

*Prince
Edward
County*

*2022 PECFN
BIOBLITZ*

*Macaulay
Mountain
Conservation
Area*

*... AND
HISTORICAL
INFORMATION*

*S.M. McKay-Kuja et al.
17-18 June 2022*

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A major source document

This document includes the 17-18 June 2022 BioBlitz report as well as information and records from other years and seasons in a series of Appendices. Thus, the reader is alerted to the fact that information on a particular species or subject may be available in different parts of this document. We intend this to serve as a major and relatively complete source for planning and management.

Front cover: Four-leaved Milkweed, 17 June 2022 at Macaulay Mountain Conservation Area. This is one of only three localities known in Canada for this very rare and endangered species. The other two localities are also in Prince Edward County suggesting the special significance of The County for native flora and fauna. Despite its significance on a national scale, The County continues to lose natural landscapes. It has become a major priority for protection and enlightened planning aimed at minimizing biodiversity loss. Photo by J. Lowry.

Back cover: Seine netting during aquatic survey on 17 June 2022 at Macaulay Mtn. C.A. pond. Les Stanfield on far right. Interested observers watch from the shore. Photo by M. Lauer.

N.B. Photographs in this report were taken at the study site during the BioBlitz unless otherwise indicated. Any errors or omissions in the report are solely the responsibility of the first author.

Prince Edward County, Macaulay Mountain Conservation Area, 2022 PECFN BIOBLITZ ... AND HISTORICAL INFORMATION

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On behalf of the Prince Edward County Field Naturalists and sponsors



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INTRODUCTION

The Prince Edward County Field Naturalists (PECFN) sponsored their eighth annual BioBlitz on 17-18 June 2022, two blustery but sunny days, at Macaulay Mountain Conservation Area in association with the Prince Edward Point Bird Observatory (PEPtBO), Quinte Conservation (QC), the South Shore Joint Initiative (SSJI), Quinte Field Naturalists (QFN) and the Nature Conservancy of Canada (NCC).

This area is owned and managed by Quinte Conservation which in 2022 was celebrating its 75th Anniversary providing an excellent opportunity for PECFN and the other organizations to highlight and showcase the biodiversity of this exceptional natural area.

This was the first PECFN BioBlitz not sited on the South Shore of The County, but this area was chosen as an appropriate location to celebrate QC's 75 years of Conservation since it is the largest Conservation Area in The County and at one time housed the headquarters of the Prince Edward County Conservation Authority, which eventually formed part of Quinte Conservation.

Methods and Objectives:

The objective of this 24-hour bioblitz was to conduct a biological survey, including both experts and non-experts, to document the flora and fauna of this area and give members of the community an opportunity to investigate and discover for themselves the natural values of this area. The Conservation Area was designated as a research project site in iNaturalist by QC and any photographs taken there, or entered as occurring there, were automatically deposited with all the other records for that site in iNaturalist. A representative from Naturehood was present on both days to engage young naturalists in activities related to nature.

Participants were provided with an information package including maps to the area and various plant communities identified within the area, as well as record sheets to list the species they observed. The sheets could be handed in at the end of the day, or data sent directly to iNaturalist.

Location:

Macaulay Mountain Conservation Area is located south east of Picton along County Road #8. It is bounded on the north by Country Road #8; on the south by Prince Edward Heights and Kingsley Rd.; on the east by Clarke's Road; and on the west by the Macaulay Heritage Park and Museum. Specifically, it occupies Lots 21, 22, 1, 2 and part of 3 in Concession 1 southeast of Carrying Place. In total it covers 440 acres (178 ha). It is named after the late William Macaulay, the son of a United Empire Loyalist, who donated much of the land where Picton is now located.

The co-ordinates of the parking lot close to Co. Rd. 8: 44.005089, -77/125323. The centre of the area is approximately found at 44.001226, -77.121486.

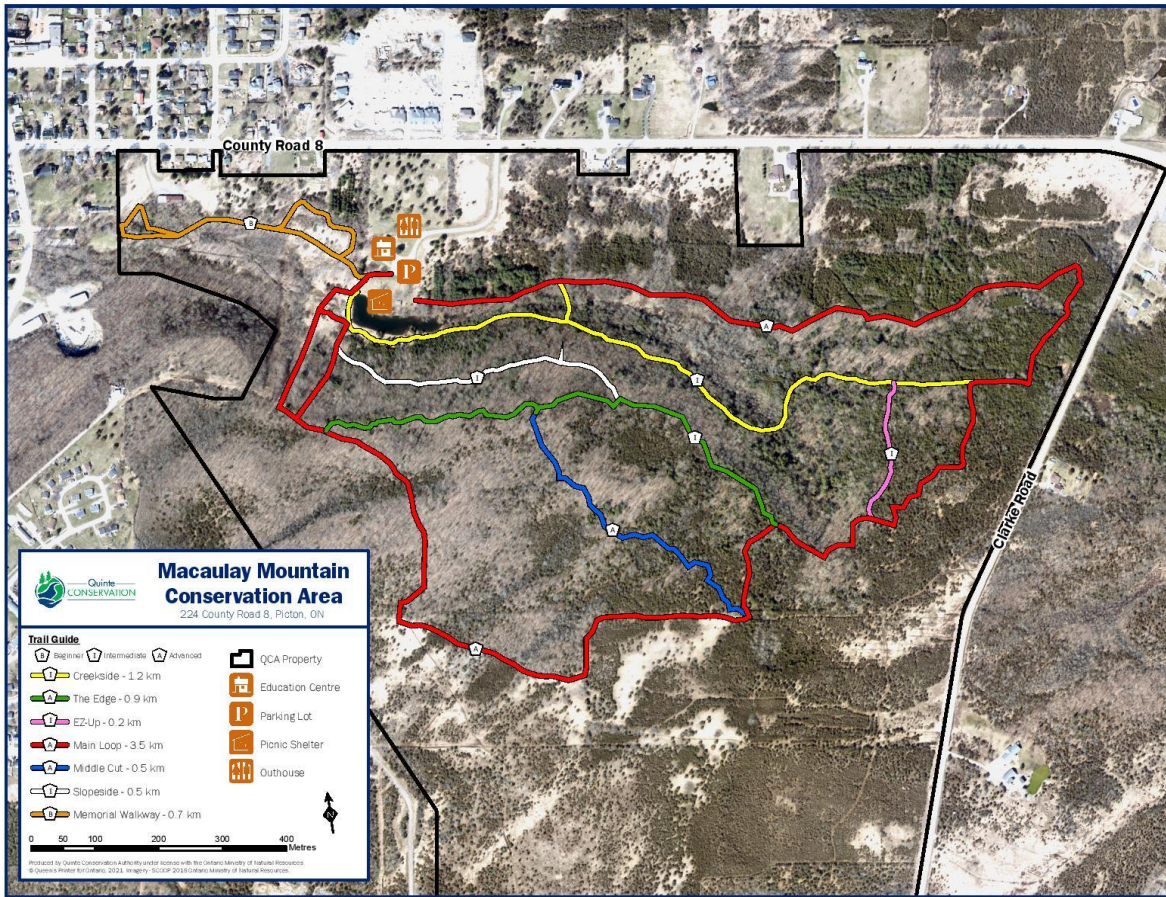


Figure 1. Quinte Conservation's map of trails within Macaulay Mountain Conservation Area (available digitally on Avenza maps). Additional QC maps can be found in Appendix 4.

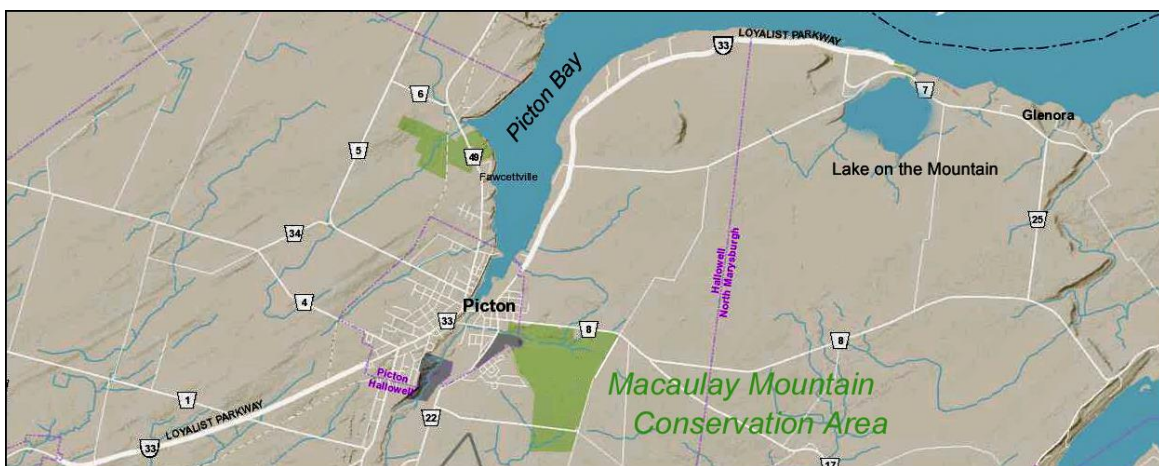


Figure 2. Location map for Macaulay Mtn. Conservation Area (E. of Picton, S. of Picton Bay)

The Site: History by Terry Sprague

Terry Sprague has kindly provided information about the history of the site from articles he had written while working for Prince Edward Region Conservation Authority (later QC). The site is named in honour of William Macaulay, the son of a United Empire Loyalist, who in 1803 received a Crown grant of land in the Picton Bay area consisting of 162 hectares. William Macaulay financed the first St. Mary Magdalene Church *circa* 1825, and donated land for the District Courthouse and Gaol. The resulting settlement of Picton, integrated with the adjacent community of Hallowell, was incorporated as the Town of Picton in 1837.

In 1970, the land for the Macaulay Mountain Conservation Area was purchased by the Prince Edward Region Conservation Authority. Today the first St. Mary Magdalene Church is the Prince Edward County Museum. Macaulay House, once the residence of the late Rev. Macaulay, portrays life in the 1850s much as it was when William Macaulay and his family farmed the land. Together, they form the Macaulay Heritage Park in cooperation with the County of Prince Edward.

The land that is today the Macaulay Mountain Conservation Area had been used for farming and pastureland. All areas but the escarpment, which possessed a steep gradient, were suitable for such agricultural purposes. Upon formal acquisition in 1973, the site was in a more or less natural state. It wasn't long before trails were cut for a downhill ski area and access roads and parking areas were developed. Also in 1973, construction of the Recreation and Education building began, which is today the Administration Office. The structure was officially opened June 8, 1974. The final development in the year of acquisition was the construction of an earthen dam at the base of the ski hill to provision the pond located there.

Remnants of an old barn foundation can be seen near the present location of the maintenance workshop on the western border of the conservation area. Construction of the workshop spanned two years and was completed in 1975.

A bog located at the base of the ski hill became an area of concern in 1976. A culvert was constructed to channel and divert water at the base of the escarpment.

The mountain has provided the setting for numerous recreational pursuits over the years. From downhill skiing and tobogganing in the winter to hiking, biking and picnicking in the warmer months, Macaulay Mountain has always been popular with outdoor enthusiasts. In the past, hang-gliding and horseback riding were also frequent practices. The mountain did not open for skiing in the 1975-1976 winter season due to lack of snow, however, downhill skiing took place every season with the exception of that winter until the late 1970s.

The Administrative building was supposed to double (and likely did for a time) as a recreational centre in the basement to accommodate the down hill skiing and perhaps a few other winter events as the slope was extremely popular for family groups tobogganing, when upwards of 100-200 people would use the slope.

From 1974 until 1980, Summer Work Employment Experience Program (S.W.E.E.P.) crews and Experience crews cleared 8 km of trails, built lookout platforms along the escarpment, and erected

cedar walkways along the trails. In addition, trail signs and a picnic shelter near the pond were built by summer crews during the same time period.

The trails at Macaulay Mountain were laid out by Doug Harnes who worked as conservation area superintendent back when the area was first purchased. There were only about 12 km of them including those up on the plateau. The Bloomfield Bicycle group was given permission to use these trails back in the 1980s, in exchange for routine maintenance of the trails.

Final additions to the main building occurred in 1989 when public washrooms, a kitchen, a covered interpretive display area and a front wooden walkway were constructed to enhance the structure.

For a number of years, the Macaulay Pond was stocked with Rainbow Trout which provided visitors to the area with unique angling opportunities. Stocking was funded by both the Ministry of Natural Resources and the Conservation Authority, however today the pond is no longer stocked due to funding restraints.

Previous studies: A biological inventory was conducted in 1993 by students Ron Bunt and Julie Helpard, as an Environmental Youth Corps program, from June to September, supervised by Terry Sprague when he was employed at the site. Terry has allowed us to reproduce the results in Appendix 1 of the present report. It is interesting to compare present day observations to those made almost 30 years ago.

QC had previously (2017) established Macaulay Mountain Conservation Area as an iNaturalist project site where observations could be logged, allowing participants to enter their observations for the site. It was thus possible to compile a list for the site which incorporated data from all seasons over several years to provide a broader description of this site (Appendix 2).

Miscellaneous observations during past years are also catalogued in Appendix 3, with observers and dates identified, to provide as complete a data base as possible for the site.

Habitats: There are three very different landforms present: 1) the spectacular east-west escarpment which is about 60 to 75 m in height; 2) the lowland, which is very wet in spots, following an intermittent stream and 3) the plateau on top of the escarpment with areas of exposed limestone which can be wet in spring and very dry by midsummer.

Included within these landforms are a number of habitats, with conditions ranging from very wet to very dry. There are open areas, e.g. meadows around the entrance to the Conservation Area, and alvar on the tableland above the escarpment, as well as deciduous, mixed and coniferous forests. The pond, marshland around it and the stream flowing into and then southward from it provide interesting wetland habitats.

An artificial pond (Figure 3) is a biodiversity gem in the southwestern area accessed directly from the parking lot. This pond (approx..2660 m²) is shallow with dense stands of Muskgrass (*Chara* sp.), Greater Bladderwort (*Utricularia vulgaris* spp. *macrohiza*), with Reed Canarygrass (*Phalaris arundinacea*), Slender Spikerush (*Eleocharis tenuis*) and Horsetail species (*Equisetum* spp.). It supported three fish species and abundant aquatic life including unusual dragonflies for the County, as well as ten amphibians and reptiles.

The area was divided into several zones for ease of locating where species were found during the BioBlitz. The trail system was used to track these locations, identifying the lower Red trail as **Area A**, the Yellow trail as **Area B**, the ascending trails as **Area C** – indicating their colour; and the upper Red trail as **Area D**. On the plateau, **Area E** is on the park or trail side of Kingsley Rd. and **Area F** is on the far side of Kingsley Rd.



Figure 3. The artificial pond at Macaulay Mountain Conservation Area has an unusual diversity of flora and fauna including ten species of reptiles and amphibians. Photo by P.M. Catling.

ACKNOWLEDGEMENTS

The participation of the BioBlitz committee, other PECFN members, other organizations, leaders, and all who took part in the event, are gratefully acknowledged and most appreciated.

The event was organized by the PECFN BioBlitz Committee: Amy Bodman, Helen Fearman, Cheryl Anderson, and Sheila McKay-Kuja. Peter Fuller also contributed from afar. The help of Quinte Conservation (QC) staff, and especially that of Maya Navrot and Robert Ormston, was very important and much appreciated. QC provided parking passes for participants, and sent maps of the C.A. (see Appendix 4). They also advertised the event on their website. Two staff acted as leaders on Friday. Thanks are extended to Mary Gunning at QC for identifying the aquatic invertebrates and allowing us to borrow a QC seine net (see back cover).

Terry Sprague, Prince Edward Point Bird Observatory and South Shore Joint Initiative also graciously provided advertising on their websites for the event. Thanks are extended to Sheila Mathers of the PEC local radio station (99.3 FM), for highlighting the event with an interview describing it. Many thanks also to Helen Fearman for arranging advertisements in local newspapers and on County Live. Gerry Jenkison is thanked for maintaining the PECFN facebook page for the BioBlitz and keeping the website updated with the latest information about it.

Special thanks are extended to Terry Sprague for sharing his knowledge, and the extensive materials he provided on the site history and species of the area (see Intro and Appendix 1).

We are indebted to our group of fine leaders who participated in the BioBlitz: Amanda Tracey from Nature Conservancy Canada led a botanical walk, with her two interns, as well as John Foster, a PECFN member. Tim Trustham from QC was leader for a botanical hike on the top of the plateau while Robert Ormston, also from QC, led a popular butterfly walk with David Bree. As mentioned, Les Stanfield headed up the aquatic team surveying the pond and stream. Tom Mason “wore many hats” on both days, helping Les and Robert with their studies and documenting many other insects, amphibians, reptiles and mammals in his forays throughout the conservation area. On Friday evening Jessica Daze, a bander from the Prince Edward Point Bird Observatory, took a small group to look for birds on the far side of Kingsley Rd. while Paul Jones led an early morning bird walk for a group of dedicated birders plotting a course through as many different habitats as possible on the red and yellow trails. Ewa Bednarczuk and Peter Christie were leaders later on Saturday morning, investigating the pond and woodland life, discovering red-backed salamanders under rocks in the woods. Paul Catling, Brenda Kostiuk, Cheryl Anderson, Dale Smith and others, spent time collecting data independently, so we thank them for their assistance with the survey, as well as all the participants who took part in the event. Ketha Gillespie, with Naturehood, involved young naturalists in activities on both days.

Some very talented participants travelled to the BioBlitz. The involvement of Dr. Jennifer Doubt and her summer student, Adam Storey, both of the Canadian Museum of Nature in Ottawa, resulted in comprehensive lists of bryophyte species with details on species of particular interest. Amanda Tracey came from the Kingston area, as well as her assistants Hailey Huffman and Rachel Marcelissen. Tom Mason travelled from Brighton; Paul Catling and Brenda Kostiuk from Ottawa; John Foster from Oshawa and John Lowry and Lori Borthwick from Belleville. A

week after the BioBlitz proper, Dave Beadle and his wife, Katie Thomas, came from Toronto to conduct a moth survey and provided many records of other insects and birds on June 25.

Particularly helpful during the aquatic study, overseen by Les Stanfield, were Robin Lauer, Greg Forbes, Anne Dumbrille, Ryan Stanfield, Tom Mason, Jessica Daze, Robert Ormston, John Foster and 12 year old Darcy Barnes, whose grandfather was a PECFN member and, before retiring to the County, had taught aquatic biology at Laurentian University. They are all thanked for their valuable help and contributions to the survey.

Thank you Sheena, Cheryl, Helen, Susan, Lise, Becky, Jozef, Sue and Dave, for projecting such a positive image of PECFN to the public at the Registration desk and so ably taking care of recording participants and providing maps and information to them. A special thanks to Sheena for arranging for the use of the Air Cadet building and having longer “shifts” than originally planned on both days. Helen was wonderful in organizing food and buying the Saturday BBQ burgers, buns and condiments, as well as photocopying the materials to be handed out to participants. Sue and Dave kindly lent their BBQ and let us use their garage for storage on Thursday night. We appreciate Cheryl Anderson arranging for the rental of the extra portable toilet for the site, paid for by PEPtBO, as well as borrowing the dissecting scopes, bird checklist board and easel from PEPtBO. Dick Bird kindly allowed us to borrow the BioBlitz signs he made to place at strategic locations to direct the public to the event. John Lowry is thanked for picking up the signs, delivering them back to Dick in Belleville afterward and setting them up at the BioBlitz.

The meals Friday evening and Saturday afternoon were a great means of fostering the camaraderie that was key to the event. Myrna Wood, Lise Bois and Helen Fearman are thanked for preparing the chilis (meat and vegan) and Moroccan dish which were all delicious, as evidenced by people returning for seconds! Marilyn Lauer and Amy Bodman made excellent salads to complement the main dishes on Friday evening. Paula provided buns and bread for the dinner. Cheryl, Sue and Dave, Sheena, Becky, Mary Kay, Amy, Susan, Cecile, Anne, Marilyn, and Marj – brought delicious cookies, brownies, bars and muffins. Any “extra” desserts were provided to the PECFN Ameliasburgh picnic on the following Thursday and SSJI picnic on Saturday. Lorie’s lemonade, tea and coffee were a great addition to the available water provided as refreshments for, and in-between, meals! Thanks also for bringing all the cups, cutlery and plates and washing them for both meals. Lori continues to inspire us with her environmental consciousness.

As usual, Allen stepped up to be the all-purpose helper – bringing books and other materials from our basement, gathering the garbage pail, shade tent, etc. to bring to the event, looking after putting up the tent, tables and banner, as well as setting up the moth survey light and sheet on Friday, picking up the BBQ, BBQing on Saturday– and then taking everything back home or to wherever it needed to be returned to. You are a tremendous help and appreciation is extended for everything you do for the event each year.

John Lowry, John Sanders and Lori Borthwick helped dismantle the “camp” after the event and take tables, BBQs and other materials to the cars and trucks. Your help was appreciated.

Myrna did a fabulous job of sewing butterfly nets from fine netting, so as not to damage the butterflies or dragonflies. Cheryl Anderson, Ewa Bednarczuk, Henri Garand, Becky Lamb, Rachel Marcelissen and Kathy O'Connell were excellent recorders for the walks they were on.

Photographs used in this report were taken by David Beadle, Paul Catling, Jessica Daze, John Foster, Brenda Kostiuk, Marilyn Laurer, John Lowry, MaryKay Morris and Tom Mason. Other photos by them, as well as by Lori Borthwick and Katie Thomas, are retained with the BioBlitz data. We appreciate their documentation of the site, its species and the event. Paul Catling worked on the beautiful report covers and some photos. He and Brenda also assisted with compiling the full iNaturalist dataset for the site. They are sincerely thanked for their help.

Appreciation is extended to everyone who assisted and apologies to anyone who wasn't mentioned but contributed in some way to the organization and success of this event.

Participants:

Cheryl Anderson	Sandra Dowds	Rachel Marcelissen
Bailey Austin-Macmillan	Jennifer Doubt	Tom Mason
Susan Banks	Anne Dumbrille	MaryKay Morris
Darcy Barnes	Helen Fearman	Kathy O'Connell
David Beadle	Greg Forbes	Robert Ormston
Ewa Bednarczuk	John Foster	Celina Qiu
Jake Bergeron	Henri Garand	Marjorie Seguin
Lise Bois	Ketha Gillespie	Dale Smith
Amy Bodman	Hailey Huffman	Les Stanfield
Lori Borthwick	Paul Jones	Ian Stanley
David Bree	Sheena Kennedy	Adam Storey
Evan Britton	Brenda Kostiuk	Victoria Taylor
Stewart Britton	Allen Kuja	Amanda Tracey
Lorie Brown	Sheila Kuja	Tim Trustham
Janna Burford	Rebecca Lamb	Susan Warrack
Paul Catling	Marilyn Lauer	Jozef Winter
Peter Christie	Robin Lauer	Susan Warrack
Jessica Daze	John Lowry	Julie Yardley-Chan
Ryan Stanfield	Myrna Wood	Cecile Yarrow

RESULTS:

SUMMARY REPORT – The number of species recorded during the BioBlitz was 564, including Algae – 1, Lichens – 1, Fungi – 4, Mosses – 64, Liverworts – 8, Vascular Plants – 189, Leech – 1, Molluscs – 2, Spiders – 7, Dragonflies and Damselflies – 22, Grasshoppers – 2, Beetles – 13, Bees and Wasps – 4, Butterflies – 26, Moths – 123, Flies 11, True Bugs – 10, Fish – 3, Amphibians – 6, Reptiles – 6, Birds – 52, Mammals – 8.

Brief summary of some noteworthy observations:

Of highest significance were the observations of the **Four-leaved Milkweed** in flower, with Endangered Status in Ontario and federally. This is especially important since this is one of the only three remaining populations of

this species in Canada, **all** located in Prince Edward County. With an imminent major housing development proposed close by, it is important that planning and management consideration is especially given to the protection of the oak-hickory forest habitat where the milkweed occurs, within this high biodiversity site.

Non Vascular Plants

One of the most dramatic species of fungus observed was the Hemlock Varnish Shelf. Four species of mosses are tracked by the Natural Heritage Information Centre (NHIC) - *Climacium americanum*, *Orthotrichum pallens*, *Syntrichia papillosa* and *Schistidium dupretii* indicating their status as rare or unusual in the province.

Vascular Plants

Large specimens of the beautiful Chinquapin Oak, a Carolinian species found in Ontario, only in the southwestern and southeastern portions of the province (see iNaturalist), occur in the woods on the plateau. In the County it is unusual and found infrequently but mainly in the east from the Green Point area to Cressy. Also, plants characteristic of alvars like Senega Snakeroot, Early Buttercup, Early Saxifrage and Fragrant Sumac were found on the summit of the escarpment. The oak-hickory forest is also a significant community.

Snails

The yellow, mostly unstriped terrestrial snails in the study area are the White-lip Garden Snail. They were abundant (over 300 seen by some participants) in the pond area and some were found 15' above ground in the branches of Basswood and Silver Maple and 15' from the main trunk.

Insects

Despite the blustery winds, 26 species of butterfly were seen, with the impressive Giant, Eastern Tiger and Black Swallowtails all observed. Of the ten species of Skippers noted, The Delaware and Crossline are rare in the County and Peck's Skipper is uncommon and local.

Species diversity of moths was high and it is interesting that 64 of the 123 species had not been recorded previously during our BioBlitzes.

Also, 19 species of Dragonflies and Damselflies were recorded. The rare Azure Bluet was one of the six species of damselflies seen. The Common Whitetail was the most abundant dragonfly with up to 100 individuals observed each day, especially over and around the pond. Two Chalk-fronted Corporals were seen at the pond. They are considered rare and local in the County. The four species of Clubtail are unusual and this may be the only location they occur in County.

Reptiles

A Northern Water Snake and an Eastern Milk Snake were interesting reptiles observed. The Red-backed Salamanders were the first found on a PECFN BioBlitz.

Fish

Blunt-nosed Minnows, Northern Bullhead and even a few Large-mouth lived in the small pond seen from the parking lot.

Birds

Of the 52 species of birds seen, Winter Wren, Scarlet Tanager, Indigo Bunting, Cooper's Hawk, Ruby-throated Hummingbird and Clay-colored Sparrow were interesting species to record. There was the possibility of Whip-poor-will nesting on the limestone plateau but this couldn't be verified due to high winds on Saturday night.

iNaturalist Information

To access iNaturalist information on Macaulay Mountain Conservation Area gathered during the BioBlitz use: <https://www.inaturalist.org/projects/macaulay-mountain-conservation-area>

Most of this information, as well as the full list of species observed from 2017 – 2022 was incorporated into this report in Appendix 2 and many additional photos are available there.

SPECIES OBSERVED

ALGAE

Only the charophyte green algae Muskgrass (*Chara* sp.) was noted. It was co-dominant in parts of the pond.

LICHENS

Although a comprehensive survey of lichens was planned, it did not occur but hopefully, in the near future, a baseline survey of the species present will be conducted and the results sent to Quinte Conservation. During the BioBlitz Adam Storey recorded one species on iNaturalist. Two others (Appendix 2) were previously recorded but undoubtedly there are many more to be found in the Conservation Area.

Cladonia coniocraea

Common Powderhorn

FUNGI

The moist conditions in the forest, especially in the lower areas toward the stream provided excellent conditions for a number of species. Most were growing on dead trees, which were either upright or lying on the forest floor, however, the Cedar Apple Rust requires live Red Cedar trees as one of its hosts. A conspicuous species seen was the very handsome and distinctive Hemlock Varnish Shelf (Figure 4). Previous records in iNaturalist are in Appendix 2, including many observations that have yet to be identified.

Table 1. List of Fungi observed at Macaulay Mountain Conservation Area during the BioBlitz.

