NYFA New York Flora Association

# Mitchelliana

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**New York Flora Association Newsletter Winter 2024**

**Editor's Note:** In this issue we have reports on three NYFA research grants, as well as field trip reports and other items of interest, including a notice of a noteworthy NYS botanical milestone (see page 7). The field trip committee is working on trips for next year, so stay tuned. And, as usual, if you have any articles, photos, or other items of botanical interest you would be willing to share in this newsletter, we welcome them.

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**NYFA Mission:**
To help people enjoy and learn about the wild plants of New York State and promote the conservation of native species.

## The Historical and Contemporary Halophytic Flora of Onondaga Lake and the Montezuma Wetlands Complex

by Alex Petzke

Inland salt marshes (ISMs) are non-tidal wetlands affected by saline groundwater and any vegetation, if present, is dominated by halophytes (salt-tolerant plant species) (Eallonardo and Leopold 2014). ISMs are endangered in New York (NYNHP 2023) and globally (Albert 2001), with only about 40 acres remaining and even less area consisting of high-quality marsh (Eallonardo and Leopold 2014). ISMs were once extensive around Onondaga Lake in Syracuse, around which a large salt production industry developed; those ISMs have largely been destroyed and only small remnants remain. ISMs remain in some abundance in the Montezuma Wetlands Complex, though likely not occupying the acreage they once did because of historical salt production operations and draining of the landscape for agriculture.

In 1983, Mildred Faust, Associate Professor of Botany at Syracuse University until 1965 and Adjunct Professor of Botany at SUNY ESF until her passing in 1988, and co-author Nancy Roberts published The Salt Plants of Onondaga Lake, Onondaga County, New York (Faust and Roberts 1983), which includes a list of 64 halophyte species documented from the saline habitats of Onondaga Lake. To compile this list they reviewed herbarium specimens and historical documents and conducted field surveys.

Recent interest in Onondaga Lake's ISMs resulted in some halophyte species being introduced to the area as part of restoration and remediation efforts, sometimes capitalizing on the discovery of natural brine springs in the area. In the 40 years since Faust and Roberts' list was published, substantial changes have been made to the area around Onondaga Lake, so I decided to update their list. No such work had been conducted in the Montezuma Wetlands Complex, with only scattered records existing, so I expanded my survey to include the MWC. Here the MWC includes the Northern Montezuma Wildlife Management Area, Montezuma National Wildlife Refuge (NWR), the Carncross Inland Salt Pond Preserve (The Nature Conservancy), and a recently constructed ISM owned by The Wetland Trust. This work was also partly motivated by the several state-listed species among our halophytic flora, for which updated documentation is especially valuable.

The objectives of this study were to: 1) conduct a survey of halophyte species at Onondaga Lake and the Montezuma Wetlands Complex, 2) survey historical records and herbarium specimens for previously undocumented halophyte occurrences, and 3) summarize trait data to characterize the documented halophytic flora.

For Objective 1, survey sites based on previous halophyte reports and potential for halophytes were targeted based on aerial imagery and field observations. I surveyed six sites at Onondaga Lake and fourteen in the MWC. At each survey site, I used an adaptive meander method, focusing on areas of low and sparse

vegetation, signs of possible salt influence. I documented the first occurrence of each halophyte species found and recorded location, habitat, associate species, plant notes (e.g., phenology), and number of plants or extent of the occurrence. I collected up to two voucher specimens per occurrence, not collecting more than 1 in every 20 stems (Wagner 1995), but also taking species rarity into account.

For Objective 2, a list of target halophyte species was compiled by searching for species in "Flora of North America" with "salt" and related terms in their habitat description documented in states or provinces adjacent to or near New York. The target halophyte list also included all species documented in the field. Ten Central New York herbaria were surveyed for the target species and available documents examined for references to halophyte species in my study areas. Those documents included plant lists from visits to the MWC ISMs by Mildred Faust and others. I am continuing to survey shared online herbarium databases for specimens of target halophyte species.

For Objective 3, ecological and life history trait data as well as conservation information for the documented halophytes were compiled from the literature and online resources.

Salt pan at Howland Island, Northern Montezuma WMA.

Field surveys were completed in 2022 but the remaining research is ongoing, so I include here only partial results. I documented 135 halophyte occurrences across both study areas representing 11 families, 23 genera, and 30 species (see species list at end of article). Of the species documented, three (salt grass (*Distichlis spicata*), smooth cordgrass (*Sporobolus alterniflorus*), and salt cordgrass (*Sporobolus pumilus*)) were introduced as part of restoration efforts and were unknown from the study areas before that (though they were all documented from at least one of the study areas historically). At Onondaga Lake, site species richness ranged from 1 to 16 and in the MWC from 2 to 11. Documented species include four state-listed

species: American reed grass (*Phragmites americanus*, Rare), annual saltmarsh aster (*Symphyotrichum subulatum*, Threatened), American saltmarsh bulrush (*Bolboschoenus maritimus* ssp. *paludosus*, Threatened), and red pigweed (*Oxybasis rubra* var. *rubra*, Threatened). My field surveys documented 16 county records for 11 species across 3 counties. The surveys yielded less than half as many species as Faust and Roberts' 1983 list of 64 species, though it should be noted that my species inclusion criteria were slightly different, and not all of Faust and Roberts' listed species were present contemporaneously.

*Bolboschoenus maritimus* ssp. *paludosus* (left) and *Symphyotrichum subulatum* (right).

Herbarium surveys found over 600 halophyte specimens across 29 species from my study areas. While I did not find any halophyte species previously undocumented from those areas, I did find a specimen of the halophyte contorted smotherweed (*Spirobassia hirsuta*) from Syracuse, representing a new record for Onondaga County. Document examination yielded over 350 individual references to halophytes in the study areas, but their exact contribution to my work has not yet been evaluated.

The present-day halophytic flora of the two study areas had 25% annual species and 72% perennials. Clonal plants reproducing asexually by stolons or rhizomes made up 47% of species. Forbs comprised 41% of species and graminoids 50%. Native species made up 74% of documented species and the coefficient of conservatism of the documented species ranged from 0 to 9.

The ISMs of Central New York (CNY) are a unique and rare ecosystem that significantly contributes to the botanical diversity of New York. The work described above provides an important update to our knowledge of CNY's halophytic flora, which merits further study and future updates. The data from this research were shared with landowners and can be applied to conservation of the ecosystem and threatened halophytes in addition to informing restoration efforts. Several organizations are actively working to bring ISMs back to our landscape by restoring degraded sites or facilitating the establishment of halophytes around recently discovered brine springs.

Note: this article discusses a different part of my dissertation research at SUNY ESF than that for which NYFA granted me funding. I wish to thank the New York Flora Association for their generous support of my research and the many people who helped me in the field and herbaria, coordinated herbarium visits, shared valuable information, and provided feedback and technical support. If you have feedback on this research or any information contributing to it, I encourage you to contact me at apetzke@syr.edu.

