



Forest / Forêt

Association CNVC00003

***Picea sitchensis* - *Tsuga heterophylla* / *Oplopanax horridus* - *Rubus spectabilis* /
*Gymnocarpium dryopteris***

Sitka Spruce - Western Hemlock / Devil's Club - Salmonberry / Common Oak Fern

Épinette de Sitka - Pruche de l'Ouest / Bois piquant - Ronce remarquable / Gymnocarpe du chêne

Subassociations: none

CNVC Alliance: not yet determined

CNVC Group: not yet determined

Type Description

Concept: CNVC00003 is a late-seral, conifer-dominated, floodplain association that occurs at low elevations along the Coast Mountains of British Columbia and on the windward slopes of Vancouver Island. It occurs on moist, fluvial high bench sites that are enriched by a seasonally fluctuating water table. The moderately closed overstory is codominated by Sitka spruce (*Picea sitchensis*) and western hemlock (*Tsuga heterophylla*). The dense to well-developed shrub layer is dominated by devil's club (*Oplopanax horridus*) and salmonberry (*Rubus spectabilis*). A dense to moderately developed herb layer is characterized by several fern species, including common oak fern (*Gymnocarpium dryopteris*), common lady fern (*Athyrium filix-femina*), and northern wood fern (*Dryopteris expansa*). High litterfall from the understory and occasional flooding inhibits the growth of mosses, and consequently this layer is generally only moderately well developed, typically including low to moderate cover of lanky moss (*Rhytidiadelphus loreus*) and coastal leafy moss (*Plagiomnium insigne*).

Vegetation: The moderately closed overstory of CNVC00003 is dominated by moderate cover of *Picea sitchensis* and *Tsuga heterophylla*, sometimes with low to moderate cover of *Alnus rubra*, *Abies amabilis*, *Populus balsamifera* ssp. *trichocarpa*, or *Thuja plicata*. The dense to well-developed shrubby understory is dominated by high cover of *Oplopanax horridus* and moderate to high cover of *Rubus spectabilis*. *Tsuga heterophylla*, *Sambucus racemosa*, *Cornus stolonifera*, *Vaccinium ovalifolium*, *Vaccinium alaskaense*, and *Ribes bracteosum* are sometimes present with moderate cover. The dense to moderately developed herb layer includes several fern species, including *Gymnocarpium dryopteris*, *Athyrium filix-femina*, and *Dryopteris expansa*. There is often low to moderate cover of *Tiarella trifoliata* (see the Comments section), *Streptopus amplexifolius*, *Streptopus lanceolatus*, and *Circaea alpina*. Occasionally, depending upon geographic area and local conditions, moderate cover of other herb species such as *Maianthemum stellatum*, *Trautvetteria caroliniensis*, *Polystichum munitum* or *Lysichiton americanus* can be found. The moss layer is generally only moderately developed and typically includes low to moderate cover of *Rhytidiadelphus loreus* and *Plagiomnium insigne*, sometimes with *Hylocomium splendens*, *Rhizomnium glabrescens*, and other *Mnium* or *Rhizomnium* spp.



***Picea sitchensis* - *Tsuga heterophylla* / *Oplopanax horridus* - *Rubus spectabilis* /
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Type Description (cont'd)

Environment: This riparian association occurs on high fluvial benches adjacent to larger streams and rivers. As high bench sites, they are infrequently influenced by surface flooding but are annually subject to an elevated water table during runoff from snowmelt and winter storms. Although the water table experiences seasonal fluctuations, soils are moist through the growing season. The fluvial water enrichment results in a productive forest community with considerable deciduous leaf litter. The litter is rapidly decomposed, further adding to the rich nutrient regime. Soils are derived from sandy fluvial materials and demonstrate weak soil development (typically Dystric Brunisols) due to their young age and occasional deposition of new material. These riparian communities are found at elevations up to approximately 500 mASL.

