

C U R A T O R I A L R E P O R T N U M B E R 1 0 1

Macrolichens of Nova Scotia: a provisional checklist
by Frances Anderson



Nova Scotia Museum
Nova Scotia Department of Communities, Culture and Heritage

CURATORIAL REPORTS

The Reports of the Nova Scotia Museum make technical information on museum collections, programs, procedures, and research accessible to interested readers.

This report contains the preliminary results of an on-going research program of the Museum. It may be cited in publications but its manuscript status should be noted.

© Crown Copyright 2014 Province of Nova Scotia

Information in this report has been provided with the intent that it be readily available for research, personal and public non-commercial use and may be reproduced in part or in whole and by any means, without charge or further permission so long as credit is given to the Nova Scotia Museum.

ISBN# 978-1-55457-552-7

The correct citation for this publication is:

Anderson, F., 2014, Macrolichens of Nova Scotia: a provisional checklist, Curatorial Report Number 101, Nova Scotia Museum, Halifax

Cover Image - Photo of *Ramalina americana* Hale by Catherine Ross

Table of Contents

Abstract.....	4
Background	4
Checklist Organization	5
• Herbaria consulted.....	6
○ Personal collections	6
Geography.....	7
Regions.....	9
Fundy Shore: Yarmouth, Digby counties	9
Fundy Shore/ Valley: Annapolis, Kings, Hants counties	16
South Shore: Shelburne, Queens, Lunenburg counties.....	24
Eastern Shore/ Halifax: Halifax, Guysborough counties.....	32
Northern: Cumberland, Colchester, Pictou, Antigonish counties	39
Cape Breton Island: Inverness, Victoria, Cape Breton, Richmond counties.....	46
Acknowledgements.....	52
References	53
Nova Scotia Macrolichen Checklist.....	56

Abstract

A provisional checklist of 341 macrolichen species in 85 genera collected in Nova Scotia's eighteen counties contains records of specimens examined by the author from ten institutional herbaria and ten personal collections. Regional lists and a comprehensive province-wide list are included. Herbarium collections are indicated by a solid circle, personal collections by an empty circle.

Background

Lichen collecting in Nova Scotia began with Archibald Menzies in the late 1700s (Goward *et al.* 1998), but is best known in the literature from Alexander MacKay (1881) who collected in Pictou County on the north shore of the province (specimens at NSPM), John Macoun (1902) who collected mainly in Cape Breton and on Sable Island (collections at CANL, H and elsewhere) and Ivan Mackenzie Lamb (1954) who also focused on Cape Breton (collections at CANL). Occasional collections were made by visiting botanists from Harvard in the early 20th century, particularly in Cape Breton. Many of their collected specimens are at Harvard's Farlow Herbarium.

John Erskine, who was primarily a botanist and high school principal, collected lichens sporadically from the early to mid-1950s while he was working on contract for the Nova Scotia Museum, where most of his specimens are housed. He contributed an article on lichens to the Journal of Education (1976). Since the 1950s, most published reports on lichens in Nova Scotia have focused on specific locations such as national parks (Roland 1980, Selva 2004, McMullin 2009, 2012, etc.), Sable Island (Richardson *et al.* 2011), or have included Nova Scotia locations as one of many in treatments of particular genera (Arup 1994, Thomson 1967, Tønsberg 1993, Selva & Tibell 1999) or in species range maps (Thomson 1994, Brodo 2001). In the 1980's Wolfgang Maass began his extensive lichen investigations (collections at NBM). Maass published articles on macrolichen species hitherto unreported from Nova Scotia, *Cavernularia hultenii* (1981), *Erioderma pedicellatum* (1983, 2002), *Moelleropsis* (1986) and *Pannaria lurida* (1986).

Until the mid-1980s and with the exception of Maass, most collections from Nova Scotia came from Cape Breton, Sable Island, national parks or the areas immediately adjacent to universities in Halifax and Wolfville in the Annapolis Valley. The macrolichen species collected were unsurprising and represented mostly common *Cladonia* species and common epiphytes. Since then, collection locations have broadened to encompass a wider range of habitats and geographic areas in the province. Two Tuckerman Workshops for lichenologists added to the list: 1999 in southwestern Nova Scotia and 2004 in Parrsboro on the Fundy coast.

In recent years, environmental assessments prior to changes in the landscape, air quality monitoring through lichen plots and a renewed interest in the province's biota have

produced lichen records from previously unexplored areas (Cameron 2002, Cameron & Richardson 2006, Cameron *et al.* 2009). These have yielded records not previously reported from Nova Scotia that have expanded the North American distribution information for some species (Neily & Anderson 2010, Anderson & Neily 2012). In fact, deliberate collecting has contributed greatly to the information recorded in this checklist. The distribution and variety of lichen species are not as narrow and limited as the historical picture suggested.

Checklist Organization

This macrolichen checklist contains records of Nova Scotia lichens that I have personally examined from ten institutional herbaria* and ten private collections** in northeastern North America. It does not include records in literature unless these are based on cited specimens that I have been able to locate and examine. This possibly controversial approach is not meant to cast doubt on the veracity of published records or range maps. However, the inclusion of such records without examination of voucher material would have created a different kind of checklist. The resulting list is a preliminary outline of the province's macrolichen biota rather than a comprehensive flora. In the course of preparing the list, I discovered some records that were based on incorrectly identified specimens. A further benefit of examining all the specimens on which the list is based is the inclusion of "by-catch" – finding additional species in the packets not listed on the packet or in the herbarium records.

The choice of which species to include as macrolichens (rather than crustose) follows Hinds and Hinds (2007). Nomenclature follows Esslinger (2012). The checklist is arranged alphabetically by macrolichen genus and species in spreadsheet format. Institutional herbarium records are indicated by a solid circle; personal herbarium records are empty circles. The list of herbaria and personal collections consulted follows this section (P6). The herbarium list is repeated in the comprehensive spreadsheet at the end of the document.

Nova Scotia's eighteen counties have been grouped into regions: Fundy Shore, Fundy Shore/Valley, South Shore, Eastern Shore/Halifax, Northern, and Cape Breton Island. A short description of each region's topography, settlement patterns and climate is followed by a list of the macrolichen species collected from the area. The regional lists are for practical use by those collecting in a particular area or by those who want to see at a glance what is already known from the region.

Major islands where collections have originated are grouped with their counties. Sable Island is grouped with Halifax. Despite Brier Island's popularity for tourists and fame among bird watchers, only one of the examined collections held a few specimens from there; it is grouped with Digby County. Seal Island (Yarmouth County), off the southern coast, is also popular with birdwatchers. Several specimens are in the Nova Scotia Museum collection. Uninhabited St. Paul Island, off the northeast tip of Cape Breton, is grouped with Victoria County; Scatarie Island with Cape Breton County; Isle Haute with Cumberland County.

The comprehensive spreadsheet at the end (P 56) includes 341 macrolichen species arranged alphabetically by genus and species, species authorities, counties arranged alphabetically and a reference specimen for each species which is cited in the last column. The spreadsheet is available in a separate downloadable file called Nova Scotia Macrolichen Checklist 2014. A spreadsheet that allows the reader to highlight an entry across all locations is available from the author by contacting museum@gov.ns.ca. In the reference column, herbarium numbers ending with P are from the Nova Scotia Museum. Other institutional herbarium codes appear in parentheses. Reference specimens from personal collections have no parentheses. Details on numbers of specimens recorded per county or the herbaria/collections where specimens are located are available from the author at museum@gov.ns.ca. Those details are not included for simplicity of viewing and because in many cases, specimen packets contained other species for which there were no county records, but also no listing on the packet. Those specimens might not appear in herbarium databases.

As with any checklist, the end result is a primarily a picture of where the collecting has been done and is necessarily a work in progress. Any errors are entirely the responsibility of the author.

• Herbaria consulted

ACAD (E.C. Smith Herbarium, Acadia University, NS)
CANL (Canadian Museum of Nature Herbarium)
CBU (Cape Breton University, NS)
DAL (Dalhousie University, NS)
FH (Farlow Herbarium, Harvard University)
NBM (New Brunswick Museum)
NDSU (North Dakota State University)
NSPM (Nova Scotia Museum)
NY (New York Botanical Garden)
STFU (St. Francis Xavier University, NS)

○ Personal collections

F. Anderson
Sean Basquill
Rob Cameron
Harold Clapp
Jim Hinds
Elisabeth Lay
Wolfgang Maass
Tom Neily
A.J. Roland (Kejimkujik National Park)
Mark Seaward

Geography

Nova Scotia juts into the North Atlantic from the northeastern corner of the North American continent. Stretching on a southwest/northeast axis from 43°22'N, 66°23'W to 47°1'N 59°40'W, it is attached to the mainland by a narrow marshy lowland of approximately 11 x 25 kilometers, and is nearly surrounded by salt water. The salt water ranges from the shallow and therefore summer-warm Northumberland Strait (20–68 m deep; up to 20°C), through the North Atlantic which is influenced by the cold Labrador current and the Gulf Stream. It includes the deep, cold waters of the Bay of Fundy (to 200 m deep; up to 12°C in summer), home to some of the highest tides in the world. The dominant climatic influences are continental, resulting from prevailing winds that sweep from the west and southwest; however, the ocean moderates temperature extremes (Davis & Browne 1996). All but two of the province's eighteen counties have a substantial coastal border; the exceptions have two coasts.

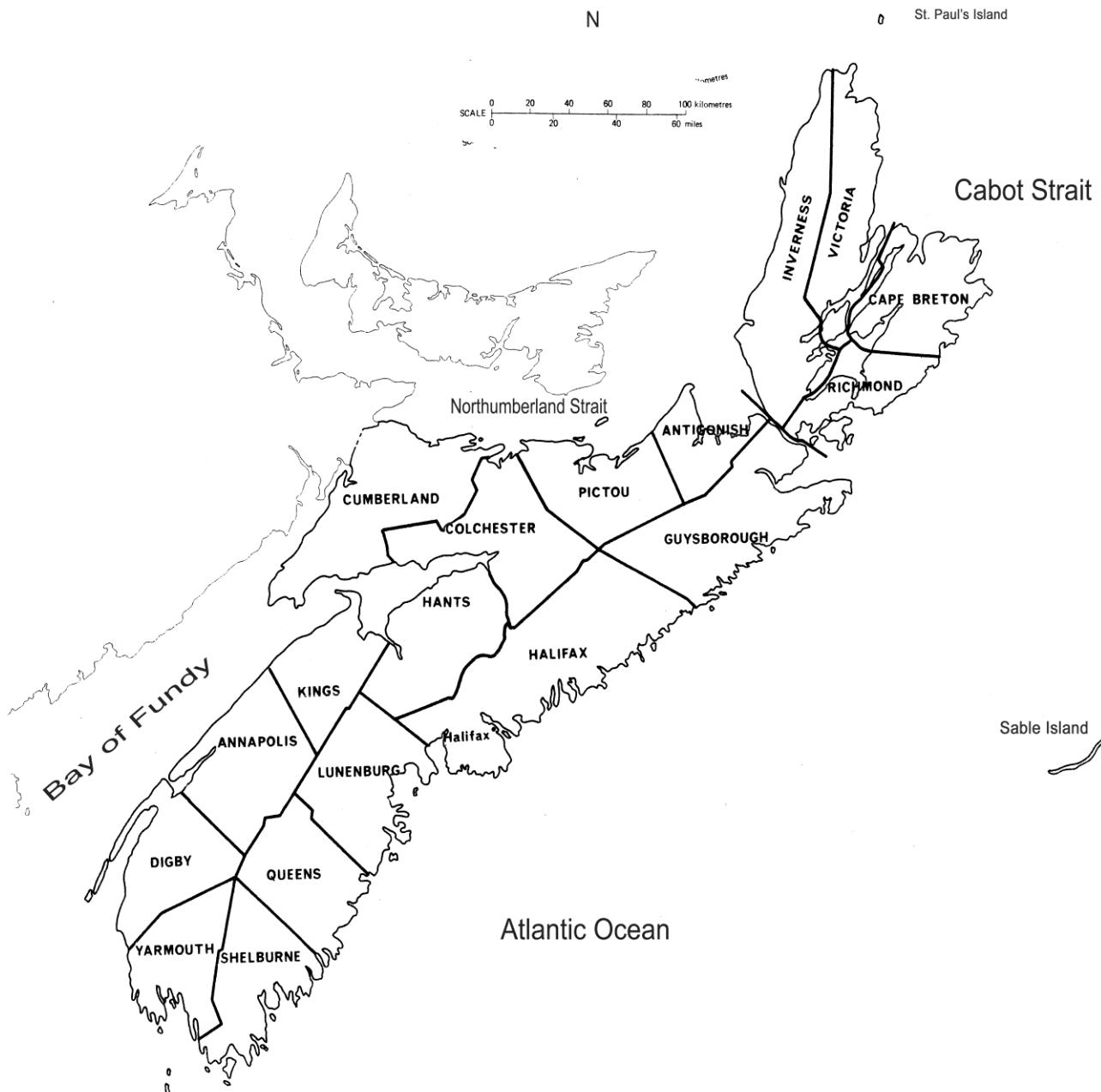
Nova Scotia's 55,000 km² encompass climatic and vegetation zones ranging from boreal (Cape Breton) through temperate (eastern sector), oceanic and maritime (Brodo 2001). Not surprisingly, the lichen flora of the province is richly varied. Since the province is not more than 130 km wide at any point, maritime fog is a major component of the climate on all coasts except most of the Northumberland Strait. Seasonal extremes are moderated by the presence of salt water to a range of mean annual temperatures of less than 5°C in northern Cape Breton to 7-7.5°C (Davis & Browne 1996; Clayden 2010; Clayden *et al.* 2011). Temperature ranges are narrow compared to continental regions. Humidity is generally high and rainfall is generally between 1000 - 1400mm (Davis & Browne 1996; Clayden *et al.* 2011), though it is up to 1600 mm in the Highlands of Cape Breton.

