

The Blazing Star



NEWSLETTER OF THE NORTH AMERICAN NATIVE PLANT SOCIETY

Native Plant to Know

Blue Giant Hyssop

Agastache foeniculum

by *Graham Buck*

At season's end, unless you've clipped the spent blossoms for long-lasting flowering, blue giant hyssop (*Agastache foeniculum*) will shed plenty of seeds for expanding next year's display. Small birds, such as goldfinches, which can land on the spikes and pick out the seeds, will also feed on them, while bees, hummingbirds and butterflies flock to the flowers. For these reasons and many others, blue giant hyssop has attracted a lot of attention of late.

Of the 17 species of *Agastache* in North America, the majority are western species, with only three native to states/provinces east of the Mississippi River: *Agastache foeniculum*, yellow giant hyssop (*A. nepetoides*) and purple giant hyssop (*A. scrophulariifolia*). Of the three species, blue giant hyssop is the most widespread. It grows across Canada, with the exception of Nova Scotia, Prince Edward Island and Newfoundland. In Canada it is only indigenous from northern Ontario, near Thunder Bay, west to Alberta and north to Northwest Territories. In the United States it is indigenous in a linear western band in the states of Illinois to Washington. The southern extent of its range is Iowa, Nebraska and Colorado, where it is extremely rare. Throughout its range it prefers to grow in sunny, dry, open, rocky habitats.

Blue giant hyssop commonly grows

to 60 to 90 centimetres (two-three feet) tall and 60 centimetres across. The plant is short-lived, relying on new seedlings to keep it going. It needs room to reseed, and is considered a bit of a spreader. I advise you to start cautiously with a few plants in the middle or back of the garden. The flowers emerge in mid-summer and can last (with deadheading) through to the fall. The individual spikes are only five-seven centimetres (two-three inches) long, but when plants are massed the effect is showy. The blooms mingle well with most neighbours and are particularly good companions for lavender-blue and yellow flowers.

Blue giant hyssop is at home in either the herb or perennial garden. Although it grows best in full sun, it will do fine with partial sun, but the plants will be smaller. It will grow in average soil but prefers rocky or sandy soils. The site should be well-drained because soil that remains wet can induce root rot. (Purple giant hyssop does better in shadier and damper areas; it naturally

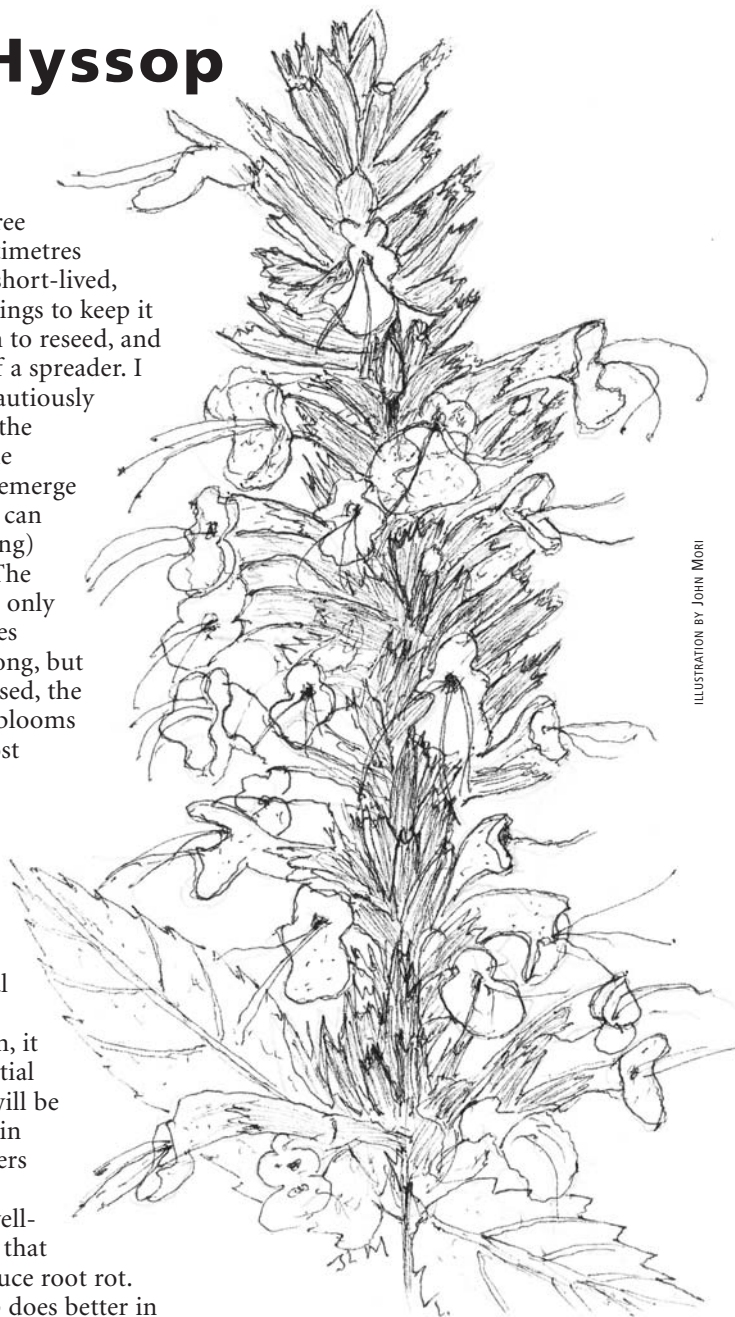


ILLUSTRATION BY JOHN MORI

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The *Blazing Star* is . . .

