



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

<http://cnvc-cnvc.ca>

Woodland / Terre boisée

Association CNVC00338

Picea mariana* / *Rhododendron canadense* – *Taxus canadensis* / *Pleurozium schreberi
Black Spruce / Rhodora – Canada Yew / Red-stemmed Feathermoss
Épinette noire / Rhododendron du Canada – If du Canada / Pleurozie dorée

Subassociations: none

CNVC Alliance: CA00002 *Picea mariana* / *Kalmia angustifolia* / *Pleurozium schreberi*

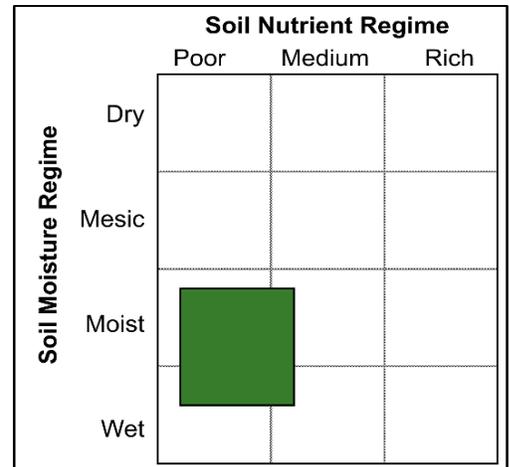
CNVC Group: CG0002 Atlantic Boreal Mesic-Moist Black Spruce – Balsam Fir – Paper Birch Forest

Type Description

Concept: CNVC00338 is a boreal coniferous woodland Association that occurs on the island of Newfoundland. The tree layer is open and dominated by scrubby black spruce (*Picea mariana*). The shrub layer is dense with abundant black spruce layers of varying ages and ericaceous shrub species, mainly rhodora, (*Rhododendron canadense*), early lowbush blueberry (*Vaccinium angustifolium*) and, to a lesser extent, sheep laurel (*Kalmia angustifolia*). Pale bog laurel (*K. polifolia*), common Labrador tea (*R. groenlandicum*), Bartram's serviceberry (*Amelanchier bartramiana*) and Canada yew (*Taxus canadensis*) are less abundant, but common species. The herb layer is well developed to dense, and commonly includes trailing arbutus (*Epigaea repens*), creeping snowberry (*Gaultheria hispidula*), wavy hairgrass (*Avenella flexuosa*), twinflower (*Linnaea borealis*), sheathed sedge (*Carex vaginata*), bunchberry (*Cornus canadensis*), goldthread (*Coptis trifolia*), wild lily-of-the-valley (*Maianthemum canadense*) and black crowberry (*Empetrum nigrum*). Red-stemmed feathermoss (*Pleurozium schreberi*) dominates the continuous moss layer. CNVC00338 occurs in western Newfoundland where the climate is very humid, maritime influenced boreal. It occurs in areas where there is limestone bedrock overlain by a shallow ericaceous mor; the vegetation represents a mixture of species of both nutrient poor and rich requirements, but overall sites are moist to wet and nutrient poor. CNVC00338 is a stable condition that would readily regenerate after fire and logging, primarily by vegetative layering of black spruce.

Vegetation: CNVC00338 is a coniferous woodland Association with an open tree layer of scrubby *Picea mariana*, with occasional *Abies balsamea*. *Picea mariana* and ericaceous shrub species, especially *Rhododendron canadense*, *Vaccinium angustifolium* and, to a lesser extent *Kalmia angustifolia*, form a dense shrub layer. Smaller amounts of *K. polifolia*, *R. groenlandicum*, *Amelanchier bartramiana* and *Taxus canadensis* are often intermixed in this layer. *Epigaea repens*, *Gaultheria hispidula*, *Avenella flexuosa*, *Linnaea borealis*, *Carex vaginata*, *Cornus canadensis*, *Coptis trifolia*, *Maianthemum canadense* and *Empetrum nigrum* characterize the well-developed to dense herb layer. Overall, shrub and herb species are a mix of nutrient-demanding, including sporadic obligate calciphiles such as *Polystichum lonchitis*, and species capable of growing on poor site conditions. *Pleurozium schreberi* dominates the continuous moss layer, which also includes *Cladonia* spp., especially *C. rangiferina*, and *Cladonia* spp., *Dicranum* spp., *Bazzania trilobata* and *Sphagnum capillifolium*.