With less than a million people in the 2011 census, Nova Scotia is sparsely populated by eastern North American standards. The coasts remain the most settled. Except for the corridor from Halifax north to Truro along the province's main highway, the interior of the province is less developed and is open to resource extraction.

Small farms and landholdings became the norm after the arrival of European settlers in the 1700's. Industrial development in the late 19th and early 20th century shifted the pattern of landholding and development. In the last century, resource extraction through mining and clearcut forest harvesting have had a greater impact on the landscape than its long history of habitation or its short history of industrial development.

Gradients of temperature, moisture and topography found in Nova Scotia create a patchwork of ecological conditions (Clayden 2011). Therefore, the present checklist locations are grouped by counties into regions, west to east, that share general climatological /geographical features. Though many features overlap, county boundaries being political rather than geographical in nature, these regions share many similar

habitats and often blend together on the ground. Grouping them by region may help to illuminate species distribution patterns. The descriptions of the regions that follow are necessarily brief and general. Except where noted, they are based primarily on information compiled from Davis & Browne's Natural History of Nova Scotia (1996) as well as from on-the-ground observations.



Regions

Fundy Shore: Yarmouth, Digby counties

Characterised by a deeply indented, low, rocky coastline on the Atlantic, the coast smoothes out to include sandy beaches, dune systems and rocky cliffs as it rounds the western tip of the province. Tidal marshes, barachois ponds, and intertidal mud flats extend along the coast, which is somewhat sheltered from the Bay of Fundy by the long, narrow (generally less than 4 kilometers wide) basalt ridge that is Digby Neck. Brier Island, at the end of Digby Neck, is a famous bird migration hot-spot (Mills 2011). In these counties, low, rolling terrain with poor drainage is riddled with lakes linked by small meandering rivers and streams with low pH, rising toward the interior to an elevation of over 125 m in the granite barrens where county boundaries meet. Swamps, swales and bogs abound (Davis & Browne 1996).

Habitation since the mid-1770s has resulted in high disturbance. A provincially rare eastern white cedar (*Thuja occidentalis*) swamp occurs some 12 kilometers inland from the Bay of Fundy in Digby County. Atlantic Coastal Plain vascular plant flora is concentrated on lakeshores, meadows and bogs in Yarmouth County (Crowley *et al.* 2011).

	Fundy Shore			
Macrolichen species	Yarmouth	Seal Isl.	Digby	Brier Isl.
Alectoria				
<i>sarmentosa</i>	●○	●	●	
Anaptychia				
<i>palmulata</i>	○			
Anzia				
<i>colpodes</i>	●○			
Arctoparmelia				
<i>centrifuga</i>	●●		●	
<i>incurva</i>	●●			
Baeomyces				
<i>rufus</i>			●	
Bryoria				
<i>capillaris</i>	●			
<i>furcellata</i>	●○		●	
<i>fuscescens</i>	○			
<i>trichodes ssp americana</i>	●		●	
<i>trichodes ssp trichodes</i>	●●○		●●	
Cetraria				
<i>aculeata</i>			●	
Cetrelia				
<i>chicitae</i>	●○		○	
<i>olivetorum</i>	●○		●○	
Cladonia				
<i>arbuscula</i>	●●		●	
<i>arbuscula ssp.mitidis</i>	○			
<i>boryi</i>	●●○		●	
<i>caespiticia</i>	●●		●	
<i>cariosa</i>	●			
<i>cenotea</i>	●●			
<i>chlorophaea</i>	●●		●	
<i>coniocraea</i>	●			
<i>crispata</i>	●●●●		●	
<i>cristatella</i>	●		●	
<i>digitata</i>	●			
<i>farinacea</i>	○		●	
<i>fimbriata</i>	●○			
<i>furcata</i>	●●		●●○	
<i>gracilis ssp gracilis</i>	●			
<i>gracilis ssp turbinata</i>	●		●	
<i>grayi</i>	●			
<i>incrassata</i>	○			
<i>labradorica</i>	●○			
<i>macilenta var. bacillaris</i>			●	
<i>maxima</i>	●●○			

	Fundy Shore			
Macrolichen species	Yarmouth	Seal Isl.	Digby	Brier Isl.
<i>multiformis</i>	••		•••○	
<i>ochrochlora</i>	●●○		●	
<i>oricola</i>	●			
<i>parasitica</i>			●	
<i>pleurota</i>			●	
<i>rangiferina</i>	●●		●	
<i>rei</i>	●			
<i>scabriuscula</i>	●●		●●●○	
<i>squamosa</i>	●		●	
<i>stellaris</i>	●			
<i>strepsilis</i>	●		●	
<i>terrae-novae</i>	●●○○		●○	
<i>turgida</i>	●●		●	
<i>uncialis</i>	●●		●●●	
<i>verticillata</i>	●●			
<i>Coccocarpia</i>				
<i>palmicola</i>	○		●○	
<i>Collema</i>				
<i>furfureum</i>			●	
<i>nigrescens</i>			○	
<i>subflaccidum</i>	●●●○		○	
<i>Degelia</i>				
<i>plumbea</i>	●○		○	
<i>Dermatocarpon</i>				
<i>luridum</i>	○			
<i>Dibaeis</i>				
<i>baeomyces</i>	●●		●	
<i>Erioderma</i>				
<i>mollissimum</i>	○		○	
<i>Evernia</i>				
<i>mesomorpha</i>	●●●○		●●	
<i>Everniastrum</i>				
<i>catawbiense</i>			○	
<i>Flavoparmelia</i>				
<i>caperata</i>	●○		○○	
<i>Fuscopannaria</i>				
<i>ahlneri</i>	○		●	
<i>leucosticta</i>			●	
<i>Heterodermia</i>				
<i>leucomela</i>			●	
<i>neglecta</i>	○		●○	
<i>speciosa</i>	○			
<i>squamulosa</i>	○		●	

	Fundy Shore			
Macrolichen species	Yarmouth	Seal Isl.	Digby	Brier Isl.
Hypogymnia				
<i>incurvoides</i>	○		●●	
<i>krogiae</i>			●	
<i>physodes</i>	●●		●●○○	
<i>tubulosa</i>	○		●○	
Hypotrachyna				
<i>afrorevoluta</i>			○	
<i>revoluta</i>			○	
Imshaugia				
<i>aleurites</i>	○		●○	
<i>placarodia</i>	○		●	
Lasallia				
<i>papulosa</i>	●●		●	
Leptogium				
<i>corticola</i>			●○○	
<i>cyanescens</i>	●●○		○	
<i>hibernicum</i>			●	
<i>laceroides</i>	●○		●○○○	
<i>millegranum</i>	●○			
<i>subtile</i>	○		●	
<i>tenuissimum</i>	○			
Lobaria				
<i>pulmonaria</i>	●●○		●●○○	
<i>quercizans</i>	●●●○		●○	
<i>scrobiculata</i>	●○		●○	
Melanelia				
<i>panniformis</i>			●	
Melanelia				
<i>subaurifera</i>	●●		●○	
Menegazzia				
<i>subsimilis</i>	○		○	
<i>terebrata</i>	●●○○		●○	
Moelleropsis				
<i>nebulosa</i> ssp. <i>frullaniae</i>			●○○	
Nephroma				
<i>helveticum</i>	○○		○●	
<i>laevigatum</i>	●○		●●	
<i>resupinatum</i>	○			
Normandina				
<i>pulchella</i>	○○			
Pannaria				
<i>conoplea</i>	●○○		●○○	
<i>rubiginosa</i>	○		●	

	Fundy Shore			
Macrolichen species	Yarmouth	Seal Isl.	Digby	Brier Isl.
Parmelia				
<i>saxatilis</i>	●		●●	
<i>squarrosa</i>	●●○○		○○	
<i>sulcata</i>	●●		○	
Parmeliella				
<i>parvula</i>			○	
<i>triptophylla</i>	○		●	
Parmelinopsis				
<i>horrescens</i>	●○			
<i>minarum</i>	○			
Parmeliopsis				
<i>capitata</i>			●	
Parmotrema				
<i>crinitum</i>	●○○		●●○	
<i>perlatum</i>	●●○		●○	
Peltigera				
<i>aphthosa</i>	●●		●	
<i>canina</i>	●●		●○	
<i>collina</i>			●	
<i>didactyla</i>			●	
<i>evansiana</i>	○			
<i>horizontalis</i>	○	●		
<i>hymenina</i>	●			
<i>leucophlebia</i>			●	
<i>membranacea</i>	●○			
<i>polydactylon</i>	●●○		●	
<i>rufescens</i>	○			
Phaeophyscia				
<i>rubropulchra</i>	○		○	
Physcia				
<i>adscendens</i>	●		●	
<i>caesia</i>	●●		●	
<i>millegrana</i>	○			
<i>stellaris</i>			●●	
<i>tenella</i>	●●	●		
Physconia				
<i>detersa</i>	○			
Platismatia				
<i>glauca</i>	●●●		●●	
<i>tuckermanii</i>	●		○	
Pseudocyphellaria				
<i>perpetua</i>	●●○		●○	
Punctelia				
<i>appalachensis</i>	○		●●○	
<i>rudecta</i>	●●○		●○○	

	Fundy Shore			
Macrolichen species	Yarmouth	Seal Isl.	Digby	Brier Isl.
Pycnothelia				
papillaria	••		•	
Pyxine				
sorediata	○		•	
Ramalina				
americana	○			
dilacerata	••		•	
farinacea			••	•
intermedia	•••	•	•	
obtusata				
roesleri	••○○	•	••	
thrausta	○		○	
Sphaerophorus				
fragilis	•			
globosus	○		•	
Stereocaulon				
dactyllophyllum	••		••	
glaucescens	••			
grande				
paschale	••		•	
pileatum	•		•	
subcoralloides	•			
Sticta				
fuliginosa	••○		•○	
Tuckermanopsis				
americana	•○		•	
orbata	•		•	
sepincola	•			
Umbilicaria				
americana	•			
mammulata			•	
muehlenbergii	•		•	
Usnea				
ceratina	•			
cornuta	○○		•○	
filipendula	•		•	
flavocardia		•		
fragilescens var. mollis		•		
fulvoreagens	•	•		
longissima			•	
merrillii	•○○		•○	
rubicunda			•	
schadenbergiana	•○		•○○	
silesiaca	••			

	Fundy Shore			
Macrolichen species	Yarmouth	Seal Isl.	Digby	Brier Isl.
<i>strigosa</i>	•••		••	
<i>subfloridana</i>	•		•	
<i>subscabrosa</i>	•		•	
<i>trichodea</i>	•		••••○	
Xanthoparmelia				
<i>conspersa</i>	••○		•	
<i>cumberlandia</i>	•			
<i>plittii</i>	•			
<i>viriduloumbrina</i>			○	
Xanthoria				
<i>parietina</i>	•••		•••	•
<i>polycarpa</i>	•		•	

Fundy Shore/ Valley: Annapolis, Kings, Hants counties

The granite ridge running up the “spine” of the western end of the province forms the southern boundary of these three counties. Rivers flow north off the interior higher elevation which is mostly mixed hardwoods, down into the fertile lowland of the Annapolis Valley where farming dominates. Erratics are common along the granite ridge. The Valley runs northeast/southwest between the forested and farmed basalt ridge of the North Mountain along the Bay of Fundy and the inland granite uplands of the South Mountain. Cold and fog from the Bay of Fundy are mostly blocked from the Valley by the North Mountain which drops steeply to the water, allowing some of the hottest temperatures in the province to occur in the Valley. The farmed rolling hills of Hants County contain significant gypsum-anhydrite deposits with former quarry sites and karst topography rich in calciphiles. Its slow-moving rivers have extensive floodplains and muddy tidal marshes.