**Species list (* = nonnative, †= obligate halophyte)**

*Agrostis stolonifera* (creeping bent)*
*Atriplex prostrata* (seaside orach)†
*Bolboschoenus maritimus* ssp. *paludosus* (American saltmarsh bulrush)†
*Diplachne fusca* ssp. *fascicularis* (bearded sprangletop)†
*Distichlis spicata* (salt grass)†
*Echinochloa walteri* (coast barnyard grass)
*Eleocharis parvula* (salt-loving spike rush)†
*Hibiscus moscheutos* ssp. *moscheutos* (swamp rose mallow)
*Hordeum jubatum* ssp. *jubatum* (foxtail barley)*†
*Juncus gerardi* (black grass)†
*Oxybasis glauca* ssp. *glauca* (oak-leaved goosefoot)*
*Oxybasis rubra* var. *rubra* (red pigweed)
*Phragmites americanus* (American reed grass)
*Phragmites australis* (Old World reed grass)*
*Puccinellia distans* (European alkali grass)*†
*Ruppia maritima* (widgeon grass)†
*Samolus valerandi* (water pimpernel)
*Schoenoplectus americanus* (chair maker's bulrush)†
*Schoenoplectus pungens* var. *pungens* (three-square bulrush)
*Solidago sempervirens* (northern seaside goldenrod)†
*Spergularia marina* (lesser saltmarsh sand spurry)†
*Spergularia media* var. *media* (greater saltmarsh sand spurry)*†
*Sporobolus alterniflorus* (smooth cordgrass) †
*Sporobolus michauxianus* (prairie cordgrass)
*Sporobolus pumilus* (salt-meadow cord grass)†
*Suaeda calceoliformis* (horned seablite)†
*Symphyotrichum subulatum* (annual saltmarsh aster)†
*Typha angustifolia* (narrow-leaved cattail)
*Zannichellia palustris* (horned pondweed)

*Solidago sempervirens*, whole plant.

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*Solidago sempervirens*, close-up.

## Halophytes of the Beaver Kill

by Daniel Atha

Returning home in a leisurely fashion to New York City after leading a smartweed (*Persicaria*) field trip around Syracuse for the New York Flora Association, I was on the hunt for the far eastern smartweed (*Persicaria extremiorientalis*), which had not been documented in New York west of Esopus Creek in Ulster county.

This particular smartweed was first collected in New York City in the 1960's. *P. extremiorientalis* (Polygonaceae) is established in the flora of the eastern United States of America (Atha, D. E., M. H. Nee & R. F. C. Naczi. 2010. Journal of the Torrey Botanical Society 137: 333–338) and has since expanded its range along the eastern seaboard from Maine to Georgia. In 2020 it was found near Akron, Ohio, and has probably spread farther west since then. It is typically found on freshly disturbed gravelly and loamy soils in full sun, for instance on roadsides and construction sites. I can't think of anything stopping its westward expansion except perhaps the invisible but very real 100th meridian that stops most of the eastern flora dead in their tracks.

We did not find it around Syracuse during the smartweed field trip, but I was determined to find it somewhere between Esopus Creek and Syracuse. There is no shortage of roads and construction sites along the way, but travelling at 70 miles per hour on Route 17 (thankfully not yet an interstate), I would never see them. Old Route 17, though, is perfect. Crossing the divide between the Susquehanna and Delaware Rivers, it follows the floodplain of the Beaver Kill for nearly fifty miles, with probably that many gravelly parking spots where trout fishermen (and women) cast their flies on America's most famous trout fishing stream. Old Route 17 is not easy to follow. It veers away from the river wherever there is a valley wide enough for a town and after passing the ever-present local tavern or Wendy's, it always leads to an on-ramp for the faster highway. It takes special effort to stay on the old road.

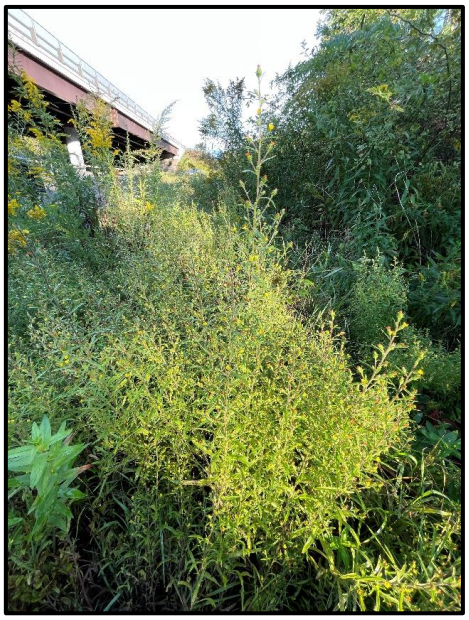
Not many Polygonaceae are halophiles and I don't think any *Persicaria* are. So why the title? Because one of the last places I stopped to look for smartweeds was under the viaduct that carries new Route 17 over the old road next to the river (see photo below).


There was a lot of moist gravel, loam, and open, lightly disturbed areas along the road - seemingly ideal habitat for *Persicaria*. What surprised me more than not finding any smartweeds, was finding not one, but three new county records; plants usually found 100 miles to the east along the coast.

The first one actually led me to it by the nose. I was standing in a patch of stinkwort (*Dittrichia graveolens*) and smelled it before I saw it. It has a camphor-like aroma, said to be noxious, but I find it pleasant—vaguely like mugwort, but sweeter. I wondered what plant was producing the aroma and looked down to find a plant I had seen only once, years before.

*Dittrichia graveolens* is a Mediterranean weed first found in New York City during the 1950s and not seen again in New York until 2019 when it was found at several sites on Staten Island (*Atha, D., Z. Wang, C. Barron, and H. Liljengren. 2019.*

*Dittrichia graveolens* (Asteraceae) naturalized and invasive in New York state, Phytoneuron 2019-5: 1–4). I could tell it was not just a casual waif here, as it is an annual from a taproot and there were hundreds of plants forming a dense patch, as thick as mugwort, but out in the gravel of the parking area where mugwort and other perennials are crushed by the car tires.



*Dittrichia graveolens.*

Following up a week later, I found three more *Dittrichia* populations due south on Route 97 between Hankins and Callicoon in Sullivan county (*Atha 16439, 16430*).

After finding the stinkwort, I wondered what other novelties might be around. With newly discerning eyes, even in the fading light, I spotted a slender little herb hugging the ground looking like a *Spergularia* or *Sagina*. I could see glandular hairs on the sepals and thought it was the weedy *Sagina japonica*, not uncommonly found in moist cracks between paving stones. I was later able to key it out with the help of my seashore dwelling friend, Vicki Bustamante. The hyaline, cup-like stipules and lavender petals were unmistakably *Spergularia*. The deltoid sepals and stamens fewer than five keyed out to *Spergularia marina*; vouchered by *Atha 16431*.

I lifted my gaze and walked ten steps more and had my hands on the rubbery stems of *Bassia scoparia* (Summer Cypress), another unexpected halophyte in the Amaranthaceae family (*Atha 16432*).

I forgot all about *Persicaria* and walked up the road, scanning both sides for anything that looked out of place. In a ditch formed at the base of a downspout draining the Route 17 viaduct above, I saw the dark green, wiry stems of *Juncus* (just to the left, but out of the photo). The inflorescences and capsules were a little beat up, but better than none. Again, with Vicki's help, we went through a few different keys based on the perennial habit, leaves produced in the distal half with lobed basal sheaths, terminal inflorescences, and sepals exceeding the fruit. Each time, we came to salt meadow rush, (*Juncus gerardii*) (*Atha 16433*), a plant Vicki knows well from Montauk.

