The Blazing Star

Spring 2014, Volume 15, Issue 2

A Publication of the North American Native Plant Society

Native Plant to Know

Red Huckleberry

Vaccinium parvifolium

by Tammie Painter

In damp forests along the Cascade Mountains from Alaska to Northern California, red huckleberries (*Vaccinium parvifolium*) establish themselves on fallen logs that serve as nurseries for the plants' seedlings. On British Columbia's Vancouver Island, the Hesquiat Indians take advantage of this natural tendency using conifer stumps as the base for red huckleberry gardens.

Red huckleberry, also known as red bilberry or red whortleberry, takes nutrients from decaying wood or organic matter on forest floors. The shrubs reach heights of one to three metres (three to 10 feet) and remain about half as wide as they are tall. Their bright green colour is striking and the branches of red huckleberry provide architectural interest as they grow in crooked, eye-catching patterns. As with many other members of the Ericaceae family, red huckleberry features clusters of bell-shaped flowers. Each dainty bell is made up of five partially fused petals that range from pale green to light pink.

The scientific name of red huckleberry gives a clue to its appearance. While the origin of the genus name *Vaccinium* remains uncertain it may be derived from *bacca*, the Latin word for berry. The word *parvus* is Latin for small and *folium* refers to leaves. At only 10 to 25 millimetres (1/2 to one inch) long, red huckleberry leaves are indeed small and ovate-shaped with a sharp tip. Although botanically classified as deciduous, red huckleberry retains much of its foliage long into winter, depending on the weather conditions. When the foliage finally prepares to drop, it puts on a brilliant display of reds and oranges before being shed.

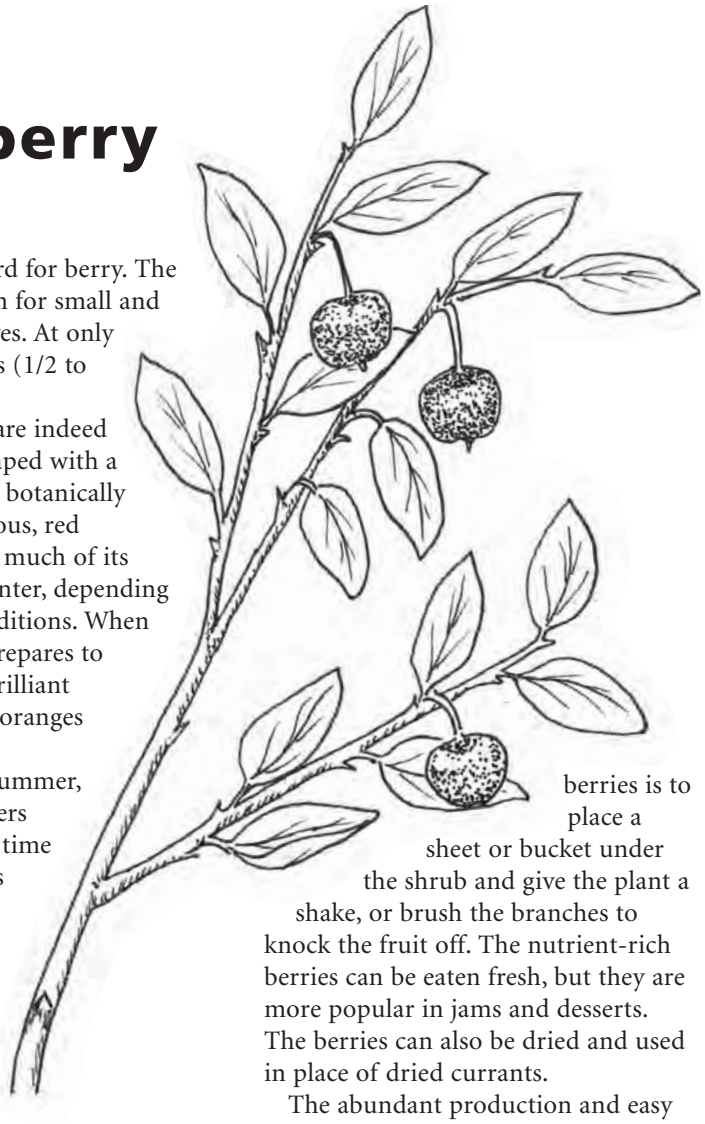


ILLUSTRATION BY BRIGITTE GRANTON

Starting in mid-summer, red huckleberry offers another treat—this time for the taste buds as well as the eyes. Around July, the shrubs fill with berries that start off pale pink but mature to a bright red that contrasts wonderfully with the green branches and foliage. The round berries are similar in size to other huckleberry fruits, about six millimetres (1/4 inch) in diameter.

