Wetland / Tourbière boisée **Association CNVC00334**

Abies balsamea / Osmundastrum cinnamomeum – Carex trisperma / Sphagnum spp.

Balsam Fir / Cinnamon Fern – Three-seeded Sedge / Peat Mosses

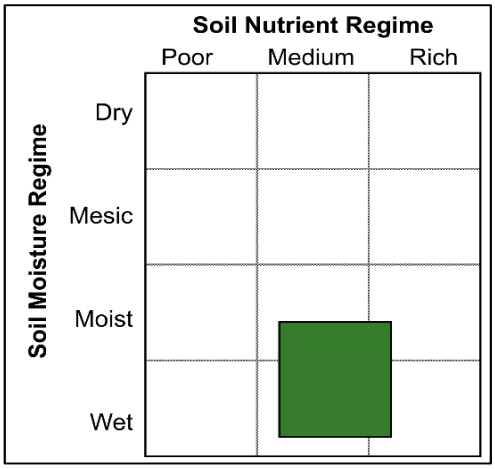
Sapin baumier / Osmonde cannelle – Carex trisperme / Sphaignes

Subassociations: *334a Osmundastrum cinnamomeum, 334b Cornus stolonifera, 334c Sorbus decora*

CNVC Alliance: CA00041 *Abies balsamea – Picea mariana / Osmundastrum cinnamomeum – Carex trisperma / Sphagnum* spp.

CNVC Group: CG0016 Atlantic Boreal Black Spruce – Balsam Fir Poor – Intermediate Treed Wetland

Source: S. Basquill



Type Description

Concept: CNVC00334 is a boreal, wetland, coniferous, forest Association that occurs on the Cape Breton plateau of Nova Scotia and in insular Newfoundland. It has a moderately closed to closed tree layer dominated by balsam fir (*Abies balsamea*), with a minor component of black spruce (*Picea mariana*). Regeneration of these species dominates the moderately developed to dense shrub layer, but Canada yew (*Taxus canadensis*) and early lowbush blueberry (*Vaccinium angustifolium*) are often present. Bartram's serviceberry (*Amelanchier bartramiana*) and speckled alder (*Alnus incana*) are less common, but can be abundant where present. The herb layer is usually dense and dominated by ferns, cinnamon fern (*Osmundastrum cinnamomeum*) or spinulose wood fern (*Dryopteris carthusiana*), and/or three-seeded sedge (*Carex trisperma*). Yellow clintonia (*Clintonia borealis*) can also be abundant amidst the other common species in this layer, twinflower (*Linnaea borealis*), creeping snowberry (*Gaultheria hispidula*), northern starflower (*Lysimachia borealis*), large-leaved goldenrod (*Solidago macrophylla*), goldthread (*Coptis trifolia*), bunchberry (*Cornus canadensis*) and wild lily-of-the-valley (*Maianthemum canadense*). Peat mosses (*Sphagnum* spp.) dominate the moderately developed to continuous moss layer, but feathermosses (*Pleurozium schreberi*, *Ptilium crista-castrensis*) are also present. CNVC00334 occurs on moist to wet, nutrient-medium sites in a region with a very humid, maritime boreal climate. Substrates are organic soils formed from slowly decomposing sedges and peat mosses. Fire is uncommon; this is a late successional, stable condition in which local hydrology, wind and insect outbreaks are the primary drivers of vegetation dynamics. Three subassociations are distinguished, *Osmundastrum cinnamomeum, Cornus stolonifera* and *Sorbus decora*.

Vegetation: CNVC00334 is a coniferous forest Association with a moderately closed to closed canopy dominated by *Abies balsamea,* often with a minor component of *Picea mariana. Betula papyrifera* (see Comments) and *P. glauca* are occasional canopy associates. The shrub layer varies from moderately developed to dense, depending on subassociation. In all cases, regenerating *Abies balsamea* and *Picea mariana* are the leading species in the shrub layer. *Taxus canadensis* and *Vaccinium angustifolium* are usually present, and *Amelanchier bartramiana* is less common but can be abundant where present. The herb layer is usually dense and characterized by abundant *Osmundastrum cinnamomeum* and/or *Dryopteris carthusiana* and *Carex trisperma. Clintonia borealis* may also be abundant. Numerous other species occur with low to moderate abundance in the herb layer, including *Linnaea borealis, Gaultheria hispidula, Lysimachia borealis, Solidago macrophylla, Cornus canadensis, Coptis trifolia* and *Maianthemum canadense.* The moss layer is continuous and dominated by *Sphagnum* species, predominantly *S. girgensohni, S. capillifolium* and *S. magellanicum,* with less abundant feathermosses, particularly *Pleurozium schreberi* and *Ptilium crista-castrensis*.

