

S P R I N G 2 0 1 9

FIELD BOTANISTS OF ONTARIO

NEWSLETTER

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President's Message

Ontario's plants will soon start to bloom, which means FBO field trips will soon be starting again. This year, we have another diverse program. Sites that we will be visiting include Goodrich-Loomis Conservation Area, Nature Conservancy of Canada's Camden East Alvar property, and Silver Creek and Strathroy Conservation Areas. Trip themes include mosses, liverworts, spring ephemerals, sedges, alvar specialists, and more. The complete list of trips will soon be on our new website: <https://www.fieldbotanistsofontario.com/>

Thanks to the efforts of Tristan Knight, Mary Anne Young, and Jessica Consiglio, you will now be able to register for trips and pay memberships fees on our website. We have been testing the new system and it is now ready to go, but if you have any suggestions for ways to improve our new way of doing things please let us know.

Our 2019 annual general meeting will be in Oshawa on September 21/22. More details will be available soon.

As we prepare for another season of field botanizing, I reflect on the generosity that makes the FBO possible. We are a volunteer organisation and I gratefully acknowledge the time and expertise from the board members, trip leaders, trip report writers, authors of other newsletter articles, those that share their knowledge and enthusiasm on field trips, and those that attend the AGM and provide important feedback. I look forward to another successful field season.

Yours in the Outdoors,

Troy

On the cover: Top: Forested valley in Port Burwell. Photo: Chris Zoladeski. Bottom: John Semple receives the Goldie Award from Dan Westerhof. Photo: Bill McIlveen.

Sidebar artwork: Field Horsetail (*Equisetum arvense*).

Trip location maps generated using NatGeo Mapmaker software.

The suggested standard source for scientific and common names is the Database of Vascular Plants of Canada (VASCAN): (<http://data.canadensys.net/vscan/search>).

Field Botanists of Ontario website: www.trentu.ca/fbo

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Annual memberships are \$20.00 for individuals and \$25.00 for families. Membership forms can be found on the FBO website above.

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(FBO) is a non-profit organization founded in 1984 for those interested in botany and conservation in Ontario.

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Editor's Note

For the most eager and curious, in these dying days of winter, here is a job for you, as prescribed by Bill McIlveen: when you get hold of this issue read his article first, be inspired, and head out to the woods in search of "evergreens" - but defined somewhat differently. It is indeed astounding that so many not truly evergreen species actually do remain green in winter, whether under the blanket of snow or fully exposed.

But, only very limited botany can be done when sub-zero temperatures prevent all plant growth. Our seasons are spring, summer and fall. The warmer the better. And the more southern the richer. Like Port Burwell or Ipperwash Dunes - both locations, one at Lake Erie the other at Lake Huron, teeming with rare species. Our contributors, Dave Jolly and Sean Spisani, provide comprehensive accounts of these locales.

The most recent Goldie Award was presented to John Semple of the University of Waterloo, the authority on asters and goldenrods. Congratulations again on behalf of the FBO.

Enjoy the issue.

Chris Zoladeski

In Port Burwell Provincial Park

12 August, 2018

By Dave Jolly

with contributions from Chris Zoladeski

The FBO field trip on August 12, 2018 began with an introduction to the area, the history of the Park and the Discovery program provided by Park staff. A park's Discovery Guide gave a history of the local area, in particular the surveying work by Mahlon Burwell (1783-1846) from whom the town and the park derive their names.

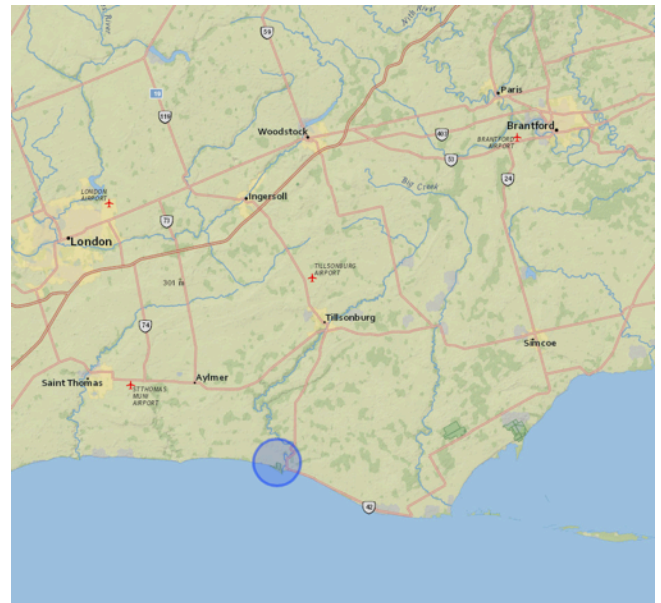
Trip leader, Dave Jolly's described previous studies conducted in the Park for example research on insect pollinators in Common Hop-tree (*Ptelea trifoliata*). Two-hundred-and-thirty-three Hop-trees were surveyed in 2016, consisting of 20 to 30 mature shrubs and over 50 seedlings, which were reported to the Natural Heritage Information Centre (NHIC) (Earthquest 2017a).

