The Blazing Star

Winter 2012, Volume 13, Issue 1

Newsletter of the North American Native Plant Society

Native Plant to Know

Jack Pine

Pinus banksiana

by Bill Moses

Come meet Jack Pine. You'll never see,
with luck, a tree less lovely than –
a tree more bent, more squat, more grim,
more weird and ugly than – Jack Pine.

Christopher Patton offered this less-than-flattering image of the jack pine (*Pinus banksiana*) in his children's book appropriately entitled *Jack Pine*. I imagine that for most Canadians our mental image of the jack pine derives from Tom Thompson's painting of the same name which depicts a sad, bedraggled, seemingly half-dead tree.

All this probably explains why you rarely see a jack pine in a landscaped setting, despite the fact that it's a fast-growing tree, even in poor soil conditions. Maybe people are not impressed with its sparse foliage which can only provide a sun-dappled, open shade. Of course, the tree suits those of us who prefer a naturalized woodland setting over a formal cookie-cutter landscape, but we seem to be in the minority.

The jack pine was "discovered" in the late 1760's by Sir Joseph Banks who explored the east coast of Canada with Captain James Cook, hence the species name *banksiana*. It is native to most of Canada and as far south as Missouri.

Jack pine is a medium-sized conifer achieving heights – under optimal conditions – from 25 to 30 metres (80-100 feet) over its lifetime of 50 to 60 years. It can grow in any kind of soil, straight and tall.

Pinus banksiana requires full sun. As the lower branches get shaded out, the needles drop off although the branches tend to stay on the tree even in their denuded state. On top of that, its needles drop after three years, a shorter period than for other pines. For example, the needles of white pine (*Pinus strobus*) live for about five years then gradually turn yellow and drop off in the fall. As a result, the jack pine has less foliage which, combined with the naked lower branches, gives it its scraggly appearance. Browsing by deer and other mammals doesn't help either. Birds probably eat the buds as well. I have seen buds excised from a twig far too neatly to suspect anything else (although I cannot totally reject the idea that it might be a worm of some sort).

Jack pine looks a bit like the non-native scotch pine (*Pinus sylvestris*); both have needles in pairs. However, the needles of the scotch pine tend to be longer and more twisted. As well, the cones of the jack pine are not

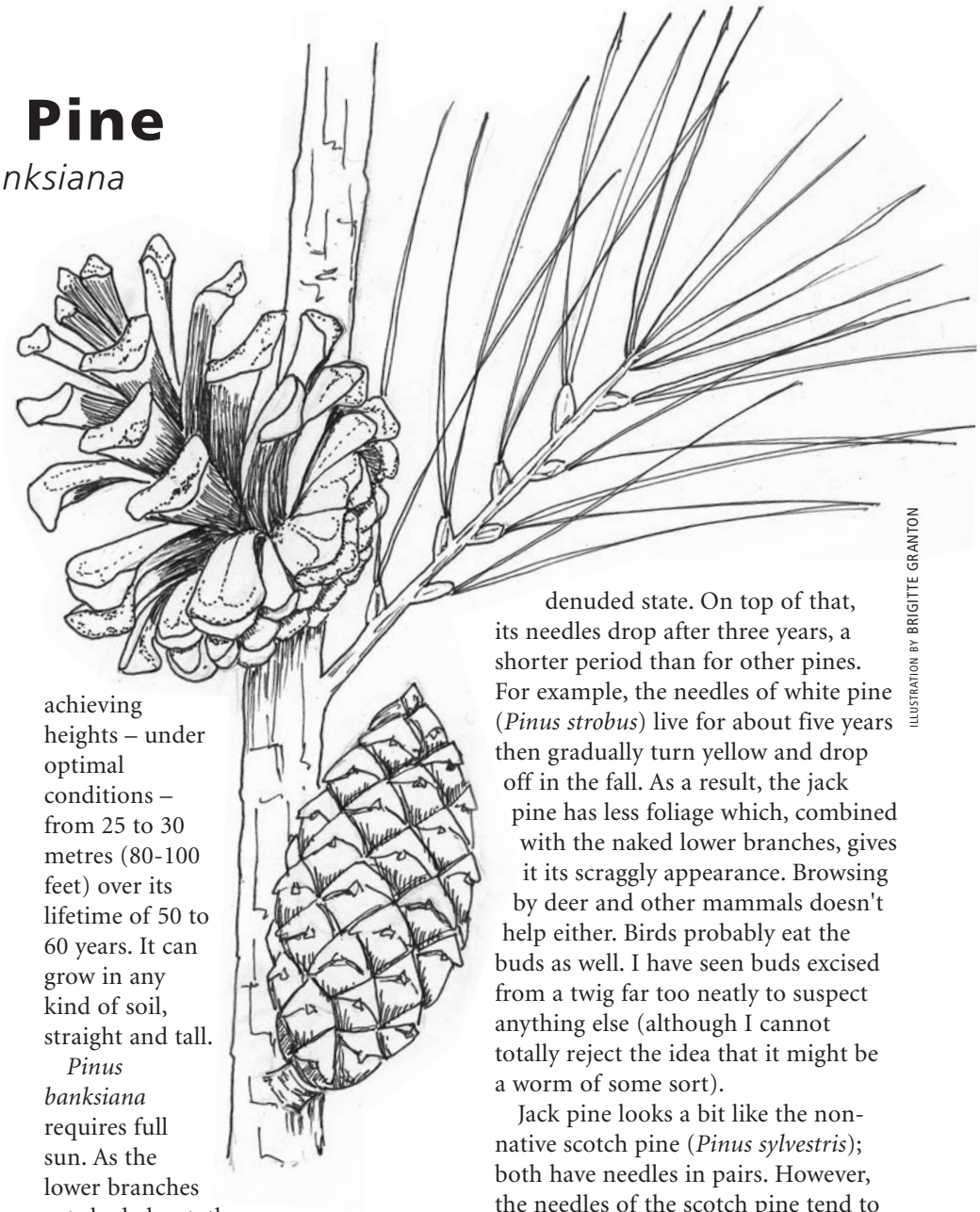

ILLUSTRATION BY BRIGITTE GRANTON

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The *Blazing Star* is . . .

