
		BWBSwk 2 /110\$6B.1	<i>Populus tremuloides</i> – <i>Viburnum edule</i> – <i>Mertensia</i> <i>paniculata</i>
		Alberta	NN/BM/E/01/01
	NN/BM/E/01/02		Pb – Aw / bracted honeysuckle / fern
	NN/BM/E/01/03		Pb – Aw / river alder / fern
	SW/LF/E/02/01		Aw – Pb / bracted honeysuckle / fern
	SW/LF/E/02/03		Aw – Pb / green alder / fern
	WC/LF/F/02/01		Aw – Pb / bracted honeysuckle / fern
	WC/LF/F/02/02		Aw – Pb / green alder – river alder / fern
	Saskatchewan	WC/LF/F/02/03	Aw – Pb / dogwood / fern
WC/UF/F/02/01		Pb / green alder – river alder / fern	
WC/UF/F/02/02		Pb / bracted honeysuckle / fern	
BP16		Balsam poplar - trembling aspen / prickly rose: Fresh clay loam	



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**Vegetation Summary\***

Species Name <sup>†</sup>	Association CNVC00080 222 plots	
	% Cover <sup>‡</sup>	% Presence <sup>^</sup>
<b>Overstory Trees</b>		
<i>Populus tremuloides</i>	35	82
<i>Populus balsamifera</i>	25	74
<i>Picea glauca</i>	5	36
<i>Betula papyrifera</i>	14	28
<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>(23 36 53 70 86)</b>	
<b>Understory Woody Shrubs and Regenerating Trees</b>		
<i>Rosa acicularis</i>	11	93
<i>Viburnum edule</i>	11	80
<b><i>Lonicera involucrata</i></b>	<b>10</b>	<b>63</b>
<b><i>Cornus stolonifera</i></b>	<b>11</b>	<b>57</b>
<i>Rubus idaeus</i>	4	55
<i>Populus tremuloides</i>	6	45
<i>Populus balsamifera</i>	4	45
<i>Amelanchier alnifolia</i>	4	41
<i>Picea glauca</i>	3	41
<i>Ribes oxycanthoides</i>	2	41
<i>Symphoricarpos albus</i>	3	40
<i>Ribes lacustre</i>	3	33
<i>Alnus incana</i>	12	32
<i>Salix bebbiana</i>	6	32
<i>Ribes triste</i>	2	32
<i>Alnus viridis</i>	14	31
<i>Betula papyrifera</i>	4	25
<i>Shepherdia canadensis</i>	4	23
<i>Lonicera dioica</i>	2	22
<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>(27 40 59 79 99)</b>	
<b>Understory Herbs and Dwarf Shrubs</b>		
<b><i>Rubus pubescens</i></b>	<b>4</b>	<b>83</b>
<i>Chamerion angustifolium</i>	5	75
<i>Petasites frigidus</i>	2	70
<i>Calamagrostis canadensis</i>	9	68
<i>Cornus canadensis</i>	5	68
<i>Mertensia paniculata</i>	4	64
<i>Lathyrus ochroleucus</i>	4	63



***Populus tremuloides* – *P. balsamifera* / *Lonicera involucrata* – *Cornus stolonifera* / *Rubus pubescens* CNVC00080**

**Vegetation Summary (cont'd)\***

Species Name†	Association CNVC00080	
	% Cover‡	% Presence^
<i>Pyrola asarifolia</i>	2	61
<i>Fragaria virginiana</i>	2	59
<i>Mitella nuda</i>	3	58
<i>Galium boreale</i>	1	58
<i>Aralia nudicaulis</i>	12	57
<i>Linnaea borealis</i>	4	52
<i>Vicia americana</i>	2	52
<i>Symphytotrichum ciliolatum</i>	2	45
<i>Maianthemum canadense</i>	2	44
<i>Eurybia conspicua</i>	6	41
<i>Galium trifidum</i>	2	41
<i>Equisetum arvense</i>	5	38
<i>Actaea rubra</i>	2	38
<i>Equisetum sylvaticum</i>	2	35
<i>Heracleum maximum</i>	5	33
<i>Viola renifolia</i>	1	26
<i>Achillea millefolium</i>	1	26
<i>Viola canadensis</i>	2	22
<i>Maianthemum racemosum</i>	2	21
<i>Delphinium glaucum</i>	3	20
<b>Herb Stratum Cover (P<sub>10</sub> P<sub>25</sub> Mean P<sub>75</sub> P<sub>90</sub>)‡</b>	<b>(20 34 54 75 100)</b>	
<b>Bryophytes and Lichens</b>		
<i>Pleurozium schreberi</i>	3	27
<i>Hylocomium splendens</i>	6	26
<b>Bryo-Lichen Stratum Cover (P<sub>10</sub> P<sub>25</sub> Mean P<sub>75</sub> P<sub>90</sub>)‡</b>	<b>(0 0 5 5 12)</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

CNVC00080

**222 plots**

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

325–747–1550

missing data (6)

**Slope Gradient (% frequency)**

steep (1)

moderately steep (5)

moderate (8)

gentle (18)

**level (67)**

missing data (3)

**Aspect (% frequency)**

**north (26)**

east (23)

south (13)

west (11)

level (17)

missing data (10)

**Meso Topoposition (% frequency)**

crest / upper (12)

mid (18)

lower / toe (23)

depression (4)

**level (30)**

missing data (14)

**Moisture Regime (% frequency)**

dry (1)

mesic (31)

**moist (65)**

wet (3)

**Nutrient Regime (% frequency)**

poor (3)

medium (37)

