



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

<http://cnvc-cnvc.ca>

Forest / Forêt

Association CNVC00097

Picea glauca* / *Lonicera involucrata* / *Rubus pubescens

White Spruce / Bracted Honeysuckle / Dwarf Raspberry

Épinette blanche / Chèvrefeuille involucre / Ronce pubescente

Subassociations: 97a *typic*, 97b *Alnus* spp.

CNVC Alliance: CA00039 *Picea glauca* – *Pinus contorta* / *Lonicera involucrata* / *Gymnocarpium dryopteris*

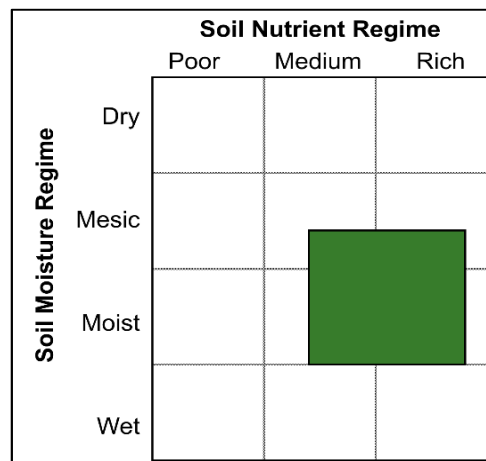
CNVC Group: CG0015 Cordilleran Boreal Moist White Spruce – Trembling Aspen (Balsam Poplar) Forest

Type Description

Concept: CNVC00097 is a boreal coniferous forest Association that occurs in Alberta, British Columbia and Yukon. It has an open to moderately closed canopy that is dominated by white spruce (*Picea glauca*) and a relatively species rich understory. Prickly rose (*Rosa acicularis*) and squashberry (*Viburnum edule*) are common species in the moderately to well-developed shrub layer. Green alder (*Alnus viridis*) and/or mountain alder (*A. incana*) can be abundant when present. The herb and dwarf shrub layer is well developed and typically includes naked mitrewort (*Mitella nuda*), bunchberry (*Cornus canadensis*), tall bluebells (*Mertensia paniculata*), dwarf raspberry (*Rubus pubescens*), twinflower (*Linnaea borealis*), arctic sweet coltsfoot (*Petasites frigidus*) and fireweed (*Chamerion angustifolium*). The moderately to well-developed moss layer is dominated by stairstep moss (*Hylocomium splendens*), with lower cover of knight's plume moss (*Ptilium crista-castrensis*) and red-stemmed feathermoss (*Pleurozium schreberi*). CNVC00097 is a late successional condition that occurs in a region with a subhumid continental climate. It is primarily found on moist nutrient-rich sites; these are among the most productive sites in the region. Two subassociations are distinguished, *typic* and *Alnus* spp.

Vegetation: CNVC00097 is a coniferous forest Association with a moderately closed canopy of *Picea glauca*. The understory is relatively diverse and includes species that are indicative of rich sites. *Rosa acicularis* and *Viburnum edule* are common, and sometimes abundant, in the moderately to well-developed shrub layer. The *Alnus* spp. subassociation has abundant *A. viridis* and/or *A. incana* (see Comments) and greater shrub layer cover than the *typic*. The herb and dwarf shrub layer is well developed and typically includes *Mitella nuda*, *Cornus canadensis*, *Mertensia paniculata*, *Rubus pubescens*, *Linnaea borealis*, *Petasites frigidus* and *Chamerion angustifolium*. The moss layer is moderately to well developed and dominated by *Hylocomium splendens*, with lower cover of *Ptilium crista-castrensis* and *Pleurozium schreberi*.

Environment: CNVC00097 occurs in a subhumid continental climate where regional fire cycles are short (<100 years) or intermediate (100-270 years). It is typically found on moist, nutrient-rich to medium sites; these are some of the most productive sites in this region of the boreal. Stands are commonly on level sites or gentle slopes, often on water-receiving middle to lower or toe-slope topositions. Seepage often enhances moisture and nutrient availability on these sites. Soils are usually fine textured (e.g., fine loams, clays or silts), derived primarily from morainal, fluvial or glaciolacustrine parent materials. Mor humus forms are common, but compared to other boreal Associations, moders are relatively frequent. Compared to the *typic* subassociation, the *Alnus* spp. subassociation is more common on cooler aspects, either north or east-facing, and on crest or upper-slope topositions.