Environment: CNVC00338 occurs in a region with a very humid, maritime-influenced boreal climate. It occurs on sites with limestone bedrock, typically on ridge tops where the bedrock is overlain by shallow ericaceous (i.e., acidic) mor, so there are plants indicative of both nutrient-poor and nutrient-rich conditions. These sites typically have poor drainage and a perched water table because of the shallow soil over bedrock. They can be quite wet during spring run off, but usually dry out in summer. Overall, site moisture regimes are moist to wet and the nutrient regime is poor. The regional fire cycle is long (270-500 years) throughout the range of CNVC00338.





***Picea mariana* / *Rhododendron canadense* – *Taxus canadensis* / *Pleurozium schreberi*
CNVC00338**

Type Description (cont'd)

Dynamics: CNVC00338 is a stable woodland condition whose origin and development is primarily controlled by a unique combination of site conditions; there is a fluctuating water table that can be extremely wet or extremely dry, and shallow soils that are underlain by basic bedrock. The cool, wet climate of the region diminishes the importance of fire as a disturbance agent within the range of this Association. Similarly, logging is not a significant disturbance factor because of the open, understocked condition and poor productivity of these forests. Even if fire or logging occurred in this Association, the condition would readily regenerate through vegetative layering of *Picea mariana*. Other woodland associations on acidic parent materials (e.g., CNVC00307 [*Picea mariana* (*Abies balsamea*) / *Kalmia angustifolia* / *Pleurozium schreberi*] and CNVC00205 [*Picea mariana* / *Kalmia angustifolia* – *Rhododendron canadense* / *Cladina* spp.]) can succeed to Kalmia Heath with repeated disturbance by fire and cutting, but this would not occur on the basic soils of CNVC00338. Also, *Kalmia angustifolia* can only persist in relatively low abundance in this Association, compared to these other woodlands, by the development of an acidic raw humus layer. Fire disturbance would probably consume the humus layer and reduce the cover of ericaceous shrubs.

Range: CNVC00338 occurs in western Newfoundland, usually on shallow soils associated with ridge tops underlain by calcareous parent materials.

Conservation Status (NatureServe)

Global Conservation Rank: no applicable rank

National Conservation Rank: not yet determined

Subnational Conservation Rank: not yet determined



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Distribution

Countries: Canada

Provinces / Territories / States: Newfoundland and Labrador

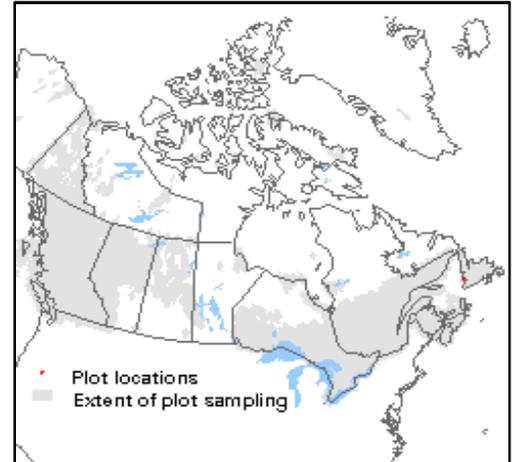
Terrestrial Ecozones and Ecoregions of Canada: Boreal Shield: Southwestern Newfoundland

Rowe's Forest Regions and Sections of Canada: Boreal: Corner Brook

NAAEC CEC Ecoregions of North America (Levels I & II): Northern Forests: Softwood Shield

Nature Conservancy of Canada Ecoregions: Boreal Shield

Ecoregions of Newfoundland: Southwestern Newfoundland



Corresponding Types and Associations

CNVC00338	Newfoundland and Labrador	W KPt	Western: <i>Taxus</i> - <i>Kalmia</i> - black spruce forest
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Vegetation Summary*

