



Woodland / Forêt ouverte

Association CNVC00020

***Pinus contorta* var. *contorta* - *Chamaecyparis nootkatensis* / *Racomitrium* spp.**

Shore Pine - Yellow-cedar / Rock Moss

Pin tordu côtier - Cyprès jaune / Racomitre

**Subassociations:** none

**CNVC Alliance:** not yet determined

**CNVC Group:** not yet determined

## Type Description

**Concept:** CNVC00020 is an endemic, scrubby, open coniferous woodland association that occurs at elevations up to 600 mASL in very wet, hypermaritime climates of coastal British Columbia. Site conditions are shallow soils on upper slopes and crests over granitic or similarly nutritionally very poor (acidic) rocky knolls. Climate, site and wind conditions result in the scrubby physiognomy and mainly uneven-aged, old forest successional stages. Shore pine (*Pinus contorta* var. *contorta*) and yellow-cedar (*Chamaecyparis nootkatensis*) - the predominant tree species - are seldom over 10 m tall. These conifers are significant components of the shrub layer along with salal (*Gaultheria shallon*). The diverse, but poorly developed herb layer is typified by bunchberry (*Cornus canadensis*) and black crowberry (*Empetrum nigrum*). The moss layer is dominated by the rock mosses (*Racomitrium* spp.).

**Vegetation:** The leading tree species of CNVC00020 are *Pinus contorta* var. *contorta* and *Chamaecyparis nootkatensis*, which are often less than 10 m tall. These species, in addition to *Tsuga heterophylla* and *Thuja plicata*, are significant components of the shrub layer. Characteristic species in the moderately developed low shrub layer include *Juniperus communis*, *Gaultheria shallon*, *Vaccinium* spp. and *Ledum groenlandicum*. The diverse, poorly developed herb layer often includes *Empetrum nigrum*, *Blechnum spicant* and *Cornus canadensis*. The moderately developed moss layer is diverse, featuring *Racomitrium* spp., along with *Rhytidiadelphus loreus*, *Hylocomium splendens* and *Cladina* spp.

**Environment:** CNVC00020 occurs at elevations up to 600 mASL (200 m at the northern and southern limits of its range) in very wet, hypermaritime climates of coastal British Columbia. It is strongly linked to upper slopes and crests on granitic or similarly nutritionally very poor (acidic) rocky knolls. Soils are developed on highly variable, thin veneers (normally less than 40 cm deep) of organic and mineral materials overlying bedrock, and are usually well drained. Treeless inclusions of exposed bedrock and soils less than 10 cm thick are common. The soil moisture regime is the driest in the prevailing humid hypermaritime climate, but is variable due to microtopography; nutritional status is very poor to poor.



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**Type Description (cont'd)**

**Dynamics:** Catastrophic natural disturbance tends not to play a major role in the dynamics of CNVC00020. These communities are renewed slowly through the mortality of individual or small numbers of trees within localized patches. Uneven-aged, scrubby, woodland physiognomy comprising young to very old trees is typical. Physiological stress from the very poor, shallow soil conditions is high. Wind is the most prevalent disturbance factor on the exposed upland locations typically occupied by these communities. Individual tree mortality by uprooting and windthrow is more common than by stem breakage because of the shallow soils and the small size and rigid strength of these slow growing trees. Fire is not a factor.

**Range:** CNVC00020 occurs at low elevations along the windward outer coast of British Columbia, from western and northern Vancouver Island and the adjacent mainland coast northward to Portland Canal and including Haida Gwaii (Queen Charlotte Islands). CNVC00020 is a Canadian endemic association.

**Conservation Status (NatureServe)**

**Global Conservation Rank:** G4

**National Conservation Rank:** not yet determined

**Subnational Conservation Rank:** S4 (BC)



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### Distribution

**Countries:** Canada

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

**Ecozones and Ecoregions of Canada:** Pacific Maritime: Coastal Gap, Queen Charlotte Ranges, Western Vancouver Island

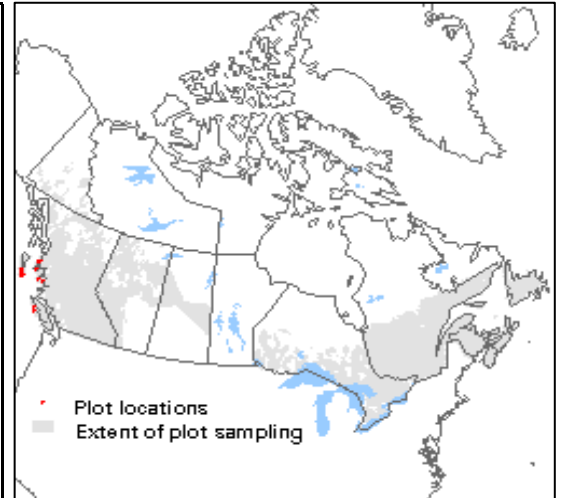
**Rowe's Forest Regions and Sections:** Coast: Northern Pacific Coast, Queen Charlotte Islands