Dynamics: CNVC00003 is a late-successional (mature and climax) floodplain forest association. It occurs on high bench sites that are infrequently flooded (i.e., decadal events) with surface waters, however, high flood waters may cause the mortality of some trees through erosion of the site. Small gaps in the stand result from windthrow, root-rot, or insect-caused mortality. Changing river flooding patterns and windthrow together result in an all-aged stand structure. Geomorphological disturbances, such as debris flows and torrents, might rarely cause stand-replacing events. Historically, fire was likely a very rare occurrence, occurring approximately every 4000 years on average.

Range: CNVC00003 occurs in wetter, maritime and subarctic climates on the mainland coast of British Columbia and on Vancouver Island. More specifically, occurrences are known in valleys and major drainages on the windward slopes north of Knight Inlet; along rivers on the western slopes of the northern Kitimat Ranges and southern Boundary Ranges; river valleys on the eastern slopes of the Coast Mountains, Kitimat Ranges, and western slopes of the Hazelton Mountains; and along rivers on the windward slopes of Vancouver Island north of Jordan River.

Conservation Status (NatureServe)

Global Conservation Rank: not applicable

National Conservation Rank: not yet determined

Subnational Conservation Rank: not applicable



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Distribution

Countries: Canada

Provinces / Territories / States: British Columbia

Terrestrial Ecozones and Ecoregions of Canada: Pacific Maritime: Coastal Gap, Northern Coastal Mountains, Pacific Ranges, Western Vancouver Island

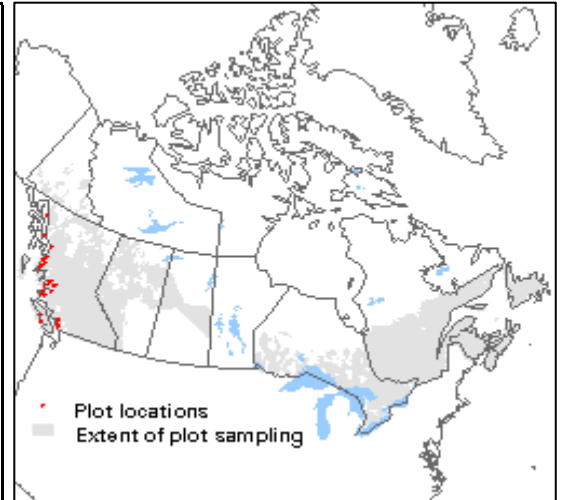
Rowe's Forest Regions and Sections of Canada: Coast: Northern Pacific Coast, Southern Pacific Coast

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

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

Biogeoclimatic Ecosystem Classification of British Columbia (zones and subzones): CWHds, CWHms, CWHvm, CWHwh, CWHwm, CWHws

British Columbia Ecoregion Classification (ecoregions and ecosections): Boundary Ranges: Central Boundary Ranges, Northern Boundary Ranges, Southern Boundary Ranges; Pacific Ranges: Eastern Pacific Ranges, Northern Pacific Ranges, Southern Pacific Ranges; Coastal Gap: Kimsquit Mountains, Kitimat Ranges; Nass Ranges: Meziadin Mountains, Nass Mountains; Eastern Hazelton Mountains: Nechako Upland; Western Vancouver Island: Northern Island Mountains, Windward Island Mountains



Corresponding Types and Associations

CNVC00003	British Columbia	CWH ds 1 /08	Sitka Spruce - Salmonberry
		CWH ms 2 /07	Sitka Spruce - Salmonberry
		CWH vm /Fh1	Sitka Spruce - Salmonberry
		CWH vm 1 /09	Sitka Spruce - Salmonberry
		CWH wh /Fh1	Sitka Spruce - Salmonberry
		CWH wm /05Fh1	Sitka Spruce - Salmonberry
		CWH ws 1 /07	Sitka Spruce - Salmonberry
		CWH ws 2 /07	Sitka Spruce - Salmonberry
		CWH ws 2 /Fh1	Sitka Spruce - Salmonberry