Three subassociations are distinguished. The *Sorbus decora* subassociation, from Cape Breton Island, has greater overall shrub layer cover, characterized by *S. decora* and *Alnus incana* (see Comments), and usually has *Streptopus lanceolatus* and *Oxalis montana* in the herb layer. *Cornus stolonifera* and other indicators of nutrient-rich conditions, such as *Vaccinium ovalifolium, Viburnum edule* or *Athyrium filix-femina* characterize the *Cornus stolonifera* subassociation. This northern Newfoundland subassociation lacks *O. cinnamomeum* and other more southern species for the island, *Ilex mucronata* and *Viburnum nudum* (see Comments). The *Osmundastrum cinnamomeum* subassociation is from eastern Newfoundland and has abundant *O. cinnamomeum*, *C. trisperma* and *Onoclea sensibilis.*

Abies balsamea / *Osmundastrum cinnamomeum* – *Carex trisperma* / *Sphagnum* spp. CNVC00334

Type Description (cont'd)

Environment: CNVC00334 is a marginally productive forest, occurring on moist to wet, nutrient-medium sites, in a region with a very humid, maritime boreal climate. Stands occur on peat-accumulating sites, often in topographic depressions between till ridges. On these sites, the water table is permanently near the surface of the organic layer. Organic material forms from slowly decomposing *Carex* and *Sphagnum* spp. and its depth over mineral or bedrock substrates ranges from approximately 20 cm to > 1 m. Seepage creates weakly minerotrophic conditions in the rooting layer.

Dynamics: CNVC00334 is a stable condition that is maintained by a persistently high water table and medium nutrient status. Fire rarely occurs because of the humid climate and wet soils. Consequently, stands of CNVC00334 tend to be long lived and multi-aged, with trees up to or exceeding 200 years. Local hydrology is the main driver of vegetation dynamics, but windthrow events and insect outbreaks impact these sites. CNVC00334 occurs in a windy environment and the shallowly rooted *Abies balsamea* are vulnerable to windthrow. Insect defoliation by spruce budworm (*Choristoneura fumiferana*) and hemlock looper (*Lambdina fiscellaria fiscellaria*) is common in these forests, and can lead to extensive canopy mortality. Following wind or insect disturbance, stands readily recover by release of understory *A. balsamea* regeneration.

Range: CNVC00334 is described from the boreal highlands of Cape Breton Island, Nova Scotia, and from insular Newfoundland. The *Osmundastrum cinnamomeum* subassociation is described from eastern Newfoundland, the *Cornus stolonifera* subassociation from the Northern Peninsula of Newfoundland, and the *Sorbus decora* subassociation is described from Cape Breton Island.

Conservation Status (NatureServe)

Global Conservation Rank: no applicable rank
National Conservation Rank: not yet determined
Subnational Conservation Rank: not yet determined

Wetland / Tourbière boisée **Association CNVC00334**

Abies balsamea / Osmundastrum cinnamomeum – Carex trisperma / Sphagnum spp.

Balsam Fir / Cinnamon Fern – Three-seeded Sedge / Peat Mosses
Sapin baumier / Osmonde cannelle – Carex trisperme / Sphaignes

Distribution

Countries: Canada

Provinces / Territories / States: Newfoundland and Labrador, Nova Scotia

Terrestrial Ecozones and Ecoregions of Canada: Atlantic Maritime: Cape Breton Highlands; Boreal Shield: Avalon Forest, Long Range Mountains, Maritime Barrens, Northern Peninsula

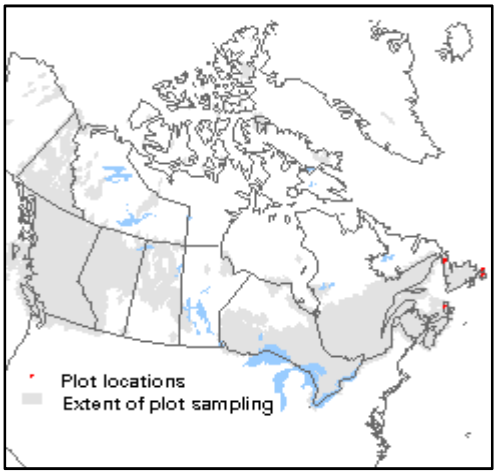
Rowe's Forest Regions and Sections of Canada: Acadian: Cape Breton Plateau; Boreal: Avalon, Newfoundland-Labrador Barrens, Northern Peninsula

