THE BRODIE CLUB

Established 1921

Website: http://thebrodieclub.eeb.utoronto.ca

THE 1,117th MEETING OF THE BRODIE CLUB

The 1,117th meeting of the Brodie Club was held on Tuesday, 19 February 2019 in Room 432 of the Ramsay Wright Laboratories of the University of Toronto.

Chair: Bertin
Secretary: E. Addison

The meeting was called to order at 7:35 pm and was attended by 39; 29 members and 10 guests.

Roll Call:

Present:Aird, E. Addison, R. Addison, Bacher, Bell, Bertin, Coady, Currie, Curry, Daniels, DeMarco, Dengler, Dunn, A. Falls, B. Falls, Hussell, Hutchinson, Iron, H. Juhola, King, Kortright, Lindsay, Moldowan, Pittaway, Riley, Rising, Slessor, Stones, Thomas

Guests: Emma Horrigan (Bell), Mary-Lou Bacher (Bacher), Linda Pimm (Aird), Tim Dickinson (Addison), Gavin Miller (H. Juhola), Peggy Haist and Ron Jenkins (Bertin), Ron Dengler (Dengler) Kathryn Falls (B and A. Falls), Alexander MacKay.

Regrets: Abraham, Beadle, Dunlop, Kotanen, LaForest, Lumsden, McAndrews, Obbard, Peter, Reading, Tomlinson, Sutherland.

Minutes: Minutes of the previous meeting were approved

Committee Reports:

Ontario Nature (ON): Slessor reported that the club had received a request to sponsor a student at the ON Environmental Leadership and Biodiversity Camp. Dunn suggested we pass the hat for the money, thinking the club did not have money to spare. Currie recommended taking it out of the club funds as they are substantial (>$2000). E. Addison recalled that part of the motion passed some time back to increase member fees included a motion passed to sponsor a student at the ON camp on an annual basis. King noted that the $350 fee is only a portion required to sponsor a student and that ON pays additional funds. Slessor reminded us of the fine summary and letter of thanks received from the student sponsored last year. A motion to sponsor a student this year (Slessor/E. Addison) passed.

Website: Dunn reported that U of T is replacing some software. Delays in getting it sorted out mean the site can't be updated for a while.

Program Committee: E. Addison reported that the March speaker will be Dr. Gail Fraser of York University speaking on The Double-crested Cormorants at Tommy Thompson Park.

Announcements:

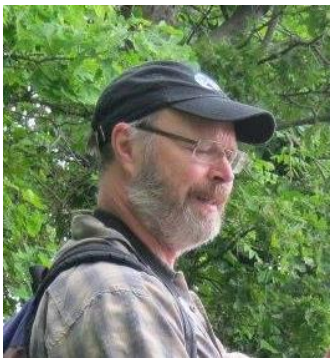
Curry announced that the Hamilton Naturalist Club is celebrating 100 years of existence, that people are making biota checklists for the area and writing memories and that a gala dinner will be held November 2. A dinner ticket will cost $75 and an invitation is extended to all Brodie Club members.

Thomas reminded members that the Ontario government is reviewing the Endangered Species Act (ESA) and that members can examine the proposals and provide responses on the Environmental Registry website. Bacher noted that a proposed change in the ESA is to provide ministerial exemptions. Bacher also noted that the Ontario federation of Anglers and Hunters are attacking the Ontario woodland caribou recovery plan for proposing roadless areas as a part of the plan.

Thomas reported that on March 6 at the Palmerston (Street) Public Library, a woman from Papua New Guinea will speak on birds of paradise. Entry is $10/ person or 'pay what you can' with proceeds donated to a charity.

Iron noted that Sebastian Kvist's recent talk to Brodie Club on "The Natural History of Leeches: evolution, blood and collections" led her to look at an online article by National Geographic that may be of interest to other Brodie members, too: "Why was this man's luggage stuffed with 5000 leeches?" https://www.msn.com/en-ca/news/world/why-was-this-mans-luggage-stuffed-with-5000-leeches/ar-BBSQQGe?ocid=spartandhp

G. Miller announced that he will be giving a talk in Uxbridge about the Goodwood Conservation Area.



SPEAKER

Riley introduced the speaker, Michael Oldham of the Natural Heritage Information Centre (NHIC) of the Ontario Ministry of Natural Resources and Forests (OMNRF) in Peterborough. Riley met Oldham when working in southwestern Ontario and considers Oldham one of the finest field botanists and herpetologists in the province. Mike became provincial botanist after the NHIC was established. Mike has many publications on plants and invertebrates. The NHIC tracks all species and ecosystems and the status of each.

