



Forest / Forêt

Association CNVC00017

*Picea sitchensis* - *Tsuga heterophylla* / *Rubus spectabilis* / *Maianthemum dilatatum*

Sitka Spruce - Western Hemlock / Salmonberry / Two-leaved False Soloman's Seal

Épinette de Sitka - Pruche de l'Ouest / Ronce remarquable / Maïanthème dilaté

**Subassociations:** none

**CNVC Alliance:** not yet determined

**CNVC Group:** not yet determined

## Type Description

**Concept:** CNVC00017 is a Canadian endemic association that occurs on rich, moist, high fluvial benches on the floodplains of rivers on the west coast of Vancouver Island and the outer mainland mid-coast of British Columbia. These sites occur at low elevations (up to 200 mASL). Sites supporting this association have a fluctuating annual water table but flood only every few years or so. Sitka spruce (*Picea sitchensis*) dominates the canopy, which includes a moderate amount of western hemlock (*Tsuga heterophylla*).

Salmonberry (*Rubus spectabilis*), stink currant (*Ribes bracteosum*), and western hemlock regeneration are the main species of the shrub layer. The well-developed herb layer is mostly ferns: western sword fern (*Polystichum munitum*), common lady fern (*Athyrium filix-femina*), and deer fern (*Blechnum spicant*); but also includes three-leaved foamflower (*Tiarella trifoliata*) and two-leaved false Soloman's seal (*Maianthemum dilatatum*). The moss layer is predominantly Oregon and slender beaked mosses (*Eurhynchium oregonum* and *E. praelongum*).

**Vegetation:** A high cover of *Picea sitchensis* and moderate cover of *Tsuga heterophylla* dominate the overstory of CNVC00017, which sometimes has high to moderate cover of *Abies amabilis* in the forest canopy. The moderately developed shrub layer is dominated by high cover of *Rubus spectabilis* and regenerating *Tsuga heterophylla*, with moderate cover of *Ribes bracteosum* and *Vaccinium parvifolium*. The well-developed herb layer is characterized by moderate to high cover of the ferns *Polystichum munitum* and *Athyrium filix-femina*, with moderate cover of *Blechnum spicant*, *Tiarella trifoliata* (see the Comments section), and *Maianthemum dilatatum*. *Galium triflorum*, *Trautvetteria carolinensis*, *Trisetum canescens*, *Dryopteris expansa*, *Stachys chamissonis*, *Prosartes hookeri*, *Trillium ovatum*, and *Viola glabella* often occur with low cover. The moderately developed moss layer is dominated by *Eurhynchium oregonum* and *E. praelongum*, with low cover of *Leucolepis acanthoneuron*, *Plagiomnium insigne*, *Rhytiadelphus loreus*, *Rhizomnium punctatum*, *Plagiochila porelloides*, and *Hylocomium splendens*.

**Environment:** CNVC00017 occurs on high fluvial benches on the floodplains of rivers on the west coast of Vancouver Island and the adjacent outer mainland coast of British Columbia. These sites occur at low elevations (less than 200 mASL). Sites supporting this association are moist, with a fluctuating annual water table but flood infrequently - only every few years or so (perhaps decadal). Soils are loamy or sandy, with poor soil development and with a medium to very rich nutrient regime.



***Picea sitchensis* - *Tsuga heterophylla* / *Rubus spectabilis* / *Maianthemum dilatatum*  
CNVC00017**

**Type Description (cont'd)**

**Dynamics:** CNVC00017 is a late-successional (mature and climax) edaphic forest community. Natural disturbances include on-going erosion, flooding every few years, and occasional windthrow. Flooding may cause the mortality of some trees but is generally a stand-maintaining disturbance. Small gaps result from windthrow, root-rot, or insect-caused mortality. The disturbance regime generally results 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:** CNVC00017 has a limited range in British Columbia, occurring at low elevations (mostly < 100 mASL) along rivers within the very wet hypermaritime climate of western and northern Vancouver Island (northward from the Port Renfrew area) and of the adjacent outer mainland mid-coast, northward to Smith Inlet. CNVC00017 is endemic to Canada.

