



Forest / Forêt

Association CNVC00011

Tsuga mertensiana* - *Chamaecyparis nootkatensis* / *Vaccinium alaskaense* / *Coptis aspleniifolia

Mountain Hemlock - Yellow-cedar / Alaskan Blueberry / Fern-leaved Goldthread

Pruche subalpine - Cyprés jaune / Airelle d'Alaska / Coptide à feuilles d'asplénie

Subassociations: none

CNVC Alliance: not yet determined

CNVC Group: not yet determined

Type Description

Concept: The subalpine CNVC00011 is endemic to elevations between approximately 500 and 1100 mASL in wet hypermaritime climates of coastal British Columbia, including Haida Gwaii (Queen Charlotte Islands). Topositions tend to be middle to upper slopes and gently rolling ridges or saddles where imperfectly to poorly drained mineral soils, and similarly drained upland organic veneers over bedrock are typical. This low productivity, scrubby forest association is codominated by mountain hemlock (*Tsuga mertensiana*) and yellow-cedar (*Chamaecyparis nootkatensis*), often with western hemlock (*Tsuga heterophylla*). In addition to tree regeneration, the shrub layer is mostly red huckleberry (*Vaccinium parvifolium*), oval-leaved blueberry (*Vaccinium ovalifolium*), and Alaskan blueberry (*Vaccinium alaskaense*). The herb layer is sparse, especially on Haida Gwaii where there is intensive deer browsing. The most common bryophytes are lanky moss (*Rhytidiadelphus loreus*), green peat moss (*Sphagnum girgensohnii*) and Bolander's earwort (*Scapania bolanderi*).

Vegetation: CNVC00011 comprises poorly productive, typically old-forest successional stages consisting of a moderate to closed scrubby canopy codominated by *Tsuga mertensiana* and *Chamaecyparis nootkatensis*, often with *Tsuga heterophylla*. *Picea sitchensis* is not a codominant species in the canopy (cf. CNVC00004). In addition to regeneration of the main tree species, the shrub layer typically includes moderate cover of *Vaccinium ovalifolium*, *Vaccinium alaskaense*, and low cover of *Vaccinium parvifolium* and *Menziesia ferruginea*. Species in the herb layer include consistent but low cover of *Coptis aspleniifolia* and *Blechnum spicant*. Often present with very low cover are *Listera cordata*, *Rubus pedatus*, and *Streptopus lanceolatus*. The moss layer is well-developed and consists of a high diversity of species. Most commonly occurring with high cover are *Rhytidiadelphus loreus* (dominant) and *Scapania bolanderi*. Also common but occurring with lower cover are *Hylocomium splendens*, *Dicranum fuscescens*, and *Sphagnum girgensohnii*. *Rhytidiopsis robusta* and *Rhizomnium glabrescens* are sometimes present with moderate cover.

Environment: CNVC00011 occurs within a subalpine, wet hypermaritime climate along the outer coast of British Columbia. Its elevational range is approximately 500 to 700 mASL. Topographic positions tend to be moderate middle to upper slopes and gently rolling ridges or saddles, where the high precipitation causes seepage waters to influence the moisture regime of the shallow soils. Nevertheless, these seepage inputs are not equivalent to those of moisture-receiving sites on lower positions in the landscape. Imperfectly to poorly drained, shallow, fine-textured mineral soils, and similarly drained upland organic veneers over bedrock are typical of sites supporting this association. Forest humus forms are predominantly mors.



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Type Description (cont'd)

Dynamics: This is a late-successional and edaphic climax forest association. Windthrow and related wind damage to vegetation are common and are further aggravated by the potential physical damage of heavy winter snow. Dips and hollows that can collect and hold snow tend to be slow to regenerate with trees. Trees characteristically grow in clumped islands where soil conditions are better, and where some protection is offered by those trees already established. Regardless of the difficult subalpine climatic conditions, many of the forests here are typically uneven-aged and very old. Fire is not a factor in the subalpine wet hypermaritime climate. Hemlock dwarf mistletoe (*Arceuthobium tsugense*) is a medium but persistent threat to *Tsuga* spp.

Range: This Canadian endemic association occurs in the subalpine on Haida Gwaii and along the outer mainland coast of British Columbia from Rivers Inlet, beyond the northern tip of Vancouver Island, northward to Portland Canal.

