

The Blazing Star



A PUBLICATION OF THE NORTH AMERICAN NATIVE PLANT SOCIETY

Native Plant to Know

Swamp Rose Mallow

Hibiscus moscheutos

by *Cornelius Sommer*

The gorgeous swamp rose mallow at our cottage on the Severn River in Muskoka, Ontario, hosts a dock spider most summers. She seems to find this plant ideal to locate her mass of baby spiders, sitting quietly guarding them as they grow.

Swamp rose mallow (*Hibiscus moscheutos* or *palustris*) is a large, cold-hardy perennial that prefers moist habitats along streams and lakeshores, beside ponds and in ditches. In Canada, this member of the Malvaceae family is found only in Ontario, historically in scattered locations on the north shore of Lake Erie. Because of its limited range, loss of habitat due to drainage of wetlands, development pressures and competition from invasive species such as the non-native phragmites (*Phragmites australis* subsp. *australis*), *Hibiscus moscheutos* has been designated as of Special Concern under the provincial Endangered Species Act.

The iNaturalist database shows observations in Ontario in a belt north of Lake Erie and Lake Ontario except for a couple of outliers, but some of those may be cultivars; they are not always confirmed as the wild species. From Ontario, swamp rose mallow ranges south through the Atlantic states and Massachusetts to Florida

and Texas.

The enormous pink flowers (sometimes with reddish to purplish centres) have five petals that each measure six to 10 centimetres (four to six inches) in length. The alternate leaves are light to mid-green and variable in shape: some come to a point, others have three lobes. The stems are fairly tough, semi-woody and will remain standing all winter. If you don't cut them down, each year will bring new leafy, flowering stems mixed in among the dead stems from previous years. The plant can grow to seven feet (over two metres) in ideal conditions.

Many years ago I purchased the swamp rose mallow that is planted on the shore of our cottage property from the North American Native Plant Society spring sale. In its *Plant Cultivation Guide*, NANPS notes that the plant is a heavy feeder and should



ILLUSTRATION BY KAITLIN BROUGH

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The Blazing Star is . . .

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NANPS EVENTS

Making Gorgeous Pollinator Gardens Using Native Plants: How to Do It!

Tuesday, January 17, 2023, 7:00 - 8:30 pm

Speaker: Clement Kent, adjunct professor of biology at York University, co-founder of Project Swallowtail

<https://makinggorgeouspollinatorgardens.eventbrite.ca>

This talk will showcase beautiful pollinator gardens, highlighting potential problems and how to overcome them. Key topics: working on a tiny budget, getting permissions in a timely way, getting young plants established during record-breaking droughts, battling invasive weeds and preventing neighbours or municipalities from destroying established gardens.

Native Shrubs for Your Garden

Tuesday, March 21, 2023, 7:00 -8:30 pm

Speaker: Colleen Cirillo has an MSc in environment and resource studies, and has spent many years working in nature interpretation, protection and restoration.

Native shrubs vary greatly in form, size and habitat. Learn about options for every application or corner of the garden – shade or sun, wet or dry, specimen or hedge, naturalized or formal.

Tickets will be available in early 2023. The registration link will be shared in the winter issue of The Blazing Star.

CANADA IS ON THE MAP

Homegrown National Park™ (HNP) is a “grassroots call-to-action to restore biodiversity and ecosystem function by planting native plants and creating new ecological networks.” This groundbreaking initiative (profiled in the summer 2021 issue of *The Blazing Star*) includes an online platform and signature map. The map is a “dynamic, interactive, community-based visual” that shows each person’s contribution to planting native by state – and now province – as well as county and zip/postal code. Canada and an “all-new Mapping Experience” have been added. The countries are colour-coded, with the states and provinces ranked by the percentage of population participating. The map markers have been updated, personalized planting descriptions are offered and planting locations are now easier to enter.

Canadians can now enter their native plant garden or habitat restoration project on the map and help spread the word about ecosystem function regeneration. Visit homegrownnationalpark.org.



Eileen Atkinson's garden was planted to attract pollinators, including the monarch butterflies congregating on this dense blazing star (Liatris spicata). Read about her experiences planting native plant beds on page 8.

PHOTOGRAPH BY EILEEN ATKINSON

Burnt Cape Ecological Reserve

by Sue Meades

The sight of a bulldozer scraping gravel from a scree slope and loading it into a dump truck was the disheartening image that greeted me and two colleagues on our first visit to Burnt Cape in 1994. The machine was also scraping away frost polygons, which took centuries to form, and destroying the limestone barren vegetation at the base of the cliff. We moved to the opposite side of the peninsula in search of rare species and, after recording several rare calciphiles (lime-loving plants), we knew we had to get this important site protected.

Historical Setting

Burnt Cape is a peninsula of Ordovician Period limestone situated on the east coast of Pistolet Bay at the northern tip of Newfoundland's Great Northern Peninsula, 40 kilometres (25 miles) southwest of the historic Norse settlement at L'Anse aux Meadows. The peninsula is approximately four kilometres (two and a half miles) long, one kilometre (half a mile) wide and over 75 metres (250 feet) in elevation. Ha-Ha Bay lies between Burnt Cape and the community of Raleigh; they are connected by a narrow isthmus of sand at the southeastern end of the cape. Due to its extreme northern location and exposure to the North Atlantic, Burnt Cape is considered one of the most arctic locations in Newfoundland.