**Conservation Status (NatureServe)**

**Global Conservation Rank:** G1G2

**National Conservation Rank:** not yet determined

**Subnational Conservation Rank:** S1S2 (BC)



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## Distribution

**Countries:** Canada

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

**Ecozones and Ecoregions of Canada:** Pacific Maritime: Western Vancouver Island

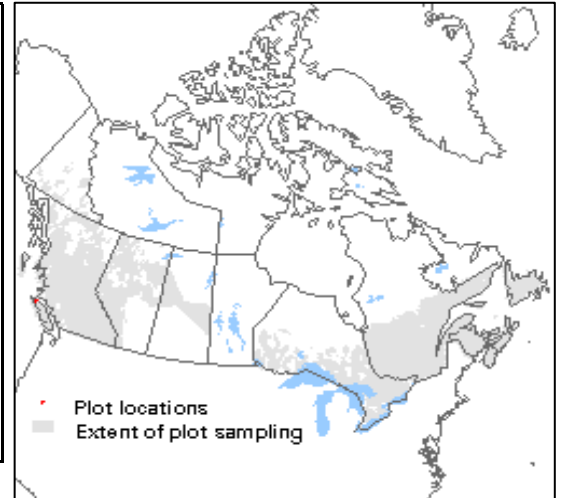
**Rowe's Forest Regions and Sections:** Coast: Southern Pacific Coast

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

**The Nature Conservancy (USA) and Nature Conservancy of Canada Ecoregions:**  
Northwest Coast

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

**Ecoregion Classification System of British Columbia (ecosections):** Nahwitti Lowland



## Corresponding Types and Associations

CNVC00017

British Columbia

CWH vh 1 /08

*Picea sitchensis* - *Maianthemum dilatatum*



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**Vegetation Summary\***

Species Name <sup>†</sup>	Association CNVC00017	
	8 plots	
	% Cover	% Presence
<b>Overstory Trees</b>		
<i>Picea sitchensis</i>	49	88
<i>Tsuga heterophylla</i>	18	88
<i>Abies amabilis</i>	32	38
<i>Thuja plicata</i>	23	25
<i>Alnus rubra</i>	12	25
<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>(59 64 72 75 80)</b>	
<b>Understory Woody Shrubs and Regenerating Trees</b>		
<i>Rubus spectabilis</i>	27	88
<i>Vaccinium parvifolium</i>	8	88
<i>Tsuga heterophylla</i>	21	75
<i>Ribes bracteosum</i>	19	63
<i>Picea sitchensis</i>	3	63
<i>Vaccinium ovalifolium</i>	7	50
<i>Sambucus racemosa</i>	3	50
<i>Gaultheria shallon</i>	15	38
<i>Menziesia ferruginea</i>	6	38
<i>Malus fusca</i>	4	38
<i>Alnus rubra</i>	1	38
<i>Vaccinium alaskaense</i>	12	25
<i>Abies amabilis</i>	8	25
<i>Taxus brevifolia</i>	4	25
<i>Rhamnus purshiana</i>	2	25
<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>(40 44 65 86 91)</b>	
<b>Understory Herbs and Dwarf Shrubs</b>		
<i>Athyrium filix-femina</i>	13	100
<i>Polystichum munitum</i>	25	88
<i>Blechnum spicant</i>	8	88
<i>Tiarella trifoliata</i>	6	88
<i>Maianthemum dilatatum</i>	5	88
<i>Galium triflorum</i>	2	88
<i>Trautvetteria caroliniensis</i>	3	63
<i>Trisetum canescens</i>	1	63
<i>Dryopteris expansa</i>	5	50
<i>Stachys chamissonis</i> var. <i>cooleyae</i>	4	50
<i>Prosartes hookeri</i>	4	50
<i>Trillium ovatum</i>	3	50
<i>Viola glabella</i>	3	50