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NATURE IN THE 90S

Saturday, September 24th 2011

NANPS is organizing a car pool tour of various sites in Markham and Thornhill, Ontario to study how nature can be protected and encouraged to thrive in the suburbs.

The reality of life is that most Canadians live in cities or suburbs. Their experience of nature is limited to a few bits of parkland and maybe a small wood which has managed to avoid development. People appreciate this bit of natural space. But as they enjoy it, they almost inevitably damage it. They bring in weed seeds on their shoes, their pets disturb the wildlife and their bicycle tires disturb the ground.

Douglas Tallamy points out in his excellent book, *Bringing Nature Home*, that to retain biodiversity we need to ensure that nature has a home in the landscapes we create in our parks and gardens.

How can urban areas be designed and built to incorporate natural areas?

NANPS gave the Town of Markham the Paul McGaw Memorial Conservation Award last year for their efforts to achieve this goal. On this tour, we will meet with the community activists involved in removing invasive species from parks, creating a wildflower meadow and planting trees.

Please order your tickets in advance from excursions@nanps.org : \$15 for NANPS members, \$25 for non-members.

This car pool tour will start in Thornhill at 08:30 a.m. on Saturday, September 24th. Those who come by TTC will be picked up from Finch Subway station at 8:15. The tour should end around 4pm.

Wear comfy walking shoes, dress for the weather and bring your camera and your lunch (we will stop at Milne Park for a picnic around noon). For more information, please email excursions@nanps.org .

John Oyston

NANPS ANNUAL GENERAL MEETING & FALL PLANT SALE

SATURDAY, OCTOBER 22ND, 2011, NOON - 4:30PM
Canada Room, Markham Civic Centre
101 Town Centre Blvd., (Hwy 7 at Warden Avenue)
Markham, Ontario

- Presentation of NANPS annual Garden Awards, Volunteer of the Year Award and the Paul McGaw Memorial Conservation Award
- Plant Sale and Book Exchange/Sale - please bring donations for both
- Please collect seeds for the Seed Exchange
- Board nominations wanted! Do you know of someone, perhaps yourself, who could serve on NANPS Board of Directors? Requirements: A willingness to learn, three-year commitment to attend at least five of nine meetings/year, a dedication to the advancement of the study, conservation, cultivation and restoration of North America's native plants
- Silent Auction featuring hand-turned bowls formed from endangered butternut tree wood salvaged from destroyed forests
- Door prizes / refreshments / free parking

PLEASE NOTE: September 1st is the deadline for nominations for the NANPS Volunteer of the Year Award.

WANTED: Seed Donors

Please collect seeds from native plants for our annual Seed Exchange and deliver them to the NANPS AGM on October 22nd or send them, separated by species and identified with the source/parentage, to NANPS, Box 84, Stn. D, Etobicoke, ON, M9A 4X1. If you have any questions contact seeds@nanps.org. Our ecosystems, pollinators and native fauna thank you!

Planned Subdivision Sparks a Wildlife Haven

by Patricia Baldwin

In 2005, my local municipality informed me of plans for a new subdivision very close to my home. Although it's located on .7 hectares (1.77 acres) within the urban borders of Scugog Township, my property is very close to the boundary line to rural areas. The houses are custom-built and all have a different landscape character, some rolling lawns with high-maintenance landscaping, others with woodlot remnants still standing from an old farm.

My main concern: to provide habitat for wildlife which I knew would be displaced by further construction. I suspected my neighbours would accept my ecological restoration project but I wanted to make it as neat and tidy as I could just to be safe.

My first project was to create a hedgerow along my south property line. I wanted bird habitat and a visual screen/sound barrier from homes destined to be built to the south. I used the formula of one-third evergreen, one-third flowering/fruit-bearing and one-third thorny shrubs and trees. I began the row by adding shrubs to pockets of existing native vegetation along the property line. To replace a large stretch of lawn along the back of my property I planted a composition of trees, shrubs and flowers in a bed midway between those two areas of vegetation. I planted a beautiful high-bush cranberry (*Viburnum trilobum*) along with two white spruce (*Picea glauca*) and three white birches (*Betula papyrifera*). Forbs such as obedient plant (*Physostegia virginiana*) and tickseed (*Coreopsis* spp.) completed the bed. I had a lot of positive feedback from that combination.

Putting in this first native plant garden was an eye-opener. I was shocked to find how difficult it was to dig a hole for my large cranberry. Much of the topsoil in that section of the yard had been removed. The sod had a surprising number of grubs in it. The subsoil was hard and rocky. I began to wonder if I could get anything to grow there. However, I persisted, adding mulch around every newly planted tree or shrub. I raided my husband's wood pile and used the logs to border the new bed and to make trimming the lawn easier. I found this helped protect my new trees and shrubs from my teenage children as they learned to cut grass as part of their summer chores. For a few years I agreed to do the excessive trimming needed around my shrubs until I had the time and materials to extend my mulched area.

I asked neighbours for their bagged leaves or offered to rake their leaves for them to use as mulch. As much as possible, I get leaves, and wood chips too, from properties with native species. Over the years, many logs have decomposed into a source of humus for my substandard soil enriching its fungal content. I confess to being as delighted to find a beautiful fungus like *Polyporus versicolor* as any



PHOTOGRAPH BY PATRICIA BALDWIN

Patricia's vernal pool garden with blue flag iris, marsh marigold, dead elm tree, white cedar and other plants

blooming flower. Let me brag too that I have harvested a few gourmet morels (*Morchella* spp.) and I'm as proud of my giant puff balls (*Calvatia gigantea*) as a farmer of his giant pumpkins at the county fair.

