



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

<http://cnvc-cnvc.ca>

Forest / Forêt

Association CNVC00087

Populus tremuloides* / *Leymus innovatus

Trembling Aspen / Downy Lymegrass

Peuplier faux-tremble / Élyme innovant

Subassociations: 87a *typic*, 87b *Arctostaphylos uva-ursi*

CNVC Alliance: CA00032 *Populus tremuloides* (*Picea glauca*) / *Shepherdia canadensis* / *Leymus innovatus*

CNVC Group: CG0014 Cordilleran Boreal Mesic Trembling Aspen – White Spruce Forest



Source: D. Downing

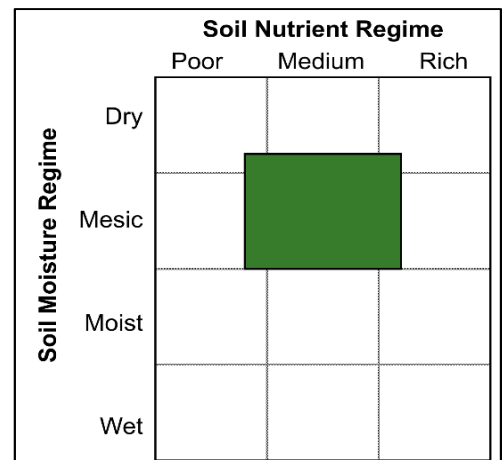
Type Description

Concept: CNVC00087 is a boreal hardwood forest Association that occurs in Alberta and British Columbia. It has an open to closed canopy of trembling aspen (*Populus tremuloides*) over a moderately developed shrub layer that typically includes prickly rose (*Rosa acicularis*) and soapberry (*Shepherdia canadensis*). The herb and dwarf shrub layer is usually dense and characterized by abundant downy lymegrass (*Leymus innovatus*), often accompanied by cream-coloured vetchling (*Lathyrus ochroleucus*), fireweed (*Chamerion angustifolium*), wild strawberry (*Fragaria virginiana*), northern bedstraw (*Galium boreale*) and American vetch (*Vicia americana*). Broad-leaf and grass litter typically covers the forest floor, so mosses are virtually non-existent. CNVC00087 occurs on mesic, nutrient-medium sites in a region with a subhumid continental climate. It is an early seral condition that typically establishes after fire. There are two subassociations, *typic* and *Arctostaphylos uva-ursi*.

Vegetation: CNVC00087 is a hardwood forest Association with an open to closed canopy of *Populus tremuloides*. The shrub layer is moderately developed and consists mainly of *Rosa acicularis* and *Shepherdia canadensis*. The usually dense herb and dwarf shrub layer is characterized by abundant *Leymus innovatus*. This layer typically has low cover of several other species such as *Lathyrus ochroleucus*, *Fragaria virginiana*, *Chamerion angustifolium*, *Galium boreale* and *Vicia americana*. Forest floor cover is predominantly broad-leaf and grass litter, so the moss layer is poorly developed. The *Arctostaphylos uva-ursi* subassociation has a more open canopy compared to the *typic* and includes *A. uva-ursi* in the understory.

Environment: CNVC00087 occurs in a subhumid continental climate where fire cycles are short (<100 years) or intermediate (100-270 years). It is typically found on mesic, or sometimes dry, nutrient-medium sites. Stands generally occur on gentle to steep slopes on water-shedding, middle to upper-slope or crest topositions. They are frequently on warmer (often drier) aspects, either south or west-facing. Soils vary in texture because they are derived from a wide range of parent materials. Humus forms are typically mors, but compared to other boreal forest Associations, moders are relatively frequent.

In Alberta, montane sites tend to be drier than foothills sites because they are subject to strong valley winds and often occur on steeper slopes. The *Arctostaphylos uva-ursi* subassociation is restricted to warm aspects and coarse-textured soils, so overall is drier than the *typic*.