The other vegetation survey was that of Klinkenberg (1984) while in 2001 a team of volunteers from Germany, Japan, and Belgium worked on the park's flora but, unfortunately, that survey was interrupted by the 9/11 event and only 155 species were documented.

In May, 2016 a full Ecological Land Classification (ELC) and vegetation survey for Ontario Parks was conducted. A total of 424 species, 5 hybrids, 4 varieties, and 4 sub-species of vascular plants were documented. Of these, 120 (29%) were introduced, exotic, or invasive. Three Species at Risk (SAR), 4 species of conservation concern (i.e., provincially rare S1-S3 ranked), 20 regionally rare species within the Carolinian

Forest Region (Earthquest 2017b, Oldham 2017), and 25 locally rare species within Elgin County (Earthquest 2017a) were documented.

After examining a couple of planted SAR trees such as American Chestnut (*Castanea dentata*) and Kentucky Coffee-tree (*Gymnocladus dioica*) field trip participants ventured through upland Maple-Beech Carolinian deciduous forest. Numerous species were spotted and identified along the trail, including Indian Tobacco (*Lobelia inflata*), Great Blue Lobelia (*Lobelia siphilitica*), Common Helleborine (*Epipactis helleborine*), Blue-stemmed Goldenrod (*Solidago caesia*), Fringed Loosestrife (*Lysimachia ciliata*), Tall Meadow-rue (*Thalictrum pubescens*) and Rough Sedge (*Carex scabrata*). At the base of the valley slopes grew several ferns, like Lady Fern



(*Athyrium filix-femina*), New York Fern (*Dryopteris noveboracensis*), Sensitive Fern (*Onoclea sensibilis*) and Ostrich Fern (*Matteuccia struthiopteris*) plus a small patch of May Apple (*Podophyllum peltatum*), now with its fully mature fruits.

Farther along the trail we saw Canada Horse-balm (*Collinsonia canadensis*) - Dave explained that this is the only member of the mint family that has a round stem. Of interest was the discovery of an S4 species - Swan's Sedge (*Carex swanii*) in an open area where dead White Ash (*Fraxinus americana*) trees



Dave Jolly faces the trip participants. Photo: C. Zoladeski.

were cut down; the count of the rings on one of the stumps revealed their age of about 75 years.

After lunch we explored the Lake Erie dune ecosystem, a provincially rare habitat.

The sand dune habitat was created through succession as wind and wave action swept sand over the landscape. Subsequently, at least two well defined series of ridges were formed advancing northward. Little Bluestem (*Schizachyrium scoparium*) with a small sporadic population of American Beach Grass (*Ammophila breviligulata*) growing mostly on the first ridge, which is the younger of the two. The older, stabilized ridges have a cover of Switch Grass (*Panicum virgatum*) and Scouring-rush (*Equisetum hyemale*). It was there that we saw the rare (ranking S2?) and inconspicuous Hooker's Bugseed (*Corispermum hookeri*). Dave explained that according to the 2016 tally there were over 1,550 mature plants scattered over the area. Of significance, there are only 13 other locations in the province where Hooker's Bugseed is known to occur, according to the NHIC (Earthquest 2017b).

Two colonies of American Beach Grass make their home on the southern inter-dune ridge adjacent to the public beach area known as the "Dog Park". This species is the focus of efforts to restore the embryo sand dune ridges immediately north of the public beach to attract SAR fauna such as the endangered Piping Plover (*Charadrius melodus*), last observed several years ago.

Another project involves controlling the spread of Common (European) Reed (*Phragmites australis* ssp. *australis*), particularly into sensitive wetland areas known to harbour SAR reptiles such as Blanding's Turtle (*Emydoidea blandingii*).

In between the two dune ridges are seasonally wet swales covered with Variegated Scouring-rush (*Equisetum variegatum*) with wetland plants such as Carolina Grass-of-parnassus (*Parnassia glauca*) and the occasional Andrews' Bottle Gentian (*Gentiana andrewsii*) (VASCAN 2018). Just when we were leaving the dunes the group spotted a clump of Shrubby False Indigo (*Amorpha fruticosa*), possibly native to Pelee Island but adventive at Port Burwell.