In the mixed forest region where I live, the usual pattern is for fields to give way to shrubs and shrubs to trees. The tree species change with the age of the forest. During that succession, the plants that die and accumulate on the ground provide nutrients for new growth. I was trying to copy nature by adding the expected plant materials to my soil. I was gratified in 2010 when I attended a lecture by Jeff Lowenfels, co-author of *Teaming with Microbes*, a wonderful book which outlines the importance of bacterial or fungal content in the soil as it relates to the type of plant grown. Basically, annuals and grasses prefer bacterially dominated soils (encouraged by high nitrogen compost) while trees, shrubs and perennials prefer fungally dominated soils (encouraged by high carbon compost). By copying nature, I had done what scientists are now showing to be the best option.

A white elm (*Ulmus americana*) woodlot once dominated the northeast corner of our property. Since we purchased our house 13 years ago, many of those elms have succumbed to Dutch Elm Disease. At least I'm providing a haven for woodpeckers and flickers as they forage for insects in the standing dead elm snags. But, that corner is now being taken over by grasses, Virginia creeper (*Parthenocissus quinquefolia*) and Canada goldenrod (*Solidago canadensis*).

I'd like to restore the woodlot with sugar maple (*Acer saccharum*), yellow birch (*Betula alleghaniensis*), American beech (*Fagus grandifolia*) and hemlock (*Tsuga canadensis*). I know these trees commonly grow in association with each other; I've even seen them together on surrounding

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properties with intact native flora. I haven't had a lot of luck with the beech and hemlock trees. While the hemlocks have done much better in the woodlot than the ones I planted elsewhere in my yard, probably due to the protection from wind and the richer soil, the browse damage was very high this past winter. At least the sugar maples and the few remaining yellow birches have grown tall enough to put them out of the reach of deer and rabbits.

When we had a survey done prior to planting the hedgerow we discovered that neighbours on one side had inadvertently extended their pond into the very corner of our woodlot. When asked, they graciously filled in that section of their pond but that left an open corner which backed onto the field behind our house. I wondered what to do. In the end I decided to outline my property with cedars to help distinguish it from adjacent lots. The area

morning cup of coffee and stroll down the woodlot trail towards my garden. The springy ground feels so different from sidewalks or grass. I know immediately I have entered another world where rabbits or squirrels, tree frogs or snakes may be hiding from me or just going about their business, accepting of me as I am of them. New fungi may have sprung up since the previous day. The trees are thick with leaves, ferns gather in clumps along the forest floor and, in mid-summer, the air is cooler and delightfully refreshing in the forest shade. Then, around a bend in the trail I find my wet meadow of flowers, the bright yellow cup plants, the rich purple of ironweed and the white profusion of boneset, all soaking up the sun. I feel wonderfully refreshed and at peace.

Since my start in 2005, the elm trees have continued to die, at first replaced by the invasive European buckthorn (*Rhamnus cathartica*). Removing them had been my first priority and the task continues even six years later. I find that in the fall buckthorns retain their leaves longer than many natives and are easier to spot and pull out. In the spring I remove anything I can pull up and brush any suckering stumps with the herbicide Roundup. I still find hidden saplings to remove each year.

When we first moved here we shared a pond with our other neighbours. They decided to fill in their half 10 years ago. Green frogs, bullfrogs and leopard frogs had all been common but I didn't see or hear much from them anymore. Our half of the former pond had now changed to a vernal pool as much of the fill used next door eroded into the lower areas of our side of the pond. In the spring we still had standing water but it was usually just wet mud by summer's end. Last year I hired landscapers to deepen a small section of this low-lying area.

Within a week of deepening the pool and adding large stones for beauty, I had green frog eggs gracing the water. The landscaper added sedges (*Carex* spp.) to the rapidly spreading clump of blue flag iris (*Iris versicolor*) I'd bought from a NANPS plant sale. Deep red cardinal flowers (*Lobelia cardinalis*), rich gold marsh marigolds (*Caltha palustris*) and pale blue forget-me-nots (*Myosotis* spp.) further enhance the surrounding area. An expanding patch of yellow lady's

PHOTOGRAPH BY PATRICIA BALDWIN



Green frog eggs in vernal pool

that had been a pond was ideal for a wet meadow planting. Because it was hidden from view by the woodlot I dubbed it my secret garden. I put dense blazing star (*Liatris spicata*), cup plant (*Silphium perfoliatum*), boneset (*Eupatorium perfoliatum*), ironweed (*Vernonia* spp.), great blue lobelia (*Lobelia syphilitica*) and others in this area and they thrived. Professional landscapers have been surprised by the height of my flowering plants. Most of my cup plants reached their maximum height of three metres (10 feet) and are taller than the cedar trees (*Thuja* spp.) along the property line.

In the summer, my secret garden hums with pollinators. At times I have found dragonflies spread out on my cement bench like university students on a Mexican beach during spring break. How delightful to see their iridescent wings sparkling in the sun. It's amazingly therapeutic to take my



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Turtle eggs are relocated on the southern slope of a berm within the hedgerow

slipper orchids (*Cypripedium perviflorum*) is hiding under a cedar and likewise looks delightful with the forget-me-nots. Pretty, this vernal pool also provides an important breeding site for insects and amphibians.