***Populus tremuloides* / *Leymus innovatus* CNVC00087**

Type Description (cont'd)

Dynamics: CNVC00087 is an early seral condition with dynamics that are typically driven by fire. *Populus tremuloides* is a pioneer species adapted to disturbance. Following any disturbance that does not kill its roots, it can reproduce vegetatively from root suckers. It also produces abundant, light, wind-dispersed seeds that can readily colonize mineral soil seedbeds exposed by disturbance. *P. tremuloides* grows rapidly in full-light conditions but is intolerant of shade so does not replace itself in a stand without further disturbance.

Succession usually proceeds slowly on these sites, typically with ingress of *Picea glauca* into the stand by seed dissemination from nearby sources although sometimes, if seed sources are available, *P. glauca* establishes at the same time as *P. tremuloides*. *P. glauca* grows more slowly so it usually requires several decades to attain canopy height (e.g., CNVC0091 [*Populus tremuloides* – *Picea glauca* – *Pinus contorta* / *Leymus innovatus*]). *P. glauca* is shade-tolerant and able to self-replace once established in a stand.

Fire often re-initiates CNVC00087 before a stand reaches a mid-successional stage. Sites supporting CNVC00087 stands are frequently subjected to low-intensity wildfires. These warm, grassy slopes are especially prone to fires in the spring, when litter on the forest floor is dry following snowmelt. In steep terrain that often experiences strong winds, fires typically carry quickly and are of low severity, particularly in more open stands. These fires usually do not burn the roots of *P. tremuloides*, so promote its vegetative regeneration. In this way, CNVC00087 can form a stable disturbance climax community.

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 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.

Range: CNVC00087 occurs in the Rocky Mountain foothills of Alberta and the boreal plains of northeastern British Columbia (BC). The *typic* subassociation occurs in both provinces. The *Arctostaphylos uva-ursi* subassociation is only described from BC.

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>

Forest / Forêt

Association CNVC00087

Populus tremuloides / *Leymus innovatus*

Trembling Aspen / Downy Lyme grass

Peuplier faux-tremble / Élyme innovant

Distribution

Countries: Canada

Provinces / Territories / States: Alberta, British Columbia

Terrestrial Ecozones and Ecoregions of Canada: Boreal Cordillera: Boreal Mountains and Plateaus, Liard Basin, Northern Canadian Rocky Mountains; Boreal Plains: Clear Hills Upland, Peace Lowland, Western Alberta Upland, Western Boreal; Montane Cordillera: Central Canadian Rocky Mountains, Eastern Continental Ranges, Northern Continental Divide; Taiga Plains

Rowe's Forest Regions and Sections of Canada: Boreal: Aspen Grove, Hay River, Lower Foothills, Mixedwood, Northern Foothills, Stikine Plateau, Upper Foothills, Upper Liard, Upper Mackenzie; Montane: Douglas-fir and Lodgepole Pine; Subalpine: East Slope Rockies

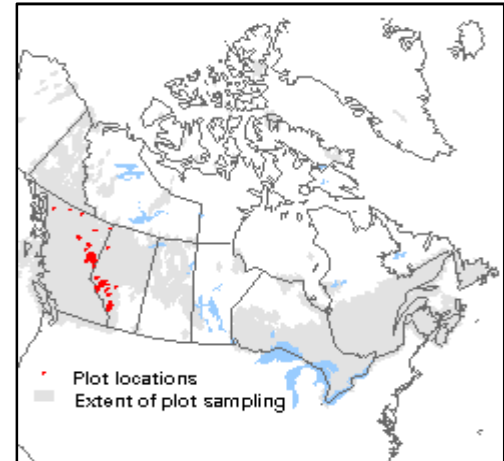
NAAEC CEC Ecoregions of North America (Levels I & II): Northern Forests: Boreal Plains; Northwestern Forested Mountains: Boreal Cordillera, Western Cordillera; Taiga: Taiga Plains