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Vegetation Summary*

Species Name [†]	Association CNVC00003	
	110 plots	
	% Cover [‡]	% Presence [^]
Overstory Trees		
<i>Picea sitchensis</i>	31	90
<i>Tsuga heterophylla</i>	20	78
<i>Abies amabilis</i>	15	37
<i>Alnus rubra</i>	14	35
<i>Thuja plicata</i>	12	29
<i>Populus trichocarpa</i>	12	23
Tree Stratum Cover (P₁₀ P₂₅ Mean P₇₅ P₉₀)[‡]	(24 40 57 75 85)	
Understory Woody Shrubs and Regenerating Trees		
<i>Oplopanax horridus</i>	33	90
<i>Rubus spectabilis</i>	20	89
<i>Tsuga heterophylla</i>	7	66
<i>Sambucus racemosa</i>	6	46
<i>Vaccinium alaskaense</i>	8	45
<i>Vaccinium ovalifolium</i>	5	45
<i>Cornus stolonifera</i>	18	44
<i>Ribes bracteosum</i>	13	44
<i>Viburnum edule</i>	4	37
<i>Picea sitchensis</i>	6	33
<i>Abies amabilis</i>	5	30
<i>Vaccinium parvifolium</i>	3	28
Shrub Stratum Cover (P₁₀ P₂₅ Mean P₇₅ P₉₀)[‡]	(40 50 69 86 95)	
Understory Herbs and Dwarf Shrubs		
<i>Tiarella trifoliata</i>	9	88
<i>Gymnocarpium dryopteris</i>	12	86
<i>Athyrium filix-femina</i>	9	82
<i>Dryopteris expansa</i>	6	75
<i>Streptopus lanceolatus</i>	8	71
<i>Streptopus amplexifolius</i>	3	70
<i>Circaea alpina</i>	8	53
<i>Cornus canadensis</i>	4	34
<i>Viola glabella</i>	4	34
<i>Maianthemum dilatatum</i>	6	31
<i>Galium triflorum</i>	1	25



***Picea sitchensis* - *Tsuga heterophylla* / *Oplopanax horridus* - *Rubus spectabilis* /
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Vegetation Summary (cont'd)*

Species Name [†]	Association CNVC00003	
	% Cover [‡]	% Presence [^]
<i>Rubus pedatus</i>	3	23
Herb Stratum Cover (P₁₀ P₂₅ Mean P₇₅ P₉₀)[‡]	(20 35 53 70 80)	
Bryophytes and Lichens		
<i>Rhytiadelphus loreus</i>	10	62
<i>Plagiomnium insigne</i>	14	56
<i>Hylocomium splendens</i>	7	35
<i>Rhizomnium glabrescens</i>	10	32
<i>Brachythecium</i> sp.	7	29
<i>Mnium</i> sp.	8	25
<i>Plagiochila asplenioides</i>	6	25
<i>Conocephalum salebrosum</i>	2	24
Bryo-Lichen Stratum Cover (P₁₀ P₂₅ Mean P₇₅ P₉₀)[‡]	(7 15 34 48 70)	

* 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
CNVC00003
110 plots

Elevation Range (min–mean–max meters)

0–95–480
missing data (13)

Slope Gradient (% frequency)

moderate (1)
gentle (6)
level (76)
missing data (16)

Aspect (% frequency)

north (4)
east (4)
south (4)
west (5)
level (58)
missing data (26)

Meso Toposition (% frequency)

mid (3)
lower / toe (5)
depression (1)
level (67)
missing data (25)

Moisture Regime (% frequency)

mesic (4)
moist (72)
wet (2)
missing data (23)

Nutrient Regime (% frequency)

medium (5)
rich (71)
missing data (24)



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Site / Soil Characteristics (cont'd)

