



Forest / Forêt

Association CNVC00016

Picea sitchensis* / *Gaultheria shallon* / *Maianthemum dilatatum

Sitka Spruce / Salal / Two-leaved False Soloman's Seal

Épinette de Sitka / Salal / Maïanthème dilaté

Subassociations: 16a typic, 16b *Trisetum canescens*

CNVC Alliance: not yet determined

CNVC Group: not yet determined

Type Description

Concept: CNVC00016 is a coniferous forest association that occurs in very wet, hypermaritime climates on rocky headlands (typic subassociation) and beachplains (*Trisetum canescens* subassociation) along the outer coast of British Columbia. Sites supporting this association occur at low elevations (0 to 30 mASL) where there is exposure to salt spray. The Sitka spruce (*Picea sitchensis*)-dominated canopy is moderately open and often shaped and thinned by strong winds. The shrub layer is characterized by high cover of salal (*Gaultheria shallon*), with regenerating Sitka spruce and western hemlock (*Tsuga heterophylla*). The dominant species in the herb layer is two-leaved false Soloman's seal (*Maianthemum dilatatum*). Tall trisetum (*Trisetum canescens*) occurs with low cover in the subassociation of this name. The moss layer has moderate cover of Oregon beaked moss (*Eurhynchium oreganum*) with low cover of several other species of mosses and liverworts.

Vegetation: CNVC00016 is a coniferous forest association with a moderately open canopy dominated by *Picea sitchensis*, often with low to moderate cover of *Tsuga heterophylla* and/or *Thuja plicata*. The well-developed shrub layer is characterized by high cover of *Gaultheria shallon*, with moderate to high cover of regenerating *Picea sitchensis*. *Rubus spectabilis*, *Vaccinium parvifolium* and regenerating *Tsuga heterophylla* and *Thuja plicata* are typically present with low cover, often co-occurring with *Rosa nutkana*, *Vaccinium ovatum* and *Lonicera involucrata*. The moderately to poorly developed herb layer is dominated by moderate cover of *Maianthemum dilatatum*. *Polystichum munitum* and *Blechnum spicant* often occur with low cover. *Trisetum canescens* occurs on abandoned beach substrates, typifying the subassociation of this name. The moderately well-developed moss layer has moderate cover of *Eurhynchium oreganum* with low cover of *Plagiothecium undulatum*, *Calypogeja trichomanis*, *Eurhynchium praelongum*, *Isoetecium myosuroides*, and *Hookeria lucens*.

Environment: CNVC00016 occurs in very wet, hypermaritime climates on rocky headlands (typic subassociation) and beachplains (*Trisetum canescens* subassociation) along the outer coast of British Columbia. Sites supporting this association occur at low elevations (0 to 30 mASL) where there is exposure to salt spray. Slopes range from level to steep, soil moisture and nutrient regimes are variable. Parent materials are often marine deposits. Soils are typically sandy and have poorly to well-developed soil horizons.



***Picea sitchensis* / *Gaultheria shallon* / *Maianthemum dilatatum* CNVC00016**

Type Description (cont'd)

Dynamics: CNVC00016 is a late-successional (mature and climax) edaphic forest association. Old stands exhibit gap dynamics and an all-aged structure. Strong winds shape the stands and trees, and influence stand density. In addition to wind, natural disturbance agents include root disease and insect-caused mortality, which may result in small gaps. Stand-destroying wind storms are rare. Historically, fire was likely a very rare occurrence, occurring approximately every 4000 years on average.

Range: CNVC00016 occupies sites along a narrow band of the outer coast of British Columbia. It is limited to the lowest elevations (0 to 30 m ASL) along the west coast of Vancouver Island and the Queen Charlotte Islands, as well as on the outer mainland coast from Wells Passage, west of Broughton Island, north to Portland Canal. Although only known from British Columbia, it is likely that this association occurs on the outer coast of the Olympic Peninsula, Washington, USA.