The botanical significance of Burnt Cape was first

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PHOTOGRAPH BY SUE MEADES

The rare pendantpod oxytrope (*Oxytropis foliolosa subsp. deflexa*) growing in a mound of moss campion (*Silene acaulis*), with mountain avens, most in fruit, at the bottom



PHOTOGRAPH BY SUE MEADES

The typical vegetation of the limestone barrens: scattered patches of entireleaf mountain avens (*Dryas integrifolia*). This photo is looking north, with the Labrador coast on the left.

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recognized by Merritt L. Fernald, Harvard University's preeminent botanist in 1925 during his ongoing botanical surveys of Newfoundland. On July 17, 1925, Fernald, accompanied by six colleagues, visited Burnt Cape for the first time. Based on James Howley's 1901 Geological Map of Newfoundland, Fernald's party expected to see a cape of reddish-brown serpentine bedrock; instead, they encountered a peninsula of grey, Ordovician limestone. Since it appeared very similar to limestone barrens they had visited previously, they anticipated that five hours would be enough time to fully explore the site before their return boat arrived. After disembarking on the eastern shore of Burnt Cape, across from Raleigh, their sense of complacency soon turned to enthusiasm:

Griscom, Pease and Hotchkiss were to work northward around the tip of the Cape, and the rest of the party started due west to make a sort of cross-section. In two minutes the shouting began. "*Carex concinna*." "Yes, we're getting it too, and the queer *Asplenium*." "Here's *Polystichum lonchitis*." "What's the other *Carex*?" "What's the *Habenaria*?" And so on until the parties were out of hearing. (*Rhodora* 1926. 8(330): 101)

At the end of their visit, Fernald reported:

We had landed on Burnt Cape with grave doubt, disappointed that it was not serpentine, but now that it approached 2 o'clock and we had planned to look at Ha-Ha Point, it was necessary to abandon the most thrilling spot thus far found. (*Rhodora* 1926. 8(330): 103)

Recent Discoveries

In mid-July 1994, my friends and I met Paul Martin Brown, an American botanist leading a botanical tour of the Great Northern Peninsula. Paul had found three dwarf hawksbeard (*Crepis nana*) and about 30 fairy slipper orchids (*Calypso bulbosa*) at Burnt Cape the previous day. The existence in Newfoundland of *Crepis nana* (now known as *Askellia pygmaea*), a western North American disjunct species, had been in doubt as it had not been reported from Newfoundland since 1925, despite several surveys in recent years. Similarly, there had been no Newfoundland reports of *Calypso* since 1929. Equipped with a rough map drawn by Paul, we set out to

confirm the reports. Unfortunately, his map was based on the position of a picnic table that had since been moved to the shoreline. Lacking a point of reference, we started searching along the eastern side of the cape for dwarf hawksbeard.

Just as we began to think our search was in vain, we spotted our quarry. Our astonishment rivaled that of Fernald's colleagues: "Look, there's a *Crepis*, and another..." "And that's the alpine milkvetch!" – and so on. We also



Hairy willow (*Salix vestita*) with purple mountain saxifrage (*Saxifraga oppositifolia*) to the right, mountain avens in the upper left and dwarf birch (*Betula pumila*) below

PHOTOGRAPH BY SUE MEADES



Frost polygons along the parking area at the end of the road at Burnt Cape

PHOTOGRAPH BY SUE MEADES

found the Burnt Cape cinquefoil, originally discovered and named *Potentilla usticapensis* by Fernald. He believed the cinquefoil to be endemic to Burnt Cape, but it has since been shown to be a long-distance disjunct of an arctic cinquefoil, *Potentilla pulchella*.

Other interesting species of the limestone barrens we encountered that day were arctic bladderpod (*Physaria arctica*), a small yellow mustard with spherical fruits, and

the purplish-flowered Fernald's braya (*Braya fernaldii*), a rare endemic mustard of the Strait of Belle Isle. It was named by American botanist E.C. Abbe in honour of Fernald's contributions to our knowledge of the Newfoundland flora.

Geologically, Burnt Cape is composed of three different ages of Early to Middle Ordovician limestone (480-470 MYA). The limestone bedrock is composed of 98.6% calcium carbonate, a more calcium-rich limestone that sets it apart from the bedrock of other coastal limestones, which have a higher magnesium content. The bedrock surface at Burnt Cape has undergone extensive in-situ weathering, producing a thick deposit of limestone gravel.

The limestone bedrock forms three levels of terraces. The upper terrace (top of the cliff) forms the crest of the cape and supports most of the Burnt Cape cinquefoil plants, as well as the rare pendantpod oxytrope (*Oxytropis deflexa* var. *foliolosa*) and several saxifrages, including the encrusted saxifrage (*Saxifraga paniculata* subsp. *laestadii*).

The middle terrace, accessible by a rough gravel road that leads to a designated parking area, is dominated by typical limestone barren habitat, characterized by discontinuous colonies of dwarf shrubs such as mountain avens (*Dryas integrifolia*), dwarf birch (*Betula pumila*) and six species of dwarf willows, including limestone willow (*Salix calcicola*), netvein willow (*S. reticulata*) and hairy willow (*S. vestita*). Numerous herbaceous calciphiles are scattered across areas of seemingly bare gravel. Large polygons of limestone

gravel, sorted by frost action into coalescing circles two to four metres (six to 13 feet) wide, can be seen near the cliff face.