To finish off the day, we drove west for a short distance to see a few other rare plants: Swamp Wood-betony (*Pedicularis lanceolata*), Canada Buffalo-berry (*Shepherdia canadensis*), Common Hop-tree and False Dragonhead (*Phytostegia virginiana*). Our trip culminated with a group photo and, for some lucky ones, with a visit to a local ice cream parlour.



Explorers of Lake Erie dunes. Photo: D. Jolly.

All in all, of special interest to participants, were the number of graminoids that were added to the official master plant list. Graminoids tend to be under-represented on provincial park plant lists. Thankfully, there were several trip participants who were able to lend a hand with graminoid identification. Courtesy of Will Van Hemessen, Don Campbell and Rivka Shachak 10 new species of grasses, sedges and rushes were discovered during the trip.



Port Burwell botanists. Photo: K. Stephenson.



Hooker's Bugseed. Photo: D. Jolly.

Collectively, field trip participants contributed to adding 26 new vascular plants to the master Port Burwell Provincial Park list, which brought the official list to 450 species. ✱

The field trip to Port Burwell Provincial Park was dedicated to memory of my wife – Janice Barnett-Jolly, a double lung transplant recipient who passed away only four days later, on August 16, 2018. It was because of her support and encouragement that I pursued my passion to become an Ecologist and Botanist. It was an honour to share my life with Jan as she nurtured me into the Ecologist/Botanist I am today.

References:

Database of Vascular Plants of Canada. 2018. Website: <http://data.canadensys.net/vscan/search?lang=en> [accessed December 30, 2018]

Earthquest. 2017a. Unpublished Common Hoptree data extracted from the Plants of Ontario database. Website: www.earthquestcanada.ca

Earthquest. 2017b. Vegetation Surveys and Ecological Land Classification of Port Burwell Provincial Park. Unpublished manuscript prepared for Ontario Parks, London, Ontario. 61 p.

Klinkenberg, R. 1984. A Reconnaissance Life Science Inventory of Iroquois Beach Provincial Park. Ontario Ministry of Natural Resources, Southwestern Region, London. OFER 8402. iv + 34 pp. + appendices + maps.

Oldham, M.J. 2017. List of the Vascular Plants of Ontario's Carolinian Zone (Ecoregion 7E). Carolinian Canada and Ontario Ministry of Natural Resources and Forestry. Peterborough, Ontario. 132 p.

Hardy Lake and Torrance Barrens

16 September, 2017

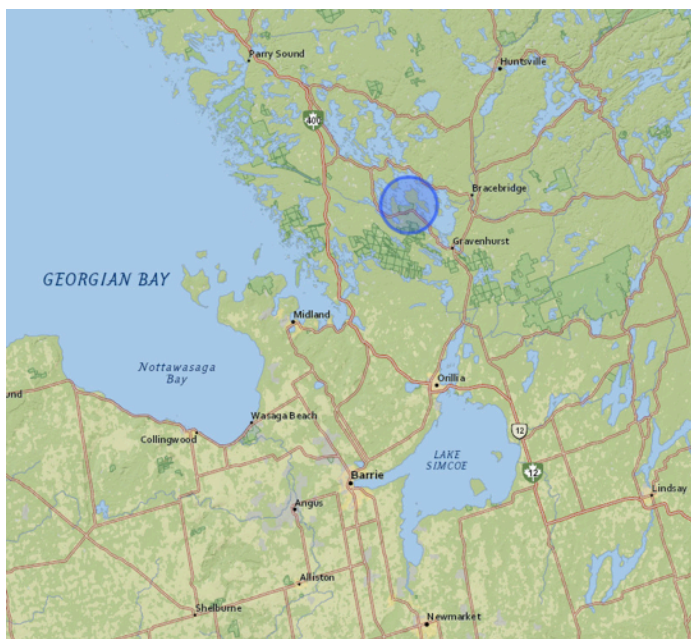
By Tyler Miller

Nineteen people rendezvoused with trip leader George Bryant on September 16, 2017 for a great two-site Field Botanists of Ontario outing. George began the morning with an overview of some of the common in-flower asters (*Symphotrichum* spp.) of the Muskoka.

