The Blazing Star

Summer 2003, Volume 4, Issue 3

Newsletter of the North American Native Plant Society

Native Plant to Know

Black gum

Nyssa sylvatica

by Tom Atkinson

Black gum, pepperidge, tupelo – these are a few of the vernacular names for that delight among Mother Nature's panoply of large woody plants known as trees - *Nyssa sylvatica*. Not too long ago I knew nothing about this plant, but now that I have "seen the light" I wander about preaching its virtues with a missionary's zeal.

The range of *Nyssa sylvatica* is extensive, from Ontario and New England, south through the eastern United States, veering west to Texas and even into upland areas of central Mexico. In the region that is familiar to me, extreme southern Ontario, black gum is found in areas that stay moist due to ephemeral spring flooding and a high water table. One of these is the North American Native Plant Society's nature reserve, known as Shining Tree Woods, on the northern shore of Lake Erie.

To see a black gum as stripling, perhaps three to five metres high (three to five yards), is to view an Adonis of woody plants: sheer beauty with a strong central leader, horizontal to slightly downward-sloping branches, an

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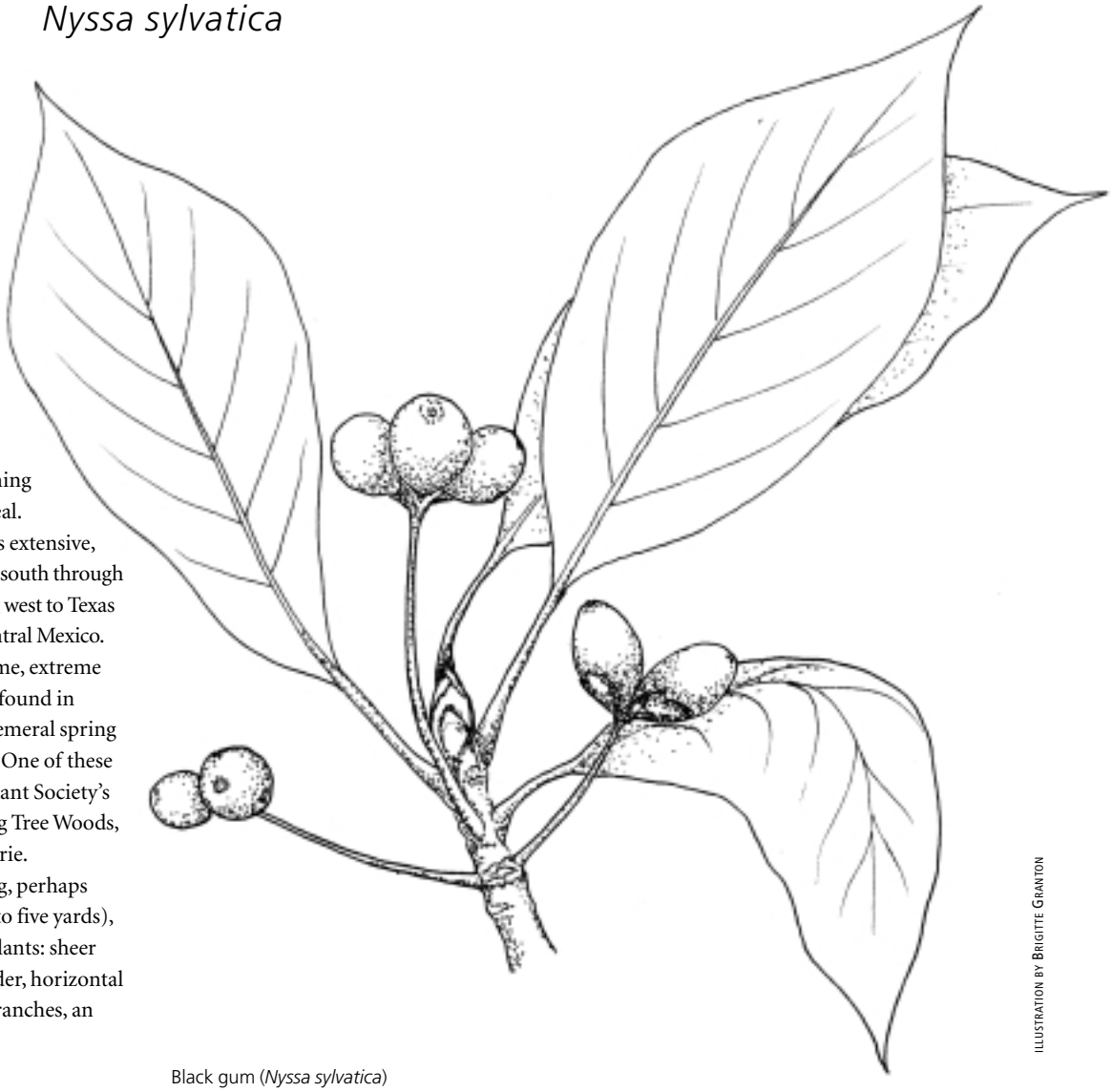

Illustration by Brigitte Granton

Black gum (*Nyssa sylvatica*)

The *Blazing Star* is . . .

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From the Editor...

With another busy spring complete NANPS members can relax and take pride in their accomplishments – a bustling Canada Blooms display where we signed up 94 new members, a successful Seed Exchange, the ever-popular Plant Sale and our latest acquisition, a pristine alvar on the shores of Lake Huron known as Zinkan Cove which we plan to protect in perpetuity. (Watch for an article in the fall 2003 issue of the *Blazing Star*.)

There's a multitude of people to thank: Trish Murphy is responsible for initiating the Zinkan Cove purchase and organizing the Seed Exchange, and Darcie McKelvey, Feng Gao and Tom Atkinson ably handled the Plant Sale. But they also had a lot of help. Many thanks to: Pat Agnew, Eric Bauer, Rita Bauer, Nicholas Bugiel, Alexandrina CantoThaler, Mary Clark, Catherine Crockett, Margaret Crockett, Grif Cunningham, Eva D'Amico, James Dale, Monica Dennis, Judy Edwards, Tom Du, Kathy Edgar (our accounting guru), Victor Feodorov, Dave Ferguson, Martin Field, Scott Guthrie, Greg Hagan, Phyllis Head, Miriam Henriques, Judy Hernandez, Colin Hinz, Carole Howlett, Bill Kilburn, Carolyn King, Lorraine Johnson, Mary Ellen Leyerle, Donna McGlone, John McGlone, Cameron McKelvey, Howard Meadd, Daisy Moore, Malle Nagy, Peter Nagy, Jo Nelson, Mary Newel, Barbara O'Malley, Art Scrannage, Susan Slottow, Harold Smith, Cornelius Sommer, Virginia Strickland Hart, Erica Thimm (the photo lady), Agnes Vandergang, Richard Woolger (the fern man), Isik Zeytinoglu and Emily Zhang.