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Web: www.nanps.org.

NANPS NEWS

NANPS has an exciting season of activities planned. Please visit our website at www.nanps.org for details about the upcoming events and more.

Building Landscapes for Future Sustainability

WEDNESDAY, FEBRUARY 29, 2012, 6:30 PM
Presentation by Paul O'Hara, botanist and owner of Blue Oak Native Landscapes, as part of NANPS 2012 Speakers' Series

John H. Daniels Faculty of Architecture Landscape and Design, University of Toronto, 230 College Street, Room 103, Toronto, Ontario
Visit www.nanps.org.

CANADA BLOOMS

Please be advised that **NANPS has a booth at Canada Blooms from Wednesday, March 21 to Sunday, March 25 only**. (Note that the dates indicated for NANPS participation in the previous issue of *The Blazing Star* were wrong.) Visit us in the Galleria near Salon 105 at Direct Energy Centre in Toronto. ***Volunteers needed and most welcome.*** Please contact Gerry Stephenson at volunteer@nanps.org.

Niagara Home & Garden Show

FRIDAY, APRIL 13 TO SUNDAY, APRIL 15, 2012
NANPS will be hosting a booth and volunteers are needed to answer questions and spread the word about native plants. Please contact Gerry at volunteer@nanps.org.

NANPS Annual Native Plant Sale

SATURDAY, MAY 12, 2012
10AM - 3PM
Markham Civic Centre
101 Town Centre Blvd.,
(Highway 7 at Warden)
Markham, Ontario
MEMBERS ADVANCE ORDERING now available. Visit www.nanps.org.
Volunteers and driver wanted.
Contact plantsale@nanps.org.

Rare Spring Excursion To NANPS Shining Tree Woods

SATURDAY, JUNE 16, 2012
NANPS Conservation Team, a small band of volunteers, has been fighting an invasion of garlic mustard at Shining Tree Woods to encourage native ferns, sedges, forbs, shrubs and saplings to take hold. We invite you to join their ranks in 2012 as participants in this rare investigation of NANPS premiere conservation property.

Our last formal excursion to this gorgeous forest took place in 2003 and space on that tour quickly sold out. Register early to avoid missing out!

This time, we're making the experience even more accessible. Thanks to a grant from the Shell Environment Fund, the price of admission has dropped to only $15!

Participants will also be invited to attend workshops before the tour outlining the problems caused by invasive species, and exploring vegetation mapping techniques, bird watching, orienteering and other conservation activities that will be put into practice during this excursion.

After an educational few hours, we'll continue on to one of Ontario's largest native plant nurseries. Visit www.nanps.org or to confirm your interest, contact land@nanps.org.

For more information, visit www.nanps.org or call (416) 631-4438.

Nature in the 905: Hope Grows in Markham

by John Oyston

On September 24th the North American Native Plant Society held an all-day tour in the Town of Markham, Ontario, last year's recipient of NANPS' Paul McGaw Memorial Conservation Award. The theme of the day: How could nature survive and even thrive in a suburban environment?

We were fortunate to have a congenial group, beautiful sunny fall weather, and hosts who talked knowledgeably and enthusiastically about each of the six sites we visited.

The tour began at Grandview Park, where European buckthorn (*Rhamnus cathartica*), garlic mustard (*Alliaria petiolata*) and periwinkle (*Vinca minor*), all invasive alien species, were threatening to take over. The Grandview Residents Association adopted the park, and Jane McCulloch showed us what they had achieved after hours of manual labour. As they were forbidden to use power tools, a row of mature buckthorns had to be cut down with hand tools. The roots were removed with forks and an "Extractigator", a tool designed to grip the trunk of a shrub and pull it up by the roots, using the handle as a lever. In one area thick black landscape fabric has been in place for two years to smother periwinkle. Most of the invasive species are now gone or in retreat, and native plants have room to thrive in this small piece of preserved forest.

PHOTOGRAPH BY JOHN OYSTON

Jane McCulloch shows off the rich diversity of native plants that have colonized Grandview Park since the local residents association eliminated the non-native invaders.

At the next stop, Wing Morse, the treasurer of the Pomona Mills Park Conservationists (PMPC), showed us a beautiful wildflower meadow next to St. Volodymyr`s Church, planted by volunteers on land which they had saved from development. One issue PMPC discussed was: "Do we want to leave nature to take its course?" If so, the sumachs (*Rhus typhina*) at the edge of the meadow would eventually take over the site. After much discussion, the group decided to retain an open sunny meadow, so they cut a path and limited the extent to which the sumachs would be allowed to spread. Pomona Mills Park was once a residential area but the houses were swept away by Hurricane Hazel in 1954 and a park was created in the valley which, thanks to PMPC, will retain its high biodiversity.

PHOTOGRAPH BY DEBORAH DALE

Karen Boniface, Wing Morse and John Oyston at Pomona Mills Park

The next stop was the Milne Dam Conservation Area, where NANPS Secretary Karen Boniface showed us several areas planted by volunteer groups that have become thriving natural habitats. The advantages are many, including reducing the amount of time and money that would have been spent on maintaining a larger lawn.

We then travelled further east to Bob Hunter Memorial Park. This park is due north of the existing Rouge Park, with a corn field on one side and new housing developments less than one kilometre (1/2 mile) away. Jim Robb, General Manager of Friends of the Rouge Watershed, gave a detailed account of the political struggle to protect the Rouge Valley from development. This movement has now succeeded, and in June 2011 it was announced that Bob Hunter Park would be part of a massive Rouge National Park. In contrast to the small parks we had seen so far, the Rouge National Park, if fully realised, could be as large as 100 square kilometres

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(39 square miles), right on the edge of the Greater Toronto Area suburbs.

Jim showed the work that was being done to convert farm fields into a mixed habitat of trees, grass and wildflowers. He described the process as being like throwing a palette of colours onto a canvas and letting nature create a masterpiece. For better or worse, as part of that process, over the next few decades, the trees will grow bigger and the sun-loving flowers will not survive in their shade. Only a few areas, such as hydro corridors, will remain open and sunny. The recreated landscape will differ from the original, but it will provide habitat and a place for human recreation, taking pressure off the undisturbed natural areas of the park. Jim talked about the conflicts between developers, farmers and those who wanted to protect and extend the natural environment. He suggested that farmers could use smaller plots of land more intensively to produce fresh vegetables for the thriving local food market, rather than taking up hundreds of hectares for corn and other cash crops.