Family	Scientific Name	Common Name
Ganodermataceae	<i>Ganoderma tsugae</i>	Hemlock Varnish Shelf
Polyporaceae	<i>Cerioporus squamosus</i>	Dryad's Saddle
	<i>Trametes versicolor</i>	Turkey Tail
Pucciniaceae	<i>Gymnosporangium juniperi-virginianae</i>	Cedar Apple Rust (on red cedar)



Figure 4. *The Hemlock Varnish Shelf, a handsome and distinctive fungus. Photo by J. Foster.*

BRYOPHYTES (MOSESSES AND LIVERWORTS) by Jennifer Doubt

Adam Storey and I attended both days of the blitz, and used the trails to access a variety of habitat types (e.g., swamp, creek bed, alvar, upland forest, disturbed powerline, etc.). Once in those habitats, we ranged off trail to access representative microhabitats (e.g., exposed rock, shaded rock, tree trunks and branches, dry and moist soil, etc.), in order to detect a representative diversity of bryophyte species. Vouchers for most species were collected (with permission of the Conservation Authority) and will be deposited at the National Herbarium of Canada at the Canadian Museum of Nature. Some records were posted to iNaturalist, and two species were noted without collecting or photographing them. The Conservation Area is large and our time was limited; this list is preliminary one and there are many taxa left to be found and documented in the study area. It will be excellent to see how the list grows from here.

Bryophyte specimens were identified with the aid of microscopes and taxonomic keys, mainly
Faubert, J., 2012. Flore des bryophytes du Québec-Labrador. Volume 1 : Anthocérotes et hépatiques. –
Société québécoise de bryologie, Saint-Valérien, Québec.

- Faubert, J., 2013. Flore des bryophytes du Québec-Labrador. Volume 2 : Mousses, première partie. – Société québécoise de bryologie, Saint-Valérien, Québec.
- Faubert, J., 2014. Flore des bryophytes du Québec-Labrador. Volume 3 : Mousses, seconde partie. Société québécoise de bryologie, Saint-Valérien, Québec.
- Flora of North America Editorial Committee (eds.). 1993+. *Flora of North America North of Mexico*. Volumes 27 & 28. Oxford University Press, London, UK, and New York, USA.
- Ireland, Robert R. 1982. Moss Flora of the Maritime Provinces. National Museum of Natural Sciences Publications in Botany, No. 13. National Museums of Canada, Ottawa, Ontario..

Eight liverwort taxa were found, and 64 mosses. Four taxa of moss – *Climacium americanum*, *Orthotrichum pallens*, *Syntrichia papillosa* and *Schistidium dupretii* – are tracked by the Ontario Natural Heritage Information Centre (<https://www.ontario.ca/page/get-natural-heritage-information>).

Climacium (tree moss) species resemble miniature trees, and grow mainly in damp places, such as swamps and moist woods. In comparison with the more common *Climacium dendroides* (northern tree moss), *C. americanum* (American tree moss) has more sharply acute stem leaves with auriculate bases. Its North American range is centred to the southeast, in the United States. *Syntrichia papillosa* (bumpy screw moss, a.k.a. marbled screw moss, on iNaturalist - <https://www.inaturalist.org/taxa/409319-Syntrichia-papillosa>) is almost invisible when its dry: its brown colour blends into the bark (at Macaulay, especially on horizontal branches or leaning trunks of old red cedar) on which the moss grows. However, when it's wet from the rain it is a stunner, and great reward for people who are crawling around with hand lenses.

Table 2. List of bryophyte species (liverworts and mosses) observed during the Macaulay Mountain C.A. bioblitz on June 17 and 18, by Jennifer Doubt and Adam Storey of the Canadian Museum of Nature. Scientific and common names are included as well as S rank for Ontario (abundance rank designated by NHIC). Rare species are shown in bold with S rank in red. Scientific names were standardized to the taxonomy recognized by the Consortium of North American Bryophyte Herbaria (<https://bryophyteportal.org/portal/>), as of August 2022, and common names correspond to those listed by the Societe Quebecoise de Bryologie (<http://societequebecoisedebryologie.org/Bryoquel.html>)

Scientific Name	Common Name	SRank
LIVERWORTS		
<i>Conocephalum salebrosum</i>	cat-tongue liverwort	S5
<i>Frullania eboracensis</i>	York scalewort	S5
<i>Liochlaena lanceolata</i>	long-leaved flapwort	S4?
<i>Lophocolea heterophylla</i>	variable-leaved crestwort	S5
<i>Plagiochila porelloides</i>	lesser featherwort	S5
<i>Porella platyphylla</i>	wall scalewort	S5

<i>Ptilidium pulcherrimum</i>	tree fringewort	S5
<i>Radula complanata</i>	flat-leaved scalewort	S5
	MOSSES	
<i>Abietinella abietina</i>	wiry fern moss	S5
<i>Anomodon minor</i>	blunt-leaved anomodon	S5
<i>Atrichum altecristatum</i>	ridged smoothcap moss	S5
<i>Atrichum crispulum</i>	strongly crispate smoothcap moss	S5
<i>Aulacomnium palustre</i>	ribbed bog moss	
<i>Barbula convoluta</i>	curly beard moss	S5
<i>Barbula unguiculata</i>	prickly beard moss	S5
<i>Brachythecium campestre</i>	field ragged moss	S5
<i>Sciuro-hypnum curtum</i>	short-leaved ragged moss	S4
<i>Sciuro-hypnum populeum</i>	matted ragged moss	S4
<i>Brachythecium rivulare</i>	river ragged moss	S5
<i>Brachytheciastrum velutinum</i>	velvet ragged moss	S4
<i>Breidleria pratensis</i>	meadow plait moss	S5
<i>Callicladium haldanianum</i>	beautiful branch moss	S5
<i>Calliergonella lindbergii</i>	Lindberg's plait moss	S5
<i>Campyliadelphus chrysophyllus</i>	golden creeping moss	S5
<i>Ceratodon purpureus</i>	fire moss	S5
<i>Claopodium rostratum</i>	long-beaked anomodon	S5
<i>Climacium americanum</i>	American tree moss	S3
<i>Climacium dendroides</i>	northern tree moss	S5
<i>Dicranum fulvum</i>	fine-leaved broom moss	S5
<i>Dicranum montanum</i>	mountain broom moss	S5
<i>Dicranum scoparium</i>	common broom moss	S5
<i>Dicranum viride</i>	green broom moss	S5
<i>Entodon cladorrhizans</i>	flat-stemmed entodon moss	S4
<i>Eurhynchiastrum pulchellum</i>	elegant beaked moss	S5
<i>Fissidens adianthoides</i>	maidenhair pocket moss	S5
<i>Fissidens taxifolius</i>	tree pocket moss	S5
<i>Fontinalis hypnoides</i>	river moss	S5
<i>Hedwigia ciliata</i>	ciliate Hedwig's moss	S5
<i>Hygroamblystegium varium</i>	willow feather moss	S5
<i>Hylocomiadelphus triquetrus</i>	electrified cat's-tail moss	S5
<i>Hylocomium splendens</i>	stairstep moss	S5
<i>Hypnum curvifolium</i>	curved-leaved plait moss	S4
<i>Hypnum pallescens</i>	stump plait moss	S5
<i>Leskea polycarpa</i>	many-fruited Leske's moss	S4
<i>Leucodon sciuroides</i>	squirrel-tail moss	S4
<i>Mnium lycopodioides</i>	clubmoss leafy moss	S5
<i>Mnium marginatum</i>	bordered leafy moss	S5

<i>Nyholmiella obtusifolia</i>	blunt-leaved bristle moss	S5
<i>Orthotrichum anomalum</i>	anomalous bristle moss	S5
<i>Lewinskya elegans</i>	elegant bristle moss	S4
<i>Orthotrichum pallens</i>	pale bristle moss	S1
<i>Orthotrichum stellatum</i>	starlike bristle moss	S4
<i>Lewinskya sordida</i>	dark-green bristle moss	S4
<i>Plagiomnium ciliare</i>	toothed leafy moss	S5
<i>Plagiomnium cuspidatum</i>	woody leafy moss	S5
<i>Plagiomnium ellipticum</i>	marsh leafy moss	S5
<i>Serpoleskea confervoides</i>	limestone willow moss	S4
<i>Platygyrium repens</i>	flat-brocade moss	S5
<i>Pleurozium schreberi</i>	red-stemmed feather moss	S5
<i>Pseudanomodon attenuatus</i>	slender anomodon	S5
<i>Pseudoleskeella nervosa</i>	nerved Leske's moss	S5
<i>Ptychostomum pseudotriquetrum</i>	common green bryum	S5
<i>Pylaisia intricata</i>	intricate pylaisia	S4
<i>Pylaisia selwynii</i>	Selwyn's pylaisia	S4
<i>Schistidium duprettii</i>	Dupret's bloom moss	S2
<i>Syntrichia papillosa</i>	bumpy screw moss	S3
<i>Syntrichia ruralis</i>	sidewalk screw moss	S5
<i>Thuidium delicatulum</i>	delicate fern moss	S5
<i>Thuidium recognitum</i>	hook-leaved fern moss	S5
<i>Tortella tortuosa</i>	frizzled crisp moss	S5
<i>Tortula truncata</i>	truncated screw moss	S4
<i>Ulota crispula</i>	lesser crisped pincushion moss	S4
<i>Weissia controversa</i>	green-tufted stubble moss	S4

N.B. A complete documentation of these taxa with co-ordinates, can be requested from J. Doubt at the Museum of Nature in Ottawa or from the first author of the BioBlitz report via the PECFN email address (pecfninfo@gmail.com).

N.B. The liverwort and moss lists shown above conform to the accepted standard of using lower case for the common names, however, throughout the rest of the report, the authors have chosen to capitalize the first letter of each common name, to remain consistent with the previous BioBlitz reports.

VASCULAR PLANTS

Table 3. Vascular Plants for Macaulay Mountain Conservation Area observed during the BioBlitz, June 17 and 18. The list is in approximate classical taxonomic order beginning with ferns and fern allies proceeding through gymnosperms through monocotyledons then dicotyledons, concluding with the Asteraceae. The family, genus, species and common names are taken from the most recent (2021) VASCAN database. See additional plant records for other times and seasons in Appendices 1, 2 and 3.

Scientific Name		Common Name
FERNS AND FERN ALLIES		
EQUISETACEAE		HORSETAIL FAMILY
<i>Equisetum arvense</i>		Field Horsetail
<i>Equisetum palustre</i>		Marsh Horsetail
CYSTOPTERIDACEAE		BLADDER FERN FAMILY
<i>Cystopteris bulbifera</i>		Bulblet Bladder Fern
ATHYRIACEAE		LADY FERN FAMILY
<i>Athyrium filix-femina</i> var. <i>angustum</i>		Northeastern Lady Fern
ONOCLEACEAE		SENSITIVE FERN FAMILY
<i>Matteuccia struthiopteris</i>		Ostrich Fern
DRYOPTERIDACEAE		WOOD FERN FAMILY
<i>Dryopteris intermedia</i>		Evergreen Wood Fern
<i>Dryopteris marginalis</i>		Marginal Wood Fern
<i>Polystichum acrostichoides</i>		Christmas Fern
THELYPTERIDACEAE		MARSH FERN FAMILY
<i>Amauropelta noveboracensis</i>		New York Fern
CONIFERS		
PINACEAE		PINE FAMILY
<i>Picea abies</i>		Norway Spruce
<i>Picea glauca</i>		White Spruce
<i>Pinus resinosa</i>		Red Pine
<i>Pinus strobus</i>		Eastern White Pine
<i>Tsuga canadensis</i>		Eastern Hemlock
CUPRESSACEAE		CYPRESS FAMILY
<i>Juniperus communis</i>		Common Juniper
<i>Juniperus virginiana</i>		Eastern Red Cedar
<i>Thuja occidentalis</i>		Eastern White Cedar
MONOCOTS		
POACEAE		GRASS FAMILY



Figure 5. Bulblet Bladder Fern forms large patches at the base of wooded slopes. Photo by J. Foster.

Bromus inermis ssp. *inermis*
Bromus pubescens
Calamagrostis canadensis var. *canadensis*
Dactylis glomerata
Danthonia spicata
Elymus repens
Festuca rubra
Phalaris arundinacea
Phleum pratensis
Poa compressa
Poa pratensis ssp. *pratensis*
 CYPERACEAE
Carex aurea
Carex pennsylvanica
Carex platyphylla
Carex vulpinoidea
Eleocharis compressa
Eleocharis tenuis

Smooth Brome
Hairy Woodland Brome
Bluejoint Reedgrass
Orchard Grass
Poverty Oatgrass
Quackgrass
Red Fescue
Reed Canarygrass
Common Timothy
Flat-stemmed Bluegrass
Kentucky Bluegrass
 SEDGE FAMILY
Golden-fruited Sedge
Pennsylvania Sedge
Broad-leaved Sedge
Fox Sedge
Flat-stemmed Spikerush
Slender Spikerush

ARACEAE

Arisaema triphyllum

JUNCACEAE

Luzula acuminata

CHOLCHICACEAE

Uvularia grandiflora

MELANTHIACEAE

Trillium erectum

LILIACEAE

Lilium philadelphicum

Streptopus lanceolatus

ASPARAGACEAE

Maianthemum canadense

Mainanthemum racemosum

Maianthemum stellatum

IRIDACEAE

Iris virginica

ORCHIDACEAE

Epipactis helleborine

ARUM FAMILY

Jack-in-the-pulpit

RUSH FAMILY

Hairy Woodrush

Large-flowered Bellwort

Red Trillium

LILY FAMILY

Wood Lily

Rose Twisted-stalk

ASPARAGUS FAMILY

Wild Lily-of-the-valley

Large False Solomon's Seal

Star-flowered False Solomon's Seal

IRIS FAMILY

Southern Blue Flag

ORCHID FAMILY

Broad-leaved Helleborine



Figure 6. Wood Lily (left) and Southern Blue Flag (right). Both localized in the area. Photos by J. Lowry.

DICOTS

SALICACEAE

Populus tremuloides

WILLOW FAMILY

Trembling Aspen

Salix sp.
JUGLADACEAE
Carya cordiformis
Carya ovata
Juglans nigra
BETULACEAE
Betula alleghaniensis
Betula papyrifera
Corylus cornuta
Ostrya virginiana

Willow shrubs edge of pond
WALNUT FAMILY
Bitternut Hickory
Shagbark Hickory
Black Walnut
BIRCH FAMILY
Yellow Birch
Paper Birch
Beaked Hazelnut
Eastern Hop-hornbeam



Figure 7. Yellow Birch with its silvery grey, thin peeling bark requires moist conditions as at the base of slopes or near streams. Photo by J. Foster

FAGACEAE
Fagus grandifolia
Quercus alba

BEECH FAMILY
American Beech
White Oak

Quercus macrocarpa
Quercus muehlenbergii
Quercus rubra
 ULMACEAE
Ulmus americana
 URTICACEAE
Boehmeria cylindrica
Laportea canadensis
Urtica dioica
 POLYGONACEAE
Rumex crispus
 CARYOPHYLLACEAE
Cerastium arvense ssp. *arvense*
Silene vulgaris
Stellaria longifolia
 RANUNCULACEAE
Actaea pachypoda
Anemonastrum canadense
Anemone virginiana
Aquilegia canadensis
Ranunculus acris,
Ranunculus fascicularis
Thalictrum dioicum
 BERBERIDACEAE
Caulophyllum giganteum
 BRASSICACEAE
Capsella bursa-pastoris
Hesperis matronalis
 SAXIFRAGACEAE
Saxifraga virginensis
 GROSSULARIACEAE
Ribes cynosbati
 ROSACEAE
Amelanchier sanguinea var. *sanguinea*
Fragaria virginiana
Geum canadense
Geum fragarioides
Potentilla recta
Prunus virginiana
Pyrus communis
Rosa blanda,
Rosa carolina
Rosa multiflora
Rubus idaeus
Rubus occidentalis
Rubus odoratus

Mossy-cup Oak
Chinquapin Oak
Red Oak
 ELM FAMILY
White Elm
 NETTLE FAMILY
Small-spike False Nettle
Wood Nettle
Stinging Nettle
 KNOTWOOD FAMILY
Curled Dock
 PINK FAMILY
Field Chickweed
Bladder Champion
Long-leaved Starwort
 BUTTERCUP FAMILY
White Baneberry
Canada Anemone
Tall Anemone
Red Columbine
Common Buttercup
Early Buttercup
Early Meadow-rue
 BARBERRY FAMILY
Giant Blue Cohosh
 MUSTARD FAMILY
Common Shepherd's Purse
Dame's Rocket
 SAXIFRAGE FAMILY
Early Saxifrage
 GOOSEBERRY FAMILY
Eastern Prickly Gooseberry
 ROSE FAMILY
Round-leaved Serviceberry
Wild Strawberry
Canada Avens
Barren Strawberry (formerly in genus *Waldsteinia*)
Sulphur Cinquefoil
Choke Cherry
Common Pear
Smooth Rose
Carolina Rose
Multiflora Rose
Red Raspberry
Black Raspberry
Purple-flowering Raspberry



Figure 8. Garden Bird's-foot Trefoil (left) and Sulphur Cinquefoil (right) are two European introductions found growing in open ground. Photos by J. Lowry.

FABACEAE

Amphicarpaea bracteata

Lotus corniculatus

Medicago lupulina

Medicago sativa

Melilotus albus

Melilotus officinalis

Robinia pseudoacacia

Trifolium hybridum

Trifolium pratense

Trifolium repens

Vicia cracca

OXALIDACEAE

Oxalis stricta

LEGUME FAMILY

American Hog Peanut

Garden Birds-foot Trefoil

Black Medic

Alfalfa

White Sweet-clover

Yellow Sweet-clover

Black Locust

Alsike Cover

Red Clover

White Clover

Tufted Vetch

WOOD SORREL FAMILY

European Wood-sorrel

GERANIACEAE
Geranium robertianum
RUTACEAE
Zanthoxylum americanum
POLYGALACEAE
Polygala senega
ANACARDIACEAE
Rhus aromatica
Rhus typhina
Toxicodendron radicans
STAPHYLIDACEAE
Staphylea trifolia
SAPINDACEAE
Acer negundo
Acer nigrum
Acer platanoides
Acer rubrum
Acer saccharinum
Acer saccharum
BALSAMINACEAE
Impatiens capensis
RHAMNACEAE
Rhamnus cathartica
VITACEAE
Parthenocissus quinquefolia
Vitis riparia,
MALVACEAE
Malva neglecta
Tilia americana
Tilia cordata
HYPERICACEAE
Hypericum perforatum
ELEAGNACEAE
Shepherdia canadensis
VIOLACEAE
Viola cucullata
ONAGRACEAE
Circaea canadensis
Oenothera biennis
APIACEAE
Daucus carota

GERANIUM FAMILY
Herb-Robert
RUE FAMILY
Northern Prickly Ash
MILKWORT FAMILY
Seneca Snakeroot
CASHEW FAMILY
Fragrant Sumac
Staghorn Sumac
Poison Ivy
BLADDERNUT FAMILY
American Bladdernut
SOAPBERY FAMILY
Manitoba Maple
Black Maple
Norway Maple
Red Maple
Silver Maple
Sugar Maple
TOUCH-MET-NOT FAMILY
Spotted Jewelweed
BUCKTHORN FAMILY
European Buckthorn
GRAPE FAMILY
Virginia Creeper
Riverbank Grape
MALLOW FAMILY
Common Mallow
American Basswood
Little-leaved Linden
ST. JOHN'S-WORT FAMILY
Common St. John's-wort
OLEASTER FAMILY
Soapberry
VIOLET FAMILY
Marsh Blue Violet
EVENING PRIMROSE FAMILY
Broad-leaved Enchanter's Nightshade
Common Evening-primrose
CARROT FAMILY
Wild Carrot



Figure 9. Bladdernut is a shrub or small understory tree with southern affinities. On the right is a close up of the thin-walled, inflated fruit which pops when crushed. Photos by J. Foster.

Heracleum maximum

Pastinaca sativa

CORNACEAE

Cornus alternifolia

Cornus racemosa

Cornus sericea

OLEACEAE

Fraxinus americana

Fraxinus pennsylvanica

Syringa vulgaris

APOCYNACEAE

Apocynum cannabinum

Asclepias incarnata

Asclepias quadrifolia

Asclepias syriaca

Vincetoxicum rossicum

CONVOLVULACEAE

Calystegia spithameus

Convolvulus arvensis

American Cow Parsnip

Wild Parsnip

DOGWOOD FAMILY

Alternate-leaved Dogwood

Grey Dogwood

Red-osier Dogwood

OLIVE FAMILY

White Ash

Green Ash

Common Lilac

DOGBANE FAMILY

Hemp Dogbane

Swamp Milkweed

Four-leaved Milkweed

Common Milkweed

European Swallowwort

MORNING GLORY FAMILY

Low False Bindweed

Field Bindweed

POLEMONIACE
Phlox divaricata
BORAGINACEAE
Echium vulgare
VERBENACEAE
Verbena simplex
LAMIACEAE
Clinopodium vulgare
Glechoma hederacea
Lycopus americanus
Prunella vulgaris ssp. *vulgaris*
SOLANACEAE
Solanum dulcamara
LENTIBULARIACEAE
Utricularia vulgaris ssp. *macrohiza*
PLANTAGINACEAE
Penstemon digitalis
Penstemon hirsutus
Plantago lanceolata
Plantago major
CAMPANULACEAE
Campanula rotundifolia
RUBIACEAE
Galium aparine
Galium tinctorium
Houstonia longifolia
VIBURNACEAE
Viburnum acerifolium
Viburnum rafinesquianum
CAPRIFOLIACEAE
Diervilla lonicera
Lonicera canadensis
Lonicera hirsuta
Lonicera tatarica
ASTERACEAE
Achillea millefolium var. *millefolium*
Arctium minus ssp. *minus*
Cichorium intybus
Coreopsis lanceolata
Erigeron philadelphicus
Eurybia macrophylla
Euthamia graminifolia
Eutrochium maculatum
Inula helenium
Lactuca canadensis
Matricaria discoidea
Pilosella caepitosa
Pilosella piloselloides

PHLOX FAMILY
Wild Blue Phlox
BORAGE FAMILY
Common Viper's-bugloss
VERVAIN FAMILY
Narrow-leaved Vervain
MINT FAMILY
Wild Basil
Ground Ivy
American Water-horehound
Common Heal-all
NIGHTSHADE FAMILY
Bittersweet Nightshade
BLADDERWORT FAMILY
Greater Bladderwort
PLANTAIN FAMILY
Foxglove Beardtongue
Hairy Beardtongue
English Plantain
Common Plantain
BELLFLOWER FAMILY
American Harebell (taxonomy in question- *C.gieseckeana*)
MADDER FAMILY
Common Bedstraw
Dyer's Bedstraw
Long-leaved Bluets
VIBURNUM FAMILY
Maple-leaved Viburnum
Downy Arrowwood
HONEYSUCKLE FAMILY
Northern Bush-honeysuckle
Canada Fly-honeysuckle
Hairy Honeysuckle
Tartarian Honeysuckle
ASTER FAMILY
Common Yarrow
Common Burdock
Wild Chicory
Lance-leaved Tickseed
Philadelphia Fleabane
Large-leaved Aster
Grass-leaved Goldenrod
Spotted Joe Pye Weed
Horseheal (or Elecampane)
Canada Lettuce
Pineappleweed
Meadow Hawkweed
Tall Hawkweed

Solidago caesia
Solidago canadensis
Solidago flexicaulis
Solidago nemoralis
Symphyotrichum cordifolium
Symphyotrichum novae-angliae
Symphyotrichum urophyllum
Taraxacum officinale
Tragopogon dubius

Blue-stemmed Goldenrod
Canada Goldenrod
Zigzag Goldenrod
Grey-stemmed Goldenrod
Heart-leaved Aster
New England Aster
Arrow-leaved Aster
Common Dandelion
Yellow Goatsbeard

INVERTEBRATES:

In the following lists, within major groups, the families and species are arranged in alphabetical order by scientific name. Common names and locations are indicated when available. Identification, in some cases, is only to the family or genus.

Bivalves and Snails, Molluscs

The yellow, mostly unstriped terrestrial (air breathing) snails in the study area are *Cepaea hortensis*, the White-lipped Snail. They were abundant (over 300 seen by some participants) in the pond area and some were found 15' above ground in the branches of Basswood and Silver Maple and 15' from the main trunk. Aquatic snails are recorded in Table 16.

Table 5. Terrestrial Snails observed during the Macaulay Mountain Conservation Area BioBlitz on 17-18 June 2022.

<i>Cepaea hortensis</i>	White-lipped Snail
<i>Neohelix albolabris</i>	Eastern Whitelip



Figure 10. The White-lipped Snail is a common species at Macaulay Mountain C.A., Photo by J. Foster.

SPIDERS AND TICKS – Arachnida

Table 6. Spiders and their allies observed in the Macaulay Mountain Conservation Area BioBlitz 17-18 June 2022 mainly by Tom Mason. The following are Mites (Order Trombidiformes) and Spiders (Order Araneae).

Family	Scientific Name	Common Name
Eriophyidae	<i>Eriophyes tiliae</i>	Lime or Red Nail Gall Mite
Gnaphosidae	<i>Gnaphosa muscorum</i>	Ground Spider
	<i>Herpyllus ecclesiasticus</i>	Parson Spider
Linyphiidae	<i>Frontinella communis</i>	Bowl and Doily Spider
	<i>Neriene radiata</i>	Filmy dome spider
Lycosidae	<i>Paradosa moesta</i>	Wolf Spider
		Wolf Spider
Thomisidae	<i>Xysticus elegans</i>	Elegant crab spider

DRAGONFLIES AND DAMSELFLIES – Odonata – by David Bree, Paul Catling, Tom Mason (with additions by Dave Beadle on June 25). The mostly sunny and mild weather on 17 June was very good for dragonflies with at least 100 Common Whitetails flying around the pond at any one time. The cool night and cloudy morning of 18 June was characterized by less dragonfly activity but later in the morning, the sunny conditions resulted in additional records. In all, 22 species of Odonates were recorded at the site (16 dragonfly and 6 damselfly species). Of importance were the Clubtail species, three of the four observed on June 25, which was not within the 24 hour BioBlitz period but on the day of the moth survey when Dave Beadle was able to participate. This may be the only site where they occur in the County.



Figure 11. Azure Bluet at Macaulay Pond, rare and local in the County. Photo by P.M. Catling.



Figure 12. Dragonflies of the genus *Arigomphus* in area of Macaulay Pond, 25 June 2022. Photos by D. Beadle. Top: Horned Clubtail; Middle: Lilypad Clubtail; Bottom: Unicorn Clubtail.

Table 7. List of Dragonflies and Damselflies recorded during the Macaulay Mountain Conservation Area BioBlitz on 17-18 June (unless otherwise indicated) with numbers seen and notes on habitat and location.

Scientific Name	Common Name	Family	Habitat and Notes
ZYGOPTERA		DAMSELFLIES	
<i>Enallagma aspersum</i>	Azure Bluet	COENAGRIONIDAE	pond-20; rare and local in County
<i>Enallagma civile</i>	Familiar Bluet	COENAGRIONIDAE	pond-10
<i>Enallagma signatum</i>	Orange Bluet	COENAGRIONIDAE	pond-7
<i>Ishnura verticalis</i>	Eastern Forktail	COENAGRIONIDAE	pond-2; on hill trail; photo
<i>Nehalennia irene</i>	Sedge Sprite	COENAGRIONIDAE	pond-8
<i>Lestes vigilax</i>	Swamp Spreadwing	LESTERIDAE	on hill trail (1)
ANISOPTERA		DRAGONFLIES	
<i>Anax junius</i>	Common Green Darner	AESHNIDAE	pond - 30
<i>Epitheca canus</i>	BeaverPond Baskettail	CORDULIIDAE	specimen caught in folding chair - 1
<i>Epitheca cynosura</i>	Common Baskettail	CORDULIIDAE	throughout in small groups feeding, on open slopes - 15
<i>Epitheca princeps</i>	Prince Baskettail	CORDULIIDAE	throughout-35
<i>Arigomorphus cornutus</i>	Horned Clubtail	GOMPHIDAE	(June 25, D. Beadle)
<i>Arigomorphus fucifer</i>	Lilypad Clubtail	GOMPHIDAE	(June 25, D. Beadle)
<i>Arigomorphus villosipes</i>	Unicorn Clubtail	GOMPHIDAE	(June 25, D. Beadle)
<i>Phanogomphus spicatus</i>	Dusky Clubtail	GOMPHIDAE	landing on open paths and grape leaves around pond - 10
<i>Celithemis elisa</i>	Calico Pennant	LIBELLULIDAE	shallow wetland on Clarke Rd., Kingsley Rd. alvar
<i>Erythemis simplicicollis</i>	Eastern Pondhawk	LIBELLULIDAE	by stream and on hill; -photo
<i>Ladona julia</i>	Chalk-fronted Corporal	LIBELLULIDAE	pond-2; rare and local in the county
<i>Leucorrhinia intacta</i>	Dot-tailed Whiteface	LIBELLULIDAE	... 1
<i>Libellula luctuosa</i>	Widow Skimmer	LIBELLULIDAE	D. Bree
	Twelve-spotted		
<i>Libellula pulchella</i>	Skimmer	LIBELLULIDAE	Kingsley Rd. alvar ; pond
<i>Plathemis lydia</i>	Common Whitetail	LIBELLULIDAE	pond-200; abundant with 100 flying around the pond on 17 June; mostly males but some of them very

different females which resembled
Libellula pulchella

Sympetrum obtrusum White-faced Meadowhawk LIBELLULIDAE Kingsley Rd. alvar -1

GRASSHOPPERS AND CRICKETS – Othoptera

Table 8. Grasshoppers seen during the Macaulay Mountain Conservation Area BioBlitz 17-18 June 2022.