Macrolichen species	Fundy Shore/Valley		
	Annapolis	Kings	Hants
Ahtiana			
<i>aurescens</i>			●○
Alectoria			
<i>sarmentosa</i>	●		●
Anaptychia			
<i>palmulata</i>	○		
Anzia			
<i>colpodes</i>	●●○	●	●
Arctoparmelia			
<i>centrifuga</i>	●	●●	
Bryoria			
<i>capillaris</i>		●	
<i>furcellata</i>	●	●	●●○
<i>nadvornikiana</i>	●		
<i>trichodes ssp americana</i>	●		
<i>trichodes ssp trichodes</i>	●		●
Cetraria			
<i>arenaria</i>		●●	
Cetrelia			
<i>chicitae</i>		●●●	●
<i>olivetorum</i>		●●○	
Cladonia			
<i>albonigra</i>		●	
<i>arbuscula</i>	●	●●●●	●
<i>boryi</i>		●●	●
<i>caespiticia</i>		●	
<i>cariosa</i>		●	○
<i>cenotea</i>		●●●	●
<i>chlorophaea</i>		●	○
<i>coniocraea</i>		●	○
<i>cornuta ssp. cornuta</i>		●	
<i>crispata</i>	○	●●●	
<i>cristatella</i>	●●	●●	●●
<i>digitata</i>			●
<i>farinacea</i>		●	
<i>fimbriata</i>		●	●
<i>furcata</i>	●●	●	
<i>gracilis ssp gracilis</i>		●	
<i>gracilis ssp turbinata</i>		●●	●
<i>grayi</i>	●		
<i>macilenta var. bacillaris</i>		●	
<i>mateocyatha</i>		●	●○
<i>maxima</i>	●	●	●
<i>multiformis</i>	●	●●●	●○

	Fundy Shore/Valley		
Macrolichen species	Annapolis	Kings	Hants
<i>norvegica</i>			
<i>ochrochlora</i>	●	●●	
<i>oricola</i>		●	
<i>parasitica</i>			○
<i>phylophora</i>		●	
<i>pleurota</i>	●	●	●
<i>pyxidata</i>		●●	○
<i>ramulosa</i>		●	
<i>rangiferina</i>	●	●●●	●●
<i>rappii</i>			
<i>rei</i>		●	●○
<i>scabriuscula</i>	●	●●	
<i>squamosa</i>	●●	●	?●
<i>stellaris</i>		●●●	●●
<i>strepsilis</i>			●○
<i>subulata</i>		●	
<i>terrae-novae</i>	●		
<i>turgida</i>	●○	●	●○
<i>uncialis</i>	●	●	○
<i>verticillata</i>		●	
Coccocarpia			
<i>palmicola</i>			●
Collema			
<i>bachmanianum</i>			●
<i>crispum</i>			●
<i>furfureum</i>		●	○
<i>leptaleum</i>	●		
<i>nigrescens</i>			●○
<i>occultatum</i>	●		
<i>subflaccidum</i>	●●○○	●●●●	
<i>tenax</i>			●○
Degelia			
<i>plumbea</i>	●	○	
Dendriscocaulon			
<i>intricatum</i>	●●		
Dermatocarpon			
<i>luridum</i>	●○	●●	
Dibaeis			
<i>baeomyces</i>	●	●●	
Ephebe			
<i>hispidula</i>	●		
<i>lanata</i>	●○○		●
Evernia			
<i>mesomorpha</i>		●●	●
<i>prunastri</i>			●●●○

	Fundy Shore/Valley		
Macrolichen species	Annapolis	Kings	Hants
Flavoparmelia			
<i>caperata</i>	●	••	●
Fuscopannaria			
<i>ahlneri</i>	○		
<i>praetermissa</i>			●○
<i>saubinetii</i>			○○
<i>sorediata</i>			●
Heterodermia			
<i>neglecta</i>	●		
<i>speciosa</i>	●○	●	
<i>squamulosa</i>	●●	●●	
Hypogymnia			
<i>incurvoides</i>		●	●
<i>krogiae</i>	●	●	●
<i>physodes</i>	●	●●●○	
<i>tubulosa</i>	●●	●●	●
Imshaugia			
<i>aleurites</i>			○
Lasallia			
<i>papulosa</i>	●	●●	
Leptogium			
<i>corticola</i>	○		●○
<i>cyanescens</i>	●●●○○	●●●	●●●○○
<i>dactylinum</i>	●○		
<i>hirsutum</i>		○	
<i>laceroides</i>	●○		●
<i>lichenoides</i>			●○
<i>millegranum</i>			●
<i>saturninum</i>	●○		●○
<i>schraderi</i>			●○
<i>subtile</i>	○	○	●○
<i>tenuissimum</i>			●○
<i>teretiusculum</i>	●		●○
Lobaria			
<i>pulmonaria</i>	●	●●●●	●○○
<i>quercizans</i>	○	●●●●	○○
<i>scrobiculata</i>	●	●●	●○
Melanelia			
<i>disjuncta</i>			●
<i>panniformis</i>	●		○
<i>sorediata</i>	●		●
<i>stygia</i>		●●	
Melanelixia			
<i>fuliginosa</i>	●	●	
<i>subaurifera</i>	●	●●●	●

	Fundy Shore/Valley		
Macrolichen species	Annapolis	Kings	Hants
Menegazzia			
<i>subsimilis</i>			●
Myelochroa			
<i>aurulenta</i>		●	
<i>galbina</i>		●	●○○
Nephroma			
<i>helveticum</i>	●○		
<i>laevigatum</i>	●○	●	●○
<i>parile</i>	●●●○	●	●
<i>resupinatum</i>	●		
Normandina			
<i>pulchella</i>	●○	●	●
Pannaria			
<i>conoplea</i>	●○		
<i>lurida s.l.</i>	●		
<i>rubiginosa</i>	●○		○
Parmelia			
<i>saxatilis</i>	●●	●	
<i>squarrosa</i>	●●	●●●	●
<i>sulcata</i>	●	●	
Parmeliella			
<i>triptophylla</i>	●○○	●	○
Parmelinopsis			
<i>minarum</i>	●		
Parmeliopsis			
<i>capitata</i>	●		
Parmotrema			
<i>crinitum</i>	●●○	●●	
<i>perlatum</i>	●○	●	
<i>reticulatum</i>	●	●	
Peltigera			
<i>aphthosa</i>	●○○	●●●	
<i>canina</i>		●	
<i>didactyla</i>		●	
<i>elisabethae</i>	●○		●●
<i>evansiana</i>	●○○	●●	○
<i>horizontalis</i>	●○○	●	○
<i>lepidophora</i>			●○
<i>leucophlebia</i>	●	●●	●○
<i>membranacea</i>	●●		●
<i>neopolydactyla</i>	●●	●●	
<i>occidentalis</i>			
<i>polydactylon</i>		●●●○	●○
<i>praetextata</i>	●○	●	
<i>rufescens</i>		●	●

	Fundy Shore/Valley		
Macrolichen species	Annapolis	Kings	Hants
Phaeophyscia			
adiastola	●		
rubropulchra	●	●●	●
Phylliscum			
demangeoni			●
Physcia			
adscendens		●●	●
aipolia	●		
dubia			○
millegrana		●●●	
phaea			○
stellaris	●	●●●	●○
Physconia			
grumosa	●		●
Placynthium			
flabellosum	●○○		
nigrum			○
Platismatia			
glauca		●●●	
tuckermanii	●	●●●	●○
Polychidium			
muscicola	○		
Protopannaria			
pezizoides	●		●
Pseudocycphellaria			
perpetua	○	○	●
Psorula			
rufonigra	●		
Punctelia			
appalachensis	●	●○○	●○
rudecta	●●	●●	●○
Pycnothelia			
papillaria		●●	●●
Pyxine			
sorediata	●	●●	
Racodium			
rupestre	○○	○○	
Ramalina			
americana	●○	●	●○
dilacerata		●	●●○
farinacea		●●●	●●●
intermedia	●	●	
roesleri	●		
Santessonella			
crossophylla			○

	Fundy Shore/Valley		
Macrolichen species	Annapolis	Kings	Hants
Solorina			
<i>saccata</i>			●○
Sphaerophorus			
<i>globosus</i>	●	●	●○
Spilonema			
<i>revertens</i>	●○		
Stereocaulon			
<i>dactyllophyllum</i>	●●	●●	○
<i>glaucescens</i>		●	
<i>intermedium</i>			○
<i>paschale</i>	●		
<i>pileatum</i>			○
<i>saxatile</i>		●	
<i>tomentosum</i>		●	
Sticta			
<i>fuliginosa</i>		●●	
<i>limbata</i>		●○	
Tuckermanopsis			
<i>americana</i>	●	●●	●
<i>ciliaris</i>		●●	
<i>orbata</i>			●
Umbilicaria			
<i>deusta</i>		●	
<i>mammulata</i>	●●●	●	
<i>muehlenbergii</i>	●●●	●●	●○
<i>polyphylla</i>		●	
Usnocetraria			
<i>oakesiana</i>	●		●
Usnea			
<i>cavernosa</i>		●●	●
<i>filipendula</i>	●	●●●○	
<i>fulvoreagens</i>	●	●	●
<i>longissima</i>	●	●●●	●
<i>macaronesica</i>			
<i>mutabilis</i>	●		●
<i>silesiaca</i>			●
<i>strigosa</i>	●●	●●●	
<i>subfloridana</i>	●	●●	●
<i>subscabrosa</i>			●
<i>trichodea</i>	●		
Vahliella			
<i>leucophaea</i>	●○○		
Vulpicida			
<i>pinastri</i>	●		

	Fundy Shore/Valley		
Macrolichen species	Annapolis	Kings	Hants
Xanthoparmelia			
<i>conspersa</i>		••	
<i>cumberlandia</i>	•	••	•○
Xanthoria			
<i>parietina</i>		••	•
<i>polycarpa</i>		••	

South Shore: Shelburne, Queens, Lunenburg counties

The granite ridge that runs up the “spine” forms the northern boundaries of these counties. Drumlins covering mostly slate slope down to the Atlantic coast. At the southern end, Shelburne County’s terrain is low and hummocky, with black spruce bogs and mixed conifer/hardwood swamps. Swampy areas often lie between the moderately rich soil of the drumlins of Queens and Lunenburg counties. The northeastern portion of Lunenburg County becomes forested granite uplands with shallow soil, exposed rock and erratics. Several long rivers run slightly southeast to the sea.

Significant Atlantic Coastal Plain flora is also found in these counties (Crowley *et al.* 2011). The coastal conifer fog forest along the Atlantic slope includes a multitude of sheltered, low-lying, poorly drained sites that are extremely high in humidity. The entire windy coastline is deeply indented, with small islands, occasional high headlands and extended white sandy beaches.