***Picea glauca* / *Lonicera involucrata* / *Rubus pubescens* CNVC00097**

Type Description (cont'd)

Dynamics: CNVC00097 is typically a self-perpetuating, late successional forest Association that develops in the prolonged absence of fire. Natural disturbance processes are primarily insect outbreaks, windthrow, or natural mortality of individual or small groups of trees by disease and other factors. Following these gap or patch disturbances, stands tend to regenerate through the release of *Picea glauca* in the understory.

After stand-replacing disturbance (especially fire), *P. glauca* is usually eliminated. The pioneer species *Populus tremuloides*, *P. balsamifera* and / or *Betula papyrifera* are likely to form the initial stand on these sites because they are adapted to disturbance (e.g., CNVC00080 [*Populus tremuloides* – *P. balsamifera* / *Lonicera involucrata* – *Cornus stolonifera* / *Rubus pubescens*]). *P. glauca* becomes established in these stands when seeds are disseminated from nearby areas, with trees growing into the canopy and forming a mid-seral mixedwood such as CNVC00083 [*Picea glauca* – *Populus tremuloides* – *P. balsamifera* / *Lonicera involucrata* / *Rubus pubescens*]. If seed sources are available, *P. glauca* sometimes re-colonizes at the same time as the pioneer hardwoods, but *P. glauca* grows more slowly, so it usually requires several decades to attain canopy height. Because it is shade tolerant and better able to reproduce in closed stands, *P. glauca* can gradually become dominant on these sites, forming CNVC00097 after approximately 125 years. At higher elevations and latitudes, where a seed source is present, ingress of the highly shade tolerant *Abies lasiocarpa* (see Comments) may also occur.

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

Range: CNVC00097 occurs in the boreal regions of Yukon, British Columbia and Alberta, 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



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Distribution

Countries: Canada

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

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

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

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

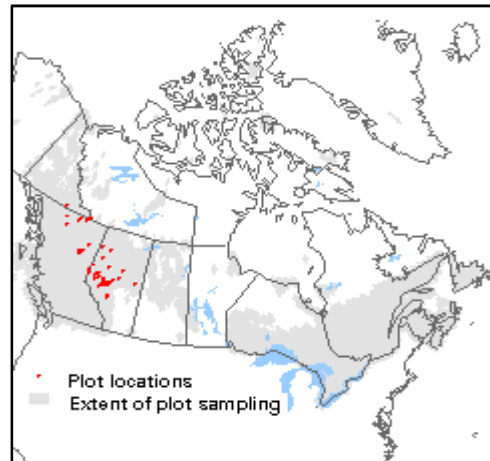
Nature Conservancy of Canada Ecoregions: Boreal Cordillera, Boreal Plains, Central Interior, Montane Cordillera, Muskwa - Kechika, Taiga Plains

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): BWBSmk, BWBSwk

British Columbia Ecoregion Classification (ecoregions): Boreal Mountains and Plateaus, Central Alberta Uplands, Central Canadian Rocky Mountains, Hyland Highland, Muskwa Plateau

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



Corresponding Types and Associations

97a typic	Alberta	NN/BM/E/03/04	Sw / fern /feather moss
		SW/LF/E/04/01	Sw / bracted honeysuckle / fern
		WC/LF/F/04/01	Sw / bracted honeysuckle / fern
		WC/LF/F/04/05	Sw / fern /feather moss
		WC/UF/F/04/02	Sw / bracted honeysuckle / fern
97b <i>Alnus</i> spp.	Yukon	Sw34g	<i>Picea glauca</i> / <i>Alnus</i> (<i>incana</i> , <i>viridis</i>) – <i>Viburnum edule</i> / <i>Aralia nudicaulis</i> – <i>Mitella nuda</i> [<i>A. viridis</i>]
		Sw34m	<i>Picea glauca</i> / <i>Alnus</i> (<i>incana</i> , <i>viridis</i>) – <i>Viburnum edule</i> / <i>Aralia nudicaulis</i> – <i>Mitella nuda</i> [<i>A. incana</i>]
	British Columbia	BWBSwk 2 /110	<i>Picea glauca</i> – <i>Ribes triste</i> – <i>Mertensia paniculata</i>
	Alberta	WC/LF/F/04/02	Sw / green alder - river alder / fern