**Commission for Environmental Cooperation Ecological Regions of North America:** Marine West Coast Forests

**The Nature Conservancy (USA) and Nature Conservancy of Canada Ecoregions:** Northwest Coast, S.E. Alaska - B.C. Coastal Forest and Mountains

**Biogeoclimatic Ecosystem Classification of British Columbia (zones and subzones):** CWH vh

**Ecoregion Classification System of British Columbia (ecosections):** Hecate Lowland, Kitimat Ranges, North Coast Fjords, Northern Pacific Ranges, Queen Charlotte Ranges, Windward Island Mountains



### Corresponding Types and Associations

CNVC00020	British Columbia	CWH vh 1 /02	<i>Pinus contorta</i> - <i>Chamaecyparis nootkatensis</i> - <i>Racomitrium lanuginosum</i>
		CWH vh 2 /02	<i>Pinus contorta</i> - <i>Chamaecyparis nootkatensis</i> - <i>Racomitrium lanuginosum</i>



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### Vegetation Summary\*

Species Name†	Association CNVC00020	
	19 plots	
	% Cover	% Presence
<b>Overstory Trees</b>		
<i>Pinus contorta</i>	23	21
<i>Chamaecyparis nootkatensis</i>	6	16
Tree Stratum Cover (P <sub>10</sub> P <sub>25</sub> Mean P <sub>75</sub> P <sub>90</sub> )‡	(0 0 8 0 30)	
<b>Understory Woody Shrubs and Regenerating Trees</b>		
<i>Pinus contorta</i>	13	100
<i>Chamaecyparis nootkatensis</i>	15	95
<i>Gaultheria shallon</i>	14	79
<i>Tsuga heterophylla</i>	8	58
<i>Thuja plicata</i>	8	58
<i>Juniperus communis</i>	6	58
<i>Ledum groenlandicum</i>	3	53
<i>Vaccinium parvifolium</i>	3	32
<i>Vaccinium ovatum</i>	18	26
<i>Vaccinium uliginosum</i>	7	26
<i>Menziesia ferruginea</i>	4	21
<i>Vaccinium alaskaense</i>	2	21
<i>Tsuga mertensiana</i>	2	21
Shrub Stratum Cover (P <sub>10</sub> P <sub>25</sub> Mean P <sub>75</sub> P <sub>90</sub> )‡	(12 22 51 75 91)	
<b>Understory Herbs and Dwarf Shrubs</b>		
<i>Empetrum nigrum</i>	14	79
<i>Cornus canadensis</i>	2	63
<i>Lycopodium clavatum</i>	1	53
<i>Calamagrostis nutkaensis</i>	5	47
<i>Blechnum spicant</i>	2	47
<i>Maianthemum dilatatum</i>	1	47
<i>Deschampsia cespitosa</i>	11	42
<i>Linnaea borealis</i>	3	42
<i>Trientalis europaea</i> ssp. <i>arctica</i>	2	42
<i>Vaccinium vitis-idaea</i>	2	37
<i>Luetkea pectinata</i>	1	37
<i>Drosera rotundifolia</i>	1	37
<i>Pinguicula vulgaris</i>	1	37
<i>Trichophorum cespitosum</i>	9	32
<i>Fauria crista-galli</i>	1	32
<i>Microseris borealis</i>	1	32
<i>Vaccinium caespitosum</i>	2	26
<i>Coptis aspleniifolia</i>	1	26



