



Forest / Forêt

Association CNVC00002

***Pseudotsuga menziesii* - *Pinus contorta* (*Tsuga heterophylla*) / *Vaccinium membranaceum* / *Arctostaphylos uva-ursi***

**Douglas-fir - Lodgepole Pine (Western Hemlock) / Mountain Huckleberry / Common Bearberry**

**Douglas de Menzies - Pin tordu latifolié (Pruche de l'Ouest) / Airelle à feuilles membraneuses / Raisin d'ours**

**Subassociations:** none

**CNVC Alliance:** not yet determined

**CNVC Group:** not yet determined

## Type Description

**Concept:** CNVC00002 is a late seral (mature and climax) association that occurs at low elevations in the subarctic and subcontinental areas of coastal southwestern British Columbia on nutrient-deficient dry crests and upper slopes with shallow soils, or on coarse-textured glacial outwash. It has a moderately open coniferous canopy dominated by moderate cover of Douglas-fir (*Pseudotsuga menziesii*) and lodgepole pine (*Pinus contorta*), often with western hemlock (*Tsuga heterophylla*). The understory is characterized by moderate cover of mountain huckleberry (*Vaccinium membranaceum*), common bearberry (*Arctostaphylos uva-ursi*) and western hemlock regeneration. The moss / lichen layer is diverse and well-developed, often with high cover of red-stemmed feather moss (*Pleurozium schreberi*) and clad lichens (*Cladonia* spp.). Stands of this association typically originate from infrequent stand replacing fires (perhaps every few hundred years) or windthrow.

**Vegetation:** CNVC00002 has a moderately open coniferous canopy dominated by moderate cover of *Pseudotsuga menziesii* and *Pinus contorta* (see the Comments section), often with low to moderate cover of *Tsuga heterophylla*. Moderate cover of *Tsuga heterophylla* regeneration and *Vaccinium membranaceum* characterizes the shrub layer, together with low to moderate cover of regenerating *Pinus contorta* and *Thuja plicata*. Low to moderate covers of *Vaccinium parvifolium*, *V. alaskaense*, *Menziesii ferruginea* and regenerating *Pseudotsuga menziesii* and *Abies lasiocarpa* often occur in the shrub layer. The poorly to moderately developed herb / dwarf shrub layer is characterized by low to moderate cover of *Arctostaphylos uva-ursi*; often with low to moderate cover of *Chimaphila umbellata*. The moss / lichen layer is diverse and well-developed. High cover of *Pleurozium schreberi* and moderate cover of *Hylocomium splendens*, *Rhytidiopsis robusta*, and *Cladonia bellidiflora* are typical. *Cladonia rangiferina*, *Polytrichum juniperinum*, *Cladonia gracilis*, and *Peltigera apthosa* are frequently present with scattered low covers.

**Environment:** Communities of CNVC00002 occur at elevations up to 1000 mASL in subarctic and subcontinental coastal British Columbia on nutrient-deficient dry crests and moderate to steep upper slopes with shallow soils, or coarse-textured glacial outwash. Thin sandy or loamy soils occur over bedrock, which is often exposed in places, or within the rubbly outwash. Site and soil conditions result in dry soil moisture regimes and very poor to poor soil nutrient regimes. Soil development suggests podzolization as the main pedogenic process - soils are usually Dystric Brunisols or Humo-Ferric Podzols.



Source: B.C. Forest Service



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**Type Description (cont'd)**

**Dynamics:** This is a late successional (mature and climax) edaphic forest type. Stands of this association typically originate from infrequent stand replacing fires (perhaps every few hundred years) or windthrow. However, historically communities on dry ridge tops and warm aspects were likely subject to more frequent fires than the surrounding landscape. Within mature and old forests, small gaps result from the death of single trees or small groups of trees due to root rots, bark beetles, or windthrow. When not initiated by stand replacing fires, gap dynamics and small ground fires likely created old forests with all-age stand structures.

**Range:** This Canadian endemic association occurs in subarctic and subcontinental areas of the eastern Coast Mountains and upper Fraser Valley of British Columbia.