	South Shore		
Macrolichen species	Shelburne	Queens	Lunenburg
Ahtiana			
<i>aurescens</i>			●●○
Alectoria			
<i>sarmentosa</i>	○	●	●○○
Anaptychia			
<i>palmulata</i>	●	●●○○	●○
Anzia			
<i>colpodes</i>	●○	●●○○	●○
Arctoparmelia			
<i>centrifuga</i>		●●	●●○
<i>incurva</i>	○	●	
Baeomyces			
<i>rufus</i>		○	○
Bryoria			
<i>capillaris</i>		●	
<i>furcellata</i>	●○○	●	●○
<i>fuscescens</i>	●		
<i>nadvornikiana</i>			●○
<i>trichodes ssp americana</i>	●	●	
<i>trichodes ssp trichodes</i>	●	●●	●●○
Cetraria			
<i>aculeata</i>	●●○		●
<i>arenaria</i>	●○		●
Cetrelia			
<i>chicitae</i>	○	●●●	●○○
<i>olivetorum</i>	●	●●	●○
Cladonia			
<i>albonigra</i>			○
<i>arbuscula</i>	●●●○	●●●	●●○
<i>arbuscula ssp.mitidis</i>	●●	●	●
<i>boryi</i>		●●	●●●○
<i>caespiticia</i>	●●	●	
<i>cenotea</i>	●●	●	
<i>chlorophphaea</i>	●●○	●●●	●○
<i>coniocraea</i>	○		○
<i>cornuta ssp. cornuta</i>		●	
<i>crispata</i>	●○●●●	●	
<i>cristatella</i>	○	●●●●●	●●
<i>deformis</i>			●●
<i>dimorphoclada</i>		●	
<i>farinacea</i>		○	●
<i>fimbriata</i>	●	○	
<i>floerkeana</i>	●●		
<i>furcata</i>	●	●●●●	●
<i>gracilis ssp gracilis</i>	●●○		
<i>gracilis ssp turbinata</i>	●●●●○	●●	●

	South Shore		
Macrolichen species	Shelburne	Queens	Lunenburg
<i>grayi</i>		••	
<i>incrassata</i>	○	••	
<i>labradorica</i>	●		
<i>macilenta</i> var. <i>bacillaris</i>	●●●○	●	●○
<i>maxima</i>		●●●	●
<i>multiformis</i>	●●●○	●○	●○
<i>norvegica</i>		●	
<i>ochrochlora</i>	●●●	●○	
<i>oricola</i>		●	
<i>parasitica</i>		●	
<i>pleurota</i>	●	●	○
<i>pyxidata</i>	●	●	●○
<i>ramulosa</i>		○	
<i>rangiferina</i>	●●	●●●	●○
<i>rappii</i>	●	●	
<i>rei</i>	●○	●	●○
<i>scabriuscula</i>	●	○	●●
<i>squamosa</i>	●●	●●●	○
<i>stellaris</i>	●	●●	●●○
<i>strepsilis</i>	●●	●	●●
<i>subtenuis</i>	●●		
<i>terrae-novae</i>	●●●	●●	
<i>turgida</i>			●●
<i>uncialis</i>	○	●●	●●●○
<i>verticillata</i>	●○	●○○	●●
Coccocarpia			
<i>palmicola</i>	●○	○	●○○
Collema			
<i>furfuraceum</i>	○●	●●○	●○○
<i>leptaleum</i>		●	●○
<i>nigrescens</i>	●●○	●	●○
<i>occultatum</i>			●○
<i>subflaccidum</i>		●●○○	●○
Degelia			
<i>plumbea</i>	●●○○		●○○
Dendriscocaulon			
<i>intricatum</i>		●	●
Dermatocarpon			
<i>luridum</i>			○
Dibaeis			
<i>baeomyces</i>			●
Ephebe			
<i>lanata</i>		○	○
<i>perspinulosa</i>		●○	
Erioderma			
<i>mollissimum</i>	●●○○	●○	●
<i>pedicellatum</i>	○	●	○○

Macrolichen species	South Shore		
	Shelburne	Queens	Lunenburg
Evernia			
mesomorpha	•••		•○
prunastri			●
Everniastrum			
catawbiense	○		•○
Flavoparmelia			
baltimorensis		●	
caperata	●	●○○	●●○
Fuscopannaria			
ahlneri	●○	●○	○
leucosticta	●○	●○○	○
sorediata	●○		●○
Heterodermia			
galactophylla			●
neglecta	●○○	●○○○	●●○
speciosa	●		●○
squamulosa			●○
Hypogymnia			
incurvoides		●	●●○
krogiae	●	●○	
physodes	●●●○	●●○○	●○
tubulosa	●○	●○○○	
vittata			●
Hypotrachyna			
afrorevoluta			●●○
revoluta	●	○	○
Imshaugia			
aleurites	●	○	●○
placarodia	●○	●○	●○
Lasallia			
papulosa	●●●	●●	●○
Leptogium			
corticola	●●○	○	●
cyanescens	●●○○	●●○	●○○
hibernicum	●		
imbricatum		●○	●
laceroides	○○	○○○	●●○
millegratum	●○○	●	●○
saturninum	●○		●
subtile			●○
tenuissimum		●●○	●
teretiusculum			●
Lobaria			
pulmonaria	●●○	●●●●○	●○
quercizans	●●●○○	●●○	●○○
scrobiculata	●●○○	●●○	●○

Macrolichen species	South Shore		
	Shelburne	Queens	Lunenburg
Melanelia			
<i>culbersonii</i>			•
<i>disjuncta</i>			•○
<i>panniformis</i>			•○
Melaneliaxia			
<i>subaurifera</i>	•	•••	
Melanohalea			
<i>olivacea</i>	•	•	•
Menegazzia			
<i>subsimilis</i>	•	•	••○
<i>terebrata</i>	•	•	•○
Moelleropsis			
<i>nebulosa</i> ssp. <i>frullaniae</i>	•○○	•○	•○
Myelochroa			
<i>galbina</i>			•○
Nephroma			
<i>bellum</i>		•	
<i>helveticum</i>	•○	○○	••○○
<i>laevigatum</i>	●○○○	○○○○	●○○
<i>parile</i>			•○
<i>resupinatum</i>			•
Normandina			
<i>pulchella</i>	•	●○○○○	•
Pannaria			
<i>conoplea</i>	○○○	●○○○	●●
<i>lurida</i> s.l.	●○	○	●○○
<i>rubiginosa</i>	●○	○○	●○
Parmelia			
<i>omphalodes</i>		•	•○
<i>saxatilis</i>	●●	○	●○
<i>squarrosa</i>	●●○	●●●○○○	●○
<i>sulcata</i>	●●●●	○	●○
Parmeliella			
<i>appalachensis</i>	○		
<i>parvula</i>	●○○	●○	○
<i>triptophylla</i>		●○○○	●○
Parmelinopsis			
<i>minarum</i>			•○
Parmeliopsis			
<i>capitata</i>	•		•
Parmotrema			
<i>crinitum</i>	●○○○	●○○	●●○
<i>perlatum</i>	●●	●○○	●●○
<i>reticulatum</i>			•
Peltigera			
<i>aphthosa</i>	•	○○	●○
<i>canina</i>	○	○○	

	South Shore		
Macrolichen species	Shelburne	Queens	Lunenburg
<i>collina</i>			○
<i>didactyla</i>		○	●
<i>elisabethae</i>	○	●	
<i>evansiana</i>		●○	
<i>extenuata</i>		○	○
<i>horizontalis</i>			●●
<i>leucophlebia</i>		●	●
<i>membranacea</i>		●●	
<i>neopolydactyla</i>		●●●	●
<i>polydactylon</i>	●	●	●●●
<i>praetextata</i>		●	●
Phaeophyscia			
<i>orbicularis</i>		○	●○
<i>rubropulchra</i>		●●	○
Phylliscum			
<i>demangeoni</i>			●○
Physcia			
<i>adscendens</i>			●
<i>aipolia</i>	●		
<i>caesia</i>		○	
<i>dubia</i>			●○
<i>millegrana</i>			○
<i>phaea</i>		●	
<i>stellaris</i>	●	●○	○
<i>subtilis</i>	○		○
<i>tenella</i> var. <i>marina</i>		●○	
Physconia			
<i>detersa</i>		●	
<i>grumosa</i>	●	●	●
Placynthium			
<i>flabellosum</i>			●○
<i>nigrum</i>		●	
Platismatia			
<i>glauca</i>	●	●●	○
<i>tuckermanii</i>	●●	●●●	●
Racodium			
<i>rupestre</i>			●
Ramalina			
<i>americana</i>		●●○	●○
<i>dilacerata</i>	●●○	●○	●
<i>farinacea</i>		●	●○
<i>intermedia</i>	●	●○	●
<i>roesleri</i>	●	●○	●○
<i>thrausta</i>	●		
Rhizoplaca			
<i>subdiscrepans</i>			●

	South Shore		
Macrolichen species	Shelburne	Queens	Lunenburg
<i>Sphaerophorus</i>			
<i>fragilis</i>			•
<i>globosus</i>	●	●●	●○
<i>Stereocaulon</i>			
<i>condensatum</i>	●○		
<i>dactyllophyllum</i>	●	●	
<i>intermedium</i>		●	
<i>paschale</i>			●○
<i>pileatum</i>	○		
<i>tomentosum</i>	●●		
<i>Sticta</i>			
<i>fuliginosa</i>	●●●○○	○○	●○
<i>limbata</i>	○		●
<i>Tuckermanopsis</i>			
<i>americana</i>	●	●○	●●○
<i>ciliaris</i>			●
<i>orbata</i>	●	●	●
<i>sepincola</i>		●	○
<i>Umbilicaria</i>			
<i>deusta</i>	●		●
<i>mammulata</i>	●●	●●	
<i>muehlenbergii</i>	●	●	●●●
<i>polyrrhiza</i>		●	
<i>Usnea</i>			
<i>ceratina</i>	●		●●○
<i>chaetophora</i>		○	
<i>cornuta</i>	●○	●○	
<i>filipendula</i>	●	●	
<i>flammea</i>	●	●	○
<i>flavocardia</i>	●	●	
<i>fragilescens</i> var. <i>mollis</i>		●	
<i>fulvoreagens</i>	●		●
<i>glabrata</i>			●○
<i>glabrescens</i>		●○	
<i>hirta</i>	●○	●	
<i>longissima</i>			●
<i>macaronesica</i>			●○
<i>merrillii</i>	○●		●
<i>rubicunda</i>	●	●	●○
<i>scabrata</i>			
<i>schadenbergiana</i>	●○	●○	●
<i>silesiaca</i>	●	●●	
<i>strigosa</i>	●●●●	●	●●●○
<i>subfloridana</i>	●●	●	●
<i>subrubicunda</i>			●○
<i>subscabrosa</i>	●	●	●○
<i>trichodea</i>	●●○○	●●○	●

Macrolichen species	South Shore		
	Shelburne	Queens	Lunenburg
Vahliella			
leucophaea		○	
Vulpicida			
pinastri	●		●
Xanthoparmelia			
conspersa	●●	●○	
cumberlandia		●○	
mougeotii	●	●○	
viriduloumbrina			●●
Xanthoria			
elegans		●	
parietina	●	●●	●●
polycarpa			○

Eastern Shore/ Halifax, Guysborough counties

Halifax County (HRM) contains the population hub of the province: the provincial capital, the largest port, and urban/suburban sprawl that extends for 20-30 kilometers in all directions. It also contains a rocky coastline, shoreline cliffs and extensive exposed coastal barrens over granite in the west, with granite barrens extending inland. Linear valleys followed by rivers lie to the east, with many small to medium lakes, tidal marshes and barachois beaches, cool, coastal white spruce/fir fog forests and many small islands. The interior Halifax County boundary includes gypsum and limestone quarries, open rolling hills covered with farmland and hardwood dominated forests.

Guy'sborough County is sparsely populated. It contains extensive black spruce bogs, long inlets, coastal bluffs and white spruce/fir forests. In the eastern part, the forests become exposed granite bedrock barrens along the Atlantic coast. Once into the Chedabucto Bay, barrens and semi-barrens are interspersed with bogs and low hardwood ridges (C.D. Howe in Fernow 1912) which become 200 m high cliffs along the western side of the Strait of Canso.

Macrolichen species	Eastern Shore/Halifax			
	Halifax	Sable Isl.	Guysborough	Scatarie Isl.
Alectoria				
<i>sarmentosa</i>	●○		●○	●
Anaptychia				
<i>palmulata</i>	●○		●○	
Anzia				
<i>colpodes</i>			●	
Arctoparmelia				
<i>centrifuga</i>	●●●○			
<i>incurva</i>	●○		○	
Baeomyces				
<i>rufus</i>	●●●			
Bryoria				
<i>capillaris</i>	●			
<i>furcellata</i>	●●●		●	
<i>fuscescens</i>	●●○	●		
<i>nadvornikiana</i>	●○			
<i>nitidula</i>	●			
<i>trichodes ssp americana</i>	●●●		●	●
<i>trichodes ssp trichodes</i>	●●●○		●	
Cetraria				
<i>aculeata</i>	●●●●	●●		
<i>islandica ssp crispiformis</i>		●		●
<i>muricata</i>	●●	●	○	
Cetrelia				
<i>chicitae</i>	●●●○○		○	
<i>olivetorum</i>	○		●○	
Cladonia				
<i>albonigra</i>			○	
<i>arbuscula</i>	●●○	●●	●	
<i>arbuscula ssp.mitis</i>	●●○	●●		
<i>boryi</i>	●●●○	●●	●●	
<i>caespiticia</i>		●●		
<i>cariosa</i>	○		●	
<i>cenotea</i>	●●○		●	●
<i>chlorophaea</i>		●	●●	●
<i>coccifera</i>	●○			
<i>conspicua</i>		●		
<i>crispata</i>	●●	●●●	●○	●
<i>cristatella</i>	●●●	●●	●●	
<i>deformis</i>	●			
<i>digitata</i>			●	●
<i>farinacea</i>	●○	●●		
<i>fimbriata</i>		●●●	●●	
<i>floerkeana</i>	●			
<i>furcata</i>	●●○		●	