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

Nature Conservancy of Canada Ecoregions: Boreal Shield, Northern Appalachians-Acadia

Ecological Land Classification of Nova Scotia (ecozones and ecoregions): Atlantic Maritime: Northern Plateau

Ecoregions of Newfoundland: Avalon Forest, Long Range Mountains, Maritime Barrens, Northern Peninsula



Corresponding Types and Associations

334a Osmundastrum cinnamomeum	Newfoundland and Labrador	E bFs	Eastern: Sphagnum - balsam fir forest
334b Cornus stolonifera	Newfoundland and Labrador	N SA	Northern: Sphagnum - balsam fir forest
334c Sorbus decora	Maritimes Region	A035-u	*Abies balsamea / Sorbus decora / Osmunda cinnamomea / Sphagnum capillifolium - Bryoria trichodes* Forest

Wetland / Tourbière boisée **Association CNVC00334**

Abies balsamea / Osmundastrum cinnamomeum – Carex trisperma / Sphagnum spp.

Balsam Fir / Cinnamon Fern – Three-seeded Sedge / Peat Mosses

Sapin baumier / Osmonde cannelle – Carex trisperme / Sphaignes

Vegetation Summary*

	Association CNVC00334		Subassociation 334a *Osmundastrum cinnamomeum*		Subassociation 334b *Cornus stolonifera*	
	13 plots		**5 plots**		**3 plots**	
Species Name[T]	% Cover[±]	% Presence[^]	% Cover[±]	% Presence[^]	% Cover[±]	% Presence[^]
Overstory Trees						
Abies balsamea	**51**	**100**	**44**	**100**	**55**	**100**
Picea mariana	11	62	19	40	4	33
Betula papyrifera	5	46	7	80	1	67
Picea glauca	4	23	2	20	-	-
Tree Stratum Cover (P_{10} P_{25} Mean P_{75} P_{90})[‡]	**(34 45 55 64 83)**		**(36 47 58 82 83)**		**(46 53 57 64 64)**	
Understory Woody Shrubs and Regenerating Trees						
Abies balsamea	26	92	4	80	9	100
Picea mariana	11	62	11	80	-	-
Taxus canadensis	5	62	9	60	7	67
Vaccinium angustifolium	1	62	2	60	1	33
Amelanchier bartramiana	10	54	-	-	7	67
Ilex mucronata	6	54	3	60	-	-
Viburnum nudum	4	54	3	60	-	-
Sorbus decora	8	46	1	20	-	-
Betula papyrifera	2	46	-	-	2	67
Alnus incana	21	38	-	-	-	-
Acer spicatum	7	38	7	80	4	33
Picea glauca	4	38	-	-	-	-
Kalmia angustifolia	4	31	4	60	-	-
Cornus stolonifera	8	23	-	-	**8**	**100**
Vaccinium ovalifolium	3	15	-	-	3	67
Rubus idaeus	2	15	2	20	2	33
Viburnum edule	2	8	-	-	2	33
Sorbus americana	1	8	-	-	1	33
Shrub Stratum Cover (P_{10} P_{25} Mean P_{75} P_{90})[‡]	**(27 34 47 59 66)**		**(24 33 39 51 56)**		**(28 30 32 35 36)**	
Understory Herbs and Dwarf Shrubs						
Linnaea borealis	4	92	2	80	7	100
Clintonia borealis	13	77	19	60	19	100
Gaultheria hispidula	2	77	2	80	2	33
Lysimachia borealis	2	77	1	60	2	67
Dryopteris carthusiana	14	69	6	40	17	100
Solidago macrophylla	7	69	4	60	2	67
Osmundastrum cinnamomeum	**34**	**62**	**24**	**80**	**-**	**-**
Carex trisperma	**21**	**62**	**43**	**60**	**19**	**33**
Coptis trifolia	9	62	1	20	6	100
Cornus canadensis	8	62	1	80	-	-

Abies balsamea / *Osmundastrum cinnamomeum* – *Carex trisperma* / *Sphagnum* spp. CNVC00334