After a short carpool ride we started at our first site of the day, Hardy Lake Provincial Park. George explained that a family named Davis



Rattlesnake-plantain. Photo: T. Knight.



preserved the old growth forest that surrounds the lake during the 1890s Muskoka's clear-cutting days and later transferred the property to the Ontario Provincial Parks. While navigating the trails along the lake's wetland and through the Eastern Hemlock (*Tsuga canadensis*), American Beech (*Fagus grandifolia*), Sugar Maple (*Acer saccharum*), Red and White Oak (*Quercus rubra*, *Q. alba*) dominated forest we observed many interesting species including: Downy Rattlesnake-plantain (*Goodyera pubescens*), Cut-leaved Grapefern (*Sceptridium dissectum*), Spinulose Wood Fern - Evergreen Wood Fern hybrid (*Dryopteris x triploidea*), Bog Aster (*Oclemena nemoralis*) and yellow eyed grass (*Xyris difformis*). George also noted that 42 Atlantic coastal plants are known to the area including, Lance Leaved Violet (*Viola lanceolata*) and Virginia Meadow-beauty (*Rhexia virginica*) both of which were observed at the site.

During the afternoon we visited the well-regarded Torrance Barrens and meandered the glacial scoured shallow to bare soiled granite rock out crops and wetland ecosystem. Some of the observed plant highlights included: Virginia Chain-fern (*Anchistea virginica*, formerly *Woodwardia virginica*), Three-toothed Cinquefoil (*Sibbaldiopsis tridentata*), Bristly Blackberry (*Rubus setosus*), and Pipewort (*Eriocaulon aquaticum*). All in all, George Bryant provided a worthwhile trip, thanks again George. ✱

Amongst Ipperwash Dunes and Swales

1 September, 2018

By Sean Spisani

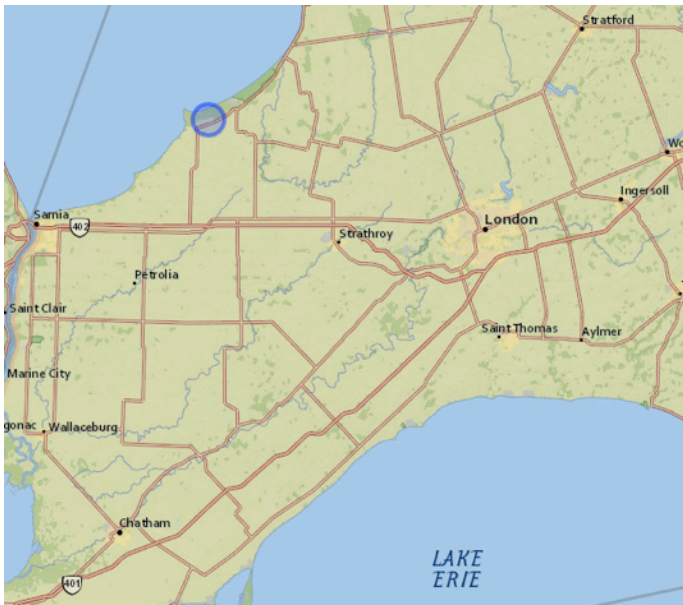
Field trip attendees met at the entrance to the Ipperwash Dunes & Swales natural area (the Site) on the morning of September 1, 2017. It was a humid day, with temperatures that reached 29°C by mid-afternoon, near the end of the trip.

The Ipperwash Dunes & Swales is a 56-ha natural area located in Lambton Shores. It is part of the Port Franks Dunes & Wetlands Complex Area of Natural & Scientific Interest that extends from Port Franks in the east to Kettle Point in the west. The area is also designated nationally as an Important Bird and Biodiversity Area. The Site is owned in part by the Nature Conservancy of Canada and the province of Ontario and is managed as nature reserve. It includes a network of trails that are accessible to the public.



Stopping in a Red Pine plantation. Photo: S. Spisani.

Walter Muma was our knowledgeable and passionate field trip leader for the day. He kicked off the walk with a physical description of Site, including the alternating sand dune and swale landforms that parallel the Lake Huron shoreline, located approximately 400 m to the north. The Ipperwash sand dunes were formed by glacial Lake Algonquin



and extend inland from Lake Huron for more than 2-km (Chapman and Putnam 1984). The varied topography, aspect, texture, drainage and moisture conditions of the dunes provide for a diversity of vegetation communities.

The group examined the Site from the trails, with a few exceptions to explore interesting microhabitats or flora species that were spotted from afar. Most of the effort was spent observing flora in the woodland dune habitats, with less time spent on the wetland boardwalk trails, which were largely single-track. Flora nomenclature in this report follows VASCAN (2010+).

The dunes included open woodland (35-60% tree canopy cover) and forest (>60% canopy) habitats with various combinations of Red Oak (*Quercus rubra*), Black Oak (*Q. velutina*), Red Maple (*Acer rubrum*), White Birch (*Betula papyrifera*), Tulip Tree (*Liriodendron tulipifera*), Red Pine (*Pinus resinosa*) and White Pine (*P. strobus*). The swales included lowland forest, swamp and marsh habitats. Common lowland forest and swamp trees included Red Ash (*Fraxinus pennsylvanica*), Black Ash (*F. nigra*), Red Maple, Eastern White Cedar (*Thuja occidentalis*), and Eastern Hemlock (*Tsuga canadensis*).