	Eastern Shore/Halifax			
Macrolichen species	Halifax	Sable Isl.	Guysborough	Scatarie Isl.
<i>gracilis</i> ssp <i>gracilis</i>	●○		●	
<i>gracilis</i> ssp <i>turbinata</i>	●●	●	●	
<i>incrassata</i>	●	●●	●	
<i>labradorica</i>			●	
<i>macilenta</i> var. <i>bacillaris</i>	●○			
<i>mateocyatha</i>	●●○			
<i>maxima</i>	●●●		○	
<i>merochlorophaea</i>				●
<i>metacorallifera</i>	●			
<i>multiformis</i>	●	●●	●	
<i>norvegica</i>				
<i>ochrochlora</i>	●○		●○	
<i>oricola</i>	●○	●		
<i>parasitica</i>	●			
<i>pleurota</i>	●●		●○	
<i>pyxidata</i>		●●		
<i>ramulosa</i>	●○	●●		
<i>rangiferina</i>	●●○	●●●	●	
<i>rei</i>		●●	●	
<i>scabriuscula</i>	●	●●		●
<i>squamosa</i>	●●●○○			
<i>stellaris</i>	●●●○	●●	○	
<i>strepsilis</i>	●●○			●
<i>stygia</i>	○		●	●
<i>subulata</i>		●●		
<i>sulphurina</i>		●		
<i>terrae-novae</i>	●●○	●○	●○	
<i>turgida</i>	●○	●●	●	
<i>uncialis</i>	●●			
<i>verticillata</i>	●●●○	●	●●	
Coccocarpia				
<i>palmicola</i>	●●○		●○	●
Collema				
<i>furfureum</i>	○		●	
<i>limosum</i>	●○			
<i>leptaleum</i>	●○			
<i>nigrescens</i>	○		○	
<i>occultatum</i>	○			
<i>subflaccidum</i>	●●○○		●○	
<i>tenax</i>	●			
Degelia				
<i>plumbea</i>	●●○○		●	
Imshaugia				
<i>aleurites</i>			●	●
<i>placarodia</i>	●		●	

	Eastern Shore/Halifax			
Macrolichen species	Halifax	Sable Isl.	Guysborough	Scatarie Isl.
Lasallia				
<papulosa< p=""></papulosa<>	●●●○○		○	
Leptogium				
corticola	●○○			●
cyanescens	●●○○○		●●○○	
laceroides	●○○		●○	
Lichina				
confinis	●●○			
Lobaria				
pulmonaria	●●●○	●	●○	
quercizans	●●●		○	
scrobiculata	●●●○	●●	●○	
Melanelia				
disjuncta	●			
panniformis	●○			
sorediata	○			
Melanelia				
fuliginosa	●○		●	
subaurifera		●		
Menegazzia				
subsimilis	○		○	
terebrata	○		●	
Moelleropsis				
nebulosa ssp. frullaniae	●○		●○	
Nephroma				
bellum	●			
helveticum	●●●○○○		○	
laevigatum	●●○	●	●	
parile	●○○		●	
resupinatum	●			
Normandina				
pulchella	●○		○	
Pannaria				
conoplea	●○○		○	
rubiginosa	●		●	
Parmelia				
omphalodes	●○			
saxatilis	●●○	●●	●	
squarrosa	●●○○	●●	●	
sulcata	●●●○	●	●○	
Parmeliella				
appalachensis	●○			
parvula			●	
triplophylla	●●		●	
Parmelinopsis				
minarum	●			

	Eastern Shore/Halifax			
Macrolichen species	Halifax	Sable Isl.	Guysborough	Scatarie Isl.
Parmeliopsis				
capitata	●●○		●	
hyperopta		●	○	
Parmotrema				
crinitum	○○		●	
Peltigera				
aphthosa	●○○		●○	
canina	○			
collina			●○	
degenii	●			
elisabethae	●			
evansiana				●
horizontalis	●●			
hydrothyria			●	
hymenina	●	●		
leucophlebia			○	
membranacea	●○○		●	●
neopolydactyla	●	●	●	
ponojensis	●			
polydactylon	●		●	
praetextata		●		
Phaeophyscia				
orbicularis	○	●●		
rubropulchra	●○		●	
Physcia				
adscendens	●○	●●	●	
caesia	●			
millegrana	●○	●		
stellaris	●●○			
subtilis	●			
tenella var. marina	●	●●	●	
Physconia				
detersa	○		●○	
Placidium				
squamulosum	●			
Placynthium				
flabellosum	●			
nigrum	●○			
Platismatia				
glauca	●●●○	●●	●○	
tuckermanii	●●●		●	
Polychidium				
muscicola			●	
Protopannaria				
pezizoides	○			
Pseudevernia				
cladonia			●	

	Eastern Shore/Halifax			
Macrolichen species	Halifax	Sable Isl.	Guysborough	Scatarie Isl.
Pseudocyphellaria				
<i>perpetua</i>	●●●○		●○	
Punctelia				
<i>appalachensis</i>				
<i>rudecta</i>	●○		●○	
Pycnothelia				
<i>papillaria</i>	●●		●●	
Pyxine				
<i>sorediata</i>			●	
Racodium				
<i>rupestre</i>	●			
Ramalina				
<i>americana</i>	●○	●●		
<i>dilacerata</i>	●●○		●	
<i>farinacea</i>	●○	●●		
<i>intermedia</i>	●●○			
<i>roesleri</i>	●●○	●	●	
<i>thrausta</i>	●○			
Rhizoplaca				
<i>subdiscrepans</i>				●
Sphaerophorus				
<i>fragilis</i>	●●●○			●
<i>globosus</i>	●●		●●○	
Stereocaulon				
<i>dactyllophyllum</i>	●●		●●	
<i>glaucescens</i>	●			
<i>grande</i>				
<i>pileatum</i>			●	
<i>saxatile</i>	●			
<i>tomentosum</i>			●	
Sticta				
<i>fuliginosa</i>	●●○		●	
Tuckermanopsis				
<i>americana</i>	●●	●●	●	●
<i>orbata</i>	●		●	
Umbilicaria				
<i>mammulata</i>	●●●			
<i>muehlenbergii</i>	●●●●○			●
Usnea				
<i>ceratina</i>				●
<i>cornuta</i>	●	●●	●	●
<i>filipendula</i>	●●○	●●		
<i>flammea</i>		●○		
<i>flavocardia</i>	●●			
<i>fragilescens</i> var. <i>mollis</i>	●			
<i>fulvoreagens</i>	●●		○	

	Eastern Shore/Halifax			
Macrolichen species	Halifax	Sable Isl.	Guysborough	Scatarie Isl.
<i>longissima</i>	●●●○	●●	○●	
<i>macaronesica</i>				●
<i>merrillii</i>			●	
<i>mutabilis</i>	●			
<i>scabrata</i>	●			
<i>schadenbergiana</i>	●●			
<i>silesiaca</i>	●●○		○	
<i>strigosa</i>	●●●●			
<i>subfloridana</i>	●●	●●		
<i>subscabrosa</i>	●●			
<i>substerilis</i>			●	
Vulpicida				
<i>pinastri</i>	●●		●○	
Xanthoparmelia				
<i>conspersa</i>	●●○			
<i>cumberlandia</i>	●●●			
<i>plittii</i>	●			
<i>viriduloumbrina</i>	●●			
Xanthoria				
<i>elegans</i>	●●			
<i>parietina</i>	●○	●	●	
<i>polycarpa</i>	●●	●●		

Northern: Cumberland, Colchester, Pictou, Antigonish counties

Cumberland and Colchester counties have two coastlines: Abruptly steep basalt and sandstone headlands on the cold and sometimes dramatically foggy Fundy side, and low, warm-water beaches and tidal marshes in the rolling plain on the Northumberland Strait, where farming and cottage-country occur. Hilly deciduous-dominated uplands in the interior send rivers and streams north into the Strait and south into the Bay of Fundy. They encompass some of province's higher elevations outside Cape Breton, particularly in the Cobequid range (to 360m) in Cumberland County. The plain and the upland hills extend through the two counties into Pictou County, where the interior county boundaries lie on lower rounded hills of farmland and upper elevation hardwoods. Bottomland intervals are common. Toward the coast through Pictou and Antigonish counties, scattered limestone and gypsum deposits occur. Coal was mined in western Cumberland County (Springhill, Joggins) and also in north-central Pictou County. The elevations rise again into the steep-sided valleys of mixed conifer-hardwood forests in the Pictou–Antigonish highlands, climbing to 300 meters. Interior uplands reach over 200m and are dominated by hardwoods.

Macrolichen species	Northern				
	Cumberland	Isle Haute	Colchester	Pictou	Antigonish
Ahtiana					
<i>aurescens</i>	●				
Alectoria					
<i>fallacina</i>	●○				
<i>sarmentosa</i>	●●		○		
Anaptychia					
<i>palmulata</i>	●●○		●○	●	○
Anzia					
<i>colpodes</i>			●		
Arctoparmelia					
<i>incurva</i>					○
Baeomyces					
<i>rufus</i>	●○			○	
Bryoria					
<i>capillaris</i>	●		●●●		○
<i>furcellata</i>	●○		●	●	○
<i>fuscescens</i>				○	
<i>implexa</i>			●		
<i>nadvornikiana</i>	○○		○		○
<i>trichodes</i> ssp <i>americana</i>	●●○		●		○
<i>trichodes</i> ssp <i>trichodes</i>	●○		●		○
Candelaria					
<i>concolor</i>	●				
Cetraria					
<i>aculeata</i>					●○
Cetrelia					
<i>chicitae</i>	●●		●●○		
<i>monachorum</i>	●●				
<i>olivetorum</i>	●●		●●○○	○	
Cladonia					
<i>arbuscula</i>	●○○		●●○	●●○	○○
<i>arbuscula</i> ssp <i>mitis</i>			●●		●○○
<i>boryi</i>				●	○
<i>caespiticia</i>	●		●	○	
<i>cariosa</i>					○
<i>carneola</i>			○		
<i>cenotea</i>	●		●		●○
<i>chlorophaea</i>	●		●●●		●●○
<i>coniocraea</i>	●		●●	○	○
<i>conista</i>	●				
<i>cornuta</i> ssp. <i>cornuta</i>	●		●		
<i>crispata</i>	●			●●●○	
<i>cristatella</i>			●●●○	●●○	●○○
<i>deformis</i>			●		
<i>digitata</i>	●				

	Northern				
Macrolichen species	Cumberland	Isle Haute	Colchester	Pictou	Antigonish
<i>farinacea</i>	●				○
<i>fimbriata</i>	●		●		●○
<i>floerkeana</i>			●		
<i>furcata</i>	●●		●○	○	○○
<i>gracilis</i> ssp <i>gracilis</i>			●		●
<i>gracilis</i> ssp <i>turbinata</i>	●○		●	○	●●
<i>gracilis</i> ssp <i>vulnerata</i>			●		
<i>grayi</i>			●		
<i>macilenta</i> var. <i>bacillaris</i>	●				
<i>maxima</i>	●○		●●	●	○
<i>multiformis</i>			●●○	○	●●
<i>norvegica</i>	●		●		
<i>ochrochlora</i>	●		●		○○
<i>oricola</i>	○				
<i>parasitica</i>			●		
<i>phylophora</i>					●○
<i>pleurota</i>	●			●○	
<i>pyxidata</i>					●○
<i>ramulosa</i>			●		
<i>rangiferina</i>	●●○		●●●○	●	●○○
<i>rei</i>			●		●
<i>scabriuscula</i>	●		●	●	●●○
<i>squamosa</i>	●●		●●	○	○
<i>stellaris</i>	●●		●●	●	○
<i>strepsilis</i>					○
<i>stygia</i>	●○				
<i>terrae-novae</i>					○
<i>turgida</i>			●●	○	
<i>uncialis</i>	○		●		○○
<i>verticillata</i>	●●		●●		●○
<i>Collema</i>					
<i>flaccidum</i>			●		
<i>furfureum</i>	●○		●○○		
<i>fuscovirens</i>	●				
<i>leptaleum</i>	●		●	○	
<i>subflaccidum</i>	●●○		●○○	●○○	○
<i>Degelia</i>					
<i>plumbea</i>	●○				
<i>Dendriscocaulon</i>					
<i>intricatum</i>	●				
<i>Dermatocarpon</i>					
<i>luridum</i>			●●		
<i>Dibaeis</i>					
<i>baeomyces</i>	●●		●●●○	●○	○
<i>Evernia</i>					
<i>mesomorpha</i>	●○○				●○
<i>prunastri</i>			○	●○	●