Our next stop was a site on the east side of Donald Cousens Parkway. Construction crews were extending a huge housing development on the west side, but the east side was protected and cared for by 10,000 Trees for the Rouge volunteers. Marshall Buchanan, a professional forester, talked about the challenges of planting trees on giant berms which had been created with soil from the construction site. The sites had been compacted by construction equipment and were not in an ideal state for planting but, because funding and volunteers were available, these sites were immediately planted. As a result, the first planting did poorly. Later plantings have been more successful.

They are attempting to establish several oak groves, which are protected by deer fences and carefully maintained. During the planning phase of this project it was suggested that it may be better not to allow the public onto the site, to allow it to develop undisturbed, but that was voted down. There is now a small roadside parking area with a gate to allow walkers onto the site and a single well-worn path. As more houses are built and more people come to live in the area, the site may be damaged by foot traffic, dogs running loose and cyclists, but the current level of use is not a problem.

Our tour ended at the residence of Greg Hagan, NANPS president. Greg has a small city lot crammed with an amazing variety of native flowers, many rescued from construction sites. With the help of neighbours and with permission from several authorities, he has planted a creek bed behind his house, a laneway and a linear bed along the road. One enthusiastic, dedicated and knowledgeable person can certainly make a difference. Without the efforts of Greg and other volunteers, these plants would have been lost under concrete and tarmac.

Photograph by John Oyston

Bob Hunter Memorial Park's thriving ecosystem

There were several recurring themes on the tour. Every speaker stressed the importance of volunteers. Not only do they do much of the work, but also they act as advocates for the site. However, they must be closely supervised to ensure that they do not remove native plants when they are meant to be removing invasives and that they plant the right trees in the right locations. Many speakers commented on the support they had received from the Town of Markham in terms of advice, funding and supplies such as trees and mulch.

Most groups had political frustrations, most markedly at the Rouge Valley site. Conflicts arose between what donors wanted and the best approach to achieving a thriving ecosystem. For example, there is often pressure to plant as many trees as possible, to hit productivity targets and to plant larger trees for immediate

impact. Sudden influxes of large numbers of well-meaning but inexperienced volunteers can cause problems. Sponsors may expect groups to accept plant materials from the lowest bidder, rather than from local sources of ethically grown plants. What's more, suppliers may take advantage of a group that wants a lot of material cheaply for a one-day event by offloading inferior stock.

Overall, the results were encouraging. Each speaker was passionate about his or her site and had been able to recruit volunteers, attract funding and acquire supplies to make a real difference in the community. The whole process of protecting or extending natural areas has become much more scientific as lessons from one site are passed on to the next. We have moved away from planting vast acreages of monoculture conifers to creating a much more diverse natural environment, including trees, shrubs, wildflowers and grasses. The process of choosing the right species for the right site has become more rigorous, and we have a better understanding of how important it is to use locally cultivated species. We have learned that it is not just about planting; most sites require ongoing watering and maintenance for several years before they become established. Most importantly, we know that if we can get the habitat right, the birds, butterflies, reptiles and mammals will find it and thrive in it. Truly, hope does grow in Markham.

A great big thank you from NANPS to all our enthusiastic hosts who gave us the back story, making the site visits so enjoyable and educational.

John Oyston is a NANPS board member and tour leader, e-mail: excursions@nanps.org.

PHOTOGRAPH BY DEBORAH DALE

Visiting Greg Hagan's native plant garden

CORRECTION

The blank space on page 11 of the fall 2011 issue of *The Blazing Star* was intended for an advertisement for Not-So-Hollow Farms. Due to an editorial error the ad did not appear. Our apologies to Not-So-Hollow Farms and our readers.

Calendar of Events

February 23-24, 2012
WATER CONSERVATION AND XERISCAPE CONFERENCE 2012: COLLABORATIONS FOR NEW SOLUTIONS
Albuquerque, New Mexico
Organized by the Xeriscape Council of New Mexico. For more info e-mail news@xeriscapenm.com.

June 11-16, 2012
ISLE ROYALE BOTANY WORKSHOP
Isle Royale National Park, Michigan
Learn to identify early-season plants with botanist Janet Marr. For more information visit the Isle Royale & Keweenaw Parks Association website at irkpa.org.

July 27-29, 2012
FOURTH ANNUAL MIDWEST NATIVE PLANT CONFERENCE
Dayton, Ohio
Organized by the Midwest Native Plant Society - www.midwestnativeplants.org.

July 30-August 3, 2012
EXPLORATION OF TAHOE'S MOST SPECTACULAR WILDFLOWER GARDENS AND FASCINATING FLOWERS
Tahoe, California
This wildflower adventure will be led by Humanities and Social Sciences Professor and Blazing Star contributor Laird Blackwell. E-mail lblackwell@sierranevada.edu or call 775-849-2295 for details.
For info, www.ser.org/events.asp.

(For NANPS events visit page 2)

Maskinonge Plant Salvage

by Andee Pelan

When life hands you lemons, make lemonade! This adage ran through my head as I dropped my regular workplan and began organizing a native plant rescue operation.

In 2010, through my work with the Lake Simcoe Region Conservation Authority (LSRCA) I was presented with a unique opportunity to design a salvage operation from six woodlots that were slated to be cut in southern Ontario. These woodlots were to be either fully or partially cleared to allow for the expansion of Highway 404 from Newmarket to Keswick. Although these woodlots were fairly small in size, they represented a significant ecological loss to the local environment – a mainly treeless landscape dominated by agriculture and fallow land being held for future development.

The 404 extension will run alongside the Maskinonge River – one of several river systems feeding Lake Simcoe. The Maskinonge River Subwatershed (MRS) is one of the most ecologically degraded systems in the entire Lake Simcoe watershed basin. This is due to poor water quality and very small pockets of forests and streamside vegetation. The MRS has less than 12% forest cover which is far below the regional goal of 30%.