Family	Scientific Name	Common Name
Acrididae	<i>Melanoplus bivittatus</i>	Yellow-striped Grasshopper
Tetrigidae	<i>Tettigidea lateralis lateralis</i>	Black-sided Pygmy Grasshopper (photo p. 40)

BEETLES – Coleoptera

Table 9. Beetles observed at Macaulay Mountain Conservation Area during the BioBlitz, 17-18 June 2022 unless otherwise noted. Family, scientific name and common names are given unless a determination to a species or genus was not possible. Habitat locations are in brackets when recorded.

Family	Scientific Name	Common Name
Cantharidae	<i>Podabrus brevicollis</i>	a soldier beetle (June 25)
	<i>Podabrus flavicollis</i>	Yellow-necked Soldier Beetle
Carabidae	<i>Cicindela sexguttata</i>	Six-spotted Tiger Beetle
Chrysomelidae	<i>Acalymma vittatum</i>	Striped Cucumber Beetle (June 25)
Cleridae	<i>Placopterus thoracicus</i>	a Checkered Beetle (June 25)
Curculionidae	<i>Lignoyodes horriulus</i>	True Weevil (June 25)
	<i>Polydrusus formosus</i>	Green Immigrant Leaf Weevil 17
	<i>Rhyssomatus lineaticollis</i>	Milkweed Stem Weevil (June 25)
Dytiscidae	<i>Dytiscus dauricus</i>	Predaceous Diving Beetle
Lampyridae	<i>Photinus consanguineus</i>	Double Cousin Firefly (25 June)
Scarabaeidae	<i>Diplotaxis tristis</i>	June Beetle (June 25)
Tenebrionidae	Alleculinae	Comb-clawed Darkling Beetles
	<i>Alobates pensylvanicus</i>	False Mealyworm Beetle (June 25)

BEES, WASPS AND ANTS - Hymenoptera

Table 10. Bees, Wasps and Ants observed at Macaulay Mountain Conservation Area BioBlitz with family, scientific name and common name listed.

Family	Scientific Name	Common Name
Apidae	<i>Apis mellifera</i>	Honey Bee
Tenthredinidae	<i>Nefusa ambigua</i>	Violet Leaf-mining Sawfly
Vespidae	<i>Euodynerus foraminatus</i>	Mason Wasp
Vespidae	<i>Polistes fuscatus</i>	Paper Wasp

BUTTERFLIES - Lepidoptera

Twenty-six species of butterflies were recorded during the BioBlitz on 17 and 18 June, 2022 despite the very windy conditions. The impressive Giant, Eastern Tiger and Black Swallowtails all observed. Of the ten species of Skippers noted, The Delaware and Crossline are rare in the County and Peck's Skipper is uncommon and local. Some locations are reported in the table below, as per the habitat description provided in the introduction.

Table 11. Butterflies observed during the BioBlitz at Macaulay Mountain Conservation Area during the BioBlitz organized alphabetically within family with notes on numbers seen and habitat location.

Scientific Name	Common Name	Habitat and notes
PAPILIONIDAE		
<i>Papilio cresphontes</i>	Giant Swallowtail	dry meadow, BC -2; on hill both days
<i>Papilio glaucus glaucus</i>	Eastern Tiger Swallowtail	dry meadow, BC -1; near bldg. 17th
<i>Papilio polyxenes</i>	Black Swallowtail	near building 17th
PIERIDAE		
<i>Colias philodice</i>	Clouded Sulphur	wet meadow (F) -1
<i>Pieris rapae</i>	Cabbage White	dry meadow, BC
LYCAENIDAE		
<i>Celastrina lucia</i>	Northern Azure	lawn/meadow -nr.parking -1;throughout

<i>Glaucopsyche lygdamus</i>	Silvery Blue	dry meadow BC -1; alvar meadow (E)-1
NYMPHALIDAE		
BRUSHFOOTS		
<i>Cercyonis pegala</i>	Common Wood Nymph	Kingsley Rd,18th
<i>Coenonympha tullia</i>	Common Ringlet	wet meadow (F), abundant; all sites
<i>Danaus plexippus</i>	Monarch	as caterpillar
<i>Limenitis archippus</i>	Viceroy	lawn/meadow near parking-1
<i>Limenitis arthemis arthemis</i>	White Admiral	dry meadow (E)-plateau-1; Kingsley Rd. dry forest,(E) plateau-abundant;dry meadow BC abundant
<i>Megisto cymela</i>	Little Wood Satyr	Kingsley Rd.
<i>Phyciodes cocyta</i>	Northern Crescent	
<i>Polygona interrogationis</i>	Question Mark	Kingsley Rd. (18 th)
<i>Vanessa atalanta</i>	Red Admiral	lawn/meadow nr.pkg.-1; at pond
HESPERONIIDAE		
SKIPPERS		
<i>Anatrytone logan</i>	Delaware Skipper	near building
<i>Ancyloxypha numitor</i>	Least Skipper	wet meadow (F)-2; all sites
<i>Epargyreus clarus</i>	Silver Spotted Skipper	dry meadow €- abundant
<i>Poanes hobomok</i>	Hobomok Skipper	dry meadow -on plateau (E)- 2; all sites
<i>Polites mystic</i>	Long Dash Skipper	wet meadow (F)-3;in field behind pond
<i>Polites origines</i>	Crossline Skipper	Kingsley Rd.; rare in PEC wet meadow (F)-1;slope/meadow near pond-1;
<i>Polites peckius</i>	Peck's Skipper	Kingsley Rd.
<i>Polites thermistocles</i>	Tawny-edged Skipper	wet meadow (F)-5; all sites, low numbers dry meadow (E)-abundant; slope meadow (A)-3; all sites
<i>Thorybes pylades</i>	Northern Cloudywing	
<i>Thyelicus lineola</i>	European Skipper	dry meadow BC-abundant; all sites



Figure 13. Northern Cloudywing, (*Thorybes pylades*), feeding on clover. Photo by J. Daze

MOTHS – Lepidoptera

Due to extremely windy conditions on 17 June only a Bark beetle, Cranefly and one moth were attracted to the billowing sheet. This survey on June 25, when conditions were more favourable, is included in the report. It is assumed that the same species would have been present during the BioBlitz. A total of 123 species of moths were recorded by D. Beadle, with 64 not observed on previous bioblitzes. Additional observations of moths seen during the day, not noted below, are Toothed Somberwing and White-spotted Sable (Bree & Mason).

Table 12. Moths observed and identified by Dave Beadle on 25 June 2023 at Macaulay Mountain Conservation Area, one week after the BioBlitz took place. Pohl numbers are used to reflect a more accurate taxonomic arrangement (Beadle & Leckie, 2012). Hodges numbers are also shown. Common names are provided when available. The number of individuals observed is recorded on the right. (T) represents a tentative identification. An asterisk (*) indicates a first report of that species (64 of 123) during the past five bioblitzes. A plus sign (+) indicates a species also seen during the day-time).

Pohl No.	Hodges No.	Scientific name	Common Name	No. Seen
16 0103	119	<i>Pseudopostega cretea</i> *	White Eye-cap Moth	1
36 0151	2445	<i>Argyresthia canadensis</i> *		1
36 0189	2481	<i>Argyresthia thuiella</i> *	Arborvitae Leafminer	1
42 0008	1144	<i>Gerdana caritella</i> *		1
42 0125	911	<i>Bibarrambra allenella</i>	Bog Bibarrambra	4
42 0321	1615	<i>Walshia miscecolorella</i> *	Sweetclover Root Borer	1
42 1030	2075	<i>Chionodes praeclarella</i>		1
42 1341	2045	<i>Scrobipalopsis Petrella</i> *		1
42 1506	1463	<i>Chrysoclysta linneela</i> *	Linden Bark Borer Moth	1
42 1647	1388	<i>Coleophora trifolii</i>	Large Clover Casebearer	1
42 1707	1670	<i>Scythris pilosella</i>		1(T)
42 1733	1171	<i>Asaphocrita aphidiella</i>		1
46 0114	6213	<i>Hellinsia lacteodactylus</i>	Milky Plume	1
62 0003	3503	<i>Acleris semipurpurana</i> *	Oak Leaf-tier	1
62 0067	3567	<i>Cnephasia stephansiana</i> *	Gray Tortrix	1
62 0107	3758.2	<i>Aethes mymara</i> *		1
62 0176	3812	<i>Phtheochroa baracana</i> *		1
62 0248	3593	<i>Pandemis lamprosana</i>	Woodgrain Leafroller	1
62 0280	3621	<i>Argyrotaenia quadrifasciana</i> *	Four-lined Leafroller	1
62 0300	3635	<i>Choristoneura rosaceana</i>	Oblique-banded Leafroller	6
62 0302	3637	<i>Choristoneura conflictana</i> *	Large Aspen Tortrix	1
62 0303	3638	<i>Choristoneura fumiferana</i>	Spruce Budworm	1
62 0314	3667	<i>Archips packardiana</i> *	Spring Spruce Needle Moth	1

62 0315	3664	<i>Archips striana</i> *	Striated Tortrix	1
62 0319	3663	<i>Archips oporana</i> *		1
62 0320	3650	<i>Archips rosana</i> *	Rose Tortrix	1
62 0333	3660	<i>Archips grisea</i> *	Gray Archips	1
62 0379	3747	<i>Coelostathma discopunctana</i> *	Batman Moth	1
62 0390	3695	<i>Sparganothis sulphureana</i> *	Sparganothis Fruitworm	1
62 0417	3725	<i>Cenopsis pettitiana</i>	Maple-basswood Leafroller	2
62 0433	3740	<i>Platynota idaeusalis</i> *	Tufted Apple Bud Moth	1
62 0528	2753	<i>Apotomis capreana</i> *	Sallow Apotomis	1
62 0539	2770	<i>Orthotaenia undulana</i>	Dusky Leafroller	1
62 0545	2776	<i>Olethreutes furfuranum</i> *	Woolly-backed Moth	1
62 0585	2817	<i>Olethreutes permundana</i> *	Raspberry Leafroller	1
62 0636	2862	<i>Hedya nubiferana</i> *	Green Budworm Moth	1
62 0735	2906	<i>Spilonota ocellana</i>	Eye-spotted Bud Moth	1
62 0786	2982	<i>Eucosma kiscana</i> *		2
62 0889.1	3038	<i>Pelochrista argentialbana</i>		1
62 1061	3074	<i>Europina tocullionana</i>	White Pinecone Borer	1
62 1105	3208	<i>Notocelia rosaecolana</i> *	Doubleday's Notocelia	1
62 1117	3218.1	<i>Sonia paraplesiana</i> *		1
62 1136	3233	<i>Proteoteras crescentana</i> *	Black-crescent Proteoteras	1
62 1276	3406	<i>Dichorampha bittana</i>		8
62 1387	3497	<i>Ecdytolopha insiticiana</i> *	Locust Twig Borer	2
66 0023	4665	<i>Lithacodes fasciola</i>	Yellow-shouldered Slug Moth	1
80 0169	5659	<i>Acrobasis palliolella</i>	Mantled Acrobasis	1
80 0222	5999	<i>Eulogia ochrifrontella</i> *	Broad-banded Eulogia	1
80 0342	5745	<i>Glyptocera consobrinella</i> *		1
80 0729	4755	<i>Elophila oblitalis</i>	Waterlily Leafcutter	1
80 0870	5435	<i>Fissicrambus mutabilis</i> *	Changeable Grass-veneer	1
80 0875	5420	<i>Microcrambus elegans</i>	Elegant Grass-veneer	6
80 0900	5413	<i>Pediasia trisecta</i> *	Sod Webworm	1
80 0907	5451	<i>Parapediasia teterrellus</i> *	Bluegrass Webworm	1
80 0926	5391	<i>Chrysoteuchia topiarius</i>	Topiary Grass-veneer	6
80 0949	5361	<i>Crambus albellus</i>	Small White Grass-veneer	2
80 0950	5362	<i>Crambus agitatellus</i>	Double-banded Grass-veneer	4
80 0982	4761	<i>Scoparia biplagiata</i>	Double-striped Scoparia	3
80 0983	4717	<i>Scoparia penumbralis</i> *	Dark Brown Scoparia	1
80 1256	5182	<i>Blepharomastix ranalis</i> *	Hollow-spotted Blepharomastix	2
80 1262	5159	<i>Desmia funeralis</i> *	Grape Leafroller	1
80 1325	5226	<i>Palpita magniferalis</i>	Splendid palpita	3
80 1425	4951	<i>Perispasta caeculalis</i>	Titian Peale's Pyralid	1
87 0003	7687	<i>Phyllodesma americana</i>	Lappet Moth	1
87 0014	7698	<i>Malacosoma distria</i>	Forest Tent Caterpillar Moth	2
87 0017	7701	<i>Malacosoma americana</i>	Eastern Tent Caterpillar Moth	1

89 0208	7886	<i>Darapsa pholus</i>	Azalea Sphinx	1
91 0260	7416	<i>Orthonama centrostrigaria</i>	Bent-line Carpet	1
91 0267	7423	<i>Hydrelia albifera</i>	Fragile White Carpet	1
91 0292	7445	<i>Horisme intestinata</i>	Brown Bark Carpet	1
91 0324	7474	<i>Eupithecia miserulata</i>	Common Pug	1
91 0466	7625	<i>Pasaphila rectangulata</i>	Green Pug	4
91 0567	7159	<i>Scopula limboundata</i>	Large Lace Border	1
91 0578	7169	<i>Scopula inductata</i>	Soft-lined Wave	1
91 0629	7048	<i>Nemoria mimosaria</i>	White-fringed Emerald	1
91 0654	7071	<i>Chlorochlamys chloroleucaria</i>	Blackberry Looper Moth	1
91 0686	6261	<i>Heliomata cycladata *</i>	Common Spring Moth	2
91 0735	6273	<i>Macaria pustularia</i>	Lesser Maple Spanworm	1
91 0756	6342	<i>Macaria bisignata *</i>	Red-headed Angle	1
91 0764	6340	<i>Macaria minorata *</i>	Minor Angle	2
91 0766	6344	<i>Macaria signaria *</i>	Pale-marked Angle	1
91 0772	6353	<i>Macaria multilineata</i>	Many-lined Angle	6
91 1009	6590	<i>Anavitrinella pampinaria</i>	Common Gray	1
91 1017	6598	<i>Protoarmia porcelaria</i>	Porcelain Gray	1
91 1062	6640	<i>Biston betularia</i>	Peppered Moth	2
91 1075	6654	<i>Hypagyrtis unipunctata *</i>	One-spotted Variant	1
91 1145	6720	<i>Lytrosis unitaria</i>	Common Lytrosis	1
91 1182	6753	<i>Pero honestaria</i>	Honest Pero	1
91 1226	6796	<i>Campaea perlata</i>	Pale Beauty	1
91 1352	6912	<i>Sicya macularia *</i>	Sharp-lined Yellow	1
91 1400	6963	<i>Tetraxis crocallata</i>	Yellow Slant Line	1
93 0017	7928	<i>Notodonta torva *</i>	Northern Finned Prominent	1
93 0051	7930	<i>Ellida caniplaga</i>	Linden Prominent	1
93 0215	8098	<i>Clemensia albata *</i>	Little White Lichen Moth	1
93 0278	8169	<i>Apantesis phalerata</i>	Harnessed Moth	1
93 0319	8140	<i>Hyphantrea cunea</i>	Fall Webworm Moth	1
93 0335	8129	<i>Pyrrharctia isabella</i>	Isabella Tiger	1
93 0404	8230	<i>Cycnia tenera</i>	Delicate Cycnia	1
93 0435	8262	<i>Ctenucha virginica +</i>	Virginia Ctenucha	10
93 0440	8267	<i>Ciseps fulvicolis +</i>	Yellow-collared Scape Moth	1
93 0495	8348	<i>Zanclognatha pedipilalis *</i>	Grayish Fan-foot	1
93 0502	8355	<i>Chytolita morbidalis *</i>	Morbid Owlet	1
93 0508	8357	<i>Macrochilo absorptalis</i>	Slant-lined Owlet	1
93 0511	8360	<i>Macrochilo orciferalis *</i>	Bronzy Macrochilo	2
93 0514	8364	<i>Phalaenostola larentioides</i>	Black-banded Owlet	5
93 0520	8370	<i>Bleptina caradrinalis</i>	Bent-winged Owlet	1
93 0551	8397	<i>Palthis angulalis</i>	Dark-spotted Palthis	1
93 0562	8442	<i>Hypena baltimoralis</i>	Baltimore Snout	1
93 0592	8404	<i>Rivula propinqualis *</i>	Spotted Grass Moth	1

93 1290	9047	<i>Protodeltote muscosula</i>	Large Mossy Glyph	1
93 1291	9048	<i>Protodeltote albidula</i>	Pale Glyph	2
93 1295	9049	<i>Maliattha synochitis</i>	Black-dotted Glyph	1
93 1396	9182	<i>Panthea furcilla</i> *	Eastern Panthea	1
93 1412	9193	<i>Raphia frater</i>	The Brother	1
93 1418	9663	<i>Balsa tristrigella</i>	Three-lined Balsa	1
93 1989	9690	<i>Condica videns</i>	White-dotted Groundling	1
93 2026	9065	<i>Leuconycta diptheroides</i>	Green Leuconycta	2
93 2363	9385.1	<i>Lateroligia ophiogramma</i> *	Double Lobed	1
93 2416	9433	<i>Xylomoia chagnoni</i> *	Reed Canary Grass Borer	2
93 3044	10397	<i>Lacinipolia renigera</i>	Bristly Cutworm Moth	2
93 3138	10587	<i>Orthodes cynica</i>	Cynical Quaker	1
93 3589	10942.1	<i>Xestia dolosa</i>	Black-Letter Dart	1
46 0057	6105	<i>Cnaemidophorus rhododactyla</i>	Rose Plume *	1



Figure 14. Above: Variable Duskyface Fly (*Melanostroma variabile*). Below: Black-sided Pygmy Grawsshopper (*Tettigidea lateralis*). 25 June 2022. Photos by D. Beadle.

FLIES - DIPTERA

Table 13. Flies observed at Macaulay Mountain Conservation Area during the BioBlitz with family, scientific name and common name recorded.

Family	Scientific Name	Common Name
Agromyzidae	<i>Liriomyza asclepiadis</i>	Milkweed Leaf-miner Fly
Calliphoridae		Blowfly
Cecidomyiidae	<i>Contarinia verrucicola</i>	Linden Wart Gall Midge
	<i>Dasineura pellex</i>	Ash Bullet Gall Midge (June 25)
Culicidae	<i>Aedes</i> sp.	Aedes mosquito
	<i>Culex</i> sp.	Culex mosquito
Keroplastidae	<i>Macrocera</i> sp.	Predatory Fungus Gnat
Limoniidae	<i>Epiphragma fasciapenne</i>	Bandwinged Crane fly (June 25)
Muscidae		House Flies and allies
Syrphidae	<i>Melanstoma mellinum</i>	Variable Duskyface Fly
Tipulidae	Limoniinae	Limonid Crane fly

TRUE BUGS - HEMIPTERA

Table 14. True Bugs observed during the Macaulay Mountain Conservation BioBlitz on 17-18 June unless otherwise indicated. Family, scientific name and common names for each listed although some identifications were just to family or genus.

Family	Scientific Name	Common Name
Belostomatidae	<i>Lethocerus americanus</i>	Giant Water Bug
Cicadellidae		Typical Leafhoppers
	<i>Athysanus argentarius</i>	Silver Leafhopper
	<i>Draeculacephala paludosa</i>	Sharpshooters (June 25)
	<i>Empoa gillettei</i>	a typical Leafhopper (June 25)
	<i>Orientalus ishidae</i>	Japanese Leafhopper
	<i>Pediopsis tiliae</i>	Typical Leafhopper
	<i>Typhlocyba transviridus</i>	Typical Leafhopper
	<i>Verolanus</i> sp.	Typical Leafhopper
Gerridae	<i>Limnopus dissortis</i>	Water Strider
Miridae	<i>Stenotus binotatus</i>	Two spotted grass bug

POND SURVEY: by Les Stanfield AQUATIC INVERTEBRATES:

Macrobenthic invertebrates were assessed for both the river and pond sections of the property. The stream sampling site was surveyed using the OSAP/OBBN methodologies as they are comparable, and the obbn lake sampling protocol was applied in the pond. (Ontario Stream Assessment Protocol and Ontario Benthic Biomonitoring Network: see: <https://trca.ca/conservation/environmental-monitoring/technical-training/ontario-stream-assessment-protocol/>. And: Jones, C., K.M. Somers, B. Craig, and T. Reynoldson. 2007. Ontario Benthos Biomonitoring Network Protocol Manual. Ontario Ministry of Environment, Dorset, Ontario.) Both protocols rely on using the kick and sweep method using a 500 μ D-net that is applied for approximately 3 minutes to capture a good representation of benthic macroinvertebrates. Sample locations are shown below.



Figure 15. Sampling points for aquatic studies. L. Stanfield.

Once collected, invertebrates were extracted from white trays by volunteers, coarse identification made to 28 groups of taxa and samples were preserved in alcohol. These data have been entered into the Flowing Waters Information System (<http://comap.ca/fwis>). Preserved samples were identified to the family level by certified taxonomists of Quinte Conservation. The description of the fish survey and results are found on p.45.

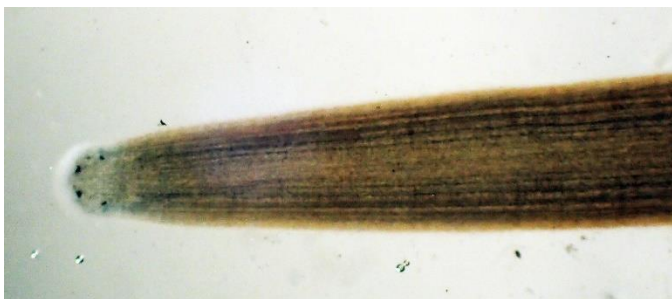


Figure 16. Showing the head of *Erpobdella punctata*, a common leech in the County, which was found in the pond. It eats other invertebrates including copepods, midges, earthworms and amphipods. Photo by P.M. Catling

Table 16. Aquatic invertebrates observed during the Macaulay Mountain Conservation Area survey of the pond and stream on 17 June 2022. Most organisms were identified to various taxonomic levels but usually to family. Results and samples were provided to QC immediately after the study. The leech was identified by P. M. Catling.

Scientific Name	Pond	Stream	Common Name
Phylum Annelida			WORMS
Oligochaetous Clitellata		1	Aquatic worms (tubificid worms)
Haplotaxidae	1		Aquatic oligochaete Worm
Erpobdellidae:			
<i>Erpobdella punctata</i>	1		a Leech (a common species of the County)
Phylum Mollusca			SNAILS AND CLAMS
Order – Gastropoda			
Family – Lymnaeidae	1	1	Pond Snails
Physidae	2	5	Bladder Snails
Pisidiidae/Sphaeriidae	7		Freshwater Clams
Planorbidae	3	1	Ramshorn or Ram’s Horn Snails
Viviparidae	3		River Snails or Mystery Snails
Phylum Arthropoda			ARTHROPODS (invertebrates with exoskeletons)
Subclass – Crustacea			CRUSTACEANS
Order – Amphiphoda	5	5	Amphipods (crustaceans without carapaces)
- Isopoda		1	Isopods (Woodlice and their relatives)
Class Insecta/Hexapoda			INSECTS
Order – Coleoptera			Beetles
Dytiscidae	4	11	Predaceous Diving Beetles
Elmidae	1		Riffle Beetles
Haliplidae	1		Crawling Water Beetles
Diptera			Flies
Ceratopogonidae	1	4	Biting Midges
Chironomidae	9	44	Non-biting Midges
Muscidae		1	House flies
Simuliidae		26	Blackflies
Tabanidae	1		Horseflies
Ephemeroptera			Mayflies
Baetidae	2		Small Minnow Mayflies
Caenidae	27		Small Squaregill Mayflies
Heptageniidae		4	Flat-headed Mayflies
Hemiptera			True Bugs
Naucoridae	2		Creeping Water Bugs or Saucer Bugs

Nepidae	1	Water Scorpion
Notonectidae	10	Backswimmers
Odonata		Damselflies and Dragonflies
Coenagrionidae	3	Narrow winged Damselflies
Gomphidae	3	Club-tailed Dragonflies

Class -Arachnida		SPIDERS, MITES AND SCORPIONS
Order - Trombidiformes or Acariformes		Mites
Hydrachnidia	3	Water Mites



Figure 17. Sorting and recording the aquatic invertebrates from the pond and stream. Photo by MaryKay Morris.

VERTEBRATES:

Fish: Two approaches were applied to assess fish communities in the pond: minnow traps and a seine net. Two minnow traps were deployed on Thursday June 16th. When checked on the 17th it was discovered that one trap had been removed from the pond. The second one contained 12 small (8-10 cm) brown bullheads. A seine net was hauled with the assistance of a canoe that covered approximately 130 m square of pond (see photo back cover). Two more brown bullheads and 14 bluntnose minnows were collected in the seine net, along with an abundance of tadpoles (mostly American toad) and other invertebrates including a giant water beetle, water scorpion and leech which are recorded in Table 17. Two large-mouth bass were observed by A. Kuja in the pond on Sunday (each ca. 30 cm).

Table 18. Fish species at Macaulay Mountain Conservation Area BioBlitz observed during the aquatic survey of the pond on 17 June 2022 using a seine net and minnow traps.

Class	Family	Scientific Name	Common Name	Observed
Cypriniformes (Carp, minnows, loaches and their relatives)				
	Cyprinidae	<i>Pimephales notatus</i>	Bluntnose Minnow	14
Siluriformes (Catfish)	Ictaluridae	<i>Ameiurus nebulosus</i>	Brown Bullhead	14
Perciformes (Perch-like fish)				
	Centrarchidea	<i>Micropterus salmoides</i>	Large-mouth Bass	2

Reptiles and Amphibians:

Table 19. Reptiles and Amphibians observed during the Macaulay Mountain Conservation Area Bioblitz 17-18 June, 2022. One individual was observed unless otherwise indicated. Order (Capital letters), family, scientific name and common names are given, as well as notes.



Figure 18. Eastern Milk Snake. Head on far left hidden for protection. Photo T. Mason.

Scientific Name	Common Name	Family	Notes
Reptiles			
CRYPTODIRA			
TURTLES			
<i>Chelydra serpentina</i>	Snapping Turtle	Chelydridae	
<i>Chrysemys picta marginata</i>	Midland Painted Turtle	Emydidae	in pond
SQUAMATA			
LIZARDS AND SNAKES			
<i>Lampropeltis triangulum</i>	Milk Snake	Colubridae	top of hill, end of trail at yard
<i>Nerodia sipedon</i>	Northern Water Snake	Colubridae	in pond
<i>Storeyi dekayii</i>	Northern Brown Snake	Colubridae	
<i>Thamnophis sirtalis sirtalis</i>	Eastern Garter Snake	Colubridae	100 m west of pond

Amphibians

ANURA

FROGS AND TOADS

Anaxyrus americanus

americanus

Eastern American Toad

Bufo

tadpoles in pond and stream

Hyla versicolor

Eastern Gray Tree Frog

Hyla

Lithobates catesbeianus

American Bullfrog

Rana

tadpoles in pond

Lithobates clamitans

Green Frog

Rana

in stream

Lithobates pipiens

Northern Leopard Frog

Rana

in deep grass in all areas

CAUDATA

SALAMANDERS

Plethodon cinereus

Red-backed Salamanders

Plethodon

under rocks in mesic woods

Figure 19. Red-backed Salamander, lead-back phase. Common under rocks on forested slopes. Photo by J. Foster.