Nature Conservancy of Canada Ecoregions: Boreal Cordillera, Boreal Plains, Canadian Rocky Mountains, Central Interior, Muskwa - Kechika, Taiga Plains

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

British Columbia Ecoregion Classification (ecoregions): Central Alberta Uplands, Central Canadian Rocky Mountains, Columbia Highlands, Hay-Slave Lowland, Liard Basin, Northern Canadian Rocky Mountains, Peace River Basin, Southern Alberta Upland, Yukon Southern Lakes

Natural Regions and Subregions of Alberta: Boreal Forest: Upper Boreal Highlands; Foothills: Lower Foothills, Upper Foothills; Rocky Mountain: Montane



Corresponding Types and Associations

87a typic	British Columbia	BWBSmk /103\$6B.1	<i>Populus tremuloides</i> – <i>Rosa acicularis</i> – <i>Leymus innovatus</i>
		BWBSmw /103\$6B.1	<i>Populus tremuloides</i> – <i>Rosa acicularis</i> – <i>Leymus innovatus</i>
		BWBSwk 1 /103\$6B.1	<i>Populus tremuloides</i> – <i>Rosa acicularis</i> – <i>Leymus innovatus</i>
		BWBSwk 2 /103\$6B.1	<i>Populus tremuloides</i> – <i>Rosa acicularis</i> – <i>Leymus innovatus</i>
	Alberta	SW/MN/C/03/01	Aw / hairy wild rye
		SW/UF/B/02/01	Aw / hairy wild rye
		WC/LF/C/02/01	Aw / Canada buffalo-berry / hairy wild rye
		WC/MN/C/03/01	Aw / Canada buffalo-berry / hairy wild rye
87b Arctostaphylos uva-ursi	British Columbia	BWBSdk /103\$6B.1	<i>Populus tremuloides</i> – <i>Arctostaphylos uva-ursi</i> – <i>Leymus innovatus</i>
		BWBSwk 1 /102\$6B.1	<i>Populus tremuloides</i> – <i>Arctostaphylos uva-ursi</i> – <i>Leymus innovatus</i>
	Alberta	WC/MN/C/03/02	Aw / prickly rose / hairy wild rye
		WC/MN/C/03/03	Aw / saskatoon / hairy wild rye
		WC/UF/C/02/01	Aw / hairy wild rye
		WC/MN/C/03/03	Aw / saskatoon / hairy wild rye
		WC/MN/C/03/02	Aw / prickly rose / hairy wild rye
		WC/MN/C/03/01	Aw / Canada buffalo-berry / hairy wild rye