Marshes that were observed included varying degrees of shrubs, forbs and graminoids. Dominant species in the

graminoid marshes included Cattail (*Typha* sp.) and Burreed (*Sparganium* sp.).

Red Pine occurred commonly in the woodland canopy; however, this species is outside its native range at this location (Farrar 1995) and is a remnant of historical plantations that likely occurred throughout the Site. In many instances it was observed as a component of mixed deciduous woodlands and was blended with other canopy species. In other instances, Red Pine persisted as a dominant canopy tree in clearly planted rows. A single Jack Pine (*P. banksiana*) was also observed on the Site and it has a similar



Flooded White Cedar swamp. Photo: S. Spisani.



Burreed shallow marsh. Photo: S. Spisani.



Autumn Coralroot. Photo: D. Campbell.

plantation origin as Red Pine. The group noted anecdotally that Pine plantations often occurred on sandy sites and may have displaced native prairie, savannah and open woodland habitats.

The author compiled a list of 181 vascular plants, including 171 of plants identified to species and ten that were only identifiable to genus at the time of the trip. Noteworthy vascular plants included sixteen provincially rare and highly conservative species (Table 1). For this report, provincially rare plants are species ranked as S1 (extremely rare), S2 (very rare), or S3 (rare) by the MNRF (2018), and highly conservative species are those with a coefficient of conservative (cc) value of 8 or higher according to Newmaster *et al.* (1998). Species with a high cc value have a high fidelity to specific habitats and are relatively intolerant of disturbance. Species with high cc values that were observed but presumed introduced to the Site are excluded from Table 1, for example Red Pine, Jack Pine, and Grey-Headed Prairie Coneflower (*Ratibida pinnata*). All of the provincially rare and highly conservative species were associated with woodland habitats, which is likely a result of the relatively low occurrence of sand dune habitats in Ontario, and the relatively high effort spent observing species in these areas of the Site.

Wildflowers that were noteworthy because they were observed in full anthesis (and only identifiable using floral characters in some cases) included White Rattlesnakeroot (*Nabalus albus*), Small-flowered Evening Primrose (*Oenothera parviflora*), Sneezeweed

(*Helenium autumnale*), and Cardinal Flower (*Lobelia cardinalis*). Timing was also favorable for identification of plants in the *Asteraceae* family, and the group spent some time examining Goldenrods (*Solidago* sp.) and Asters (e.g. *Symphyotrichum* sp.).

Several species observed were not identifiable because they were either sterile or too far past anthesis, including many in the *Poaceae*, *Cyperaceae* and *Juncaceae* families.

Eleven of the species identified are considered exotic in Ontario; however, weedy areas such as the parking lot and trailhead were generally not documented. Invasive non-native plants included Spotted Knapweed (*Centaurea stoebe* ssp. *micranthos*), Common Barberry (*Berberis vulgaris*), European Black Alder (*Alnus glutinosa*), White Mulberry (*Morus alba*), Glossy Buckthorn (*Frangula alnus*) and European Reed (*Phragmites australis* ssp. *australis*).

Trip attendees also noted a variety of interesting non-botanical organisms including an impressive Russell's Bolete (*Frostiella russellii*) and a few other showy mushrooms; however, the highlight was a large (~ 75 cm long) Eastern Hog-nosed Snake (*Heterodon platirhinos*) with bright yellow coloration between dark black blotches.

We are grateful to Walter Muma for coordinating and leading the field trip at this very interesting site. All trip attendees contributed observations and deserve credit for the species records contained in this report. ✱

References

- [VASCAN] Brouillet L, Desmet P, Coursol F, Meades SJ, Favreau M, Anions M, Bélisle P, Gendreau C, Shorthouse D, and contributors (2010+). Database of Vascular Plants of Canada (VASCAN). Online at <http://data.canadensys.net/vascan> and <http://www.gbif.org/dataset/3f8a1297-3259-4700-91fc-acc4170b27ce>, released on 2010-12-10. Version [xx]. GBIF key: 3f8a1297-3259-4700-91fc-acc4170b27ce. Data paper ID: doi: <http://doi.org/10.3897/phytokeys.25.3100> [last accessed April, 2016].
- Chapman, L.J., and Putnam, D.F. 1984. The Physiography of Southern Ontario. Ontario Geological Survey, Special Volume 2. 270 pp.
- Farrar, J.L. 1995. Trees in Canada. Fitzhenry & Whiteside Ltd. and the Canadian Forest Service, Natural Resources Canada. 502 pp.
- [MNRF] Ontario Ministry of Natural Resources and Forestry. 2018. Ontario Vascular Plants. Online at from <https://www.ontario.ca/page/get-natural-heritage-information>. [last accessed April, 2016].
- Newmaster, S. G., A. Lehela, Peter W. C. Uhlig, Sean McMurray and Michael J. Oldham. 1998. Ontario Plant List. Forest Research Information Paper No. 123, Ontario Forest Research Institute, Ontario Ministry of Natural Resources, Sault Ste. Marie, Ontario.