Figure 20. Indigo Bunting (left), 14 July 2019, iNat. Photo 45067966 by Jason King. CC BY-NC 4.0. and House Finch (right), 7 May 2022, iNat. Photo 195919940 by donm5d. CC BY-NC 4.0.

BIRDS:

Of the 52 species of birds seen, Winter Wren, Scarlet Tanager, Indigo Bunting, Cooper’s Hawk, Ruby-throated Hummingbird and Clay-colored Sparrow were interesting species to record. There was the possibility of Whip-poor-will nesting on the limestone plateau but we couldn’t be sure that we heard their calls due to high winds on Saturday night. Birds are one of the most likely groups to suffer as a result of increased human disturbance such as the addition of trails and more human activity in the C.A. For example, Ruffed Grouse were not seen or heard during the BioBlitz although they were still present in 1993.

Table 20. List of birds seen during the Macaulay Mountain Conservation Area BioBlitz on 17 and 18 June, 2022). Taxonomic order follows the AOU Checklist of North American Birds (online) incorporating changes through the 62nd supplement (2021) <http://checklist.aou.org/taxa>,

Common Name	Scientific Name	Family	Order	17- Jun	18- Jun
Canada Goose	<i>Branta canadensis</i>	Anatidae	Anseriformes	x	
Mallard	<i>Anas platyrhynchos</i>	Anatidae	Anseriformes		x
Mourning Dove	<i>Zenaida macroura</i>	Columbidae	Columbiformes	x	
Eastern Whip-poor-will	<i>Antrostomus vociferous</i>	Caprimilgidae	Caprimilgiformes	x?	

Ruby-throated Hummingbird	<i>Archilocus colubris</i>	Trochilidae	Apodiformes		X
Killdeer	<i>Charadrius vociferous</i>	Charadriidae	Charadriiformes	X	
Ring-billed Gull	<i>Larus delawarensis</i>	Laridae	Charadriiformes	X	X
American Bittern	<i>Botaurus lentigenosis</i>	Ardeidae	Pelecaniformes		X
Great Blue Heron	<i>Ardea herodias</i>	Ardeidae	Pelecaniformes	X	X
Turkey Vulture	<i>Cathartes aura</i>	Cathartidae	Cathartiformes	X	X
Cooper's Hawk	<i>Accipiter cooperii</i>	Accipitridae	Accipitriformes		X
Broad-winged Hawk	<i>Buteo platypterus</i>	Accipitridae	Accipitriformes		X
Barred Owl	<i>Strix varia</i>	Strigidae	Strigiformes	X	
Belted Kingfisher	<i>Megoceryle alcyon</i>	Alcedinidae	Coraciformes		X
Northern Flicker	<i>Colaptes auratus</i>	Picidae	Piciformes		X
Eastern Wood Pewee	<i>Contopus virens</i>	Tyanidae	Passeriformes	X	X
Great-crested Flycatcher	<i>Myiarchus crinitus</i>	Tyanidae	Passeriformes	X	X
Eastern Kingbird	<i>Tyrannus tyrannus</i>	Tyanidae	Passeriformes		X
Warbling Vireo	<i>Vireo gilvus gilvus</i>	Vireonidae	Passeriformes	X	
Red-eyed Vireo	<i>Vireo olivaceus</i>	Vireonidae	Passeriformes	X	X
Blue Jay	<i>Cyanocitta cristata</i>	Corvidae	Passeriformes	X	X
American Crow	<i>Corvus brachyrhynchus</i>	Corvidae	Passeriformes	X	X
Common Raven	<i>Corvus corax</i>	Corvidae	Passeriformes		X
Black-capped Chickadee	<i>Poecile atricapillus</i>	Paridae	Passeriformes	X	X
Tree Swallow	<i>Trachycineta bicolor</i>	Hirundinidae	Passeriformes		X
House Wren	<i>Troglodytes aedon</i>	Troglodytidae	Passeriformes	X	X
Winter Wren	<i>Troglodytes hiemalis</i>	Troglodytidae	Passeriformes		X
Gray Catbird	<i>Dumetella carolinensis</i>	Mimidae	Passeriformes		X
European Starling	<i>Sturnus vulgaris</i>	Sturnidae	Passeriformes		X
Wood Thrush	<i>Hylocichla mustelina</i>	Turdidae	Passeriformes	X	
American Robin	<i>Turdus migratorius</i>	Turdidae	Passeriformes	X	X
American Goldfinch	<i>Spinus tristis</i>	Fringillidae	Passeriformes	X	X
Chipping Sparrow	<i>Spizella passerina</i>	Passerellidae	Passeriformes	X	X
Clay-coloured Sparrow	<i>Spizella pallida</i>	Passerellidae	Passeriformes	X	
Field Sparrow	<i>Spizella pusilla</i>	Passerellidae	Passeriformes	X	X
Song Sparrow	<i>Melospiza melodia</i>	Passerellidae	Passeriformes	X	X
White-throated Sparrow	<i>Zonotrichia albicollis</i>	Passerellidae	Passeriformes	X	
Eastern Towhee	<i>Pipilo erythrophthalmus</i>	Passerellidae	Passeriformes	X	
Baltimore Oriole	<i>Icterus galbula</i>	Icteridae	Passeriformes	X	X
Red-winged Blackbird	<i>Agelaius phoeniceus</i>	Icteridae	Passeriformes		X
Brown-headed Cowbird	<i>Molothrus ater</i>	Icteridae	Passeriformes		X
Common Grackle	<i>Quiscalus quiscula</i>	Icteridae	Passeriformes		X
Ovenbird	<i>Seiurus aurocapilla</i>	Parulidae	Passeriformes	X	X
Common Yellowthroat	<i>Geothlypis trichas</i>	Parulidae	Passeriformes	X	X
American Redstart	<i>Setophaga ruticilla</i>	Parulidae	Passeriformes		X
Yellow Warbler	<i>Setophaga petechia</i>	Parulidae	Passeriformes	X	

Yellow-rumped Warbler	<i>Setophaga coronata</i>	Parulidae	Passeriformes		x
Black-throated Green Warbler	<i>Setophaga virens</i>	Parulidae	Passeriformes		x
Scarlet Tanager	<i>Piranga olivacea</i>	Cardinalidae	Passeriformes	x	x
Northern Cardinal	<i>Cardinalis cardinalis</i>	Cardinalidae	Passeriformes	x	x
Rose-breasted Grosbeak	<i>Pheucticus ludovicianus</i>	Cardinalidae	Passeriformes	x	
Indigo Bunting	<i>Passerina cyanea</i>	Cardinalidae	Passeriformes	x	x

MAMMALS



Figure 21. This young mouse was probably a Deer Mouse, found near the administrative building. Most mice are largely nocturnal and not seen without special effort during BioBlitz events. Photo by J. Foster.

Table 21. List of the Mammals (or evidence of them) observed during the Macaulay Mountain Conservation Area BioBlitz 17-18 June 2022. One individual was observed unless otherwise indicated. Some explanatory notes are included.

Scientific Name	Common Name	Family	Notes
RODENTIA	RODENTS		
<i>cf Peromyscus maniculatus</i>	Eastern Deer Mouse	Cricetidae	at Building
<i>Tamias striatus</i>	Eastern Chipmunk	Sciuridae	
<i>Tamiasciurus hudsonius</i>	Red Squirrel	Sciuridae	along lower trail
LAGOMORPHA	RABBITS, HARES, PICAS		
<i>Sylvilagus floridans</i>	Eastern Cottontail	Leporidae	north of Kingsley
CARNIVORA	CARNIVORANS		
<i>Canis latrans</i>	Coyote	Canidae	tracks
<i>Procyon lotor</i>	Raccoon	Procyonidae	along Kingsley Rd.
ARTIODACTYLA	EVEN-TOED UNGULATES		
<i>Odocoileus virginianus</i>	White-tailed Deer	Cervidae	tracks

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Figure 22. Chinquapin Oak (*Quecus muehlenbergii*) is a regionally rare plant in Prince Edward that occurs in Oak – Hickory woodlands. Macaulay Mtn., 9 Sept. 2020. Photo by P.M. Catling.

APPENDIX 1

The 1993 Floral and Faunal Inventory, with preliminary notes by Terry Sprague

INTRODUCTION.

The Macaulay Mountain Conservation Area comprises 178 hectares of land located on County Road #8 on the eastern outskirts of Picton. Specifically, it occupies Lots 21, 22, 1, 2, 3 in Concession 1 southeast of Carrying Place. It is bounded on the north by County Road #8; on the south by Prince Edward Heights; on the east by a concession road (Clarke's Road); and on the west by the Macaulay Heritage Park and Museum.

Macaulay Mountain Conservation Area features a steep east-west escarpment rising 30 - 40 metres above the local terrain. There is a mature forest along the escarpment face which features Carolinian species and a unique stand of Eastern Hemlock.

A wide variety of year round educational and recreational pursuits are offered at Macaulay Mountain Conservation Area. Fireplace pits and a picnic shelter are available overlooking Macaulay Pond in addition to two scenic lookouts located on the top edge of the escarpment. Eleven kilometres of trails enable hiking fans to enjoy panoramic views of Picton Bay and the surrounding countryside. Winter enthusiasts will enjoy sampling the cross country skiing opportunities along the trails, or challenging the steep slope of Macaulay Mountain with a toboggan.

ECOLOGY

LOWLAND

The valley is a low lying area which has an intermittent stream that flows through most of the area. This stream provides water for the pond which is located at the bottom of the escarpment. The soil here is thin and moist, while at the same time being well drained and fairly rich in nutrients. The moisture content here is much higher than in the other areas. The tree cover close to the escarpment bed is a mature forest type. Some typical trees in this area include Sugar Maple, White Oak and Black Cherry. The availability of water and food draws a diverse population of birds and animals to this area. The stream beds provide corridors for skunks and raccoons. The undergrowth in this area provides a good fawning location and food source for whitetail deer.

ESCARPMENT

The escarpment is a steep slope which runs east to west between the valley and the plateau, with varying soil depths and a dense forest growth. This slope varies in elevation from 143 metres on the west end of the escarpment to 152 metres on the east that drops 30 to 40 metres to the valley. Along this escarpment there are intermittent streams and drainage depressions located on the face of the escarpment. The types of trees that grow here are mostly climax growth which include hard maple, White Ash, Butternut, Ironwood, Red and White Cedar and Eastern Hemlock.

These trees provide nesting and cover sites for many species of birds such as Black-capped Chickadees, Chipping Sparrows and Ruffed Grouse which are often spotted in cedar. Eastern Hemlock and cedar seed and tree buds provide food for Red and Gray Squirrels, chipmunks and birds. There are also plenty of fallen logs which provide Ruffed Grouse with drumming sites from which they perform their courtship rituals.

Typical plants consist of ferns such as the Christmas Fern and the Lady Fern. Since there is an increase in moisture and shade here as compared to the plateau, plants such as Jack-in-the-Pulpit and White Trillium are found in this area.

PLATEAU

The plateau is located above the escarpment on the southern end of the property and has a central high point of 155.5 metres above the local terrain. This plateau is seasonally wet and has a cleared line of bare rock at the northwest end flowing over the escarpment. Here, there is thin rocky soil which has drought-like conditions in the summer months. In the spring, when higher levels of ground moisture persist Early Buttercup, Common Dandelion and Early Saxifrage abound. However, when the summer arrives and less moisture is available, plants such as King Devil, Yellow Goat's-beard, Yarrow, Common St. John's Wort and Viper's Bugloss grow. Trees found growing along the escarpment include Red Cedar, White Cedar, Northern Prickly Ash and Dwarf Juniper. The open fields, which have Red and White cedar, provide a source of cover for European Hare and Eastern Cottontail. The fence rows are utilized by Red Tail Fox, raccoons, deer and rabbits as travel corridors between edges. The scattered shrubs provide berries which are eaten by many songbirds.

RED-BACKED SALAMANDER

The Red-backed Salamander is a member of the lungless salamander family. The key feature of this salamander is the red stripe extending along the back from the head, narrowing at the base of the tail. The body is long and narrow and the belly is black with white mounding. (Behler 1979)

In Canada, Red-backed Salamanders are found in moist coniferous, mixed and hardwood forests from Western Ontario to Southern Quebec, as well as Newfoundland. They are completely terrestrial and found frequently throughout their range. Its cold tolerance has allowed it to survive in southeast Canada and the northeast United States. From its daytime home under stones and debris, it forages for tiny invertebrates at night in the surrounding leaf litter. At the Macaulay Mountain Conservation Area Red-backed Salamanders are frequently encountered under flat stones on the lowland trail near the pond.

Courtship and mating occurs from October to April for these amphibians. From June to July clusters of grape-like eggs, numbering from about six to twelve, are suspended from the under surface of logs or stones. These young mature in two years while females lay eggs once every two years. (Behler 1979)

THE EASTERN HEMLOCK STAND

Situated within the conservation area is a stand of Eastern Hemlock, unusual in the County except along escarpments. These trees like to grow in podzolic to brown podzolic soil groups and thrive in humid cool climates with an adequate amount of moisture in all seasons.

Hemlock is often associated with White Pine in stands that have originated after a fire, windthrow, or some other disturbance which exhibits some trails of a pioneer forest. Unlike the pine though, hemlock can also start to grow in established stands and slowly advance into a dominant position without benefits of a major disturbance, thus behaving as a climax species.

Hemlock flowers appear from April to early June. Small winged seeds are shed during the fall and winter following cone maturity. The cone scales open when the weather is dry and close in wet weather; therefore, seed dispersal occurs when it is dry and windy. Mature, dominant and old growth trees continue to produce cones in abundance up to 450 years of age or longer. (Hosie 1979)

A principal enemy for the Eastern Hemlock is shallow roots. When hemlock are shallow rooted they tend to be more susceptible to drought injury. Windthrow can occur frequently on wet sites and on shallow or slow draining soils. The wind can also cause radial stress cracks and windshake (cracks between growth rings). Porcupine, although not present at Macaulay Mountain, can also wound hemlock by gnawing on the bark. It is interesting to note that because of the excellent low light tolerance levels of hemlocks, they can be the size of seedlings and yet be hundreds of years old. (Hosie 1979).

It is not unusual for hemlocks to be one inch in diameter and 100 years old. The present known record age for a hemlock is 988 years old, 48 metres tall with a diameter of 213 centimetres.

Visitors to Macaulay Mountain have an opportunity to observe the Eastern Hemlock and its attributes as the hiking trail passes through this interesting stand.

INTERESTING FACTS

- hemlock is not suitable for campfires since it throws off sparks
- the knots are extremely hard and will dull an axe
- buds of seeds and leaves provide food for Red and Gray squirrels, chipmunks and birds
- the wood itself is rich in tannin
- hemlock is the hardest wood of all conifers

MAIDENHAIR FERN (*Adiantum pedatum* L.)

Commonly found in rich shaded soil in ravines or beneath moist rocky banks, it is most abundant in limestone areas. Circular or horseshoe-like fronds are borne on slender stalks. With this fern, each stalk divides into two recurving parts that bear leaflets on the outer rim and has larger leaflets in the middle. Leaf size varies with the soil's richness.

Still, flat fronds can reach a size of 16" by 10" under proper conditions. Leaflets number 5 to 6 on each stalk branch and are bluish green in colour. Sub leaflets vary in shape with basically no stalks. Shape of the sub leaflet can vary from fan-shaped to oblong. The fern's axis is recurved and slender. Colour varies from black to chestnut brown while the surface is not scaly. The stalk can be up to 20" long, is black to dark brown in colour and is generally smooth.

Maidenhair's rootstocks creep extensively and are grayish brown. Often, light brown scales can be found near the growing end. The actual roots grow mainly near the growing end of the rootstock. Fruitdots of the maidenhair fern number 1 to 5 on upper margins of the leaflets and appear indusium white to yellowish green.

One small patch of this fern grows in the lowland region of the Macaulay Mountain Conservation Area.

HOUSE FINCH

Carpodacus mexicanus

by Terry Sprague

(from an article written in the early 1990's)

Not only is this a fairly recent arrival to Prince Edward County and one of my favourite members of the finch family, but if any species exemplifies the change that has taken place at Macaulay Mountain since 1970, it is certainly this species. Coincidentally, the purchase of Macaulay Mountain almost coincides with the arrival of this species in the province of Ontario.

The date was August 27, 1972. Several members of the Kingston Field Naturalists were having a good day birding at Prince Edward Point, at the southeastern tip of Prince Edward County. Purple Finches were everywhere, the raspberry coats of the males striking against a backdrop of Shagbark Hickory and Ironwood. Their numbers suggested an autumn movement of the species through this popular migration point.

The less spectacular brown females were also around, their white eyebrows offsetting the heavy sparrow-like streaking. Suddenly a somewhat different female came into view, this one lighter in colour with finer streaks and lacking the white line through the line which readily identifies a female purple finch. Dr. Ronald Weir, a chemical engineer at Kingston's Royal Military College and author of the recently published *Birds of the Kingston Region*, and veteran birder Helen Quilliam were also on hand this day and identified the bird as a female House Finch, the first ever for the province of Ontario.

Little did they know as they recorded the details of their discovery and headed back to Kingston, that in less than 20 years the House Finch would be among the most abundant guests at bird feeding stations along the northern shores of Lake Ontario and Lake Erie.

The story of the phenomenal spread of this species began in 1940 when cagebird dealers in California sent a small shipment of House Finches, caught in the wild, to dealers in New York City for sale as "Hollywood Finches." Since this was a flagrant violation of the Migratory Bird Treaty Act, agents of the U.S. Fish and Wildlife Service promptly put an end to it. The birds were released on Long Island, where they proceeded to pair up and multiply. Within a few years, sightings began to occur up and down the eastern seaboard, and

home owners were captivated by these colourful exotics. After their initial Ontario appearance at Prince Edward Point, residents along the Lake Erie shoreline were delighted when their first individual turned up four years later.

With habits similar to those of the House Sparrow, these new arrivals began popping up in towns and villages all along the lakeshore. By 1978, they were nesting at Niagara-on-the-Lake. It wasn't until 1980, however, that the population literally exploded in Kingston. Hundreds of reports flooded in from bird feeder watchers, curious about these new arrivals. Nests were turning up on vine-covered buildings, in ornamental evergreen trees, under eaves, and in hanging flower pots. The scattered breeding pairs during that first year or two at Kingston had expanded to over 250 breeding pairs by 1985. By 1988 an estimated 1,000 pairs of House Finches had nested within the Kingston area.

Meanwhile in Prince Edward County, individuals began appearing at feeding stations in 1982, and nesting was confirmed the following year. By 1990, the species had expanded to rural neighbourhoods with flocks of 25 to 250 converging on bird feeders.

Today their expansion continues unabated. Sightings of House Finches were made on a daily basis during the Macaulay Mountain study, and the species likely nests there in suitable areas. Studies during the Ontario Breeding Bird Atlas, from 1981 through 1985, indicated that breeding evidence was heaviest in the Niagara Peninsula and Toronto area, although breeding has been confirmed all along the shoreline of Lake Ontario and Lake Erie and extending east along the St. Lawrence River, with sightings as far north as Marathon, near Thunder Bay.

The Ontario Bird Feeder Survey, conducted by the Long Point Bird Observatory at Lake Erie, revealed that 32% of all Ontario bird feeders enjoy the presence of House Finches. If we leave the northern region out of the picture where the species is still pretty much of a rarity, then we can safely say that close to 50% of the feeders located within the House Finch's common range are frequented by this species. Using this same formula, there are about 4.74 House Finches per feeder with higher percentages in the Niagara/Toronto area.

Their soft expressive notes are a happy contrast to the harsh, irritating chirping of the House Sparrow, their song full-throated and as natural as the rippling of a mountain brook. Bird feeder operators find that House Finches prefer the smaller black oil sunflower seed over the larger, striped sunflower seed.

Niger seed, imported from Africa and Asia and sold commercially at most feed mills which specialize in mixed bird feed, is another favourite. Offering this in a silo type feeder specially designed for niger seed will guarantee results. Those who offer these two foods and abundance of water during the summer months can be sure of one or two pairs of House Finches remaining to nest in some obscure corner of the premises.

Will the House Finch one day push the aggressive House Sparrow into oblivion? Somehow I doubt it, although the House Sparrow in the East has been undergoing a long period of decline ever since the automobile replaced the horse. When we add such factors as disease, predation, and changing agricultural practices, it is easy to see that the House Finch is just one more adverse factor. With similar nesting habits, the House Finch will certainly be giving the House Sparrow a run for its money. With his cheery warble and a colour that glows like a flash of sunset through a summer shower, many anticipate its reign as a welcome change.

A Floral and Faunal Inventory of Macaulay Mountain Conservation Area - 1993

A Floral and Faunal Inventory was conducted in 1993 by Ron Bunt and Julie Helpard as an Environmental Youth Corps program supervised by Terry Sprague. Although the survey spanned only 12 weeks (June to September) the inventory includes flora and fauna species identified since the area's purchase. Mammal identification was made via recorded sightings, sounds, and tracks.

N.B. The organization of the original vascular plant list was modified for ease of comparison with the BioBlitz data (rather than grouped as Trees, Shrubs, Vines and all herbaceous plants alphabetically by family). Some scientific names have changed (due to taxonomic revisions). The order of species is alphabetically by common name, rather than scientific name, and the families are in alphabetical order within major taxonomic groups. Those species with an asterisk were not observed during the BioBlitz but this may be due to season or just being missed rather than an indication that they are no longer present. (In the case of some birds, e.g. Ruffed Grouse, this is an example a species that is absent now, due to the increased disturbance during the nesting period.)

VASCULAR PLANTS

LOCATION: (P) Plateau (E) Escarpment (L) Lowland

Common Name

Location

Scientific Name

FERNS AND FERN ALLIES

POLYPODIACEAE (True Ferns)

Christmas Fern
Lady Fern
Maidenhair Fern
Ostrich Fern
Sensitive Fern

Polystichum acrostichoides
Athyrium Filix-femina
Adiantum pedatum
Matteuccia struthiopteris
Onoclea sensibilis

EQUISETACEAE (Horsetail Family)

Field Horsetail

Equisetum arvense

GYMNOSPERMS

CUPRESSACEAE (Cedar Family)

Eastern Red Cedar
Ground Juniper
Eastern White Cedar

Juniperus virginiana
Juniperus communis
Thuja occidentalis

PINACEAE (Pine Family)

Eastern Hemlock
Eastern White Pine
Mugho Pine *
White Spruce

Tsuga canadensis
Pinus strobus
Pinus mugo
Picea glauca

MONOCOTS

ARACEAE (Arum Family)

Jack-in-the-Pulpit

(EL)

Arisaema atrorubens



Figure 23. Maidenhair Fern. A woodland species found on lower slopes near the stream. Photo by T. Sprague, several years ago, but plants observed again after the BioBlitz.

CYPERACEAE (Sedge Family)

Dark Green Bulrush *
Sedge *
Sedge
Three Square *

Scirpus atrovirens
Carex intumescens
Carex vulpinoidea
Scirpus americanus

GRAMINEAE (Grass Family)

Brome Grass *		<u>Bromus ciliatus</u>
Canada Blue Joint		<u>Calamagrostis canadensis</u>
Canada Blue Grass		<u>Poa compressa</u>
Green Foxtail *		<u>Setaria viridis</u>
Meadow Fescue *		<u>Festuca elatior</u>
Quack Grass		<u>Agropyron repens</u>
Red Fescue		<u>Festuca rubra</u>
Ribbon Grass		<u>Phalaris arundinacea</u>
Timothy		<u>Phleum pratense</u>

IRIDACEAE (Iris Family)

Blue-eyed Grass *	(E)	<u>Sisyrinchium mucronatum</u>
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LILIACEAE (Lily Family)

False Solomon's-seal	(EL)	<u>Smilacina racemosa</u>
Large-flowered Bellwort	(E)	<u>Uvularia grandiflora</u>
Red Trillium	(EL)	<u>Trillium erectum</u>
Starry False Solomon's-seal	(EL)	<u>Smilacina stellata</u>
Trout Lily	(EL)	<u>Erythronium americanum</u>
White Trillium *	(EL)	<u>Trillium grandiflorum</u>
Wild Lily-of-the-valley	(EL)	<u>Maianthemum canadense</u>

ORCHIDACEAE (Orchard Family)

Helleborine	(EL)	<u>Epipactis helleborine</u>
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DICOTS

ACERACEAE (Maple Family)

Manitoba Maple		<u>Acer negundo</u>
Red Maple		<u>Acer rubra</u>
Silver Maple		<u>Acer saccharinum</u>
Sugar Maple		<u>Acer saccharum</u>
Mountain Maple *		<u>Acer spicatum</u>

AMARANTHACEAE (Amaranth Family)

Green Amaranth *	(PL)	<u>Amaranthus retroflexus</u>
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ANACARDIACEAE (Cashew Family)

Poison Ivy	(PEL)	<u>Rhus radicans</u>
Staghorn Sumac		<u>Rhus typhina</u>

ASCLEPIADACEAE (Milkweed Family)

Common Milkweed	(PL)	<u>Asclepias syriaca</u>
Purple Milkweed *	(L)	<u>Asclepias purpurascens</u> (***)S2) search for
Swamp Milkweed	(L)	<u>Asclepias incarnata</u>
Black Swallowwort	(L)	<u>Cynanchrum nigrum</u>

BALSAMINACEAE (Touch-me-not Family)

Jewelweed	(PL)	<u>Impatiens capensis</u>
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BERBERIDACEAE (Barberry Family)

Blue Cohosh	(E)	<u>Caulophyllum thalictroides</u>
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BETULACEAE (Birch Family)

Ironwood		<u>Ostrya virginiana</u>
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White Birch		<u>Betula papyrifera</u>
Blue Beech		<u>Carpinus caroliniana</u>
BORAGINACEAE (Forget-me-not Family)		
Hound's-tongue *	(P)	<u>Cynoglossum officinale</u>
Viper's Bugloss	(P)	<u>Echium vulgare</u>
CAMPANULACEAE (Bluebell Family)		
Harebell	(E)	<u>Campanula rotundifolia</u>
CAPRIFOLIACEAE (Honeysuckle Family)		
Nannyberry *		<u>Viburnum lentago</u>
Red Elderberry *		<u>Sambucus pubens</u>
Highbush Cranberry		<u>Viburnum trilobum</u>
CARYOPHYLLACEAE (Pink Family)		
Bladder Campion	(PL)	<u>Silene cucubalus</u>
Deptford Pink *	(E)	<u>Dianthus armeria</u>
Mouse-ear Chickweed	(P)	<u>Cerastium vulgatum</u>
CHENOPODIACEAE (Goosefoot Family)		
Lamb's-quarters *	(P)	<u>Chenopodium album</u>
COMPOSITAE (Composite Family)		
Black-eyed Susan *	(L)	<u>Rudbeckia hirta</u>
Boneset *	(L)	<u>Eupatorium perfoliatum</u>
Bull Thistle *	(PL)	<u>Cirsium vulgare</u>
Canada Goldenrod	(PL)	<u>Solidago canadensis</u>
Common Dandelion	(P)	<u>Taraxacum officinale</u>
Common Fleabane	(PEL)	<u>Erigeron philadelphicus</u>
Common Ragweed *	(P)	<u>Ambrosia artemisiifolia</u>
Daisy Fleabane *	(PEL)	<u>Erigeron annuus</u>
Canada Thistle	(PL)	<u>Cirsium vulgare</u>
Elecampane	(L)	<u>Inula helenium</u>
Field Pussytoes *	(PL)	<u>Antennaria neglecta</u>
Field Sow-thistle *	(PL)	<u>Sonchus oleraceus</u>
King Devil	(P)	<u>Hieracium pratense</u>
Late Goldenrod *	(PL)	<u>Solidago gigantea</u>
Ox-eye Daisy	(PL)	<u>Chrysanthemum leucanthemum</u>
Plantain-leaved Pussytoes *	(PL)	<u>Antennaria plantaginifolia</u>
Prickly Lettuce *	(P)	<u>Lactuca scariola</u>
Spotted Joe-pye-weed	(L)	<u>Eupatorium maculatum</u>
Sweet Joe-pye-weed	(L)	<u>Eupatorium purpureum</u>
Tall Goldenrod *	(PL)	<u>Solidago altissima</u>
Wild Chicory	(PL)	<u>Chichorium intybus</u>
White Snakeroot *	(L)	<u>Eupatorium rugosum</u>
Yarrow	(P)	<u>Achillea millefolium</u>
Yellow Goat's-beard	(PL)	<u>Traopogon pratensis</u>
CONVOLVULACEAE (Morning-glory Family)		
Field Bindweed	(PL)	<u>Convolvulus arvensis</u>
CORNACEAE (Dogwood Family)		
Alternate-leaved Dogwood		<u>Cornus alternifolia</u>
Red-Osier Dogwood		<u>Cornus stolonifera</u>
CRUCIFERAE (Mustard Family)		
Black Mustard *	(P)	<u>Brassica nigra</u>