We'd especially like to mention long-time Seed Exchange supplier Jan Murphy of Kingston, Ontario who single-handedly represented NANPS at a local native plant workshop and signed up 10 new members.

Not to be forgotten are the regulars who stuff newsletters into envelopes: Darcie McKelvey, Art Scrannage and Susan Slottow. A warm thank you to all.

Winners of our 2003 plant sale survey include Phyllis Head, Dorothy Marchesan and Daphen Svenningson who received autographed copies of "The Gardener's Manifesto" by Lorraine Johnson, Debbie Wilkinson who won a year-long membership to NANPS and Marg Horton who bagged a $10 gift certificate. Congratulations!

Two big events coming up in the fall include the NANPS annual general meeting (see below for details) and the Clear Creek Forest outing (flip to page 12 for more information). We hope to see you at both.

Irene Fedun

NORTH AMERICAN NATIVE PLANT SOCIETY Annual General Meeting

October 4, 2003 - from 10AM – 2PM

Civic Garden Centre
777 Lawrence Avenue East (at Leslie)
Toronto, Ontario

- election of 2004 board of directors – Note: If you are unable to attend the AGM you may submit a written proxy to a member in attendance or a member of the executive prior to the meeting
- plant sale and seed exchange
- presenters include Henry Kock, interpretive horticulturalist and plant propagator at the University of Guelph Arboretum, Guelph, Ontario
- refreshments served

Don't forget to bring in native plant donations and seeds for the exchange!

Woody Plants: the Backbone of our Landscape

Henry Kock will talk about the eight-year evolution of his garden from a "blank slate of lawn" into a woodland and mini-marsh teeming with ephemerals, wildflowers, sedges, grasses and native shrubs, and bursting with wildlife. He will also describe the Elm Recovery Project he established at the University of Guelph Arboretum in collaboration with the University of Toronto and draw from the manual he is writing on the ecology and propagation of woody plants in the Great Lakes Watershed.

Sowing the Seed

by Diana Baragar

PHOTOGRAPH COURTESY DIANA BARAGAR

The new native plant demonstration bed at the John Janzen Nature Centre in Edmonton.

We call ourselves the Edmonton Naturalization Group (ENG). Our goal is to encourage the use of local wildflowers and shrubs in landscaping on both private and public property, including schoolgrounds, parks and roadsides.

In 1997, to protect children from poisons, Cherry Dodd obtained a pesticide-free designation for Donnan Park sports field close to her home in Edmonton, Alberta. The park borders Mill Creek Ravine Park which is several kilometres (or miles) long and mostly natural. Still, not all the vegetation in the ravine is native. Canada thistles (*Cirsium arvense*), which despite their name are native to Europe, have taken up residence here. So Cherry started pulling them up. She also requested that the grass not be mown close to the native trees. There she planted rhombic-leaved sunflowers (*Helianthus subrhomboideus*), meadow arnica (*Arnica chamissonis*) and giant hyssop (*Agastache foeniculum*). She grew all of them from seed.

The following year I saw a pesticide truck spraying the thistles in front of my house which faces Mill Creek Ravine Park. To protect my grandchildren and preserve the native Flodman's thistle (*Cirsium flodmanii*) I made a commitment to the City to control the Canada thistles and other noxious weeds (a Provincial designation) so there would be no need for herbicides. Cherry was in agreement so she and I chose several areas of the park where the natives outnumbered the non-natives and began weeding.

Thus the Thistle Patrol was born. Under the City of Edmonton's Partners-in-Parks program volunteers are now caring for several natural areas by removing the weeds. One area had been planted previously with native shrubs by volunteers from Canadian Airlines. ENG is now replanting natives in the adjoining grassy strips that are no longer mown (at our request). We have discovered that many natives return to unmown areas including balsam and aspen poplars (*Populus balsamifera, P. tremuloides*), saskatoon (*Amelanchier alnifolia*), roses (*Rosa acicularis, R. woodsii*), showy and smooth asters (*Aster conspicuus, A. laevis*), yarrow (*Achillea millefolium*), wild red raspberry (*Rubus idaeus*) and even a blue-eyed grass (*Sisynrinchium montanum*).

In 1998-9 a group of us, under the leadership of Patsy Cotterill, tried to save a small natural area called Little Mountain. Sadly, we lost the fight, the moist woods with lush understorey and a particularly rich prairie remnant (the last of its kind in Edmonton). We did, however, obtain permission to remove some of the prairie sod that included many native forbs. In the spring of 2000 about 140 square metres (about 167 square yards) of sod was cut into strips with a garden sod cutter, rolled up, and transplanted to Edmonton's Clover Bar Waste Management Site, where it found a new home as a naturescape for the administration building.

Other plants have been rescued from the Little Mountain site, including 200-250 slender blue beardtongue (*Penstemon procerus*), the only known Edmonton population of this common prairie species. These easy-to-move plants have been planted at schoolgrounds and in private yards but most are in use at our new projects.

Needing more room for our salvaged plants we asked the City of Edmonton for space at its Old Man Creek Nursery in spring, 2002. There we maintain a variety of plants that are used for our naturalization projects and as a seed source. We also have many seedlings planted from seed sown last fall.

A year ago we established our name and goals but then realized that our amibitions had outgrown our means. We wanted to plant a demonstration bed using local prairie plants and write a book about how to grow these species, where to obtain local plants or seeds and where to see these plants in the wild, then put everything on a website. Since many of us are members of the Alberta Native Plant Council (ANPC) we asked that ENG be designated as a local committee so that we could apply for funds without creating a new organization. ANPC agreed and gave us seed funding.

This spring we planted a 28-square-metre bed (300 square feet) at the John Janzen

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Know Your NANPS WEBSITE!

This season's featured website address is http://nanps.org/clear/frame.shtml. With beautiful colour photos and detailed descriptions it profiles Clear Creek Forest, one of southern Ontario's last remaining old-growth forests. Clear Creek is the site of NANPS first-ever excursion on October 18th.

You can also post questions, give answers, share your experiences or put up notices on our message board: http:/nanps/org/board/frame.shtml. If you'd like to suggest a new topic area for the Message Board contact nanps@nanps.org.