Conservation Status (NatureServe)

Global Conservation Rank: not yet determined

National Conservation Rank: not yet determined

Subnational Conservation Rank: no applicable rank



Forest / Forêt

Association CNVC00016

Picea sitchensis / *Gaultheria shallon* / *Maianthemum dilatatum*

Sitka Spruce / Salal / Two-leaved False Solomon's Seal

Épinette de Sitka / Salal / Maïanthème dilaté

Distribution

Countries: Canada

Provinces / Territories / States: British Columbia

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

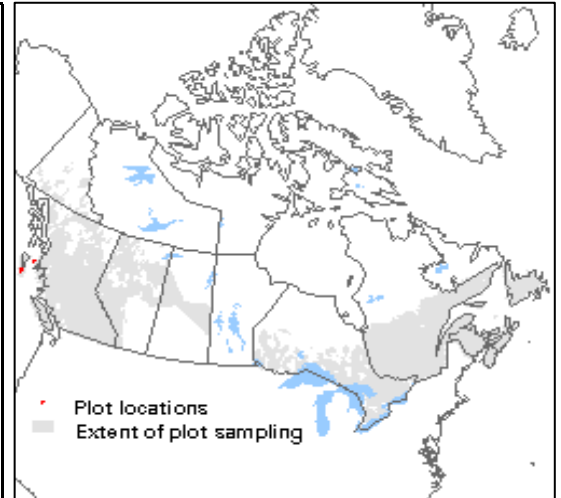
Rowe's Forest Regions and Sections: Coast: Northern Pacific Coast, Queen Charlotte Islands, Southern Pacific Coast

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

The Nature Conservancy (USA) and Nature Conservancy of Canada Ecoregions: 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, Queen Charlotte Lowland, Queen Charlotte Ranges, Nahwitti Lowland



Corresponding Types and Associations

16a typic	British Columbia	CWH vh 1 /14 CWH vh 2 /14	<i>Abies amabilis</i> - <i>Streptopus amplexifolius</i> - <i>Streptopus lanceolatus</i> <i>Abies amabilis</i> - <i>Streptopus amplexifolius</i> - <i>Streptopus lanceolatus</i>
16b <i>Trisetum canescens</i>	British Columbia	CWH vh 1 /15	<i>Abies amabilis</i> - <i>Streptopus amplexifolius</i> - <i>Streptopus lanceolatus</i>



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

<http://cnvc-cnvc.ca>

Forest / Forêt

Association CNVC00016

Picea sitchensis / *Gaultheria shallon* / *Maianthemum dilatatum*

Sitka Spruce / Salal / Two-leaved False Soloman's Seal

Épinette de Sitka / Salal / Maïanthème dilaté

Vegetation Summary*

Species Name [†]	Association CNVC00016		Subassociation 16a typic		Subassociation 16b <i>Trisetum canescens</i>	
	29 plots		24 plots		5 plots	
	% Cover	% Presence	% Cover	% Presence	% Cover	% Presence
Overstory Trees						
<i>Picea sitchensis</i>	39	93	40	92	38	100
<i>Tsuga heterophylla</i>	18	52	21	50	5	60
<i>Thuja plicata</i>	15	45	17	46	2	40
Tree Stratum Cover (P₁₀ P₂₅ Mean P₇₅ P₉₀)[‡]	(22 25 47 69 78)		(23 26 50 70 81)		(22 25 36 40 52)	
Understory Woody Shrubs and Regenerating Trees						
<i>Gaultheria shallon</i>	48	100	47	100	52	100
<i>Picea sitchensis</i>	19	90	13	88	46	100
<i>Tsuga heterophylla</i>	10	72	11	75	4	60
<i>Vaccinium parvifolium</i>	2	59	2	58	5	60
<i>Thuja plicata</i>	6	55	7	50	3	80
<i>Rubus spectabilis</i>	2	55	3	50	1	80
<i>Rosa nutkana</i>	2	45	2	46	1	40
<i>Vaccinium ovatum</i>	2	41	1	33	3	80
<i>Lonicera involucrata</i>	2	38	2	33	2	60
<i>Menziesia ferruginea</i>	2	34	2	38	1	20
<i>Malus fusca</i>	16	31	17	33	1	20
<i>Pinus contorta</i>	2	7	-	-	2	40
Shrub Stratum Cover (P₁₀ P₂₅ Mean P₇₅ P₉₀)[‡]	(36 55 73 92 95)		(35 51 71 92 95)		(65 80 80 87 92)	
Understory Herbs and Dwarf Shrubs						
<i>Maianthemum dilatatum</i>	14	72	14	67	12	100
<i>Polystichum munitum</i>	4	59	4	50	3	100
<i>Blechnum spicant</i>	2	59	2	50	2	100
<i>Calamagrostis nutkaensis</i>	4	34	4	42	-	-
<i>Pteridium aquilinum</i>	2	31	2	25	2	60
<i>Streptopus amplexifolius</i>	1	28	1	25	1	40
<i>Polypodium scolieri</i>	3	24	3	25	1	20
<i>Boschniakia hookeri</i>	2	24	1	17	2	60
<i>Vicia nigricans</i> ssp. <i>gigantea</i>	3	21	3	25	-	-
<i>Achillea millefolium</i>	1	21	1	21	1	20
<i>Tiarella trifoliata</i>	2	17	2	21	-	-
<i>Trisetum canescens</i>	2	17	1	4	2	80
<i>Listera caurina</i>	1	17	1	21	-	-
<i>Arctostaphylos uva-ursi</i>	1	14	1	8	1	40
<i>Cornus canadensis</i>	3	10	1	4	4	40
<i>Leymus mollis</i>	3	10	-	-	3	60
<i>Vicia americana</i>	1	7	-	-	1	40