Red huckleberries are tart so it's best to let them fully ripen and reach their peak of sweetness before harvesting. The easiest way to collect the tiny berries is to place a sheet or bucket under the shrub and give the plant a shake, or brush the branches to knock the fruit off. The nutrient-rich berries can be eaten fresh, but they are more popular in jams and desserts. The berries can also be dried and used in place of dried currants.

The abundant production and easy growth of the red huckleberry made it a popular food for native peoples along the West Coast including the S'Klallam, Skagit, Snohomish, Chinook and Lummi. The plant has medicinal properties as well. The Skagit boiled the bark into a tea to alleviate cold

Continued on page 15

The *Blazing Star* is . . .

The *Blazing Star* is published quarterly (April, August, November, February) by the North American Native Plant Society (NANPS). Contact editor@nanps.org for editorial deadlines and for advertising rates. The views expressed herein are those of the authors and not necessarily those of NANPS.
The North American Native Plant Society is dedicated to the study, conservation, cultivation and restoration of North America's native flora.

Spring 2014
Volume 15, Issue 2
ISSN 2291-8280

Editor: Irene Fedun
Production: Bea Paterson
Proofreader: Eileen Atkinson
Printed by: Guild Printing, Markham, Ontario

North American Native Plant Society, formerly Canadian Wildflower Society, is a registered charitable society, no. 130720824 RR0001.
Donations to the society are tax-creditable in Canada.

NANPS Membership:
CAN$25/YEAR WITHIN CANADA,
US$25/YEAR OUTSIDE CANADA

Join online or send cheque or money order to North American Native Plant Society, Box 84, Stn D, Toronto, ON M9A 4X1.
Telephone: (416) 631-4438.
E-mail: nanps@nanps.org.
Web: www.nanps.org.

Editorial

Spring is a great time to be a native plant enthusiast. Here in a northern climate, this is when I head out to my favourite trails and natural areas to breathe fresh air and take in the bright green signs of early spring. When the trails are clear and you can pull on rain boots and a light jacket, and head out to the forest feeling the warm sun on your back and the cold rising from the small mounds of remaining snow and ice, everything feels so new and fresh. You can't help but feel a sense of relief and lightness following the long, cold winter.

PHOTOGRAPH BY JOHN OYSTON

Cass Stabler

It seems that everywhere I go these days, the benefits of getting outside and connecting with nature are mentioned. I know the average Blazing Star reader is the type to head out into nature on a regular basis. This spring, as you're lacing up your hiking boots, I encourage you to observe the native ecosystems that surround you and see what lessons you can bring home to your own gardens. Spend some time contemplating what makes the forest, tallgrass prairies or other ecosystems work so well. When you are planning your garden, instead of focusing on individual species, think about the communities and interactions between different plants. Which plants provide shade and shelter for their neighbours? Which species like to have their feet wet? How many different native species will do well in your backyard ecosystem? Thinking about these questions and applying these ideas to your garden design will lead to a more sustainable, lower maintenance garden for you to enjoy. Creating a garden that functions in the local ecosystem will also bring a greater diversity of native pollinators, birds, butterflies, toads and other beneficial creatures to your corner of the world.

In my mind, a successful garden is one that brings that calm, fresh feeling of stepping onto your favourite trail in early spring. You can find many native plant gardening resources online at www.nanps.org or through your local wildflower organization.