The problems in the Maskinonge are so vast that a special project was created in 2009 to deal with some of them on private land. The Maskinonge River Recovery Project (MRRP) is a community stewardship program designed to do on-the-ground environmental improvement projects. The MRRP is a partnership between the LSRCA, York Environmental Stewardship, the Towns of Georgina and East Gwillimbury, and *Save the Maskinonge*, a local environmental advocacy organization whose vocal opposition to the highway project may have made the plant rescue opportunity possible.

PHOTOGRAPH BY DEBORAH DALE

Bruce Carr lovingly embracing a tray of rescued bloodroot (Sanguinaria canadensis).

Since it began, the MRRP has carried out a wide array of interesting projects. We have planted thousands of native trees and shrubs along the river banks. Countless tons of rocks have been installed on river banks and beds in order to reduce erosion, add oxygen to the water and improve fish habitat. We have mounted bat, songbird and duck boxes, and built several snapping turtle nesting mounds. We've removed rotting old tires and toxic railway ties from the river and held public education events meant to raise awareness of the state of the river. We work with community groups and schools, and installed a native plant butterfly garden at Keswick High School. The funds used to pay for the garden were raised by the students who sold live, potted Christmas trees that people could

plant in their backyards.

The MRRP's success is due to strong partnerships between various levels of government and the community they serve. As well, this program was designed with a degree of flexibility that allows us to adapt to shifting conditions and to seize new opportunities as they arise. This was the case when the Ontario Ministry of Transportation (MTO) began discussions with us around compensation for the loss of the woodlots and agreed to fund the LSRCA to conduct a native plant salvage operation.

In a remarkably short period of time, the LSRCA hired a crew of four and set up a temporary nursery in order to receive the plants. The crew was hired for a five-week contract that began in early June 2010. The timing of the plant salvage was not ideal for the plants; rather it was determined by the small window of time afforded to us by the MTO. In short, the bulldozers were waiting.

To begin the project, I contacted the North American Native Plant Society and invited a small group to come out to tour the woodlots. Next, I contracted Paul Heydon of Grow Wild! Native Plant Nursery to enhance the crew's plant identification skills and highlight species that are particularly rare or difficult to propagate. This was an integral part of the operation. With Paul's assistance the crew was able to focus their efforts on the species that had the greatest potential to be successfully transplanted. Paul also gave advice on transplanting, handling and after-care of the plants which was critical when setting up the temporary nursery.

Armed with information, shovels, trowels, wheelbarrows, bug spray and a huge number of empty pots, the crew began their work. More than 3,300 flowers and herbs, 600 ferns and 300 sedges were dug up and put in pots and flats over the five-week contract.

Towards the end of the project, we organized a public Plant Rescue event. The event was advertised on the NANPS e-mail list, as well as in local papers and on various list-serves and websites. More than 200 participants joined the LSRCA and NANPS for the day. Although some folks expressed their disappointment at the loss of the woodlots, most were very excited by this rare opportunity to gather wild plants. The plant crew helped people

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PHOTOGRAPH BY JANET HARRISON

Paradise (Farr Woods, August 2010)

PHOTOGRAPH BY JANET HARRISON

Paradise gone: a road runs through it (Farr Woods, August 2010)

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load up their cars with pots full of wild ginger (*Asarum canadense*), ostrich fern (*Matteuccia struthiopteris*) and blue cohosh (*Caulophyllum thalictroides*). Flats of white trilliums (*Trillium grandiflorum*), wild leeks (*Allium tricoccum*) and woodland strawberries (*Fragaria vesca*) were loaded onto wheelbarrows and lugged back through the farm field to waiting vehicles. The more exciting finds included yellow lady's-slipper (*Cypripedium calceolus*), Christmas fern (*Polystichum acrostichoides*), red trillium (*Trillium erectum*) and Jack-in-the-pulpits (*Arisaema triphyllum*). The participation of NANPS volunteers who offered their plant identification skills at this event was invaluable.

Overall, this project was a great success, resulting in the salvaging of over 5,000 native plants that would have otherwise been lost to the highway development project. The plants have since been transplanted to several recipient sites in the Lake Simcoe Watershed including a restoration project on Georgina Island with the local First Nation. We hope that the genetic diversity of these plants – the value of which cannot be understated – has been saved.

With increasing development pressures on the landscape, remaining woodlots become fragmented little islands of nature. As fragmented landscapes become the norm, preserving genetic biodiversity with plant salvage operations will become increasingly important. I highly recommend that this type of activity be considered for other projects where mature woodlots are being removed.

In addition to preserving precious genetic biodiversity, there will be more native, climate-adapted plants available for restoration projects. From a public relations standpoint, this plant rescue operation may also have helped lessen some of the frustration or disappointment felt by the local community for the loss of these woodlots.

While plant salvage cannot and should not replace protection, it is one more tool that land managers could be using in order to compensate for the extreme pressures on our local environments that result from increasing growth.

Andee Pelan is the LSRCA's Maskinonge River Recovery Project Coordinator. With a background in eco-tourism, forestry and ecological restoration, Andee recognizes the importance of connectivity – both physically on the land as well as with the relationships people have with the land. For more information about the LSRCA's stewardship programs, please visit www.lsrca.on.ca/programs.

Rain Gardening in New York

by Emily DeBolt

As an environmental educator for a non-profit lake association in New York, I have spent the last few years educating homeowners, landscapers, and municipal board members about the benefits of using native plants in the landscape, particularly to help protect water quality. Using native plants to protect waterways is not a common topic for discussion – except among lake and watershed groups – but it's too valuable a secret to keep to ourselves.

As development and its resulting impermeable surfaces increase over time, precipitation can no longer soak into the ground. Instead it runs off these surfaces into our waterways, carrying pollutants with it. Our lakes, streams and rivers can only take so much. Nonpoint source pollution from stormwater runoff is responsible for the majority of impaired waterways in New York State. These waterbodies are not only critical ecosystems that need to be protected, but are also important for local tourism economies and property values.