Truth be told, I actually stopped at this site to answer the call of nature and ended up finding three new county records: the *Spergularia*, *Juncus*, and *Dittrichia* (Delaware county) and later, *Dittrichia*, new for Sullivan county.

Why are there four obligate halophytes growing together in the middle of the Catskills? The site is in a slight depression next to a river in a narrow, shaded valley with a curved, elevated roadway above it. This stretch of a major highway is undoubtedly heavily salted all winter long and all that salt must accumulate and become concentrated in this spot. And what about my original query, the Far Eastern Smartweed? I found that too, just east of Syracuse in Chittenango, Madison county (*Atha 16404*) and east of Binghamton in Hancock, Delaware county (not vouchered), both new county records. The species undoubtedly occurs along roadsides or on dirt piles somewhere in the vast expanse between Syracuse and Buffalo.

All plants are documented with photographs on iNaturalist and all but the Hancock population of *Persicaria extremiorientalis* are documented with herbarium specimens. The specimens will be distributed to the New York Botanical Garden (NY) and the New York State Museum (NYS).

**Editor' note**: for more on weedy roadside halophytes, see the NYFA blog post at https://nyflora.org/november-botanizing-on-a-saline-roadside/


An excerpt from Ontario County Times-Journal, May 8, 1874 reads: "We are pleased to learn that a Botanic Club has been organized in Canandaigua. The meetings are held the first Saturday evening in each month at the residence of some member, but as membership increases, a special room or hall will be secured. At a meeting Saturday evening the club was fully organized by the election of Dr. Harvey Jewett, president, and Miss Jennie Draper, secretary, and the adoption of rules and regulations to govern the organization. The practical analysis of plants and flowers cannot fail to be of interest to the members. We congratulate the society in their fortunate selection of officers. None could be chosen who take more interest in botanical study or who are more competent or ready to impart information on the interesting study."

Today, the Canandaigua Botanical Society remains dedicated to advancing knowledge and enjoyment of plants found in the Finger Lakes Region. With its origin dating to 1874, the society is the second oldest botanical club in the United States. Only the Torrey Botanical Society is older, having been organized in 1867 and incorporated in 1871. The original Canandaigua Botanical Society members came from diverse backgrounds but shared a common interest to study all types of plants growing in their region. Early collectors included S.C. Hart, E. Christian, E.T. Emmons, E.O. Cartwright, H.P. Sartwell, and E.P. Gardener. Methods of travel were slower in those early years, but hard work was rewarded by discovering rare plants. No swamp was too wet for botanizing! Extensive collections of pressed plants were prepared by the club, documenting the flora of bygone times. Many specimen sheets, some now over 100 years old, are currently housed in the Finger Lakes Herbarium at Finger Lakes Community College. By the 1940s, during the World War II gas rationing era, botanical gatherings were curtailed but some field trips did continue during spring, summer and fall, and indoor meetings were held during the winter.

In the 1960s, society membership opened to anyone interested in the natural world with a focus on the habitats created by the vegetation. Indoor winter meetings and summer field trips in the Finger Lakes Region continued on, with an annual meeting, potluck dinner and invited guest speaker held each April. The 100$^{th}$ anniversary of the society was celebrated in April 1974. Current membership numbers about 80 individuals having a wide range of knowledge from novice to expert. Interests include wildflowers, trees, ferns, fungi, edible plants, medicinal plants, insects, birds, invasives, local geology and more. Members enjoy leisurely paced walks which allow time to observe and learn about what is underfoot, overhead and all around when one looks closely.

Details of the upcoming celebration can be accessed at: http://canandaiguabotanicalsociety.blogspot.com.

This article was prepared by Bruce Gilman with material provided by Laura Ouimette, Coordinator of the Canandaigua Botanical Society, newspaper articles from the Ontario County Times-Journal (May 8, 1874, and May 25, 1934), and an historic letter from Dr. E.D. Merrill, former Director of NY Botanical Garden.

## Resolving the Species Entity of *Aconitum noveboracense* (Ranunculaceae)

by Michelle Mi-Jeong Yoo, PhD, Department of Biology, Clarkson University, Potsdam, NY.
2023 NYFA Grant Award Recipient

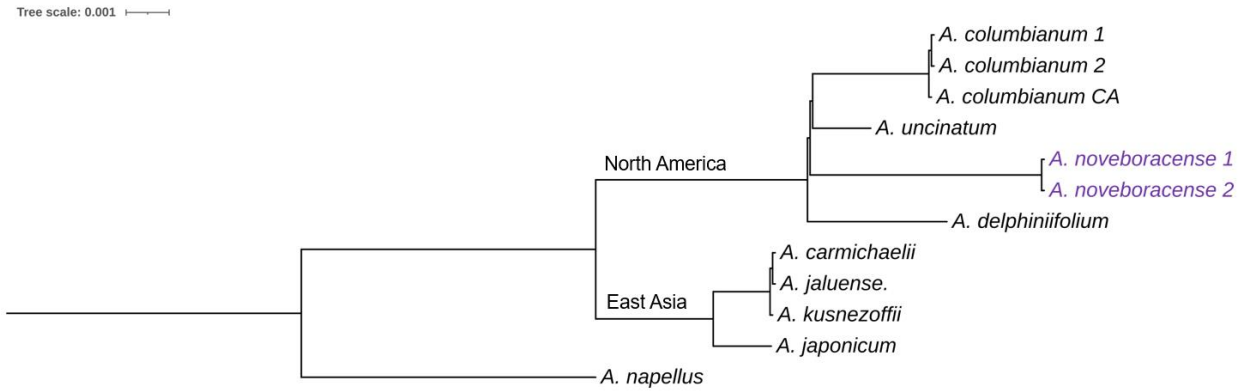
Northern Monkshood (*Aconitum noveboracense*) in Ulster County. Photo by Brandon Cohen.

The first step for species conservation and protection is to assess whether the species of concern can be distinguished from other similar species and therefore represents a distinct taxon. The species in the genus *Aconitum* share morphological similarities and lack distinguishing traits for taxonomic delineation, with many studies showing the dearth of genealogical and evolutionary distinctness between closely related species. This applies to *A. noveboracense* A. Gray and *A. columbianum* Nuttall in J. Torrey & A. Gray. The former species is globally designated as a threatened species endemic to three isolated regions of the United States: northeastern Iowa/southwestern Wisconsin, northeastern Ohio, and the Catskill Mountains of New York. In contrast, *A. columbianum* is globally secure and commonly found in the western United States. Since *A. columbianum* exhibits extreme variation in its morphological traits in many regional populations, Brink & Woods (1997) integrated *A. noveboracense* and *A. columbianum* into one species, with bulbil-bearing and non-bulbil-bearing subspecies. In their treatment, *A. noveboracense* belongs to non-bulbil-bearing subspecies, and Cole & Kuchenreuther (2001) agreed with this treatment based on the low genetic differentiation between those two species inferred from isozyme and random amplified polymorphic DNA (RAPD) data. However, their limited sampling and low resolution of isozyme and RAPD made it hard to reach consensus for this taxonomic treatment. For example, Farrell (2008) retained the species status of *A. noveboracense* based on the fact that some members of this species bear bulbils.

