

Species List for the Purcell's Cove Conservation Lands: 2012 Update

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Photos and GPS Info for the 2012 PCCL Inventory: see

<http://halifaxfieldnaturalists.ca/arnell/inventory2012/index.html>

1. Introduction

The Purcell's Cove Conservation Lands (PCCL) occur as a long strip, approximately 260 m wide, extending from Purcell's Cove Road, over Purcell's Pond to Flat Lake, approximately 1.4 km inland. These lands were donated to the Nova Scotia Nature trust by members of the Field and Napier families in 2003 and 2009, respectively. The Halifax Field Naturalists (HFN) contributed towards initial legal costs and, with the Nova Scotia Nature Trust (NSNT), conducts an annual species inventory of the combined properties. This document is a report on the 2012 inventory which took place August 18th, 2012. The hike was led by Alice Morgan of the Nova Scotia Nature Trust. David Patriquin of HFN coordinated the species inventory, with input and assistance from Bob McDonald and Burkhard Plache, as well as contributions from other of the 14 participants.

The lists of species we have been compiling since 2003 include species encountered over the whole trail from Purcell's Cove Road to Flat Lake. The first section of this trail, between Purcell's Cove Road and Purcell's Pond, lies outside of the PCCL (see Google Earth Map below), but has been included in the past because it was considered likely that it is still representative of what's in the PCCL. (Until the Napier Lands were added in 2008, even a large portion of the trail beyond Purcell's Pond lay outside of the PCCL which then included only the Captain Arnell Lands.)

This year, we decided to restrict our inventory to sections of the trail lying inside the PCCL. Further, to provide some documentation on recovery of vegetation after the "Spryfield Fire" of 2009, we documented plant species for burned and unburned sections of the trail separately. On April 30/May 1, 2009, an intense forest fire "cut a swath though Spryfield, Purcell's Cove and Ferguson's Cove" (Chronicle Herald May 2). A substantial portion of the PCCL was affected, including most of the land from the

high barrens west of Purcell's pond to Flat Lake. The fire had moved in an eastwardly direction from beyond Flat Lake towards Purcell's Pond, but stopped at a low-lying area of wettish forest and wetland well before Purcell's Pond (point D on the Google Earth Map, below). See <http://halifaxfieldnaturalists.ca/arnell/index.html> for some photographic documentation of the post-fire recovery of the vegetation.

2. Methods & Map

These surveys are semi-formal in nature. We simply record species encountered as we walk the trail. Thus what's listed depends, to some extent, on the expertise of the participants. There were 14 participants in total. Four participants had provisional species lists and checked off or added species as they were encountered by themselves or others, noting whether they were in burnt or unburnt sections. The lists for vascular plants were compiled by David Patriquin; Bob McDonald submitted separate lists for Birds, Odes and Leps. Bob McDonald and Burkhard Plache checked the final lists.



Google Map of the area with boundaries of PCCL (data from NSNT) and the trail added. The red path was the route tracked on Aug. 18th, 2012. The unburned sections are those between points A & B, C & D, E & F, G & H and a small wetland adjacent to Flat Lake at point J. The burnt sections are those between points D & E, F & G, H & J. See final page of this report for a larger version of the map.

3. Vascular Plants

NB = Not burned, B = Burned in 2009

Under B (Burnt), an asterisk indicates an unburned section of the trail within the larger burn area

Under Note, “B – by lake” refers to the small wetland adjacent to Flat Lake. The wetland was mostly spared from the fire.

