Woodland / Forêt ouverte **Association CNVC00008**

Pinus contorta var. *contorta* / *Gaultheria shallon - Vaccinium alaskaense* / *Cladina* spp.

Shore Pine / Salal - Alaskan Blueberry / Reindeer Lichen

Pin tordu côtier / Salal - Airelle d'Alaska / Cladonie

Subassociations: none
CNVC Alliance: not yet determined
CNVC Group: not yet determined

Type Description

Concept: CNVC00008 is a Pacific Coast, open, scrubby coniferous woodland association that occurs on rocky outcrops, from sea level to approximately 850 m, on thin veneers of organic, morainal, or colluvial soils overlying ridged or hummocky bedrock, within a mosaic of essentially bare rock outcrops. Although rare in the northern mainland of British Columbia, it has a potentially wide geographic range in the Coast Mountains and the mountains of Vancouver Island. The open scrubby tree layer is dominated by shore pine (*Pinus contorta* var. *contorta*), with some western red cedar (*Thuja plicata*), western hemlock (*Tsuga heterophylla*) or Douglas-fir (*Pseudotsuga menziesii*) at lower elevations, or with yellow-cedar (*Chamaecyparis nootkatensis*) and mountain hemlock (*Tsuga mertensiana*) at higher elevations. The shrub layer is dominated by salal (*Gaultheria shallon*), with variable coverage of conifer regeneration. The herb layer is very sparse. Reindeer lichens (*Cladina* spp.) and rock mosses (*Racomitrium* spp.) dominate the moss / lichen layer.

Vegetation: *Pinus contorta* var. *contorta*, with *Thuja plicata* and *Tsuga heterophylla* at lower elevations, or with *Chamaecyparis nootkatensis* and *Tsuga mertensiana* at higher elevations, are the main species in the scrubby open canopy of this coniferous woodland association. Approximately as far north as Kemano, at lower elevations, P*seudotsuga menziesii* is a common component of the tree layer. The moderately developed shrub layer is dominated by *Gaultheria shallon*, with variable coverage of conifer regeneration, as well as *Vaccinium alaskaense*, *V. parvifolium*, and *Menziesia ferruginea*. *Gaultheria shallon* is less frequent at higher elevations. The herb layer is very sparse. *Cladina* spp. and *Racomitrium* spp. dominate the moderately well-developed moss / lichen layer. *Hylocomium splendens* and *Pleurozium schreberi* are also common, but are less abundant.

Environment: A scrubby, rock outcrop woodland, CNVC00008 can occur over a wide geographic area from sea level to approximately 850 m (lower in the north along the mainland coast). Soils are very dry, rapidly drained, nutrient poor, thin veneers of organic, morainal or colluvial materials overlying ridged or hummocky bedrock. Topopositions tend to be crests and upper slopes. Typically, sites supporting these communities are found within a mosaic of essentially bare rock outcrops.

Pinus contorta var. *contorta* / *Gaultheria shallon - Vaccinium alaskaense* / *Cladina* spp. CNVC00008

Type Description (cont'd)

Dynamics: Catastrophic natural disturbance tends not to play a major role in the dynamics of this association. 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 a factor only in the southern portions of the range, influenced by the rainshadow of the Vancouver Island Ranges or the Olympic Mountains.

Range: Although rare in the northern mainland portion of its range, CNVC00008 potentially occurs widely in the submontane and montane from western to northern Vancouver Island, and along the windward Coast Mountains of British Columbia from the Fraser River valley and possibly as far northward as the Prince Rupert area. This association also occurs in the Puget Lowland of Washington State.

Conservation Status (NatureServe)

Global Conservation Rank: G3G5
National Conservation Rank: not yet determined
Subnational Conservation Rank: S3S5 (BC)

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Distribution

Countries: Canada

Provinces / Territories / States: British Columbia

Ecozones and Ecoregions of Canada: Pacific Maritime: Coastal Gap, Lower Mainland, Pacific Ranges, Western Vancouver Island

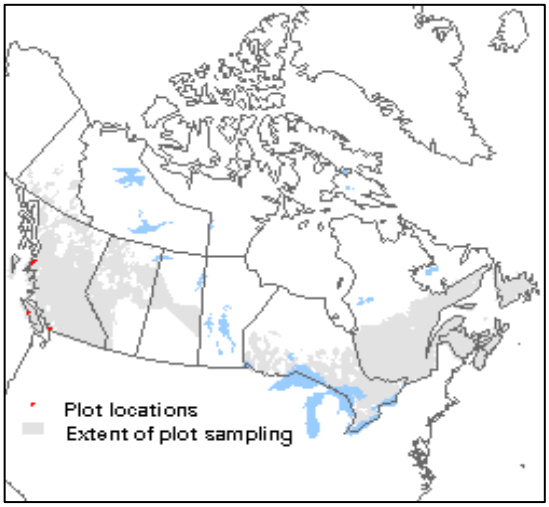
Rowe's Forest Regions and Sections: Coast: Northern Pacific Coast, Southern Pacific Coast

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

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

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

Ecoregion Classification System of British Columbia (ecosections): Kitimat Ranges, Southern Pacific Ranges, Windward Island Mountains



Corresponding Types and Associations

CNVC00008	British Columbia	CWH vm 1 /02	*Pinus contorta - Gaultheria shallon - Cladina*
		CWH vm 2 /02	*Pinus contorta - Gaultheria shallon - Cladina*