Therefore, my study aimed to assess the genetic differences between *A. columbianum* and *A. noveboracense* in order to determine whether these differences support the distinction between them as separate species or as a single species. We examined both nuclear and chloroplast regions for genetic differentiation. The target sequences were obtained from the nuclear ribosomal internal transcribed spacer (ITS) region and the chloroplast *matK* gene, as these two markers were commonly sequenced for other *Aconitum* species. Additionally, we included three chloroplast microsatellites, namely the *rps4*/*trnT*-UGU intergenic spacer (IGS), *ndhG/ndhI* IGS, and the *rpl20*/*rps12* IGS, which exhibited variation in two *A. columbianum* individuals from California.

In pursuit of the objective, we included two individuals of *A. columbianum* from California, two *A. noveboracense* from New York, and one *A. uncinatum* sample from North Carolina. Additionally, we incorporated other *Aconitum* sequences obtained from NCBI GenBank, such as *A. delphiniifolium* and *A. jaluense*, as they are phylogenetically related to *A. columbianum* (Luo et al., 2005). Finally, the sequence of *A. napellus* was used as an outgroup.

First, we observed genetic differentiation between *A. columbianum* and *A. noveboracense* in both nuclear and chloroplast regions. The phylogenetic analysis of ITS sequences revealed a distinct separation between *A. noveboracense* and *A. columbianum*, with eight differing base pairs out of 744 (1.08%). This disparity is notably greater than the differentiation observed between *A. columbianum* and *A. uncinatum*, which showed only three differing base pairs out of 744 (0.40%).




A maximum likelihood tree based on ITS sequences (744 bp). *Aconitum noveboracense* is clearly differentiated from *A. columbianum*.

The chloroplast regions displayed a little bit lower genetic variation between *A. columbianum* and *A. noveboracense* compared to the ITS region, a pattern consistent with the uniparental inheritance of the chloroplast genome. The microsatellite analysis was repeated a number of times; in the last *rpl20/rps12* IGS did not demonstrate variable repeat numbers, but exhibited sequence differences (see table below). Notably, *A. noveboracense* shared identical sequences in *matK* with *A. columbianum* from Wisconsin and displayed three and eight base pair differences with *A. uncinatum* and *A. columbianum*, respectively. This finding suggests two possibilities: 1) *A. columbianum* from Wisconsin may actually be *A. noveboracense*, not *A. columbianum*, and 2) *A. noveboracense* is indeed distinctively differentiated from *A. columbianum*.

| Species | *rpl20/rps12* IGS position | | *matK* position | | | | | |
|---|---|---|---|---|---|---|---|---|
| | 32 | 58 | 59 | 194 | 228 | 403 | 518 | 533 |
| *A. columbianum* (California)* | G | C | G | T | C | A | T | C |
| *A. columbianum* (Canada) | G | C | N | C | C | A | T | C |
| *A. noveboracense* 1* | A | T | C | C | T | T | G | T |
| *A. noveboracense* 2* | A | T | C | C | T | T | G | T |
| *A. columbianum* (Wisconsin) | N | N | N | C | T | T | G | T |
| *A. uncinatum** | A | C | C | C | C | T | G | T |
| *A. delphiniifolium* | G | C | C | C | C | A | T | T |
| *A. monanthum* | G | C | C | C | C | T | T | T |
| *A. napellus* | G | C | C | C | C | T | T | T |

Variable sequences in two regions of chloroplast genome. An asterisk indicates data obtained in this study. A N represents that sequence information is not available.

Based on the current dataset, it is evident that both *A. columbianum* and *A. noveboracense* showcase genetic differentiation in both nuclear and chloroplast regions. Moreover, the genetic distinction between these two species surpasses that observed between *A. columbianum* and *A. uncinatum*. Consequently, *A. noveboracense* should be acknowledged as a distinct species.

Given the evident genetic differentiation between *A. columbianum* and *A. noveboracense*, it becomes imperative to assess the genetic variation among populations of *A. noveboracense* from three isolated regions. These populations have been separated for an extended period, potentially facilitating independent evolutionary processes. Furthermore, to validate the findings of this study, additional samples should be examined in future research.

I would like to express my gratitude to the New York Flora Association for awarding me a 2023 research grant. This generous support has covered the field trips and sequencing cost. Additionally, it will continue to cover the costs associated with the upcoming sequencing and fragment analyses.

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## Assessing Survivorship of Planted and Seeded Species Within Restored Great Lakes Coastal Wetlands Along Lake Ontario

by Rene Belleville, SUNY Brockport, 2023 NYFA grant recipient

Great Lakes coastal wetlands are vital freshwater ecosystems, providing a variety of ecosystem benefits and functions for both humans and wildlife. However, many coastal wetland communities within the Great Lakes region have been altered by the dominant emergent macrophyte hybrid cattail (*Typha ×glauca*, hereafter Typha), a hybrid between the native broad-leaf cattail, (*Typha latifolia*), and the regionally invasive narrow-leaf cattail (*Typha angustifolia*) (Bansal et al. 2019). Within Lake Ontario wetlands, Typha has increased in abundance in response to environmental change, displacing sedge/grass meadow marsh communities (Bansal et al 2019, Wilcox et al. 2008, Wilcox and Bateman 2018, Lemein et al. 2017). Lake level management in Lake Ontario has resulted in the decline of native sedge/grass meadow species populations through competition with Typha under static water levels (Wilcox et al. 2008).

To manage Typha and create new sedge/grass meadow and emergent habitat in several wetlands within the Braddock Bay Wildlife Management Area (BBWMA) located in Greece, NY, large-scale excavation and spoil placement restorations were carried out between 2014 and 2021 at Braddock Bay, Buttonwood Creek, Buck Pond, and Cranberry Pond. These large-scale restoration projects included reduction of Typha coverage, excavating and creating channels and potholes within dense Typha stands, creation of mound spoils along potholes and channels, and seeding and planting of a variety of emergent and sedge/grass species on the mounds (Silva et al. 2021, Polzer and Wilcox 2022). The goals of these actions were to

improve wildlife access, increase surface elevations, and change soil characteristics, which in turn would promote more diverse sedge/grass meadow and emergent vegetation growth and discourage the growth of Typha (Armitage et al. 2016, Silva et al. 2021).

During the first growing season following restoration at BBWMA, only half of planted and seeded species were observed in random vegetation samplings (Silva et al. 2021, Polzer and Wilcox 2022). To determine the survivorship of seeded species at previous wetland restorations where we know seeding and planting took place at Braddock Bay, Buck Pond, and Buttonwood Creek in the BBWMA, we visited previously sampled points on mound spoils and identified all species present in quadrats in 2023, and collected soil samples at each point to determine how soil water content, bulk density, and organic matter may affect plant communities.

In the newly excavated areas of cattail marsh at Cranberry Pond in the BBWMA, we aimed to determine the method with the highest survivorship rates among the seeded and planted sedge/grass meadow species lake sedge (*Carex lacustris*) and Canada bluejoint (*Calamagrostis canadensis*). A replicated field experiment was set up on the newly placed mound spoils using a randomized block design. Treatments included plots that were seeded in late fall 2021 (Seed), seeded then covered with collected leaves of our study species in late fall 2021 (Hay), planted with plugs in the spring 2022 (Plugs), control plots that were manipulated as a procedural control (Control), and control plots that were not manipulated as a referential control (Reference). Vegetation data were collected from plots, identifying each species to the lowest taxonomic level possible and recording their percent cover.