The landscaper also expanded a prairie garden I had started a year earlier. Prairies depend on occasional fires so my husband burned some buckthorn branches in the site of my future prairie garden to help prepare the soil for new plantings. The garden was bordered by rocks to define it and cedar rails were installed to give the area a purposeful look and winter interest. We constructed a fire pit and patio area on one side. Within the prairie, I added at least one evergreen, *Juniperus virginiana*, a pasture rose (*Rosa carolina*) and a snowberry shrub (*Symphoricarpos albus*) to give it year-round appeal. Close to the fire pit, we put in prairie smoke (*Geum triflorum*) as it could withstand the high heat. More cup plants towered over the west side of the garden, propped up by the cedar rail fence to prevent them from spilling over onto the grassed pathway. Indian grass (*Sorghastrum nutans*), prairie brome (*Bromus kalmia*),

hoary vervain (*Verbena stricta*), wild bergamont (*Monarda fistulosa*), columbine (*Aquilegia canadensis*), black-eyed Susan (*Rudbeckia hirta*) and pale purple coneflower (*Echinacea pallida*) were some of the flowers and grasses introduced into this garden.

My final project with my landscaper was a rock-faced berm installed along my hedgerow border. When a mother turtle laid her eggs in a pile of topsoil by my driveway in June of last year, I read up about turtle nests on the Metro Zoo Adopt-A-Pond website (www.torontozoo.com/adoptapond/index.asp) and relocated her eggs to the south-facing berm. Later in the summer I noticed holes in the berm and hope that they were made by emerging turtle hatchlings rather than egg predators. This year I would like to install a more suitable turtle-nesting zone.

It's been six years since I first received those letters from the township regarding a new subdivision. It has yet to be built. Maybe all those letters I wrote to various levels of government had an effect?! In the meantime, I'm having far too much fun constructing my own wildlife haven. Every year I find myself dreaming of a new project to replace more lawn!

Patricia Baldwin of Port Perry, Ontario was a NANPS 2010 Garden Award winner.




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Virginia Barrier Islands

by Stephen Johnson

Though I became familiar with east coast beaches such as Nags Head in North Carolina, Myrtle Beach in South Carolina and Virginia Beach, Virginia long ago, I had never seen a pristine sand beach as found on a Virginia barrier island until I began field studies as a graduate student.

Sand barrier islands are located worldwide: the commonalities are river-delivered sand and isolation. Such islands are all along the east coast of North America; those in Virginia are much like barrier islands farther north, not influenced by the warming of the Gulf Stream which departs the east coast at Hatteras Island, North Carolina. Today these islands are uninhabited.

The principal islands in the 12-island, Nature Conservancy-owned Virginia barrier chain, used by ecological and geological scientists, are Hog and Parramore Islands located about halfway between Assateague Island (made famous by Marguerite Henry's book, *Misty of Chincoteague*) to the north and Fisherman Island at the mouth of Chesapeake Bay to the south. The only access is by boat winding its way through long and sinuous channels among miles of spartina-clad mud flats.

A barrier island is a complex and dynamic place with sand contours subject to often rapid change. The ocean-side beach is like any other seashore, but on these islands natural vegetation is allowed to grow wherever the proper habitats are available. It's splendidly isolated and you can hear the calls of shorebirds and crashing surf, and walk in a habitat described by the first English explorers to come here about 460 years ago.

My colleagues and I ventured to the north end of Hog Island hoping to arrive at high tide so that we could unload the boat directly onto the Machipongo Station dock, named for the Nassawodoc Indian word for "dusty place". It was the last of the Virginia barrier island life-saving

stations and is now used by researchers from Virginia Commonwealth University, University of Virginia and Old Dominion University. If we missed high tide we'd have to take hundreds of pounds of gear though ten yards of boot-sucking marsh muck!

After traveling through miles of low salt marsh dominated by salt marsh cordgrass (*Spartina alterniflora*), the first difference you see is the high salt marsh dominated by salt meadow hay (*Spartina patens*). Salt marsh cordgrass has a long association with people. Inhabitants of barrier islands once used it as animal forage. Today it is used as mulch by gardeners in the northeastern states. Salt marsh hay is not as dominating as salt marsh grass, so here you may be lucky enough to spot colours provided by high marsh wildflowers. We arrived in May when sea lavender (*Limonium carolinianum*) was in flower. Sea lavender is sometimes available in nurseries and flower shops all the way to the midwestern states, but observing it in natural conditions was most gratifying. Once I was lucky enough to spot a single flowering stem of maritime gerardia (*Agalinis maritima*), a hemiparasitic species attached to the roots of the surrounding salt meadow hay.

Here your attention can quickly be diverted by acute pain – from an attack by a green head horsefly. I chuckle now, but I can certainly sympathize with the response the first English explorers and settlers must have had to these biting flies referred

to as tabanids. Such vicious flies certainly impressed John White, artist and founder of the lost Roanoke Island (North Carolina). He painted the horsefly calling it "a dangerous biting fly". The impressive three-quarter-inch (19 millimetre) "green-heads" have eyes that look like green aviator sunglasses. They land on top of your head, carve a bowl out of your scalp with their jaws and lap up the pooling blood. The attack will certainly interrupt a wildflower reverie.

Behind the high salt marsh are towering shrubs of the spicily scented waxmyrtle (*Myrica cerifera*), the woody aster called groundsel tree (*Baccharis halmifolia*) and marsh elder (*Iva fructescens*). Hidden among the waxmyrtles was my study goal, the loblolly pine (*Pinus taeda*). I had to hack through yards of waxmyrtle with a machete to get to every tree, a sweaty endeavour guaranteed to draw thousands of frightfully large bloodsuckers known as salt marsh mosquitoes.