***Pinus contorta* var. *contorta* - *Chamaecyparis nootkatensis* / *Racomitrium* spp. CNVC00020**

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

Species Name <sup>†</sup>	Association CNVC00020	
	% Cover	% Presence
<i>Huperzia haleakalae</i>	1	26
<i>Gentiana douglasiana</i>	1	26
<i>Kalmia microphylla</i>	1	26
<i>Carex anthoxanthea</i>	12	21
<i>Loiseleuria procumbens</i>	4	21
<i>Caltha leptosepala</i>	3	21
<i>Vaccinium uliginosum</i>	3	21
<i>Eriophorum angustifolium</i>	1	21
<i>Andromeda polifolia</i>	1	21
<i>Triantha glutinosa</i>	0	21
<i>Agrostis aequivalvis</i>	0	21
<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>(11 16 32 40 51)</b>	
<b>Bryophytes and Lichens</b>		
<i>Rhytidiadelphus loreus</i>	12	63
<i>Racomitrium lanuginosum</i>	18	58
<i>Hylocomium splendens</i>	8	53
<i>Pleurozium schreberi</i>	5	42
<i>Cladonia</i> sp.	4	42
<i>Cladina rangiferina</i>	5	37
<i>Cladina portentosa</i>	4	37
<i>Sphagnum</i> sp.	6	32
<b><i>Racomitrium</i> sp.</b>	<b>21</b>	<b>26</b>
<i>Dicranum</i> sp.	6	26
<i>Herbertus aduncus</i>	4	26
<i>Sphagnum capillifolium</i>	3	26
<i>Cladina</i> sp.	3	21
<i>Dicranum scoparium</i>	2	21
<i>Eurhynchium oreganum</i>	2	21
<b>Bryo-Lichen Stratum Cover</b>		
<b>(P<sub>10</sub> P<sub>25</sub> Mean P<sub>75</sub> P<sub>90</sub>)<sup>‡</sup></b>	<b>(17 28 48 72 82)</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> 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  
CNVC00020  
**19 plots**

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

5–134–390  
missing data (11)

### Slope Gradient (% frequency)

very steep (11)  
**steep (37)**  
moderate (11)  
gentle (16)  
level (5)  
missing data (21)

### Aspect (% frequency)

**north (26)**  
south (16)  
west (21)  
level (5)  
missing data (32)

### Meso Toposition (% frequency)

**crest / upper (74)**  
lower / toe (5)  
missing data (21)

### Moisture Regime (% frequency)

very dry (5)  
**dry (79)**  
moist (5)  
missing data (11)

### Nutrient Regime (% frequency)

**poor (84)**  
medium (5)  
missing data (11)



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

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**Soil Parent Material (% frequency)**

**colluvium (16)**  
eolian (5)  
moraine / till (5)  
organic (5)  
missing data (68)

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

non-soil (16)  
coarse loamy (16)  
fine loamy (11)  
silty (11)  
**organic (21)**  
missing data (26)

**Root Restricting Depth (% frequency)**

**0 – 20 cm (16)**  
21 – 99 cm (11)  
missing data (74)

**Humus Form (% frequency)**

**mor (21)**  
moder (5)  
peatymor (5)  
missing data (68)



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### Additional Characteristics

Species of High Conservation Concern:

Non-native Species:

Management Issues:

### Type Statistics

Internal Similarity:

Confidence: high

Strength:

### Related Concepts

**Similar CNVC Associations:** CNVC0008 *Pinus contorta* var. *contorta* / *Gaultheria shallon* - *Vaccinium alaskaense* / *Cladina* spp.

**Related United States National Vegetation Classification Associations:** CEG002791 *Pinus contorta* - *Chamaecyparis nootkatensis* / *Racomitrium lanuginosum* Forest

**Relationships with Other Classifications:**

### Comments

CNVC0008 [*Pinus contorta* var. *contorta* / *Gaultheria shallon* - *Vaccinium alaskaense* / *Cladina* spp.] is a rock outcrop community that occurs in adjacent maritime climates. It can be similar in species composition to CNVC00020 but typically tends to have less *Chamaecyparis nootkatensis*, *Empetrum nigrum*, and *Racomitrium lanuginosum*, and no *Juniperus communis*.

### Source Information

**Number of source plots for CNVC00020:** 19

**Information Sources:** British Columbia Ministry of Forests and Range, Research Branch BECMaster database, October 2007 (19 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, A. Inselberg, C. Cadrin and K. Baldwin

**Date of Concept:** November, 2005

**Date of Description:** March, 2011





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**Source Information (cont'd)**

**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:**

Banner, A.; MacKenzie, W.; Haeussler, S.; Thomson, S.; Pojar, J.; Trowbridge, R. 1993. A field guide to site identification and interpretation for the Prince Rupert Forest Region. B.C. Min. For., Res. Branch, Victoria, BC. Land Manage. Handb. No. 26.

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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.

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