Macrolichen species	Northern				
	Cumberland	Isle Haute	Colchester	Pictou	Antigonish
Everniastrum					
<i>catawbiense</i>	●●○○				
Flavoparmelia					
<i>caperata</i>	●●			○	○
Fuscopannaria					
<i>ahlneri</i>	●				
<i>saubinetii</i>	●				
Heterodermia					
<i>galactophylla</i>			●		
<i>neglecta</i>	●●○				
<i>speciosa</i>	●●○		●	○	
<i>squamulosa</i>	●●				
Hypogymnia					
<i>incurvoides</i>	●●○				○
<i>krogiae</i>	●●		●○	●	○
<i>physodes</i>	●●		●●	○	●○○
<i>tubulosa</i>	●●		●○		○○
<i>vittata</i>	●				
Hypotrachyna					
<i>afrorevoluta</i>	●●○				
<i>revoluta</i>	○		●		
Imshaugia					
<i>aleurites</i>	●●				
Lasallia					
<i>papulosa</i>	○				○
Leptogium					
<i>cyanescens</i>	●●●○		●●●●●○	○	○
<i>imbricatum</i>	●○				
<i>laceroides</i>	●●○○		●○		
<i>lichenoides</i>					●
<i>millegrana</i>			○		
<i>saturninum</i>	●●		○		
<i>subtile</i>	○				
<i>teretiusculum</i>	●				
Lobaria					
<i>pulmonaria</i>	●●●		●●●	●●○○	●○
<i>quercizans</i>	●●		●●●●	●○○	○
<i>scrobiculata</i>	●		●●○	○○	○
Melanelia					
<i>fuliginosa</i>	●●○		●○	○	○
<i>subaurifera</i>	●●○		●●○	●○	●○
Melanohalea					
<i>olivacea</i>	●●		●●	●	
<i>septentrionalis</i>	●		●		
Menegazzia					
<i>subsimilis</i>	●●●				
<i>terebrata</i>	●		●		

	Northern				
Macrolichen species	Cumberland	Isle Haute	Colchester	Pictou	Antigonish
Myelochroa					
aurulenta	••		•		
galbina	•		•••		
Nephroma					
bellum	•○		•○		○
helveticum	••		••		
laevigatum	•			•○○	○
parile	•○		•		•○
Normandina					
pulchella	••○○		○		
Pannaria					
conoplea	••○		•		
rubiginosa	••○			•	
Parmelia					
fertilis	•		••○	•	
saxatilis	••		•		
squarrosa	•••○		••••	•○○	○○
sulcata	•○		•••	•○	•○
Parmeliella					
appalachensis	○				
triptophylla	••○		••○	•○○	○
Parmelinopsis					
minarum	•○				
Parmeliopsis					
capitata	•		○	○	•○
hyperopta	•			•	
Parmotrema					
crinitum	••○		•		
Peltigera					
aphthosa	••		•••••○○		○
canina			•••	○	••
degenii	•••		○		
didactyla	○			•	•
elisabethae	•		•		•○
evansiana	••		•••○○		
horizontalis	••		••	•○	○
hydrothyria	•○		○○		
hymenina	○				
leucophlebia	•○		•	○○	
membranacea	••○○		••	•	•○
neckeri			•○		
neopolydactyla	•○		•		○
polydactylon	••○		•••		
praetextata	•		••		
rufescens					○

	Northern				
Macrolichen species	Cumberland	Isle Haute	Colchester	Pictou	Antigonish
Phaeophyscia					
adiastola	●				
orbicularis					○
pusilloides	●●		●		
rubropulchra	●		●●	○	○
Physcia					
adscendens	●		●●	○	
aipolia	●				○
millegrana	●		○	○	
phaea	○				
stellaris	●●		●●●○	○	○
Physconia					
detersa	●●○		●○○		
grumosa	●●		●○		
Platismatia					
glauca	●●○		●●	○	○
tuckermanii	●●		○	○	○
Protopannaria					
pezizoides	●			●○	●○
Pseudevernia					
cladonia	●				
Pseudocyphellaria					
perpetua	●○		●		
Punctelia					
appalachensis	●●●○		●○		
rudecta	●●○		●●●○	●○	○
Pycnothelia					
papillaria			●	●	
Pyxine					
sorediata	●●○		●●●○○	●	
Racodium					
rupestre	○				
Ramalina					
americana	●●○		●○	○	○
dilacerata	●		○●	○	●
farinacea	●●●○○		●	●○	●○
intermedia	●		●		
obtusata			●○		
roesleri	●●○○	●	●○	●○○	
thrausta	●●○		○		
Sphaerophorus					
globosus	●●○		●●	○	
Stereocaulon					
condensatum				●	
dactyllophyllum	●		●●●	○	
dactyllophyllum var.occidentale			●		

	Northern				
Macrolichen species	Cumberland	Isle Haute	Colchester	Pictou	Antigonish
<i>intermedium</i>					○
<i>paschale</i>			•••		•
<i>pileatum</i>			●	○	
<i>saxatile</i>	●		●		
<i>tomentosum</i>			•••	○	○
Sticta					
<i>fuliginosa</i>	●●○		●●		
<i>limbata</i>	●○				
Tuckermanopsis					
<i>americana</i>	●●		●	●	○
<i>ciliaris</i>	●		○	●	
<i>orbata</i>	●			○	●○
Umbilicaria					
<i>mammulata</i>			●		
<i>muehlenbergii</i>				○	
Usnocetraria					
<i>oakesiana</i>	●●		○		
Usnea					
<i>ceratina</i>	●		●		
<i>chaetophora</i>	●				
<i>cornuta</i>	●		●		○
<i>filipendula</i>	●○		●●		○
<i>flammea</i>	●				
<i>fulvoreagens</i>	●		●		○
<i>glabrata</i>	●				
<i>glabrescens</i>	○				
<i>hirta</i>	●				●
<i>longissima</i>	●		●		
<i>macaronesica</i>	●○				
<i>merrillii</i>	●				
<i>scabrata</i>	●				
<i>schadenbergiana</i>	●				
<i>silesiaca</i>	●				
<i>strigosa</i>	●		○	○	○
<i>subfloridana</i>	●○		●		●○
<i>subscabrosa</i>	●		●		
<i>trichodea</i>	●○		●●		○
Vahliella					
<i>leucophaea</i>	○		○		
Vulpicida					
<i>pinastri</i>	●		●	○	
Xanthoparmelia					
<i>cumberlandia</i>	●				
<i>plittii</i>	○				
Xanthoria					
<i>parietina</i>	●●		●●●○	○	○
<i>polycarpa</i>				○	

Cape Breton Island: Inverness, Victoria, Cape Breton, Richmond counties

Cape Breton Island is the boreal forest region of the province. Linked to the mainland by a causeway since 1955, it contains the province's highest elevations, to just over 500 m in the Highlands, and some of its harshest climate. The establishment of the causeway produced ice free waters on the southeastern side of the causeway with lasting environmental changes as a result.

The coastal fringe ranges from steep cliffs that rise to 100 m out of the sea, to a low-lying plain on the far northern coast. Inverness County includes the Northumberland coast with its warm summer waters and ice-covered winters; Victoria County's coast is exposed on the east to the Cabot Strait. Their interior boundaries bisect the Cape Breton Highlands. In the north, mighty winds, cold temperatures, a short summer and the province's highest precipitation across the high plateau in the Highlands create stunted forest and many bogs and barrens. Deep valleys flow down toward the coasts, forming canyons that fill with fog and have many north-facing walls. Rare arctic-alpine plants have been found on some of the northern plateaus and cliffs (Smith & Erskine 1954). Talus slopes and deciduous forests dominate the valleys. Small population clusters are sparsely scattered around the coast. Off the far northern tip of Cape Breton lies St. Paul Island, where Erskine collected in the 1950s. Nova Scotia Department of Natural Resources staff recently added to lichen species known from St. Paul.

Where the land slopes to the south toward the uplands and lowlands of the Bras d'Or Lake shores, tillable land and habitation increase. Gypsum deposits and karst topography are most frequent south of the Highlands, though on the far northern coast there were substantial quarries, as well as along the Northumberland Strait.

Famous for coal mining, the slightly undulating, poorly drained terrain in Cape Breton County includes higher disturbance than most of the rest of the island. Climate extremes are modified by the Atlantic Ocean and the land mass to the west and north. Large bays and harbours often have rocky barrier beaches. Coastal forests on the east and south are white spruce, while inland black spruce bogs are frequent. Sea cliffs (to 20 m) and exposed headlands occur mostly in the south, along Gabarus Bay, but extend into Richmond County along the Atlantic where in the interior, bogs, swamps and wandering streams are numerous. The sheltered Chedabucto Bay is surrounded on its eastern side with coastal white spruce/balsam fir forests and low drumlins, gravel beaches and salt marshes. One of the province's major pulp mills and biomass power generating stations is located on the eastern flank of the Bay, up the channel toward the Canso causeway.

Macrolichen species	Cape Breton Island				
	Inverness	Victoria	St.Paul I.	Cape Breton	Richmond
Alectoria					
fallacina	●	●			
sarmentosa	●●○	●●	●	●●●	●●○○
Anaptychia					
palmulata		●			
crinalis				●●●●	
Anzia					
colpodes	●				
Arctoparmelia					
centrifuga	●	●●		●	●
incurva	●	●●		●●	●
Baeomyces					
rufus	●	●●●			●
Bryoria					
capillaris	●	●○			
furcellata		●		●	●
fuscescens	●			●●○	
nadvornikiana					○
trichodes ssp americana	●	●		●	●○
trichodes ssp trichodes		●●		●	
Cavernularia					
hultenii				●	
Cetraria					
aculeata	●	●●	●○	●●●	●
islandica ssp crispiformis	●●	●●●		●○	
laevigata				●	
muricata		●●	○	●	
Cetrariella					
delisei		●			
Cetrelia					
chicitae	●	●			
olivetorum	●●●	●		●	●○
Cladonia					
arbuscula	●●●	●●●●	●○	●	●
arbuscula ssp.mitis	●●●	●●●	●●○	●●	
borealis			○	●	
boryi	●●	●●	○	●●●	●
brevis					○
caespiticia	●				
cariosa		●●○		●●	
carneola		●			
cenotea	●	●●●		●	●

Macrolichen species	Cape Breton Island				
	Inverness	Victoria	St.Paul I.	Cape Breton	Richmond
<i>chlorophaea</i>	••	•••	○	•	
<i>coccifera</i>	•	••		•	•
<i>coniocraea</i>		••		•	○
<i>cornuta</i> ssp. <i>cornuta</i>	•	••		•	
<i>cornuta</i> ssp. <i>groenlandica</i>		•			
<i>crispata</i>		••••		••	
<i>cristatella</i>	••	•	•	•	•
<i>deformis</i>		••		••	
<i>digitata</i>	•	•	••	•	•
<i>farinacea</i>		•	•		
<i>fimbriata</i>	•	•		•	•
<i>furcata</i>	•	•	•	•	•
<i>gracilis</i> ssp. <i>gracilis</i>		•••	•	••	
<i>gracilis</i> ssp. <i>elongata</i>			•		
<i>gracilis</i> ssp. <i>turbinata</i>	••	••••		••	
<i>grayi</i>					••
<i>macilenta</i> var. <i>bacillaris</i>		•		•	
<i>macroceras</i>				•	
<i>maxima</i>	•••	••	○	•	•
<i>merochlorophaea</i>					•
<i>multiformis</i>	••○	•••		•	•
<i>ochrochlora</i>	•	•••	○	•	•
<i>oricola</i>			○		
<i>phyllophora</i>	•	•		•	
<i>pleurota</i>	••	••••		•	
<i>pocillum</i>		•		•	
<i>pyxidata</i>	•○	•••		•	
<i>rangiferina</i>	••○	••••	○	••	•
<i>rappii</i>				•	
<i>rei</i>	•○	••		••	•
<i>scabriuscula</i>	•••	•••		•	•••
<i>squamosa</i>	••	•••	○	•	•
<i>stellaris</i>	••	••••	○	••	•
<i>strepsilis</i>	•	••		•	
<i>stygia</i>				•○	•
<i>sulphurina</i>		••			
<i>terrae-novae</i>	••		○	•	•
<i>turgida</i>	••	•	○	••	
<i>uncialis</i>	••	••	•○	•••	••
<i>verticillata</i>	••	•		••	
<i>wainioi</i>	••	••			
Coccocarpia					
<i>palmicola</i>					•○

	Cape Breton Island				
Macrolichen species	Inverness	Victoria	St.Paul I.	Cape Breton	Richmond
Collema					
bachmanianum		●			
crispum		○			
cristatum		●○			
furfuraceum	●	●○		●○	○
leptaleum		●			
subflaccidum	●	●○		●●○	●
Lichina					
confinis				●	
Lobaria					
pulmonaria	●●●	●●●○○	●	●○	●●●○
ouercizans	●●●●	●●○		●○	●●○
scrobiculata	●	●●○		●○	●○
Massalonia					
carnosa		●●●			
Melanelia					
disjuncta	●	●			
hepatizon		●		●	
panniformis	●			●	
sorediata	●				
stygia	●			●	
Melanelia					
fuliginosa	●●	●		●●○	●○
subaurifera	●●	●●●			●
Melanohalea					
olivacea				●	
Menegazzia					
subsimilis					●
Myelochroa					
galbina		●			
Nephroma					
arcticum	●	●●●			
bellum	●	●●●			●○
helveticum					●○
laevigatum	●●●○	●●●○○		○	●○
parile	●●	●			
resupinatum		●●			
Normandina					
pulchella					○
Pannaria					
conoplea					●
rubiginosa	●	●			