Table 1. Provincially rare and highly conservative species observed.

Family	Scientific Name	Common Name	Coefficient of Conservatism	Provincial Status
Anacardiaceae	<i>Rhus aromatica</i> var. <i>aromatica</i>	Fragrant Sumac	8	S5
Apocynaceae	<i>Asclepias tuberosa</i> var. <i>interior</i>	Butterfly Milkweed	8	S4
Asteraceae	<i>Liatris cylindracea</i>	Slender Blazing-star	10	S3
Cannabaceae	<i>Celtis tenuifolia</i>	Dwarf Hackberry	10	S2
Caryophyllaceae	<i>Sabulina michauxii</i>	Michaux's stitchwort	8	S5
Ericaceae	<i>Arctostaphylos uva-ursi</i>	Common Bearberry	8	S5
Ericaceae	<i>Chimaphila umbellata</i> ssp. <i>umbellata</i>	Common Pipsissewa	8	S5
Ericaceae	<i>Gaylussacia baccata</i>	Black Huckleberry	8	S4
Fagaceae	<i>Quercus muehlenbergii</i>	Chinquapin Oak	9	S4
Fagaceae	<i>Quercus velutina</i>	Black Oak	8	S4
Magnoliaceae	<i>Liriodendron tulipifera</i>	Tulip Tree	8	S4
Rubiaceae	<i>Galium pilosum</i> var. <i>pilosum</i>	Hairy Bedstraw	9	S3
Asparagaceae	<i>Polygonatum pubescens</i>	Hairy Solomon's Seal	8	S5
Orchidaceae	<i>Corallorhiza odontorhiza</i>	Autumn Coralroot	8	S2
Poaceae	<i>Sporobolus rigidus</i> var. <i>magnus</i>	Great Lakes Sandreed	10	S3
Poaceae	<i>Sorghastrum nutans</i>	Yellow Indiangrass	8	S4

Evergreens in Winter

By W.D. McIlveen

When one hears the term ‘evergreen’, the first picture that usually comes to mind is coniferous trees – the pines, spruces, cedars, firs, and so on (of course, in our wisdom, we botanists exclude the larches which are deciduous). But while the majority of conifers do remain green throughout the winter, the foliage is retained for a few years before being shed. Therefore, it may be more appropriate to refer to them as ‘temporarily’ green, but such nit-picking is unlikely change the well-ingrained name.

If we should have the opportunity to visit a woodlot or some other natural area at the close of winter, we can see that the evergreen nature of the vegetation is much more extensive than we might have initially have surmised. On one such situation this past winter, I was

in a forest tract where the snow had recently all but disappeared. The scenery was dominated by large leafless trees, limestone boulders, and leaf litter covering the ground. I could easily image many people thinking that the scene was somewhat desolate without a full compliment of tree leaves and wild flowers. I could also imagine the application of the old ‘glass half full’ meme to the situation. The more optimistic component of such viewers could understand that the woods were merely resting, but full of promise for an upcoming year of active growth. At this time, the tree buds were mostly still tightly closed and shoots buds of others were hidden beneath the leaf litter. But a quick look could soon provide many clues to justify the more optimistic take on the situation.

When the snow does depart, there is already a large amount of green present. The amount of green plant matter is dependent upon the number of boulders and rocky outcrops present. That green is largely due to the myriad of mosses, which particularly drape over the upper surfaces of the rock. Mosses and liverworts can be quite abundant on the trunks of trees as well. They are more common at the base of a tree and diminish in abundance with height above ground. A testimony of the tolerance to winter conditions is the fact that some moss species will produce their sporophytes through the snow but obviously such low-growing species can only do this effectively when the snow depth is not great.



Figure 1. *Anemone acutiloba*. Britton Tract 2018 02 26.