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Nature Centre located in the North Saskatchewan River valley near Fort Edmonton. We put in 36 different species of forbs and grasses including pussytoes (*Antennaria spp.*) low milkweed (*Asclepias ovalifolia*), showy and tufted white prairie asters (*Aster conspicuus, A. ericoides*), smooth fleabane (*Erigeron glabellus*), three-flowered avens (*Geum triflorum*), alpine hedysarum (*Hedysarum alpinum*), common tall sunflower (*Helianthus nuttallii*), low goldenrod (*Solidago missouriensis*), stiff goldenrod (*Solidago rigida*), golden bean (*Thermopsis rhombifolia*), heart-leaved alexanders (*Zizia aptera*), blue gramma grass (*Bouteloua gracilis*), green needle grass (*Stipa viridula*), rough fescue (*Festuca scabrella*) which is the grass emblem of Alberta, and June grass (*Koeleria macrantha*). ENG will care for the bed by weeding and watering.

ENG wanted the plants to be displayed in a garden –like setting to show gardeners that it is possible to have a bed full of beautiful native plants in your own yard. The species chosen are easy to grow, even from seed, and are non-invasive. They represent a variety of growth habits and interests. All the plants came from stock that grew in Edmonton or within 20 kilometres (about 12 miles) of the city so even the genes are from this area.

We are kept busy responding to requests for school naturalization, identification of native plants and the plants themselves. We hope to establish an ongoing rescue program for native flora in areas about to be bulldozed. This will be a source of badly needed plants and will help preserve genetic diversity.

It is wonderful to see the demonstration bed in flower, and the results of the Thistle Patrol's labours and our educational projects. Despite two previous years of drought, this year's rain has brought flowers planted two or three years ago into full bloom. It all proves that we are making a difference.

Diana Baragar is an Edmontonian and avid gardener who believes there is a place for local wildflowers among the fruits, vegetables and horticultural varieties of flowers in our yards.

Acadian Forest Restoration

by Caitlyn Vernon

Photograph Courtesy Tegan Wong

Young trees in the Acadian Forest Restoration Nursery.

My arrival at the Falls Brook Centre – a sustainable living demonstration centre in Knowlesville, New Brunswick - in the summer of 2000 was greeted by friendly faces, abundant garden veggies and the savory promise of ripening fruits and berries. Behind the centre on the trails of Skeddadle Ridge I first explored the Acadian Forest, its hardwood stands unusual to a recent arrival like me from the evergreen west coast. Over the years I have come to know this forest better, watching it change through the seasons: from trout lilies emerging in spring to the bold red maples of fall and the long winter shadows of birches on the snow. Learning the ecology of this forest I have become aware of other changes, of the threats to its health and continuity.

The Acadian Forest was once the dominant ecosystem here, stretching across the Maritime Provinces and into New England. Typically it was an uneven-aged mixed forest. On the upland ridges sugar maple (*Acer saccharum*), beech (*Fagus grandifolia*) and hophornbeam (*Ostrya virginiana*) were dominant, while in the lowland forests red spruce (*Picea rubens*), eastern hemlock (*Tsuga canadensis*), yellow birch (*Betula alleghaniensis*) and eastern white pine (*Pinus strobus*) were more common. The forest boasted an incredible diversity of shrubs and woodland plants including over 40 species of terrestrial orchids such as the showy lady's slipper (*Cypripedium reginae*), rare in New Brunswick, and yellow lady's slipper (*Cypripedium calceolus*), an indicator species of the St. John Appalachian hardwoods.

Unfortunately, much of the diversity has been lost to expanding agricultural lands, urbanization and intensive logging that converts mixed stands into even-aged plantations of predominantly spruce (*Picea sp.*) and fir (*Abies sp.*). Only tiny remnants of old-growth Acadian Forest remain.

The mechanization of forestry has meant an increased rate of tree harvesting and loss of jobs. To make matters worse the originally diverse forest is often replaced with one or two species. This reduces opportunities for communities to process value-added wood products from a range of species or harvest a variety of non-timber forest products. An example is black ash (*Fraxinus nigra*), traditionally used by the Maliseet First Nations to make woven baskets. Wood from the lower trunk of the tree is pounded with a hammer causing it to separate into thin strips that are fashioned into beautiful baskets. Unfortunately, black ashes are now rare, and the skills needed to make the baskets are becoming increasingly rare too.

Decreased forest diversity can also disturb

fish and game populations, affect recreational opportunities and reduce the availability of medicinal plants. As an example, the anti-cancer drug Taxol™ is extracted from the needles of Canada yew (*Taxus canadensis*), an evergreen shrub that prefers growing under tolerant hardwood stands and generally will not persist after the canopy trees have been harvested.

Access to clean drinking water depends on the presence of healthy forests as well but water quality is compromised by clear-cutting and the application of pesticides. Typically the economic benefits of forest harvesting go to whoever owns the land or has a licence to harvest. But if we calculate the social and environmental impacts of modern forestry practices – usually negative – we are all downstream.

The Acadian Forest Restoration Nursery was founded by the Falls Brook Centre to help restore the ecological diversity of the local forests and, by so doing, to provide sustainable livelihood options to rural New Brunswick communities. We focus on growing varieties of trees that are typically lost after clearcutting; the regenerating forests have a lower species diversity and higher proportion of evergreen trees than the original Acadian Forest.

To preserve local genetic diversity and ensure that the trees and shrubs can survive our long cold winters we propagate plants using cuttings and seeds found locally. Seeds are collected from nearby seed trees, healthy specimens of native trees that survive as remnants of the old Acadian Forest. The seeds, including red oak (*Quercus rubra*), butternut (*Juglans cinerea*), sugar maple, eastern hemlock and tamarack (*Larix laricina*), are prepared according to their type, then planted into our nursery. Cuttings are used to propagate red osier dogwood (*Cornus stolonifera*), black ash, willows (*Salix sp.*) and various berry bushes.

In addition to our nursery and plantings on site, we are promoting the establishment of community nurseries and schoolground restoration in our local area, asking people to help identify and conserve good seed trees, and providing information on how to collect and prepare seeds and cuttings.

Ten years ago the Falls Brook Centre was built on land made muddy by ATVs and surrounded by forests that had been clearcut and highgraded numerous times. With time, patience and compost the degraded landscape has been converted into bountiful gardens, orchards and a tree nursery. The site and surrounding forests are now used to support the residents and to offer education in organic agriculture, forest restoration, renewable energies and more. Visitors are always welcome and often join in with the ongoing restoration of soil and forest.