Depressions and ravines support a more continuous carpet of vegetation, but many ravines contain deep, hidden crevices that a person could fall into, never to be seen again. The limestone barrens and coastline accessible from the parking area provide an excellent vantage point from which to view icebergs or watch humpback whales when they



Dwarf hawkbeard (*Askellia pygmaea*)



A view of the Cannonholes on the lower terrace

PHOTOGRAPH BY SUE MEADES

PHOTOGRAPH BY SUE MEADES

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come to feed on capelin in early summer.

The lowest terrace, accessible only from a trail that runs along the base of the cliff, provides hikers with a view of the Cannon Holes (circular openings in the lower cliff face) and a small sea cave (Little Oven), both formed by water seeping from crevices in the bedrock. A larger sea cave (Big Oven) can be seen along a trail leading west from the parking area. Trilobites and fossils, some of which have yet to be described, are also characteristic of the limestone strata at this site.

The rediscovery of the fairy slipper orchid and dwarf hawksbeard prompted us to lobby the Newfoundland government to stop the quarrying at Burnt Cape and protect it as an ecological reserve. To date, a total of 309 plant species have been documented within this 3.6 square kilometre (1.4 square mile) site, including 36 endangered or threatened species, the largest number of rare species known from any one region of Newfoundland.

Achieving Protection

In August 1995, existing quarry permits were not renewed and a ban was placed on future quarry activity at Burnt Cape. The Nature Conservancy of Canada (NCC) provided funding for the rehabilitation of damaged areas, which was performed by a crew of seven local residents between June and September 1998. To be fair, the names of all interested unemployed residents of Raleigh were put in a hat and the first seven names drawn were hired! Our new “rehab crew” included four men and three women who worked tirelessly to return damaged sites, as near as

possible, to their former appearance. I was hired to plan and oversee the rehabilitation work, do a vegetation survey of the entire reserve site and compile a map of vegetation types, disturbance sites and existing roads.

Damage by quarrying at the cape fell into two basic categories: removal of loose gravels from scree slopes and frost polygons, and excavation of gravel pits. As it is impossible to reconstruct centuries-old frost polygons or to return quarried gravel to excavated pits, rehabilitation work mainly involved leveling off hills of stockpiled gravel with



One of the lower pits at Burnt Cape in 1995 after gravel extraction



The same pit in 2022, showing recolonization 24 years after the regeneration work was completed

PHOTOGRAPH BY SUE MEADES

PHOTOGRAPH BY SUE MEADES

picks and shovels, and raking disturbed gravel areas into a flat surface suitable for recolonization by pioneer species, such as yellow mountain saxifrage (*Saxifraga aizoides*), purple mountain saxifrage (*S. oppositifolia*) and the purple-flowered Newfoundland oxytrope (*Oxytropis campestris* var. *minor*). In time, mountain avens (*Dryas integrifolia*), dwarf willows (*Salix* spp.), shrubby cinquefoil (*Dasiphora fruticosa*), and other species characteristic of the limestone barrens would eventually colonize the bare gravels.

There were four large gravel pits on the cape: two on the upper terrace, east of the cliff face, and two on the northeastern slope of the cape, facing Ha-Ha Bay and Raleigh. These pits were too deep to fill in or to rake flat, so the sides were raked into gradual slopes that could eventually be stabilized by colonizing dwarf shrubs. I noted on subsequent visits to these sites that recolonization is definitely progressing, but it will be quite a while before all visible signs of damage from previous quarrying is hidden.

In 1999, the NCC provided additional funding to train two Newfoundland Parks employees as interpreters, who offered tours of the reserve for several years until provincial government cutbacks in 2013 resulted in cancellation of this popular resource. Currently, two- to three-hour tours are available for a fee through Burnt Cape Cabins.

To protect and maintain sensitive populations of rare species, certain areas within the reserve are off limits to cars, ATVs and bicycles. A rough gravel road that leads from Raleigh to a designated parking area is passable by vehicles with adequate clearance, but former routes used by bulldozers have been decommissioned, with boulders placed at intersections with the main road to prevent access. Individual visitors can access the reserve without a permit, but large groups and anyone conducting research or monitoring of listed plant species must obtain an Endangered Species Act permit from the NL Wildlife division (wildlifepermits@gov.nl.ca).

In January 1998, Burnt Cape was declared a Provisional Reserve, with permanent Ecological Reserve status granted in March 2000. Since Raleigh was the gateway to the newly established Burnt Cape Ecological Reserve, the community soon saw a surge of ecotourism. When we first visited in 1994, Raleigh had a population of about 200. It offered one bed-and-breakfast, a small general store and gas pump, and a chicken takeout, which we soon discovered was closed during the lunch and dinner hours! Raleigh now boasts three different accommodation options. The Burnt Cape Café was an instant success, with its fresh lobster and moose steak, but due to COVID-19 and staff shortages, the café closed in 2020. We hope to see it running again next year!

Burnt Cape Ecological Reserve stands as a prime example of how communities, with

the help of botanists, geologists and forward-thinking government officials, can recognize the value of a unique site and work to protect it.