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Soil Parent Material (% frequency)	fluvial (38) anthropogenic (1) missing data (61)
Soil Rooting Zone Substrate (% frequency)	sandy (51) coarse loamy (11) fine loamy (3) silty (4) organic (1) missing data (31)
Root Restricting Depth (% frequency)	0 – 20 cm (1) 21 – 99 cm (1) ≥ 100 cm (3) missing data (95)
Humus Form (% frequency)	mor (21) moder (36) mull (4) peatmor (3) missing data (36)



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

<http://cnvc-cnvc.ca>

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Additional Characteristics

Species of High Conservation Concern: Reported habitat for grizzly bear (*Ursus arctos horribilis*) (G4 [NatureServe], S3 [BC CDC], SC [COSEWIC]); western screech-owl (*Megascops kennicottii kennicottii*) (G5T4 [NatureServe], S3 [BC CDC], SC [COSEWIC]); Keen's long-eared myotis (*Myotis keenii*) (G2G3 [NatureServe], S2 [BC CDC], DD [COSEWIC]); Dahurian willowherb (*Epilobium davuricum*) (G5 [NatureServe], S1S3 [BC CDC]); dotted leafy moss (*Rhizomnium punctatum*) (G5 [NatureServe] S1S3 [BC CDC]).

Non-native Species:

Management Issues:

Type Statistics

Internal Similarity:

Confidence: high

Strength:

Related Concepts

Similar CNVC Associations:

Related United States National Vegetation Classification Associations: CEG002825 *Picea sitchensis* - *Tsuga heterophylla* / *Oplopanax horridus* - *Rubus spectabilis* / *Gymnocarpium dryopteris* Forest

Relationships with Other Classifications:

Comments

Tiarella trifoliata (three-leaved foamflower) may include *T. trifoliata* var. *laciniata* (cut-leaved foamflower), *T. trifoliata* var. *trifoliata* (three-leaved foamflower) and/or *T. trifoliata* var. *unifoliata* (one-leaved foamflower).

Although this association is only known from British Columbia, it is very similar to several associations from south-east Alaska that are dominated by *Picea sitchensis*, *Tsuga heterophylla*, *Oplopanax horridus* and/or *Rubus spectabilis*.

Source Information

Number of source plots for CNVC00003: 110

Information Sources: British Columbia Ministry of Forests and Range, Research Branch BECMaster database, October 2007 (110 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:

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.

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).

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

British Columbia Ministry of Water, Land and Air Protection. 2004a. Grizzly Bear in: Accounts and measures for managing identified wildlife. B.C. Min. Water, Land and Air Prot., Victoria, BC. 52 p.

British Columbia Ministry of Water, Land and Air Protection. 2004e. Keen's Long-eared Myotis in: Accounts and measures for managing identified wildlife. B.C. Min. Water, Land and Air Prot., Victoria, BC. 52 p.

Brown, K.J.; Hebda, R.J. 1999. Long-term fire incidence in coastal forests of British Columbia. Northwest Sci. 73:41-43.

(COSEWIC) Committee on the Status of Endangered Wildlife in Canada. 2002. COSEWIC assessment and update status report on the Western Screech-owl *Otus kennicottii* in Canada. Ottawa. COSEWIC. vi + 31 p.

Dorner, B.; Wong, C. 2003. Natural disturbance dynamics on the North Coast. Background report for North Coast LRMP, Integrated Land Management Bureau, Gov. British Columbia. 51 p.

Green, R.N.; Klinka, K. 1994. A field guide to site identification and interpretation for the Vancouver Forest Region. B.C. Min. For., Res. Branch, Victoria, BC. Land Manage. Handb. No. 28. 285 p.

Lertzman, K.; Gavin, D.; Hallett, D.; Brubaker, L.; Lepofsky, D.; Mathewes, R. 2002. Long-term fire regime estimated from soil charcoal in coastal temperate rainforests. Conservation Ecology 6:5.

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.

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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