Vegetation Summary (cont'd)*

	Association CNVC00334		Subassociation 334a *Osmundastrum cinnamomeum*		Subassociation 334b *Cornus stolonifera*	
Species Name[T]	% Cover[±]	% Presence[^]	% Cover[±]	% Presence[^]	% Cover[±]	% Presence[^]
Maianthemum canadense	2	62	1	60	-	-
Calamagrostis canadensis	3	46	7	40	-	-
Aralia nudicaulis	4	38	-	-	2	33
Rubus chamaemorus	2	38	2	40	-	-
Streptopus lanceolatus	1	38	-	-	-	-
Oclemena acuminata	11	31	-	-	-	-
Oxalis montana	6	31	-	-	-	-
Rubus pubescens	14	23	21	40	1	33
Onoclea sensibilis	11	23	11	60	-	-
Phegopteris connectilis	11	23	19	20	7	67
Platanthera obtusata	1	23	-	-	1	33
Epigaea repens	1	23	-	-	-	-
Thelypteris noveboracensis	34	15	34	40	-	-
Dryopteris intermedia	19	15	19	40	-	-
Symphyotrichum puniceum	3	15	3	40	-	-
Iris versicolor	1	15	-	-	-	-
Athyrium filix-femina	19	8	-	-	19	33
Gymnocarpium dryopteris	9	8	-	-	9	33
Equisetum sylvaticum	2	8	-	-	2	33
Viola renifolia	2	8	-	-	2	33
Goodyera repens	1	8	-	-	1	33
Viola blanda	1	8	-	-	1	33
Herb Stratum Cover (P_{10} P_{25} Mean P_{75} P_{90})[‡]	**(48 60 72 100 100)**		**(62 85 86 100 100)**		**(54 60 73 84 94)**	
Bryophytes and Lichens						
Pleurozium schreberi	10	85	14	80	4	67
Ptilium crista-castrensis	4	85	8	80	3	67
Dicranum majus	3	62	3	40	9	33
Rhytidiadelphus loreus	1	62	2	60	1	33
Sphagnum girgensohnii	**50**	**54**	**46**	**80**	**57**	**100**
Hylocomiastrum umbratum	6	54	-	-	4	67
Dicranum fuscescens	2	54	3	40	-	-
Sphagnum capillifolium	**26**	**46**	**-**	**-**	**2**	**33**
Hylocomium splendens	8	46	9	80	6	67
Bazzania trilobata	2	46	4	20	-	-
Polytrichum commune	9	38	8	60	12	67
Sphagnum magellanicum	**5**	**38**	**19**	**20**	**-**	**-**
Bryoria sp.	1	38	-	-	-	-
Tetraphis geniculata	1	38	-	-	-	-
Ptilidium ciliare	1	38	-	-	-	-
Sphagnum russowii	**16**	**31**	**9**	**60**	**38**	**33**
Plagiothecium laetum	1	31	-	-	-	-
Hypnum pallescens	1	23	-	-	-	-
Sphagnum palustre	**19**	**15**	**19**	**40**	**-**	**-**
Sphagnum squarrosum	**3**	**15**	**4**	**20**	**1**	**33**

Abies balsamea / *Osmundastrum cinnamomeum* – *Carex trisperma* / *Sphagnum* spp. CNVC00334

Vegetation Summary (cont'd)*

	Association CNVC00334		Subassociation 334a *Osmundastrum cinnamomeum*		Subassociation 334b *Cornus stolonifera*	
Species Name[†]	% Cover[±]	% Presence^	% Cover[±]	% Presence^	% Cover[±]	% Presence^
Alectoria ochroleuca	1	15	-	-	-	-
Sphagnum quinquefarium	**38**	**8**	**38**	**20**	**-**	**-**
Sphagnum rubellum	**19**	**8**	**19**	**20**	**-**	**-**
Dicranum scoparium	4	8	-	-	4	33
Sphagnum papillosum	**4**	**8**	**4**	**20**	**-**	**-**
Bryo-Lichen Stratum Cover (P_{10} P_{25} Mean P_{75} P_{90})[‡]	**(37 40 68 100 100)**		**(48 97 82 100 100)**		**(78 86 91 100 100)**	

* 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

[‡] $P_x = X^{th}$ percentile (e.g., $P_{10} = 10^{th}$ percentile)

Wetland / Tourbière boisée **Association CNVC00334**

Abies balsamea / Osmundastrum cinnamomeum – Carex trisperma / Sphagnum spp.