Behind Machipongo Station is a jeep



View atop Machipongo Station showing approach to Hog Island at low tide

PHOTOGRAPH BY STEPHEN JOHNSON

trail to the beach. Here you walk through time toward the ocean. The first dunes you encounter may be well over 100 years old. Next, you walk through a wide, wet and heavily vegetated depression called a swale to a younger dune perhaps 50 years old and then through a younger less vegetated swale until you reach the foredune, likely formed less than 25 years ago. The older dunes, called backdunes, and the older swales are monopolized by waxmyrtle growing so densely that no light reaches the ground. Younger backdunes, not so well covered, have prairie-like communities with a variety of wildflowers and grasses. One grass you will quickly get to know – due to spiny fruits that catch your socks and drill their way into your flesh – is sandbur (*Cenchrus tribuloides*). A wispy and almost shadow-less plant is three awn grass (*Aristida tuberculosa*). Its long awns, resembling cat whiskers, are arranged like the blades of tiny windmills. While the grasses aren't showy, they may bite you!

Here grow some of the most beautiful seaside wildflowers such as the open, pale yellow, bowl flowers of seaside primrose (*Oenothera humifusa*). Unlike the tall forms of inland primroses, this species is recumbent, hiding among the sandburs and three awns. The forbidding and inadequately named

yellow thistle (*Cirsium horridulum*) sits like a crowned citadel of vegetal broken glass, knives and needles with lower leaves exerting physical pressure on and killing anything growing nearby. An aesthetic counterpoint to yellow thistle is the velvet-leaved beach ground cherry (*Physalis viscosa* ssp. *maritima*) a State-level Threatened species with hidden yellow, pendulous flowers. Swaths of the vining and prostrate beach pea (*Strophostyles helvola*) spread over other areas of backdune. Covered in small pink flowers, this vine can act as quite a functional trip cord.

The beautiful sea pink (*Sabatia stellaris*) looks like few flowers on the mainland. I was fascinated by how the canary yellow base of the petals is separated from the major pink extent of petal by a thin red zigzag line appearing as if on the spacesuit of Flash Gordon. Another beautiful pink flower, purple false foxglove (*Agalinis purpurea*), is rare and found in freshwater marshes in swales, growing with host plants such as big-headed rush (*Juncus megacephalus*).

In the youngest swales, fresh

water from rainfall accumulates and hosts some rare species for the State of Virginia. Most of the wetlands are quickly colonized by graminoids such as squarestem spikerush (*Eleocharis quadrangulata*), blunt spikerush (*E. obtusa*), giant bulrush (*Scirpus validus*), chestnut sedge (*Fimbristylis castanea*) and – in drier areas – running beach grass (*Panicum amarum*). There are some diminutive, prostrate plants such as succulent-leaved marsh hyssop (*Bacopa monnieri*), a Threatened species in Virginia prized in ayurvedic medicine. Another spreading and recumbent plant is common frog fruit (*Lippia nodiflora*) which grows far south into the tropics (in Montserrat it is called “man better man”). A rare pink flower is the stinking saltmarsh fleabane which goes by the scientific name of *Pluchea foetida*, making it sound

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Tree Tenders Volunteer Training

This 15-hour training program is designed for Torontonians who want to gain tree-related knowledge and skills. If you've ever wanted to learn more about trees and how to properly care for them, this course for you!

Each session provides basic arboriculture training including indoor and outdoor instruction. The final day includes a group tree planting. Registration is required for fall sessions at www.yourleaf.org/tree-tenders-volunteer-training.

Fall course starts on September 27, 2011 at 6p.m. at Toronto Botanical Garden, 777 Lawrence Ave East. Cost is \$50/\$70 with course material plus HST.

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adorably disgusting! Sadly, the diversity of this habitat is fading fast with the colonization and rapid takeover by common reed (*Phragmites australis*).

Where the foredune is breached, the swale becomes salty or sand-covered in what are called overwashes. This is the most likely spot to find glassworts, the most common being annual glasswort (*Salicornia bigelovii*). In my peregrinations I would come upon a large mass of blood-red annual glasswort; its succulence reminded me of H. G. Well's "red weed" from War of the Worlds.

The foredune itself, facing constant salt spray and rising well above the water table, is a sparsely vegetated zone but one typically stabilized by American beach grass (*Ammophila breviligulata*). This grass is one of the only stabilizing influences for the developing foredune and is the focal point of female diamondback terrapins looking for a place to nest. Yet even in front of the foredune is a small guild of stalwart, salt-tolerant plants. The most bizarre is sea rocket (*Cakile edentula*) with fruits containing two types of seed-dispersal mechanisms. Growing from the foredune to the high tide line is the diminutive, mat-forming seaside spurge (*Euphorbia polygonifolia*). On a beach similar to this one Henry David Thoreau observed this same species, recording it in his book Cape Cod.

I also botanized southward on Hog Island walking on the thin and spongy ecotone between high salt marsh and shrub zone usually finding enough sure footing on rooted sand. Along the way I passed sea oxeye (*Borrichia fructescens*) and used my thumb to assess the sharpness of the erect bract of black needlerush (*Juncus roemarianus*). While doing this, I spotted an opening in the shrub zone and hacked my way to it. I found a tiny grove of large and probably old toothache trees (*Zanthoxylum clava-herculis*) all surrounding an immense oyster shell midden. Radford, Ahles and Bell in Flora of the Carolinas say that this is

the most likely place to find the trees on the coastal plain. In the Carolinas, Native Americans and early settlers used the bark of the tree medicinally to treat, among other things, toothaches. I found out later that the

coelestinum). I also discovered a record for the Virginia Barrier Island flora when I found a single clump of the mycotropic *Monotropa uniflora* that look like a handful of un-striped candy canes. Within five years of my



PHOTOGRAPH BY STEPHEN JOHNSON

Sabatia stellaris with *Fimbristylis castanea* in open dune community

midden was considered to be quite old and perhaps a remnant of Native American fishing expeditions to Hog Island. The toothache trees may have been planted in the 1920's or earlier by the inhabitants of Hog Island's nearly forgotten town of Broadwater.