**Conservation Status (NatureServe)**

**Global Conservation Rank:** GNR

**National Conservation Rank:** not yet determined

**Subnational Conservation Rank:** no applicable rank



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**Distribution**

**Countries:** Canada

**Provinces / Territories / States:** British Columbia

**Terrestrial Ecozones and Ecoregions of Canada:** Pacific Maritime: Coastal Gap, Pacific Ranges

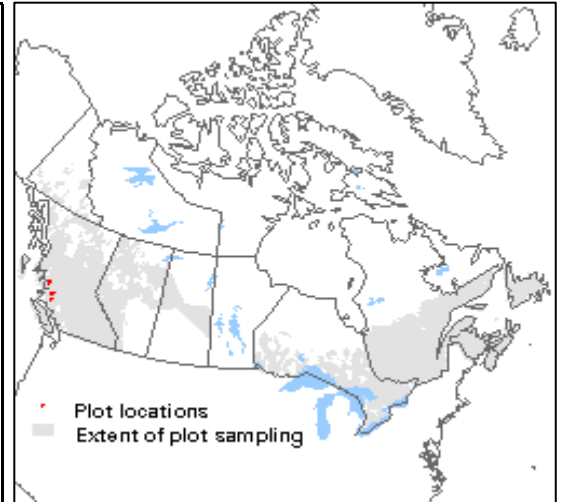
**Rowe's Forest Regions and Sections of Canada:** Coast: Southern Pacific Coast

**NAAEC CEC Ecoregions of North America (Levels I & II):** Marine West Coast Forests

**Nature Conservancy of Canada Ecoregions:** North Cascades and Pacific Ranges, Coastal Forests and Mountains of Southeast Alaska and B.C.

**Biogeoclimatic Ecosystem Classification of British Columbia (zones and subzones):** CWHds, CWHms

**British Columbia Ecoregion Classification (ecoregions and ecosections):** Pacific Ranges: Northern Pacific Ranges, Central Pacific Ranges; Coastal Gap: Kimsquit Mountains



**Corresponding Types and Associations**

CNVC00002	British Columbia	CWHds 1 /02	Douglas-fir - Lodgepole Pine - Kinnikinnick
		CWHds 2 /02	Douglas-fir - Lodgepole Pine - Kinnikinnick
		CWHms 2 /02	Douglas-fir - Lodgepole Pine - Kinnikinnick



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**Vegetation Summary\***

Species Name <sup>†</sup>	Association CNVC00002	
	14 plots	
	% Cover <sup>‡</sup>	% Presence <sup>^</sup>
<b>Overstory Trees</b>		
<i>Pseudotsuga menziesii</i>	19	86
<i>Pinus contorta</i>	19	71
<i>Tsuga heterophylla</i>	20	50
<i>Thuja plicata</i>	8	36
<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>(22 26 46 64 68)</b>	
<b>Understory Woody Shrubs and Regenerating Trees</b>		
<i>Tsuga heterophylla</i>	14	86
<i>Vaccinium membranaceum</i>	13	71
<i>Pinus contorta</i>	8	71
<i>Thuja plicata</i>	8	64
<i>Amelanchier alnifolia</i>	2	57
<i>Pseudotsuga menziesii</i>	12	50
<i>Vaccinium parvifolium</i>	5	50
<i>Vaccinium alaskaense</i>	17	43
<i>Abies lasiocarpa</i>	11	43
<i>Menziesia ferruginea</i>	6	43
<i>Paxistima myrsinites</i>	7	36
<i>Sorbus scopulina</i>	2	36
<i>Elliottia pyroliflorus</i>	1	29
<i>Abies amabilis</i>	6	21
<i>Acer glabrum</i>	3	21
<i>Pinus monticola</i>	3	21
<i>Tsuga mertensiana</i>	2	21
<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>(33 46 49 55 64)</b>	
<b>Understory Herbs and Dwarf Shrubs</b>		
<i>Arctostaphylos uva-ursi</i>	8	71
<i>Chimaphila umbellata</i>	7	50
<i>Goodyera oblongifolia</i>	2	36
<i>Linnaea borealis</i>	3	29
<i>Cryptogramma acrostichoides</i>	1	29
<i>Phyllodoce empetriformis</i>	7	21
<i>Cornus canadensis</i>	3	21
<i>Chimaphila menziesii</i>	1	21



***Pseudotsuga menziesii* - *Pinus contorta* (*Tsuga heterophylla*) / *Vaccinium membranaceum* / *Arctostaphylos uva-ursi* CNVC00002**

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

Species Name <sup>†</sup>	Association CNVC00002	
	% Cover <sup>‡</sup>	% Presence <sup>^</sup>
<b>Herb Stratum Cover (P<sub>10</sub> P<sub>25</sub> Mean P<sub>75</sub> P<sub>90</sub>)<sup>‡</sup></b>	<b>(3 10 20 25 38)</b>	
<b>Bryophytes and Lichens</b>		
<i>Cladonia</i> sp.	15	100
<i>Hylocomium splendens</i>	15	64
<i>Cladina</i> sp.	7	64
<i>Pleurozium schreberi</i>	42	57
<i>Rhytidiopsis robusta</i>	16	50
<i>Polytrichum juniperinum</i>	6	50
<i>Peltigera aphthosa</i>	3	50
<i>Dicranum scoparium</i>	7	36
<i>Rhytidiadelphus triquetrus</i>	13	29
<i>Niphotrichum canescens</i>	4	29
<i>Rhytidiadelphus loreus</i>	4	29
<i>Dicranum fuscescens</i>	3	29
<i>Polytrichum piliferum</i>	3	29
<i>Dicranella palustris</i>	5	21
<i>Barbilophozia floerkei</i>	2	21
<b>Bryo-Lichen Stratum Cover (P<sub>10</sub> P<sub>25</sub> Mean P<sub>75</sub> P<sub>90</sub>)<sup>‡</sup></b>	<b>(44 70 72 89 90)</b>	