Sue Meades is a botanist with over 45 years' experience. Her resumé includes consulting on environmental impact statements for major projects in Newfoundland and Labrador, teaching botany courses at Algoma University and illustrating two forestry manuals. Currently, Sue is working on the Flora of Newfoundland and Labrador website (<https://newfoundland-labradorflora.ca/>) and doing fieldwork in the summers with her husband, Bill Meades.



Netvein willow with male catkins

PHOTOGRAPH BY SUE MEADES

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My Native Plant Journey

by Eileen Atkinson

When my son was in high school, more than 20 years ago, he had a summer job at Sheridan Nurseries in Markham, Ontario. One day he came home with a potted plant a co-worker had given him. “Take this home to your mother,” she said. “She’ll like it. Tell her it’s a native plant – a cup plant.” Was that the first time I heard about native plants? It might have been. I certainly didn’t know anything about them. I took the cup plant (*Silphium perfoliatum*) to our summer cabin and planted it near the front steps. It grew six feet (two metres) tall that summer and, when the lovely yellow, daisy-like flowers appeared, they were constantly covered with monarch butterflies and bees of all sizes. I was amazed. Native plant, huh? What did that mean? And so, my journey began.

There was no Google back then, so learning took longer. You had to find knowledgeable people who were willing to share their knowledge (most native plant folks did it willingly) or locate hard-to-find native plant books. Lorraine Johnson published *100 Easy-To-Grow Native Plants* in 1999. That was my first reference book and has remained a companion all these years.

Our tiny townhouse garden in Markham was full of non-natives such as burning bush, hosta and periwinkle. I quickly realized the benefits of native plants and wanted more. When I saw an ad for the North American Native Plant Society (NANPS) plant sale at the Markham Civic Centre off I went, armed with my list. I found a line-up of other enthusiastic gardeners – also armed with lists – waiting for the doors to open. What a wonderful discovery! It led me into the native plant community. So many trees, shrubs and plants for sale, sorted by their need for sun or shade and tables staffed by keen, knowledgeable volunteers! There were book stands, too, and lots of discussion about bees and other pollinators, wetlands, rain gardens and butterflies. I had found my people!



Planting began on the second group of beds in May 2021. The first bed, with the birch and red osier dogwood, is visible in the background.

Sometime later I attended a seed-collecting workshop, where I was recruited for the NANPS board of directors. Really? Me? I was no expert. It turned out that, like most boards, they needed admin people, organizers and table-minders, too. I could do that. So, I served my term, met some amazing people and learned so much more along the way.

There were many events being held once you started looking: Seedy Saturdays in February, University of Toronto lectures, conferences in Guelph, workshops and demonstrations of all kinds. I went to many of them. I devoured every page of the NANPS website. Talk about a kid in a candy shop!

A particular NANPS outing that had a big influence on me was a very long, one-day bus ride to three forests at various stages of growth. Backus Woods in southwestern Ontario is one of the few old-growth forests remaining in the province. It was so different from the others. We became silent there, as though we were in a cathedral. We were lucky enough to have an expert with us who explained what we were seeing and what was going on that we couldn’t see. That trip convinced me that conservation is



Upland white goldenrod (*Solidago ptarmacoides*) visited by a goldenrod soldier beetle

even more important than restoration and native plant gardening. We could never recreate what nature had accomplished. Only nature could. That’s why I now volunteer with the Couchiching Conservancy, a charitable non-profit doing an amazing job of acquiring properties to be preserved in perpetuity. The society also works with other non-profits to extend protected lands in a bioregion known



Late August 2021



Grasshoppers mating on a cup plant

as The Land Between – a transition zone roughly 40 kilometres (25 miles) wide that extends between the Canadian Shield and the St. Lawrence Lowlands in Ontario.

I volunteered at Canada Blooms for NANPS and chafed at the fact that we had one tiny table in a huge hall full of people who didn't get it – yet. With other NANPS volunteers, I planted native plants at the Markham Civic Centre gardens, manned the membership table at the plant sales,

cleaned and packaged seeds, wrote reports and handouts, and copy edited the newsletter. I loved it all and learned so much, but then, when my three-year term on the board was up and I was asked to run again, I declined. I hadn't had time for my own gardens and I was eager to get going, armed with all this new knowledge.

Our postage-stamp townhouse garden started looking better, but then the north began to beckon. We sold our city property and bought a small house on a large lot in Muskoka. It was quieter and more affordable but the main attraction was the clean slate for me to work with, nothing but turf grass everywhere.

The new house is in a lovely community full of traditional gardens. We didn't want to upset our new friends and neighbours with an all-natural garden, so we designed a large, kidney-shaped bed in the front yard for native plants. We planted a clump of grey birch (*Betula populifolia*), three red osier dogwoods (*Cornus sericea*) and three northern bush honeysuckles (*Diervilla lonicera*).

Following instructions found online, we dug the sod up by hand, put down a thick layer of compost, then cardboard, then triple mix. We

planted right away, cutting through the wet cardboard. Everything thrived; the plants got thick and lush, but with few flowers. The soil was too rich. It didn't need all those amendments. Nothing has been added to that bed for a few years now and it seems to be settling down.