Habit	Species	Common Name	NB	B	Note
Fern/LVP	<i>Dennstaedtia punctilobula</i>	Hay-scented Fern	+		New 2012
Fern/LVP	<i>Dryopteris spinulosa</i>	Wood Fern			
Fern/LVP	<i>Lycopodium obscurum</i>	Tree Clubmoss	+		New 2012
Fern/LVP	<i>Osmunda cinnamomea</i>	Cinnamon Fern	+		
Fern/LVP	<i>Polypodium virginianum</i>	Rock Polypody			
Fern/LVP	<i>Pteridium aquilinum</i>	Bracken	+	+	
Fern/LVP	<i>Thelyptis noveboracensis</i>	New York Fern			
Forb/Herb	<i>Aralia hispida</i>	Bristly Sarsaparilla		+	
Forb/Herb	<i>Aralia nudicaulis</i>	Wild Sarsaparilla	+	+	
Forb/Herb	<i>Arenaria groenlandica</i>	Mountain Sandwort		+	
Forb/Herb	<i>Aster acuminatus</i>	Whorled Wood Aster	+	*	
Forb/Herb	<i>Aster nemoralis</i>	Bog Aster	+		
Forb/Herb	<i>Aster radula</i>	Rough-leaved Aster			
Forb/Herb	<i>Clintonia borealis</i>	Blue-bead Lily	+		
Forb/Herb	<i>Coptis trifolia</i>	Gold-thread	+		
Forb/Herb	<i>Cornus canadensis</i>	Bunchberry	+	+	
Forb/Herb	<i>Cypripedium acaule</i>	Pink Lady's Slipper	+		

Forb/Herb	<i>Drosera roduntifolia</i>	Round-leaved Sundew		+	B - by lake
Forb/Herb	<i>Fragaria virginiana</i>	Common Strawberry			
Forb/Herb	<i>Lechea intermedia</i>	Pinweed		+	New 2012
Forb/Herb	<i>Maianthemum canadense</i>	Wild Lily of the Valley	+		
Forb/Herb	<i>Medeola virginiana</i>	Indian Cucumber Root			
Forb/Herb	<i>Melampyrum lineare</i>	Cow-wheat	+		
Forb/Herb	<i>Mitchella repens</i>	Partridgeberry / Twinberry	+		
Forb/Herb	<i>Monotropa hypopithys</i>	Pinesap			
Forb/Herb	<i>Monotropa uniflora</i>	Indian Pipe			
Forb/Herb	<i>Nuphar variegata</i>	Yellow Pond Lily			
Forb/Herb	<i>Potentilla tridentata</i>	Three-toothed Cinquefoil		+	
Forb/Herb	<i>Sarracenia purpurea</i>	Pitcher Plant	+	+	B by lake & in a depression on the barrens
Forb/Herb	<i>Solidago nemoralis</i>	Oldfield Goldenrod		*	New 2012
Forb/Herb	<i>Solidago puberula</i>	Downy Goldenrod	+	+	
Forb/Herb	<i>Trientalis borealis</i>	Starflower	+		
Graminoid	<i>Eriophorum sp.</i>	White Cotton Grass			
Graminoid	<i>Eriophorum virginicum</i>	Tawny Cotton Grass		+	B by lake
Graminoid	<i>Luzula luzuloides</i>	woodrush		+	
Graminoid	<i>Scirpus cyperinus</i>	Woolrush	+		
Shrub	<i>Alnus crispa</i>	Green alder		*	New 2012
Shrub	<i>Aronia melanocarpa</i>	Black chokeberry		+	New 2012
Shrub	<i>Chamaedaphne calyculata</i>	Leatherleaf	+	+	B- by lake

Shrub	<i>Diervilla lonicera</i>	Bush Honeysuckle			
Shrub	<i>Gaylussacia baccata</i>	Black Huckleberry	+	+	
Shrub	<i>Gaylussacia dumosa</i>	Dwarf Huckleberry			
Shrub	<i>Hamamelis virginiana</i>	Witch-hazel		*	
Shrub	<i>Ilex glabra</i>	Inkberry	+		One site only Cords: 44.603488N 63.577179W
Shrub	<i>Ilex verticillata</i>	Canada Holly	+		New 2012
Shrub	<i>Juniperus communis</i>	Common Juniper			
Shrub	<i>Juniperus horizontalis</i>	Creeping Juniper			
Shrub	<i>Kalmia angustifolia</i>	Sheep Laurel, Lambkill	+	+	
Shrub	<i>Ledum groenlandicum</i>	Labrador Tea	+	+	
Shrub	<i>Myrica gale</i>	Sweet Gale		+	B – by Lake
Shrub	<i>Myrica pennsylvanica</i>	Bayberry	+	+	
Shrub	<i>Nemopanthus mucronata</i>	Mountain Holly	+	+	
Shrub	<i>Prunus sp.</i>	Cherry			
Shrub	<i>Rhododendron canadense</i>	Rhodora	+	+	
Shrub	<i>Rubus sp.</i>	Blackberry			
Shrub	<i>Vaccinium angustifolium</i>	Early Low Blueberry	+	+	
Shrub	<i>Vaccinium myrtilloides</i>	Velvet-leaf Blueberry		+	
Shrub	<i>Viburnum alnifolium</i>	Hobblebush			
Shrub	<i>Viburnum cassinoides</i>	Witherod	+	+	
Subshrub	<i>Corema conradii</i>	Broom- crowberry	+	+	
Subshrub	<i>Epigaea repens</i>	Mayflower	+	+	
Subshrub	<i>Gaultheria procumbens</i>	Wintergreen, Teaberry	+	+	
Subshrub	<i>Hudsonia ericoides</i>	Golden Heather	+	+	