While you're spending time outdoors, I urge you to connect with a local environmental group. Most organizations are volunteer-run. Every year, they make significant contributions to the local environment by maintaining and restoring natural areas. Providing education at a community display, helping out at a tree planting event or organizing a hike through a favourite local park will be much appreciated contributions. The North American Native Plant Society is one of those valuable organizations always looking for volunteers. If you are interested, please contact us at volunteer@nanps.org.

Cass Stabler lives in Toronto, Ontario and is the newly elected president of NANPS. Her favourite place to hike in the spring is Warsaw Caves Conservation Area, though these days she can often be found in Morningside Park, a hidden gem in the east end of the city. She writes at www.plantthecitygreen.ca.

NANPS EVENTS

MAY 10, 2014 **North American Native Plant Society Annual Plant Sale**

10am – 3 pm
Markham Civic Centre, 101 Town Centre Blvd., NW corner of Hwy 7 and Warden Avenue, Markham

Anyone wishing to volunteer at the sale or in preparation for it, please email plantsale@nanps.org. Volunteers are most welcome!

MAY 11, 2014 **Native Plants: Beautiful, Important, Threatened**

Presentation by John Oyston and plant sale at Artisans on Danforth at 2 p.m. Photo exhibit by John from May 2nd – May 31st.

MAY 12, 2014 **Gardening: Planting the Right Seeds for Biodiversity**

Paul LaPorte presentation at the Carden Community Centre, Lake Dalrymple, Ontario at 7 p.m. By donation.

MAY 26, 2014 **Gardening: Planting the Right Seeds for Biodiversity**

Durham Region Beekeepers' Association, 7 p.m., Greenbank Centennial Hall, Greenbank, Ontario

JULY 3, 2014 **Native Plants: Beautiful, Important, Threatened**

John Oyston at Toronto Botanical Gardens, 7 p.m.

For more information about NANPS Speakers Series and other events please visit www.nanps.org.

NANPS AWARD NOMINATIONS

The **NANPS Conservation Award** recognizes the extraordinary contribution of an individual or group to the conservation, protection or restoration of the natural heritage/native flora of North America at the community, regional, provincial, national or continental level. Deadline for submissions is May 31st.

NANPS Garden Awards recognize and celebrate the amazing gardens that support diverse habitat and shared accommodations for our native flora and fauna. The **NANPS Volunteer Award** is given to a volunteer who makes an outstanding contribution to the fulfillment of NANPS goals. Deadline for submissions to these awards is July 31st.

Visit www.nanps.org for more information.

LESSONS LEARNED

Why do we water plants after planting them? A plant needs water as it adapts to a new site especially if its roots have been damaged during planting. Adding water also gets rid of something the plant does not need: an air gap between the roots and the soil in which the plant is planted. Water and nutrients cannot pass through an air gap and roots will not grow out into an air space, so it is important that the soil touches the roots. Water will make the soil softer and more friable so that it will fall or crumble against the roots. If you add pressure, the root ball will be squeezed up against the soil and the roots will grow outwards absorbing water and nutrients.

When planting small trees, it's often useful to tie marker tape (available at big box hardware stores) to them, so that they are more visible when mowing or weed-whacking. However, if the tape is tied around the trunk, within a few years it will begin to act as a tourniquet as the tree grows expands in girth, preventing the flow of sap up and down the tree trunk. This will eventually weaken the trunk and may kill the tree. I have lost a few white pine seedlings (*Pinus strobus*) this way. To avoid this, tie the marker tape onto a branch rather than the main trunk or cut the tape off with a sharp knife after a couple of years.

John Oyston

Cartoon by Janet Harrison

A Native Plant Tipping Point?

by Suzanne Dingwell

Is the push for appreciation of native plants about to be derailed? Have the proponents of native plant use become entangled in wars of their own and turned the focus away from the importance of the basic messages? Are we about to trip over our own two feet?

In many ways, this is a golden moment in time. Sustainability is a hot topic, and even people who aren't plant lovers are willing to listen to ideas that will make the world more green and clean. Native plants are turning up in places where they've never been seen before: at the United States Botanic Garden (North America's oldest botanic garden on the grounds of the State Capitol in Washington, D.C.), in the *New York Times* and on National Garden Club booklists, among others. What happens next will either be the result of our combined efforts to promote native plants by understanding "the marketplace," or our refusal to understand it causing us to miss the opportunity to make our "product" a good buy.