I started eyeing the rest of the lawn my husband was so diligently cutting. "Let's get rid of all the grass in the front and just have native beds," I said to him. It took a bit of persuading, but he finally agreed. We called in Laura Thomas from Hidden Habitat in Gravenhurst to help with the design, sod removal and planting. Best idea ever! She was great. She recognized my passion and realized that I wanted to be involved every step of the way. We worked as a team, but she did all the heavy work.

We created two more large flower beds, added river rock, and a mulched pathway that wound around and tied everything together. A rented sod-cutter made short work of a hard job, then we put down cardboard and topsoil. No compost or triple mix. I chose not to mulch the flower beds (even though mulching retains moisture) because birds don't like walking on mulch and I like watching birds. Cheaper, easier and everything is thriving.

What would I do differently? I wouldn't plant so many shrubs in a flower garden. The roots become too dense. One red osier dogwood and one northern bush honeysuckle would have been enough in the first bed. I also planted some vigorous shrubs too close to the house, then realized my mistake and dug them up. The dogwoods are a dilemma for me because they get huge and need pruning to look good where they are. If I prune them though, I don't get many flowers or berries because these occur on second-year growth. I haven't solved that one yet.

I wish I had paid attention sooner to bloom times and colour to create

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better combinations. Some of my “mistakes” turned out great though! I love the white pearly everlasting (*Anaphalis margaritacea*) with the off-white nodding wild onion (*Allium cernuum*). Another accidental favourite combo is Canada goldenrod (*Solidago canadensis*), fleabane (*Erigeron strigosus*), with its delicate pinky flowers, and lavender anise hyssop (*Agastache foeniculum*). So pretty in late summer.

Other combinations I like are dense blazing star (*Liatris spicata*) with black-eyed susans (*Rudbeckia hirta*); pearly everlasting, scarlet bee balm (*Monarda didyma*), black-eyed susan, blue vervain (*Verbena hastata*) and foxglove beardtongue (*Penstemon digitalis*); butterfly milkweed (*Asclepias tuberosa*) with anise hyssop or dense blazing star; and wild bergamot (*Monarda fistulosa*) with purple coneflower (*Echinacea purpurea*).

Evening primrose (*Oenothera biennis*) and sundrops (*Oenothera pilosella*) are favourites of mine. They are plants of the same genus but one blooms in the evening, the other during the day. They are easy to grow, spread well but stay manageable and their bright yellow blooms last most of the summer. As the leaves turn red, the clumps make lovely additions to the fall garden. White snakeroot (*Ageratina altissima*) is a lovely fall bloomer that I just discovered. I also like the lesser-known plants wild senna (*Senna hebecarpa*), for its bush shape and long “beans,” and giant yellow hyssop (*Agastache nepetoides*) for the number of pollinators it attracts.

What’s next? I’m looking at the backyard. A sanctuary garden sounds like a lovely idea. The pollinator patch at the cabin is always going to be a work in progress, battling the invasives. And seed collecting is a wonderfully peaceful, contemplative activity with a purpose, giving you seeds to grow and share. I have had surprisingly good success with winter

sowing, both by sinking flowerpots in the ground and by putting plastic containers full of seeds in the snow.

My happiest days are spent pottering around in our native plant garden. Then I sit, exhausted, on the porch to survey my work and along comes our resident chipmunk to investigate the changes. A hummingbird sits a while on a birch bough. Finches arrive in flocks for the seeds and single robins hop through the undergrowth. Chickadees come to the birdbath to drink or bathe, and my day – and joy – is complete.

Native plant gardening is not just a new way of gardening – it’s a new way of thinking. So many people are recognizing the benefits that it has become a social movement. I started this journey when I learned about the declining populations of bees, birds, butterflies and other pollinators. When I learned about the deep roots these plants send down, which help conserve water and prevent soil erosion, it was another plus. Then I started thinking about how our colonizing predecessors disrespected not only native people and wildlife, but the land, too – cutting down trees, damming rivers, introducing plants from other continents. It seems like a good idea to give something back. A native plant garden is a small step, I know, but in the right direction. There seems to be a growing sensitivity to what nature needs and a reassessment of how we live in the world.

The cup plant my son brought home over 20 years ago is still going strong. It grows 10 feet (three metres) tall each summer and five feet (1½ metres) wide. I still love it. There are fewer monarchs these days, but the ones that do come always find their way to this plant.

Eileen Atkinson loves to share her passion for native plants, but she stops when she sees people’s eyes glazing over. Usually.



Black-eyed susans with bee balm and red osier dogwood



*Goldenrod (*Solidago* sp.), fleabane (*Erigeron* sp.) and anise hyssop (*Agastache foeniculum*) in new beds in August 2022*

PHOTOGRAPH BY EILEEN ATKINSON

PHOTOGRAPH BY EILEEN ATKINSON

Prairies and Savannahs of Northwestern Ontario

by Wasyl Bakowsky

While working on my MSc. thesis at the University of Toronto, I came across some plant specimens of prairie

thistles in a herbarium cabinet in our lab. They had been collected from the Stanley Cemetery, just west of my hometown of Thunder Bay, Ontario. This came as a surprise. Our family

had driven past that cemetery countless times on our way to our swimming spot at Kakabeka Falls Provincial Park. I had no idea there were rare prairie species in this part of the province.