Subshrub	<i>Rubus hispidus</i>	Dewberry	+	*	
Subshrub	<i>Vaccinium macrocarpon</i>	Large Cranberry			
Tree-conif	<i>Abies balsamea</i>	Balsam-Fir	+		
Tree-conif	<i>Larix laricina</i>	Eastern Larch, Tamarack	+	+	B – by lake
Tree-conif	<i>Picea glauca</i>	White Spruce	+	+	B – survivor close to lake
Tree-conif	<i>Picea mariana</i>	Black Spruce	+	+	
Tree-conif	<i>Picea rubens</i>	Red Spruce	+		
Tree-conif	<i>Pinus banksiana</i>	Jack Pine	+	+	
Tree-conif	<i>Pinus strobus</i>	White Pine	+		
Tree-conif	<i>Tsuga canadensis</i>	Hemlock	+		
Tree-decid	<i>Acer pensylvanicum</i>	Striped Maple			
Tree-decid	<i>Acer rubrum</i>	Red Maple	+	+	
Tree-decid	<i>Acer spicatum</i>	Mountain Maple			
Tree-decid	<i>Amelanchier sp.</i>	Shadbush / Indian Pear	+		
Tree-decid	<i>Aronia arbutifolia</i>	Red Chokeberry			
Tree-decid	<i>Betula alleghaniensis</i>	Yellow Birch			
Tree-decid	<i>Betula papyrifera</i>	White Birch		+	
Tree-decid	<i>Betula populifolia</i>	Wire (Grey) Birch	+	+	
Tree-decid	<i>Populus grandidentata</i>	Large-toothed Aspen		+	
Tree-decid	<i>Quercus rubra</i>	Red Oak		+	
Tree-decid	<i>Sorbus americana</i>	Mountain-ash			

ADDITIONAL NOTES 2012

- Lily by Flat Lake possibly *Maianthemum canadense*; to be confirmed
- *Vaccinium vitis-idaea*: possibly by Flat Lake, to be confirmed
- Sedges, rushes, grasses - several species in wet, unburned areas, not Identified
- Mosses, mushrooms: not addressed

**4. Leps and Odes of the NSNT Purcell's Cove Conservation Lands
Compiled by Bob McDonald 2012-08-19**

NB = Not burned, B = Burned in 2009

Butterflies

Red Admiral

White Admiral

Clouded Sulphur

Mourning Cloak

Spring Azure

Summer Azure +2012: NB, B

Cabbage White

Odonates (dragonflies/damselflies)

Ebony Jewelwing

Azure Bluet

Shadow Darner

Brush-tipped Emerald

Emerald sp. +2012: (loc'n not noted)

Chalk-fronted Corporal

Meadowhawk sp. +2012: (loc'n not noted)

Crimson-ringed Whiteface

5. Bird List – Purcell’s Cove Conservation Lands (NSNT)

List compiled by Bob McDonald (bobathome@eastlink.ca)

43 species to date (15 August 2012)