Conservation Status (NatureServe)

Global Conservation Rank: G3G4

National Conservation Rank: not yet determined

Subnational Conservation Rank: S3S4 (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

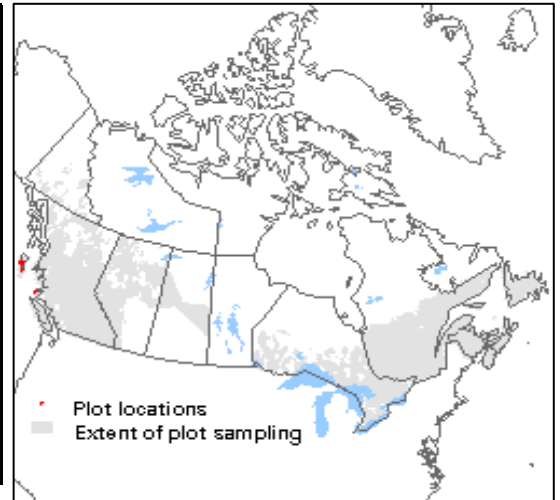
Rowe's Forest Regions and Sections: Coast: Northern Pacific Coast, Queen Charlotte Islands

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

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

Biogeoclimatic Ecosystem Classification of British Columbia (zones and subzones): MH wh

Ecoregion Classification System of British Columbia (ecosections): Hecate Lowland, Skidegate Plateau



Corresponding Types and Associations

CNVC00011	British Columbia	MH wh 1 /04	<i>Tsuga mertensiana</i> - <i>Chamaecyparis nootkatensis</i> - <i>Coptis aspleniifolia</i>
		MH wh 2 /04	<i>Tsuga mertensiana</i> - <i>Chamaecyparis nootkatensis</i> - <i>Coptis aspleniifolia</i>



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Vegetation Summary*

Species Name [†]	Association CNVC00011	
	8 plots	
	% Cover	% Presence
Overstory Trees		
<i>Tsuga mertensiana</i>	27	100
<i>Chamaecyparis nootkatensis</i>	29	88
<i>Tsuga heterophylla</i>	27	63
<i>Thuja plicata</i>	6	25
Tree Stratum Cover (P₁₀ P₂₅ Mean P₇₅ P₉₀)[‡]	(35 61 70 91 99)	
Understory Woody Shrubs and Regenerating Trees		
<i>Vaccinium alaskaense</i>	10	75
<i>Vaccinium parvifolium</i>	3	75
<i>Tsuga heterophylla</i>	11	63
<i>Chamaecyparis nootkatensis</i>	7	63
<i>Tsuga mertensiana</i>	4	63
<i>Menziesia ferruginea</i>	2	63
<i>Vaccinium ovalifolium</i>	11	50
<i>Gaultheria shallon</i>	0	38
<i>Vaccinium</i> sp.	8	25
<i>Thuja plicata</i>	4	25
<i>Abies amabilis</i>	3	25
<i>Alnus viridis</i>	1	25
Shrub Stratum Cover (P₁₀ P₂₅ Mean P₇₅ P₉₀)[‡]	(10 19 30 46 51)	
Understory Herbs and Dwarf Shrubs		
<i>Coptis aspleniifolia</i>	3	100
<i>Blechnum spicant</i>	1	100
<i>Listera cordata</i>	2	88
<i>Rubus pedatus</i>	1	75
<i>Streptopus lanceolatus</i>	1	75
<i>Cornus canadensis</i>	1	50
<i>Listera caurina</i>	0	50
<i>Moneses uniflora</i>	0	50
<i>Calamagrostis nutkaensis</i>	7	38
<i>Harrimanella stelleriana</i>	4	38
<i>Veratrum viride</i>	1	38
<i>Lycopodium clavatum</i>	1	38
<i>Huperzia haleakalae</i>	0	38
<i>Carex anthoxanthea</i>	6	25
<i>Caltha leptosepala</i>	2	25