Our philosophy is to carry out restoration activities with respect for the complexities of forest dynamics that we cannot presume to understand. Although we may feel an urgent need to repair the damage done to forest ecosystems, we must acknowledge that forest restoration is a natural process requiring more time than we can comprehend. We must recognize that our actions are but an offering. Each planted seed encapsulates possibilities for a new beginning, a new relationship between people and the environment, born out of respect and hope for a vibrant and healthy forest that will sustain us.

Caitlyn Vernon is a biologist doing forest restoration work in New Brunswick and with communities in Mexico. She works at Falls Brook Centre, an environmental and educational community development organization (www.fallsbrookcentre.ca).

A Right to Garden

For the first time in Canada a provincial court of appeal has recognized that environmental values are a form of expression worthy of protection under the *Canadian Charter of Rights and Freedoms*.

Douglas Counter and his father, Victor, struggled for three years to preserve a road-allowance native plant garden in front of their home in Toronto, Ontario from a municipal bylaw that deemed it illegal. Last October the Ontario Superior Court of Justice ruled that the by-law must be interpreted in a way that accommodates the Counters' guarantee of freedom of expression in the *Charter of Rights*. The court urged the City of Toronto to develop clear guidelines that promote the natural enhancement of public spaces in a responsible, community-minded fashion. When the City failed to do so, Doug, his attorneys and Environmental Defence Canada (which was supporting the legal action) decided to take the case a step further, challenging the City bylaw that seemed to ban gardens on road allowances.

In May the Court of Appeal agreed that "there is no ban on natural gardens of any kind on public space" and that the limitation in the City's bylaw (maximum height of one metre or three feet) "still permits generous natural growth". The court decided not to strike down the bylaw but found that it cannot be interpreted in a way that bans the Counters' garden and infringes upon their Charter rights.

Photograph Courtesy Doug Counter

Doug planted his native front-yard garden in 1997 as a memorial to his mother. Two years later he expanded it onto the stormwater management ditch fronting his property on the advice of a municipal brochure entitled "55 Ways to Green Etobicoke Naturally" which, coincidentally, Doug himself had designed. (Etobicoke was the name of the municipality before amalgamation with the City of Toronto.) The seventh recommendation in the brochure read: "Sow wildflower and perennial seeds or plant groundcover instead of grass seed on your portion of the street allowance" (obviously a miscommunication between government departments).

Doug's ditch garden (which strictly adheres to the metre-high limitation intended to ensure the safety of pedestrians and motorists) attracts butterflies, birds and other wildlife, filters pollutants from stormwater runoff and beautifies the neighbourhood.

Vilko Zbogar of Klippensteins Barristers & Solicitors, the Counters' legal counsel, said that the decision to protect this garden "sets an environmentally beneficial precedent for all of Ontario and beyond". He noted that this case represents the first time a court anywhere in Canada has ruled that citizens have a *Charter*-protected right to express environmental values on public land. An event worth celebrating.

Wood Poppy: Rare for a Reason

by Jane Bowles

Photograph Courtesy Jane Bowles

A stand of wood poppies in one of the three known Canadian sites.

In May 1887 poet/naturalist Robert Elliot presented a specimen of a spectacular yellow-flowered poppy to the London chapter of the Entomological Society of Ontario. He had discovered wood poppy (*Stylophorum diphyllum*) growing in a few isolated patches along the Thames River near his home in Plover Mills. A few more discoveries were made close by over the next couple of years and then there were no more reports of this plant for almost a century.

When the *Atlas of Rare Plants of Ontario* (Argus *et al.*, 1982-1987) was published, *Stylophorum diphyllum* was listed as "probably extirpated" in Ontario. However, that same year a population of about 700 plants was found in a woodland just outside London. This appeared to be the only stand in the country, and the wood poppy was listed as endangered in Canada in 1993 by the Committee on the Status of Endangered Wildlife in Canada. Still, it received no real protection. That fall some logging and filling was done at the wood poppy site which destroyed about 500 plants.

In 1994 the Ontario Endangered Species Act came into effect and the wood poppy and its habitat were now protected. Since 1997 a recovery team has been working to understand more about the plant's ecology in order to ensure its survival.

Once the wood poppy and its status became known in the London area two people reported having seen it in the wild in the 1970s. After a number of searches, both patches were rediscovered. Currently, the total known wild population of wood poppy in Canada consists of about 450 plants in three locations. All are within 15 kilometres (about nine miles) of London and two are along the Thames River. At one site there are only six plants occupying one square metre (a little more than a square yard) of ground. No seedlings or new recruits have ever been reported there.

In addition to the wild populations there are about 220 "captive" wood poppies. One collection is growing under ginseng shade at the Environmental Field Station at the University of Western Ontario; the other is at the Royal Botanical Gardens in Hamilton. All were grown from seed collected in the wild in Ontario. About 200 are from 21 sources of known maternal origin (i.e. it is known which individual plants the seeds came from). This is valuable information enabling botanists to keep track of which plants belong to which genetic lines and whether there are differences among the populations.

Wood poppy is not an easy plant to spot except for the few days in spring when it is flowering. The leaves are very similar to those of greater celandine (*Chelidonium majus*), a close relative. They are basal, long-stalked and deeply lobed, dark green above, paler below and slightly waxy. The flowers are much larger than those of celandine, up to five centimetres (about two inches) across, and the same deep shining yellow as a marsh marigold (*Caltha palustris*). The flowering stem has a pair of leaves about two-thirds of the way up from the base (hence the specific name *diphyllum* which means two-leaved) and one to four flowers. The stem is hollow and slightly fleshy and all parts of the plant produce an acrid dark orange juice. Flowering occurs in May but the leaves remain green all summer. The fruit are greyish capsules the shape of a football; they are covered with stiff fleshy hairs. As the fertilized seeds grow and get heavier the capsule hangs downwards under its own weight. When the seeds are ripe the capsule splits open and the seeds fall to the ground. They are about 1.5 mm (1/10 inch) in diameter, dark brown and have a contrasting white fringe of oil bodies (tiny balloons filled with oil) arranged like a Mohawk hairdo.

Wood poppy is one of several plants that are rare in Canada because they are at the extreme northern limit of their range. In the United States, especially Kentucky, eastern Missouri, southern Illinois and western Virginia, the species is fairly common, although it grows in widely scattered localities. Often the genetics of outlying plants are distinctly different from those growing near the centre of the range. Outlier populations are important for maintaining genetic diversity in the population as a whole, an issue currently under study. Collections of material have been made to examine the genetic variation within and among the three Canadian and several US populations. For example, it is not known if the Ontario wood poppies are all closely related (implying a single colonization that since dispersed) or if they represent two or more colonization events. If it is found that one population is

distinctly different, and related to plants from Kentucky or elsewhere in the United States, then it suggests a post-settlement introduction at that site i.e. a garden escape. Until we know more it is important that the Canadian germ lines (genetic lines) not be "contaminated" with foreign material.