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Vegetation Summary*

Species Name [†]	Association CNVC00097		Subassociation 97a <i>typic</i>		Subassociation 97b <i>Alnus</i> spp.	
	65 plots		37 plots		28 plots	
	% Cover [‡]	% Presence [^]	% Cover [‡]	% Presence [^]	% Cover [‡]	% Presence [^]
Overstory Trees						
<i>Picea glauca</i>	34	98	39	97	28	100
<i>Betula papyrifera</i>	4	34	4	43	3	21
<i>Abies lasiocarpa</i>	9	32	10	38	5	25
<i>Populus balsamifera</i>	3	26	4	24	1	29
<i>Populus tremuloides</i>	5	23	6	30	3	14
Tree Stratum Cover (P₁₀ P₂₅ Mean P₇₅ P₉₀)[‡]	(15 26 41 50 74)		(24 32 48 67 78)		(12 19 32 42 46)	
Understory Woody Shrubs and Regenerating Trees						
<i>Rosa acicularis</i>	8	94	7	92	8	96
<i>Viburnum edule</i>	6	86	5	81	7	93
<i>Ribes lacustre</i>	2	48	2	49	2	46
<i>Lonicera involucrata</i>	7	43	6	68	12	11
<i>Alnus viridis</i>	15	42	5	30	22	57
<i>Cornus stolonifera</i>	4	37	3	27	4	50
<i>Picea glauca</i>	3	37	2	46	6	25
<i>Abies lasiocarpa</i>	5	35	3	43	10	25
<i>Ribes triste</i>	4	34	1	41	9	25
<i>Alnus incana</i>	15	29	1	11	19	54
<i>Rubus idaeus</i>	5	26	2	30	11	21
<i>Sorbus scopulina</i>	1	25	1	27	1	21
<i>Populus balsamifera</i>	2	23	1	24	2	21
<i>Shepherdia canadensis</i>	3	22	5	16	1	29
<i>Rhododendron groenlandicum</i>	2	20	2	24	2	14
<i>Betula papyrifera</i>	1	20	1	24	2	14
<i>Salix</i> sp.	4	18	4	8	5	32
<i>Ribes oxycanthoides</i>	4	15	3	24	10	4
<i>Populus tremuloides</i>	1	15	1	27	-	-
<i>Ribes hudsonianum</i>	1	15	8	3	1	32
Shrub Stratum Cover (P₁₀ P₂₅ Mean P₇₅ P₉₀)[‡]	(14 24 38 47 68)		(10 21 28 36 41)		(19 33 51 63 89)	
Understory Herbs and Dwarf Shrubs						
<i>Mitella nuda</i>	3	91	3	92	3	89
<i>Cornus canadensis</i>	11	89	10	95	14	82
<i>Mertensia paniculata</i>	3	86	3	95	2	75
<i>Rubus pubescens</i>	7	83	7	81	8	86
<i>Linnaea borealis</i>	7	80	7	84	7	75
<i>Petasites frigidus</i>	2	71	2	84	2	54
<i>Chamerion angustifolium</i>	4	60	2	57	5	64
<i>Aralia nudicaulis</i>	7	52	9	46	4	61



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Vegetation Summary (cont'd)*