The old way to deal with surface runoff was to direct it somewhere and collect it. You may have seen these retention ponds at nearby shopping malls and townhome complexes. This is gray infrastructure. The way of the future is green infrastructure. The idea behind green infrastructure for stormwater management design is to decrease the volume of stormwater to be dealt with. You aren't conveying and collecting the rain, but rather infiltrating and keeping the water on site by getting it into the ground as quickly as possible. Green infrastructure principles and practices allow for micro management of runoff, promote groundwater recharge, increase losses through evapotranspiration, and emulate the preconstruction hydrology. All of these benefits result in reduced water-quality-treatment volume.

One green infrastructure technique gaining in popularity is a rain garden. And this is where native plants come in. The deep roots of many natives absorb and filter runoff more effectively than the short roots of many turf grasses and other ornamental plants. This makes native plant rain gardening a great way to protect local waterways.

What is a rain garden?

A rain garden is a vegetated depression that collects stormwater runoff. By directing runoff into the garden, the rain that falls on rooftops, driveways and other impervious surfaces on your property infiltrates into the ground, recharging local and regional aquifers. Rain gardens also can help alleviate problems with flooding and drainage. They are pretty and functional, enhancing the beauty of yards and communities and providing valuable habitat and food for wildlife like birds and butterflies. Rain gardens also enable homeowners to manage small volumes of rainfall on their own properties, reducing the need for expensive municipal stormwater treatment structures.

PHOTOGRAPH BY EMILY DEBOLT

This rain garden was installed at the county fairgrounds in Essex County, New York, by the Essex County Soil and Water Conservation District with plants from the Fiddlehead Creek Farm & Native Plant Nursery. This is the first year of this garden, so it hasn't filled in yet. It has educational signage so that during the county fair people can learn about the native plants used in the garden.

Selecting Plants

Since a rain garden is flooded periodically, you need plants that can live in both wet and dry conditions. Plants in the middle of the garden

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Photograph by Emily DeBolt

After this rain garden has been dug, a base level of gravel for increased infiltration has been added, and then topsoil added and leveled, we lay out the plants to get ready for planting.

where it is deepest should be best adapted to very wet conditions, able to handle standing water for short periods of time. Plants on the edge of the garden should be able to handle brief inundations. Be sure to stabilize the berm around your garden that holds the water using grass or dry-tolerant native plants.

Determine if your site is sunny or shady. Remember – your garden needs six hours or more of sun to be considered "full sun". It is easiest to find sun-loving plants that work well for rain gardens, so keep this in mind when planning the garden's location. Think about the plant heights, colours, and blooming periods as well. Mix a variety of flowers, grasses, ferns and sedges, for different shapes and textures above – and different root depths below – the surface. Shrubs are great in rain gardens too if you have the space. Consider planting flowers in masses of colour to attract birds and butterflies.

A SAMPLE OF NEW YORK NATIVES FOR RAIN GARDENS

Lowest, Wettest Zone

Plants adapted to up to six inches (15 centimetres) standing water for short periods or "very wet"

- Blue flag iris *Iris versicolor*
- Crimson-eyed rosemallow *Hibiscus moscheutos*
- Wool grass *Scirpus cyperinus*
- Buttonbush *Cephalanthus occidentalis*
- Swamp rose *Rosa palustris*
- Swamp milkweed *Asclepias incarnata*
- Red twig dogwood *Cornus sericea*
- Sensitive fern *Onoclea sensibilis*
- Switch grass *Panicum virgatum*
- Common boneset *Eupatorium perfoliatum*

Middle Zone

Plants adapted to fluctuating water levels or "moderately wet"

- Arrowwood *Viburnum dentatum*
- Spicebush *Lindera benzoin*
- Common elderberry *Sambucus canadensis*
- Silky dogwood *Cornus amonum*
- Gray dogwood *Cornus racemosa*
- Cardinal flower *Lobelia cardinalis*
- Blue lobelia *Lobelia siphilitica*
- Winterberry *Ilex verticillata*
- Tufted hairgrass *Deschampsia caespitosa*
- Common rush *Juncus effusus*
- Cinnamon fern *Osmunda cinnamomea*
- Royal fern *Osmunda regalis*

Outer Zone

Upland species, moderately dry to dry – for planting around the berm and very edges of garden

- Witch hazel *Hamamelis virginiana*
- Serviceberry *Amelanchier canadensis*
- Joe Pye weed *Eupatorium fistulosum*
- Little bluestem *Schizachyrium scoparium*
- Indian grass *Sorghastrum nutans*
- Common sneezeweed *Helenium autumnale*
- Blue vervain *Verbena hastata*
- Wild columbine *Aquilegia canadensis*
- Wild geranium *Geranium maculatum*
- Cut-leaf coneflower *Rudbeckia laciniata*
- Shrubby sundrops *Oenothera fruticosa*

Note: some of the plants listed for the wettest zone will also work well in the middle, and vice versa.

Creating and Maintaining your Garden

Rain gardens can be a great homeowner project. Start by determining your drainage area and soil type, and deciding on the size of garden you want. The typical homeowner rain garden is 100-300 square feet (9-28 square metres). Larger gardens can be hard to dig and might require engineering. If you want a larger garden, consult a professional landscaper or engineer, or consider breaking it up into multiple smaller gardens that you can do yourself in stages.

Follow the tricks the professionals use and group plants in odd-number clumps, using three, five or seven individuals of the same species together. After you're done planting, mulch. Don't use bark mulch – it will float away when the garden fills after a rain. Hardwood mulches and pea gravel work best.

There are many great guides available as free pdf files online that walk you through all of the steps from selecting an appropriate site for your

garden, to sizing and digging, and finally planting the garden. A few of my favorites are:

- *Rain Gardens: A how-to manual for homeowners* by University of Wisconsin Extension. http://clean-water.uwex.edu/pubs/pdf/rgmanual.pdf
- *The Vermont Rain Garden Manual.* http://www.vacd.org/~winooski/VtRainGardenManual.pdf
- *Rain Gardens in Connecticut: A design guide for homeowners.* http://nemo.uconn.edu/publications/rain_garden_broch.pdf

After the first few rainfalls, take a look and see how the garden is doing. You can make adjustments as needed such as building up your berm or cutting it back in some locations. Placing a few rocks in strategic locations can break up fast-moving water and provide a nice ornamental feature. You will need to water the plants the first year until they are established, and weed just as you would with any garden. As the plants grow and fill in over time, the maintenance will decrease.