In the 19th and early 20th century Hog Island boasted a large maritime forest, located primarily at its south end, composed of loblolly pine and perhaps other trees. After the east coast hurricane of 1933, the south end of Hog Island began eroding apace. Fifty years later, the island's maritime forest had fallen into the sea. The town of Broadwater can be found by scuba divers two miles (three kilometres) offshore.

I visited Parramore Island just twice. Parramore is the island immediately north of Hog and once supported a large maritime forest. I was lucky enough to be in this forest and see among the thick pine duff a single, but robust, pink ladyslipper (*Cypripedium acaule*) and the sky blue flowers of wild ageratum (*Eupatorium*

visit this loblolly pine forest was attacked and mostly killed by the southern pine bark beetle. Ten years later it burned to the ground from a lightning strike; the nice clean understorey of ladyslippers must by now be a developing thicket of waxmyrtle.

But these islands will forge on, as long as new sand is delivered by river outflow. Hog Island in the early to mid 1990's was forming new sandbars in the north. This early stage of beach building might eventually lead to the formation of the next foredune. Already by the mid 1990's the swales where marsh hyssop grew were being rapidly colonized by waxmyrtle. To the south I saw salt-killed waxmyrtle where the eroding beach came too close. The rapidity and relentlessness of change is especially clear on Wreck Island where I observed that remnants of salt marsh peat faced the crashing sea 20 years ago. Then, the island's foredune was rapidly progressing over marsh and into flowering prickly pear cactus (*Opuntia compressa*). New sand

Requests for Seeds

was colonized by quickly growing rhizomes of saltgrass (*Distichlis spicata*). Today, Wreck Island has lost two miles of its north end. As long as sand is provided in amounts greater than taken away by erosion from wind and waves, the islands will remain but in a state of constant change.

Stephen Johnson is a freelance ecologist and botanist originally from Virginia where he studied the effects of salt stress on loblolly pine on the Virginia Barrier Islands for his PhD thesis at Virginia Commonwealth University.

Daniel Campbell of Laurentian University in Sudbury, Ontario is planning to run an experiment on nitrogen-fixing species and he's trying to obtain seed for a few species, *Shepherdia canadensis*, *Elaeagnus comuttata*, *Astragalus alpinus*, *Lathyrus palustris* and *Vicia americana*. He would be interested in any sources, although more northern sources would be best. Contact him at 705-675-1151 ext. 2385 or dcampbell@laurentian.ca.



Kirsten Prior of the Department of Ecology and Evolution, University of Toronto is searching for seeds from native woodland forbs such as *Trillium* and *Viola* spp. and others. Contact her at k.prior@utoronto.ca.

Congratulations to NANPS Seed Collectors

We'd like to congratulate and thank the native plant enthusiasts who earned NANPS first-ever certificates in ethical native seed collection at our October 2010 workshop:

Ontario residents Andrew Gledhill of Markham, Heather Pankhurst of Pefferlaw and NANPS Director Paul LaPorte of Sunderland.

Salvaging Endangered Butternuts

When NANPS heard that the extension of the 404 Highway north of Toronto would involve the loss of several woodlots, home to some of the last of the threatened butternut trees (*Juglans cinerea*) in Ontario, we were greatly saddened. Faced with a "no alternatives" situation, NANPS President Greg Hagan and a host of NANPS volunteers rescued many saplings among other native plants. Greg and I are now caring for the trees.

Greg Humphreys, a green wood turner, salvaged the wood from the

adult butternuts slated for destruction and created bowls. Greg donated his works of art to the Maskinonge River Recovery Project and also to NANPS,



Bowls created by artist Greg Humphreys from butternut trees sacrificed to the extension of Highway 404

to fund restoration and raise money to preserve other woodlots. Several of Greg's bowls will be sold at a silent auction at NANPS AGM in October.

The Lake Simcoe Bowl, whose curious markings resemble the geographical features around Lake Simcoe, will remind us of the loss of the endangered butternut and the flora and fauna of these woodlots that have "paved" the way for people wanting a convenient drive up to the northern wilderness.

Sue Stephenson

PHOTOGRAPH BY SUE STEPHENSON

Calendar of Events

September 19-22, 2011

NORTH AMERICAN WEED MANAGEMENT ASSOCIATION CONFERENCE
Winnipeg, Manitoba
For more information:
www.invasivespeciesmanitoba.com/site/index.php.

September 24, 2011

NATURE IN THE 905 – NANPS FALL TOUR
Markham, Ontario
For more information email
excursions@nanps.org.

October 13-16, 2011

NATIVE PLANT SOCIETY OF TEXAS SYMPOSIUM
Houston, Texas
Visit www.npsot.org/symposium2011 for more info.

October 17-21, 2011

SOCIETY FOR ECOLOGICAL RESTORATION SOUTHEAST CHAPTER ANNUAL MEETING
New Trajectories and References for Ecological Restoration
Quincy, Florida
For details www.ser.org/events.asp.

October 22, 2011

NORTH AMERICAN NATIVE PLANT SOCIETY ANNUAL GENERAL MEETING
Markham, Ontario
Visit www.nanps.org for details.