Northwestern Ontario had never received much attention from botanists, so there were all kinds of habitats and rare plants to be discovered. I had thought the area supported only boreal forest, so the possibility of finding prairies in this region was exciting. I was determined to return one day and explore the northwest further. That day came in 1994, when I took a position with the Natural Heritage Information Centre, Ontario Ministry of Natural Resources, and partnered with my colleague Michael Oldham to undertake targeted surveys in search of rare vegetation.

This vegetation, typically found further west, originated 6,000 to 8,000 years ago during the Hypsithermal Period, when the climate was drier and warmer. Prairie vegetation expanded eastward during this time, following which the climate grew cooler and more moist; prairies then retreated westward, persisting as relicts in northwestern Ontario in drier-than-normal sites, typically those with shallow soils over bedrock on south-facing slopes. Additionally, prairie species prefer nutrient-rich soils; here, they develop from the weathering of base-rich bedrock, commonly referred to as greenstones. Most of the region consists of acidic granite, which is unsuitable for these plants.

We discovered that the best sites were along lake and river shorelines, including Lake of the Woods, Rainy Lake and Rainy River. Here, the vegetation occurs as small prairie patches dominated by grasses and herbs, while more extensive areas include scattered, open-grown bur oaks (*Quercus macrocarpa*) with a similar understorey. These are referred to as oak savannahs.

The understorey vegetation is



PHOTOGRAPH BY WASYL BAKOWSKY

No flower is more attractive to bees in these habitats than blue giant hyssop.



PHOTOGRAPH BY WASYL BAKOWSKY

A bur oak savannah with an understorey of big bluestem, a characteristic prairie grass

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dominated by prairie grasses such as big bluestem (*Andropogon gerardii*), prairie junegrass (*Koeleria macrantha*) and plains porcupine grass (*Heterostipa spartea*). Common prairie herbs include hoary puccoon (*Lithospermum canescens*), smooth beardtongue (*Penstemon gracilis*), blue hedge-hyssop (*Agastache foeniculum*), starry onion (*Allium stellatum*) and prairie buttercup (*Ranunculus rhomboideus*).

Big bluestem can grow to great heights under the right conditions, as high as three metres (nine feet). It is the characteristic grass of the appropriately named tallgrass prairie biome. The inflorescence (panicle) has three branches, rather like the foot of a turkey, hence its other common name, turkeyfoot.

Prairie junegrass is a clumping grass that grows to 0.6 metres (two feet) in height. The flowering head looks something like timothy (*Phleum pratense*), a widespread introduced grass. Prairie junegrass was once fairly common in southwestern Ontario, but is now very rare. However, it has been found so frequently in the northwest that it is no longer considered a rare plant in the province.

Plains porcupine grass is the most interesting of the three grasses. The seed head is about one centimetre (half an inch) long and very sharply-pointed. It has a long appendage, referred to as an awn. The seed is fairly heavy, so when it drops from the plant it lands tip down and, over time, the wind twirls the awn around such that the seed screws itself into the soil. I take great delight in throwing these seeds at my loved ones! With their weighted tips they are like small spears and they hurt like a little sharp-pointed spear would!

Hoary puccoon, a beautiful herb with velvet-like leaves, was widely used by Indigenous peoples. They ground the roots to make a vibrant red dye, which they used as body paint and to decorate ornaments and garments.

Smooth beardtongue is a showy

native snapdragon, favoured by pollinators such as hummingbirds, bees and butterflies. Blue hedge-hyssop has soft, anise-scented leaves that can be used in potpourris and teas. The plant has been estimated to produce as many as 90,000 individual flowers during its long blooming period!

Starry onion bulbs were used by indigenous people as a vegetable and to flavour soups. Prairie buttercup is one of the earliest flowering plants in prairies and savannahs. It can be readily identified by its lower, leathery, kidney-shaped leaves.

Although the vegetation covers only 432 hectares (1,070 acres) on 296 mapped sites in northwestern Ontario, these prairies and savannahs support a disproportionate number of rare species. They make an important contribution to the biodiversity of the province. Some of Ontario's rarest plants, such as western silvery aster (*Symphotrichum sericeum*), occur in this habitat. Western silvery aster, known from only three sites in the province, is classified as an endangered species. In northwestern Ontario it is at the northeastern limit of its range, being found more commonly in the American Midwest and as far

south as Texas.

Some of the northwestern Ontario prairie and savannah plants are known only from single locations in Ontario. Slick-seed wild bean (*Strophostyles leiosperma*) was found in a prairie remnant along the Winnipeg River, growing with what we thought at the



PHOTOGRAPH BY WASYL BAKOWSKY

Purple prairie clover (*Dalea purpurea*) is a classic prairie legume attractive to pollinators. It occurs in only three locations in Ontario.



PHOTOGRAPH BY WASYL BAKOWSKY

Grasses such as big bluestem are wind-pollinated. Here we see the protruding purple female stigmas and dangling male anthers. Wind blows pollen from the anthers into contact with the stigmas and fertile seeds develop.

time was stiff-leaved showy goldenrod (*Solidago rigidiuscula*). However, upon examination by an Ontario aster



PHOTOGRAPH BY WASYL BAKOWSKY

Flodman's thistle (*Cirsium flodmanii*) is a rare native thistle, characterized by a delicate white stem and leaf undersides.

specialist, it was determined to be a new species, pale showy goldenrod (*S. pallida*). This *Solidago* has an extremely limited distribution in North America, mainly in small pockets of South Dakota, Nebraska and Colorado. Its presence in northwestern Ontario is nothing short of remarkable.

