



Forest / Forêt

Association CNVC00057

Picea sitchensis / *Gaultheria shallon* / *Polystichum munitum*

Sitka Spruce / Salal / Western Sword Fern

Épinette de Sitka / Salal / Fougère épée

Subassociations: none

CNVC Alliance: not yet determined

CNVC Group: not yet determined

Type Description

Concept: Sitka spruce (*Picea sitchensis*) is prominent in this productive, shoreline, coniferous forest association, where exposure to salt spray is pronounced. CNVC00057 occurs near sea level on wind-exposed sandy marine terraces and lower slope topopositions within the very wet hypermaritime climate regime of the outer Pacific coast. Soils are generally mesic to moist and relatively fertile. Sitka spruce is often accompanied in the canopy by variable coverage of western hemlock (*Tsuga heterophylla*) and western redcedar (*Thuja plicata*). Common species in the shrub layer include salal (*Gaultheria shallon*), salmonberry (*Rubus spectabilis*), red huckleberry (*Vaccinium parvifolium*), and regenerating tree species. When sufficient light is available, the herb layer usually features western sword fern (*Polystichum munitum*), deer fern (*Blechnum spicant*), two-leaved false Solomon's seal (*Maianthemum dilatatum*), clasping-leaved twisted-stalk (*Streptopus amplexifolius*), and bracken fern (*Pteridium aquilinum*). The relatively diverse moss layer includes slender beaked moss (*Eurhynchium praelongum*), Oregon beaked moss (*E. oregonum*), shining clear moss (*Hookeria lucens*), dotted leafy moss (*Rhizomnium punctatum*), flat moss (*Plagiothecium undulatum*) and hairy pouchwort (*Calypogeja trichomanis*).

Vegetation: CNVC00057 is a productive, shoreline coniferous forest association. *Picea sitchensis* is typically the leading canopy species, especially on sites exposed to salt spray or mist, accompanied by variable minor coverage of *Tsuga heterophylla* and *Thuja plicata*. The latter species increase in importance, at the expense of *Picea sitchensis*, as the salt influence declines with distance from the spray zone. *Gaultheria shallon*, *Rubus spectabilis*, *Vaccinium parvifolium* and regenerating tree species dominate the variable shrub layer. The herb layer is likewise variably sparse to well-developed, depending on the intensity of overstory shading. Common herb species include *Polystichum munitum*, *Blechnum spicant*, *Maianthemum dilatatum*, *Streptopus amplexifolius*, and *Pteridium aquilinum*. The moss layer is relatively species-rich, reflecting the moist shoreline conditions with salt and other mineral inputs, but generally without high cover. Common species include *Eurhynchium praelongum*, *E. oregonum*, *Hookeria lucens*, *Rhizomnium punctatum*, *Plagiothecium undulatum* and *Calypogeja trichomanis*.

Environment: CNVC00057 occurs in very wet hypermaritime climates on sandy marine terraces and lower slope topopositions. Sites supporting this association occur near sea level where there is exposure to salt spray and mist. The mesic to moist, nutrient-rich soils are Humo-Ferric Podzols, Dystric Brunisols and Regosols, with mor humus forms.



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Type Description (cont'd)

Dynamics: CNVC00057 is a shoreline forest association of the outer Pacific coast. Strong winds shape the stands and individual trees, and also influence stand density by causing windthrow and tree breakage. In addition to wind, natural disturbance agents include root disease and insect-caused mortality, which may result in small canopy gaps. Old stands exhibit gap dynamics and an all-aged structure. Stand-destroying windstorms are rare. Fires are not a significant factor in this hypermaritime climate. This association can currently be found in an old-forest stage only within coastal protected areas, otherwise it occurs in young or mature forest stages due to logging or human settlement activities.

Range: CNVC00057 occurs near sea level in a narrow shoreline band along the outer west coast of Vancouver Island. It may occur on the adjacent outer mainland coast of British Columbia northward to near Rivers Inlet. It is also distributed south on the Olympic Peninsula of Washington State, USA.

Conservation Status (NatureServe)

Global Conservation Rank: G3

National Conservation Rank: not yet determined

Subnational Conservation Rank: S3



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

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Distribution

Countries: Canada

Provinces / Territories / States: British Columbia

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

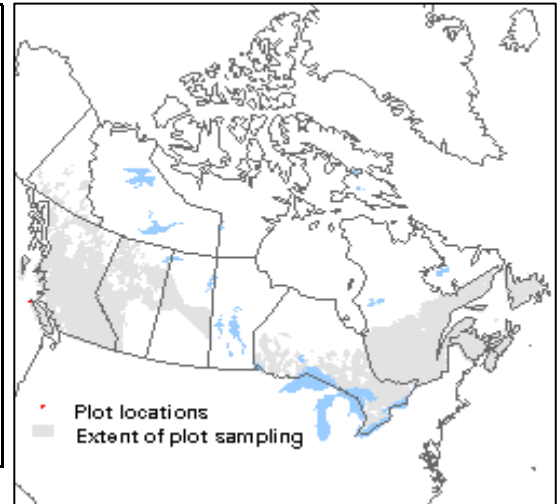
Rowe's Forest Regions and Sections of Canada: Coast: Northern Pacific Coast

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

Nature Conservancy of Canada Ecoregions: Pacific Northwest Coast

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

British Columbia Ecoregion Classification (ecoregions and ecosections): Western Vancouver Island: Nahwitti Lowland