Balsam Fir / Cinnamon Fern – Three-seeded Sedge / Peat Mosses
Sapin baumier / Osmonde cannelle – Carex trisperme / Sphaignes

Vegetation Summary (cont'd)*

	Subassociation 334c *Sorbus decora*	
	5 plots	
Species Name[T]	% Cover[±]	% Presence^
Overstory Trees		
Abies balsamea	**55**	**100**
Picea mariana	10	100
Betula papyrifera	-	-
Picea glauca	5	40
Tree Stratum Cover (P_{10} P_{25} Mean P_{75} P_{90})[‡]	**(44 47 52 55 57)**	
Understory Woody Shrubs and Regenerating Trees		
Abies balsamea	55	100
Picea mariana	10	80
Taxus canadensis	< 1	60
Vaccinium angustifolium	1	80
Amelanchier bartramiana	12	100
Ilex mucronata	8	80
Viburnum nudum	5	80
Sorbus decora	**10**	**100**
Betula papyrifera	3	80
Alnus incana	21	100
Acer spicatum	-	-
Picea glauca	4	100
Kalmia angustifolia	2	20
Cornus stolonifera	-	-
Vaccinium ovalifolium	-	-
Rubus idaeus	-	-
Viburnum edule	-	-
Sorbus americana	-	-
Shrub Stratum Cover (P_{10} P_{25} Mean P_{75} P_{90})[‡]	**(54 58 65 68 79)**	
Understory Herbs and Dwarf Shrubs		
Linnaea borealis	2	100
Clintonia borealis	3	80
Gaultheria hispidula	2	100
Lysimachia borealis	3	100
Dryopteris carthusiana	16	80
Solidago macrophylla	12	80
Osmundastrum cinnamomeum	**45**	**80**
Carex trisperma	**5**	**80**
Coptis trifolia	13	80
Cornus canadensis	15	80

Abies balsamea / *Osmundastrum cinnamomeum – Carex trisperma* / *Sphagnum* spp. CNVC00334

Vegetation Summary (cont'd)*

	Subassociation 334c *Sorbus decora*	
Species Name[T]	% Cover[±]	% Presence[^]
Maianthemum canadense	3	100
Calamagrostis canadensis	1	80
Aralia nudicaulis	5	80
Rubus chamaemorus	2	60
Streptopus lanceolatus	1	100
Oclemena acuminata	11	80
Oxalis montana	6	80
Rubus pubescens	-	-
Onoclea sensibilis	-	-
Phegopteris connectilis	-	-
Platanthera obtusata	1	40
Epigaea repens	1	60
Thelypteris noveboracensis	-	-
Dryopteris intermedia	-	-
Symphyotrichum puniceum	-	-
Iris versicolor	1	40
Athyrium filix-femina	-	-
Gymnocarpium dryopteris	-	-
Equisetum sylvaticum	-	-
Viola renifolia	-	-
Goodyera repens	-	-
Viola blanda	-	-
Herb Stratum Cover (P_{10} P_{25} Mean P_{75} P_{90})[‡]	**(41 60 56 63 65)**	
Bryophytes and Lichens		
Pleurozium schreberi	9	100
Ptilium crista-castrensis	1	100
Dicranum majus	2	100
Rhytidiadelphus loreus	1	80
Sphagnum girgensohnii	**-**	**-**
Hylocomiastrum umbratum	7	100
Dicranum fuscescens	1	100
Sphagnum capillifolium	**31**	**100**
Hylocomium splendens	-	-
Bazzania trilobata	1	100
Polytrichum commune	-	-
Sphagnum magellanicum	**1**	**80**
Bryoria sp.	1	100
Tetraphis geniculata	1	100
Ptilidium ciliare	1	100
Sphagnum russowii	**-**	**-**
Plagiothecium laetum	1	80
Hypnum pallescens	1	60
Sphagnum palustre	**-**	**-**
Sphagnum squarrosum	**-**	**-**

Abies balsamea / *Osmundastrum cinnamomeum – Carex trisperma* / *Sphagnum* spp. CNVC00334

Vegetation Summary (cont'd)*

	Subassociation 334c *Sorbus decora*	
Species Name[†]	% Cover[±]	% Presence^
Alectoria ochroleuca	1	40
Sphagnum quinquefarium	**-**	**-**
Sphagnum rubellum	**-**	**-**
Dicranum scoparium	-	-
Sphagnum papillosum	**-**	**-**
Bryo-Lichen Stratum Cover		
(P_{10} P_{25} Mean P_{75} P_{90})[‡]	**(37 37 40 41 43)**	

* 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

[‡] $P_x = X^{th}$ percentile (e.g., $P_{10} = 10^{th}$ percentile)

Wetland / Tourbière boisée **Association CNVC00334**

Abies balsamea / Osmundastrum cinnamomeum – Carex trisperma / Sphagnum spp.