Plains muhly (*Muhlenbergia cuspidata*) was discovered in a bur oak savannah on Lake of the Woods, where it occurs in a single one-metre-square (three-foot-square) patch. Other western species with but a single occurrence include the funky-looking western false gromwell (*Lithospermum occidentale*), the delicately pretty prairie rose (*Rosa arkansana*) and canescent tall goldenrod (*Solidago altissima* var. *gilvocanescens*). Another 12 species occur in these habitats from less than half a dozen locations, species with so few occurrences they are considered

to be in the rarest category.

Altogether, there are 78 prairie indicator species now known from the prairies and savannahs of northwestern Ontario. The number of species present at any one site is variable. A half-hectare (1.2-acre) slope of dry prairie may have as few as half a dozen species, while an extensive 10-hectare (25-acre) oak savannah may have as many as 25 to 30 species.

After spending a few weeks each year in northwestern Ontario over the course of 12 summers, my colleague and I had discovered much about the botanical landscape of this beautiful part of the province, having found many previously unknown examples of prairie vegetation. We added new species to the flora of Ontario and Canada, and greatly increased the knowledge of the location, condition and extent of prairie species in our province.

Wasył Bakowsky is a community ecologist with the Ministry of Natural Resources and Forestry.



PHOTOGRAPH BY WASYL BAKOWSKY

Dry tallgrass prairies are dominated strictly by grasses and herbs. Big bluestem is typically the most abundant species, showing its glorious autumnal colours in this photo.

New & Noted

A Garden for the Rusty-patched Bumblebee: Creating Habitat for Native Pollinators

Ontario and Great Lakes Edition

By Lorraine Johnson and Sheila Colla, with illustrations by Ann Sanderson

250 pages

Douglas & McIntyre, 2022

A Garden for the Rusty-patched Bumblebee is a book that distills and synthesizes the new ecological imperative in gardening, which is to “actively participate in the natural processes that make all life on earth possible.” By now, even the least attentive gardener has heard that bees are in crisis and that native plants somehow signal virtue, but the connections between the two may yet have remained opaque. With remarkable economy and nuance, this guide elucidates both theory and practice in gardening with native plants.

The early chapters provide a succinct “primer” on the pollination of native plants and paint the global decline of bee populations. It memorably distinguishes between the honeybee and native bee crises by observing that “starting a honeybee hive does not help save wild bees any more than keeping backyard hens helps save wild birds.” Although the book provides the basics of pollination, there are also intriguing facts about bees that I had not encountered in other texts, such as that certain bees, if infected with intestinal parasites, have the ability to “self-medicate” by seeking out flowers containing the right chemicals, and that it is not only pollen but also oils, yeasts and microbes that bees harvest from the plants they visit.

As the introduction asserts, “creating habitat is climate action.” As a classic example of how local action should reflect global thinking, native plantings can store carbon in deep and extensive root systems; being adapted to local conditions, they may also prove more resilient under extreme weather events, reducing flood risk and preventing soil erosion. Crucially, they support biodiversity, increasing the ecosystem’s ability to withstand the changes wrought by the climate crisis.

To help us act locally, this edition of the book focuses on Ontario and the Great Lakes region. (A U.S. edition is planned that will cover the Northeast, Upper Midwest and Great Lakes.) More than 300 plants are profiled, together with ideal growing conditions and specialist insect associations, organized by flowering season, so gardeners can design a yard—or even a container garden—that offers pollinators something from early spring through fall. Apart from the usual suspects, the authors include some relatively little-known and hard-to-find native plants such as smooth carrion flower (*Smilax herbacea*) and rose twisted-stalk (*Streptopus lanceolatus*). Indeed, there is a list near the end



of the book of plants that activist gardeners should ask for, so as to prod nurseries into expanding their catalogues.

This spirit of quiet activism infuses the book—the new gardening is not just about aesthetic delight, but also citizen science, wildlife advocacy and a deep reverence for Indigenous knowledge and land stewardship. In this vein, we are asked to think of ourselves as land custodians rather than

owners; to refrain from using pesticides and from raking and tidying (not a problem for me!) so that pollinators can overwinter safely and leaf litter can improve soil health and microbial diversity; and to work to increase public acceptance of native plant gardens, for instance by campaigning to repeal local by-laws mandating that everyone maintain a green and sterile lawn. Local efforts of the foregoing are generously highlighted in the book, from individually tended gardens to grassroots initiatives (such as Blooming Boulevards, in Mississauga, Ontario) and institutional models (such as the Helen M. Kippax Garden within the Royal Botanical Gardens in Burlington, Ontario).

Lest we are tempted to believe that our puny yards could not possibly make a difference, the authors list the reasons why our small efforts have a big impact. These range from the small size and range of individual insects to the massive reduction in high-quality habitat for pollinators and the other fauna that depend on them. At the end of each reason the authors sound the refrain, “Your planting matters,” almost as a mantra for our era of dire environmental crisis. The effect is inspiring as well as admonitory. We cannot afford not to act.