**rich (53)**

missing data (7)





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

Association  
CNVC00080

**Soil Parent Material (% frequency)**

colluvium (1)  
eolian (2)  
**moraine / till (27)**  
fluvial (23)  
glaciofluvial (11)  
lacustrine (10)  
glaciolacustrine (18)  
organic (1)  
missing data (5)

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

non-soil (1)  
sandy (5)  
coarse loamy (9)  
fine loamy (20)  
silty (7)  
**clayey (28)**  
organic (1)  
missing data (29)

**Root Restricting Depth (% frequency)**

21 – 99 cm (1)  
≥ 100 cm (9)  
missing data (90)

**Humus Form (% frequency)**

mor (21)  
moder (12)  
mull (1)  
peatymor (0)  
missing data (65)





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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:

CNVC00078 [*Populus balsamifera* – *P. tremuloides* / *Equisetum arvense* – *E. pratense*] occurs on moister, richer boreal sites from Yukon to Alberta. It has an understory dominated by *Equisetum arvense* and *E. pratense*.

CNVC00081 [*Populus tremuloides* / *Lonicera involucrata* / *Gymnocarpium dryopteris*] occurs on comparable boreal sites in British Columbia and likely Alberta. It has less *Populus balsamifera* in the tree layer and greater fern cover, particularly of *Gymnocarpium dryopteris*.

CNVC00082 [*Populus tremuloides* / *Oplopanax horridus*] is restricted to very rich seepage sites in the Rocky Mountain foothills of Alberta and has *Oplopanax horridus* as a diagnostic species in the shrub layer.

CNVC00083 [*Picea glauca* – *Populus tremuloides* / *Lonicera involucrata*] is a similar mixedwood Association that occurs on comparable sites in the same range (see Dynamics).

CNVC00094 [*Populus tremuloides* / *Rosa acicularis* – *Viburnum edule*] occurs on mesic, nutrient-medium boreal sites from Yukon to western Manitoba. It has less *Populus balsamifera* in the canopy and a shrub layer with less *Lonicera involucrata* and more *Shepherdia canadensis*.

CNVC000333 [*Populus tremuloides* – *P. balsamifera* / *Alnus incana* – *Cornus stolonifera*] occurs on comparable boreal sites in northwestern Ontario and likely southeastern Manitoba. It has a shrub layer with greater *Alnus incana* ssp. *rugosa*, or sometimes *A. viridis*, and regenerating *Picea mariana*, and less *Rosa acicularis*, *Lonicera involucrata* and *Viburnum edule*.

Related United States National Vegetation Classification Associations:

Relationships with Other Classifications:

### Comments

*Alnus incana* here refers to *Alnus incana* ssp. *tenuifolia* (mountain alder).



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

<http://cnvc-cnvc.ca>

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### **Source Information**

**Number of source plots for CNVC00080:** 222

#### **Information Sources:**

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

Biogeoclimatic Ecosystem Classification Program of British Columbia. 2011. BECMaster ecosystem plot database [VPro13/MSAccess 2010 format]. W.H. MacKenzie (ed.) B.C. Min. For., Lands, and Nat. Res. Ops., Smithers, BC. Available: [www.for.gov.bc.ca/hre/becweb/resources/information-requests](http://www.for.gov.bc.ca/hre/becweb/resources/information-requests) (accessed: June 2015).

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, J. Archibald, K. Baldwin, K. Chapman, W. MacKenzie, M. McLaughlan, D. Meidinger

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

**Date of Concept:** November, 2011

**Date of Description:** November, 2017

### **Classification References:**

Archibald, J.H.; Klappstein, G.D.; Corns, I.G.W. 1996. Field guide to ecosites of southwestern Alberta. Nat. Resour. Can., Can. For. Ser., North. For. Cent., Edmonton, AB. Spec. Rep. 8.

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.

Beckingham, J.D.; Corns, I.G.W.; Archibald, J.H. 1996. Field guide to ecosites of west-central Alberta. Nat. Resour. Can., Can. For. Serv., North. For. Cent., Edmonton, AB. Spec. Rep. 9.

DeLong, C.; Banner, A.; MacKenzie, W.H.; Rogers, B.J.; Kaytor, B. 2011. A field guide to ecosystem identification for the Boreal White and Black Spruce zone of British Columbia. B.C. Min. For. Range, For. Sci. Prog., Victoria, BC. Land Manage. Handb. No. 65.

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:**

Andison, D.W. 1998. Temporal patterns of age-class distributions on foothills landscapes in Alberta. *Ecography* 21(5):543-550.

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.

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.

Haeussler, S.; Coates, D. 1986. Autecological characteristics of selected species that compete with conifers in British Columbia: a literature review. Skeena For. Consult. and B.C. Min. For. and Lands, Smithers and Victoria, BC. FRDA Rep. 001.

Harris, H.T. 1990. *Populus balsamifera* subsp. *balsamifera*. 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/popbal/all.html> (accessed: May 28, 2015).



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**Characterization References (cont'd):**

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.

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.

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, K. Baldwin and D. Downing. *Populus tremuloides* – *P. balsamifera* / *Lonicera involucrata* – *Cornus stolonifera* / *Rubus pubescens* [online]. Sault Ste. Marie, Ontario, Canada: Canadian National Vegetation Classification. November, 2017; generated Nov-17-2017; cited ENTER DATE ACCESSED. 11 p. Canadian National Vegetation Classification Association: CNVC00080. Available from <http://cnvc-cnvc.ca>. System Requirements: Adobe Acrobat Reader v. 7.0 or higher. ISSN 1916-3266.