Another group of plants of substantial size individually is the ferns. Not all ferns remain green throughout the winter. The fronds of some species remain green for about a year while others are deciduous and die back to ground level during the winter months. Of those that remain green all year, the Christmas Fern (*Polystichum acrostichoides*) is probably the most characteristic of the evergreen group. Others in the same genus are Northern Holly Fern (*Polystichum lonchitis*) and Braun’s Holly Fern (*Polystichum braunii*). Walking-fern Spleenwort (*Asplenium rhizophyllum*) and Rock Polypody (*Polypodium virginianum*) by virtue of their



Figure 2. *Oenothera biennis* rosette. Rockwood C.A. 2018 03 04.

tendency to grow on top of boulders might never get covered by snow and therefore remain exposed to the elements throughout the winter. Others in the former genus include Hart's-tongue Fern (*Asplenium scolopendrium* var. *americanum*), Maidenhair Spleenwort (*Asplenium trichomanes*) and Green Spleenwort (*Asplenium trichomanes-ramosum*). The others that stay green under the snow include several species of *Dryopteris* and their many hybrids.

Several small shrubs and vines remain green all year. These include the native Common Bearberry (*Arctostaphylos uva-ursi*) and Creeping Snowberry (*Gaultheria hispidula*) and Eastern Teaberry or Wintergreen (*Gaultheria procumbens*). Non-native evergreens such as English Ivy (*Hedera helix*) and Climbing Euonymus (*Euonymus fortunei*) have been blamed for displacing the *Gaultheria* species in some US states. The native Trailing Arbutus (*Epigaea repens*) retains green leaves below the snow although they may have large brown 'winter-worn' patches. Other Ericaceous species including Labrador Tea (*Rhododendron groenlandicum*), Laurels (*Kalmia* sp.), Bog Rosemary (*Andromeda*) and Leatherleaf (*Chamaedaphne*) as well as Black Crowberry (*Empetrum nigrum*) are

as listed as evergreens. The non-native Privets (*Ligustrum* sp.) may maintain green leaves where they occur on older wood. Cotonasters (*Cotoneaster* sp.), which occasionally escape from cultivation, also retain their green leaves.

Among the herbaceous plants, there is little value in remaining green through the winter in the case of annual species. This can be quite a different matter when the species is a winter annual, a biennial, or perennial. Retaining green photosynthetic foliage can be highly beneficial in allowing the plant to get a quick start in the spring.



Figure 3. *Veronica officinalis*. Hilton Falls.

Plants that get that quick start can take advantage of the warm sunny period after the snow melts and before the tree canopy develops because such plants do not need to consume important time and resources to produce their own foliage within that short window of time. They are ready to utilize the light immediately.

During the February visits to a few local forest sites, there were a number of herbaceous plant species that were green - which prompted the preparation of this article. They included numerous sedge and grass species that were green, at least at the base, but mostly could not be identified. The green basal tissues were a very common feature in the graminoid species. The green native herbs included Wild Leek (*Allium tricoccum*), Sharp-lobed Hepatica (*Anemone acutiloba*) (Fig. 1), Smooth Wild Strawberry (*Fragaria virginiana*), Bedstraw sp. (*Galium* sp.), Yellow Avens (*Geum aleppicum*), Common Evening-primrose (*Oenothera biennis*) (Fig. 2), Buttercup (*Ranunculus*), and Violet (*Viola*). The green non-native group was somewhat larger. That list included Garlic Mustard (*Alliaria petiolata*), Narrow-leaved Bittercress (*Cardamine impatiens*), Greater Celandine (*Chelidonium majus*), Canada Thistle (*Cirsium arvense*), Herb-Robert (*Geranium robertianum*), Dame's Rocket (*Hesperis matronalis*), Common St. John's-wort (*Hypericum perforatum*), English Plantain (*Plantago lanceolata*), Common Self-heal (*Prunella vulgaris*), Common Dandelion (*Taraxacum*



Figure 4. *Populus tremuloides*. Chlorophyll zone in bark. Campbellville Road, 2003.



Figure 5. *Rosa multiflora* stem. Rattray Marsh. 2018 02 28.

officinale), Common Mullein (*Verbascum thapsus*), and Common Speedwell (*Veronica officinalis*) (Fig. 3).

The ease with which this list was compiled is an indication that a rather large number of plants have adopted the wintergreen habit. While the green character was quite obvious, some species showed necrotic tissues that were likely caused by low temperatures. Others such as the Evening-primrose showed a red or purplish colour. This colour is frequently seen in seedling that are stressed by cold or phosphorus deficiency, conditions that are often inter-related.