The big question about wood poppy is: why is it so rare in Canada? At first glance it does not have the characteristics that typify rare species. Many plants are rare because they require specialized habitats that have been fragmented or destroyed as a result of European settlement. This is not the case for *Stylophorum diphyllum*. Suitable habitat seems to be readily available, and the plant was extremely rare here even before European settlement. None of the life history traits of wood poppy suggest why the species might be rare. The plants mature quickly and can flower in their first year. The adults are long-lived and produce blossoms most years. Flowering is quite profuse and the flowers are self-compatible (meaning that the pollen of a flower is capable of fertilizing an ovule in the pistil of the same flower). This is a useful strategy for plants that grow in woods early in the season when there may be few pollinators, so that cross-pollination is not always an option.

The average wood poppy produces about 2,000 seeds a year. Once the seeds have undergone a period of cold stratification to break dormancy, germination rates are reasonably high. Under cultivation wood poppy can even have distinctly weedy tendencies.

The factors limiting the increase and spread of wood poppy populations appear to be connected with seed survival and germination. The seeds are normally dispersed by ants, a phenomenon know as myrmecochory that is common among woodland herbs. The ants are attracted by the oil body (elaiosome) and carry the seed off to their nest. Once there, the nutritious oil body is removed and the hard-coated kernel is discarded. An ant midden provides an ideal place for the remaining seed to germinate. However, recent studies have found that there is competition between ants and mice for wood poppy seeds and, if the mouse gets there first, the whole seed is eaten and never has a chance to produce a new plant.

There may be other factors, unknown to us, that limit germination in the wild. Seeds collected and planted at existing wood poppy sites failed to germinate, even though seeds planted in cultivation have done well. The germinating seed may require nothing more than a site safe from competition and predation, but further study is required. The recovery team is currently attempting to uncover and overcome the roadblocks to successful wood poppy reproduction.

Native plant gardeners have shown themselves eager to aid in the wood poppy's recovery by introducing the plants into their own gardens. However, the recovery team urges caution. The "wild turkey approach" is entirely inappropriate. Introducing *Stylophorum diphyllum* from a variety of unknown sources into places it has never grown naturally may not help the recovery effort; in fact, it could disrupt local ecosystems. Furthermore, there may be important ecological and genetic messages in the rarity of the wood poppy. In our enthusiasm to save the species we should not erase those messages before they have been read and understood.

ILLUSTRATION BY JANE BOWLES

Jane Bowles is a freelance ecologist and adjunct professor in the Departments of Biology and Geography at the University of Western Ontario in London. She is concerned with protecting natural habitats and native species in the fragmented landscape of southern Ontario. With Michael Oldham she wrote the original Status Report for Wood Poppy *in 1991 and has since served on the recovery team for this plant.*

Grassland Reserve Program

Prairie enthusiasts in the United States have much to celebrate - $49.492 million in fact. Funds are now available through the Grassland Reserve Program (GRP) for those who wish to protect native prairie remnants in their states and to give remnants priority over native and non-native plantings. The nationwide program is authorized through 2007 by the 2002 Farm Bill with 2003 funds available until September 30th.

However, there are concerns. Both exotic and native grasslands are eligible with no guarantees that virgin native grasslands will be the main focus. It also seems likely that the standards currently used for Conservation Reserve Program plantings will be used for GRP plantings. That means it is possible that distant-origin low-diversity prairie reconstructions will be planted next to high-quality prairie remnants.

The Prairie Coalition Network urges prairie enthusiasts to contact appropriate state officials and conservation organizations. That is the most effective way to ask that native prairie remnants be made the major GRP focus, and that local-ecotype prairie seed be used for prairie plantings, especially near remnants. The Network feels it is especially important to work with or have input into State Technical Committees that develop state level guidelines for Farm Bill conservation programs.

The time to get involved is now, because state guidelines and priorities for GRP are currently being developed.

For details visit http://www.privatelandstewardship.org.

Going Native, Southern Style

by Maria Griener

About 50 miles (80 kilometres) north of New Orleans, Louisiana marshlands are still abundant. However, since land development is moving at a rapid pace, the remaining wilderness areas of the Deep South are never taken for granted, especially by Natural Area, Inc. This recently formed organization based in Mandeville, Louisiana has made native plant preservation their number one cause.

Native Volunteers, a program of Natural Area, Inc., was established to rescue native plants, especially trees, from construction, development and public works sites, and find homes for them in local landscapes. Volunteers go out to pre-selected sites to dig up as many native plants as shovels, buckets and pots will allow. Ginger Fortson, who heads the organization, says the majority of the rescued plants and trees go to state parks, public places and schools, but the plant rescuers can transplant half of what they have dug into their own gardens.

The second half of their mission is to educate the public, the development industry and government about the benefits and value of native species in the landscape. The organization holds seminars for contractors on how to build without damaging existing vegetation. In Louisiana contractors are required to have four hours of continuing education per year in order to keep their state licence. Not only can Native Volunteers help them fulfill this requirement, they also try to provide the contractors with some good PR.

Shrubs and vines native to Louisiana that volunteers have rescued include American beautyberry (*Callicarpa americana*), southern wax myrtle (*Myrica cerifera*), red buckeye (Aesculus pavia), dahoon holly (I*lex cassine*), partridgeberry vine (*Mitchella repens*) and muscadine vine (*Vitis rotundifolia*).

Trees that have been found on the rescue sites include black cherry (*Prunus serotina*), parlsey hawthorn (*Crataegus marshalii*), red cedar (*Juniperus virginiana*), swamp red maple (*Acer rubrum var. drummondii*), crabapple (*Malus angustifolia*), mayhaw (*Crataegus opaca*), Grancy graybeard (*Chionanthus virginicus*) and cypress (*Taxodium distichum*).

Below are some brief descriptions of, and growth conditions for, a handful of the native plants mentioned above.

Southern Wax Myrtle

My mother has a wax myrtle in her backyard that grew from a clipping a half dozen years ago and is now immense. Typically found in thickets, woodlands and near swamps, *Myrica cerifera* can grow in partial shade to full sun. This evergreen shrub is tolerant of most growing conditions but is best transplanted while it's still under five feet (one and a half metres). Over 40 species of birds love the blue berries. In colonial times the leaves and fruit were boiled and wax was extracted to make bayberry candles.