Finding Plants Native to Your Area

If you search for "rain garden plant list" online you will be overwhelmed with the choices. The challenge is determining which of those plants are native to your area and then finding a local nursery that sells them. In our part of upstate New York, lots of environmental groups and agencies encourage the planting of natives in home gardens but until recently there were no local nurseries that carried these plants within a few hours' drive. I was one of those people urging others to "go native" but most people would respond with: "Sounds great – where do I get the plants around here?" So my husband and I started our own nursery, Fiddlehead Creek Native Plant Nursery, three years ago. It has been a steep learning curve but, thanks to the help of many knowledgeable people, we are making

PHOTOGRAPH BY EMILY DEBOLT

*Turtlehead (*Chelone glabra*)*

our way. We specialize in native plants for rain gardens and shoreline buffers, but as any plant lover knows, it is hard to stop yourself once you start growing – so we grow a large selection of native grasses, perennials, ferns and shrubs for a variety of landscaping needs.

Since there are many misconceptions about what constitutes a "native plant", here is a simple definition: a native plant is one that grew in a given state or province before the arrival of Europeans. We live in New York so we grow only species native to New York. Of course, plants don't pay attention to state lines and their distribution can be vast, but, more often than not, a species that is native to the west coast will not be found in the east. Many larger nurseries and big box stores ignore this basic principle and sell plants from other parts of the country as "native plants" when they may not be native to your area at all. Selecting natives means choosing the plants best adapted to local soil and climactic conditions and most nutritious for local pollinators.

Choose native – and you'll get excited when it rains!

Emily DeBolt is co-owner of the Fiddlehead Creek Native Plant Nursery in New York State. To learn more go online at www.fiddleheadcreek.com.

New Lichen Named for Henry Kock

Artist Anne Hansen has purchased the scientific-naming rights to a newly discovered lichen in honour of her late husband Henry Kock. A passionate, beloved horticulturist, Henry died of brain cancer in 2005.

The species-naming rights for the new lichen were donated to Ancient Forest Alliance (www.ancientforestalliance.org) as a fundraiser by Trevor Goward, a lichen scientist at the University of British Columbia. Dr. Goward recently discovered what will now be called ***Bryoria kockiana***.

Dubbed "Mr. Arboretum" at the University of Guelph where he worked for 20 years, Henry was an enthusiastic proponent of habitat restoration, plant propagation and shelterbelt agriculture. He established the Elm Recovery Project at the Arboretum and he is the original author of ***Growing Trees from Seed***, a book published in 2008 by Firefly Books Ltd. It was completed by Henry's botanical colleagues Paul Aird, John Ambrose and Gerald Waldron.

Anne Hansen, who moved to British Columbia in 2007 to pursue her art, says of her late husband, "Henry was a tireless champion of biodiversity and inconspicuous species like toads, lichens and sedges. Organic gardening became his life's work after an unfortunate early vocational exposure to pesticides. Many native gardens throughout southern Ontario owe their existence to Henry's classes at the Arboretum and his travelling presentations. His own garden, which he transformed from lawn to forest, was lovingly called the Hotel of the Trees."

In a tribute to the celebrated environmental activist, the Gosling Foundation helped establish a new greenhouse at the university and asked that it be named the Henry Kock Propagation Centre. Fittingly, a lichen – which bears a strong resemblance to Henry's beard – will now carry his name as well!

Inglis Falls Native Tree Nursery

by Bill Moses

In the Owen Sound, Ontario area, I am part of a small band of people working hard to increase the awareness of that special set of plants that do not receive enough attention or respect. I am talking, of course, about our native plants. Our dedicated group of volunteers operates the Inglis Falls Native Tree Nursery. As an arboretum we deal with the woody natives (trees, shrubs and vines). To achieve native status in our operation, the plant must be indigenous to Grey or Bruce County.

There is a lot of confusion about what is and what is not a native plant. A good example is the wild grape (*Vitis riparia*). Many people are surprised that this aggressive plant is native because it appears to be obsessed with smothering other plants. In fact, the wild grape lived in harmony with its neighbours for thousands of years before the arrival of the Europeans. Whatever damage it did, other plants soon learned to cope. We have to realize that large trees also attack other plants although in a less dramatic manner. They shade out plants that grow beneath them either stunting them or worse. But it's all part of the natural order of things ….which we humans have upset to our detriment and that of the planet.

At the Inglis Falls Nursery we rely on the slim publication *A Checklist of Vascular Plants for Bruce and Grey Counties* as the final arbiter for determining our list of native woody plants. (This checklist is maintained by the Bruce-Grey Plant Committee of the Owen Sound Field Naturalists.) A plant's woody status (other than the obvious – trees) is determined by its inclusion in *Shrubs of Ontario* by James H. Soper and Margaret L. Heimburger. Our native plant list includes approximately 120 shrubs, 50 trees and 10 vines. Some of the accepted woodies may come as a surprise: perhaps the most recognizable would be bunchberry (*Cornus canadensis*), a lovely, low-growing, woodland plant with white flowers in the spring and bright red berries in late summer. Classifying a plant as a tree, a shrub or a vine is a somewhat arbitrary determination, of course. On a recent guided hike I referred to glaucous honeysuckle (*Lonicera dioica*) as a vine. The hike leader, a person of qualification, corrected me. It was not a vine because it only sprawled. Soper calls it a semi-erect shrub or a twining woody vine.

PHOTOGRAPH BY BILL MOSES

The Inglis Falls Nursery donates plants to public projects in an effort to popularize native plantings.

Planting at the Inglis Falls Arboretum began in the mid-'60s. Despite the original concept – to plant only indigenous species – exotic plants were included because it was thought that the public might find them more appealing. Once the arboretum expanded (assisted by the purchase of more land), this older section became known as Trees of the World.

In 2000, several enthusiasts formed the Arboretum Alliance to oversee the expansion of the arboretum. A design was prepared by a landscape architectural firm which included a propagation area. The decision was again made to use only native woody plants of Grey and Bruce Counties.