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Vegetation Summary*

Species Name†	Association CNVC00008 15 plots % Cover	% Presence
Overstory Trees		
Pinus contorta	**20**	**53**
Thuja plicata	6	40
Tsuga heterophylla	9	33
Pseudotsuga menziesii	6	33
Chamaecyparis nootkatensis	3	33
Tsuga mertensiana	3	33
Tree Stratum Cover (P_{10} P_{25} Mean P_{75} P_{90})‡	**(0 8 18 32 40)**	
Understory Woody Shrubs and Regenerating Trees		
Vaccinium alaskaense	**4**	**73**
Pinus contorta	13	67
Gaultheria shallon	**33**	**60**
Vaccinium parvifolium	4	60
Thuja plicata	10	53
Tsuga heterophylla	7	53
Menziesia ferruginea	5	53
Chamaecyparis nootkatensis	11	33
Elliottia pyroliflorus	8	33
Pseudotsuga menziesii	4	33
Tsuga mertensiana	3	33
Pinus monticola	1	27
Shrub Stratum Cover (P_{10} P_{25} Mean P_{75} P_{90})‡	**(20 29 49 60 89)**	
Understory Herbs and Dwarf Shrubs		
Saxifraga ferruginea	1	33
Selaginella wallacei	1	33
Cryptogramma acrostichoides	0	33
Cornus canadensis	1	27
Danthonia spicata	1	27
Herb Stratum Cover (P_{10} P_{25} Mean P_{75} P_{90})‡	**(2 4 9 7 28)**	
Bryophytes and Lichens		
Hylocomium splendens	9	87
Pleurozium schreberi	11	80
Cladina rangiferina	**4**	**60**
Dicranum scoparium	4	53

Pinus contorta var. *contorta* / *Gaultheria shallon - Vaccinium alaskaense* / *Cladina* spp. CNVC00008

Vegetation Summary (cont'd)*

	Association CNVC00008	
Species Name†	% Cover	% Presence
Rhytidiadelphus loreus	2	53
Cladina mitis	**5**	**40**
***Cladina* sp.**	**31**	**33**
Racomitrium lanuginosum	20	33
Rhytidiopsis robusta	3	33
Peltigera aphthosa	2	33
Cladonia squamosa	0	33
Racomitrium canescens	20	27
Polytrichum juniperinum	3	27
Stereocaulon sp.	2	27
Cladina arbuscula	1	27
Cladina stellaris	**5**	**7**
Bryo-Lichen Stratum Cover		
(P_{10} P_{25} Mean P_{75} P_{90})‡	**(25 42 69 92 95)**	

* 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
‡ $P_x = X^{th}$ percentile (e.g., $P_{10} = 10^{th}$ percentile)

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Site / Soil Characteristics

	Association CNVC00008
	15 plots
Elevation Range (min–mean–max meters)	
	130–424–840
	missing data (13)
Slope Gradient (% frequency)	
	very steep (20)
	steep (27)
	moderately steep (20)
	moderate (13)
	level (7)
	missing data (13)
Aspect (% frequency)	
	east (27)
	south (13)
	west (7)
	level (7)
	missing data (47)
Meso Topoposition (% frequency)	
	crest / upper (53)
	mid (7)
	missing data (40)
Moisture Regime (% frequency)	
	very dry (67)
	dry (20)
	missing data (13)
Nutrient Regime (% frequency)	
	poor (60)
	missing data (40)

Pinus contorta var. *contorta* / *Gaultheria shallon - Vaccinium alaskaense* / *Cladina* spp. CNVC00008

Site / Soil Characteristics (cont'd)

	Association CNVC00008
Soil Parent Material (% frequency)	
	bedrock (40)
	colluvium (7)
	moraine / till (7)
	fluvial (7)
	missing data (40)
Soil Rooting Zone Substrate (% frequency)	
	non-soil (47)
	sandy (7)
	coarse loamy (27)
	missing data (20)
Root Restricting Depth (% frequency)	
	0 – 20 cm (7)
	21 – 99 cm (27)
	missing data (67)
Humus Form (% frequency)	
	mor (27)
	missing data (73)

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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: CNVC00021 *Pseudotsuga menziesii - Pinus contorta var. contorta / Festuca occidentalis / Niphotrichum canescens - Racomitrium lanuginosum - Cladina* spp. Woodland

Related United States National Vegetation Classification Associations: CEGL000150 *Pinus contorta var. contorta / Gaultheria shallon* Woodland; CEGL002842 *Pinus contorta* var. *contorta / Gaultheria shallon / Cladina* spp. Woodland

Relationships with Other Classifications:

Comments

Several other rock outcrop associations occur in coastal British Columbia. CNVC00021 [*Pseudotsuga menziesii - Pinus contorta* var. *contorta / Festuca occidentalis / Niphotrichum canescens - Racomitrium lanuginosum - Cladina* spp.] and CNVC00002 [*Pseudotsuga menziesii - Pinus contorta (Tsuga heterophylla) / Vaccinium membranaceum / Arctostaphylos uva-ursi*], which occur in drier climatic conditions, have more *Pseudotsuga menziesii* in the overstory and do not have *Vaccinium alaskaense* in the shrub layer. Found in hypermaritime climates, CNVC00020 [*Pinus contorta* var. *contorta - Chamaecyparis nootkatensis / Racomitrium* spp.] is characterized by *Chamaecyparis nootkatensis* and has *Juniperus communis* in the shrub layer.

Part of the range of conditions for the USNVC *Pinus contorta* var. *contorta / Gaultheria shallon* Forest (CEGL000150) Association recognized in Washington State overlaps with this association, as it can occur on rock outcrops. However, it also includes early to mid-successional communities occurring on glacial outwash and till.

Source Information

Number of source plots for CNVC00008: 15

Information Sources: British Columbia Ministry of Forests and Range, Research Branch BECMaster database, October 2007 (15 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

Pinus contorta var. *contorta* / *Gaultheria shallon - Vaccinium alaskaense* / *Cladina* spp. CNVC00008

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:
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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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