March 1-3, 2012

MANGROVE ECOLOGY, MANAGEMENT AND RESTORATION TRAINING COURSE
Hollywood, Florida
For info, www.ser.org/events.asp.

Engelmann's Quillwort

by Paul Heydon

One might ask: what is a quillwort? Quillwort (this is both the singular and plural form) are aquatic fern allies (pteridophytes) and they belong to the Family Isoetaceae. Ferns are a diverse group of seedless plants and, in general, have larger leaves than the fern allies which have smaller leaves or none at all. Quillwort consist of grass-like leaves that arise from a two- or three-lobed corm that is buried in the soil, but otherwise have relatively few physical features. They have a long fossil record dating back to the early Triassic Period, which occurred 248-206 million years ago when dinosaurs and mammals first appeared on the time line. Easily recognized as a genus, quillwort species are hard to identify based on their appearance. Identification of species is done through examination of the ornamentation of the spores. They are definitely not the most beautiful plants, but beauty is in the eye of the beholder and I have become quite fond of them!

Engelmann's quillwort (*Isoetes engelmannii*) is usually found in shallow water near the shoreline in areas with minimal competition from other plant species, although sometimes it's found on wet ground on the shoreline. The aquatic substrate most commonly associated with quillwort is a sandy clay loam.

Engelmann's quillwort was listed as Endangered by COSEWIC (Committee on the Status of Endangered Wildlife in Canada) in 1992. Plans are underway to have it designated as Endangered provincially since it is known to exist in only two Canadian locations, both in Ontario. These populations are found at the Big Chute Muskoka District and Simcoe County, and at the Gull River, West Guilford, in Haliburton County. Together, these Ontario populations contain approximately 1,469 individuals. Engelmann's quillwort occur in Ontario in mixed populations with other quillwort,

including the common spiny-spored quillwort (*I. echinospora*).

These populations are thought to be remnants from the last glaciation. The popular theory is that the Canadian populations of Engelmann's quillwort are disjunct from the North American range of the species. It is postulated that the distribution of the Engelmann's quillwort in the Great



Engelmann's quillwort

Lakes Region of North America is related to dramatically different drainage patterns that existed following the end of the Wisconsin glaciation. This pattern of distribution is shared by an array of shoreline and aquatic species that are disjunct from their primarily Atlantic Coastal Plain range. Finally, there is no documentation of Engelmann's quillwort (or any quillwort species) being inadvertently transported in the wild in North America.

Engelmann's quillwort is most abundant in the eastern United States along the Atlantic coastal plain. However, many of the U.S. populations are in decline. Botanists believe that Engelmann's quillwort populations have declined throughout the northern and western portions of their North American range. Threats to these remaining quillwort populations include increased nutrient

levels and habitat degradation.

Both Ontario populations were studied with the goal of collecting many ecological parameters and running a genetic analysis. This study was performed by a contracted ecologist and geneticist through Parks Canada. This was the first ever North American ecological study of quillwort. The study looked at water

quality parameters, population estimates, associated plants and soil textures to determine which factors affect the distribution and abundance of the Engelmann's quillwort. It is postulated that low phosphorus levels, low competition, ice scour, and fresh (not stagnant) flowing water could be the most important factors enabling the viability of these populations. In the Ontario populations Engelmann's and other species of quillwort are generally found in high quality water bodies. Engelmann's quillwort are considered to be an indicator of high species diversity and water quality.

Paul Heydon is an ecologist and owner of Grow Wild! Native Plant Nursery. Funds for the Engelmann's quillwort project were provided (in part) by the Parks Canada Species at Risk Recovery Action Education Fund, a program supported by the National Strategy for the Protection of Species at Risk.

PHOTOGRAPH BY PAUL HEYDON

Acer platanoides - A Cautionary Tale

by Merle Gunby

Leaves: opposite, simple, dark green above, lustrous below; petiole exudes milky sap when broken

Habit: rounded, symmetrical crown, usually with very dense foliage and shallow root system

Flowers: yellow, produced in erect corymbs (clusters)

Fruit: samara (winged). Wings of the keys are widely spread

Landscape value: overused and overrated

Native habitat: continental Europe

Cultivars: many

This abridged listing gleaned from *Dirr's Manual of Woody Landscape Plants* describes the Norway maple, *Acer platanoides*, a tree that has dominated urban landscape plantings in much of North America for more than a century. A contrarian might include additional diagnostic terms, such as the following:

Leaves: leathery, cling to tree in autumn, tend to smother other plants and grass when they do fall

Habit: casts dense shade, needs lots of space; shallow moisture-sucking roots make it difficult even for grass to grow under it

Fruit: over-abundant! The keys create a nuisance when they flutter to the ground, often clogging drains or starting new generations of *A. platanoides* where they are not wanted.

Cultivars: far too many (the best-known is Crimson King) Note: subsequent generations of cultivars tend to regain characteristics of the parent species.

Referring to red-foliaged Norway maple cultivars, a public official recently enthused, "I just love all those red maples growing in our city . . . they're so beautiful!" Well maybe, but the real red maple, *Acer rubrum*, a species indigenous to much of eastern North America, has been displaced – along with other beautiful native maples – by this alien invader.