Dame's Rocket	(E)	<u>Hesperis matronalis</u>
Field Pennycress *	(P)	<u>Thlaspi arvense</u>
Toothwort *	(P)	<u>Dentaria diphylla</u>
Winter Cress *	(L)	<u>Barbarea vulgaris</u>
DIPSACEAE (Teasel Family)		
Teasel *	(L)	<u>Dipsacus laciniatus</u>
ELEGANACEAE (Oleaster Family)		
Russian Olive *		<u>Elaeagnus angustifolia</u>
FAGACEAE (Beech Family)		
American Beech		<u>Fagus grandifolia</u>
Red Oak		<u>Quercus rubra</u>
Bur Oak		<u>Quercus macrocarpa</u>
White Oak		<u>Quercus alba</u>
GERANIACEAE (Geranium Family)		
Herb-Robert	(EL)	<u>Geranium robertianum</u>
JUGLANDACEAE (Walnut Family)		
Black Walnut		<u>Juglans nigra</u>
Butternut *		<u>Juglans cinerea</u>
Shagbark Hickory		<u>Carya orata</u>
Bitternut Hickory		<u>Carya cordiformis</u>
LABIATAE (Mint Family)		
Blue Giant Hyssop *	(L)	<u>Agastache foeniculum</u>
Catnip *	(PL)	<u>Nepeta cataria</u>
Heal-all	(PL)	<u>Prunella vulgaris</u>
Motherwort *	(PL)	<u>Leonurus cardiaca</u>
Peppermint *	(PL)	<u>Mentha piperita</u>
Wild Bergamot *	(PL)	<u>Monarda fistulosa</u>
Wild Mint *	(PL)	<u>Mentha arvensis</u>
Spearmint *	(L)	<u>Mentha spicata</u>
LEGUMINOSAE (Pea Family)		
Alfalfa	(PL)	<u>Medicago sativa</u>
Alsike Clover	(L)	<u>Trifolium hybridum</u>
Birdfoot Trefoil	(L)	<u>Lotus corniculatus</u>
Black Medick	(PL)	<u>Medicago lupulina</u>
Caragana *		
Cow Vetch	(PL)	<u>Vicia cracca</u>
Smaller Hop Clover *	(PL)	<u>Trifolium procubens</u>
White Sweet Clover	(PL)	<u>Melilotus alba</u>
Yellow Sweet Clover	(PL)	<u>Melilotus officinalis</u>
MALVACEAE (Mallow Family)		
Mallow	(PL)	<u>Malva neglecta</u>
OLEACEAE (Olive Family)		
Northern Prickly Ash		<u>Xanthoxylum americanum</u>
White Ash		<u>Fraxinus americana</u>
Black Ash		<u>Fraxinus nigra</u>
ONAGRACEAE (Evening- primrose Family)		
Enchanter's Nightshade	(EL)	<u>Circaea quadrisulcata</u>
Hairy Willow-herb *	(EL)	<u>Epibolium hirsutum</u>

OXALIDACEAE (Wood-sorrel Family) Yellow Wood-sorrel	(E)	<u>Oxalis stricta</u>
PLANTAGINACEAE (Plantain Family) Common Plantain	(PL)	<u>Plantago major</u>
POLEMONIACEAE (Phlox Family) Blue Phlox Moss Phlox *	(E) (E)	<u>Phlox divaricata</u> <u>Phlox subulata</u>
POLYGONACEAE (Buckwheat Family) Common Smartweed * Curled Dock	(PL) (PL)	<u>Polygonum hydropiper</u> <u>Rumex crispus</u>
PORTULACACEA (Purslane Family) Spring Beauty * Purslane *	(EL) (L)	<u>Claytonia virginica</u> <u>Portulaca oleracea</u>
PRIMULACEAE (Primrose Family) Scarlet Pimpernel *	(E)	<u>Anagallis arvensis</u>
PYROLACEAE (Wintergreen Family) Indian-pipe *	(E)	<u>Monotropa uniflora</u>
RANUNCULACEAE (Buttercup Family) Columbine Common Buttercup Early Meadow-Rue Red Baneberry Sharp-lobed Hepatica Thimbleweed White Baneberry	(E) (PL) (E) (E) (E) (PL) (E)	<u>Aquilegia canadensis</u> <u>Ranunculus acris</u> <u>Thalictrum dioicum</u> <u>Actaea rubra</u> <u>Hepatica acutiloba</u> <u>Anemone virginiana</u> <u>Actaea pachypoda</u>
RHAMNACEAE (Buckthorn Family) Common Buckthorn		<u>Rhamnus catharticus</u> (* <u>alnifolia</u>)
ROSACEAE (Rose Family) Agrimonies * Common Strawberry Purple-flowering Raspberry Rough Avens * Rough-fruited Cinquefoil Silvery Cinquefoil * White Avens Wood Strawberry * Black Cherry * Domestic Apple * Pin Cherry * Black Raspberry Choke Cherry Multiflora Rose Pasture Rose Red Raspberry Smooth Rose	(EL) (P) (PEL) (PL) (PL) (P) (E) (EL)	<u>Agrimonia</u> sp. <u>Fragaria virginiana</u> <u>Rubus odoratus</u> <u>Geum virginianum</u> <u>Potentilla recta</u> <u>Potentilla argentea</u> <u>Geum canadense</u> <u>Fragaria vesca</u> <u>Prunus serotina</u> <u>Pyrus malus</u> <u>Prunus pensylvanica</u> <u>Rubus occidentalis</u> <u>Prunus virginiana</u> <u>Rosa multiflora</u> <u>Rosa carolina</u> <u>Rubris idaeus</u> <u>Rosa blanda</u>
RUBIACEAE (Bedstraw Family) Northern Bedstraw *	(EL)	<u>Galium boreale</u>

White Wild Licorice *	(PL)	<u>Galium circaezans</u>
Wild Madder *	(PL)	<u>Galium mollugo</u>
SALICACEAE (Willow Family)		
Black Willow *		<u>Salix nigra</u>
Large-tooth Aspen *		<u>Populus grandidentata</u>
Trembling Aspen		<u>Populus tremuloides</u>
SAXIFRAGACEAE (Saxifrage Family)		
Early Saxifrage	(PL)	<u>Saxifraga virginiana</u>
Miterwort *	(EL)	<u>Mitella diphylla</u>
SCROPHULARIACEAE (Snapdragon Family)		
Common Mullein *	(PL)	<u>Verbascum thapsus</u>
Hairy Beardtongue	(PL)	<u>Penstemon hirsutus</u>
Butter-and-eggs *	(PL)	<u>Linaria vulgaris</u>
SOLANACEAE (Tomato Family)		
Nightshade	(L)	<u>Solanum dulcamara</u>
TILIACEAE (Linden Family)		
American Basswood		<u>Tilia americana</u>
Little-leaf Linden		<u>Tilia cordata</u>
ULMACEAE (Elm Family)		
American Elm		<u>Ulmus americana</u>
UMBELLIFERAE (Parsley Family)		
Queen Anne's Lace	(PL)	<u>Daucus carota</u>
Wild Parsnip	(P)	<u>Pastinaca sativa</u>
URTICACEAE (Nettle Family)		
Stinging Nettle	(P)	<u>Urtica dioica</u>
VERBENACEAE (Vervain Family)		
Blue Vervain *	(PL)	<u>Verbena hastata</u>
VIOLACEAE (Violet Family)		
Common Blue Violet *	(EL)	<u>Viola papilionacea</u>
Downy Yellow Violet *	(EL)	<u>Viola pubescens</u>
Marsh Blue Violet	(EL)	<u>Viola cucullata</u>
VITACEAE (Grape Family)		
Riverbank Grape		<u>Vitis riparia</u>
Summer Grape *		<u>Vitis aestivalis</u>
Virginia Creeper		<u>Parthenocissus vitacea</u>

INSECTS

Common Name

Ambush Bug
Anopheles Mosquito
Ant
Back Swimmer
Blue Damselfly
Bumble Bee

Scientific Name

Family Phymatidae
Anopheles sp.
Family Formicidae
Family Notonectidae
Calopteryx virgo
Subfamily Culicinae

Cabbage Butterfly
 Cecropia moth
 Cicada
 Common Wasp
 Daddy-long-legs
 Deer Fly
 Dragonfly
 Eastern Tiger Swallowtail Butterfly
 Eastern Tent Caterpillar
 European Earwig
 European Skipper
 Field Cricket
 Green Dragon Fly
 Gypsy Moth
 Honey Bee
 Katydid
 Maple Spindle-gall Mite
 Monarch Butterfly
 Praying Mantis
 Seven Spotted Ladybird Beetle
 Stink Bug
 Viceroy
 Walking Stick
 Water Mite
 Water Boatman
 Water Strider
 Yellowjacket

Pieris rapae
Hyalophora cecropia
 Family Cicadidae
Paravespula septempucata
 Order Phalangida
Chrysops sp.
 Order Odonata
Pterousus glaucus
Malacosoma americanum
 Family Lucanidae
Thymelicus lineda
 Subfamily Gryllinae
Anax imperator
Lymantria dispar
Apis mellifera
 Subfamily Pseudophyllinae
Vasatesacerus crummena
Danaus plexippus
 Family Mantidae
Hippodamia convergen
 Family Pentatomidae
Limenitis archippus
 Family Phasmatidae
 Order Acarina
 Family Corixidae
 Family Gerridae
 Subfamily Vespinae

REPTILES AND AMPHIBIANS

SNAKES

COLUBRIDAE (Colubrid Snake Family)

Brown Snake
 Common Garter Snake
 Eastern Milk Snake
Eastern Ribbon Snake *
 Smooth Green Snake

Storeria dekayi
Thamnophis sirtalis
Lampropeltis triangulum triangulum
Thamnophis sauritus
Opheodrys vernalis

TURTLES

EMYDIDAE (Pond, Marsh and Box Turtle Family)

Eastern Painted Turtle

Chrysemys picta

TOADS AND FROGS

RANIDAE (True Frog Family)

Bullfrog
 Green Frog
 Northern Leopard Frog

Rana catesbeiana
Rana clamitans
Rana pipiens

BUFONIDAE (Toad Family)

American Toad

Bufo americanus

HYLIDAE (Treefrog Family)
Common Gray Treefrog
Spring Peeper *

Hyla versicolor
Hyla crucifer

SALAMANDERS

PLETHODONTIDAE (Lungless Salamander Family)
Red-backed Salamander

Plethodon cinereus

BIRDS

Common Name:

Scientific Name:

AREIDAE (Herons, Bitterns)
Great Blue Heron

Ardea herodias

ANATIDAE (Swans, Geese, Ducks)
Canada Goose
Mallard
Blue-winged Teal *

Branta canadensis
Anas platyrhynchos platyrhynchos
Anas discors

CATHARTIDAE (New World Vultures)
Turkey Vulture

Cathartes aura

ACCIPTRIDAE (Hawks, Eagles)
Northern Harrier *
Sharp-shinned Hawk *
Cooper's Hawk
Goshawk *
Red-tailed Hawk *
American Rough-legged Hawk *

Circus cyaneus hudsonius
Accipiter striatus velox
Accipiter cooperii
Accipiter gentilis atricapillus
Buteo jamaicensis
Buteo lagopus s. jonannis

FALCONAE (Falcons)
American Kestrel *

Falco sparverius

TETRAONIDAE (Grouse, Ptarmigan)
Ruffed Grouse *

Bonasa umbellus

CHARAPRIIDAE (Plovers)
Killdeer

Charadrius vociferus vociferus

SCOLOPACIDAE (Woodcocks, Snipes, Sandpipers)
Common Snipe *
American Woodcock *
Spotted Sandpiper *

Capella gallinago
Philonela minor
Actitis macularia

LARIDAE (Gulls, Terns)
Ring-billed Gull

Larus delawarensis

COLUMBIDAE (Pigeons, Doves)
Rock Dove *
Mourning Dove

Columba livia
Zenaidura macroura

CUCULIDAE (Cuckoos)

Black-billed Cuckoo *

Coccyzus erythrophthalmus**STRIGIDAE** (True Owls)

Great Horned Owl *

Snowy Owl *

Long-eared Owl *

Bubo virginianusNyctea scandiacaAsio otus wilsonianus**CAPRIMULGIDAE** (Goatsuckers)

Common Nighthawk *

Whip-poor-will

Chordeiles minorCaprimulgus vociferus**TROCHILIDAE** (Hummingbirds)

Ruby-throated Hummingbird

Archilochus colubris**ALCEDINDAE** (Kingfishers)

Belted Kingfisher

Megaceryle alcyon alcyon**PICIDAE** (Woodpeckers)

Downy Woodpecker *

Hairy Woodpecker *

Northern Flicker

Pileated Woodpecker *

Dendrocopus pubescensDendrocopus villosusColaptes auratusHylatomus pileatus**TYRANNIDAE** (Tyrant Flycatchers)

Eastern Wood Pewee

Alder Flycatcher *

Least Flycatcher *

Eastern Phoebe *

Great Crested Flycatcher

Eastern Kingbird

Contopus virensEmpidonax trailliiEmpidonax minimusSayornis phoebeMyiarchus crinitusTyrannus tyrannus**ALAUDIDAE** (Larks)

Horned Lark *

Eremophila alpestris**HIRUMDINDAE** (Swallows)

Purple Martin *

Tree Swallow

Northern Rough-winged Swallow *

Cliff Swallow *

Barn Swallow *

Progne subis subisIridoprocne bicolorStelgidopteryx ruficollisPetrochelidon pyrrhonata albifronsHirundo rustica erythrogaster**CORVIDAE** (Jays, Magpies, Crows)

Blue Jay

American Crow

Cyanocitta cristataCorvus brachyrhynchus**PARIDAE** (Chickadees)

Black-capped Chickadee

Parus atricapillus**SITTIDAE** (Nuthatches)

Red-breasted Nuthatch *

White-breasted Nuthatch *

Sitta canadensisSitta carolinensis**CERTHIIDAE** (Creepers)

Brown Creeper *

Certhia familiaris**TROGLODYTIDAE** (Wrens)

House Wren

Troglodytes aedon

Winter Wren

Troglodytes troglodytes

SYLVIIDAE (Kinglets and Gnatcatchers)

Golden-crowned Kinglet *

Ruby-crowned Kinglet *

Rugulus satrapa satrapa

Regulus calendula calendula

TURDIDAE (Thrushes)

Eastern Bluebird *

Veery *

Swainson's Thrush *

Wood Thrush

American Robin

Sialia sialis

Hylocichla fuscescens

Catharus ustulatus

Hylocichla mustelina

Tundus migratorius

MIMIDAE (Mockingbirds, Thrushes)

Catbird

Brown Thrasher *

Dumetella carolinensis

Toxostoma rufum

BOMBYCILLIDAE (Waxwings)

Cedar Waxwing *

Bombycilla cedrorum

LANIIDAE (Shrikes)

Northern Shrike *

Lanis excubitor borealis

STURNISAE (Starlings)

European Starling

Strunus vulgaris vulgaris

VIREONIDAE (Vireos)

Warbling Vireo

Red-eye Vireo

Vireo gilvus gilvus

Vireo olivaceus

PARULIDAE (Wood Warblers)

Tennessee Warbler *

Nashville Warbler *

Yellow Warbler

Chestnut-sided Warbler *

Magnolia Warbler *

Cape May Warbler *

Black-throated Blue Warbler *

Yellow-rumped Warbler

Black-throated Green Warbler

Blackburnian Warbler *

Palm Warbler *

Bay-breasted Warbler *

Black-and-white Warbler *

American Redstart *

Ovenbird *

Mourning Warbler *

Common Yellowthroat

Wilson's Warbler *

Canada Warbler *

Vermivora peregrina

Vermivora ruficapilla ruficapilla

Dendroica petechia

Dendroica pensylvanic

Dendroica magnolia

Dendroica trigrina

Dendroica caerulescens

Dendroica coronata

Dendroica virens

Dendroica fusca

Dendroica palmarum

Dendroica castanea

Mniotilta varia

Setohaga ruticilla

Seiurus aurocapillus

Oporornis philadelphia

Geothlypis trichas

Wilsonia pusilla pusilla

Wilsonia canadensis

THRAUPIDAE (Tanagers)

Scarlet Tanager

Piranga olivacea

FRINGILLIDAE (Grosebeaks, Finches, Buntings, Sparrows)

Northern Cardinal

Richmondia cardinalis

Rose-breasted Grosbeak
American Tree Sparrow *
Chipping Sparrow
Clay-coloured Sparrow
Field Sparrow
Vesper Sparrow *
Savannah Sparrow *
Song Sparrow
Rufous-sided Towhee
Swamp Sparrow *
White-throated Sparrow
White Crowned Sparrow *
Dark-eyed Junco *
Pine Grosbeak *
Purple Finch *
House Finch *
Common Redpoll *
American Goldfinch
Evening Grosbeak *
Snow Bunting *

ICTERIDAE (Orioles, Blackbirds)

Bobolink *
Red-winged Blackbird
Eastern Meadowlark *
Common Grackle
Rusty Blackbird *
Brown-headed Cowbird
Northern Oriole

PLOCEIDAE (Weaver Finches)

House Sparrow *

MAMMALS

CANIDAE (Dog Family)

Coyote
Red Fox *

CERVIDAE (Deer Family)

Whitetail Deer

CRICETIDAE (Mice,Rats,Lemmings and Vole Family)

Deer Mouse
Meadow Vole*
Norway Rat *

LEPORIDAE (Rabbit and Hare Family)

Eastern Cottontail Rabbit
European Hare *

MUSTELIDAE (Weasels,Skunks,etc Family)

Longtail Weasel *
Striped Skunk *

Pheucticus luctuosa
Spizella arborea arborea
Spizella passerina passerina
Spizella pallida
Spizella pusilla pusilla
Pooecetes gramineus gramineus
Passerculus sandwichensis
Melospiza melodia
Pipilo erythrophthalmus
Melospiza georgiana
Zonotrichia albicollis
Zonotrichia leucophrys
Junco hyemalis
Pinicola enucleator leucura
Carpodacus purpureus
Carpodacus mexicanus
Carduelis flammea
Carduelis tristis
Hesperiphona vespertina vespertina
Plectrophenax nivalis nivalis

Dolichonyx oryzivorus
Agelaius phoeniceus
Sturnella magna
Ouiscalus quiscalus
Euphagus carolinus
Mobthrus ater ater
Icterus galbula

Passer domesticus domesticus

Canis latrans
Vulpes fulva

Odocoileus virginianus

Peromyscus maniculatus
Microtus pennsylvanicus
Rattus norvegicus

Sylvilagus floridanus
Lepus europaeus

Mustela frenata
Mephitis mephitis

PROCYONIDAE (Raccoon and Coatis Family)

Raccoon

[Procyon lotor](#)**SCIUNIDAE** (Squirrel Family)

Eastern Chipmunk

Eastern Gray Squirrel

Red Squirrel

Woodchuck *[Tamias striatus](#)[Sciurus carolinensis](#)[Tamiasciurus hudsonicus](#)[Marmota monax](#)**SORICIDAE** (Shrew Family)**Pygmy Shrew ***[Microsorex hoyi](#)**TALPIDAE** (Moles)**Starnose Mole ***[Condylura crist](#)

APPENDIX 2

Species reported on iNaturalist at Macaulay Mountain Conservation Area between 2017 and Jan. 2023 for all groups including: 1 Myxogastrid Amoeba species, 2 Slime Molds, 3 Lichens, 211 Vascular Plants (58 additions to the BioBlitz list), 2 Mosses, 12 Fungi, 2 Snails, 21 Dragonflies and Damselflies, 3 Grasshoppers, 23 Butterflies, 22 Moths, 13 Beetles, Bees and Wasps, 10 Flies, 18 True Bugs, 1 Mantid, 7 Spiders, 13 Reptiles and Amphibians, 11 Bird and 4 Mammal species. For each group the taxa are recorded alphabetically according to genus. Records for the 2022 BioBlitz are identified with shading. Those species that are additions to the lists in the BioBlitz are identified with an asterisk after the scientific name. To see photograph go to photo link column and use control click to go to iNat.

Scientific Name	Common Name	Photo Link	Date Observed	iNat. #
<i>Myxogastrid AMOEBAs</i>				
<i>Lycogala epidendrum *</i>	Wolf's Milk		23-May 2022	118401135
<i>SLIME MOLDS</i>				
<i>Guepinia helvelloides *</i>	Apricot Jelly	<u>2</u>	29-Sep 2021	96647374
<i>LICHENS</i>				
<i>Cladonia coniocraea</i>	Common Powderhorn	<u>3</u>	18-Jun 2022	122395800
<i>Cladonia coniocraea</i>	Common Powderhorn	<u>2</u>	27-Jul 2021	88885060
<i>Cladonia pyxidata *</i>	Pebbled Pixie Cup		03-Aug 2022	129348229
<i>Cladonia verticillata *</i>	Ladder Lichen		03-Aug 2022	129347843

VASCULAR PLANTS

<i>Acer platanoides</i>	Norway Maple		13-May	2021	78622732
<i>Acer platanoides</i>	Norway Maple	<u>5</u>	13-May	2021	78622069
<i>Acer saccharinum</i>	Silver Maple	<u>2</u>	17-Jun	2022	122194194
<i>Achillea millefolium</i>	Common Yarrow	<u>2</u>	17-Jun	2022	122427951
<i>Achillea millefolium</i>	Common Yarrow		17-Jun	2022	122406897
<i>Achillea millefolium</i>	Common Yarrow		10-Jun	2021	82492891
<i>Achillea millefolium</i>	Common Yarrow		06-Jun	2021	81921567
<i>Achillea millefolium</i>	Common Yarrow	<u>2</u>	06-Jun	2021	81920225
<i>Achillea millefolium</i>	Common Yarrow	<u>2</u>	14-Jul	2019	28901850
<i>Actaea pachypoda</i>	White Baneberry		22-May	2022	118297248
<i>Actaea pachypoda</i>	White Baneberry		08-May	2021	77989876
<i>Actaea pachypoda</i>	White Baneberry		06-Aug	2017	7401801
<i>Ageratina altissima</i> *	White Snakeroot		24-Jul	2021	88485316
<i>Ambrosia artemisiifolia</i> *	Ragweed		06-Aug	2017	7401192
<i>Amphicarpaea bracteata</i>	American Hog-Peanut		17-Jun	2022	122229087
<i>Anemonastrum canadense</i>	Meadow Anemone	<u>2</u>	17-Jun	2022	122427316
<i>Anemone virginiana</i>	Tall Thimbleweed		27-Oct	2022	140169506
<i>Anemone virginiana</i>	Tall Thimbleweed		10-Jun	2021	82493439
<i>Anemone virginiana</i>	Tall Thimbleweed		06-Jun	2021	81921211
<i>Anemone virginiana</i>	Tall Thimbleweed	<u>2</u>	06-Jun	2021	81920208
<i>Anemone virginiana</i>	Tall Thimbleweed	<u>2</u>	29-May	2021	80823579
<i>Anemone virginiana</i>	Tall Thimbleweed	<u>2</u>	08-Sep	2020	59009576
<i>Antennaria howellii howellii</i> *	pussytoes	<u>5</u>	28-May	2019	25970213
<i>Apocynum cannabinum</i>	Hemp Dogbane		18-Jun	2022	122369473
<i>Apocynum cannabinum</i>	Hemp Dogbane		17-Jun	2022	122198393
<i>Apocynum cannabinum</i>	Hemp Dogbane	<u>4</u>	14-Jul	2019	28958677
<i>Apocynum cannabinum</i>	Hemp Dogbane	<u>2</u>	14-Jul	2019	28957564
<i>Aquilegia canadensis</i>	Red Columbine		17-Jun	2022	122428431
<i>Aralia nudicaulis</i> *	Wild Sarsaparilla	<u>2</u>	06-Jun	2021	81924085
<i>Arctium sp.</i>	Burdocks		17-Jun	2022	122192864
<i>Arisaema triphyllum</i>	Jack-in-the-Pulpit		22-May	2022	118297696
<i>Arisaema triphyllum</i>	Jack-in-the-Pulpit		22-May	2022	118297402
<i>Asclepias incarnata</i>	Swamp Milkweed		24-Jul	2021	88486211
<i>Asclepias incarnata</i>	Swamp Milkweed	<u>2</u>	14-Jul	2019	28957563
<i>Asclepias incarnata</i>	Swamp Milkweed		06-Aug	2017	9537195
<i>Asclepias quadrifolia</i>	Four-leaved Milkweed		25-Jun	2022	123895220
<i>Asclepias quadrifolia</i>	Four-leaved Milkweed		25-Jun	2022	123456322
<i>Asclepias quadrifolia</i>	Four-leaved Milkweed		25-Jun	2022	123456262
<i>Asclepias quadrifolia</i>	Four-leaved Milkweed		17-Jun	2022	122407431
<i>Asclepias quadrifolia</i>	Four-leaved Milkweed		17-Jun	2022	122406115
<i>Asclepias quadrifolia</i>	Four-leaved Milkweed		17-Jun	2022	122405909

<i>Asclepias quadrifolia</i>	Four-leaved Milkweed		17-Jun	2022	122405873
<i>Asclepias quadrifolia</i>	Four-leaved Milkweed		17-Jun	2022	122405785
<i>Asclepias quadrifolia</i>	Four-leaved Milkweed		17-Jun	2022	122405701
<i>Asclepias quadrifolia</i>	Four-leaved Milkweed		17-Jun	2022	122405675
<i>Asclepias quadrifolia</i>	Four-leaved Milkweed		17-Jun	2022	122405631
<i>Asclepias quadrifolia</i>	Four-leaved Milkweed		17-Jun	2022	122405592
<i>Asclepias quadrifolia</i>	Four-leaved Milkweed		17-Jun	2022	122405532
<i>Asclepias quadrifolia</i>	Four-leaved Milkweed		17-Jun	2022	122405436
<i>Asclepias quadrifolia</i>	Four-leaved Milkweed		17-Jun	2022	122405375
<i>Asclepias quadrifolia</i>	Four-leaved Milkweed	<u>6</u>	17-Jun	2022	122249533
<i>Asclepias quadrifolia</i>	Four-leaved Milkweed		15-Jun	2022	121965928
<i>Asclepias quadrifolia</i>	Four-leaved Milkweed		15-Jun	2022	121965875
<i>Asclepias quadrifolia</i>	Four-leaved Milkweed		15-Jun	2022	121965818
<i>Asclepias quadrifolia</i>	Four-leaved Milkweed		15-Jun	2022	121965755
<i>Asclepias quadrifolia</i>	Four-leaved Milkweed		15-Jun	2022	121965664
<i>Asclepias quadrifolia</i>	Four-leaved Milkweed		15-Jun	2022	121965634
<i>Asclepias quadrifolia</i>	Four-leaved Milkweed		15-Jun	2022	121965539
<i>Asclepias quadrifolia</i>	Four-leaved Milkweed		15-Jun	2022	121965397
<i>Asclepias quadrifolia</i>	Four-leaved Milkweed		15-Jun	2022	121965337
<i>Asclepias quadrifolia</i>	Four-leaved Milkweed		15-Jun	2022	121965218
<i>Asclepias quadrifolia</i>	Four-leaved Milkweed		15-Jun	2022	121965091
<i>Asclepias quadrifolia</i>	Four-leaved Milkweed		15-Jun	2022	121964715
<i>Asclepias quadrifolia</i>	Four-leaved Milkweed		15-Jun	2022	121964646
<i>Asclepias quadrifolia</i>	Four-leaved Milkweed		15-Jun	2022	121964536
<i>Asclepias quadrifolia</i>	Four-leaved Milkweed		15-Jun	2022	121964492
<i>Asclepias quadrifolia</i>	Four-leaved Milkweed		15-Jun	2022	121964404
<i>Asclepias quadrifolia</i>	Four-leaved Milkweed		15-Jun	2022	121964369
<i>Asclepias quadrifolia</i>	Four-leaved Milkweed		24-Jul	2021	88485595
<i>Asclepias quadrifolia</i>	Four-leaved Milkweed	<u>2</u>	10-Jun	2021	82494215
<i>Asclepias quadrifolia</i>	Four-leaved Milkweed		06-Jun	2021	81922236
<i>Asclepias quadrifolia</i>	Four-leaved Milkweed	<u>5</u>	06-Jun	2021	81920217
<i>Asclepias quadrifolia</i>	Four-leaved MilkweedA	<u>2</u>	29-May	2021	80823489
<i>Asclepias quadrifolia</i>	Four-leaved Milkweed	<u>2</u>	19-Aug	2013	26510613
<i>Asclepias quadrifolia</i>	Four-leaved Milkweed	<u>5</u>	09-Jul	2010	35753589
<i>Asclepias quadrifolia</i>	Four-leaved Milkweed		#####	2014	1382349
<i>Asclepias syriaca</i>	Common Milkweed	<u>2</u>	17-Jun	2022	122427078
<i>Asclepias syriaca</i>	Common Milkweed		17-Jun	2022	122405312
<i>Asclepias syriaca</i>	Common Milkweed		17-Jun	2022	122195930
<i>Asclepias syriaca</i>	Common Milkweed		17-Sep	2021	95221838
<i>Asclepias syriaca</i>	Common Milkweed		24-Jul	2021	88486082
<i>Asclepias syriaca</i>	Common Milkweed		25-Jun	2021	84932233
<i>Asclepias syriaca</i>	Common Milkweed		25-Jun	2021	84500203
<i>Asclepias syriaca</i>	Common Milkweed		10-Jun	2021	82495000