I hypothesized that in 2023 at previously restored sites at Braddock Bay, Buck Pond, and Buttonwood Creek, presence of seeded and planted species would be less than 50% of the original species that were seeded and planted, and that seeding, then covering the seeds with collected leaves (similar to a hay transfer method), would show the highest survivorship among treatments tested.

A total of 12 out of 30 seeded species were found on mounds at Braddock Bay, 4 of 21 seeded species at Buttonwood Creek, and 3 of 21 seeded species at Buck Pond (Table 1). At all three sites, the presence of seeded species was well less than 50%, with the average number of seeded species per quadrat being 7.6% at Buck Pond, 5.2% at Buttonwood Creek, and 7.1% at Braddock Bay. Ordination plots also suggest that the plant community on the mounds at Buck Pond differ from those of Braddock Bay and Buttonwood Creek (which appear to be more similar to each other). Plant communities at Buck Pond and Buttonwood Creek appear to be mostly driven by soil organic matter content and soil water content.

On plots in Cranberry Pond, we found that Canada bluejoint showed the highest cover in the Seed treatment, and lake sedge showed the highest cover in Plug treatment plots in the first year of sampling (2022). Although the Seed treatment exhibited the greatest cover in Canada bluejoint plots, it is important to highlight that our Hay treatment plots also demonstrated higher Canada bluejoint cover during the initial year of sampling. In the first growing season, seed-grown Canada bluejoint seedlings in both Seed and Hay treatment plots often measured less than a foot in height, while surviving lake sedge plugs were around 1 to 2 feet tall (Figure 1). In the second year of sampling (2023), Canada bluejoint showed the highest cover in the Seed treatment and lake sedge showed the highest cover in Plug treatments, again both yielding higher average percent cover than the previous year. Although a number of Canada bluejoint plugs did not survive beyond the first year, individuals originating from seeds in Seed treatment plots seemed to proliferate both in quantity and size (Figure 2). However, despite the satisfactory growth of Canada bluejoint seeds in Hay plots in 2022, these individuals did not survive into 2023, as the cover of Canada bluejoint in Hay plots decreased. Surviving lake sedge plugs appeared to spread successfully through rhizomes, leading to the emergence of numerous new plants being observed outside the designated plot areas. While treatments had significant effects on our study species' cover, both years of sampling at Cranberry Pond suggest that treatment showed no effect on the overall plant community. However, it is evident that the specific mounds where the individual plots were located did influence the plant community.

The findings from this study reveal that despite extensive seeding initiatives post-restoration and mound creation, attempts to establish sustainable populations of the seeded species were unsuccessful at previously restored sites. Based on findings from our field experiment, it is clear that each species necessitated varied approaches to achieve optimal survivorship. When aiming to reintroduce *Carex* species or other clonal perennials after restoration efforts, it is advisable to avoid using seeds. Utilizing plugs of clonal species offers distinct advantages over seeds, particularly for *Carex* species, which have specific and restrictive growing condition requirements. With plug transplants, well-established rhizomes and robust root systems enhance their ability to adapt and establish themselves in a new environment. To encourage the resurgence of perennial species and grasses that don't depend on established rhizomes for survival and growth, optimal results were achieved by seeding at a density surpassing the recommended levels. Numerous prior studies have similarly advocated for seeding at 2 to 3 times the suggested density (Kettenring and Tarsa 2020; Boers et al. 2007). Our suggestion is to seed at the maximum density feasible within the project's financial and logistical constraints.

It is our hope that the results of this survivorship study can be used to inform land managers and stakeholders within New York State for future restorations of this kind in Lake Ontario wetlands.

Table 1. Seed mixes at each site. Green shading indicates a species found during sampling in 2023.

| **Braddock Bay** | **Buck Pond** | **Buttonwood Creek** |
|---|---|---|
| *Acorus americanus* | *Acorus americanus* | *Acorus americanus* |
| *Alisma subcordatum* | *Alisma subcordatum* | *Alisma subcordatum* |
| *Asclepias incarnata* | *Asclepias incarnata* | *Asclepias incarnata* |
| *Bidens cernua* | *Bidens cernua* | *Bidens cernua* |
| *Calamagrostis canadensis* | *Calamagrostis canadensis* | *Calamagrostis canadensis* |
| *Carex lacustris* | *Carex lacustris* | *Carex lacustris* |
| *Carex lurida* | *Carex lurida* | *Carex lurida* |
| *Carex scoparia* | *Carex comosa* | *Carex comosa* |
| *Carex stipata* | *Carex stipata* | *Carex stipata* |
| *Carex stricta* | *Carex stricta* | *Carex stricta* |
| *Carex vulpinoidea* | *Carex vulpinoidea* | *Carex vulpinoidea* |
| *Elymus virginicus* | *Carex crinita* | *Carex crinita* |
| *Eutrochium maculatum* | *Carex lupulina* | *Carex lupulina* |
| *Glyceria canadensis* | *Eupatorium perfoliatum* | *Eupatorium perfoliatum* |
| *Iris versicolor* | *Juncus effusus* | *Juncus effusus* |
| *Juncus effusus* | *Onoclea sensibilis* | *Onoclea sensibilis* |
| *Leersia oryzoides* | *Pontederia cordata* | *Pontederia cordata* |
| *Mimulus ringens* | *Sagittaria latifolia* | *Sagittaria latifolia* |
| *Persicaria amphibia* | *Schoenoplectus tabernaemontani* | *Schoenoplectus tabernaemontani* |
| *Poa palustris* | *Sparganium eurycarpum* | *Sparganium eurycarpum* |
| *Pontederia cordata* | *Verbena hastata* | *Verbena hastata* |
| *Sagittaria latifolia* | | |
| *Schoenoplectus tabernaemontani* | | |
| *Scirpus atrovirens* | | |
| *Scirpus polyphyllus* | | |
| *Scirpus cyperinus* | | |
| *Sparganium americanum* | | |
| *Sparganium eurycarpum* | | |
| *Verbena hastata* | | |
| *Vernonia noveboracensis* | | |

Figure 1. *Calamagrostis canadensis* growth from seeds (left) and *Carex lacustris* plugs (right) the first year following seeding and planting in 2022.

Figure 2. *Calamagrostis canadensis* growth from seeds (left) and *Carex lacustris* growth from plugs in the foreground of the photo (right) the second year of sampling in 2023.

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## Cedar Lake/Bonaparte Weekend Field Trip, June 16 and 17, 2023

by Donna Vogler

**Part One:** This St. Lawrence County trip was organized and led by Steven Daniel with the able assistance of Anne Johnson, and covered three distinct habitats around the property that Steven has owned for several years, including an upland rocky ridge, a shaded cedar swamp, and the Cedar Lake shoreline itself. Participants included Kyle Webster, Kaley Catlin, Barb Root, Doug McGrady, Aaron Iverson, Robert Wesley, Shirley Denton, and Donna Vogler.