	Cape Breton Island				
Macrolichen species	Inverness	Victoria	St.Paul I.	Cape Breton	Richmond
Parmelia					
fertilis				○	
omphalodes	●				
saxatilis	●	●●●	○	●●	
squarrosa	●●	●●	○	●●○	●○○
sulcata	●●	●●●	●●○	●●	●
Parmeliella					
parvula					●
triptophylla	●●●	●●○		●●○	●○
Parmeliopsis					
ambigua	●			●	
capitata	●	●		●	●
hyperopta	●	●			
Peltigera					
aphthosa	●●	●●		●	●○
canina	●	●●			
collina		●			●○
degenii				●	
didactyla	○	●		●	
elisabethae	●	●●●		●	
horizontalis	●●	●		●	
hydrothyria		●●			
hymenina	●			●	●○
leucophlebia	●●	●●●			
malacea				●	
membranacea	●●	●		●○	●
neckeri	●				
neopolydactyla	●●	●●●	●		●
occidentalis			●		
ponojensis		●			
polydactylon	●	●●		●	
praetextata	●●	●		●	●
rufescens		●●●●			●
Phaeophyscia					
adiastola				●	
orbicularis		●			
pusilloides		●●		●	
rubropulchra	●●	●		●○	●○
Physcia					
adscendens	●			●	
aipolia				●	
caesia				●	●
dubia	●	●		●	
millegrana		●			●

	Cape Breton Island				
Macrolichen species	Inverness	Victoria	St.Paul I.	Cape Breton	Richmond
<i>phaea</i>					•
<i>stellaris</i>		•		•	•
<i>subtilis</i>					
<i>tenella</i>				•	
<i>tenella</i> var. <i>marina</i>				••	•
Umbilicaria					
<i>americana</i>		•			
<i>deusta</i>	•	••		•	
<i>hyperborean</i>	•	•		•	
<i>mammulata</i>	•				
<i>muehlenbergii</i>	•	•••		•	
<i>polyphylla</i>		••		•	
<i>vellea</i>	•				
Usnea					
<i>chaetophora</i>					
<i>cornuta</i>				•	••
<i>fibrillose</i>		•			
<i>filipendula</i>	••	••		•	••
<i>fulvoreagens</i>	•	•			
<i>longissima</i>	○			••○	••
<i>scabrata</i>	•	••			
<i>schadenergiana</i>				•	
<i>silesiaca</i>		•		•	••
<i>strigosa</i>	•	•		•	
<i>subfloridana</i>		••		•	•
<i>trichodea</i>		•		•	
Vahliella					
<i>leucophaea</i>	•				
Vulpicida					
<i>pinastri</i>	••	••		•	
Xanthoparmelia					
<i>conspersa</i>	•	•		••	
<i>cumberlandia</i>		•			
<i>plittii</i>	•			•	
<i>viriduloumbrina</i>					•
Xanthoria					
<i>elegans</i>				••	
<i>parietina</i>	•	•		•	•
<i>polycarpa</i>	•	•		••	

Acknowledgements

This checklist would not have been possible without the generous donation of time and support from many lichenologists and herbarium curators. Many of them allowed me to examine the collections in their herbaria and confirmed determinations when those were in question. Several of them identified newly collected specimens that sometimes turned out to be recently described species. Some loaned me Nova Scotia specimens of their own. Any misidentifications or errors in recording are mine, not those who helped me.

My gratitude extends to Ted Ahti, who examined the entire *Cladonia* section at NSPM (and some *Peltigera* specimens); to Ernie Brodo for his time and willingness to work through my questions; and to Curtis Bjork; Stephen Clayden; Philippe Clerc; Ted Esslinger; Trevor Goward; Richard Harris; Jim Hinds; Per Magnus Jørgensen; Elisabeth Lay; James Lendemer; Bruce McCune; Ruth Newell; David Richardson; Mark Seaward; Michaela Schmull; Catherine Sneddon and Matthias Schulz. I thank them all for their help and advice. Additional thanks to Stephen Clayden for manuscript advice and continued encouragement for this project. Thanks also to Troy McMullin for manuscript review. Personal collections are listed above and I thank their collectors for access to their specimens.

And special thanks to Marian Munro, Curator of Botany, Collections Division at the Nova Scotia Museum for supporting this project over the long years it took to come to fruition, to Kim Franklin for her patience in readying this manuscript for viewing and to Laura Bennett for seeing it through the publishing process.

References

- Anderson, F. and Neily, T. New and noteworthy macrolichen records for Nova Scotia. *Evansia* 29(1): 1-3.
- Arup, Ulf. 1994 The Genus *Caloplaca* on Seashore Rocks in Eastern North America. *Bryologist* 97 (4):377-392.
- Brodo, I. M., Sharnoff, S.D. and Sharnoff, S. 2001. Lichens of North America. Yale University Press, New Haven, USA.
- Cameron, Robert 2002. Habitat associations of epiphytic lichens in managed and unmanaged forest stands in Nova Scotia. *Northeastern Naturalist* 9(1): 27-46.
- Cameron, R.P. and Richardson, D.H.S. 2006. Occurrence and abundance of epiphytic cyanolichens in Protected Areas of Nova Scotia, Canada. *Opusculum philolichenum* 3: 5-14.
- Cameron, R.P., F. Anderson, W.S.G. Maass. 2010. Lichens of Scatarie Island Wilderness Area. *Proceedings of the Nova Scotia Institute of Science* 45:69-78.
- Census of Canada. <http://www12.statcan.gc.ca/census-recensement/index-eng.cfm>. Accessed September 2012.
- Clayden, S.R. 2010. Lichens and allied fungi of the Atlantic Maritime Ecozone. In Assessment of Species Diversity in the Atlantic Maritime Ecozone. Edited by D.F. McAlpine and I.M. Smith. NRC Research Press, Ottawa, Canada. Pages 153–178.
- Crowley, M., Beals, L. 2011. Atlantic Coastal Plain Flora in Nova Scotia: Identification & Information Guide. Mersey Tobeatic Research Institute, Nova Scotia.
- Erskine, John 1976. In Forest and Field with John Erskine. Compiled from articles previously published in the Journal of Education. Nova Scotia Museum, Cultural Services Program, Department of Education, Government of Nova Scotia. Pp. 39-43.
- Esslinger, T.L. 2012. A cumulative checklist for the lichen-forming, lichenicolous and allied fungi of the continental United States and Canada [online]. North Dakota State University, Fargo, ND. Available at <http://www.ndsu.edu/pubweb/~esslinge/chcklst/chcklst7.htm> [first posted 1 December 1997; Most Recent Version, (#18) 13 December 2012], Fargo, North Dakota.
- Fernow, B.E and Howe, C.D., White, J.H. 1912. Forest Conditions of Nova Scotia. Published by permission of the Department of Crown Lands, Nova Scotia for the Conservation Commission, Ottawa, Canada.

- Goward, T. *et al.*, 1998. Rare Lichens of Canada: a Review and Provisional Listing. Committee On the Status of Endangered Wildlife In Canada, Canadian Wildlife Service, Environment Canada, Ottawa.
- Hinds, J.W. and Hinds, P.L. 2007. The macrolichens of New England. Memoirs of the New York Botanical Garden 96:xxii, 1-584.
- Lamb, I. M 1954. Lichens of Cape Breton Island, Nova Scotia. National Museums of Canada, Bulletin 132:239-313.
- Maass, W.S.G. 1981. New observations on the distribution and ecology of *Cavernularia hultenii* in eastern North America. Proceedings of the Nova Scotian Institute of Science 31: 193-206.
- Maass, W.S.G. 1983. New Observations on *Erioderma* in North America. Nordic Journal of Botany 3 (5): 567-576.
- Maass, W.S.G. 1997. Botanical surveys in the Cape Chignecto Area of Cumberland County, Nova Scotia. Report to the Nova Scotia Department of Natural Resources, Parks and Recreation Division. 42pp.
- Maass, W.S.G. 1986. *Moelleropsis* (Lecanorales) as a component of *Erioderma* habitats in Atlantic Canada. Proceedings of the Nova Scotian Institute of Science 37:21-36.
- Maass, W.S.G. and B.L. Hoisington. 1986. *Pannaria lurida* in Atlantic Canada. Proceedings of the Nova Scotian Institute of Science 36: 131-135.
- Maass, W.S.G. and Yetman, D. 2002. COSEWIC Assessment and Status Report on the Boreal Felt Lichen, *Erioderma pedicellatum* in Canada. Committee on the Status of Endangered Wildlife in Canada, Ottawa. 50 pp.
- Macoun, J. 1902. Catalogue of Canadian Plants. Geological Survey of Canada, Government Printing Bureau, Ottawa.
- Mackay, Alexander. 1880. Lichens of Nova Scotia. Transactions of the Nova Scotian Institute of Natural Sciences 5:299-307.
- McMullin, R.T. 2009. Lichens of Kejimkujik National Park and National Historic Site, Nova Scotia, Canada (Provisional List). Opuscula Philolichenum 7: 71-78.
- McMullin, R.T. 2012. New and interesting lichens to Kejimkujik National Park and National Historic Site, Nova Scotia, Canada. Opuscula Philolichenum 11: 52-59.
- Mills, Eric L. and L. Laviolette 2011. Birds of Brier Island. Proceedings of the Nova Scotian Institute of Science, Special Issue Part I, vol 46.

Natural History of Nova Scotia, rev. ed. 1996. vols 1 & 2. Davis and Browne, eds. Nova Scotia Museum, Halifax, Nova Scotia.

Neily, T. and Anderson, F. 2010. *Leptogium hibernicum* Mitch. Ex P.M. Jørg. discovered in North America. Lichenologist 42(5): 629-630.

Richardson, D.H.S., Lucas, Z. & Anderson, F. 2009. The lichen flora of Sable Island, Nova Scotia: its past, present and likely future status. Bryologist 112(3): 558-571.

Roland, A. 1980. Lichens, liverworts, mosses, and flowering plants of Kejimkujik National Park. Parks Canada Agency. Maitland Bridge, Nova Scotia. 111 pp.

Scotter, George W. 1966. Arboreal lichens as a food source for caribou in Cape Breton Highlands National Park, with brief notes on terrestrial vegetation. Canadian Wildlife Service, Edmonton, Alberta.

Selva, S. B. and Tibell. L.1999. Lichenized and non-lichenized calicioid fungi from North America. Bryologist 102: 377-397.

Selva, S.B., Edberg, M.P. and M. Selva. 2004. Survey of epiphytic lichens of late successional northern hardwood forests in northern Cape Breton Island. Parks Canada Ecosystem Monitoring and Data Reports, no.8.

Smith, E.C. and J.S. Erskine 1954. Contributions to the Flora of Nova Scotia IV. Rhodora 56: 242-252

Thomson, J. W. 1967. The Lichen genus Cladonia in North America. University of Toronto Press, Toronto, Canada.

Thomson, J.W. 1984. American Arctic Lichens 1.The Macrolichens. Columbia University Press, New York.

Tønsberg, Tor 1993. Additions to the Lichen Flora of North America. Bryologist 96(1): 138-141.

Nova Scotia Macrolichen Checklist

This comprehensive spreadsheet includes 341 macrolichen species arranged alphabetically by genus and species, species authorities, counties arranged alphabetically and a reference specimen for each species which is cited in the last column. Herbarium numbers ending with P are from the Nova Scotia Museum. Other institutional herbarium codes appear in parentheses. Reference specimens from personal collections have no parentheses. Details on numbers of specimens recorded per county or the herbaria/collections where specimens are located are available from the author at museum@gov.ns.ca. Those details are not included for simplicity of viewing and because in many cases, specimen packets contained other species for which there were no county records, but also no listing on the packet. Those specimens might not appear in herbarium databases.