The propagation area is entirely a volunteer operation coordinated by the Arboretum Alliance which in turn operates under the auspices of the Grey Sauble Conservation Authority. The basic components of the propagation area are a greenhouse, a shade house and a cold frame for stratification of the seeds that we collect. Most seeds of local woody plants need to be kept cold and damp for a period of time before they will germinate. This process is called cold stratification. (The seeds of the soft maples, silver maple [*Acer saccharinum*] and red maple [*A. rubrum*], are collected in the spring and do not require a cold stratification period.) Rain from a nearby barn roof provides us with our water supply.

Our current activities revolve around collecting seed, processing the seed, planting it and then storing it in our pest-proof cold frame for the

winter. As the seedlings develop in the spring we set them out in our shade house in squares 60 x 60 centimetres (two feet by two feet). In our shade house layout there are 140 squares and currently we are growing about 60 species.

Plants from the shade house can be planted directly in the arboretum, sold as is, donated to schools, garden clubs or other organizations doing plantings in public areas, or planted into an outside garden to grow some more. We are at the greenhouse every Saturday morning from early spring to late fall. We sell native plants, extol their virtues, conduct tours of our operation and give free plants to children. Members of the public may bring plants for identification.

Inglis Falls Native Plant Nursery objectives:

1. To provide a place where people can learn propagation techniques for, and the habits of, our indigenous plants. Here they can also learn to identify native woody plants in the field. This can be done through Saturday morning visits, asking questions, purchasing inexpensive native plants and/or volunteering. Visiting by appointment is always a definite possibility. If people are interested at all in native woody plants and are in the area, a visit to our operation is a must!

2. To sensitize people to the concept – and importance – of biodiversity. The community of native plants and their relationships with each other that has developed over the last 10,000 years has been dramatically altered and can never be put back together again. It is important to protect what is left and attempt not to inflict further stresses. Not all our customers are attuned to this concept.

A lot of our visitors will ask for "what grows fast." We can offer them a silver maple (a popular tree) that is a year old and 60 centimetres high (two feet) for $2 but they almost always opt for the two-year-old tree that's 1.2 - 1.5 metres (four to five feet) tall for $5. We'll even give customers our 15-centimetre (six-inch) seedlings for free if they pot them up but there are very few takers for this great deal.

This is not to complain. Rather it is an opportunity to make the case for diversity. The fact is that there are popular native plants (the ones that grow fast or have other "attractive" features) and unpopular ones. Planting just the popular ones does not create a natural environment.

Some people want "colour". They have become accustomed to bright flowers or stunning fall foliage on cultivated or genetically modified plants trimmed or otherwise manipulated to create a painting-like landscape year-round. Plants in their natural state are considered untidy and plain. I am sure you could take any person and with dyes, plastic surgery, make-up and clothes give them a striking look but it's important to realize that the look is merely superficial. All this points to the fact that we have a long way to go.

Our ideal client is one who is interested in growing a variety of native plants as a learning experience. We are hoping that once we have completed a natural woodland setting of native plants in our new section of the arboretum it will be easier to make converts.

3. To work with the education system curriculum to provide plant materials and a demonstration area for propagating trees as well as our expertise as a resource for teachers. School groups now come for visits and learn some basic botanical and environmental concepts. As the demand grows, we will need to expand our volunteer base. As well, it will be necessary to make it easy for teachers to access what we have to offer. Organizing and financing a one-day bus tour to visit the arboretum is a major undertaking. Taking the activity

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PHOTOGRAPH BY BILL MOSES

Native woody plant seeds being processed for planting

PHOTOGRAPH BY BILL MOSES

*Merle Gunby collecting hemlock seed (*Tsuga canadensis*) on a roadway beside a property owned by the Nature Conservancy of Canada known locally as Cinnamon Bog*

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to the schools might make more sense. Another aspect is timing. A teacher can use lima beans to demonstrate how plants grow at any time of the school year. To use maple seed requires that the lesson be taught when the seeds are available. These are all issues that have to be worked out.

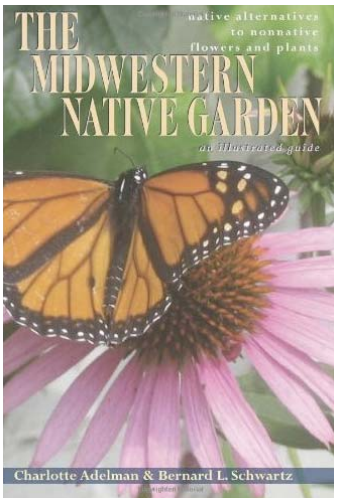
The important point is that we have the resources and we stand ready to assist in any way we can.

The Inglis Falls Native Plant Nursery is a larger-scale operation but anyone with a decent-sized yard can have a small area set aside for propagation of native plants and then give the plants you have brought into this world to friends or family who might appreciate them. It can be a very satisfying hobby!

Bill Moses heads up the Inglis Falls Native Plant Nursery volunteer team. Contact him at bill.mosesos@gmail.com.

New & Noted

The Midwestern Native Garden: Native Alternatives to Nonnative Flowers and Plants, An Illustrated Guide
by Charlotte Adelman and Bernard L. Schwartz
2011, Ohio University Press
Paperback, 268 pages



Midwestern gardeners have the great good fortune to be the targeted readers for this beautiful guide that offers native alternatives to the conventional plants sold by mainstream nurseries. *The Midwestern Native Garden* covers native forbs, grasses, sedges and vines that resemble (or have the same cultural requirements as) often-planted alien ornamentals. Many of the natives chosen bloom during the same season as the plants they would displace. Detailed plant entries are accompanied by colour photographs and illustrations not only of the plants (native and non) but also the birds, butterflies or other insects that the native plants attract. The images of pollinators are a special treat, one rarely found in such abundance in plant guides.

The Cultivation and Nature Notes contain useful and sometimes delightful bits of information. Here's an example from the entry on bishop's cap (*Mitella dyphilla*): "Each flower is replaced by an open capsule that contains many small seeds, which are distributed by raindrops. They strike the capsule and cause it to bend, flinging some of its seeds."