Red Cedar

Our state capital, Baton Rouge – which means red stick in French – was supposedly named for all the "red sticks" or red cedars growing along the bluffs of the Mississippi River. These trees are relatively slow growers and need well-drained soil. Still, they do well in harsh environments in all types of light conditions. The fruits, referred to by botanists as "berry-like cones", are eaten by dozens of species of wildlife, everything from bluebirds to wild turkeys, meadow mice to black bears. *Juniperus virginiana* has beautiful red exfoliating bark and lovely twisting branches. Is it any wonder that bonsai aficionados often choose cedar for their subjects?

Red Swamp Maple

In late winter *Acer rubrum var. drummondii* is quite a showpiece. Before the foliage emerges, the female trees bring on their bright red flowers and liven up the most desolate wintry landscapes. The bark is silvery-gray and the form is oblong to oval.

Dahoon Holly

Ilex cassine is a native evergreen shrub of North Carolina to Florida and Louisiana. During one of the digs that Native Volunteers sponsored, members came across a single dahoon holly that was as tall as the surrounding pines – at least 50 feet (15 metres) high. Regarded as a large shrub or small tree, the dahoon holly has a dense upright form and reddish-orange berries on the females. This dioecious plant can grow in boggy acid soils and is somewhat tolerant of salt spray.

The following plants native to Louisiana (and other parts of the south) have yet to be spotted by members of Native Volunteers but they number among my favourites.

Oakleaf Hydrangea

I've heard *Hydrangea quercifolia* described as a gawky teenager. It grows slowly for the

Preserving Trees during Land Development

The National Arbor Day Foundation has published 45 bulletins on preservation of trees in urban areas. Native Volunteers find *Bulletin #35: How to Protect Trees during Underground Work* particularly useful when meeting with public works officials who supervise work that involves trenching and other digging. *Bulletin #20: A Systematic Approach to Building with Trees* is used by Native Volunteers during "Trees and Construction" continuing education seminars for residential contractors.

Recommendations for preserving trees and other native vegetation during development include the following:

1) decide which trees are worth saving – Ginger Fortson emphasized the importance of this pre-development step
   - native tree species should be given priority
   - trees that will survive the stresses placed upon them during construction are key
2) prepare the trees for protection during the construction work
   - build a barrier fence to protect the critical root zone (a circle measuring one foot out from the trunk in radius for each inch of tree trunk diameter)
   - the fence will prevent soil, garbage or construction materials from being piled under a tree, and heavy machinery from parking there, compacting the soil and damaging the roots
3) help trees adjust to the altered environment once construction is complete
   - ensure that the trees are properly watered
   - rejuvenate the stressed trees by feeding them compost

Photograph courtesy Robert H. Mohlenbrock

Beautyberry

first couple of years then puts on six inches (about 15 centimetres) of growth a year until it reaches seven feet (two metres) both in height and in width. Oakleaf hydrangeas can be found from the Piedmonts to south Florida and Louisiana. They often grow under the shade of pine trees. In May snowy white clusters of flowers pop out, lasting for months. As the flowers age the outer reaches turn a light rose. On older branches the bark exfoliates exposing a cinnamon-coloured underbark.

Pipestem or Florida Leucothoe

Agarista populifolia has only recently come to be appreciated on the residential landscaping scene in the south. This glossy evergreen shrub can grow six to eight feet (two metres or more) wide and up to 12 feet (three and a half metres) tall. In spring small, bell-shaped, creamy flowers that have a honey-like fragrance hang in clusters, resembling very much the flowers of blueberries. The deep green leaves are alternate and have very fine teeth which give the weeping branches an attractive lacy quality. The leaves are two to four inches (five-10 centimetres) long and taper to a narrow tip. Branches are multi-stemmed; the petioles turn reddish in full sun.

Pipestem was originally found in mixed swamps and along creeks and spring runs from southeast South Carolina to Florida. Still, it has proven to be resistant to drought conditions and can take both partial shade and full sun. Pipestem makes an excellent hedge if pruned and can be successfully cultivated in USDA zones 6 to 9.

Henry's Garnet Virginia Willow

Itea virginica is an elegant plant when in flower but to my mind it qualifies as an ugly duckling since it undergoes a huge transformation from winter to spring. It is a veritable Charlie Brown Christmas tree during the winter months displaying a few spindly branches, but in mid to late March it starts to put out new leaves. By early April four-inch (10-centimetre) fragrant white racemes drape around the shrub in a curtain of elegance and aroma. In the fall the leaves turn a deep red, showing another facet of its beauty. Henry's Garnet is touted as one of the outstanding ornamental plants for Louisiana landscapes. A local native-plant grower remarked that one of his customers bought two dozen once she saw them in their spring glory.

Maria Griener is a landscaper, freelance writer and novelist who can be reached at visionwriters@earthlink.net. For more information about Natural Area, Inc. write to them at P.O. Box 484, Mandeville, Louisiana 70470-0484 or call 985-626-6279.

Credit for photograph of beautyberry: ***Robert H. Mohlenbrock*** *@ USDA-NRCS PLANTS Database/****USDA SCS 1991.*** **Southern wetland flora: Field office guide to plant species.** *South National Technical Center, Fort Worth, TX.*

The National Arbor Day Foundation has established a project called **Tree City USA** in cooperation with the USDA Forest Service and the National Association of State Foresters. It provides direction, technical aid and national recognition for urban and community forestry programs across the United States. To become a Tree City the municipal government must: appoint a Tree Board or Department to ensure that someone is legally responsible for the care and management of the community's trees, write a tree care ordinance for the protection of public trees, establish a community forestry program with an annual budget of $2 (U.S.) per capita for tree care, and proclaim and observe Arbor Day annually. For more information visit www.arborday.org/programs/treecityusa.html.

Calendar of Events

The NANPS on-line Message Board (www.nanps.org) now lists events. Please e-mail information about your native plant events to nanps@nanps.org. We'd be happy to include your listing on the Message Board.

August 30, 2003
Invasive Species Removal
Annandale, Virginia
Join the North Virginia Conservation Trust volunteers to help remove English ivy from the Annandale Community Park. For directions and details call Emily Hamner at 703-354-5093 or e-mail Information@NVCT.org.

September 5-6, 2003
Third Tallgrass Pprairie and Savanna Forum
Peterborough, Ontario
The forum will cover species recovery plans and species research, soil research, restoration of remnants, recreation projects on marginal land, prescribed burning, First Nations experiences, GIS mapping projects and more. Contact info@tallgrassontario.org.

September 13, 2003
Native Plant Society of British Columbia Annual General Meeting
Galiano Island, British Columbia
Call Susan Bastin at 250-361-3122 for more information.