Species Name ^T	Association CNVC00338 4 plots	
	% Cover [±]	% Presence ^A
Overstory Trees		
<i>Picea mariana</i>	27	100
<i>Abies balsamea</i>	1	75
<i>Betula papyrifera</i>	1	25
<i>Larix laricina</i>	1	25
Tree Stratum Cover (P₁₀ P₂₅ Mean P₇₅ P₉₀)[‡]	(17 17 28 38 39)	
Understory Woody Shrubs and Regenerating Trees		
<i>Picea mariana</i>	32	100
<i>Rhododendron canadense</i>	28	100
<i>Vaccinium angustifolium</i>	16	100
<i>Kalmia angustifolia</i>	8	100
<i>Kalmia polifolia</i>	2	100
<i>Rhododendron groenlandicum</i>	2	100
<i>Abies balsamea</i>	2	100
<i>Amelanchier bartramiana</i>	7	75
<i>Taxus canadensis</i>	3	75
<i>Amelanchier</i> sp.	9	50
<i>Ilex mucronata</i>	8	50
<i>Acer rubrum</i>	1	25
<i>Larix laricina</i>	1	25
<i>Rosa nitida</i>	1	25
<i>Sorbus decora</i>	1	25
<i>Viburnum nudum</i>	1	25
Shrub Stratum Cover (P₁₀ P₂₅ Mean P₇₅ P₉₀)[‡]	(77 85 90 100 100)	
Understory Herbs and Dwarf Shrubs		
<i>Epigaea repens</i>	14	100
<i>Gaultheria hispidula</i>	11	100
<i>Avenella flexuosa</i>	7	100
<i>Linnaea borealis</i>	7	100
<i>Carex vaginata</i>	5	100
<i>Cornus canadensis</i>	5	100
<i>Coptis trifolia</i>	2	100
<i>Maianthemum canadense</i>	3	75
<i>Empetrum nigrum</i>	2	75
<i>Fragaria virginiana</i>	3	50
<i>Cypripedium acaule</i>	2	50
<i>Solidago macrophylla</i>	1	50
<i>Chamerion angustifolium</i>	3	25



***Picea mariana* / *Rhododendron canadense* – *Taxus canadensis* / *Pleurozium schreberi*
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Vegetation Summary (cont'd)*

Species Name [†]	Association CNVC00338	
	% Cover [‡]	% Presence [^]
<i>Clintonia borealis</i>	3	25
<i>Oryzopsis asperifolia</i>	3	25
<i>Calamagrostis pickeringii</i>	1	25
<i>Carex castanea</i>	1	25
<i>Lysimachia borealis</i>	1	25
<i>Polystichum lonchitis</i>	1	25
<i>Rubus pubescens</i>	1	25
<i>Streptopus lanceolatus</i>	1	25
Herb Stratum Cover (P₁₀ P₂₅ Mean P₇₅ P₉₀)[‡]	(38 41 58 65 86)	
Bryophytes and Lichens		
<i>Pleurozium schreberi</i>	39	100
<i>Cladina rangiferina</i>	19	100
<i>Dicranum undulatum</i>	14	100
<i>Bazzania trilobata</i>	14	100
<i>Hylocomium splendens</i>	13	100
<i>Sphagnum capillifolium</i>	7	100
<i>Cladonia sp.</i>	7	100
<i>Ptilidium ciliare</i>	11	75
<i>Ptilium crista-castrensis</i>	7	75
<i>Dicranum scoparium</i>	10	50
Bryo-Lichen Stratum Cover (P₁₀ P₂₅ Mean P₇₅ P₉₀)[‡]	(87 95 95 100 100)	

* 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

CNVC00338

4 plots

Elevation Range (min–mean–max meters)

244–278–320

Slope Gradient (% frequency)

moderately steep (25)

missing data (75)

Aspect (% frequency)

north (25)

missing data (75)

Meso Topoposition (% frequency)

missing data (100)

Moisture Regime (% frequency)

moist (100)

Nutrient Regime (% frequency)

missing data (100)

Soil Parent Material (% frequency)

bedrock (50)

moraine / till (50)

Soil Rooting Zone Substrate (% frequency)

non-soil (50)

missing data (50)

Root Restricting Depth (% frequency)

missing data (100)

Humus Form (% frequency)

mor (25)

mull (25)

missing data (50)



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Additional Characteristics

Species of High Conservation Concern:

Non-native Species:

Management Issues:

Type Statistics

Internal Similarity:

Confidence:

Strength:

Related Concepts

Similar CNVC Associations:

CNVC00205 [*Picea mariana* / *Kalmia angustifolia* – *Rhododendron canadense* / *Cladina* spp.] occurs on drier sites with acidic soils in central Newfoundland. It has less tree layer cover, a shrub layer with greater abundance of *Kalmia angustifolia*, and lichens, rather than feathermosses, dominate the moss and lichen layer.