<i>Asclepias syriaca</i>	Common Milkweed		06-Jun	2021	81922918
<i>Asclepias syriaca</i>	Common Milkweed		31-Jul	2019	29940453
<i>Asclepias syriaca</i>	Common Milkweed		14-Jul	2019	28931672
<i>Asclepias syriaca</i>	Common Milkweed		22-Oct	2018	17757696
<i>Asclepias syriaca</i>	Common Milkweed		22-Oct	2018	17757696
<i>Athyrium angustum</i>	Northern Lady Fern		22-May	2022	118296508
<i>Athyrium angustum</i>	Northern Lady Fern		24-Jul	2021	88484990
<i>Avenella flexuosa</i> *	Wavy Hair-Grass	<u>2</u>	25-Jun	2021	84503603
<i>Barbarea vulgaris</i> *	Bitter Wintercress		22-May	2022	118298071
<i>Betula alleghaniensis</i>	Yellow Birch	<u>2</u>	02-Jan	2023	145683720
<i>Betula papyrifera</i>	Paper Birch		24-Apr	2019	13012152
<i>Betula papyrifera</i>	Paper Birch		24-Apr	2019	23012152
<i>Bidens cernua</i> *	Nodding Beggarticks		17-Sep	2021	95221295
<i>Bidens cernua</i>	Nodding Beggarticks		08-Sep	2020	58979374
<i>Bromus pubescens</i>	Hairy Woodland Brome	<u>5</u>	17-Jun	2022	122238670
<i>Bromus pubescens</i>	Hairy Woodland Brome	<u>6</u>	25-Jun	2021	84504179
<i>Bromus pubescens</i>	Hairy Woodland Brome	<u>6</u>	24-Oct	2018	17810976
<i>Bromus pubescens</i>	Hairy Woodland Brome	<u>6</u>	24-Oct	2018	17810976
<i>Calystegia spithamea</i>	Low False Bindweed	<u>3</u>	17-Jun	2022	122427165
<i>Campanula gieseckiana</i>	Giesecke's Harebell		25-Jun	2021	84504952
<i>Campanula rotundifolia</i>	Common Harebell		17-Jun	2022	122407680
<i>Campanula rotundifolia</i>	Harebell Complex		17-Jun	2022	122290047
<i>Campanula rotundifolia</i>	Common Harebell	<u>2</u>	25-Jun	2021	84549297
<i>Capsella bursa-pastoris</i>	Shepherd's-Purse	<u>4</u>	13-May	2021	78622062
<i>Cardamine diphylla</i> *	Two-leaved Toothwort	<u>2</u>	13-May	2021	78623006
<i>Cardamine diphylla</i>	Two-leaved Toothwort	<u>4</u>	13-May	2021	78622087
<i>Cardamine diphylla</i>	Two-leaved Toothwort		08-May	2021	77990156
<i>Cardamine diphylla</i>	Two-leaved Toothwort		26-Apr	2021	75389182
<i>Carduus acanthoides</i> *	Broad-winged Thistle	<u>5</u>	14-Jul	2019	28932822
<i>Carex blanda</i> *	Eastern Woodland Sedge	<u>5</u>	13-May	2021	78622077
<i>Carex cephalophora</i> *	Oval-headed Sedge	<u>2</u>	25-Jun	2021	84505217
<i>Carex eburnea</i> *	Ebony Sedge	<u>4</u>	25-Jun	2021	84652043
<i>Carex pedunculata</i> *	Long-stalked Sedge	<u>3</u>	13-May	2021	78622092
<i>Carex pellita</i> *	Woolly Sedge		15-Jul	2021	87233404
<i>Carex platyphylla</i>	Broad-leaved Sedge		02-Jan	2023	145683623
<i>Carex platyphylla</i>	Broad-leaved Sedge	<u>2</u>	18-Jun	2022	122395561
<i>Carex platyphylla</i>	Broad-leaved Sedge		25-Jun	2021	84652467
<i>Carex platyphylla</i>	Broad-leaved Sedge	<u>6</u>	13-May	2021	78622098
<i>Carex platyphylla</i>	Broad-leaved Sedge		22-Oct	2018	17757786
<i>Carex platyphylla</i>	Broad-leaved Sedge	<u>2</u>	24-Apr	2019	23012306
<i>Carex platyphylla</i>	Broad-leaved Sedge		22-Oct	2018	17757786
<i>Carex retrorsa</i> *	Retorse Sedge	<u>3</u>	13-Aug	2020	56353844
<i>Carex vulpinoidea</i>	Fox Sedge	<u>2</u>	25-Jun	2021	84651792

<i>Carya ovata</i>	Shagbark Hickory	<u>6</u>	14-Jul	2019	28901856
<i>Carya ovata</i>	Shagbark Hickory		24-Oct	2018	17805968
<i>Carya ovata</i>	Shagbark Hickory		22-Oct	2018	17757787
<i>Carya ovata</i>	Shagbark Hickory		24-Oct	2018	17805968
<i>Carya ovata</i>	Shagbark Hickory		22-Oct	2018	17757787
<i>Caulophyllum giganteum</i>	Early Blue Cohosh		22-May	2022	118296080
<i>Caulophyllum giganteum</i>	Early Blue Cohosh	<u>6</u>	13-May	2021	78622082
<i>Caulophyllum giganteum</i>	Early Blue Cohosh		08-May	2021	77990227
<i>Caulophyllum giganteum</i>	Early Blue Cohosh		26-Apr	2021	75389063
<i>Caulophyllum giganteum</i>	Early Blue Cohosh		25-Apr	2021	75248956
<i>Caulophyllum giganteum</i>	Early Blue Cohosh		24-Apr	2021	75091764
<i>Caulophyllum thalictroides*</i>	Blue Cohosh	<u>2</u>	10-May	2022	116435628
<i>Caulophyllum thalictroides</i>	Blue Cohosh	<u>2</u>	06-Aug	2017	7400979
<i>Caulophyllum thalictroides</i>	Blue Cohosh	<u>2</u>	06-Aug	2017	7400979
<i>Centaurea x moncktonii *</i>	Monckton's Knapweed	<u>2</u>	13-Aug	2020	56354509
<i>Cerastium arvense</i>	Field Chickweed		06-Jun	2021	81923284
<i>Cerastium arvense</i>	Field Chickweed	<u>2</u>	28-May	2019	25970994
<i>Cerastium tomentosum *</i>	Snow-in-Summer	<u>3</u>	11-Jul	2022	125821259
<i>Cichorium intybus</i>	Chicory		17-Sep	2021	95220915
<i>Cichorium intybus</i>	Chicory	<u>3</u>	03-Jul	2022	125207405
<i>Circaea canadensis</i>	Broadleaf Enchanter's NightshadeC		24-Jul	2021	88484760
<i>Circaea canadensis</i>	Broadleaf Enchanter's Nightshade	<u>3</u>	14-Jul	2019	28958682
<i>Cirsium arvense</i>	Creeping Thistle		24-Jul	2021	88486147
<i>Claytonia virginica*</i>	Virginia Spring Beauty	<u>3</u>	10-May	2022	116434464
<i>Claytonia virginica</i>	Virginia Spring Beauty	<u>3</u>	08-May	2022	116132312
<i>Claytonia virginica</i>	Virginia Spring Beauty	<u>2</u>	13-May	2021	78623512
<i>Claytonia virginica</i>	Virginia Spring Beauty	<u>7</u>	13-May	2021	78622102
<i>Claytonia virginica</i>	Virginia Spring Beauty		01-May	2021	77059446
<i>Clinopodium vulgare</i>	Wild Basil		25-Jun	2022	123895257
<i>Clinopodium vulgare</i>	Wild Basil	<u>5</u>	14-Jul	2019	28898962
<i>Comandra umbellata *</i>	Bastard Toadflax		10-Jun	2021	82492504
<i>Comandra umbellata</i>	Bastard Toadflax		28-May	2019	25968441
<i>Comandra umbellata</i>	Bastard Toadflax		24-Oct	2018	17805962
<i>Comandra umbellata</i>	Bastard Toadflax		28-May	2019	25968441
<i>Comandra umbellata</i>	Bastard Toadflax		24-Oct	2018	17805962
<i>Convallaria majalis *</i>	European Lily of the Valley		23-May	2022	118400412
<i>Convallaria majalis</i>	European Lily of the Valley		06-Jun	2021	81923781
<i>Convolvulus arvensis</i>	Field Bindweed	<u>2</u>	17-Jun	2022	122429779
<i>Convolvulus arvensis</i>	Field Bindweed		25-Jun	2021	84837625
<i>Convolvulus arvensis</i>	Field Bindweed		06-Jun	2021	81923031
<i>Convolvulus arvensis</i>	Field Bindweed	<u>2</u>	06-Aug	2017	7401194

<i>Coreopsis lanceolata</i>	Lance-leaved Coreopsis		17-Jun	2022	122405171
<i>Cornus alternifolia</i>	Alternate-leaved Dogwood		17-Jun	2022	122196954
<i>Cornus alternifolia</i>	Alternate-leaved Dogwood	<u>5</u>	13-May	2021	78622066
<i>Cornus alternifolia</i>	Alternate-leaved Dogwood		31-Jul	2019	29941629
<i>Cornus alternifolia</i>	Alternate-leaved Dogwood	<u>2</u>	24-Apr	2019	23012498
<i>Cornus alternifolia</i>	Alternate-leaved Dogwood	<u>2</u>	24-Apr	2019	23012498
<i>Cornus racemosa</i>	Gray Dogwood	<u>2</u>	17-Jun	2022	122427236
<i>Cornus racemosa</i>	Gray Dogwood	<u>5</u>	17-Jun	2022	122229139
<i>Cornus racemosa</i>	Gray Dogwood		17-Jun	2022	122200426
<i>Cornus racemosa</i>	Gray Dogwood		15-Jul	2021	87262280
<i>Cornus rugosa</i> *	Round-leaved Dogwood		22-Oct	2018	17757691
<i>Cornus sericea</i>	Red Osier Dogwood		11-Jul	2022	125824704
<i>Cornus sericea</i>	Red Osier Dogwood		23-May	2022	118388971
<i>Cystopteris bulbifera</i>	Bulblet Fern		22-May	2022	118296173
<i>Cystopteris bulbifera</i>	Bulblet Fern		06-Aug	2017	9537205
<i>Daphne mezereum</i> *	Mezereon		02-May	2008	8456163
<i>Daphne mezereum</i>	Mezereon		02-May	2008	8456163
<i>Daucus carota</i>	Wild Carrot		31-Jul	2019	29940622
<i>Dianthus armeria</i> *	Deptford Pink		21-Jul	2021	90301571
<i>Dianthus armeria</i>	Deptford Pink		24-Jul	2021	88485941
<i>Dianthus armeria</i>	Deptford Pink		25-Jun	2021	84651962
<i>Dianthus armeria</i>	Deptford Pink	<u>2</u>	25-Jun	2021	84548809
<i>Dianthus armeria</i>	Deptford Pink	<u>2</u>	14-Jul	2019	28898961
<i>Dicentra cucullaria</i>	Dutchman's Breeches	<u>2</u>	13-May	2021	78622116
<i>Dichanthelium implicatum</i> *	Old Field Panic Grass	<u>5</u>	25-Jun	2021	84503403
<i>Diervilla lonicera</i>	Northern Bush Honeysuckle		17-Jun	2022	122196414
<i>Dipsacus fullonum</i> *	Wild Teasel	<u>2</u>	13-May	2021	78622868
<i>Dipsacus fullonum</i>	Wild Teasel	<u>6</u>	13-May	2021	78622080
<i>Echium vulgare</i>	Viper's-Bugloss		17-Jun	2022	122407179
<i>Echium vulgare</i>	Viper's-Bugloss		10-Jun	2021	82494146
<i>Echium vulgare</i>	Viper's-Bugloss		14-Jul	2019	28931676
<i>Echium vulgare</i>	Viper's-Bugloss		06-Aug	2017	9537812
<i>Eleocharis compressa</i>	Flat-stem Spikerush	<u>2</u>	17-Jun	2022	122428549
<i>Eleocharis compressa</i>	Flat-stem Spikerush		25-Jun	2021	84549258
<i>Eleocharis palustris</i> *	Common Spike-Rush		13-Aug	2020	82511102
<i>Elymus hystrix</i> *	Bottlebrush Grass	<u>5</u>	14-Jul	2019	28895763
<i>Elymus hystrix</i>	Bottlebrush Grass		24-Oct	2018	17805967
<i>Elymus hystrix</i>	Bottlebrush Grass		06-Aug	2017	7401190
<i>Elymus hystrix</i>	Bottlebrush Grass		24-Oct	2018	17805967
<i>Elymus hystrix</i>	Bottlebrush Grass		06-Aug	2017	7401190

<i>Erigeron annuus</i> *	Annual Fleabane	<u>3</u>	14-Jul	2019	28901855
<i>Erigeron philadelphicus</i>	Philadelphia Fleabane	<u>2</u>	17-Jun	2022	122405257
<i>Erigeron philadelphicus</i>	Philadelphia Fleabane		17-Jun	2022	122193204
<i>Erigeron philadelphicus</i>	Philadelphia Fleabane		10-Jun	2021	82494541
<i>Erigeron philadelphicus</i>	Philadelphia Fleabane		06-Jun	2021	81923136
<i>Erythronium americanum</i> *	Yellow Trout Lily		22-May	2022	118297326
<i>Erythronium americanum</i>	Yellow Trout Lily		08-May	2022	116128256
<i>Erythronium americanum</i>	Yellow Trout Lily	<u>3</u>	13-May	2021	78622084
<i>Erythronium americanum</i>	Yellow Trout Lily		08-May	2021	77989443
<i>Erythronium americanum</i>	Yellow Trout Lily		26-Apr	2021	75388964
<i>Erythronium americanum</i>	Yellow Trout Lily		24-Apr	2019	23012100
<i>Eupatorium perfoliatum</i> *	Common Boneset		27-Aug	2022	132730822
<i>Euthamia graminifolia</i>	Flat-topped Goldenrod		17-Sep	2021	95221355
<i>Eutrochium maculatum</i>	Spotted Joe-Pye Weed		17-Sep	2021	95221236
<i>Eutrochium maculatum</i>	Spotted Joe-Pye Weed		18-Aug	2020	56884744
<i>Eutrochium maculatum</i>	Spotted Joe-Pye Weed		18-Aug	2020	56841707
<i>Fagus grandifolia</i>	American Beech		24-Apr	2019	23012282
<i>Festuca subverticillata</i> *	Nodding Fescue		25-Jun	2021	84500216
<i>Fragaria virginiana</i>	Virginia Strawberry		22-May	2022	118298120
<i>Fragaria virginiana</i>	Virginia Strawberry		08-Aug	2021	90465133
<i>Fragaria virginiana</i>	Virginia Strawberry	<u>2</u>	13-May	2021	78622068
<i>Fraxinus americana</i>	White Ash		25-Jun	2021	85001592
<i>Fraxinus americana</i>	White Ash	<u>2</u>	24-Apr	2019	23012231
<i>Fraxinus pennsylvanica</i>	Green Ash		17-Jun	2022	122290031
<i>Fraxinus sp.</i>	Ash		17-Jun	2022	122195378
<i>Fraxinus sp.</i>	Ash		17-Jun	2022	122193546
<i>Galium circaezans</i> *	Licorice Bedstraw		28-May	2019	25968454
<i>Galium mollugo</i> *	Hedge Bedstraw	<u>3</u>	06-Jun	2021	81920231
<i>Galium obtusum</i>	Bluntleaf Bedstraw		25-Jun	2022	123895245
<i>Galium sp.</i>	Bedstraws	<u>2</u>	17-Jun	2022	122429556
<i>Galium sp.</i>			17-Jun	2022	122195781
<i>Galium sp.</i>	Bedstraws	<u>2</u>	10-May	2022	116435066
<i>Galium sp.</i>	Bedstraws		25-Jun	2021	85002144
<i>Genus Helianthus</i>	Sunflowers	<u>2</u>	13-Aug	2020	56354360
<i>Genus Pilosella</i>	Mouse Ear Hawkweeds		17-Jun	2022	122194427
<i>Genus Pinus</i>	Pine		17-Jun	2022	122200529
<i>Genus Ribes</i>	Currants and Gooseberries		17-Jun	2022	122199172
<i>Genus Rosa</i>	Roses		10-Jun	2021	82495083
<i>Genus Scirpus</i>	Bulrush		17-Jun	2022	122197645
<i>Genus Vincetoxicum</i>	Dog-strangling Vines	<u>2</u>	24-Oct	2018	17806159
<i>Geranium robertianum</i>	Herb Robert		24-Jul	2021	88485405
<i>Hedeoma pulegioides</i> *	American Pennyroyal	<u>2</u>	25-Jun	2021	84500224
<i>Helianthus divaricatus</i>	Woodland Sunflower	<u>6</u>	14-Jul	2019	28903475

<i>Helianthus divaricatus</i>	Woodland Sunflower		28-May	2019	25968456
<i>Helianthus divaricatus</i>	Woodland Sunflower		22-Oct	2018	17757901
<i>Helianthus divaricatus</i>	Woodland Sunflower		06-Aug	2017	7401401
<i>Helianthus divaricatus</i>	Woodland Sunflower		22-Oct	2018	17757901
<i>Helianthus divaricatus</i>	Woodland Sunflower		06-Aug	2017	7401401
<i>Helianthus strumosus</i> *	Pale-leaved Woodland Sunflower		17-Sep	2021	95221937
<i>Helianthus strumosus</i>	Pale-leaved Woodland Sunflower		24-Oct	2018	17808326
<i>Hepatica acutiloba</i>	Sharp-lobed Hepatica		02-Jan	2023	145679788
<i>Hepatica acutiloba</i>	Sharp-lobed Hepatica		15-Jun	2022	121964250
<i>Hepatica acutiloba</i>	Sharp-lobed Hepatica	<u>2</u>	10-May	2022	116432985
<i>Hepatica acutiloba</i>	Sharp-lobed Hepatica	<u>2</u>	08-May	2022	116134505
<i>Hepatica acutiloba</i>	Sharp-lobed Hepatica		24-Jul	2021	88485781
<i>Hepatica acutiloba</i>	Sharp-lobed Hepatica		29-May	2021	80823262
<i>Hepatica acutiloba</i>	Sharp-lobed Hepatica	<u>5</u>	13-May	2021	78622105
<i>Hepatica acutiloba</i>	Sharp-lobed Hepatica		08-May	2021	77989957
<i>Hepatica acutiloba</i>	Sharp-lobed Hepatica		26-Apr	2021	75389244
<i>Hepatica acutiloba</i>	Sharp-lobed Hepatica	<u>2</u>	25-Apr	2021	75249277
<i>Hepatica acutiloba</i>	Sharp-lobed Hepatica	<u>2</u>	14-Nov	2020	64929856
<i>Hesperis matronalis</i>	Dame's Rocket		17-Jun	2022	122196754
<i>Hesperis matronalis</i>	Dame's Rocket		15-Jun	2022	121966110
<i>Hesperis matronalis</i>	Dame's Rocket		10-Jun	2021	82494611
<i>Houstonia longifolia</i>	Long-leaved Bluets	<u>3</u>	17-Jun	2022	122427895
<i>Houstonia longifolia</i>	Long-leaved Bluets		10-Jun	2021	82494582
<i>Houstonia longifolia</i>	Long-leaved Bluets		06-Jun	2021	81920627
<i>Houstonia longifolia</i>	Long-leaved Bluets	<u>3</u>	06-Jun	2021	81850098
<i>Hypericum perforatum</i>	Common St. John's-Wort		24-Jul	2021	88446312
<i>Hypericum perforatum</i>	Common St. John's-Wort	<u>2</u>	25-Jun	2021	84653162
<i>Hypericum perforatum</i>	Common St. John's-Wort	<u>2</u>	14-Jul	2019	28903477
<i>Impatiens capensis</i>	Common Jewelweedl		24-Jul	2021	88484818
<i>Inula helenium</i>	Elecampane		17-Jun	2022	122196413
<i>Inula helenium</i>	Elecampane		24-Jul	2020	54168570
<i>Iris virginica</i>	Southern Blue Flag		17-Jun	2022	122406336
<i>Iris virginica</i>	Southern Blue Flag		17-Jun	2022	122406243
<i>Juglans nigra</i>	Black Walnut		17-Jun	2022	122194016
<i>Juniperus communis</i>	Common Juniper		17-Jun	2022	122429224
<i>Juniperus communis</i>	Common Juniper	<u>2</u>	06-Oct	2020	61862433
<i>Juniperus communis</i>	Common Juniper	<u>2</u>	24-Apr	2019	23012414
<i>Juniperus communis</i>	American Common Juniper		24-Oct	2018	17806116
<i>Juniperus virginiana</i>	Eastern Redcedar		27-Oct	2022	140166513
<i>Juniperus virginiana</i>	Eastern Redcedar	<u>2</u>	24-Jun	2022	123218665
<i>Juniperus virginiana</i>	Eastern Redcedar		25-Jun	2021	84500209
<i>Juniperus virginiana</i>	Eastern Redcedar	<u>2</u>	24-Apr	2019	23012475
<i>Juniperus virginiana</i>	Eastern Redcedar		06-Aug	2017	9537803

<i>Leucanthemum vulgare</i>	Oxeye Daisy		17-Jun	2022	122429478
<i>Leucanthemum vulgare</i>	Oxeye Daisy		17-Jun	2022	122406445
<i>Leucanthemum vulgare</i>	Oxeye Daisy		17-Jun	2022	122192626
<i>Leucanthemum vulgare</i>	Oxeye Daisy		10-Jun	2021	82493013
<i>Leucanthemum vulgare</i>	Oxeye Daisy		06-Jun	2021	81921322
<i>Leucanthemum vulgare</i>	Oxeye Daisy	<u>2</u>	29-May	2021	80823869
<i>Lilium philadelphicum</i>	Wood Lily		25-Jun	2022	123456365
<i>Lilium philadelphicum</i>	Wood Lily		17-Jun	2022	122407359
<i>Lilium philadelphicum</i>	Wood Lily	<u>2</u>	17-Jun	2022	122406054
<i>Lilium philadelphicum</i>	Wood Lily		17-Jun	2022	122290048
<i>Lonicera canadensis</i>	American Fly-Honeysuckle		18-Jun	2022	122395846
<i>Lonicera canadensis</i>	American Fly-Honeysuckle		25-Apr	2021	75249113
<i>Lonicera dioica</i> *	Glaucous Honeysuckle		25-Jun	2019	27666847
<i>Lonicera dioica</i>	Glaucous Honeysuckle		22-Oct	2018	17757694
<i>Lonicera hirsuta</i>	Hairy Honeysuckle		17-Jun	2022	122405976
<i>Lonicera hirsuta</i>	Hairy Honeysuckle		22-Oct	2018	17757695
<i>Lonicera tatarica</i>	Tatarian Honeysuckle		25-Jun	2021	85001506
<i>Lonicera xylosteum</i> *	Fly Honeysuckle		23-May	2022	118401029
<i>Lotus corniculatus</i>	Bird's-foot Trefoil		17-Jun	2022	122193044
<i>Lotus corniculatus</i>	Bird's-foot Trefoil		24-Jul	2021	88486291
<i>Lotus corniculatus</i>	Bird's-foot Trefoil	<u>2</u>	25-Jun	2021	84651696
<i>Lotus corniculatus</i>	Bird's-foot Trefoil		29-May	2021	80822992
<i>Lotus corniculatus</i>	Bird's-foot Trefoil		31-Jul	2019	29940744
<i>Lythrum salicaria</i>	Purple Loosestrife		14-Jul	2022	126270067
<i>Maianthemum racemosum</i>	Solomon's Plume	<u>2</u>	22-May	2022	118297055
<i>Maianthemum racemosum</i>	Solomon's Plume	<u>3</u>	31-Jul	2021	89775675
<i>Maianthemum racemosum</i>	Solomon's Plume		24-Jul	2021	88485151
<i>Maianthemum racemosum</i>	Solomon's Plume		10-Jun	2021	82494307
<i>Maianthemum racemosum</i>	Solomon's Plume		06-Jun	2021	81921745
<i>Maianthemum racemosum</i>	Solomon's Plume		29-May	2021	80823199
<i>Maianthemum racemosum</i>	Solomon's Plume		08-May	2021	77989705
<i>Maianthemum racemosum</i>	Solomon's Plume		26-Apr	2021	75389329
<i>Maianthemum racemosum</i>	Solomon's Plume		06-Oct	2020	61862102
<i>Maianthemum racemosum</i>	Solomon's Plume		08-Sep	2020	59009568
<i>Maianthemum stellatum</i>	Star-flowered Lily-of-the-Valley		23-May	2022	118397754
<i>Matteuccia struthiopteris</i>	Ostrich Fern		22-May	2022	118297792
<i>Matteuccia struthiopteris</i>	Ostrich Fern	<u>3</u>	10-May	2022	116419260
<i>Matteuccia struthiopteris</i>	Ostrich Fern	<u>4</u>	14-Jul	2019	28958680
<i>Medicago lupulina</i>	Black Medick		10-Jun	2021	82494932
<i>Medicago lupulina</i>	Black Medick		06-Jun	2021	81921902
<i>Medicago sativa</i>	Alfalfa	<u>2</u>	17-Jun	2022	122429844
<i>Medicago sativa</i>	Alfalfa		17-Jun	2022	122407228
<i>Medicago sativa complex</i>	Alfalfa Complex	<u>2</u>	25-Jun	2021	85002064