September 13-14, 2003
Wild Ones 2003 National Conference
Shaw Nature Reserve
St. Louis, Missouri
Further info: www.for-wild.org or dilley.2@osu.edu or 614-939-9273.

September 14-18, 2003
17th Biennial Conference of the Estuarine Research Federation
Seattle, Washington
Visit their website at http://www.erf.org.

September 17-20, 2003
2003 National Urban Forest Conference
San Antonio, Texas
Visit http://www.americanforests.org/graytogreen/conference.

September 24-27, 2003
Natural areas conference
Defining a Natural Areas Land Ethic
Madison, Wisconsin
Contact information: (608) 266-0394 or thomas.meyer@dnr.state.wi.us.

October 4, 2003
North American Native Plant Society Annual General Meeting
Toronto, Ontario
Keynote speaker: Henry Kock of the University of Guelph Arboretum.
Civic Garden Centre
For further information call (416) 631-4438 or e-mail nanps@nanps.org.

October 18, 2003
Clear Creek Forest and Orford Ridges Native Plants Nursery Tour
Chatham-Kent, Ontario
E-mail excursions@nanps.org.

October 20-24, 2003
Wetlands 2003
Nashua, New Hampshire
Focusing on wetlands and landscape level assessment as they relate to sound science, responsible public policy and emerging legal issues.
Visit www.aswm.org.

November 3-7, 2003
Invasive Plants In Natural And Managed Systems
Fort Lauderdale, Florida
For more information: www.esa.org/ipinams-emapi7.

November 19-22, 2003
SER 2003
Assembling the Pieces: Restoration, Design and Landscape Ecology
Austin, Texas
The 15th Annual Conference of the Society for Ecological Restoration International. An important part of the conference is a design charrette on November 21st that will focus on the Colorado River corridor below Town Lake.
Visit www.ser.org for more information.

March 22-25, 2004
Fourth Southwestern Rare And Endangered Plant Conference
Las Cruces, New Mexico
Organizers are in the pre-solicitation process of collecting the addresses of interested parties. Preliminary information about the conference available at: htt://nmrareplants.unm/edu.

Germinating Seeds

by Darcie McKelvey

Back on May 8th, I posted the following item on the NANPS website. I can still remember the elated mood I was in.

This morning I went to check the pots I have outside to see if anything had come up yet. Four different success stories, all in one day! Joy of joy, trillium seeds I got from the Ontario Rock Garden Society (ORGS) two years ago have just started to come up, a Trillium simile *(jeweled wakerobin) and a* Trillium erectum *(red trillium). (Hope I have more of both, but I only had six seeds each).*

Also, finally, I see germination of Gentiana andrewsii *(bottle gentian). I put the seeds on top of some Promix (surface sow) and a cloth around the top of the pot (fastened with an elastic band). All outside of course, and we had some really tough weather this winter. However, today I found there are a LOT of little seedlings coming up. Some of them are just laying prostrate on the soil with root development obvious; others are smart enough to stick themselves into the soil right away (how do they do this?). I have tried twice before to germinate bottle gentian, but without success.*

Claytonia virginica *(spring beauty): I ordered some seeds from the New England Wildflower Society and planted them in a mixture of real soil and sphagnum moss. Three little seedlings. [They look a bit like grass. I do hope it is* Claytonia *and not some foundling – the big difficulty in using real soil for germination.]*

Growing seeds is fun fun fun.

I think it only fair, two months later, to clear the air. What I thought were two germinating trillium seedlings were not trilliums. When they started getting bigger, I realized they were some kind of clover species. How unfair that very similar-looking seedlings appeared in each of the trillium containers, leading me to believe that the miracle of germinating trilliums had actually happened.

This is always a problem when I grow things from seed. I don't always know what the immature plant looks like, and I mostly use other soil as a germinating medium. Real soil has other seeds in it, as well as the ones I'm hoping for.

I only have one *Claytonia virginica* at this point and I think it is a marvel, since I've found out they are "D germinators" (they need a warm moist period, followed by a cold period, and will germinate upon returning to warmth again). This plant should not have appeared until next spring.

However, I really have succeeded with *Gentiana andrewsii* this year, which are large enough to pot up and plentiful enough to permit me to be generous. I also had germinating success with *Gentiana crinita* or fringed gentian (seeds from Gardens North), *Arisaema dracontium* or green dragon (ORGS seeds), *Epigaea repens* or trailing arbutus (seeds from the North American Rock Garden Society – long story, as this involved me locating soil with a very particular fungus that this plant needs…) and *Cimicifuga racemosa* (black cohosh). No success with trillium (two species), *Sanguinaria canadensis* (bloodroot), *Hepatica* and *Caulophyllum thalictroides* (blue cohosh). Of course I won't discard pots with these seeds until a couple more years go by. Hope springs eternal.

I am busy collecting seeds from my garden to donate to the NANPS Seed Exchange (and I hope other NANPS members are doing the same). Storage for many of the woodland herbaceous ephemerals should involve a damp mixture such as 50% wet sand and 50% dry peat moss. Start collecting!

Darcie McKelvey is NANPS' Vice-President and a keen native plant gardener.

Please share your germination stories with readers of the Blazing Star. *Your successes (or challenges) will be helpful to others. Write to NANPS Editor, P.O. Box 84, Station D, Etobicoke, ON, Canada*

New & Noted

Ontario Forests: A Historical Perspective
By K.A. Armson (Markham and Toronto: Fitzhenry and Whiteside Limited and Ontario Forestry Association, 2001. 233 pages, p.b., ISBN 1-55041-626-X)

I detected a submerged tone of frustration in this wonderfully comprehensive history of Ontario's forests. It's as if the author (a forester for over 50 years) has had it with all the myths floating around Ontario's forestry debates and wants to set the record straight. (I should stress that the author's tone is measured and gracious throughout, not a hint of a rant anywhere.)

The "straight record," though, might rattle more than a few cages. For example, at the beginning of the book Armson asserts that "the expression 'preservation of an ecosystem' is an oxymoron and serves to mislead…". The reason? Because "an ecosystem is dynamic, never static." Well, yes, but surely most preservationists are trying to preserve ecosystem *functioning*—the dynamic natural processes that drive ecosystem change—rather than trying to deny that change occurs.