The rusty-patched bumblebee hovers over the book like a lost friend for whose return we are preparing. Last seen in Canada in 2009 by co-author Sheila Colla, this bee is a generalist pollinator that would benefit from the increase in habitat that this book is working to inspire. If the Rusty-patched Bumblebee is still out there somewhere, we fervently hope it finds our native plant gardens to be congenial spaces in which to feed and multiply.

Our plantings matter.

Vicki Low is the copy editor of The Blazing Star. She thanks Lorraine Johnson for help with this review.

Continued from page 1 – **Swamp Rose Mallow**

be mulched in the winter. I have never mulched it, but I know that it benefits from rich garden soil or, on marshy shores, from the nutrients found in copious decaying vegetation. My swamp rose mallow has flourished and now forms a large clump, with more than 20 stems growing from the root mass. It has seeded along the shoreline for several metres and into a flower bed four metres (15 feet) from the lake's edge.

I have also seeded swamp rose mallow in my Newmarket garden, where it flowers happily, even in partial shade, but has never grown very tall or vigorous. I have had no difficulty cultivating this plant, but I've discovered that, left to its own devices, it does not propagate to new locations readily.

Late summer is a glorious time for our native wildflowers, when masses

of different goldenrods (*Solidago* spp.), the deep purple of New England asters (*Symphyotrichum novae-angliae*), many other species of aster and curious plants such as obedient plant (*Physostegia virginiana*) come into their own. But the showiest by far – the one I am most excited to see – is *Hibiscus moscheutos*, with its flamboyant pink (or sometimes white) blossoms.

Swamp rose mallow is not terribly afflicted by insects or other pests, but I have seen bunches of Japanese beetles munching on the flowers, which are a nectar source for many insects. The caterpillar of the painted lady butterfly feeds on the leaves.

The plant is rich in mucilage, a gelatinous fluid,

which has been used to treat lung ailments, urinary infections and dysentery. The dried stalks can be ground up to make an infusion to help heal bladder infections, while a tea made from the boiled leaves can treat digestive inflammations.

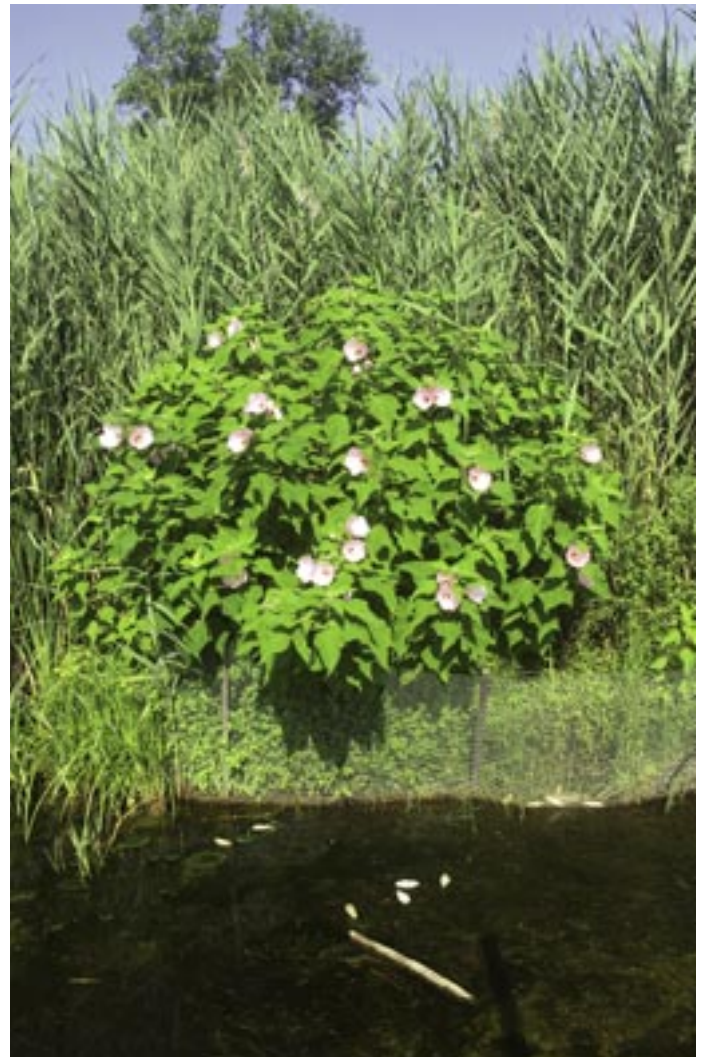
Beautiful and useful, swamp rose mallow is all that one could hope for from a plant.

Cornelius Sommer has been a NANPS member and volunteer since it was the Canadian Wildflower Society. He enjoys having two overgrown gardens!



PHOTOGRAPH BY CORNELIUS SOMMER

Swamp rose mallow flower buds and a Japanese beetle



PHOTOGRAPH BY ETHAN DROPKIN

Landscape architect Ethan Dropkin finds *Hibiscus moscheutos* throughout the New Jersey Meadowlands on the sunny edges of infestations of European common reed (*Phragmites australis* subsp. *australis*). It's unlikely the mallow can hold its own against the invasive phragmites in the long run.



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