<i>Medicago sativa</i>	Alfalfa		19-Jun	2021	83816682
<i>Medicago sativa</i>	Alfalfa		10-Jun	2021	82492683
<i>Medicago sativa</i>	Alfalfa	<u>3</u>	08-Sep	2020	59009455
<i>Melilotus albus</i>	White Sweetclover		24-Jul	2021	88486370
<i>Melilotus officinalis</i>	Yellow Sweetclover		25-Jun	2022	123895248
<i>Melilotus officinalis</i>	Yellow Sweetclover	<u>2</u>	17-Jun	2022	122428761
<i>Melilotus officinalis</i>	Yellow Sweetclover		10-Jun	2021	82492607
<i>Melilotus officinalis</i>	Yellow Sweetclover		06-Jun	2021	81921473
<i>Melilotus officinalis</i>	Yellow Sweetclover	<u>2</u>	06-Jun	2021	81918361
<i>Mentha aquatica</i>	Watermint		17-Sep	2021	95221052
<i>Mimulus ringens</i> *	Allegheny Monkeyflower		24-Jul	2021	88484917
<i>Monarda fistulosa</i> *	Wild Bergamot		24-Jul	2021	88486017
<i>Monarda fistulosa</i>	Wild Bergamot		24-Jul	2020	54171338
<i>Monarda fistulosa</i>	Wild Bergamot		24-Jul	2020	54171276
<i>Monarda fistulosa</i>	Wild Bergamot	<u>3</u>	14-Jul	2019	28931670
<i>Monotropa hypopitys</i> *	Pinesap		29-Sep	2021	96647422
<i>Nabalus latissimus</i> *	Tall Rattlesnake Root		29-Sep	2021	96583804
<i>Onoclea sensibilis</i>	Sensitive Fern		23-May	2022	118400927
<i>Onoclea sensibilis</i>	Sensitive Fern		22-May	2022	118297448
<i>Oryzopsis asperifolia</i> *	White-grained Mountain-Ricegrass	<u>2</u>	28-May	2019	25968659
<i>Ostrya virginiana</i>	American Hophornbeam		25-Apr	2021	75249652
<i>Ostrya virginiana</i>	American Hophornbeam	<u>5</u>	14-Jul	2019	28903472
<i>Ostrya virginiana</i>	American Hophornbeam		24-Apr	2019	23012189
<i>Ostrya virginiana</i>	American Hophornbeam		24-Oct	2018	17806058
<i>Ostrya virginiana</i>	American Hophornbeam		24-Apr	2019	23012189
<i>Ostrya virginiana</i>	American Hophornbeam		24-Oct	2018	17806058
<i>Parthenocissus quinquefolia</i>	Virginia Creeper		17-Jun	2022	122194832
<i>Pastinaca sativa</i>	Wild Parsnip		17-Jun	2022	122196074
<i>Pastinaca sativa</i>	Wild Parsnip	<u>3</u>	13-May	2021	78622078
<i>Pastinaca sativa</i>	Wild Parsnip	<u>3</u>	14-Jul	2019	28957562
<i>Penstemon digitalis</i>	Foxglove Beardtongue		17-Jun	2022	122405114
<i>Penstemon hirsutus</i>	Hairy Beardtongue		17-Jun	2022	122428692
<i>Penstemon hirsutus</i>	Hairy Beardtongue		17-Jun	2022	122406848
<i>Penstemon hirsutus</i>	Hairy Beardtongue		17-Jun	2022	122406701
<i>Penstemon hirsutus</i>	Hairy Beardtongue		17-Jun	2022	122194876
<i>Penstemon hirsutus</i>	Hairy Beardtongue		25-Jun	2021	84500204
<i>Penstemon hirsutus</i>	Hairy Beardtongue		10-Jun	2021	82492426
<i>Penstemon hirsutus</i>	Hairy Beardtongue		06-Jun	2021	81920459
<i>Penstemon hirsutus</i>	Hairy Beardtongue	<u>3</u>	06-Jun	2021	81849405
<i>Penstemon hirsutus</i>	Hairy Beardtongue		24-Oct	2018	117805963
<i>Penstemon hirsutus</i>	Hairy Beardtongue		24-Oct	2018	17805963
<i>Phlox divaricata</i>	Blue Phlox	<u>3</u>	10-May	2022	116455983

<i>Phlox divaricata</i>	Blue Phlox	<u>3</u>	08-May	2022	116136111
<i>Phlox divaricata</i>	Blue Phlox		10-Jun	2021	82494442
<i>Phlox divaricata</i>	Blue Phlox		06-Jun	2021	81921656
<i>Phlox divaricata</i>	Blue Phlox		06-Jun	2021	81920210
<i>Phlox divaricata</i>	Blue Phlox		29-May	2021	80823346
<i>Phlox divaricata</i>	Blue Phlox	<u>2</u>	13-May	2021	78623128
<i>Phlox divaricata</i>	Blue Phlox	<u>3</u>	13-May	2021	78622108
<i>Phlox divaricata</i>	Blue Phlox		28-May	2019	35968446
<i>Picea abies</i>	Norway Spruce		17-Jun	2022	122192405
<i>Picea glauca</i>	White Spruce	<u>2</u>	24-Apr	2019	23012450
<i>Pilosella caespitosa</i>	Meadow Hawkweed		25-Jun	2022	123895242
<i>Pilosella caespitosa</i>	Meadow Hawkweed		15-Jun	2022	121965975
<i>Pilosella caespitosa</i>	Meadow Hawkweed		10-Jun	2021	82492949
<i>Pilosella caespitosa</i>	Meadow Hawkweed		06-Jun	2021	81923433
<i>Pilosella piloselloides</i>	Smooth Hawkweed	<u>3</u>	17-Jun	2022	122426861
<i>Plantago major</i>	Greater Plantain		31-Jul	2019	29941107
<i>Polygala senega</i>	Seneca Snakeroot	<u>2</u>	17-Jun	2022	122251611
<i>Polygala senega</i>	Seneca Snakeroot		25-Jun	2021	84500211
<i>Polygala senega</i>	Seneca Snakeroot	<u>3</u>	19-Jun	2021	83815843
<i>Polygala senega</i>	Seneca Snakeroot		10-Jun	2021	82492835
<i>Polygala senega</i>	Seneca Snakeroot	<u>2</u>	06-Jun	2021	81920213
<i>Polygala senega</i>	Seneca Snakeroot	<u>3</u>	07-Nov	2018	18225563
<i>Polygala senega</i>	Seneca Snakeroot		28-May	2019	25968448
<i>Polygala senega</i>	Seneca Snakeroot	<u>3</u>	07-Nov	2018	18225563
<i>Polystichum acrostichoides</i>	Christmas Fern		02-Jan	2023	145683577
<i>Polystichum acrostichoides</i>	Christmas Fern		22-Oct	2022	139675747
<i>Polystichum acrostichoides</i>	Christmas Fern		22-May	2022	118296311
<i>Polystichum acrostichoides</i>	Christmas Fern		24-Jul	2021	88485055
<i>Polystichum acrostichoides</i>	Christmas Fern		29-May	2021	80823663
<i>Polystichum acrostichoides</i>	Christmas Fern	<u>3</u>	13-May	2021	78622089
<i>Polystichum acrostichoides</i>	Christmas Fern	<u>2</u>	24-Apr	2019	23012110
<i>Populus deltoides</i> *	Eastern Cottonwood		14-Jul	2022	126270294
<i>Potentilla recta</i>	Sulphur Cinquefoil		17-Jun	2022	122406770
<i>Potentilla recta</i>	Sulphur Cinquefoil	<u>3</u>	17-Jun	2022	122194604
<i>Prunella vulgaris</i>	Common Selfheal		25-Jun	2022	123895237
<i>Prunella vulgaris</i>	Common Selfheal		17-Jun	2022	122428744
<i>Prunella vulgaris</i>	Common Selfheal		17-Jun	2022	122406525
<i>Prunella vulgaris</i>	Common Selfheal		17-Jun	2022	122197513
<i>Prunella vulgaris</i>	Common Selfheal		24-Jul	2021	88485477
<i>Prunella vulgaris</i>	Common Selfheal		10-Jun	2021	82492561
<i>Prunella vulgaris</i>	Common Selfheal		31-Jul	2019	29941541
<i>Prunus virginiana</i>	Chokecherry	<u>3</u>	25-Jun	2021	85001540
<i>Quercus × deamii</i>	Deam's Oak		25-Jun	2021	84500205

<i>Quercus alba</i>	White Oak	<u>2</u>	07-Nov	2018	18225562
<i>Quercus macrocarpa</i>	Bur Oak		24-Apr	2019	23012358
<i>Quercus muehlenbergii</i>	Chinkapin Oak	<u>2</u>	17-Jun	2022	122428941
<i>Quercus muehlenbergii</i>	Chinkapin Oak		17-Jun	2022	122290042
<i>Quercus muehlenbergii</i>	Chinkapin Oak	<u>2</u>	25-Jun	2021	84653279
<i>Quercus muehlenbergii</i>	Chinkapin Oak	<u>2</u>	25-Jun	2021	84549171
<i>Quercus muehlenbergii</i>	Chinkapin Oak	<u>6</u>	19-Jun	2021	83816210
<i>Quercus muehlenbergii</i>	Chinkapin Oak		28-May	2019	25968533
<i>Quercus muehlenbergii</i>	Chinkapin Oak		22-Oct	2018	17757692
<i>Quercus rubra</i>	Northern Red Oak		23-May	2022	118397796
<i>Quercus rubra</i>	Northern Red Oak		24-Apr	2019	23012266
<i>Ranunculus abortivus</i>	Small-flowered Buttercup		22-May	2022	118297184
<i>Ranunculus acris</i>	Meadow Buttercup		25-Jun	2022	123895232
<i>Ranunculus acris</i>	Meadow Buttercup		17-Jun	2022	122429201
<i>Ranunculus acris</i>	Meadow Buttercup		17-Jun	2022	122193283
<i>Ranunculus acris</i>	Meadow Buttercup		15-Jun	2022	121966023
<i>Ranunculus acris</i>	Meadow ButtercupR		10-Jun	2021	82494714
<i>Ranunculus acris</i>	Meadow Buttercup		06-Jun	2021	81923869
<i>Ranunculus acris</i>	Meadow Buttercup		29-May	2021	80823135
<i>Ranunculus fascicularis</i>	Early Buttercup	<u>2</u>	13-May	2021	78623676
<i>Ranunculus fascicularis</i>	Early Buttercup	<u>4</u>	13-May	2021	78622114
<i>Ranunculus fascicularis</i>	Early Buttercup		28-May	2019	25968453
<i>Ranunculus recurvatus</i> *	Hooked Buttercup		29-May	2021	80823800
<i>Rhamnus cathartica</i>	Common Buckthorn		12-Aug	2022	130556827
<i>Rhamnus cathartica</i>	Common Buckthorn		17-Jun	2022	122198127
<i>Rhamnus cathartica</i>	Common Buckthorn		24-Oct	2018	17805964
<i>Rhus aromatica</i>	Fragrant Sumac		06-Oct	2020	61862189
<i>Rhus aromatica</i>	Fragrant Sumac		28-May	2019	25968534
<i>Rhus aromatica</i>	Fragrant Sumac		22-Oct	2018	17757693
<i>Rhus aromatica</i>	Fragrant Sumac		22-Oct	2018	17757693
<i>Rhus typhina</i>	Staghorn Sumac		17-Jun	2022	122197225
<i>Rhus typhina</i>	Staghorn Sumac		08-Aug	2021	90465255
<i>Robinia pseudoacacia</i>	Black Locust		17-Jun	2022	122198294
<i>Robinia pseudoacacia</i>	Black Locust		17-Jun	2022	122196998
<i>Rosa blanda</i>	Smooth Rose	<u>2</u>	17-Jun	2022	122427793
<i>Rosa carolina</i>	Carolina Rose		17-Jun	2022	122407756
<i>Rubus occidentalis</i>	Black Raspberry		17-Jun	2022	122196640
<i>Rubus occidentalis</i>	Black Raspberry		24-Apr	2019	23012082
<i>Rubus odoratus</i>	Purple-flowered Raspberry		22-Oct	2022	139675908
<i>Rubus odoratus</i>	Purple-flowered Raspberry	<u>3</u>	14-Jul	2019	28958687
<i>Rudbeckia triloba</i> *	Brown-eyed Susan		17-Sep	2021	95221779
<i>Sambucus racemose</i> *	Red-berried Elder		25-Jun	2021	84652380

<i>Sambucus racemosa</i>	Red-berried Elder	<u>2</u>	13-May	2021	78622074
<i>Sambucus racemosa</i>	Garlic Mustard	<u>2</u>	13-May	2021	78622073
<i>Sanicula canadensis</i> *	Black Snakeroot	<u>2</u>	06-Jun	2021	81922094
<i>Sanicula sp.</i>	Sanicles	<u>3</u>	06-Jun	2021	81920205
<i>Schizachne purpurascens</i> *	Purple Oat	<u>4</u>	13-May	2021	78622110
<i>Schizachne purpurascens</i>	Purple Oat		28-May	2019	26131015
<i>Scirpus pendulus</i> *	Nodding Bulrush		25-Jun	2021	84500200
<i>Scutellaria galericulata</i> *	Marsh Skullcap		27-Aug	2022	132731334
<i>Scutellaria lateriflora</i> *	Side-flowering Skullcap	<u>2</u>	13-Aug	2020	56353448
<i>Silene vulgaris</i>	Bladder Champion		17-Jun	2022	122407278
<i>Silene vulgaris</i>	Bladder Champion		17-Jun	2022	122406995
<i>Silene vulgaris</i>	Bladder Champion		10-Jun	2021	82494965
<i>Silene vulgaris</i>	Bladder Champion		06-Jun	2021	81922721
<i>Solidago caesia</i>	Bluestem Goldenrod		04-Oct	2022	137915148
<i>Solidago caesia</i>	Bluestem Goldenrod		24-Oct	2018	17805990
<i>Solidago canadensis</i>	Canada Goldenrod		31-Jul	2019	29941755
<i>Solidago flexicaulis</i>	Broad-leaved Goldenrod		04-Oct	2022	137915146
<i>Solidago flexicaulis</i>	Broad-leaved Goldenrod		04-Oct	2022	137915145
<i>Solidago flexicaulis</i>	Broad-leaved Goldenrod	<u>2</u>	10-May	2022	116424312
<i>Solidago flexicaulis</i>	Broad-leaved Goldenrod	<u>2</u>	10-Oct	2021	97843545
<i>Solidago flexicaulis</i>	Broad-leaved Goldenrod		29-Sep	2021	96577716
<i>Solidago flexicaulis</i>	Broad-leaved Goldenrod		17-Sep	2021	95221567
<i>Solidago flexicaulis</i>	Broad-leaved Goldenrod	<u>2</u>	13-May	2021	78622067
<i>Solidago flexicaulis</i>	Broad-leaved Goldenrod		06-Oct	2020	61872226
<i>Solidago flexicaulis</i>	Broad-leaved Goldenrod		24-Apr	2019	23012372
<i>Symphotrichum cordifolium</i>	Common Blue Wood Aster	<u>2</u>	17-Jun	2022	122428259
<i>Symphotrichum cordifolium</i>	Common Blue Wood Aster		06-Oct	2020	61861926
<i>Symphotrichum cordifolium</i>	Common Blue Wood Aster		27-Sep	2020	61006088
<i>Symphotrichum cordifolium</i>	Common Blue Wood Aster	<u>2</u>	05-Oct	2019	33914274
<i>Symphotrichum cordifolium</i>	Common Blue Wood Aster		24-Oct	2018	17805966
<i>Symphotrichum ericoides</i> *	White Heath Aster		17-Sep	2021	95221713
<i>Symphotrichum novae-angliae</i>	New England Aster		17-Sep	2021	95220977
<i>Symphotrichum novae-angliae</i>	New England Aster		27-Sep	2020	60982821
<i>Symphotrichum urophyllum</i> *	Arrow-leaved Aster		08-Sep	2020	59008962
<i>Syringa vulgaris</i>	Common Lilac		24-Oct	2018	17805961
<i>Thalictrum dioicum</i>	Early Meadow-Rue		22-Oct	2022	139660143
<i>Thalictrum dioicum</i>	Early Meadow-Rue		22-May	2022	118296382
<i>Thalictrum dioicum</i>	Early Meadow-Rue	<u>3</u>	08-May	2022	116128479
<i>Thalictrum dioicum</i>	Early Meadow-Rue		10-Jun	2021	82494377

<i>Thalictrum dioicum</i>	Early Meadow-Rue		06-Jun	2021	81922366
<i>Thalictrum dioicum</i>	Early Meadow-Rue		29-May	2021	80823748
<i>Thalictrum dioicum</i>	Early Meadow-Rue	<u>2</u>	13-May	2021	78623363
<i>Thalictrum dioicum</i>	Early Meadow-Rue	<u>6</u>	13-May	2021	78622091
<i>Thalictrum dioicum</i>	Early Meadow-Rue		08-May	2021	77989546
<i>Thalictrum dioicum</i>	Early Meadow-Rue		26-Apr	2021	75389117
<i>Thalictrum dioicum</i>	Early Meadow-Rue		25-Apr	2021	75249530
<i>Thalictrum dioicum</i>	Early Meadow-Rue		24-Apr	2021	75092737
<i>Thuja occidentalis</i>	Northern Whitecedar		17-Jun	2022	122200825
<i>Thuja occidentalis</i>	Northern Whitecedar		28-Nov	2020	65761437
<i>Thuja occidentalis</i>	Northern Whitecedar		24-Apr	2019	23012174
<i>Tilia americana</i>	Basswood		31-Jul	2019	29941576
<i>Toxicodendron radicans</i>	Eastern Poison Ivy		29-May	2021	80822929
<i>Toxicodendron rydbergii</i>	Western Poison Ivy		23-May	2022	118400152
<i>Toxicodendron rydbergii</i>	Western Poison Ivy		23-May	2022	118389656
<i>Toxicodendron rydbergii</i>	Western Poison Ivy		08-Sep	2020	58970545
<i>Tragopogon dubius</i>	Yellow Salsify		06-Jun	2021	81920873
<i>Tragopogon dubius</i>	Yellow Salsify	<u>2</u>	06-Jun	2021	81920203
<i>Tribe Convolvuleae</i>			02-Jul	2021	85554201
<i>Trifolium pratense</i>	Red Clover		17-Jun	2022	122192808
<i>Trifolium pratense</i>	Red Clover		10-Jun	2021	82492757
<i>Trifolium pratense</i>	Red Clover		06-Jun	2021	81923544
<i>Trifolium repens</i>	White Clover		06-Jun	2021	81923675
<i>Trillium erectum</i>	Red Trillium		22-May	2022	118296985
<i>Trillium erectum</i>	Red Trillium		08-May	2021	77990052
<i>Trillium erectum</i>	Red Trillium		01-May	2021	76316615
<i>Trillium erectum</i>	Red Trillium		26-Apr	2021	75389020
<i>Trillium grandiflorum</i> *	Large White Trillium		23-May	2022	118400824
<i>Trillium grandiflorum</i>	Large White Trillium		22-May	2022	118296578
<i>Trillium grandiflorum</i>	Large White Trillium		22-May	2022	118296225
<i>Trillium grandiflorum</i>	Large White Trillium		22-May	2022	118296005
<i>Trillium grandiflorum</i>	Large White Trillium		08-May	2022	116127874
<i>Trillium grandiflorum</i>	Large White Trillium	<u>2</u>	13-May	2021	78622101
<i>Trillium grandiflorum</i>	Large White Trillium		08-May	2021	77989608
<i>Triosteum aurantiacum</i> *	Orange-fruited Horse Gentian	<u>2</u>	06-Jun	2021	81922598
<i>Triosteum aurantiacum</i>	Orange-fruited Horse Gentian	<u>4</u>	06-Jun	2021	81920224
<i>Triosteum aurantiacum</i>	Orange-fruited Horse Gentian	<u>2</u>	09-Jul	2008	35776373
<i>Triosteum aurantiacum</i>	Orange-fruited Horse Gentian	<u>6</u>	14-Jul	2019	28895753
<i>Triosteum aurantiacum</i>	Orange-fruited Horse Gentian		28-May	2019	25968535
<i>Triosteum aurantiacum</i>	Orange-fruited Horse Gentian		06-Sep	2018	16422049

<i>Triosteum aurantiacum</i>	Orange-fruited Horse Gentian		22-Oct	2018	17757900
<i>Triosteum aurantiacum</i>	Orange-fruited Horse Gentian		06-Sep	2018	16422049
<i>Tsuga canadensis</i>	Eastern Hemlock		02-Jan	2023	145683903
<i>Tsuga canadensis</i>	Eastern Hemlock		22-Oct	2018	17757698
<i>Tsuga canadensis</i>	Eastern Hemlock	<u>2</u>	24-Apr	2019	23012206
<i>Tsuga canadensis</i>	Eastern Hemlock		22-Oct	2018	17757698
<i>Utricularia macrorhiza</i>	Common Bladderwort		06-Aug	2017	7401189
<i>Uvularia grandiflora</i>	Largeflower Bellwort		17-Jun	2022	122407609
<i>Uvularia grandiflora</i>	Largeflower Bellwort	<u>2</u>	08-May	2022	116136291
<i>Uvularia grandiflora</i>	Largeflower Bellwort	<u>3</u>	13-May	2021	78622106
<i>Verbena simplex</i>	Narrowleaf Vervain	<u>2</u>	17-Jun	2022	122429075
<i>Verbena simplex</i>	Narrowleaf Vervain		17-Jun	2022	122406389
<i>Verbena simplex</i>	Narrowleaf Vervain	<u>4</u>	25-Jun	2021	84652144
<i>Verbena simplex</i>	Narrowleaf Vervain	<u>2</u>	25-Jun	2021	84548964
<i>Verbena simplex</i>	Narrowleaf Vervain	<u>2</u>	25-Jun	2021	84500218
<i>Verbena simplex</i>	Narrowleaf Vervain	<u>2</u>	10-Jun	2021	82494091
<i>Veronica anagallis-aquatica</i> *	Blue Water-Speedwell	<u>2</u>	13-Aug	2020	56353757
<i>Viburnum rafinesqueanum</i>	Downy Arrowwood		06-Oct	2020	61862269
<i>Viburnum rafinesqueanum</i>	Downy Arrowwood		22-Oct	2018	17757899
<i>Vicia cracca</i>	Tufted Vetch		17-Jun	2022	122195242
<i>Vicia cracca</i>	Tufted Vetch		24-Jul	2021	88486448
<i>Vincetoxicum rossicum</i>	European Swallow-Wort		27-Oct	2022	140169431
<i>Vincetoxicum rossicum</i>	European Swallow-Wort		17-Jun	2022	122193139
<i>Vincetoxicum rossicum</i>	European Swallow-Wor		10-Jun	2021	82494661
<i>Vincetoxicum rossicum</i>	European Swallow-Wort		06-Jun	2021	81921046
<i>Vincetoxicum rossicum</i>	European Swallow-Wort		29-May	2021	80823053
<i>Vincetoxicum rossicum</i>	European Swallow-Wort	<u>3</u>	14-Jul	2019	28931679
<i>Vincetoxicum rossicum</i>	European Swallow-Wort		06-Aug	2017	7401388
<i>Viola cucullata</i>	Marsh Blue Violet	<u>3</u>	22-May	2022	118297909
<i>Viola cucullata</i>	Marsh Blue Violet	<u>3</u>	22-May	2022	118297615
<i>Viola sororia</i> *	Common Blue Violet	<u>5</u>	13-May	2021	78622071
<i>Viola sororia</i>	Common Blue Violet	<u>2</u>	13-May	2021	78616020
<i>Viola sp.</i>	Violets		16-May	2021	78996286
<i>Vitis riparia</i>	Riverbank Grape		17-Jun	2022	122192959
<i>Waldsteinia fragarioides</i>	Appalachian Barren-Strawberry		17-Jun	2022	122407524
<i>Waldsteinia fragarioides</i>	Appalachian Barren- Strawberry	<u>3</u>	08-May	2022	116133685
<i>Waldsteinia fragarioides</i>	Appalachian Barren- Strawberry	<u>3</u>	13-May	2021	78622109
<i>Waldsteinia fragarioides</i>	Appalachian Barren-Strawberry		28-May	2019	26168893
<i>Waldsteinia fragarioides</i>	Appalachian Barren-Strawberry		28-May	2019	25968449
<i>Waldsteinia fragarioides</i>	Appalachian Barren-Strawberry		28-May	2019	25968449
<i>Waldsteinia fragarioides</i>	Appalachian Barren-Strawberry		24-Oct	2018	17805991

<i>Zanthoxylum americanum</i>	Prickly Ash	<u>2</u>	24-Apr	2019	23012381
<i>Zanthoxylum americanum</i>	Prickly Ash	<u>2</u>	12-Oct	2018	20478894
<i>Zanthoxylum americanum</i>	Prickly Ash	<u>2</u>	06-Aug	2017	9537194
<i>Zanthoxylum americanum</i>	Prickly Ash		02-May	2008	8456180
<i>Zanthoxylum americanum</i>	Prickly Ash	<u>2</u>	24-Apr	2019	23012381
<i>Zanthoxylum americanum</i>	Prickly Ash	<u>2</u>	12-Oct	2018	20478894
<i>Zanthoxylum americanum</i>	Prickly Ash	<u>2</u>	06-Aug	2017	9537194
<i>Zanthoxylum americanum</i>	Prickly Ash		02-May	2008	8456180
<i>Carex sp.</i>	True sedge	<u>2</u>	17-Jun	2022	122426976
	a mint	-	17-Jun	2022	

MOSSES

<i>Aulacomnium palustre</i>	Ribbed Bog Moss		19-Jun	2022	146574826
<i>Hylocomiadelphus triquetrus</i>	Rough Goose Neck Moss		24-Apr	2019	23012094

FUNGI

<i>Agaricus sp.</i>	Field and Button Mushroom	<u>2</u>	08-Sep	2020	59009225
<i>Amanita sp.</i>	an Amanita Mushroom		23-Oct	2021	99155825
<i>Cerioporus squamosus</i>	Dryad's Saddle		23-May	2022	118401216
<i>Cerioporus squamosus</i>	Dryad's Saddle		22-May	2022	118297985
<i>Cerioporus squamosus</i>	Dryad's Saddle		22-May	2022	118297113
<i>Epichloe typhina</i>		<u>3</u>	11-Jul	2022	125821703
<i>Fuligo septica</i>	Dog Vomit Slime Mold		10-Jun	2021	82494755
<i>Ganoderma tsuga</i>	Hemlock Varnish Shelf		18-Jun	2022	122358480
<i>Ganoderma tsugae</i>	Hemlock Varnish Shelf		25-Jun	2022	123456702
<i>Ganoderma tsugae</i>	Hemlock Varnish Shelf	<u>2</u>	25-Jun	2022	123456652
<i>Ganoderma tsugae</i>	Hemlock Varnish Shelf		25-Jun	2022	123456591
<i>Ganoderma tsugae</i>	Hemlock Varnish Shelf		18-Jun	2022	122329228
<i>Ganoderma tsugae</i>	Hemlock Varnish Shelf		15-Jun	2022	121964073
<i>Ganoderma tsugae</i>	Hemlock Varnish Shelf		15-Jun	2022	121964020
<i>Gymnosporangium juniperi- virginianae</i>	Juniper-apple Rust		17-May	2022	118423316
<i>Mycena galericulata</i>	Common Bonnet		24-Jul	2021	88485098
<i>Neofavolus alveolaris</i>	Hexagonal-pored Polypore		15-Jun	2022	121965459
<i>Phlebia radiata</i>	Wrinkled Crust	<u>3</u>	06-Feb	2022	106273247
<i>Ramaria formosa</i>	Yellow-tipped Coral Fungus		25-Jun	2022	123456414
<i>Rigidoporus populinus</i>	Poplar Bracket		30-Oct	2022	140641927
<i>Russula brevipes</i>	Short-stemmed Russula	<u>3</u>	08-Sep	2020	59009111
<i>Tremella mesenterica</i>	Witch's Butter	<u>4</u>	02-Jan	2023	145679914
<i>Unidentified Fungi</i>		<u>2</u>	30-Oct	2022	140641965
<i>Unidentified Fungi</i>			22-May	2022	118296932

<i>Unidentified Fungi</i>	<u>2</u>	22-May	2022	118296773
<i>Unidentified Fungi</i>		15-Oct	2021	98749667
<i>Unidentified Fungi</i>		15-Oct	2021	98749488
<i>Unidentified Fungi</i>	<u>4</u>	31-Jul	2021	89775576
<i>Unidentified Fungi</i>	<u>2</u>	11-Oct	2020	62361892