NB = Not burned, B = Burned in 2009

American Black Duck +2012: NB
Ring-necked Duck
Double-crested Cormorant
Osprey +2012: B
Northern Harrier
Broad-winged Hawk
Red-tailed Hawk
Merlin
Greater Yellowlegs
Herring Gull
Mourning Dove +2012: B
Belted Kingfisher
Downy Woodpecker
Hairy Woodpecker
Black-backed Woodpecker
Northern Flicker
Red-eyed Vireo
Least Flycatcher
Grey Jay
Blue Jay
American Crow +2012: NB, B
Common Raven +2012: B
Black-capped Chickadee +2012: NB
Boreal Chickadee
Golden-crowned Kinglet
Swainson’s Thrush
Hermit Thrush
American Robin +2012: NB
Cedar Waxwing
Yellow Warbler (DG)
Chestnut-sided Warbler (DG)
Yellow-rumped Warbler
Black-throated Green Warbler
Palm Warbler
Black-and-White Warbler
Common Yellowthroat +2012: NB
Song Sparrow
White-throated Sparrow +2012: NB

Dark-eyed Junco +2012: NB
Brown-headed Cowbird
Purple Finch
Pine Siskin
American Goldfinch

6. Other Vertebrates 2012

Garter snake +NB
Cotyote scat +B

7. Lichens

In 2012, we did not attempt to make a comprehensive list for lichens. This list was compiled on October 18, 2009 by Frances Anderson, and applies to the whole trail.

MACROLICHENS	NB	B	NOTES
<i>Arctoparmelia centrifuga</i>			
<i>Arctoparmelia incurva</i>			– new record for HRM
<i>Bryoria furcellata</i>			
<i>Bryoria fuscescens</i>			
<i>Cladonia cf. borealis</i>			–If confirmed, it would be new record for HRM
<i>Cladonia boryi</i>			
<i>Cladonia chlorophaea</i>			
<i>Cladonia coniocraea</i>			
<i>Cladonia crispata</i>			
<i>Cladonia cristatella</i>			
<i>Cladonia incrassata</i>			– new record for HRM
<i>Cladonia macilenta</i> var. <i>bacillaris</i>			
<i>Cladonia maxima</i>			
<i>Cladonia pleurota</i>			
<i>Cladonia rangiferina</i>			
<i>Cladonia squamosa</i>			
<i>Cladonia stellaris</i>			
<i>Cladonia strepsilis</i>			
<i>Cladonia uncialis</i>			
<i>Evernia mesopmorpha</i>			
<i>Hypogymnia incurvodes</i>			
<i>Hypogymnia physodes</i>			
<i>Hypogymnia tubulosa</i>			
<i>Imshaugia aleurites</i>			
<i>Imshaugia placarodia</i>			
<i>Lasallia papulosa</i>			
<i>Melanelia disjuncta</i>			
<i>Melanelia panniformis</i>			
<i>Parmelia saxatilis</i>			
<i>Parmelia squarrosa</i>			
<i>Parmelia sulcata</i>			
<i>Platismatia glauca</i>			
<i>Platismatia tuckermanii</i>			
<i>Stereocaulon saxatile</i>			
<i>Tuckermannopsis orbata</i>			
<i>Umbilcaria muehlenbergii</i>			
<i>Usnea filipendula</i>			
<i>Usnea subfloridana</i>			

<i>Usnea strigosa</i>			
<i>Xanthoparmelia conspersa</i>			
<i>Xanthoparmelia cumberlandia</i>			
<u>CRUSTOSE</u>			
<i>Acarospora fuscata</i>			
<i>Aspicilia</i> sp.			
<i>Fuscidea</i> sp.			
<i>Loxospora ochrophea</i>			
<i>Placynthiella uliginosa</i>			
<i>Porpidia</i> sp.			
<i>Rhizocarpon geographicum</i>			
<i>Rhizocarpon</i> sp.			