Balsam Fir / Cinnamon Fern – Three-seeded Sedge / Peat Mosses
Sapin baumier / Osmonde cannelle – Carex trisperme / Sphaignes

Site / Soil Characteristics

	Association CNVC00334	Subassociation 334a *Osmundastrum cinnamomeum*	Subassociation 334b *Cornus stolonifera*
	13 plots	**5 plots**	**3 plots**
Elevation Range (min–mean–max meters)			
	15–162–274	90–163–215	15–161–274
	missing data (38)	missing data (0)	missing data (0)
Slope Gradient (% frequency)			
	moderately steep (8)	moderately steep (20)	moderately steep (0)
	moderate (8)	moderate (20)	moderate (0)
	gentle (15)	**gentle (40)**	gentle (0)
	level (69)	level (20)	**level (100)**
Aspect (% frequency)			
	north (23)	north (40)	north (0)
	east (15)	east (40)	east (0)
	west (15)	west (20)	west (0)
	level (46)	level (0)	**level (100)**
Meso Topoposition (% frequency)			
	crest / upper (8)	crest / upper (20)	crest / upper (0)
	lower / toe (8)	lower / toe (20)	lower / toe (0)
	depression (8)	depression (20)	depression (0)
	level (38)	level (0)	level (0)
	missing data (38)	missing data (40)	missing data (100)
Moisture Regime (% frequency)			
	moist (31)	moist (60)	moist (33)
	wet (54)	wet (0)	**wet (67)**
	missing data (15)	missing data (40)	missing data (0)
Nutrient Regime (% frequency)			
	medium (38)	medium (0)	medium (0)
	missing data (62)	missing data (100)	missing data (100)
Soil Parent Material (% frequency)			
	bedrock (8)	bedrock (20)	bedrock (0)
	colluvium (8)	colluvium (20)	colluvium (0)
	missing data (85)	missing data (60)	missing data (100)
Soil Rooting Zone Substrate (% frequency)			
	non-soil (15)	non-soil (40)	non-soil (0)
	missing data (85)	missing data (60)	missing data (100)
Root Restricting Depth (% frequency)			
	missing data (100)	missing data (100)	missing data (100)
Humus Form (% frequency)			
	missing data (100)	missing data (100)	missing data (100)

Wetland / Tourbière boisée **Association CNVC00334**

***Abies balsamea* / *Osmundastrum cinnamomeum* – *Carex trisperma* / *Sphagnum* spp.**
Balsam Fir / Cinnamon Fern – Three-seeded Sedge / Peat Mosses
Sapin baumier / Osmonde cannelle – Carex trisperme / Sphaignes

Site / Soil Characteristics (cont'd)

	Subassociation 334c *Sorbus decora*
	5 plots
Elevation Range (min–mean–max meters)	
	— missing data (100)
Slope Gradient (% frequency)	
	moderately steep (0) moderate (0) gentle (0) **level (100)**
Aspect (% frequency)	
	north (20) east (0) west (20) **level (60)**
Meso Topoposition (% frequency)	
	crest / upper (0) lower / toe (0) depression (0) **level (100)** missing data (0)
Moisture Regime (% frequency)	
	moist (0) **wet (100)** missing data (0)
Nutrient Regime (% frequency)	
	medium (100) missing data (0)
Soil Parent Material (% frequency)	
	bedrock (0) colluvium (0) missing data (100)
Soil Rooting Zone Substrate (% frequency)	
	non-soil (0) missing data (100)
Root Restricting Depth (% frequency)	
	missing data (100)
Humus Form (% frequency)	
	missing data (100)

Wetland / Tourbière boisée **Association CNVC00334**

Abies balsamea / Osmundastrum cinnamomeum – Carex trisperma / Sphagnum spp.