Many trees and shrubs may lose their foliage over winter yet they retain some capacity for performing photosynthesis. This is because they also have chlorophyll in their near-surface tissues of their twigs. Poplars, for example, have a notable layer of green tissues just below a transparent surface layer (Fig. 4) that protects the photosynthetic tissue. Older bark does not have such physiological capacity. While relatively little photosynthesis is likely to take place during the

winter, this capability pays dividends to the plant should it lose all of its foliage during a caterpillar infestation. The sugars produced in the twigs can greatly aid the plant's production of a second flush of leaves to replace those lost to the insects. Certain species may have other colours of pigmentation but some such as Euonymus and Rose species are green all year (Fig. 5). ✱

2018 John Goldie Award

W.D. McIlveen

On September 8, 2018, the FBO held their AGM at the Orillia Museum of Art and History. A highlight of that meeting was the presentation of the 12th John Goldie Award to John Semple from the University of Waterloo. Virtually everyone that claims to practice field botany in Ontario, will be familiar with John's guides to the asters and goldenrods in the province published by the University of

Waterloo. Before he joined the University in 1974, John had completed his Bachelor of Science (BSc) at Tufts University. He then went on to complete his Master of Arts (MA) and Doctor of Philosophy (PhD) (1972) at Washington University St. Louis. Here he learned the principles and methods of plant taxonomy using Texas Sleepy Daisy (*Xanthisma texanum*) as his study species. That experience in morphological analysis and cytogenetic set him on a course where extended his studies to other members of the aster family. All of his early work predated the arrival of DNA sequencing. Presently John is presently Professor Emeritus and Adjunct Professor at the University.



Over his career, John has produced many scientific publications and papers all leading to an update of the taxonomy and nomenclature of the aster family. In addition to the guides to the asters and goldenrods of Ontario, he contributed portions of the book *Systematics, Evolution, and Biogeography of Compositae* edited by V. A Funk, A Susanna, T. F. Steussy, and R. J Bayer. He prepared the chapter on the *Solidago* for the *Flora of North America* as well as the chapter dealing with the asters in the genus *Symphyotrichum*. He contributed his drawings and guidance in a book on the asters, goldenrods and fleabanes of Bruce and Grey Counties published by Owen Sound Field Naturalists.

In recognition of the contributions made by his wife Brenda, he named one of the goldenrods *Solidago brendiae*. He prepared a lab manual for the study of plants by university classes. He provides guest lectures to many naturalist groups. In the case of FBO, he led field trips and workshops to Norfolk County in 1993 and Waterloo in 2007. The Field Botanists of Ontario are therefore pleased to acknowledge the very valuable contributions made by John Semple by recognizing his efforts in the form of the 2018 John Goldie Award. ✱

Clive Edmund Goodwin, obituary

Although better known to Ontario naturalists for his contributions to ornithology and bird watching in Ontario, Clive Goodwin was also an excellent field botanist and had diverse natural history interests including butterflies and dragonflies. Clive was born in Yorkshire, England, in 1929, moved to Toronto in 1949 and passed away at the age of 89 on 16 August 2018.

Clive published several books, received several prestigious awards, and did a great deal to advance conservation in Ontario. He was Executive Director of the Conservation Council of Ontario from 1965 to 1977, was awarded the Doris Huestis Speirs Award by the Society of Canadian Ornithologists in 2009, and the Distinguished Ornithologist Award by the Ontario Field Ornithologists in 2014.

After retiring and moving to Cobourg, Northumberland County, with his wife Joy in 1990, Clive began compiling a list of vascular plants of the county in 1997. Clive and Joy spent many field days driving the county's road network and stopping at various places to document roadside plants and those in adjacent natural areas. He contacted me at the Natural Heritage Information Centre (NHIC) for assistance with plant identification and for several years at the end of each field season he would drive to Peterborough with a pile of pressed specimens, some of which are preserved in the NHIC herbarium. Clive was a keen observer and his plant identifications were almost always correct. His Northumberland County botanical survey was largely complete by 2001 and he compiled an online "List of the Vascular Plants of Northumberland County, Ontario" (<http://www.willowbeachfieldnaturalists.org/assets/bird-assets/downloads/Plants.pdf>).

Perhaps due to his British background, Clive was particularly interested in exotic plants (which are mostly European) and many of the plants he collected were rare weeds. One of his finds, in April 2004 from a municipal campground in Cobourg, was Bur Buttercup (*Ranunculus testiculatus*), a species not reported from anywhere in eastern Canada, but correctly identified by Clive. A few days earlier Sean Blaney had found the same species as a weed in the campground at Long Point Provincial Park. Clive, Sean, and I collaborated on an article reporting the species new to eastern Canada (Canadian Field-Naturalist 120(3): 319-322).

Clive Goodwin made a significant contribution to natural history and conservation in Ontario and will be greatly missed.

Michael J. Oldham