Armson also challenges conventional eco-notions about old-growth forests. He states, "The mythology associated with the common perception of pristine forests lives on, unrealistically warping the concept of 'protection' of old-growth forests." He cites the old-growth pines of Temagami—a flashpoint for environmental battles in Ontario in the 1980s and 90s—as an "anomaly…developed since the early 1900s", the result of human intervention (in particular, the suppression of fire). In Armson's view, the environmentalists may have won the battle but, in winning, they lost sight of the bigger goal: "By continuing present non-intervention practices, we are guaranteeing the essential replacement of pine by other species with lesser biological rotation ages, less visual appeal, greater susceptibility to major insect depredations, and a totally different set of ecological conditions."

Armson sees his book as an "attempt to view Ontario's forests with a historical perspective and convey a sense of the magnificent resource they have been, are, and may continue to be in the future." He achieves this goal admirably. Armson brings history alive. He describes the forest in southwestern Ontario when mastadons and mammoths roamed the woods, outlines tree movement north following glaciation, details the characteristics of most Ontario tree species and the conditions in which they grow, and discusses aboriginal interactions with the forest and the trends and impacts of settlement.

Later he explores legislative changes in the management of Ontario's forests, the logging industry, and how technological changes have shaped the forest. *Ontario Forests* delivers a wealth of information.

Reviewed by Lorraine Johnson

Continued from page 1

almost stripped-bare conifer in outline. The leaves are thick and shiny dark green. Bark on young trees is smooth, greyish-brown to grey. As expected of a member of the *Cornaceae* or dogwood family, mature black gum specimens (up to 20 metres or 65 feet tall in Ontario, taller further south) have bark that has darkened and broken into plates. (I sometimes think of tectonic plates since these plates do move as the tree grows.)

The spectacular autumn colour convinced me that this was a must-have. Black gum is similar to a young beech (*Fagus grandifolia*) in bark and outline. But while beech leaves are a glorious chocolate brown in fall, black gum leaves are scarlet or crimson. At "worst", they are shiny yellow to burnt orange. (To be truly moved visit http://aggie-horticulture.tamu.edu/ornamentals/natives/trees/Nyssasylvs1704.jpg for a photo of its shiny red leaves.).

Black gum has continental cousins that are at least as intriguing. Swamp tupelo, *Nyssa sylvatica var. biflora*, develops a taproot and has a swollen base to the mean height of the growing season water level. Water roots, which develop under flooded conditions, help support the tree and capture nutrients. These specialized roots tolerate high carbon dioxide concentrations, oxidize the rhizosphere* and carry on anaerobic respiration. Ogeechee tupelo (*Nyssa ogeechee*) is a denizen of the deep south. It is used to make tupelo honey. The mature fruit, known as Ogeechee lime, has a subacid flavor. It is made into preserves and used for a beverage.

If you wish to propagate your own black gum, rest assured that it is simple. To get fruit you need to have both a male and a female. The mature dark blue fruits are easy to spot among the delightful burnt orange-to-crimson leaves on the female tree. The fruit is just under one centimetre (about two-fifths of an inch) in length. Squeeze the fruit, which is oily, and a single seed is your reward. When you collect seed, limit your take to no more than 10% of what you find.

Take your seed home and either outplant it or pot it up as soon as you can. If you outplant it, do so in a row, with a marker at each end of the row. Growing in a row means that when the seeds germinate next year, seeing lookalike plants growing in that row means it's a lead-pipe cinch that they represent what you planted. If you plan to use pots, get moist sterilized potting soil, fill the pot, cover the seeds with at least a centimetre of potting soil and get it very wet. (In fact, Mary Gartshore of Pterophylla, a native plant nursery, offers the best advice: "Overwinter them in muck."). Seal the pot inside a freezer bag and tag it. The pot needs to be stored in a location where the temperature will be near freezing over winter. Germination will occur in spring. Make sure the pots and seedlings are put outside during the growing season. Growth is always stronger this way. (If the plants start to grow inside, the leaves may become UV-scorched when the plant is finally taken outdoors. This is unsightly, but that is all.) I keep pot-started seedlings in pots over the first winter after germination. This is where the muck comes in. Keep the soil wet. Outplant the seedlings the second spring.

Black gum needs an "acid foot", soil high in organic matter with a pH of 6.5 or less. Although this can be achieved without artificial additives I find it is still necessary to use peat, a practice not recommended by naturalists since the mining of this resource is unsustainable and damages valuable ecosystems. Still, in this instance I see no recourse. Peat is needed to get a black gum going. However, once the plant is established, it can often take care of itself. Growth may be slower or the foliage chlorotic (yellowed) if conditions are not ideal, but the tree will survive. The young black gums in our garden are faring nicely now.

If you do not wish to start a *Nyssa sylvatica* yourself, purchase one from a local nursery (vs. far-away or churn-'em-out-to-make-money nurseries). The small grower cares, often collecting seed from nearby locations and propagating the plants. Buying from a local ethically run nursery means the tree will do better than one trucked in from a great distance - and a warmer (or colder) hardiness zone. Mind you, *Nyssa sylvatica* is rated USDA zones 4 to 9.

Even if you do not plant a black gum, do yourself a favour and go out in search of one. If they do not grow naturally in your region, check out a local arboretum or cemetery. You will be delighted with your find.

* The rhizosphere is the zone surrounding the roots of plants in which complex relations exist among the plant, the soil microorganisms and the soil itself. The plant roots and the biofilm associated with them can profoundly influence the chemistry of the soil including pH and nitrogen transformations.

*Tom Atkinson is a native woody plant propagator as one of his avocations. A semi-retired software developer, Tom numbers field botany and native plant gardening among his interests. He welcomes your correspondence at asimina@sympatico.ca. The id (*Asimina*) refers to another of Tom's favourite trees.*

Clear Creek Forest And Orford Ridges Native Plants Nursery Tour

Join fellow NANPS members on Saturday, October 18th for a field trip to Clear Creek, a beautiful old-growth forest. Walk among majestic 350-year-old oaks, beeches and maples that stretch 30 metres (100 feet) into the sky. Touch the soil, breathe the air, see the place these trees have called home for centuries. Experience a thriving forest ecosystem.

Mathis Natvik, an ecologist who was instrumental in saving this forest, will be our guide. And after the tour we'll visit Mathis' own nursery where he propagates a host of rare native plants from sassafras to pawpaws. There will be lots of time to shop. Remember to bring a bag lunch.

Reserve your space now by e-mailing excursions@nanps.org or calling 416-631-4438. Individual tickets (which include the bus ride from the Civic

Garden Centre in Toronto) are $35, family tickets (4 persons, maximum of two adults) are $100. This trip is for NANPS members only.

Bus leaves Civic Garden Centre at 8AM sharp.

Find out more about this wonderful forest at http://www.nanps.org/clear/frame.shtml.