8. Comments on vegetation in 2012

Thirty species of vascular plants were observed only in the unburnt sections of the trail, ten only in burnt sections, and twenty-one in both sections:

Vascular Plants observed in only unburnt sections of the trail in 2012

	Species	Common Name
1.	<i>Abies balsamea</i>	Balsam-Fir
2.	<i>Alnus crispa</i>	Green alder
3.	<i>Amelanchier sp.</i>	Shadbush / Indian Pear
4.	<i>Aster acuminatus</i>	Whorled Wood Aster
5.	<i>Aster nemoralis</i>	Bog Aster
6.	<i>Chamaedaphne calyculata</i>	Leatherleaf
7.	<i>Clintonia borealis</i>	Blue-bead Lily
8.	<i>Coptis trifolia</i>	Gold-thread
9.	<i>Cypripedium acaule</i>	Pink Lady's Slipper
10.	<i>Dennstaedtia punctilobula</i>	Hay-scented Fern
11.	<i>Drosera rotundifolia</i>	Round-leaved Sundew
12.	<i>Eriophorum virginicum</i>	Tawny Cotton Grass
13.	<i>Hamamelis virginiana</i>	Witch-hazel
14.	<i>Ilex glabra</i>	Inkberry
15.	<i>Ilex verticillata</i>	Canada Holly
16.	<i>Larix laricina</i>	Eastern Larch, Tamarack
17.	<i>Lycopodium obscurum</i>	Tree Clubmoss
18.	<i>Maianthemum canadense</i>	Wild Lily of the Valley
19.	<i>Melampyrum lineare</i>	Cow-wheat
20.	<i>Mitchella repens</i>	Partridgeberry
21.	<i>Myrica gale</i>	Sweet Gale
22.	<i>Osmunda cinnamomea</i>	Cinnamon Fern
23.	<i>Picea glauca</i>	White Spruce
24.	<i>Picea rubens</i>	Red Spruce
25.	<i>Pinus strobus</i>	White Pine
26.	<i>Rubus hispidus</i>	Dewberry
27.	<i>Scirpus cyperinus</i>	Woolrush
28.	<i>Solidago nemoralis</i>	Oldfield Goldenrod
29.	<i>Trientalis borealis</i>	Starflower
30.	<i>Tsuga canadensis</i>	Hemlock

Vascular Plants observed only in only burnt sections of the trail in 2012

	Species	Common Name
1	<i>Aralia hispida</i>	Bristly Sarsaparilla
2	<i>Arenaria groenlandica</i>	Mountain Sandwort
3	<i>Aronia melanocarpa</i>	Black chokeberry
4	<i>Betula papyrifera</i>	White Birch
5	<i>Lechea intermedia</i>	Pinweed
6	<i>Luzula luzuloides</i>	Woodrush
7	<i>Populus grandidentata</i>	Large-toothed Aspen
8	<i>Potentilla tridentata</i>	Three-toothed Cinquefoil
9	<i>Quercus rubra</i>	Red Oak
10	<i>Vaccinium myrtilloides</i>	Velvet-leaf Blueberry

Vascular Plants observed in both unburnt & burnt sections of the trail in 2012

	Species	Common name
1	<i>Acer rubrum</i>	Red Maple
2	<i>Aralia nudicaulis</i>	Wild Sarsaparilla
3	<i>Betula populifolia</i>	Wire Birch
4	<i>Corema conradii</i>	Broom-crowberry
5	<i>Cornus Canadensis</i>	Bunchberry
6	<i>Epigaea repens</i>	Mayflower
7	<i>Gaultheria procumbens</i>	Wintergreen, Teaberry
8	<i>Gaylussacia baccata</i>	Black Huckleberry
9	<i>Hudsonia ericoides</i>	Golden Heather
10	<i>Kalmia angustifolia</i>	Sheep Laurel, Lambkill
11	<i>Ledum groenlandicum</i>	Labrador Tea
12	<i>Myrica pensylvanica</i>	Bayberry
13	<i>Nemopanthus mucronata</i>	Mountain Holly
14	<i>Picea mariana</i>	Black Spruce
15	<i>Pinus banksiana</i>	Jack Pine
16	<i>Pteridium aquilinum</i>	Bracken
17	<i>Rhododendron canadense</i>	Rhodora
18	<i>Sarracenia purpurea</i>	Pitcher Plant
19	<i>Solidago puberula</i>	Downy Goldenrod
20	<i>Vaccinium angustifolium</i>	Early Low Blueberry
21	<i>Viburnum cassinoides</i>	Witherod

Of the ten species observed only in burnt sections, Bristly Sarsaparilla is typically a transient, early successional, post-disturbance species and could well be restricted to the burnt sections, possibly the same is true for Pinweed. It is likely that the others occur also in unburnt areas. Many of the 31 species observed in the burnt sections have some adaptations to recurrent fire (e.g. Jack Pine, Black Huckleberry) and/or are typical early successional species. The oak sighting referred to a seedling which could have been transported in as an acorn after the fire. Downy Goldenrod is not noted as an early successional species but is commonly cited as a species occurring in dry sandy soils, outcrops etc. and it may also have come in after the fire rather than survived it in situ.