I have one request for the revised edition of this guide, whenever it may come out: I would love it if the authors would indicate which natives are best-equipped to outcompete the most aggressive of the non-natives. Take goutweed (*Aegopodium* spp.), a determined invader, often from neighbours' yards. The list of native alternatives given in *The Midwestern Native Garden* is long but seemingly intended for gardeners starting with a blank slate. The book might be saying, "If you like the look of this plant, for Earth's sake, don't plant it. Use mountainmint (*Pycnanthemum* spp.), skullcap (*Scutellaria* spp.) or Canada anemone (*Anemone canadensis*) instead." It would be helpful if the authors added, for example, that Virginia waterleaf (*Hydrophyllum virginianum*), although it may not look much like goutweed, is apparently able to hold back the invading armies and maybe even make inroads into their ranks! No doubt there are other natives among those mentioned that could do the same. Any such hints would be most appreciated.

The Midwestern Native Garden is a fascinating and informative book, even for someone who lives in a region originally covered by eastern forest and not midwestern prairie.

Review by Irene Fedun, editor of The Blazing Star

ANSWERS TO SEEDHEAD QUIZ in fall 2011 Blazing Star

Top left: Sweet Joe Pye weed (*Eupatorium purpureum*)
Bottom left: Great St. John's wort (*Hypericum pyramidatum*)
Top right: Blazing star (*Liatris* sp.)
Bottom right: Ironweed (*Vernonia* sp.)

Continued from page 1

symmetrical. They have no stem but are attached directly to the branch and the cone is "glued" shut (serotinous) and stays on the tree for years. This hard shell leads red squirrels and their kin to leave the cones alone.

This brings us to one of the important facts about this tree. It requires forest fires for the cones to open and the seeds to be released. Surprisingly, the cones provide enough protection to the seeds that they are able to withstand the heat of the fire and remain viable. The fire also burns the litter on the ground leaving bare soil. After a fire, a thick blanket of jack pine seedlings will soon cover the site. This blanket of trees helps to prevent erosion and keeps the soil from drying out. Typically, every 50 years or so, a pure, even-aged stand of jack pine will burn and be replaced by another even-aged stand which will last another 50 years. Large tracts of these jack pine stands are required for the successful breeding of the Kirtland's warbler, a threatened species.

In Michigan, "jack pine stands are managed by logging, burning, seeding, and replanting on a rotational basis to provide approximately 38,000 acres [15,000 hectares] of productive nesting habitat at all times. By carrying these stands to a 50-year rotational age, nesting habitat can be maintained for the warblers with little sacrifice to the commercial harvest of jack pine. These jack pine stands also provide habitat for the upland sandpiper, eastern bluebird, white-tailed deer, black bear and snowshoe hare, and for several protected prairie plants, including the Allegheny plum [*Prunus alleghaniensis*], Hill's thistle [*Cirsium hillii*], and rough fescue [*Festuca scabrella*]". (This quote was taken from the Michigan Department of Natural Resources website page about the Kirtland's warbler.)

Since jack pine is a short-lived tree, in most places it is supplanted by longer-lived species such as white spruce (*Picea glauca*) or tamarack (*Larix laricina*). However, in places where the soil and/or weather are poor – such as the boreal forest with its shallow soils, muskeg and tundra, and harsh climate – only jack pine will prosper. A jack pine seedling can grow 30 centimetres (one foot) in its first year, and start producing cones at five to 10 years old, even under such difficult conditions. This species has adapted to grow where other trees cannot, even able to endure sudden temperature swings during extreme cold. This explains the tree's often stunted appearance.

On a recent trip to Singing Sands within the Bruce Peninsula National Park I noted some jack pines growing near the parking lot in pure sand, as is their wont. Nearby was a smaller tree with cones but some of them had started to open. I took a while to convince myself that this too was a jack pine. The literature does say that sometimes the hot sun will cause the cones to open but I do wonder if this was true in this instance. Perhaps cones of young trees have less glue. A theory to be examined.

Jack pine is an important source of pulpwood, lumber and round timber despite the fact that the wood is moderately soft, resinous, coarse-textured and unable to last long in a humid environment. First Nations' peoples ate the young needles for the Vitamin C.

European settlers, when they cleared the land of jack pine, often found that the soil was so poor it would not grow crops. Some settlers came to the conclusion that the jack pine must have put a curse on them and so they tended to avoid places where it grew. I would suggest that jack pine's adaptability to conditions where other species cannot survive is a blessing, not a curse, one that more of us could learn to exploit.

Bill Moses is a volunteer at the Inglis Falls Arboretum in Owen Sound, Ontario. After researching this article he is determined to grow jack pine in the Arboretum's native nursery.

Canadian Pollinator Advocate Named

In 2011, NANPS member Dr. Clement Kent was honoured as the North American Pollinator Protection Campaign's (NAPPC) Canadian Pollinator Advocate. Clement founded the Pollinator Gardens Project of the Horticultural Societies of Parkdale and Toronto, and conceived and designed an indoor pollinator garden for Canada Blooms, the largest garden show in Canada. His own garden is also a haven for wildlife.

Clement readily acknowledges the support and inspiration he has received from scientists at York University in Toronto where he is studying honeybee genetics. For their commitment to environmental education, he praises Dr. Laurence Packer, melittologist and author of the book *Keeping the Bees: Why All Bees Are At Risk and What We Can Do To Save Them*, Laurence's colleague and co-author on many scientific papers Prof. Amro Zayed, ornithologist Dr. Bridget Stutchbury, and biologist and biopsychologist Dr. Gail Fraser.

Four other pollinator advocates were feted at NAPPC's awards ceremony held in October of last year. Dr. Isabel Ramirez, who has been promoting and protecting overwintering habitat for monarch butterflies, received the Pollinator Advocate Mexico honour. Farmer-Rancher Pollinator Conservation Award winners were Peter and Laura Berthelsen, who have created butterfly habitat and an outdoor classroom on their land in Elba, Nebraska. Pollinator Advocate Jimmy Brown has incorporated pollinator habitat development into the management practices of Energy United holdings in North Carolina, creating a network of potential pollinator habitat spanning over 1,000 miles (1,600 kilometres).

Congratulations and many thanks to these committed individuals!

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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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