In *Trees in Canada*, John Laird

Farrar says there are 13 species of *Acer* native to North America; 10 are native to Canada. With all this variety to choose from, there should be no problem finding native maples for landscaping projects. In southern Ontario, three species come to mind: the aforementioned red maple which thrives in a great variety of soils and habitats, silver maple (*Acer saccharinum*) which grows best on



PHOTOGRAPH BY MERLE GUNBY

This sugar maple, Acer saccharum, in Owen Sound, Ontario has been providing shade and beauty for over 100 years as evidenced by the lumps and bumps on the trunk – character lines.

rich, moist bottomlands but is less tolerant of shade than red maple and, of course, sugar maple (*Acer saccharum*). This quintessential Canadian tree produces fine lumber, maple syrup, bright burning firewood and the pattern for Canada's flag. Sugar maples are major contributors to our spectacular fall forest colour display.

If aesthetics were the only issue, it would be none of our business what others planted. But, we cannot ignore the ecological ramifications of the Norway maple invasion. Humans have done it again – we've introduced an exotic species that has escaped the restrictions present in its original ecology. Without such controls it thrives in its new environment, crowding out the native flora that make up the inter-species continuum that provides food and habitat for a broad range of life forms, including microbes, insects, birds and other animals.

A cursory Google search informs us that many American states have restricted or banned the use of Norway maples. Some are even uprooting them from forested areas because their fecundity and dense shade inhibit native tree growth and regeneration of the undergrowth of herbaceous plants.

An excerpt from a computer search engine illustrates the problem in some

Toronto parks: "The leaves of the sugar maple, *Acer saccharum*, had fallen; those of the Norway maple were still retained. As a result it was all too apparent just what a threat this species presents to the forested ravines and other natural remnants of the maple-beech and oak forests of Toronto. . . A stunning and horrifying image was seen in many of Toronto's forests, of partial to continuous understorey of bright yellow [Norway maple] foliage."

One man took drastic measures when he purchased a home outside Toronto with a well-established Norway maple in the front yard. His first landscape chore was to climb the tree with chainsaw in hand, removing the tree limb by limb. He even dug out the root. He now has a nice lawn – but that is a whole other story.

Merle Gunby of Owen Sound, Ontario: farmer, photographer, salesman and occasional writer. Avocation: naturalist.

Continued from page 1

grows in damp thickets.) As you might guess by its northern range, blue giant hyssop is winter-hardy, surviving temperatures as low as -34 Celsius (-30 Fahrenheit). Should too many volunteer seedlings appear in your garden, gently dig them up and transplant them or offer them to your neighbour.

In late summer, when warm, humid days are followed by cool nights, the leaves of *Agastache foeniculum* can get powdery mildew. Control a light case by removing and disposing of affected leaves, or, do what I do and simply tolerate the presence of leaves that are only slightly blemished (but do not eat them). Cut back all severely affected plants to within 15 centimetres (five inches) of the soil and allow healthy new growth to appear in a few weeks.

I have noticed that bumblebees are really attracted to all three species (yellow, purple and blue). Yellow giant hyssop is listed by the University of Michigan State as one of "the 26 most attractive Michigan native perennials for attracting beneficial insects." While waiting for the flowers to develop, you can enjoy the edible, dark green, heart-shaped leaves that smell like licorice. The leaves have a mint-licorice taste (other common names of this plant are anise hyssop and licorice mint) and they can be consumed in salad, soups, iced teas and alcoholic drinks. The flowers too have the anise-mint taste and can be used to enhance salads.

Blue giant hyssop has been used by First Nations people as a breath-freshener, tea and sweetener. An infusion of the herb would relieve chest pains, and the roots were used for coughs. Today blue giant hyssop is commercially grown for an essential oil, known as methyl chavitol, found in the leaves. Removed by steam distillation, the essential oil is most commonly used in perfumes and as food flavouring. The oil has insecticidal properties and is used to control two pests of stored products – Indian meal moth and Mediterranean flour moth. Beekeepers take advantage of the commercial fields of this plant

because the honey made from the flowers is excellent.

With so many things going for it – beautiful blooms, care-free nature, medicinal qualities and edible leaves – giant blue hyssop will be a mainstay in my garden.

Graham Buck is passionate about the preservation of native landscapes and their recovery through ecological restoration and naturalization. To this end he owns and operates Nith River Native Plants in New Hamburg, Ontario, a company specializing in native plants, seeds and ecological restoration.

Letter to the Editor

John Mori's article on the "personality" of the eastern skunk cabbage struck a kindred chord in me. This plant is also my favourite member of our herbaceous native flora. The ecological relationships of *Symplocarpus foetidus* with associate organisms are especially fascinating. John cites examples of one mammal, one reptile, one mollusc and several insects.

A colleague and I researched this phenomenon in April, 1978 at Highland Creek Park, Scarborough, Ontario. (cf. WILDFLOWER 3(2): 36, 37.) Over a period of five visits throughout the month to this swamp, we collected organisms from the spathe interiors and spadix surfaces with an aspirator bottle.

Of the 46 arthropods collected, 15 (32%) were arachnids and 31 (68%) were insects suggesting a well-established predator/prey relationship between these two groups. All the insects were well-dusted with pollen and thus were potential pollinators. The organisms collected were from a 40 metres-square plot (431 square feet) containing approximately 735 specimens of mature, flowering eastern skunk cabbage.

*Jim Hodgins
Toronto, Ontario*

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Your donations and membership dollars help NANPS to study, conserve, cultivate and restore North America's native flora. Members receive our quarterly newsletter, *The Blazing Star*, and are eligible for NANPS-sponsored excursions and the Seed Exchange. NANPS is a registered charitable organization (no. 130720824 RR0001) founded in 1984. **Donations to the Society are tax-creditable in Canada. Tax receipts will be issued for donations of \$20 or more.**

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