The day started off up in a rocky upland where Steven had been monitoring a population of the state endangered northern wild comfrey (*Andersonglossum boreale*) under a mixed canopy of northern white cedar (*Thuja occidentalis*), hemlock (*Tsuga canadensis*), and deciduous trees and shrubs, including what may be a candidate for a state champion rock elm (*Ulmus thomasii*), as well as sugar and red maples (*Acer saccharum* and *A. rubrum*), basswood (*Tilia americana*), and black cherry (*Prunus serotina*). Understory species distinctive of rich, calcareous soils showed a diversity of spring ephemerals and woodland ferns, including wild ginger (*Asarum canadense*), white trillium (*Trillium grandiflorum*), ginseng *(Panax quinquefolia*), liverwort (*Hepatica acutiloba*), bulblet fern (*Cystopteris bulbifera*), and rattlesnake fern (*Botrychium virginiana*). Notable sedges included *Carex eburnea, C. pedunculata,* and *C. hitchcockiana*.

We next descended into a swampier region that graded downward towards the lake edge with patterned hummocks and open water patches under a largely cedar and balsam fir (*Abies balsamea*) overstory. Notable woody species here included: balsam fir, black ash (*Fraxinus nigra*), Labrador tea (*Rhododendron*

*groenlandicum*), holly species (*Ilex mucronata* and *I. verticillata*), and towards the end of our trail, a nice patch of hoary willow (*Salix candida*). The diversity of ferns and sedges provided many teaching moments for the group, and allowed some of our good spotters to identify a Northern Parula and later an Arctic skipper fluttering through the dense vegetation. Classic bog species included pitcher plant (*Sarracenia purpurea*) and bogbean (*Menyanthes trifoliata*), both with some flowers in bloom. In these rich woods, the group found three lady slippers: yellow (*Cypripedium parviflorum)* just past flowering, pink (*C. acaule*) in bloom, and a small population of showy (*C. reginae*) all with flowers eaten. Other orchids included a green woodland orchid (*Platanthera clavellata*), early coral root (*Corallorhiza trifida*), and a pair of heart-leaved twayblade (*Neottia bifolia*). Several very nice stands of twinflower (*Linnaea borealis*) offered good photo opportunities. Another photo stop was made for a colorful toothpaste slime mold (*Lycogala epidendron*).

*Linnaea borealis* (left) and toothpaste slime mold (right). Photos by Doug McGrady.

During a late lunch on the Daniel's deck overlooking the lake, we were given the opportunity to use Steven's telescope to spy on a loon nest that sadly seemed to have failed this year. We also had to monitor the storm front that was threatening us all morning, but took the chance to get out on Cedar Lake in kayaks and canoes. Steven guided our crafts towards clusters of walking fern (*Asplenium rhizophyllum*), the state-rare smooth cliff brake (*Pellaea glabella*), and a beautiful flowering yellow hairy honeysuckle (*Lonicera hirsuta*), all hugging the cliffs. The rain did come but was brief, and the worst of the storm appeared to go around us, so we ended our lake tour with a look at the, quite literally, lovely shadbush (*Amelanchier amabilis*). The weather gods and Steven were thanked for a very successful outing.

*Lonicera hirsuta* (left) and *Pellaea glabella* (right). Photos by Robert Wesley.

The group enjoying a paddle around the lake at the end of the day. Photo by Doug McGrady.

**Part Two:** Bonaparte Swamp in Lewis County has long been a favorite botanical stop for NYFA members. Several participants had stayed overnight in the area after the nearby Cedar Lake trip of the previous day to make it a full-out botanical weekend with Anne Johnson and Steven Daniel. We were joined for this outing by Rozayra Mori Millet, Katie and Scott Beeles, and Elizabeth Spencer. After parking along the road near the rail crossing west of Harrisville, the group walked along the track of this abandoned rail section, with periodic forays into the wetlands on either side. Hence, the species ranged from gravel bed weeds such as tower mustard, (*Turritis glabra*) to many common and uncommon wetland endemics.

Just northeast of our start were found a trio of horsetails (*Equisetum arvense, E. fluviatile,* and *E. hyemale*), which made for wonderful field comparisons, and later, *E. palustre* and *E. scirpoides* were added to our list from nearly the same area. Similarly, the willows (*Salix* spp.) provided good learning stops as we encountered *S. bebbiana, S. candida, S. discolor, S. pedicellaris*, and *S. serissima*. The open wetlands were dotted with white cedar (*Thuja occidentalis*), the less common black spruce (*Picea mariana*), and the rare dwarf birch (*Betula pumila*). Sedges made up a good portion of the groundcover, with *Sphagnum*-covered hummocks scattered in the wet interior. These yielded sightings of sundew (*Drosera rotundifolia*), cottongrasses (*Eriophorum gracile* and *E. virginicum*), and swamp pink (*Arethusa bulbosa*) in bloom. One stop was to observe the smooth, red bases of the leaf sheaths of the native *Phragmites americanus*, which grew in patches. The invasive *Phragmites australis* generally lacks these.

*Eriophorum gracile* (left), *Betula pumila* (middle), and *Arethusa bulbosa* (right). Photos by Doug McGrady.

During a quick lunch break, Steven Daniel, our trip leader, coaxed several of us out to visit a small population of ram's head orchid (*Cypripedium arietinum*), which in total made for four lady slipper species for the day. We then headed back to the road crossing, but with a deep woods detour to view some oddities and rarities. A single population of the rare sedge *Carex vaginata* was re-located, with a very few of them fruiting. Also among the rare sedges was *Carex gynocrates*, growing in mixed association with the very delicate *Carex leptalea* in the deep woods, and *Carex livida* in the more open fens. Toward the end of our hike, a photo stop was made to ogle three massive white cedars.

Full lists of the species encountered each day will be posted on the NYFA website in the future.

Kyle Webster and Doug McGrady measuring one of the large cedars. Photo by Robert Wesley.

The group trudging out after a good day slogging through forest and fen. Photo by Doug McGrady.

## Grasses of New York Workshop, August 2023

by Katie Beeles

This summer, the New York Flora Association and Cornell's Bailey Hortorium hosted a grass identification workshop led by David Werier with assistance provided by Steven Daniel. On August 10th through 13th, 14 students spent valuable time in the field and in the lab with David and Steven. A total of 52 grass species were discussed in situ and countless other species were observed in the lab. David kindly provided a section of keys from his future book, as well as pressed samples from his personal collection for identification practice during lab time.

On the evening of Thursday August 10th, the class met at Bailey Hortorium where we were instructed on grass characteristics and given a printed key for the grass section of David's "Flora of New York". David covered the basics of grass identification: growth form, grass-specific terminology, inflorescence types, and floret anatomy. After the basics, David gave us an introduction to his key, building an understanding of his artificial groups which split the key into smaller, more manageable sections. Other botanical knowledge was passed on too, with David suggesting his favorite hand lens and the best microscope techniques for working with the small grass parts.