We noted only one small patch of Pinweed. Interestingly, in a hike the following week between Williams and Colpitt Lake, large patches of pinweed were seen in barrens areas that had burnt over in the spring of 2012.

Fifteen of the species sighted in the burnt sections in 2012 were observed regenerating within months of the fire in 2009 (HFN Field Trip report for Aug 21, 2009):

Vascular Plants observed in burnt sections on June 25, 2009

	Species	Common Name
1	<i>Betula populifolia</i>	Birch, Grey
2	<i>Pteridium aquilinum</i>	Bracken Fern
3	<i>Cornus canadensis</i>	Bunchberry
4	<i>Ilex verticillata</i>	Canada Holly
5	<i>Gaylussacia baccata</i>	Huckleberry
6	<i>Populus grandidentata</i>	Large-tooth aspen
7	<i>Vaccinium angustifolium</i>	Lowbush Blueberry
8	<i>Nemopanthus mucronatus</i>	Mountain Holly
9	<i>Panicum lanuginosum</i>	<i>Panic-grass</i>
10	<i>Cypripedium acaule</i>	Pink Lady's-slipper
11	<i>Sarracenia purpurea</i>	Pitcher Plant
12	<i>Acer rubrum</i>	Red Maple
13	<i>Rhododendron canadense</i>	Rhodora
14	<i>Trientalis borealis</i>	Starflower
15	<i>Gaultheria procumbens</i>	Teaberry
16	<i>Aralia nudicaulis</i>	Wild Sarsaparilla
17	<i>Scirpus cyperinus</i>	Woolrush

The two species on the list above that were not noted in burnt sections in 2012, Woolrush and Panic-grass, are both graminoids. The 2009 observations of these species were of seedlings and were not conclusive. We were not looking critically at graminoids during the August 2012 inventory, so really, we cannot say much about their presence or absence in 2012. The pitcher plants observed in 2009 were in a small boggy area within a larger burnt barrens area; the surface sphagnum had burnt (photo at <http://halifaxfieldnaturalists.ca/arnell/june25/kPitcher.jpg>). In 2012 they were again observed in such areas as well as in the small wetland by Flat Lake.

The summer of 2012 was exceptionally hot and dry June through August. There were large patches of vegetation on some of the drier barrens areas that appeared to be totally dried out and dead; Lowbush Blueberry and Golden Heather were notably affected; also some Jack Pine and seedlings and Pinweed.

Many of the 30 species observed only in unburnt sections of the trail are wetland species or species not generally associated with landscapes where there are frequent fires.

The plant species on the entire list (Section 2, above) that were not checked off for 2012 are mostly species that occur on the trail between Purcell's Cove Road and Purcell's Pond. In that section, the trail goes alongside, across, or close to the stream draining Purcell's Pond, also it goes through areas there is some accumulation of till and through steep

embankments leading down to the stream. Moisture-loving, and species characteristic of older forests such as Witch Hazel, Striped Maple and Yellow Birch are common in that area, but are largely absent from the trail beyond the bottom of Purcell's Pond.

It is suggested that in future, some effort should be made to document species in unburned areas not close to the trail but lying within the PCCL, with some note being made of the location and habitats involved. In the meantime, the entire list could be maintained as a Provisional List of Species.

We should note that we do not have any observations for mosses and mushrooms, and that sedges, rushes and grasses have not been critically documented. We are also lacking data for most insects, amphibians and small mammals. However, the lists as they stand still provide a basis for characterizing the habitats and for monitoring changes.

ADDENDUM: LARGER VERSION OF THE GOOGLE MAP