***Picea sitchensis* / *Gaultheria shallon* / *Maianthemum dilatatum* CNVC00016**

Vegetation Summary (cont'd)*

Species Name [†]	Association CNVC00016		Subassociation 16a typic		Subassociation 16b <i>Trisetum canescens</i>	
	% Cover	% Presence	% Cover	% Presence	% Cover	% Presence
Herb Stratum Cover (P₁₀ P₂₅ Mean P₇₅ P₉₀)[‡]	(3 5 20 35 45)		(3 4 18 35 45)		(11 20 28 35 47)	
Bryophytes and Lichens						
<i>Eurhynchium oregonum</i>	14	97	10	96	35	100
<i>Plagiothecium undulatum</i>	2	76	2	75	4	80
<i>Eurhynchium praelongum</i>	5	62	4	54	6	100
<i>Calypogeja trichomanis</i>	1	62	1	54	1	100
<i>Hookeria lucens</i>	1	55	1	46	1	100
<i>Isothecium myosuroides</i>	3	52	3	46	4	80
<i>Peltigera membranacea</i>	2	41	1	33	2	80
<i>Blepharostoma trichophyllum</i>	1	41	1	33	1	80
<i>Rhytidiadelphus loreus</i>	14	38	14	46	-	-
<i>Bazzania denudata</i>	1	38	1	38	1	40
<i>Hylocomium splendens</i>	13	28	16	25	6	40
<i>Rhizomnium glabrescens</i>	10	28	10	33	-	-
<i>Heterocladium macounii</i>	1	28	1	29	1	20
<i>Rhizomnium punctatum</i>	2	24	1	13	2	80
<i>Dicranum scoparium</i>	1	24	1	21	1	40
<i>Plagiochila porelloides</i>	1	24	1	29	-	-
<i>Diplophyllum albicans</i>	1	21	0	8	1	80
<i>Claopodium crispifolium</i>	1	21	1	25	-	-
<i>Scapania bolanderi</i>	4	17	6	13	1	40
<i>Peltigera polydactylon</i>	2	17	1	4	3	80
<i>Cephalozia lunulifolia</i>	1	17	1	13	1	40
<i>Lepidozia reptans</i>	1	17	1	21	-	-
<i>Lophozia incisa</i>	1	14	1	4	1	60
<i>Pseudotaxiphyllum elegans</i>	3	7	-	-	3	40
<i>Rhytidiadelphus triquetrus</i>	1	7	-	-	1	40
Bryo-Lichen Stratum Cover (P₁₀ P₂₅ Mean P₇₅ P₉₀)[‡]	(10 13 33 48 59)		(10 13 28 36 50)		(39 45 54 65 71)	

* 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)



Forest / Forêt

Association CNVC00016

Picea sitchensis / *Gaultheria shallon* / *Maianthemum dilatatum*

Sitka Spruce / Salal / Two-leaved False Soloman's Seal

Épinette de Sitka / Salal / Maïanthème dilaté

Site / Soil Characteristics

	Association CNVC00016 29 plots	Subassociation 16a typic 24 plots	Subassociation 16b <i>Trisetum canescens</i> 5 plots
Elevation Range (min–mean–max meters)	0–7–30	0–7–30	3–7–14
Slope Gradient (% frequency)	very steep (7) steep (7) moderately steep (21) moderate (14) gentle (14) level (38)	very steep (8) steep (8) moderately steep (21) moderate (17) gentle (13) level (33)	very steep (0) steep (0) moderately steep (20) moderate (0) gentle (20) level (60)
Aspect (% frequency)	north (7) east (7) south (31) west (14) level (28) missing data (14)	north (8) east (8) south (33) west (13) level (21) missing data (17)	north (0) east (0) south (20) west (20) level (60) missing data (0)
Meso Toposition (% frequency)	crest / upper (3) mid (3) lower / toe (10) level (14) missing data (69)	crest / upper (4) mid (4) lower / toe (13) level (17) missing data (63)	crest / upper (0) mid (0) lower / toe (0) level (0) missing data (100)
Moisture Regime (% frequency)	dry (14) mesic (24) missing data (62)	dry (17) mesic (29) missing data (54)	dry (0) mesic (0) missing data (100)
Nutrient Regime (% frequency)	poor (21) rich (17) missing data (62)	poor (25) rich (21) missing data (54)	poor (0) rich (0) missing data (100)