																			Islands								
Macrolichen species in NS	Authorities	Annapolis	Antigonish	Cape Breton	Colchester	Cumberland	Digby	Guysborough	Halifax	Hants	Kings	Inverness	Lunenburg	Pictou	Queens	Richmond	Shelburne	Victoria	Yarmouth	Brier Isl.	Isle Haute	Sable Isl.	Scatarie Isl.	Seal Isl.	St.Paul Isl.	Verification specimen	
Ahtiana										•				•○													
aurescens	(Tuck.) A.Thell & Randlane													•○												Anderson 775 (039431P)	
Alectoria													•○														
fallacina	Motyka												•													Anderson C2 (031706P)	
sarmentosa	(Ach) Ach.	•		•••	○	••	•	○	●	•		•○	•○	●	●	●○○	○	●	●○				•	•	•	Sneddon 442L (012386P)	
Anaptychia																											
palmulata	(Michx.) Vain.	○	○			○○	●○		○○				●○	●	●○○		●	●	○							Richardson (016707P)	
crinalis	(Schaerer) Vézda		••••																							Sneddon 195L (012395P)	
Anzia																											
colpodes	(Ach.) Stizenb.		••○			●		●			●		●○		●○○		●○		●○							LaGreca (016727P)	
Arctoparmelia																											
centrifuga	(I.) Hale	•		●			●					●○○	●●	●	●○○	●●	●	●	●●	●●	●●	●●				Erskine 998 (012410P)	
incurva	(Pers.) Hale		○	●●								○	●○	●		●	●	○	●●	●●						Sneddon 1951L (012416P)	
Baeomyces																											
rufus	(Huds.) Rebent.									●○	●		●●●	●	○	○	●	●	●	●●●						Cameron 97- 034 (022452P)	
Bryoria																											
capillaris	(Ach.) Brodo & Hawksw		○			●●●	●				●		●		●				●○	●						Cameron 192 (031627P)	
furcellata	(Fr.) Brodo & Hawksw.	●	○	●	●	●○	●	●	●●●	●●○	●●	●	●○○	●●	●●○	●●	●●○	●●	●●○							Erskine 56C2782 (012431P)	
fuscescens	(Gyeln.) Brodo & Hawksw.		●●○									●●○		●												Lucas 310 (041294P)	
implexa	(Hoffm.) Brodo & Hawksw.					●																				A.R.Prince (FH 6240)	
nadovnikiana	(Gyeln.) Brodo & Hawksw.	●	○			○○						●○		●○												Anderson T5SL10	
nitidula	(Th. Fr.) Brodo & D. Hawksw																										Taschereau PMT B4 (012439P)
trichodes ssp americana	(Motyka) Brodo & D. Hawksw.	●	○	●	●	●○○	●	●	●●●			●		●○	●	●	●	●	●							Taschereau PMT71-3 (012442P)	
trichodes ssp trichodes	(Motyka) Brodo & D. Hawksw.	●	○	●	●	●○	●	●	●●○	●●			●●○	●●	●●○	●●	●●○	●●	●●○							Brodo 19069 (CANL 37713)	
Candelaria																											
concolor	(Dicks.) Stein									●																Harries (NBM FL-07574)	
Cavernularia																											Maass WM-001 (015448P)
Cetraria																											
aculeata	(Schreb.) Fr.		●○	●●●			●		●●●●		●	●		●	●○○	●●			●●				●○			Erskine 51C1798 (012971P)	
arenaria	Kärnefelt													●●	●			●○								Richardson (16700P)	
islandica ssp crispiformis	Räsänen		○○										●●													Sneddon 1634L (012487P)	
laevigata	Rass		●																								Sneddon 1980L (012497P)
muricata	(Ach.) Eckfeldt		●							○	●●															Lamb 6881(CANL 15764)	
Cetrariella																											
deipsei	(Bory ex Schaer.) Kärnefelt & A.Tibell																		●								Comeau (012496P)
Cetrelia																											
chicitae	(W.L.Cubl.) W.L.Cubl. & C.F.Cubl.									●●○	●●	○	○○	●●●○	●●	●●○	●●	●●○	●●	●●○	●●	●●○					Erskine 1067 (012502P)
monachorum	Zahlbr. Cubl. & C.Cubl.)									●●○	●●															Goward/Clayden (UBC 77-24)	
olivetorum	(Nyl.) W.L.Cubl & C.F.Cubl.	●		●●○	●●	●○	●○	○	●●○	●●●	●○	●○	●●○	●●	●●○	●●	●●○	●●	●●○	●●	●●○	●●	●●○	●●		Erskine 52C2202 (012503P)	
Cladonia																											
albonigra	Brodo & Ahti													○													Taschereau (012763P)
arbuscula	(Wall.) Flotow	●	○○	●	●○	●○○	●○	●	●○○	●○	●	●○○	●○○	●○○	●○○	●○○	●○○	●○○	●○○	●○○	●○○	●○○	●○○	●○○	●○○	Sneddon C1055 (008247P)	
arbuscula ssp.mitis	(Sandst.) Ruoss		●●○	●●										●●○													Sneddon C1056A (012536P)
borealis	S. Stenroos																										Sneddon 1786L (012720P)
boryi	Tuck.		○	●●●						●	●●		●●○	●●●	●●●	●●●	●●●	●●●	●●●	●●●	●●●	●●●	●●●	●●●	●●●	●●●	Richardson (016932P)
brevis	(Sandst.) Sandst.													●													Basquill 3092
caespiticia	(Pers.) Flörke									●	●		●		●		●		●		●		●			Richardson 201 (041312P)	
cariosa	(Ach.) Sprengel	○	●●																								Brodo 19054 (CANL 37710)
carneola	(Fr.) Fr.																										Scoter 4:6225 (CANL)
cenotea	(Ach.) Schaefer		●○	●	●	●				●	●○○		●●●	●●●	●●●	●●●	●●●	●●●	●●●	●●●	●●●	●●●	●●●	●●●	●●●	Taschereau 67-9 (012709P)	
chlorophaea	(Flörke ex Sommerf.) Sprengel		●●○	●●	●●●	●●				●	●●○		●○	●●○	●●○	●●○	●●○	●●○	●●○	●●○	●●○	●●○	●●○	●●○	●●○	Brodo 18875 (CANL 37781)	
coccifera	(L.) Willd.																										Taschereau 6-70PM (012723P)
coniocrea	(Flörke) Sprengel	○	●	●●	●									○	●	●	●	●	●	●	●	●	●	●	●	Macoun (CANL 7193)	
conista	(Nyl.) Robbins																										Anderson C1474 (035195P)
conspicua	(Ahti) Ahti																										Wilson (008223P)
cornuta ssp. cornuta	(L.) Hoffm.																										Nichols 0911 (FH 1909)
cornuta ssp.groenlandica	(E.Dahli) Ahti																										Sneddon 1004L (CBU 1192)
crispata	(Ach.) Flotow	○		●●		●●○	●●	●●○	●●○	●●○	●●○	●●○	●●○	●●○	●●○	●●○	●●○	●●○	●●○	●●○	●●○	●●○	●●○	●●○	●●○	P.Comeau B3 (012736P)	
cristatella	Tuck.	●●	●●○	●●	●●●○	●●●	●●●○	●●●	●●●○	●●●	●●●○	●●●	●●●○	●●●	●●●○	●●●	●●●○	●●●	●●●○	●●●	●●●○	●●●	●●●○	●●●	●●●○	Sneddon 57L (12742P)	
deformis	(L.) Hoffm.		●●○	●●																							Taschereau PMT51-68 (012757P)
digitata	(L.) Hoffm.																										

	Authorities	Annapolis	Antigonish	Cape Breton	Colchester	Cumberland	Digby	Guysborough	Halifax	Hants	Kings	Inverness	Lunenburg	Pictou	Queens	Richmond	Shelburne	Victoria	Yarmouth	Brier Isl.	Isle Haute	Sable Isl.	Scatarie Isl.	Seal Isl.	St.Paul Isl.	Verification specimen	
<i>Macrolichen species in NS</i>																											
<i>depreaultii</i>	Delise ex Nyl.																									Lamb 6811 (CANL 10373)	
<i>glaucescens</i>	Tuck.				•							•														Peterson #14(NBM FL-02601)	
<i>grande</i>	(H. Magn.) H. Magn.					○						○														Lamb 6708 (FH)	
<i>intermedium</i>	(Savicz) H. Magn.																										Lamb 6708 (FH)
<i>paschale</i>	(L.) Hoffm.	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	Lamb 6839 (CANL 10293)	
<i>pileatum</i>	Ach.																										Lamb 6648 (CANL 10409)
<i>saxatile</i>	H. Magn.	•	•	•	•																						Lamb 6795 (CANL 10384)
<i>subcoralloides</i>	(Nyl.) Nyl.																										Harris (NY 1150128)
<i>tomentosum</i>	Fr.		○	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	Lamb 6878 (CANL 10458)	
Sticta																											
<i>fuliginosa</i>	(Hoffm.) Ach.						•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	Macoun (CANL 3398)
<i>limbata</i>	(Sm.) Ach.						•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	Anderson 639 (038998P)
Tuckermanopsis																											
<i>americana</i>	(Sprengel) Hale	•	○	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	Richardson (016722P)	
<i>ciliaris</i>	(Ach.) Gyeinik					•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	Sneddon 105L (012485P)	
<i>orbata</i>	(Nyl.) M. J. Lai		○	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	Sneddon 185L (013610P)	
<i>sepincola</i>	(Ehrh.) Hale		•																							Buck (NY1180017)	
Umbilicaria																											
<i>americana</i>	Poelt & T. H. Nash																										Cameron (023133P)
<i>deusta</i>	(L.) Baumg.		•																								Sneddon 195 (FH)
<i>hyperborea</i>	(Ach.) Hoffm.			•																							Ireland 11920 (CANL 35671)
<i>mammulata</i>	(Ach.) Tuck.	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	Erskine (013629P)	
<i>muehlenbergii</i>	(Ach.) Tuck	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	Macoun 195 (FH)	
<i>polyphylla</i>	(L.) Baumg.		•																								Brodo 19064 (CANL 37701)
<i>polyrhiza</i>	(L.) Fr.																										Richardson (016966P)
<i>vellea</i>	(L.) Hoffm.																										Clayden (NBM FL-07306)
Usnocetraria																											
<i>oakesiana</i>	(Tuck.) A. Thell & Randlane	•			○	•	•																			Anderson C4 (03707P)	
Usnea																											
<i>cavernosa</i>	Tuck.																										Gillett 15683A (CANL 36514)
<i>ceratina</i>	Ach.				•	•																				Anderson 820 (039476P)	
<i>chaetophora</i>	Stirton						•																			Anderson 446	
<i>cornuta s.l.</i>	Körber		○	•	•	•	•	•	•	•	•														Richardson 104 (041237P)		
<i>fibrillosa</i>	Motyka																										Lamb 6814 (CANL 17099)
<i>filipendula</i>	Stirton	•	○	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	Brodo (CANL12192)	
<i>flammea</i>	Stirton																										Anderson 709 (038937P)
<i>flavocardia</i>	Räsänen																										Anderson 1027 (039497P)
<i>fragilescens var. mollis</i>	(Vainio) Clerc																										Casselman (013665P)
<i>fulvoreagens</i>	(Räsänen) Räsänen	•	○	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	Casselman (013666P)	
<i>glabrata</i>	(Ach.) Vainio																										Anderson 779 (039477P)
<i>glabrescens</i>	(Nyl. ex Vainio) Vainio																										Brodo (CANL12196)
<i>hirta</i>	(L.) F. H. Wigg.	•																									Brodo (CANL1203)
<i>longissima</i>	Ach.	•		•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	Erskine 1089 (013668P)	
<i>macaronesica</i>	P. Clerc			•	○	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	Anderson CC725	
<i>merrillii</i>	Motyka																										Anderson 1383
<i>mutabilis</i>	Stirton	•																									Casselman (013669P)
<i>rubicunda</i>	Stirton																										Anderson 1590757 (P)
<i>scabrata</i>	Nyl.																										Macoun (CANL17220)
<i>schadenbergiana</i>	Göpp & Stein	•																									Anderson CC641 (038979P)
<i>silesiaca</i>	Motyka																										Anderson CC493 (038978P)
<i>strigosa</i>	(Ach.) Eaton s. lat.	•	○	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	Sneddon C1323 (013673P)	
<i>subfloridana</i>	Stirton	•	○	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	Cameron (031662P)	
<i>subrubicunda</i>	P. Clerc																										Anderson 131
<i>subscabrosa</i>	Motyka																										Anderson 253
<i>substerilis</i>	Motyka																										Anderson 150378 (P)
<i>trichodea</i>	Ach.	•	○	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	Macoun exic. #38 FH	
VahlIELLA																											
<i>leucophaea</i>	(Vahl) P. M. Jørg	•	○																								Maass 83D-6b
Vulpicida																											
<i>pinastri</i>	(Scop.) J.-E. Mattsson & M. J. Lai	•		•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	G.M. Murphy 130 (CANL6133)	
Xanthoparmelia			</td																								