PHOTOGRAPH BY SUZANNE DINGWELL

*Fireweed (*Chamerion latifolium*) is lovely but, like many pioneer plants, can be aggressive*

WHAT'S GOING WRONG? HOW CAN WE IMPROVE?

- **We need to be passionate without being over-zealous.** Many people are turned off by moralistic overtones. Here's just one real life example. At the recent New Directions in American Landscapes Symposium, one of the presenters urged listeners to take up the mantle of Frederick Law Olmsted (an American landscape architect, journalist, social critic and administrator) and "be drivers of change and moral reformers." In the lobby after this talk, a landscape architect with a large practice in the metro D.C. area said, "I don't like to talk about moral gardening, it makes me very uncomfortable." This is probably a response typical of the majority.

But it doesn't mean we have to limit efforts to educate people about the advantages of natives. What it means is that we need to be able to explain those advantages in concrete ways, with quantifiable outcomes. The moral benefits will automatically follow the practical demonstrations. Sustainable, beautiful plantings of natives will not need moral rationalization and everyone will be happy anyway.

- **We need to promote natives for home landscapes in responsible ways.** Too many people and communities are experiencing failures with natives because of unrealistic expectations.

When people expect natives to "be more drought tolerant, need less fertilizer and fewer pesticides," they **also need to know that this will only be true if the plant is located in a situation that replicates what it would expect in the place where it chose to be native in the first place.** *The burden of education falls squarely on our shoulders.*

We also need to be sure people know that natives can't just be stuck in the ground and abandoned. Witness the tale of the planting of native laurel oaks in an entire neighborhood in

PHOTOGRAPH BY SUZANNE DINGWELL

Native azaleas have special requirements

Florida, where massive die-off occurred because the majority of homeowners expected the transplanted trees to be fine "because they were native." In that case, a great

Photograph by Suzanne Dingwell

A transplanted tree is a transplant first, a native plant second

idea, using the native *Quercus laurifolia* as a street tree, went awry for just this reason. Not enough was done to educate the homeowners on the street so they understood that the transplanted trees needed supplemental water in order to become established.

• **We need to be tolerant of the viewpoints of others.** Andrew Steer, president of the World Resources Institute, noted in a talk last year that "We are stuck where no longer can we make consensual decisions in negotiations." The World Resources Institute believes along the lines of American ecological economist Herman Daly that the world's economy is a subset of the environment and their mission is "to sustain a healthy environment—the foundation of economic opportunity and human well-being."

Mr. Steer pointed out that where we are going to be able to make progress in today's world is **not at the top**, not between world leaders and governments, not in our own congress, but in smaller, more nimble organizations: clubs, groups and coalitions such as the C40 Cities Climate Leadership Group (a network of the world's megacities taking action to reduce greenhouse gas emissions). Translate that into native plant societies, restoration groups, master gardeners, Audubon members, garden clubs, etc. That means we cannot afford to be like world leaders and refuse to engage with people because we don't think their positions fit our personal definitions of worthiness.

Native plant lovers, the world needs our consensual decisions. As we move forward into this golden moment of opportunity, whether you are a homeowner, one-pot owner or landscape architect, let's keep in mind:

1. We need to make welcome in our conversations people **who are purists and people who plant cultivars**. People who have peonies in their yards, and yes, even people who insist they must have invasives.
2. We need to realize that people will have many and varied reasons for wanting to use natives in their yards: sense of place, ecological restoration, attracting wildlife, reduction of non-renewable resources, and that **no matter what our personal evaluation of the relative merits of these goals, we cannot allow our own choices to imply criticism of other's values.** Some people respond to altruistic incentives, some to financial and some to artful. We need them all on our side.
3. **We need to educate and support first-time users of native plants** so that their plantings are not only healthy but beautiful. We want native plantings to bring life and joy. Our educational efforts need to be ramped up so that our converts will both experience success and motivate their friends and neighbors to use natives. Then those corridors of connectivity will become a reality and all of us who do garden for wildlife will share in the benefits.

So. Let's stand united. . . and be inclusive.