***Picea sitchensis* / *Gaultheria shallon* / *Maianthemum dilatatum* CNVC00016**

Site / Soil Characteristics (cont'd)

	Association CNVC00016	Subassociation 16a typic	Subassociation 16b <i>Trisetum canescens</i>
Soil Parent Material (% frequency)	colluvium (3) marine (14) missing data (83)	colluvium (4) marine (17) missing data (79)	colluvium (0) marine (0) missing data (100)
Soil Rooting Zone Substrate (% frequency)	non-soil (3) sandy (34) fine loamy (3) clayey (3) organic (3) missing data (52)	non-soil (4) sandy (21) fine loamy (4) clayey (4) organic (4) missing data (63)	non-soil (0) sandy (100) fine loamy (0) clayey (0) organic (0) missing data (0)
Root Restricting Depth (% frequency)	missing data (100)	missing data (100)	missing data (100)
Humus Form (% frequency)	mor (69) missing data (31)	mor (67) missing data (33)	mor (80) missing data (20)



Forest / Forêt

Association CNVC00016

Picea sitchensis / *Gaultheria shallon* / *Maianthemum dilatatum*

Sitka Spruce / Salal / Two-leaved False Soloman's Seal

Épinette de Sitka / Salal / Maïanthème dilaté

Additional Characteristics

Species of High Conservation Concern: Reported habitat for marbled murrelet (*Brachyramphus marmoratus*) (G3G4 [NatureServe], S2B, S4N [BC CDC], T [COSEWIC]); spotted owl (*Strix occidentalis*) (G3 [NatureServe], S1 [BC CDC], E [COSEWIC]).

Non-native Species:

Management Issues:

Type Statistics

Internal Similarity:

Confidence: high

Strength:

Related Concepts

Similar CNVC Associations: CNVC00057 *Picea sitchensis* / *Gaultheria shallon* / *Polystichum munitum*

Related United States National Vegetation Classification Associations: CEG002823 *Picea sitchensis* / *Gaultheria shallon* / *Maianthemum dilatatum* Forest

Relationships with Other Classifications:

Comments

Several *Picea sitchensis*-dominated, shoreline forest associations occur along the exposed, outer coastline of British Columbia. Sitka spruce is tolerant of the saline conditions resulting from salt spray and high wind and wave action. CNVC00016 is characterized by the dense understory of *Gaultheria shallon*. Although *G. shallon* does occur in other shoreline associations, the cover is less and these are characterized by other species. CNVC00057 [*Picea sitchensis* / *Gaultheria shallon* / *Polystichum munitum*] is found on marine terraces, which are moist and support a diversity of ferns and other rich-site indicators. Rocky headlands and old sand dunes may have an association of *Picea sitchensis* - *Calamagrostis nootkatensis*, as yet undescribed in the CNVC.

Source Information

Number of source plots for CNVC00016: 29

Number of source plots for 16a typic: 24

Number of source plots for 16b *Trisetum canescens*: 5

Information Sources: British Columbia Ministry of Forests and Range, Research Branch BECMaster database, October 2007 (29 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



***Picea sitchensis* / *Gaultheria shallon* / *Maianthemum dilatatum* CNVC00016**

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 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. 2004b. Marbled Murrelet 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. 2004d. Spotted Owl in: Accounts and measures for managing identified wildlife. B.C. Min. Water, Land and Air Prot., Victoria, BC. 52 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.

Suggested Citation: Meidinger, D.; Iverson, K.; Cadrin, C.; Baldwin, K. *Picea sitchensis* / *Gaultheria shallon* / *Maianthemum dilatatum* [online]. Sault Ste. Marie, Ontario, Canada: Canadian National Vegetation Classification. March, 2011; generated Apr-21-2011; cited ENTER DATE ACCESSED. 9 p. Canadian National Vegetation Classification Association: CNVC00016. Available from <http://cnvc-cnvc.ca>. System Requirements: Adobe Acrobat Reader v. 7.0 or higher. ISSN 1916-3266.