Species Name [†]	Association CNVC00097		Subassociation 97a <i>typic</i>		Subassociation 97b <i>Alnus</i> spp.	
	% Cover [‡]	% Presence [^]	% Cover [‡]	% Presence [^]	% Cover [‡]	% Presence [^]
<i>Equisetum arvense</i>	4	51	4	43	3	61
<i>Calamagrostis canadensis</i>	6	42	6	62	4	14
<i>Pyrola asarifolia</i>	4	42	4	46	3	36
<i>Equisetum sylvaticum</i>	5	40	7	49	1	29
<i>Gymnocarpium dryopteris</i>	2	38	2	43	3	32
<i>Orthilia secunda</i>	1	37	1	43	2	29
<i>Galium boreale</i>	1	34	1	41	1	25
<i>Streptopus amplexifolius</i>	1	29	1	35	1	21
<i>Actaea rubra</i>	2	28	2	32	2	21
<i>Lycopodium annotinum</i>	6	26	6	30	6	21
<i>Equisetum pratense</i>	4	26	5	38	1	11
<i>Equisetum scirpoides</i>	4	26	1	27	8	25
<i>Vaccinium vitis-idaea</i>	3	26	4	32	3	18
<i>Viola renifolia</i>	1	26	1	38	1	11
<i>Fragaria virginiana</i>	1	26	1	43	1	4
<i>Goodyera repens</i>	1	26	1	38	1	11
<i>Galium trifidum</i>	1	23	1	38	1	4
<i>Lathyrus ochroleucus</i>	1	23	1	27	1	18
<i>Delphinium glaucum</i>	1	22	1	27	1	14
<i>Maianthemum canadense</i>	1	20	1	27	1	11
<i>Leymus innovatus</i>	4	18	4	16	5	21
<i>Maianthemum racemosum</i>	3	18	3	32	-	-
<i>Circaea alpina</i>	3	15	2	11	3	21
<i>Eurybia conspicua</i>	2	15	2	24	3	4
<i>Symphyotrichum ciliolatum</i>	2	15	2	24	2	4
<i>Moneses uniflora</i>	1	15	1	11	1	21
<i>Viola</i> sp.	1	14	< 1	3	1	29
<i>Galium</i> sp.	1	11	-	-	1	25
Herb Stratum Cover (P₁₀ P₂₅ Mean P₇₅ P₉₀)[‡]	(23 30 51 70 87)		(25 35 53 77 91)		(21 29 48 62 85)	
Bryophytes and Lichens						
<i>Hylocomium splendens</i>	32	69	32	95	32	36
<i>Ptilium crista-castrensis</i>	16	63	14	89	22	29
<i>Pleurozium schreberi</i>	14	62	14	86	15	29
<i>Eurhynchium pulchellum</i>	1	17	1	27	1	4
Bryo-Lichen Stratum Cover						
(P₁₀ P₂₅ Mean P₇₅ P₉₀)[‡]	(6 13 49 85 95)		(10 14 59 90 97)		(1 10 34 66 85)	

* 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)



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Site / Soil Characteristics

	Association CNVC00097 65 plots	Subassociation 97a <i>typic</i> 37 plots	Subassociation 97b <i>Alnus</i> spp. 28 plots
Elevation Range (min–mean–max meters)	460–840–1100 missing data (34)	460–819–1090 missing data (14)	700–901–1100 missing data (61)
Slope Gradient (% frequency)	steep (2) moderately steep (3) moderate (9) gentle (11) level (48) missing data (28)	steep (3) moderately steep (3) moderate (11) gentle (14) level (65) missing data (5)	steep (0) moderately steep (7) moderate (11) gentle (36) level (43) missing data (4)
Aspect (% frequency)	north (11) east (17) south (14) west (11) level (18) missing data (29)	north (11) east (22) south (24) west (16) level (22) missing data (5)	north (14) east (11) south (11) west (21) level (32) missing data (11)
Meso Topoposition (% frequency)	crest / upper (6) mid (12) lower / toe (11) level (26) missing data (45)	crest / upper (3) mid (16) lower / toe (14) level (41) missing data (27)	crest / upper (11) mid (7) lower / toe (7) level (7) missing data (68)
Moisture Regime (% frequency)	mesic (12) moist (60) wet (2) missing data (26)	mesic (16) moist (84) wet (0) missing data (0)	mesic (7) moist (29) wet (4) missing data (61)
Nutrient Regime (% frequency)	poor (5) medium (26) rich (40) saline (2) missing data (28)	poor (5) medium (35) rich (57) saline (0) missing data (3)	poor (4) medium (14) rich (18) saline (4) missing data (61)



***Picea glauca* / *Lonicera involucrata* / *Rubus pubescens* CNVC00097**

Site / Soil Characteristics (cont'd)