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

<http://cnvc-cnvc.ca>

Forest / Forêt

Association CNVC00087

Populus tremuloides / *Leymus innovatus*

Trembling Aspen / Downy Lyme grass

Peuplier faux-tremble / Élyme innovant

Vegetation Summary*

Species Name [†]	Association CNVC00087		Subassociation 87a <i>typic</i>		Subassociation 87b <i>Arctostaphylos uva-ursi</i>	
	103 plots		95 plots		8 plots	
	% Cover [‡]	% Presence [^]	% Cover [‡]	% Presence [^]	% Cover [‡]	% Presence [^]
Overstory Trees						
<i>Populus tremuloides</i>	41	99	43	99	25	100
<i>Picea glauca</i>	4	50	4	52	3	25
<i>Populus balsamifera</i>	9	34	9	36	1	13
<i>Pinus contorta</i>	6	19	6	18	3	38
Tree Stratum Cover (P₁₀ P₂₅ Mean P₇₅ P₉₀)[‡]	(18 30 48 65 78)		(20 34 50 65 78)		(11 14 26 21 46)	
Understory Woody Shrubs and Regenerating Trees						
<i>Rosa acicularis</i>	10	92	10	93	8	88
<i>Shepherdia canadensis</i>	8	70	8	67	8	100
<i>Populus tremuloides</i>	7	52	7	52	7	63
<i>Picea glauca</i>	3	49	3	45	2	88
<i>Amelanchier alnifolia</i>	5	40	5	38	3	63
<i>Viburnum edule</i>	6	39	6	38	6	50
<i>Salix sp.</i>	4	35	4	32	4	75
<i>Symphoricarpos albus</i>	4	28	4	29	6	13
<i>Lonicera dioica</i>	2	24	2	26	-	-
<i>Spiraea lucida</i>	4	20	4	22	-	-
<i>Populus balsamifera</i>	3	20	3	21	1	13
<i>Juniperus communis</i>	3	9	3	5	3	50
Shrub Stratum Cover (P₁₀ P₂₅ Mean P₇₅ P₉₀)[‡]	(10 17 33 41 70)		(10 18 34 41 70)		(10 12 29 40 53)	
Understory Herbs and Dwarf Shrubs						
<i>Leymus innovatus</i>	19	94	18	94	29	100
<i>Lathyrus ochroleucus</i>	6	77	6	80	8	38
<i>Fragaria virginiana</i>	3	75	3	75	2	75
<i>Chamerion angustifolium</i>	5	72	6	71	2	88
<i>Galium boreale</i>	1	71	1	73	1	50
<i>Vicia americana</i>	3	67	3	69	3	38
<i>Linnaea borealis</i>	6	59	6	56	6	100
<i>Eurybia conspicua</i>	6	58	6	57	8	75
<i>Symphyotrichum ciliolatum</i>	3	58	2	59	3	50
<i>Pyrola asarifolia</i>	2	53	2	55	3	38
<i>Achillea millefolium</i>	1	52	1	51	1	75
<i>Mertensia paniculata</i>	4	48	5	45	3	75
<i>Orthilia secunda</i>	1	48	1	46	2	63
<i>Cornus canadensis</i>	6	40	6	40	1	38
<i>Calamagrostis canadensis</i>	5	36	5	37	< 1	25
<i>Arctostaphylos uva-ursi</i>	4	36	4	31	5	100



***Populus tremuloides* / *Leymus innovatus* CNVC00087**

Vegetation Summary (cont'd)*

Species Name [†]	Association CNVC00087		Subassociation 87a <i>typic</i>		Subassociation 87b <i>Arctostaphylos uva-ursi</i>	
	% Cover [‡]	% Presence [^]	% Cover [‡]	% Presence [^]	% Cover [‡]	% Presence [^]
<i>Rubus pubescens</i>	3	34	3	37	-	-
<i>Petasites frigidus</i>	3	33	3	35	1	13
<i>Castilleja miniata</i>	3	28	3	31	-	-
<i>Maianthemum stellatum</i>	2	27	2	29	-	-
<i>Maianthemum canadense</i>	1	27	1	29	-	-
<i>Delphinium glaucum</i>	2	26	2	27	0	13
<i>Arnica cordifolia</i>	3	20	4	21	2	13
<i>Taraxacum officinale</i>	1	20	1	22	-	-
<i>Vaccinium vitis-idaea</i>	4	19	4	19	6	25
<i>Hedysarum alpinum</i>	3	19	3	21	-	-
<i>Thalictrum occidentale</i>	2	17	3	16	2	38
<i>Gentianella amarella</i>	1	12	1	7	2	63
<i>Festuca altaica</i>	4	10	4	8	2	25
<i>Lupinus arcticus</i>	9	7	13	5	< 1	25
<i>Poa sp.</i>	1	6	2	4	< 1	25
<i>Hedysarum boreale</i>	2	4	2	2	2	25
<i>Pedicularis labradorica</i>	1	4	1	2	< 1	25
Herb Stratum Cover (P₁₀ P₂₅ Mean P₇₅ P₉₀)[‡]	(29 42 60 79 97)		(29 40 60 80 99)		(42 44 57 67 76)	
Bryophytes and Lichens						
<i>Hylocomium splendens</i>	6	33	7	33	1	38
<i>Pleurozium schreberi</i>	3	22	3	21	2	38
<i>Brachythecium salebrosum</i>	1	21	1	22	3	13
<i>Peltigera aphthosa</i>	2	12	1	11	5	25
<i>Brachythecium sp.</i>	3	10	3	7	5	38
<i>Cladonia sp.</i>	3	8	2	6	7	25
<i>Brachytheciaceae</i>	1	5	2	3	< 1	25
Bryo-Lichen Stratum Cover (P₁₀ P₂₅ Mean P₇₅ P₉₀)[‡]	(0 0 7 7 15)		(0 0 7 7 18)		(0 4 5 6 9)	