Corresponding Types and Associations

CNVC00057

British Columbia

CWHvh 1 /17

Sitka Spruce - Slough Sedge



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Vegetation Summary*

Species Name [†]	Association CNVC00057 24 plots	
	% Cover	% Presence
Overstory Trees		
<i>Picea sitchensis</i>	59	100
<i>Tsuga heterophylla</i>	19	88
<i>Thuja plicata</i>	17	42
Tree Stratum Cover (P₁₀ P₂₅ Mean P₇₅ P₉₀)[‡]	(60 69 79 88 91)	
Understory Woody Shrubs and Regenerating Trees		
<i>Gaultheria shallon</i>	48	100
<i>Rubus spectabilis</i>	15	96
<i>Picea sitchensis</i>	2	88
<i>Tsuga heterophylla</i>	6	71
<i>Vaccinium parvifolium</i>	5	71
<i>Lonicera involucrata</i>	3	46
<i>Vaccinium ovatum</i>	4	42
<i>Rosa nutkana</i>	5	29
<i>Thuja plicata</i>	3	29
<i>Menziesia ferruginea</i>	5	25
Shrub Stratum Cover (P₁₀ P₂₅ Mean P₇₅ P₉₀)[‡]	(15 44 64 85 95)	
Understory Herbs and Dwarf Shrubs		
<i>Polystichum munitum</i>	16	96
<i>Blechnum spicant</i>	15	96
<i>Maianthemum dilatatum</i>	3	92
<i>Streptopus amplexifolius</i>	1	58
<i>Pteridium aquilinum</i>	5	54
<i>Dryopteris expansa</i>	2	33
<i>Tiarella trifoliata</i>	3	29
<i>Galium triflorum</i>	2	29
<i>Boschniakia hookeri</i>	1	29
<i>Carex obnupta</i>	3	25
<i>Athyrium filix-femina</i>	2	25
<i>Vicia americana</i>	2	25
Herb Stratum Cover (P₁₀ P₂₅ Mean P₇₅ P₉₀)[‡]	(10 22 34 48 57)	
Bryophytes and Lichens		
<i>Eurhynchium praelongum</i>	8	96
<i>Eurhynchium oreganum</i>	7	92
<i>Hookeria lucens</i>	2	92



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Vegetation Summary (cont'd)*

Species Name [†]	Association CNVC00057	
	% Cover	% Presence
<i>Rhizomnium punctatum</i>	4	88
<i>Plagiothecium undulatum</i>	3	88
<i>Calypogeja trichomanis</i>	2	67
<i>Plagiochila porelloides</i>	1	54
<i>Isothecium myosuroides</i>	2	50
<i>Rhytidiadelphus loreus</i>	2	50
<i>Diplophyllum albicans</i>	1	46
<i>Bazzania denudata</i>	1	46
<i>Cephalozia lunulifolia</i>	1	46
<i>Peltigera polydactylon</i>	1	46
<i>Hylocomium splendens</i>	4	42
<i>Lepidozia reptans</i>	1	38
<i>Blepharostoma trichophyllum</i>	1	38
<i>Plagiomnium insignne</i>	3	29
<i>Scapania bolanderi</i>	1	29
<i>Peltigera membranacea</i>	2	25
<i>Dicranum scoparium</i>	1	25
<i>Cephalozia bicuspidata</i>	1	25
<i>Riccardia latifrons</i>	1	25
<i>Pellia neesiana</i>	3	21
<i>Pseudotaxiphyllum elegans</i>	1	21
Bryo-Lichen Stratum Cover		
(P₁₀ P₂₅ Mean P₇₅ P₉₀)[‡]	(15 21 30 40 46)	

* 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
CNVC00057
24 plots

Elevation Range (min–mean–max meters)

1–5–17

Slope Gradient (% frequency)

steep (17)
gentle (13)
level (71)

Aspect (% frequency)

north (17)
east (4)
south (4)
west (13)
level (63)

Meso Toposition (% frequency)

level (4)
missing data (96)

Moisture Regime (% frequency)

moist (4)
missing data (96)

Nutrient Regime (% frequency)

rich (4)
missing data (96)



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Site / Soil Characteristics (cont'd)

Association
CNVC00057

Soil Parent Material (% frequency)

fluvial (4)
missing data (96)

Soil Rooting Zone Substrate (% frequency)

sandy (92)
fine loamy (8)

Root Restricting Depth (% frequency)

missing data (100)

Humus Form (% frequency)

mor (46)
mull (4)
missing data (50)



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

Related United States National Vegetation Classification Associations: CEG L000402 *Picea sitchensis* / *Gaultheria shallon* - *Rubus spectabilis* Forest
CEGL000401 *Picea sitchensis* / *Gaultheria shallon* Forest

Relationships with Other Classifications:

Comments

Picea sitchensis is resistant to salt spray-induced needle burn and die-back damage, and can tolerate greater salinity in soil solution than other conifer species. Furthermore, its higher nutritional requirements for calcium, magnesium and phosphorus appear to make it more suitable to higher salinity environments, where these elements are concentrated.

Several *Picea sitchensis*-dominated, shoreline forest associations occur along the exposed, outer coastline of British Columbia. CNVC00016 [*Picea sitchensis* / *Gaultheria shallon* / *Maianthemum dilatatum*] differs from CNVC00057 by the dense understory of *Gaultheria shallon*. 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 CNVC00057: 24

Information Sources: British Columbia Ministry of Forests and Range, Research Branch BECMaster database, October 2007 (24 plots)

Concept Authors: K. Klinka, J. Pojar, D. Meidinger, C. Chapell, C. Cadrin, G. Kittel, C. McCain, K. Boggs, J. Kagan, G. Cushon, A. Banner and T. DeMeo

Description Authors: A. Inselberg, D. Meidinger, and K. Baldwin

Date of Concept: 1991, 2005

Date of Description: June, 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.

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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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