Balsam Fir / Cinnamon Fern – Three-seeded Sedge / Peat Mosses
Sapin baumier / Osmonde cannelle – Carex trisperme / Sphaignes

Additional Characteristics

Species of High Conservation Concern:

Non-native Species:

Management Issues:

Type Statistics

Internal Similarity: **Confidence:**
Strength:

Related Concepts

Similar CNVC Associations:

CNVC00278 [*Abies balsamea / Pleurozium schreberi – Sphagnum* spp.] is an upland Association dominated by *Abies balsamea* that occurs in boreal regions of Quebec and Newfoundland on moist or mesic, nutrient-medium sites. It lacks the abundant ferns and *Carex* spp. that characterize CNVC00334 and has greater cover of feathermosses.

CNVC00279 [*Abies balsamea / Ilex mucronata / Osmundastrum cinnamomeum / Sphagnum* spp.] is a similar Association that occurs on comparable sites in more temperate regions of Quebec, New Brunswick, Nova Scotia and Prince Edward Island. It has greater abundance of temperate species such as *Acer rubrum, Betula alleghaniensis* and *Picea rubens*, and lower abundance of *Carex trisperma.*

CNVC00299 [*Abies balsamea / Alnus incana / Sphagnum* spp.] occurs in Quebec on wet, nutrient-rich boreal sites and has an understory dominated by *Alnus incana*.

CNVC00312 [*Picea mariana – Abies balsamea / Osmundastrum cinnamomeum – Carex trisperma / Sphagnum* spp.] occurs on comparable sites in Newfoundland. It is floristically similar to CNVC00334, but is codominated by *Picea mariana* and has greater cover of ericaceous shrub species, such as *Kalmia angustifolia, Rhododendron groenlandicum* and *R. canadense* and little to no *Dryopteris spinulosa*.

CNVC00348 [*Abies balsamea / Taxus canadensis / Rubus pubescens / Dicranum majus*] is an upland Association dominated by *Abies balsamea* that occurs on insular Newfoundland on moist to wet, nutrient-rich sites. It has greater cover of *Acer spicatum, Taxus canadensis* and *Viburnum edule* in the shrub layer, and a herb layer with less *Carex trisperma* and *Osmundastrum cinnamomeum* and greater *Mitella nuda* and *Rubus pubescens*. The moss layer is dominated by feathermosses rather than *Sphagnum* mosses.

Related United States National Vegetation Classification Associations:

Relationships with Other Classifications:

CNVC00334 occurs in Nova Scotia and on the island of Newfoundland, but is not treated in either Neily et al. 2011 or Meades & Moores 1994.

Comments

CNVC00334 is consistent with the concept of a treed swamp in the Canadian Wetland Classification System.

Alnus incana here refers to ssp. *rugosa* (speckled alder).

Betula papyrifera here refers to both *B. papyrifera* (paper birch) and *B. cordifolia* (heart-leaved birch).

Viburnum nudum here refers to var. *cassinoides* (wild raisin).

Abies balsamea / Osmundastrum cinnamomeum – Carex trisperma / Sphagnum spp. CNVC00334

Source Information

Number of source plots for CNVC00334: 13
Number of source plots for 334a *Osmundastrum cinnamomeum*: 5
Number of source plots for 334b *Cornus stolonifera*: 3
Number of source plots for 334c *Sorbus decora*: 5
Information Sources:

Basquill, S.P. (compiler). 2015. Maritime provinces of Canada regional forest ecosystem plot database. Standardized forest ecosystem plot data compilation and classification from N.B. Dept. Nat. Resour.; P.E.I. For., Fish, & Wildlife Div., Dept. Commun., Land, & Environ.; N.S. Dept. Nat. Resour.; N.S. Environ.; Parks Can.; the Atlantic Can. Conserv. Data Centre; and other sources. Atlantic Can. Conserv. Data Centre, Sackville, NB.

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, S. Basquill, K. Chapman, B. Meades
Description Authors: B. Meades, K. Chapman, S. Basquill and K. Baldwin
Date of Concept: February, 2012
Date of Description: September, 2018

Classification References:

Basquill, S.; Beaudette, D.; Cameron, R.; Curley, R.; Fenton, N.; Glen, W.; Gordon, S.; Hutchinson, J.; Kelly, G.; Loo, J.; Lynds, A.; MacAskill, D.; MacKinnon, D.; MacQuarrie, K.; Makepeace, S.; Matson, B.; Neily, P.; Quigley, E.; Zelazny, V. 2009 (updated 2015). Forest communities of the Maritime provinces of Canada. Atlantic Canada Conservation Data Centre, Sackville, NB.