* 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)



Forest / Forêt

Association CNVC00087

Populus tremuloides / *Leymus innovatus*

Trembling Aspen / Downy Lyme grass

Peuplier faux-tremble / Élyme innovant

Site / Soil Characteristics

	Association CNVC00087 103 plots	Subassociation 87a <i>typic</i> 95 plots	Subassociation 87b <i>Arctostaphylos uva-ursi</i> 8 plots
Elevation Range (min–mean–max meters)	350–1040–1743 missing data (4)	400–1048–1743 missing data (4)	350–952–1235 missing data (0)
Slope Gradient (% frequency)	very steep (3) steep (15) moderately steep (15) moderate (19) gentle (19) level (27) missing data (2)	very steep (1) steep (13) moderately steep (15) moderate (19) gentle (21) level (29) missing data (2)	very steep (25) steep (38) moderately steep (13) moderate (25) gentle (0) level (0) missing data (0)
Aspect (% frequency)	north (14) east (15) south (39) west (18) level (6) missing data (9)	north (15) east (16) south (37) west (17) level (6) missing data (9)	north (0) east (0) south (63) west (38) level (0) missing data (0)
Meso Toposition (% frequency)	crest / upper (19) mid (27) lower / toe (5) level (17) missing data (32)	crest / upper (18) mid (24) lower / toe (5) level (18) missing data (35)	crest / upper (38) mid (63) lower / toe (0) level (0) missing data (0)
Moisture Regime (% frequency)	dry (12) mesic (71) moist (3) missing data (15)	dry (6) mesic (75) moist (3) missing data (16)	dry (75) mesic (25) moist (0) missing data (0)
Nutrient Regime (% frequency)	poor (16) medium (42) rich (22) missing data (20)	poor (16) medium (41) rich (21) missing data (22)	poor (13) medium (50) rich (38) missing data (0)



***Populus tremuloides* / *Leymus innovatus* CNVC00087**

Site / Soil Characteristics (cont'd)

	Association CNVC00087	Subassociation 87a <i>typic</i>	Subassociation 87b <i>Arctostaphylos uva-ursi</i>
Soil Parent Material (% frequency)	colluvium (7) eolian (12) moraine / till (20) fluvial (24) glaciofluvial (12) lacustrine (4) glaciolacustrine (6) missing data (16)	colluvium (7) eolian (13) moraine / till (21) fluvial (26) glaciofluvial (9) lacustrine (4) glaciolacustrine (6) missing data (13)	colluvium (0) eolian (0) moraine / till (13) fluvial (0) glaciofluvial (38) lacustrine (0) glaciolacustrine (0) missing data (50)
Soil Rooting Zone Substrate (% frequency)	non-soil (7) sandy (11) coarse loamy (18) fine loamy (15) silty (9) clayey (9) missing data (32)	non-soil (7) sandy (7) coarse loamy (17) fine loamy (16) silty (9) clayey (9) missing data (34)	non-soil (0) sandy (50) coarse loamy (38) fine loamy (0) silty (0) clayey (0) missing data (13)
Root Restricting Depth (% frequency)	21 – 99 cm (5) ≥ 100 cm (2) missing data (93)	21 – 99 cm (4) ≥ 100 cm (2) missing data (94)	21 – 99 cm (13) ≥ 100 cm (0) missing data (88)
Humus Form (% frequency)	mor (37) moder (17) missing data (46)	mor (38) moder (13) missing data (49)	mor (25) moder (75) missing data (0)