CNVC00307 [*Picea mariana* (*Abies balsamea*) / *Kalmia angustifolia* / *Pleurozium schreberi*] is a similar *Picea mariana*-dominated woodland condition that occurs on mesic sites in the same range, but on acidic soils. Its shrub layer is dominated by *Kalmia angustifolia* rather than *Rhododendron canadense*.

CNVC00335 [*Picea mariana* / *Kalmia angustifolia* / *Pleurozium schreberi* – *Sphagnum capillifolium*] is a wetland condition with greater tree layer cover, a shrub layer dominated by *Kalmia angustifolia* rather than *Rhododendron canadense*, and abundant *Sphagnum* spp. in the moss layer.

CNVC00339 [*Picea mariana* – *Kalmia angustifolia* – *Ilex mucronata* / *Sphagnum* spp. – *Cladina* spp. – *Pleurozium schreberi*] is a wetland krummholtz condition that occurs in eastern Newfoundland and the Cape Breton plateau of Nova Scotia. It lacks a tree layer but has a dense shrub layer dominated by *Picea mariana*. It has abundant *Sphagnum* spp. in the moss layer.

CNVC00350 [*Picea mariana* / *Pleurozium schreberi* – *Hylocomium splendens*] occurs on acidic soils in the same range and has a forest rather than woodland physiognomy. It has lower abundance of ericaceous shrubs.

Related United States National Vegetation Classification Associations:

Relationships with Other Classifications:

CNVC00338 is unique to the island of Newfoundland but is not treated in Meades & Moores 1994.

Comments

These sites are somewhat ecologically similar to alvars on the mainland in that they have a widely fluctuating water table on shallow calcareous soils. However, they lack *Thuja occidentalis* and many other mainland species.



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Source Information

Number of source plots for CNVC00338: 4

Information Source:

Natural Resources Canada, Canadian Forest Service, Atlantic Region. 2006. Forest vegetation plot descriptions from the following publications: Damman, A.W.H. (1963, 1964, 1967); Meades, W.J. (1976, 1986). Nat. Res. Canada, Corner Brook, NL.

Concept Authors: K. Baldwin, K. Chapman, B. Meades

Description Authors: B. Meades, K. Chapman and K. Baldwin

Date of Concept: February, 2013

Date of Description: September, 2018

Classification References:

Damman, A.W.H. 1967. The forest vegetation of western Newfoundland and site degradation associated with vegetation change. PhD thesis, Univ. of Michigan, Ann Arbor, MI, US.

Characterization References:

Arsenault, A.; LeBlanc, R.; Earle, E; Brooks, D.; Clarke, B.; Lavigne, D.; Royer, L. 2016. Unravelling the past to manage Newfoundland's forests for the future. For. Chron. 92:487-502.

Boulanger, Y.; Gauthier, S.; Burton, P.J. 2014. A refinement of models projecting future Canadian fire regimes using homogeneous fire regime zones. Can. J. For. Res. 44(4):365-376.

Meades, W.J.; Moores, L. 1994. Forest site classification manual: A field guide to the Damman forest types of Newfoundland. 2nd Edition. Corner Brook, Western Newfoundland Model Forest, Inc., NL. FRDA Rep. 003.

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>.

Suggested Citation: B. Meades, K. Chapman and K. Baldwin. *Picea mariana* / *Rhododendron canadense* – *Taxus canadensis* / *Pleurozium schreberi* [online]. Sault Ste. Marie, Ontario, Canada: Canadian National Vegetation Classification. September, 2018; generated Sep-19-2018; cited ENTER DATE ACCESSED. 8 p. Canadian National Vegetation Classification Association: CNVC00338. Available from <http://cnvc-cnvc.ca>. System Requirements: Adobe Acrobat Reader v. 7.0 or higher. ISSN 1916-3266.