Rare Plants of Ontario

The talk was organized under five topics: diversity, species of concern, methods for ranking status, distributions of plants and discoveries made in NHIC studies. Oldham summarized the total species, rare species and species at risk (SAR) for vascular plants (3164/731/83), bryophytes (727/436/3) and lichens (969/324/5). Complete species lists can be downloaded by using Google to access the NHIC website.

The NHIC is a member of a collective named NatureServe (www.natureserve.org) which was established in many jurisdictions before NHIC was established in 1993. All NatureServe centres in North America use the same database structure and same system for ranking plants for conservation concerns. Specific information (e.g. location of rare plants) is provided 'on a need to know basis'.

Rankings (1-5, rarest to most common) are determined globally (G), nationally (N) and state/provincially (S). NHIC is responsible for establishing the 'S' rankings for Ontario. Twenty-six species, all Carolinean, are recognized as extirpated from Ontario and are ranked 'SX'. Other species are only known from historical records (e.g. Hairy Angelica, *Angelica venenosa*) and are ranked 'SH'.

Since March 2017, the NHIC database has been linked with 'iNaturalist,' 'e-Bird' and a herpetology website. Since that time, 21,183 plant observations have been submitted for 1033 species, by 234 people.

NHIC started with ARVPO, the "Atlas of the Rare Vascular Plants of Ontario 1982-1987" by G.W. Argus, K.M. Pryor, D.J. White and C.J. Keddy; published by the National Museum of Nature. Following many additional discoveries by NHIC field workers and others, OMNR published a fourth edition in 2009 (Oldham, M.H., and S.R. Brinker. 2009. Rare Vascular Plants of Ontario. 4th ed. OMNR, Peterborough), which can be downloaded at the OMNRF NHIC website. Many of Ontario's rare plants are located in southern Ontario and also along the Lake Superior shores and the area of Lake of the Woods.

Ontario has few endemic species because the floral communities were wiped clear by the glaciations and have had to recolonize from elsewhere. The rare species identified in Ontario are mainly species at the edge of contiguous ranges in other jurisdictions. For example, broad beech fern (*Phegopteris hexagonoptera*) is a peripheral range species with clusters of occurrences at the east end of Lake Ontario, along the shores of Lake Erie and some outliers in the Bruce Peninsula and Parry Sound areas. However, Ontario is 'globally responsible for one Great Lakes endemic, the lakeside daisy (*Tetraneuris herbacea*, pictured at right), a plant restricted to alvars on Manitoulin Island and a bit of the Bruce Peninsula. Examples of plants with disjunct distributions in Ontario include tufted saxifrage (*Saxifraga cespitosa*), and artic alpine species in most of its range, but found in Ontario only along beach ridges of the Hudson Bay coast. Another is Devil's club (*Oplopanax horridis*), a very common plant on the Pacific coast but a disjunct in Ontario, known only from Porphyry Island and the Slate Islands of Lake Superior.

The NHIC has conducted extensive field surveys in the Lake of the Woods area of northwestern Ontario and in the Hudson Bay lowlands, as well as in southern Ontario where most previous work has been done. Species encountered for the first time in Ontario from their field studies included 44 species of native vascular plants, 29 non-native species (mainly in southern Ontario), 9 species of bryophytes (mainly in the north) and 44 species of lichens distributed throughout the province. Field surveys to Lake of the Woods area for 1-2 weeks annually during the mid-1990s focused on bur oak savannah ecosystems that harboured numerous prairie ecosystem species at the extreme eastern limit of their range. The pale showy goldernrod (*Solidago speciosa*) discovered there was the first record for Canada. Another first record for Canada was the slick-seed wild bean (*Strophostyles leiosperma*). Slender beardtongue (*Penstemon gracilis*), prairie spikemoss (*Selaginella densa*) and prairie onion (*Allium stellatum*) were previously considered rare in Ontario but found to be more widespread. Once species are no longer considered rare, NHIC discontinues tracking them.