Damman, A.W.H. 1963. A reconnaissance survey of the ecological conditions in the forests of the Roddickton Area, Newfoundland. For. Res. Branch, Can. Dept. For., NL. Mimeo 63-N-1.

Meades, W.J. 1986. Successional status of ericaceous dwarf-shrub heath in eastern Newfoundland. PhD thesis, Univ. of Connecticut, Storrs, CT.

Characterization References:

Beil C.E.; Comeau P.L.; Smith R.T. 1971. An ecological investigation and floristic survey of the Sunday Lake, Baldwin Lake, Big Southwest Brook Area in Cape Breton Highlands National Park. National Parks Branch Report on Project No. 01/7-P4.

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.

Crum, H.A.; Planisek, S. 1988. A focus on peatlands and peat mosses. Univ. of Michigan Press, MI, US.

Fryer, J. L. (2014). Picea mariana. In: Fire Effects Information System. Retrieved (accessed: May 26, 2015), from Available: http://www.fs.fed.us/database/feis/plants/tree/picmar/all.html.

Greene, D.F.; Zasada, J.C.; Sirois, L.; Kneeshaw, D.; Morin, H.; Charron, I.; Simard, M.J. 1999. A review of the regeneration dynamics of North American boreal forest tree species. Can. J. For. Res. 29:824-839.

Kenkel, N.C.; Walker, D.J.; Watson, P.R.; Caners, R.T; Lastra, R.A. 1997. Vegetation dynamics in boreal forest ecosystems. Coenoses 12(2-3):97-108.

McCarthy, J. 2001. Gap dynamics of forest trees: a review with particular attention to boreal forests. Environ. Rev. 9(1):1-59.

Meades, S. J.; Meades, W.J.In prep. Flora of Newfoundland and Labrador. Available: http://www.newfoundland-labradorflora.ca/ (accessed September 26, 2018).

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.

Abies balsamea / Osmundastrum cinnamomeum – Carex trisperma / Sphagnum spp. CNVC00334

Characterization References (cont'd):

Meades, W.J.; Schooley, H.O. 1981. Damage caused by the spruce budworm - future stands. Pages 49-54 in: J. Hudak, A. Raske (eds.) Review of the spruce budworm outbreak in Newfoundland: its control and forest management implications. Environ. Canada, Can. For. Serv., Newfoundland For. Res. Centre, St. John's, NL.

National Wetlands Working Group. 1988. Wetlands of Canada. Sustain. Dev. Branch, Environ. Can., Ottawa, ON and Polyscience Publications Inc., Montreal, QC. ELC Series No. 24.

National Wetlands Working Group. 1997. The Canadian wetland classification system. Waterloo, ON, B.G. Warner, and C.D.A. Rubec (eds.) Wetlands Res. Centre, Univ. of Waterloo.

Rydin, H.; Jeglum, J.K. 2006. The biology of peatlands. Oxford Univ. Press, Oxford, UK.

Neily, P.; Basquill, S.; Quigley, E.; Stewart, B.; Keys, K. 2011. Forest ecosystem classification for Nova Scotia, Part I: Vegetation types. N.S. Dept. Nat. Resour., Renew. Resour. Branch, NS.

Smith, R.T. 1974. A phytosociological study of fir and spruce forests on the plateau of Cape Breton Island, Nova Scotia. M.Sc. thesis, Univ. B.C., Vancouver, BC.

Thompson, I.D.; Larson, D.J.; Montevecchi, W.A. 2003. Characterization of old "wet boreal" forests, with an example from balsam fir forests of western Newfoundland. Environ. Rev. 11:523-546.

Uchytil, R.J. 1991. Abies balsamea. In: Fire Effects Information System. U.S. Dept. Agric. For. Serv. Rocky Mt. Res. Stn., Fire Sci. Lab., Missoula, MT, US. Available: http://www.fs.fed.us/database/feis/plants/tree/abibal/all.html (accessed: May 26, 2015).

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, S. Basquill and K. Baldwin. *Abies balsamea / Osmundastrum cinnamomeum – Carex trisperma / Sphagnum* spp. [online]. Sault Ste. Marie, Ontario, Canada: Canadian National Vegetation Classification. September, 2018; generated Sep-19-2018; cited ENTER DATE ACCESSED.14 p. Canadian National Vegetation Classification Association: CNVC00334. Available from http://cnvc-cnvc/ca. System Requirements: Adobe Acrobat Reader v. 7.0 or higher. ISSN 1916-3266.