***Picea sitchensis* - *Tsuga heterophylla* / *Rubus spectabilis* / *Maianthemum dilatatum*  
 CNVC00017**

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

Species Name <sup>†</sup>	Association CNVC00017	
	% Cover	% Presence
<i>Boykinia occidentalis</i>	2	50
<i>Tolmiea menziesii</i>	2	50
<i>Luzula parviflora</i>	2	50
<i>Melica subulata</i>	2	50
<i>Claytonia sibirica</i>	1	50
<i>Lactuca muralis</i>	2	38
<i>Streptopus amplexifolius</i>	1	38
<i>Adiantum aleuticum</i>	14	25
<i>Polypodium glycyrrhiza</i>	2	25
<i>Coptis aspleniifolia</i>	2	25
<i>Adenocaulon bicolor</i>	1	25
<i>Carex obnupta</i>	1	25
<i>Gymnocarpium dryopteris</i>	1	25
<i>Oenanthe sarmentosa</i>	1	25
<i>Tiarella trifoliata</i> var. <i>laciniata</i>	1	25
<i>Bromus vulgaris</i>	1	25
<i>Cornus canadensis</i>	1	25
<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>(44 45 66 80 86)</b>	
<b>Bryophytes and Lichens</b>		
<i>Eurhynchium oreganum</i>	11	88
<i>Leucolepis acanthoneuron</i>	4	88
<i>Plagiomnium insigne</i>	3	88
<i>Rhytiadelphus loreus</i>	3	75
<i>Eurhynchium praelongum</i>	8	63
<i>Rhizomnium punctatum</i>	4	63
<i>Plagiochila porelloides</i>	2	63
<i>Hylocomium splendens</i>	7	50
<i>Calypogeja trichomanis</i>	1	38
<i>Sphagnum papillosum</i>	3	25
<i>Plagiothecium undulatum</i>	2	25
<i>Hookeria lucens</i>	2	25
<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>(16 23 46 61 74)</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  
CNVC00017  
**8 plots**

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

3–36–125  
missing data (13)

#### Slope Gradient (% frequency)

gentle (13)  
**level (75)**  
missing data (13)

#### Aspect (% frequency)

south (13)  
**level (75)**  
missing data (13)

#### Meso Toposition (% frequency)

**mid (13)**  
missing data (88)

#### Moisture Regime (% frequency)

**mesic (13)**  
missing data (88)

#### Nutrient Regime (% frequency)

**rich (13)**  
missing data (88)



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

	Association CNVC00017
<b>Soil Parent Material (% frequency)</b>	<b>moraine / till (13)</b> missing data (88)
<b>Soil Rooting Zone Substrate (% frequency)</b>	sandy (25) <b>coarse loamy (63)</b> missing data (13)
<b>Root Restricting Depth (% frequency)</b>	<b>≥ 100 cm (13)</b> missing data (88)
<b>Humus Form (% frequency)</b>	<b>mor (25)</b> moder (13) missing data (63)



# 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]); marbled murrelet (*Brachyramphus marmoratus*) (G3G4 [NatureServe], S2B, S4N [BC CDC], T [COSEWIC]); Keen's long-eared myotis (*Myotis keenii*) (G2G3 [NatureServe], S2 [BC CDC], DD [COSEWIC]); 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:** CNVC00003 *Picea sitchensis* - *Tsuga heterophylla* / *Oplopanax horridus* - *Rubus spectabilis* / *Gymnocarpium dryopteris*.

**Related United States National Vegetation Classification Associations:** CEG002826 *Tsuga heterophylla* - *Picea sitchensis* / *Rubus spectabilis* - *Ribes bracteosum* Forest.

**Relationships with Other Classifications:**

## Comments

CNVC00003 [*Picea sitchensis* - *Tsuga heterophylla* / *Oplopanax horridus* - *Rubus spectabilis* / *Gymnocarpium dryopteris*], is another high-bench floodplain association that occurs in maritime and sub-maritime climates of the British Columbia coast. It shares overstory characteristics with CNVC00017 but has high *Oplopanax horridus* content in the shrub layer and differs in fern composition in the herb layer. CNVC00026 [*Tsuga heterophylla* - *Picea sitchensis* / *Rhytidadelphus loreus* - *Hylocomnium splendens*] is a high-bench floodplain association of hyper-maritime climates occurring north of the range of CNVC00017, including Haida Gwaii (Queen Charlotte Islands). The vegetation of this association would likely be more similar to CNVC00017, if it were not for the intensity of deer browsing on Haida Gwaii.

*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).

## Source Information

**Number of source plots for CNVC00017:** 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, K. Iverson, 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:

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 November 26, 2007).

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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.

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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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