The Far North Project was funded for six seasons to gather information in light of initiatives by indigenous peoples and also expanding industrial activity. In addition to an NHIC field botanist, other biologists surveyed birds, soil and insects. They focused on bird colonies, parks and nature reserves, the latter as previously identified by John Riley. The Sutton Ridges where Riley had encountered numerous new species for Ontario and the shores of rivers that had been exposed to regular flooding and associated nutrient enrichment were sources of plant diversity. The coastal strip of tundra and the raised beach ridges within it provided unique habitat due to the cooler microclimate as influenced by the ice out in Hudson Bay in summer. On James Bay are salt marsh meadow ecosystems found nowhere else in Canada. The Far North study revealed 20 species of plants new to Ontario and 18 species previously thought rare in Ontario and now considered more common (e.g., pretty cinquefoil, *Potentilla pulchella*).

Taxonomic groups and nomenclature are continually revised as science learns more, 28% of species included in ARVPO in the mid-1980s are now called something different. Some species are split (e.g. *Aster spp.* Has been split into 6 genera) and some groups are lumped. Some taxa are shifted from specific to subspecifc status and vice versa. For example, the limestone hedge-hyssop (*Gratiola quartermaniae*) is now recognized as a new species from alvar ecosystem sites) that are wet in spring and dry in summer. The currently known range of this species is extremely disjunct, with records only from Ontario, Tennessee and Texas. One of the new species Oldham mentioned is *Carex juniperorum* (pictured at left), which was described by Bill Crins and colleagues (Catling, P. M., A. A. Reznicek and W. J. Crins. 1993. Systematic Botany 18(3): 496-501.)

Questions following the presentation:

Bacher: Did you know Sandy Gage who in 1994-1996 worked towards the expansion of Polar Bear Provincial Park? A: No. There has been development interest not only in the 'Ring of Fire' area but also within the park around the Sutton Ridges.

G. Miller: In the NHIC, there was a ranking of sites of vegetative communities back in the 1990s. Have they been updated? A: They should be updated. Contact Wasyl Bakowsky for more information on this initiative.

Lindsay: What do you have planned next? A: Retirement! Planning in NHIC depends a lot on partnered funding which gets identified within specific periods of time. NHIC may be partnering with National Parks to survey park flora.

Dunn: If you do not have the background information on a species, can you still rank them? A: Yes, that can be done if there may be threat or trend information derived from other jurisdictions. Question marks delineating uncertainty can be added to a ranking.

Rising: Specific methods were explained for the Hudson Bay work. Was there a systematic methodology applied to other surveys? A: There is variation in methodologies. NHIC uses

museum specimens, species lists--whatever sources are available. A few taxa are focused on each year and a new initiative every 5 years.

Riley: You have explained conservation rankings and have a deep personal experience with COSEWIC and COSSARO. What similarities or differences do you see? A: They do not focus on plants as much as on birds and herps. There are lots of critically endangered plant species that will not get status reports. COSEWIC direction is influenced by sub-committees. Status report are long and costly so there is competition for resources to complete status reports.

Riley: Are there alternative approaches? A: There could be bundling of 4-5 plants being considered together based on common threats, etc. However, all species are ranked individually.

Currie: Has there been attention to aquatic plants? A: We have tried but there has been less attention on aquatic plants, so less information and fewer species getting attention and ranking.

Hussell: Do you use geology maps to find places with unusual topography, soils etc. where you might look for rare plants? A: Have not, but that might work.

Bob Curry thanked the speaker.

OBSERVATIONS

DeMarco: Noted the influence of club speakers on our activities by mentioning that while wading through water during a trip to Vietnam, his family counted and watched the behaviour of leeches attaching to their legs.

E. Addison mentioned a book "The Wolf" which describes interactions of wolves within and between packs based on thousands of observations in Yellowstone, including over 10,000 observations by one individual. It provides a stunning increase in our understanding of social interactions among wolves both within and between packs. [Blakeslee, N. 2017. The wolf, a true story of survival and obsession in the west. Random House Canada. 300pp. ISBN 978-0-345-81573-6].

Bertin mentioned an article on murmurations in starlings that created a realistic simulation model of what occurs in nature using only a few simple rules: nearby birds move further apart, more distant birds move closer, and birds align their direction and speed to that of the nearest seven or so neighbours.

Daniels reported on the current status of monarch butterflies on their wintering areas. There has been a 140% increase over the previous year. One explanation is that Mexican authorities have been more vigilant in protecting the roosting trees. However, this seems simplistic and Daniels suspects a broader factor such as warm weather.

The meeting was adjourned at 9:20 pm.

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