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SNAILS

<i>Cepaea hortensis</i>	White-lipped Garden Snail		25-Sep	2022	138411987
<i>Cepaea hortensis</i>	White-lipped Garden Snail		25-Sep	2022	136500631
<i>Cepaea hortensis</i>	White-lipped Snail		27-Aug	2022	132732220
<i>Cepaea hortensis</i>	White-lipped Snail		27-Aug	2022	132732112
<i>Cepaea hortensis</i>	White-lipped Snail		27-Aug	2022	132731043
<i>Cepaea hortensis</i>	White-lipped Snail		27-Aug	2022	132730911
<i>Cepaea hortensis</i>	White-lipped Snail		25-Jun	2022	123720225
<i>Cepaea hortensis</i>	White-lipped Snail		17-Jun	2022	122290023
<i>Cepaea hortensis</i>	White-lipped Snail		17-Jun	2022	122197332
<i>Cepaea hortensis</i>	White-lipped Snail		17-Jun	2022	122195676
<i>Cepaea hortensis</i>	White-lipped Snail	<u>2</u>	02-Jul	2021	85554195
<i>Cepaea hortensis</i>	White-lipped Snail	<u>10</u>	13-May	2021	78622065
<i>Cepaea hortensis</i>	White-lipped Snail	<u>3</u>	13-May	2021	78616320
<i>Cepaea hortensis</i>	White-lipped Snail		13-Oct	2020	62829874
<i>Cepaea hortensis</i>	White-lipped Snail		06-Oct	2018	50957700
<i>Cepaea hortensis</i>	White-lipped Snail		24-Jun	2018	18718904
<i>Cipangopaludina chinensis</i> *	Chinese Mystery Snail	<u>2</u>	10-May	2022	116440459

DRAGONFLIES AND DAMSELFLIES - Odonata

<i>Aeshna constricta</i> *	Lance-tipped Darner	<u>5</u>	31-Jul	2022	131812134
<i>Aeshna verticalis</i> *	Green-striped Darner	<u>5</u>	31-Jul	2022	131891395
<i>Aeshna verticalis</i>	Green-striped Darner	<u>4</u>	31-Jul	2022	131807847
<i>Arigomphus cornutus</i>	Horned Clubtail		25-Jun	2022	123713158
<i>Arigomphus cornutus</i>	Horned Clubtail	<u>2</u>	25-Jun	2022	123713154
<i>Arigomphus cornutus</i>	Horned Clubtail	<u>2</u>	03-Jul	2019	28767132
<i>Arigomphus cornutus</i>	Horned Clubtail	<u>2</u>	02-Jul	2019	28765027
<i>Arigomphus furcifer</i>	Lilypad Clubtail	<u>2</u>	25-Jun	2022	123713149
<i>Arigomphus villosipes</i>	Unicorn Clubtail		25-Jun	2022	123713139
<i>Celithemis elisa</i>	Calico Pennant		02-Jul	2019	28765022
<i>Celithemis eponina</i> *	Halloween Pennant		25-Jun	2022	123713133
<i>Dorocordulia libera</i> *	Racket-tailed Emerald	<u>3</u>	14-Jul	2019	28957555
<i>Enallagma aspersum</i>	Azure Bluet		25-Jun	2022	123713127
<i>Enallagma civile</i>	Familiar Bluet		27-Aug	2022	132730504
<i>Enallagma ebrium</i>	Marsh Bluet		25-Jun	2022	123713120
<i>Epiaschna heros</i> *	Swamp Darner		31-Jul	2022	131808719

<i>Epithea cynosura</i>	Common Baskettail		17-Jun	2022	122308662
<i>Epithea princeps</i>	Prince Baskettail		17-Jun	2022	122429175
<i>Erythemis simplicicollis</i>	Eastern Pondhawk		13-Aug	2020	56354245
<i>Erythemis simplicicollis</i>	Eastern Pondhawk		03-Jul	2019	28767122
<i>Erythemis simplicicollis</i>	Eastern Pondhawk		06-Aug	2017	7401196
<i>Ischnura posita</i> *	Fragile Forktail		03-Jul	2019	28767133
<i>Ischnura verticalis</i>	Eastern Forktail		25-Jun	2022	123713122
<i>Lestes eurinus</i> *	Amber-winged Spreadwing		03-Jul	2019	28767126
<i>Phanogomphus spicatus</i>	Dusky Clubtail		03-Jul	2019	28767128
<i>Phanogomphus spicatus</i>	Dusky Clubtail		02-Jul	2019	28765025
<i>Plathemis lydia</i>	Common Whitetail		25-Jun	2021	84500793
<i>Plathemis lydia</i>	Common Whitetail		14-Jul	2019	28993473
<i>Plathemis lydia</i>	Common Whitetail		03-Jul	2019	28767131
<i>Sympetrum sp.</i>	Meadowhawk	<u>3</u>	25-Jun	2021	84652920
<i>Sympetrum vicinum</i>	Autumn Meadowhawk				129347694
<i>Sympetrum sp.</i>	Meadowhawk	<u>3</u>	11-Jul	2022	125822289
GRASSHOPPERS					
<i>Melanoplus punctulatus</i>	Pine Tree Spur-throat Grasshopper	<u>3</u>	15-Aug	2022	130973490
<i>Melanoplus punctulatus</i>	Pine Tree Spur-throat Grasshopper	<u>2</u>	14-Jul	2019	28895760
<i>Tettigidea lateralis</i>	Black-sided Pygmy Grasshopper		25-Jun	2022	123720178
BUTTERFLIES					
<i>Callophrys gryneus</i> *	Juniper Hairstreak	<u>2</u>	14-Jul	2019	28957559
<i>Celastrina neglecta</i> *	Summer Azure		06-Aug	2017	7401394
<i>Cercyonis pegala</i>	Common Wood-Nymph		27-Aug	2022	132730167
<i>Cercyonis pegala</i>	Common Wood-Nymph	<u>2</u>	11-Jul	2022	125820343
<i>Cercyonis pegala</i>	Common Wood-Nymph		11-Jul	2022	125820262
<i>Cercyonis pegala</i>	Common Wood-Nymph	<u>2</u>	14-Jul	2019	28932823
<i>Cercyonis pegala</i>	Common Wood-Nymph		14-Jul	2019	28903480
<i>Cercyonis pegala</i>	Common Wood-Nymph		06-Aug	2017	7401382
<i>Cercyonis pegala</i>	Common Wood-Nymph		06-Aug	2017	7401383
<i>Coenonympha californica</i>	Common Ringlet		27-Aug	2022	132767632
<i>Colias eurytheme</i> *	Orange Sulphur		06-Aug	2017	7401379
<i>Colias philodice</i>	Clouded Sulphur	<u>2</u>	27-Aug	2022	132732425
<i>Colias philodice</i>	Clouded Sulphur		27-Aug	2022	132730713
<i>Colias philodice</i>	Clouded Sulphur		06-Aug	2017	7401385
<i>Cupido comyntas</i> *	Eastern Tailed-Blue		27-Aug	2022	132730279
<i>Danaus plexippus</i>	Monarch		12-Aug	2022	130526568
<i>Danaus plexippus</i>	Monarch		17-Jun	2022	122406170
<i>Danaus plexippus</i>	Monarch		14-Jul	2019	28931668

<i>Danaus plexippus</i>	Monarch		06-Aug	2017	7401396
<i>Danaus plexippus</i>	Monarch		06-Aug	2017	7401392
<i>Epargyreus clarus</i>	Silver-spotted Skipper	<u>2</u>	02-Jul	2019	28765024
<i>Erythemis simplicicollis</i>	Eastern Pondhawk		14-Jul	2019	28895755
<i>Euphyes vestris</i> *	Dun Skipper		14-Jul	2019	28957557
<i>Euphyes vestris</i>	Dun Skipper		06-Aug	2017	7401389
<i>Lethe anthedon</i> *	Northern Pearly-Eye		14-Jul	2019	28957553
<i>Lethe anthedon</i>	Northern Pearly-Eye		06-Aug	2017	7401397
<i>Limenitis archippus</i>	Viceroy		27-Aug	2022	132767618
<i>Limenitis archippus</i>	Viceroy		27-Aug	2022	132730369
<i>Lon hobomok</i>	Hobomok Skipper		25-Jun	2021	97957133
<i>Lon hobomok</i>	Hobomok Skipper	<u>3</u>	25-Jun	2021	84652331
<i>Lon hobomok</i>	Hobomok Skippe		25-Jun	2021	84549419
<i>Lon hobomok</i>	Hobomok Skipper		10-Jun	2021	82494493
<i>Lon hobomok</i>	Hobomok Skipper		06-Jun	2021	81920215
<i>Megisto cymela</i>	Little Wood Satyr		14-Jul	2019	28898964
<i>Papilio canadensis</i> × <i>glaucus</i>	Canadian × Eastern Tiger Swallowtail		14-Jul	2019	28958691
<i>Papilio cresphontes</i>	Eastern Giant Swallowtail		15-Jun	2022	121964942
<i>Papilio cresphontes</i>	Eastern Giant Swallowtail		06-Aug	2017	7401443
<i>Papilio polyxenes</i>	Black Swallowtail		06-Aug	2017	7401393
<i>Papilio polyxenes</i>	Black Swallowtail		06-Aug	2017	7401393
<i>Phyciodes cocyta</i>	Northern Crescent	<u>2</u>	25-Jun	2021	84652704
<i>Phyciodes cocyta</i>	Northern Crescent		06-Aug	2017	7401390
<i>Polygonia comma</i> *	Eastern Comma		06-Aug	2017	7401378
<i>Polygonia interrogationis</i>	Question Mark	<u>2</u>	06-Aug	2017	7401395
<i>Thorybes pylades</i>	Northern Cloudywing	<u>2</u>	06-Jun	2021	81920237
<i>Thymelicus lineola</i>	Essex Skipper		14-Jul	2019	28932824
MOTHS					
<i>Acronicta insularis</i>	Marsh Dagger	<u>3</u>	14-Jul	2019	28957560
<i>Actias luna</i> *	North American Luna Moth		23-Jun	2010	5898738
<i>Actias luna</i>	North American Luna Moth		25-Jun	2021	84653114
<i>Actias luna</i>	North American Luna Moth		25-Jun	2021	84548703
<i>Actias luna</i>	North American Luna Moth		23-Jun	2010	5898738
<i>Anageshna primordialis</i>	Yellow-spotted Webworm Moth		05-Jul	2007	111375273
<i>Catocala epione</i>	Epione Underwing		06-Aug	2017	7401191
<i>Crambus agitatellus</i>	Double-banded Grass-Veneer		05-Jul	2007	111375281
<i>Crambus albellus</i>	Small White Grass-Veneer		23-Jun	2008	111375277
<i>Crambus saltuellus</i>	Pasture Grass-Veneer		23-Jun	2010	111375278
<i>Dichomeris sp.</i>	Glenn's Dichomeris Moth and Allies	<u>2</u>	05-Jul	2007	111375269
<i>Euchaetes egle</i>	Milkweed Tussock Moth	<u>2</u>	22-Aug	2020	57236548

<i>Genus Eudonia</i>		Jun-22	2022	122381065	
<i>Gnorimoschema gallaeasterella</i>		18-Jun	2022	122395434	
<i>Halysidota tessellaris</i>	Banded Tussock Moth	22-Aug	2020	57237587	
<i>Hellinsia sp</i>		Jun-21	2021	82948990	
<i>Lophocampa caryae</i>	Hickory Tussock Moth	17-Aug	2019	31169959	
<i>Lophocampa caryae</i>	Hickory Tussock Moth	28-Sep	2014	29453641	
<i>Microcrambus elegans</i>	Elegant Grass-Veneer	06-Aug	2017	7401200	
<i>Parapediasia teterrellus</i>	Bluegrass Webworm Moth	2	23-Jun	2008	111375279
<i>Protoboarmia porcelaria</i>	Porcelain Gray	17-Jun	2022	122405827	
<i>Pyrrharctia isabella</i>	Isabella Tiger Moth	10-May	2022	116468220	
<i>Pyrrharctia isabella</i>	Isabella Tiger Moth	28-Sep	2014	29453642	
<i>Renia adspersgillus</i>	Speckled Renia Moth	06-Aug	2017	7401198	
<i>Sparganothis unifasciana</i>	One-lined Sparganothis Moth	05-Jul	2007	111375272	
<i>Thyris maculata</i>	Spotted Thyris Moth	14-Jul	2019	28898963	
<i>Virbia sp.</i>	Virbia Moths	2	Jun-21	2021	83077227
<i>Grapholita sp.</i>		25-Jun	2022	123790358	
BEETLES - Coleoptera					
<i>Acalymma vittatum</i>	Striped Cucumber Beetle	25-Jun	2022	123717278	
<i>Alobates pennsylvanicus</i>	False Mealworm Beetle	25-Jun	2022	123717264	
<i>Bledius sp.</i>	Rove Beetles	2	Jun-22	2022	122335141
<i>Chauliognathus pennsylvanicus</i>	Goldenrod Soldier Beetle	05-Aug	2020	65904371	
<i>Cicindela sexguttata</i>	Six-spotted Tiger Beetle	14-Jul	2019	28932826	
<i>Diplotaxis tristis</i>	June Beetles	25-Jun	2022	123717260	
<i>Lignyodes horridulus</i>	Weevil	25-Jun	2022	123717256	
<i>Photinus consanguineus</i>	Double Cousin Firefly	25-Jun	2022	123717248	
<i>Placopterus thoracicus</i>	a checkered beetle, Cleridae	25-Jun	2022	123717244	
<i>Podabrus brevicollis</i>	a soldier beetle, Cantharidae	25-Jun	2022	123717241	
<i>Podabrus flavicollis</i>	Yellow-necked Soldier Beetle	25-Jun	2022	123717238	
<i>Polydrusus formosus</i>	Green Immigrant Leaf Weevil	2	17-Jun	2022	122429107
<i>Rhyssomatus lineaticollis</i>	Milkweed Stem Weevil	25-Jun	2022	123717234	
<i>Tenebrionidae (subfamily Alleculinae)</i>	Comb-clawed Darkling Beetles	25-Jun	2022	123717271	
<i>Tetraopes tetrophthalmus</i>	Red Milkweed Beetle	06-Aug	2017	7401041	
<i>Cantharidae (subfamily Cantharinae)</i>	Soldier Beetle	18-Jun	2022	122307420	
BEES AND WASPS					
<i>Apis mellifera</i>	Western Honey Bee	02-Jul	2021	85554202	
<i>Aproceros leucopoda</i>	Elm Zigzag Sawfly	8	31-Jul	2022	137484570

<i>Bombus griseocollis</i>	Brown-belted Bumble Bee		17-Sep	2021	95221415
<i>Bombus impatiens</i>	Common Eastern Bumble Bee		27-Aug	2022	132731984
<i>Bombus impatiens</i>	Common Eastern Bumble Bee		17-Sep	2021	95221634
<i>Eurosta solidaginis</i>	Goldenrod Gall Fly		06-Aug	2017	9537193
<i>Melissodes desponsus</i>	Eastern Thistle Longhorn		05-Aug	2020	65904370
<i>Polistes fuscatus</i>	Dark Paper Wasp		27-Aug	2022	132731877
<i>Polistes fuscatus</i>	Dark Paper Wasp	<u>5</u>	25-Jun	2021	84932201
<i>Polistes fuscatus</i>	Dark Paper Wasp		25-Jun	2021	84548739
<i>Rhopalomyia solidaginis</i>	Goldenrod Bunch Gall Midge		27-Aug	2022	132767630
<i>Rhopalomyia solidaginis</i>	Goldenrod Bunch Gall Midge		27-Aug	2022	132731779

FLIES AND ALLIES - Diptera

<i>Chrysopilus ornatus</i>	Ornate Snipe Fly	<u>4</u>	14-Jul	2019	28958679
<i>Epiphragma fasciapenne</i>	Band-winged Crane Fly		25-Jun	2022	123720221
<i>Eurosta solidaginis</i>	Goldenrod Gall Fly	<u>3</u>	13-May	2021	78622083
<i>Eurosta solidaginis</i>	Goldenrod Gall Fly		06-Aug	2017	9537193
Family Muscidae	House Flies and Allies		25-Jun	2022	123720195
Family Limoniidae	Limoniid Crane Flies		25-Jun	2022	123720220
<i>Liriomyza asclepiadis</i>	Milkweed Leaf-miner Fly	<u>2</u>	25-Jun	2022	123720213
<i>Liriomyza asclepiadis</i>	Milkweed Leaf-miner Fly		25-Jun	2022	123720205
<i>Melanostoma mellinum</i>	Variable Duskyface Fly	<u>2</u>	25-Jun	2022	123720187
<i>Nefusa ambigua</i>	Violet Leafmining Sawfly	<u>2</u>	25-Jun	2022	123720190
Subfamily Macrocerinae	a Fungus Gnat		25-Jun	2022	123720199
<i>Toxomerus marginatus</i>	Margined Calligrapher	<u>2</u>	11-Jul	2022	125838075
Gall on Linden(See spiders)			17-Jun	2022	122192135

TRUE BUGS - Hemiptera

Aphididae	Aphids		25-Jun	2021	84503404
<i>Athysanus argentarius</i>	Silver Leafhopper		25-Jun	2022	123715141
<i>Contarinia verrucicola</i>	Linden Wart Gall Midge		17-Jun	2022	122560266
<i>Dasineura pellex</i>	Ash Bullet Gall Midge	<u>2</u>	25-Jun	2021	85001810
<i>Draeculacephala paludosa</i>	Sharpshooters Cicadellinae		25-Jun	2022	123715197
<i>Empoa gillettei</i>	Typical Leafhoppers		25-Jun	2022	123715188
Family Cicadellidae	Typical Leafhoppers		25-Jun	2022	123715202
Genus Acanalonia		<u>3</u>	01-Aug	2022	129049244
Genus Macrosteles	Typical Leafhoppers		25-Jun	2022	123715178
<i>Graphocephala coccinea</i>	Red-banded Leafhopper		14-Jul	2019	28895759
<i>Leptoglossus occidentalis</i>	Western Conifer Seed Bug		22-Oct	2022	139676021
<i>Leptoglossus occidentalis</i>	Western Conifer Seed Bug	<u>3</u>	01-Aug	2022	129049099
<i>Neotibicen canicularis</i>	Northern Dog-day Cicada		30-Jul	2008	17979869
<i>Odontocorynus salebrosus</i>		<u>4</u>	25-Jun	2021	84837797
<i>Orienteus ishidae</i>	Japanese Leafhopper		25-Jun	2022	123715167
<i>Pediopsis tiliae</i>	Lime Leafhopper		25-Jun	2022	123715161

<i>Phymata americana</i>	Jagged Ambush Bug		04-Oct	2022	137915143
<i>Phymata americana</i>	Jagged Ambush Bug	<u>2</u>	03-Aug	2022	129347528
<i>Stenotus binotatus</i>	Two-spotted Grass Bug		25-Jun	2022	123720183
Subgenus <i>Verdanus</i>	Diplocolenus sp.		25-Jun	2022	123715147
<i>Typhlocyba transviridis</i>	Typical Leafhoppers		25-Jun	2022	123715154
<i>MANDIDS - Mantodea</i>					
<i>Mantis religiosa</i>	European Mantis	<u>2</u>	28-Oct	2021	99646717
<i>Mantis religiosa</i>	European Mantis	<u>2</u>	25-Jun	2021	84651895
<i>Mantis religiosa</i>	European Mantis	<u>2</u>	25-Jun	2021	84630571
-					
<i>SPIDERS - Arachnidea</i>					
<i>Thomisidae</i>	Crab Spiders		16-May	2021	78994789
<i>Dolomedes scriptus</i>	Striped Fishing Spider		10-May	2022	116418127
<i>Enoplognatha ovata</i>	Common Candy-striped Spider	<u>2</u>	14-Jul	2019	28931678
<i>Enoplognatha ovata</i>	Common Candy-striped Spider	<u>2</u>	14-Jul	2019	28931673
<i>Eriophyes tiliae</i>	Red Nail Gall Mite	<u>2</u>	17-Jun	2022	122560267
<i>Genus Tetragnatha</i>	Stretch Spiders		20-Aug	2018	16169859
<i>Genus Xysticus</i>	Ground Crab Spiders	<u>4</u>	25-Jun	2021	84873872
<i>Pelegrina flavipes?</i>	Jumping Spider		06-Jun	2021	81849348
<i>Vasates quadripedes</i>	Maple Bladdergall Mite		06-Aug	2017	7401188
<i>REPTILES AND AMPHIBIANS</i>					
<i>Anaxyrus americanus</i>	American Toad		24-Jul	2021	88484695
<i>Anaxyrus americanu</i>	American Toad		10-May	2022	116468299
<i>Anaxyrus americanus</i>	American Toad		25-Jun	2022	123456511
<i>Anaxyrus americanus</i>	American Toad		18-Jun	2022	122326601
<i>Anaxyrus americanus</i>	American Toad		10-May	2022	116439828
<i>Anaxyrus americanus</i>	American Toad		15-Oct	2021	99868431
<i>Anaxyrus americanus</i>	American Toad		13-May	2021	78622063
<i>Anaxyrus americanus</i>	American Toad		14-Jul	2019	28958676
<i>Chrysemys picta</i>	Painted Turtle		08-Oct	2021	97586326
<i>Chrysemys picta</i>	Painted Turtle		29-Jul	2020	54777002
<i>Chrysemys picta marginata</i>	Midland Painted Turtle	<u>3</u>	27-Aug	2022	132731225
<i>Chrysemys picta marginata</i>	Midland Painted Turtle	<u>2</u>	10-May	2022	116449108
<i>Chrysemys picta marginata</i>	Midland Painted Turtle		10-May	2022	116449089
<i>Emydoidea blandingii</i>	Blanding's Turtle	<u>2</u>	43556	Apr.23	22963707
<i>Hyla versicolor</i>	Gray Treefrog	<u>4</u>	11-Aug	2021	90769952
<i>Hyla versicolor</i>	Gray Treefrog		16-May	2021	79051266
<i>Lampropeltis triangulum</i>	Eastern Milksnake	<u>2</u>	06-Jun	2021	81920238
<i>Lithobates catesbeianus</i>	American Bullfrog	<u>2</u>	12-Aug	2022	130556496

<i>Lithobates catesbeianus</i>	American Bullfrog		24-Jun	2018	18699735
<i>Lithobates clamitans</i>	Green Frog		23-May	2022	118405200
<i>Lithobates pipien</i>	Northern Leopard Frog		27-Aug	2022	132732318
<i>Lithobates pipiens</i>	Northern Leopard Frog		12-Aug	2022	130556643
<i>Lithobates pipiens</i>	Northern Leopard Frog		23-May	2022	118405023
<i>Lithobates pipiens</i>	Northern Leopard Frog		10-May	2022	116495615
<i>Lithobates sylvaticus</i> *	Wood Frog	<u>2</u>	10-May	2022	116495415
<i>Lithobates sylvaticus</i>	Wood Frog		14-Jul	2019	28901854
<i>Opheodrys vernalis</i> *	Smooth Greensnake	<u>2</u>	31-Jul	2021	89775627
<i>Plethodon cinereus</i>	Eastern Red-backed Salamander		18-Jun	2022	122325346
<i>Plethodon cinereus</i>	Eastern Red-backed Salamander		11-Apr	2020	44803613
<i>Plethodon cinereus</i>	Eastern Red-backed Salamander		10-Oct	2010	37953920
<i>Thamnophis sirtalis</i>	Common Garter Snake		22-Oct	2022	139661306
<i>Thamnophis sirtalis sirtalis</i>	Eastern Garter Snake	<u>2</u>	13-May	2021	78622097
BIRDS					
<i>Ardea herodias</i>	Great Blue Heron		08-May	2022	116140558
<i>Cathartes aura</i>	Turkey Vulture		11-May	2019	142798050
<i>Haemorhous mexicanus</i>	House Finch		07-May	2022	116082804
<i>Meleagris gallopavo</i>	Wild Turkey		17-Jun	2022	122428146
<i>Meleagris gallopavo</i>	Wild Turkey		25-Apr	2021	75248591
<i>Myiarchus crinitus</i>	Great Crested Flycatcher		06-Jun	2021	81920235
<i>Passerina cyanea</i>	Indigo Bunting	<u>3</u>	14-Jul	2019	28895754
<i>Sitta carolinensis</i>	White-breasted Nuthatch		11-May	2019	142798047
<i>Sphyrapicus varius</i>	?Yellow-bellied Sapsucker		03-Oct	2020	61611482
<i>Spizella passerina</i>	Chipping Sparrow	<u>2</u>	06-Jul	2021	86294990
<i>Spizella passerina</i>	Chipping Sparrow		02-Jul	2021	85554203
<i>Tamiasciurus hudsonicus</i>	American Red Squirrel NB		15-Oct	2021	99868430
<i>Thamnophis sirtalis sirtalis</i>	Eastern Garter Snake NB	<u>2</u>	23-Oct	2021	99155735
<i>Troglodytes aedon</i>	House Wren	<u>2</u>	06-Jul	2021	86294991
<i>Troglodytes aedon</i>	House Wren	<u>2</u>	02-Jul	2021	85554198
MAMMALS					
<i>Castor canadensis</i>	American Beaver		02-Jul	2021	85554196
<i>Odocoileus virginianus</i>	White-tailed Deer	<u>2</u>	17-Jun	2022	122427987
<i>Odocoileus virginianus</i>	White-tailed Deer		10-May	2022	116421958
<i>Odocoileus virginianus</i>	White-tailed Deer		25-Mar	2020	68157015
<i>Odocoileus virginianus</i>	White-tailed Deer		06-Aug	2017	7401199
<i>Procyon lotor</i>	Common Raccoon	<u>3</u>	17-Jun	2022	122428315
<i>Tamiasciurus hudsonicus</i>	American Red Squirrel		13-May	2021	78622075

APPENDIX 3. Additional previous records for Macaulay Mountain Conservation Area.

VASCULAR PLANTS – P.M. Catling and B. Kostiuk

Spiranthes lucida – Shining Ladies-tresses Orchid – toward the outflow of the pond – see photo and caption p. 94. A very rare and unusual plant in the County only found at one or two other localities.

SNAILS - P.M. Catling and B. Kostiuk Observations from 2014-10-04:

<i>Neohelix albolabris</i>	10	Macauley Mt. valley	44.00109	-77.11823
Medium size - unidentified	25	Macauley Mt. valley	44.00109	-77.11823
<i>Novisuccinea ovalis</i>	1	Macauley Mt. valley	44.00109	-77.11823
<i>Angispira alternata</i>	2	Macauley Mt. valley	44.00109	-77.11823
<i>Appalachina sayana</i> Pilsbry *	1	Macauley Mt. valley	44.00109	-77.11823
<i>Cepaea nemoralis</i> (Linnaeus)	36	Picton, -Public Works yard below Macauley Mtn.	44.00488	-77.13257

**Appalachina sayana* Pilsbry is S1-S2 according to the Natural Heritage Information Centre

Observations from 2022-04-24:

Stagnicola elodea – large snail shells from ditch at south end of Macauley Mtn. C.A. (nr Clarke Rd.)
Unidentified aquatic snail sp.- smaller, less than 1 cm black and living – same location as above

GRASSHOPPERS – P.M. Catling and B. Kostiuk

2020 July 31, 2020191, *Melanoplus huroni*, Huron Grasshopper (possibly), rare in southern Ontario. The county is a southern and eastern limit. Possibly a southern boreal glacial relict and new for the county.

DAMSELFLIES AND DRAGONFLIES – David Bree - additional records from Macauley Mtn. C.A.

Exact location data available through inquiry at pecfninfo@gmail.com.

Common Name	Scientific Name	Date Seen	No. seen	Family
Slender Spreadwing	<i>Lestes rectangularis</i>	2000-09-03	1 male	Lestidae
Tule Bluet	<i>Enallagma carunculatum</i>	2006-07-09	1m c&r	Coenagriidae
Skimming Bluet	<i>Enallagma geminatum</i>	2000-09-03	35-6 pr in tandem	Coenagriidae
Canada Darner	<i>Aeshna canadensis</i>	2007-06-18	3 (1m c&r)	Aeshnidae
Spiny Baskettail	<i>Epitheca spinigera</i>	2010-05-22	2m c&r	Corduliidae
Arrowhead Spiketail	<i>Cordulegaster obliqua</i>	2004-06-07	1m, well seen through binoculars 1 st record for PEC*	Cordulegastridae
Frosted Whiteface	<i>Leucorrhinia frigida</i>	2002-06-10	1 male	Libellulidae
Painted Skimmer	<i>Libellula semifasciata</i>	2005-06-22	1	Libellulidae

(* Arrowhead Spiketail also seen by P.M. Catling at a later date along stream at this site)



Figure 24. A small population (15 plants) of Shining Ladies'-tresses, an uncommon native orchid, once occurred on the west side of the south end of the pond in a wet meadow. The area was subsequently fertilized and trees were planted destroying most of the population. Macaulay Mountain Pond, southwest side, 18 June 2016. Photo by Brenda Kostiuk.

APPENDIX 4. Maps prepared by Quinte Conservation delineating the full extent of Macaulay Mountain Conservation Area including lands on the opposite side of Kingsley Rd.