***Tsuga mertensiana* - *Chamaecyparis nootkatensis* / *Vaccinium alaskaense* / *Coptis aspleniifolia* CNVC00011**

Vegetation Summary (cont'd)*

Species Name [†]	Association CNVC00011	
	% Cover	% Presence
<i>Luzula parviflora</i>	0	25
Herb Stratum Cover (P₁₀ P₂₅ Mean P₇₅ P₉₀)[‡]	(4 6 20 22 41)	
Bryophytes and Lichens		
<i>Rhytidiadelphus loreus</i>	23	88
<i>Scapania bolanderi</i>	17	75
<i>Hylocomium splendens</i>	7	75
<i>Dicranum fuscescens</i>	6	63
<i>Sphagnum girgensohnii</i>	5	63
<i>Rhytidiopsis robusta</i>	12	50
<i>Rhizomnium glabrescens</i>	8	50
<i>Plagiothecium undulatum</i>	2	50
<i>Pellia neesiana</i>	5	38
<i>Plagiochila asplenioides</i>	2	38
<i>Sphagnum</i> sp.	43	25
<i>Dicranum scoparium</i>	5	25
<i>Bazzania</i> sp.	2	25
<i>Lepidozia reptans</i>	1	25
Bryo-Lichen Stratum Cover (P₁₀ P₂₅ Mean P₇₅ P₉₀)[‡]	(53 64 72 80 86)	

* 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 = Xth percentile (e.g., P₁₀ = 10th percentile)



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Site / Soil Characteristics

Association
CNVC00011

8 plots

Elevation Range (min–mean–max meters)

440–575–650
missing data (13)

Slope Gradient (% frequency)

steep (38)
moderate (38)
gentle (13)
missing data (13)

Aspect (% frequency)

north (25)
east (25)
west (38)
missing data (13)

Meso Topoposition (% frequency)

crest / upper (75)
mid (13)
missing data (13)

Moisture Regime (% frequency)

mesic (50)
moist (50)

Nutrient Regime (% frequency)

poor (13)
medium (50)
missing data (38)



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Site / Soil Characteristics (cont'd)

Association
CNVC00011

Soil Parent Material (% frequency)

colluvium (38)
moraine / till (25)
organic (13)
missing data (25)

Soil Rooting Zone Substrate (% frequency)

non-soil (38)
fine loamy (13)
clayey (13)
organic (13)
missing data (25)

Root Restricting Depth (% frequency)

0 – 20 cm (25)
21 – 99 cm (38)
missing data (38)

Humus Form (% frequency)

mor (50)
moder (13)
missing data (38)



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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: CNVC00004 *Tsuga mertensiana* - *Picea sitchensis* (*Chamaecyparis nootkatensis*) / *Vaccinium alaskaense* - *V. parvifolium* / *Rhytidadelphus loreus* - *Scapania bolanderi*

Related United States National Vegetation Classification Associations: C EGL002838 *Tsuga mertensiana* - *Chamaecyparis nootkatensis* / *Vaccinium (alaskaense and ovalifolium)* / *Coptis aspleniifolia* Forest

Relationships with Other Classifications:

Comments

This association is similar to CNVC00004 [*Tsuga mertensiana* - *Picea sitchensis* (*Chamaecyparis nootkatensis*) / *Vaccinium alaskaense* - *V. parvifolium* / *Rhytidadelphus loreus* - *Scapania bolanderi*] but lacks *Picea sitchensis* and has more *Chamaecyparis nootkatensis*. The wetter CNVC00032 [*Chamaecyparis nootkatensis* - *Tsuga mertensiana* (*Picea sitchensis*) / *Veratrum viride* - *Nephrophyllidium crista-galli*] has indicators of moister sites such as *Veratrum viride* and *Nephrophyllidium crista-galli*. On Haida Gwaii, heavy deer browsing has affected the floristic composition of forest communities. In the absence of browsing, more moist-site indicator species would be present in the vegetation summary.

Source Information

Number of source plots for CNVC00011: 8

Information Sources: British Columbia Ministry of Forests and Range, Research Branch BECMaster database, October 2007 (8 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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Lewis, T. 2003. The ecosystems of Block 6, Tree-Farm License 25, Queen Charlotte Islands, British Columbia. Internal Report for Western Forest Products Inc. 137 p.

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NatureServe. 2007. NatureServe Explorer: An online encyclopedia of life [web application]. Version 6.2. NatureServe. Arlington, VA, USA. Available: <http://www.natureserve.org/explorer> (accessed: November 26, 2007).

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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