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

<http://cnvc-cnvc.ca>

Forest / Forêt

Association CNVC00087

Populus tremuloides* / *Leymus innovatus

Trembling Aspen / Downy Lyme grass

Peuplier faux-tremble / Élyme innovant

Additional Characteristics

Species of High Conservation Concern:

Non-native Species:

Management Issues:

Type Statistics

Internal Similarity:

Confidence:

Strength:

Related Concepts

Similar CNVC Associations:

CNVC00091 [*Populus tremuloides* – *Picea glauca* – *Pinus contorta* / *Leymus innovatus*] is a similar mixedwood Association that occurs on comparable sites in the same range (see Dynamics).

CNVC00092 [*Populus tremuloides* – *Pinus contorta* / *Rhododendron groenlandicum* / *Leymus innovatus* – *Vaccinium vitis-idaea* / *Hylocomium splendens*] is a similar mixedwood Association that occurs on similar, but cooler sites in the same range.

CNVC00094 [*Populus tremuloides* / *Rosa acicularis* – *Viburnum edule*] occurs on comparable boreal sites from Yukon to western Manitoba. It has greater constancy and cover of *Viburnum edule* in the shrub layer and more *Cornus canadensis* and *Rubus pubescens* in the herb and dwarf shrub layer, with less *Leymus innovatus*.

CNVC00330 [*Populus tremuloides* / *Shepherdia canadensis* / *Arctostaphylos uva-ursi*] occurs on drier, poorer boreal sites in British Columbia and Yukon. It has *Arctostaphylos uva-ursi* rather than *Leymus innovatus* dominant in the herb and dwarf shrub layer.

Related United States National Vegetation Classification Associations:

Relationships with Other Classifications:

Comments

The Alberta Montane ecosite phases SW/MN/C31, WC/MN/C31, WC/MN/C32 and WC/MN/C33 are classified as CNVC00087 because they are ecologically similar to and not floristically distinguishable from comparable Lower and Upper Foothills units (see Distribution).

Source Information

Number of source plots for CNVC00087: 103

Number of source plots for 87a *typic*: 95

Number of source plots for 87b *Arctostaphylos uva-ursi*: 8

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 (accessed: June 2015).

Concept Authors: L. Allen, J. Archibald, K. Baldwin, K. Chapman, W. MacKenzie, D. Meidinger

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

Date of Concept: March, 2012

Date of Description: November, 2017



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

<http://cnvc-cnvc.ca>

***Populus tremuloides* / *Leymus innovatus* CNVC00087**

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. Centre, Edmonton, AB. Spec. Rep. 8.
- 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. Centre, 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.

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.
- 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.
- 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.
- 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.
- 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).
- 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.
- Stockdale, C. 2014. Fire regimes of western boreal Canada and the foothills of Alberta. A discussion document and literature review for the LANDWEB Project.
- Willoughby, M.G.; Alexander, M.J.; Adams, W. 2005. Range plant community types and carrying capacity for the Montane subregion of Alberta. AB Sustain. Resour. Dev., Pub. Lands Div., Edmonton, AB. Pub. No. T/071.

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: D. Downing, K. Chapman and K. Baldwin. *Populus tremuloides* / *Leymus innovatus* [online]. Sault Ste. Marie, Ontario, Canada: Canadian National Vegetation Classification. November, 2017; generated Nov-28-2017; cited ENTER DATE ACCESSED. 9 p. Canadian National Vegetation Classification Association: CNVC00087. Available from <http://cnvc-cnvc.ca>. System Requirements: Adobe Acrobat Reader v. 7.0 or higher. ISSN 1916-3266.