On Friday morning, the class met at Edwards Lake Cliffs Preserve where we spent the morning in old fields, successional shrublands, wet depressions, and hardwood forested hillsides near the cliffs. The group took lunch along the cliffs that overlook Cayuga Lake and spent some time on the forested slopes of the preserve. On the trek uphill, we stopped to observe the stunted growth form of the grasses growing on the trail. At the parking lot, we marveled at the grasses growing on the roadside and planned our second meeting spot of the day - Salt Point Natural Area. The roadsides near this site host halophytic grasses - a useful characteristic when growing alongside NY's salt-treated roads. We stopped for yet "one more grass", *Setaria verticillata*, on the walk to a restaurant in Ithaca for group dinner. Evening lab time was offered to anyone interested in getting a closer look at the grasses discussed this day or to peruse David's collection.

A stop in the woods (left), and Steven laughs as the class parrots his handlens technique (right). Photos by Whitney Carleton.

On Saturday morning, the class met at Larch Meadows in Buttermilk Falls State Park to walk the loop trail. David had collected *Panicum miliaceum* from his own backyard to show the class before we continued along the trail. We botanized through the shrub swamp, floodplain forest, and the Cayuga Inlet. A short-lived thunderstorm passed over as we took shelter under an overpass. Following the rain, we stopped to discuss the many grasses growing trailside as we completed the loop in the early afternoon. The remainder of the afternoon was spent practicing grass ID at the Bailey Hortorium. After another group dinner in Ithaca, additional lab time was offered to those who were interested.

David teaching on a hillside. Photo by Katie Beeles.

On the final day, the class headed to Danby State Forest where we took lunch and a group photo before our hike into the forest. The forested hillside provided many grasses and other plants of interest to stop at and admire. The pace was slower and class members headed out as needed to make their drive home. The final class members parted ways and headed home by the mid afternoon after one last grass-filled day.

Group photo, taken by Steven Daniel.

Thanks again to David and Steven for the instruction, late nights in the lab, and attentiveness to all levels of learners at the workshop. Attendees of all levels walked away from this class with new identification tips and tricks and a greater appreciation for grasses.

**Grasses on Friday, August 11**
*Poa compressa*
*Schedonorus arundinaceus*
*Phleum pratense*
*Elymus repens*
*Agrostis gigantea*
*Agrostis stolonifera*
*Agrostis gigantea*
*Phragmites australis*
*Poa palustris*
*Dactylis glomerata*
*Phalaris arundinacea*
*Miscanthus sinensis*
*Danthonia spicata*
*Elymus villosus*
*Elymus virginicus* var. *intermedia*
*Elymus hystrix* var. *hystrix*
*Bromus pubescens*
*Muhlenbergia sobolifera*
*Muhlenbergia schreberi*
*Sporobolus vaginiflorus*
*Poa pratensis*
*Elymus canadensis*
*Sorghastrum nutans*
*Eragrostis minor*
*Andropogon gerardi*
*Sporobolus compositus*
*Puccinellia distans*
*Setaria verticillata*

**Grasses on Saturday, August 12**
*Panicum miliaceum*
*Elymus virginicus* var. *virginicus*
*Elymus virginicus* var. *jejunus*
*Leersia virginica*
*Leersia oryzoides*
*Tridens flavus*
*Microstegium vimineum*
*Dichanthelium clandestinum*
*Muhlenbergia frondosa*
*Bromus latiglumis*
*Elymus riparius*
*Bromus nottowayanus*
*Glyceria grandis*
*Glyceria striata*
*Brachyelytrum erectum*
*Eragrostis pilosa*

**Grasses on Sunday, August 13**
*Cinna latifolia*
*Cinna arundinacea*
*Festuca subverticillata*
*Danthonia compressa*
*Agrostis perennis*
*Agrostis scabra*
*Dichanthelium dichotomum*
*Dichanthelium xanthophysum*
*Elymus trachycaulus*

## Smartweed Field Trip

by Ed Frantz, in collaboration with Anne Johnson. All photos (except hand lens) by Patty Butter.

On Sept 16, 2023 we met at Long Branch Park in Syracuse for a day devoted to the genus *Persicaria*. The field trip started at 10am with 13 attendees and (unfortunately) a couple of no shows. The weather was clear and sunny with highs in the mid 70's, a great day to spend learning about and exploring these plants. Our instructor, Daniel Atha, was enthusiastic and well prepared to share his knowledge and respect for this humble genus. After the first hour it was clear that he was not only an expert on the genus, but that he had a gift for teaching. Participants appreciated learning about the process he undertook in researching the genus and the importance of specimen collection and documentation. He also set a few precedents with this field trip by being the best dressed botanist (with a tie and attractive tweed jacket) and by providing everyone with a handlens (both 10 and 20 power, with lights, see photo below) hanging on an attractive lanyard with NYFA Smartweed Field Trip and the date noted.

Before heading off to find some smartweeds, Daniel had provided us with a much-tested key, noting that while many keys use a starting point of annual vs. perennial, a distinction which is difficult to use (especially with herbarium specimens), his gives that character less importance. We spent several hours at Long Branch Park getting familiar with this key and worked with it throughout the day.

Working with the key and getting up close and personal with *Persicaria*.

Listening with rapt attention while surrounded by smartweeds on the shoreline of Onondaga Lake.

After lunch we visited two other spots, a property owned by the Central New York Land Trust in the Tully Lakes area and Labrador Hollow. The group saw and discussed nine species of *Persicaria* throughout the day, almost half of the twenty species in New York State. Daniel shared insights as well on species we didn't see and what key characters to look for, including its habitat. He emphasized that by getting to know a plant you can learn many things about it, its soil, bedrock, and even the history of the site on which it is growing. At the end of the day, participants definitely felt more comfortable with this genus.


Pink and white flowers of *P. pensylvanica* (left). Its glandular hairs (right) on the peduncle feel rough to the touch.


The nodding inflorescence (left) and glabrous internodes and lanceolate leaves (right) of *P. lapathifolium*.


Showy inflorescence (left) and glabrous tubular ocreae (right) of *P. coccinea*.

The beautiful inflorescence (left) of *P. amphibia*. When it grows on land the ocreae are distinctly flaring (right).

The short inflorescence of P. maculosa (left). Its glabrous internodes and ocrea have short cilia (right).

We ended the day with a quick look at a roadside population of the non-native *P. nepalensis* at Labrador Hollow sometime after 4PM. It was a day packed full of learning, with many expressing their enthusiasm and thanks before departing.

*P. nepalensis* is a reportedly rapidly spreading naturalized, non-native species.

Here are some links provided by Daniel Atha for those interested in reading more about *Persicaria*:

*Persicaria extremiorientalis* is established in the Flora of the Eastern United States of America
First report of *Persicaria posumbu* (Polygonaceae) for North America
American and Asian Jumpseed in North America
The case for recognizing *Persicaria amphibia* and *Persicaria coccinea* as distinct species
*Persicaria* in the Flora of North America

The group at the start of the day, note the new hand lenses around the necks of the participants.

Steve Young wanted to share the following handy lists of family name changes, especially useful for those of us who are of a certain age. Thanks Steve!