\* species present in > 20% of sample plots are listed

<sup>†</sup> see **Botanical Nomenclature** link at <http://cnvc-cnvc.ca> for botanical sources, synonyms and common names

<sup>‡</sup> average percent cover of a species within the plots in which it occurs (i.e., characteristic cover)

<sup>^</sup> percent frequency occurrence for a species within the total plots

<sup>‡</sup> 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  
CNVC00002  
**14 plots**

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

130–540–1140

### Slope Gradient (% frequency)

very steep (7)  
**steep (29)**  
moderately steep (14)  
moderate (14)  
gentle (14)  
level (21)

### Aspect (% frequency)

north (7)  
east (36)  
**south (43)**  
level (14)

### Meso Toposition (% frequency)

crest / upper (36)  
mid (7)  
lower / toe (7)  
missing data (50)

### Moisture Regime (% frequency)

very dry (14)  
**dry (86)**

### Nutrient Regime (% frequency)

**poor (79)**  
medium (21)



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

	Association CNVC00002
<b>Soil Parent Material (% frequency)</b>	bedrock (14) fluvial (14) glaciofluvial (7) missing data (64)
<b>Soil Rooting Zone Substrate (% frequency)</b>	non-soil (14) <b>sandy (79)</b> missing data (7)
<b>Root Restricting Depth (% frequency)</b>	0 – 20 cm (7) 21 – 99 cm (36) missing data (57)
<b>Humus Form (% frequency)</b>	<b>mor (57)</b> moder (21) missing data (21)





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

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## Additional Characteristics

**Species of High Conservation Concern:** Reported habitat for spotted owl (*Strix occidentalis*) (G3 [NatureServe], S1 [BC CDC], E [COSEWIC]).

**Non-native Species:**

**Management Issues:**

## Type Statistics

**Internal Similarity:**

**Confidence:** high

**Strength:**

## Related Concepts

**Similar CNVC Associations:**

**Related United States National Vegetation Classification Associations:** CEG002827 *Pseudotsuga menziesii* - *Pinus contorta* - *Tsuga heterophylla* / *Vaccinium membranaceum* / *Arctostaphylos uva-ursi* Woodland

**Relationships with Other Classifications:**

## Comments

In dry to moist subarctic climates of British Columbia, CNVC00002 is differentiated from the moister CNVC00043 [*Pseudotsuga menziesii* - *Tsuga heterophylla* (*Thuja plicata*) / *Gaultheria shallon* - *Vaccinium parvifolium*] by its more extreme site conditions and increased *Pinus contorta*, and by the lack of *Gaultheria shallon*.

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

## Source Information

**Number of source plots for CNVC00002:** 14

**Information Sources:** British Columbia Ministry of Forests and Range, Research Branch BECMaster database, October 2007 (14 plots)

**Concept Authors:** D. Meidinger, C. Chappell, C. Cadrin, G. Kittel, C. McCain, K. Boggs, J. Kagan, G. Cushon, A. Banner and T. DeMeo

**Description Authors:** D. Meidinger, K. Iverson, C. Cadrin and K. Baldwin

**Date of Concept:** November, 2005

**Date of Description:** March, 2011





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**Classification References:**

British Columbia Ministry of Forests and Range, Research Branch. 2007. Vegetation classification hierarchy: BECMaster database (October 2007). B.C. Min. For., Victoria, BC.

Meidinger, D.; Chappell, C.; Cadrin, C.; Kittel, G.; McCain, C.; Boggs, K.; Kagan, J.; Cushon, G.; Banner, A.; DeMeo, T. 2005. International vegetation classification of the Pacific Northwest: International correlation of temperate coastal forest plant associations of Oregon, Washington, British Columbia and Alaska. Contributors: B.C. Ministry of Forests, USDA Forest Service, B.C. Conservation Data Centre, Alaska Natural Heritage Program, Washington Natural Heritage Program, Oregon Natural Heritage Information Center.

**Characterization References:**

British Columbia Conservation Data Centre. 2007. B.C. Species and Ecosystems Explorer. B.C. Min. of Environ. Victoria, BC. Available: <http://www.env.gov.bc.ca/cdc/access.html> (accessed August 12, 2008).

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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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