	Association CNVC00097	Subassociation 97a <i>typic</i>	Subassociation 97b <i>Alnus</i> spp.
Soil Parent Material (% frequency)	moraine / till (20) fluvial (18) glaciofluvial (3) lacustrine (9) glaciolacustrine (11) organic (5) missing data (34)	moraine / till (27) fluvial (22) glaciofluvial (3) lacustrine (11) glaciolacustrine (16) organic (5) missing data (16)	moraine / till (11) fluvial (14) glaciofluvial (4) lacustrine (7) glaciolacustrine (4) organic (4) missing data (57)
Soil Rooting Zone Substrate (% frequency)	sandy (5) coarse loamy (9) fine loamy (25) silty (8) clayey (9) organic (5) missing data (40)	sandy (8) coarse loamy (11) fine loamy (38) silty (11) clayey (8) organic (5) missing data (19)	sandy (0) coarse loamy (7) fine loamy (7) silty (4) clayey (11) organic (4) missing data (68)
Root Restricting Depth (% frequency)	21 – 99 cm (3) ≥ 100 cm (6) missing data (91)	21 – 99 cm (5) ≥ 100 cm (8) missing data (86)	21 – 99 cm (0) ≥ 100 cm (4) missing data (96)
Humus Form (% frequency)	mor (28) moder (8) missing data (65)	mor (35) moder (11) missing data (54)	mor (18) moder (4) missing data (79)



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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* – *P. balsamifera* / *Lonicera involucrata* / *Rubus pubescens*] is a similar mixedwood Association that occurs on comparable sites in the same range and has *Populus tremuloides* codominant in the overstory (see Dynamics).

CNVC00096 [*Picea glauca* / *Equisetum arvense* – *E. pratense*] occurs on moist, nutrient-rich sites in the same range and has an understory dominated by *Equisetum arvense* and *E. pratense*.

CNVC00098 [*Picea glauca* / *Gymnocarpium dryopteris*] occurs on comparable sites in the same range and has more abundant *Gymnocarpium dryopteris* in the herb and dwarf shrub layer.

CNVC00099 [*Picea glauca* / *Oplopanax horridus*] occurs on moist, nutrient-rich sites in the same range and has a shrub layer containing *Oplopanax horridus*.

CNVC00100 [*Abies lasiocarpa* – *Picea glauca* / *Gymnocarpium dryopteris*] occurs on comparable foothills sites in Alberta and has *Abies lasiocarpa* codominant in the canopy (see Dynamics).

CNVC00102 [*Picea glauca* / *Rosa acicularis* / *Hylocomium splendens*] occurs on mesic, nutrient-medium sites in the same range. It has lower constancy and cover of the more nutrient-demanding herb and dwarf shrub species, like *Mitella nuda*, *Rubus pubescens* and *Petasites frigidus*, that help to characterize CNVC00097.

CNVC00103 [*Picea glauca* – *Abies balsamea* / *Rosa acicularis* / *Aralia nudicaulis*] is a similar coniferous Association that occurs on comparable boreal sites from Alberta to Ontario. It has *Abies balsamea* codominant in the overstory and lacks *A. lasiocarpa*.

Related United States National Vegetation Classification Associations:

Relationships with Other Classifications:

Comments

Abies lasiocarpa here refers to both *A. lasiocarpa* (subalpine fir) and *A. bifolia* (Rocky Mountain alpine fir).

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



***Picea glauca* / *Lonicera involucrata* / *Rubus pubescens* CNVC00097**

Source Information

Number of source plots for CNVC00097: 65

Number of source plots for 97a typic: 37

Number of source plots for 97b *Alnus* spp.: 28

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).

Ecosystem and Landscape Classification Program. 2017. YBECMaster ecosystem plot database [VPro13/MSAccess 2010 format]. Ecol. Land Class. Prog. Dept. Env., Govt. Yukon, Whitehorse, Yukon.

Concept Authors: L. Allen, J. Archibald, K. Baldwin, K. Chapman, N. Flynn, C. Kennedy, W. MacKenzie, K. McKenna, D. Meidinger

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

Date of Concept: March, 2012

Date of Description: August, 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.

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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).

Achuff, P.L.; LaRoi, G.H. 1977. *Picea-Abies* forests in the highlands of Northern Alberta. *Vegetatio*. 33(2/3):127-146.

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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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