**NYS Former Scroph Family Genera and Current Families**

Clicking on the genus name will bring you to the NYFA Atlas page for that family.

| | | |
|---|---|---|
| **Orobanchaceae** | | |
| Agalinis | Agalinis | 6 |
| Aphyllon | Broomrape | 1 |
| Aureolaria | False foxglove | 3 |
| Buchnera | Bluehearts | 1 |
| Castilleja | Indian paintbrush | 1 |
| Conopholis | Oakdrops | 1 |
| Epifagus | Beechdrops | 1 |
| Euphrasia | Eyebright | 1 |
| Melampyrum | Cow wheat | 1 |
| Odontites | Red bartsia | 1 |
| Orobanche | Lesser broomrape | 1 |
| Orthocarpus | Owl's clover | 1 |
| Pedicularis | Lousewort | 2 |
| Rhinanthus | Yellow rattle | 3 |
| Schwalbea | Chaffseed | 1 |
| **Phrymaceae** | | |
| Erythranthe | Muskflower | 2 |
| Mimulus | Monkey flower | 2 |
| Phryma | Phryma | 1 |
| **Plantaginaceae** | | |
| Antirrhinum | Snapdragon | 1 |
| Callitriche | Water starwort | 5 |
| Chaenorhinum | Dwarf snapdragon | 1 |
| Chelone | Turtlehead | 1 |
| Collinsia | Blue-eyed-Mary | 2 |
| Cymbalaria | Kenilworth ivy | 2 |
| Digitalis | Foxglove | 4 |
| Gratiola | Hedge hyssop | 3 |
| Hippuris | Mare's tail | 1 |
| Kickxia | Fluellin | 2 |
| Leucospora | Paleseed | 1 |
| Linaria | Toadflax | 7 |
| Littorella | Shore grass | 1 |
| Misopates | Weasel’s snout | 1 |
| Penstemon | Beardtongue | 5 |
| Plantago | Plantain | 13 |
| Veronica | Speedwell | 26 |
| Veronicastrum | Culver’s root | 1 |
| **Scrophulariaceae** | | |
| Buddleja | Butterfly bush | 2 |
| Limosella | Mudwort | 1 |
| Scrophularia | Figwort | 5 |
| Verbascum | Mullein | 7 |

**NYS Former Lily Family Genera and Current Families with Taxa Count**

Clicking on the genus name will bring you to the NYFA Atlas page for that family.

| | | |
|---|---|---|
| **Amaryllidaceae** | | |
| Allium | Onion | 12 |
| Galanthus | Snowdrop | 2 |
| Leucojum | Snowflake | 1 |
| Narcissus | Daffodil | 3 |
| **Asparagaceae** | | |
| Asparagus | Asparagus | 1 |
| Convallaria | Lily-of-the-valley | 1 |
| Hosta | Plantain lily | 3 |
| Hyacinthoides | Bluebell | 2 |
| Maianthemum | Mayflower | 4 |
| Muscari | Grape hyacinth | 2 |
| Ornithogalum | Star-of-Bethlehem | 2 |
| Polygonatum | Solomon's-seal | 3 |
| Scilla | Scilla, Glory-of-the-snow | 3 |
| Yucca | Yucca | 1 |
| **Asphodelaceae** | | |
| Hemerocallis | Day lily | 2 |
| **Colchicaceae** | | |
| Uvularia | Bellwort | 4 |
| **Liliaceae** | | |
| Clintonia | Blue bead | 2 |
| Erythronium | Trout lily | 2 |
| Lilium | Lily | 6 |
| Medeola | Indian cucumber | 1 |
| Prosartes | Yellow mandarin | 1 |
| Streptopus | Twisted stalk | 3 |
| Tulipa | Tulip | 1 |
| **Melanthiaceae** | | |
| Amianthium | Fly poison | 1 |
| Anticlea | Death camas | 1 |
| Chamaelirium | Fairywand | 1 |
| Helonias | Swamp pink | 1 |
| Melanthium | Bunchflower | 2 |
| Stenanthium | Featherbells | 1 |
| Trillium | Trillium | 9 |
| Veratrum | False hellebore | 1 |
| **Nartheciaceae** | | |
| Aletris | Colicroot | 1 |

## Message from the President

Dear NYFA Members and Friends,

At the beginning of this New Year, I would like to sincerely thank all of you for all you did last year to make this organization successful. There have been so many generous donations of money throughout the year and during "Giving Tuesday". Many of those who lead workshops and field trips do so without pay. Your contributions of time and money above the regular dues will be extremely useful in the coming year. With our Strategic Plan in place, NYFA is poised to become more proactive regarding projects that carry out our mission to help people enjoy and learn about the wild plants of NYS and promote the conservation of native species. The NYFA Board recently formed a "Strategic Plan Committee" to help guide application of the plan and to assess accomplishments. It's a very exciting time for our organization. One important way for us to accomplish our mission is to continue to offer and enhance our workshop and field trip offerings. Stay tuned for the upcoming schedule which will be out in February. Don't hesitate to contact me if you have any comments, questions or concerns.

Botanically yours, Dan Spada.

## Support the New York Flora Atlas

The NY Flora Atlas is supported entirely by New York Flora Association membership dues and donations. We need your support! Your sponsorship of the Atlas helps pay for the annual hosting cost, keeps the Atlas up-to-date, and supports adding new features.

The Atlas could not exist without support from our members and donors. We acknowledge everyone who generously donates $50 or more to the Atlas. To make a donation, check out the sponsorship levels on the web page, then complete the form to make your donation.

Thanks to all of those that have already sponsored the Atlas!

See the current Atlas Sponsors here.
Go to the New York Flora Atlas
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## A Short Botanical Story

iNaturalist has a handy feature that allows a user to receive alerts whenever a plant (or other entity) is posted within a designated area. I discovered this a couple of years ago and since I am interested in what plants people are seeing in St. Lawrence County, I asked iNat to send me notices whenever any plant is posted. I've seen some good finds and in 2022 I was quite interested and happy to see a posting of the rare Canada milkvetch (*Astragalus canadensis*), from a private island in the St. Lawrence River. Milkvetch had been recorded in the county quite a few years ago (Turnbull's Beach, Black Lake 1932, and Old Man Island, 1939), so I was aware that it would be possible to come across it at some point. I contacted the person who posted it and she was glad to hear that it was a special plant, and was able this year to arrange a boat ride to visit it and to check other islands. Apparently it thrives on rocky, wave and windswept shorelines.

*Astragalus canadensis*, photo by Annie Wakeley Wall.


A photo essay and quote from John Steinbeck's Grapes of Wrath, by Steven Daniel.

" *the grass heads were heavy with oat beards to catch on a dog's coat, and foxtails to tangle in a horse's fetlocks, and clover burrs to fasten in sheep's wool; sleeping life waiting to be spread and dispersed, every seed armed with an appliance of dispersal, twisting darts and parachutes for the wind, little spears and balls of tiny thorns, and all waiting for animals and for the wind, for a man's trouser cuff or the hem of a woman's skirt, all passive but armed with appliances of activity…."*



**Check out what's on our website [www.nyflora.org](http://www.nyflora.org) and blog: [www.nyfablog.org](http://www.nyfablog.org)**

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**We are only accepting credit card payments through PayPal at this time. If you would like to use a credit card, please use the link on our website: http://www.nyflora.org/membership/**

**If by check, mail with form to: Treasurer, NY Flora Association, 17 Quail Path, Liverpool, NY 13090**

***Thank you for supporting NYFA and the flora of New York State***

**NY Flora Association**
**PO Box 122**
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