Suzanne Dingwell has been promoting the use of native plants for over a decade as a speaker, writer, blogger and volunteer on behalf of the Florida and Virginia Native Plant Societies, Audubon of North Virginia, the American Horticultural Society and others.

Photograph by Suzanne Dingwell

Don't be prickly: Opuntia humifusa *(prickly pear cactus)*

Sue is a member of the blogging team at Native Plant and Wildlife Gardens. *This article originally appeared at* Native Plants and Wildlife Gardens*, http://nativeplantwildlifegarden.com/a-native-plant-tipping-point, and is reprinted here with permission.*

Garlic Mustard: Evil Invader or Benign Immigrant?

As part of the North American Native Plant Society's Dr. Barbara Fallis Lecture Series in March, Dr. Dawn Bazely, a biology professor at York University in Toronto, addressed this question about garlic mustard (*Alliaria petiolata*): Is it an "Evil invader or just another immigrant looking to fit in?"

Dr. Bazely has conducted much of her research within Point Pelee National Park and Rondeau Provincial Park which lie along the north shore of Lake Erie. This ecosystem, a closed-canopy deciduous forest and fire-dependent savanna, is part of the Mixed Woods Plains Ecozone (which includes the Carolinian zone) indigenous to southern Ontario. Current pressures on this ecosystem come from browsing of the understorey by white-tailed deer (whose natural predators have all vanished from the area). Deer are acting as a keystone herbivore as they browse the entire understorey vegetation including tree branches and shrubs up to a height of two metres (six feet). Prior research has shown that when deer densities are in the region of 35 to 55 deer per square kilometre (91 to 142 per square mile) for extended periods (1960s to late 1990s), the result is a missing forest understorey. When deer densities are reduced, through herd management, to 8 to 10 per square kilometre (21 to 26 per square mile), the shaded forest habitat does not return rapidly and the more open habitat persists.

Dr. Bazely set out to study the impact of deer browsing on these understorey forest floor communities. She inherited two deer exclosures (fenced-off areas that exclude deer) from Ontario Parks in Rondeau where she demonstrated that a forest can recover when deer are barred from eating the vegetation. The results of one of her team's studies found that the height of white trilliums (*Trillium grandiflorum*) increased with decreasing deer density and the percentage of plants that flowered also increased. The browse line also disappeared when deer were excluded.

In the mid-1990s, Dr. Bazely's team set up permanent monitoring plots on the forest floor in these parks which were actively being managed to reduce deer numbers. She was interested in the role that deer were playing in the movement of garlic mustard, a non-native plant which likes disturbance. She found some evidence that deer management leads to a decline in garlic mustard density. In 1996, 100% of the plots in Point Pelee contained garlic mustard but 13 years later, garlic mustard was missing from some of the plots. Interestingly, there was no difference in species diversity (the average number of plant species observed per plot) between plots with garlic mustard and those without, i.e. the presence of garlic mustard did not seem to reduce species diversity, which began to increase in these plots following deer density reductions. Her conclusions indicate no long-term effect of garlic mustard on native plant species diversity in Rondeau.

The seed banks (the natural storage of seeds, often dormant, within the soil of most ecosystems) in these communities were another object of study. Dr. Bazely discovered there are far more seeds of ruderal or weedy species (including garlic mustard) in the soil than there are seeds of native plants. The species diversity observed above ground doesn't reflect the diversity of seeds lying below ground. Short-term garlic mustard pulls are, therefore, not effective because of the plant's massive seed bank below ground. You would need to pull garlic mustard for at least six years straight in the same location to significantly reduce garlic mustard abundance. But what effect does six years of trampling by humans have on the native understorey vegetation in the same area?

Dr. Bazely also discussed the reported allelopathic properties of garlic mustard (allelopathy is a biological phenomenon by which an organism produces one or more biochemicals that influence the growth, survival and reproduction of other organisms). The field-based impacts of this research – whether allelopathic effects are the main factor driving the loss of native forest plant species – have not been demonstrated over the long term in forest plots. Dr. John Klironomos at the University of Guelph found that garlic mustard negatively impacts the mycorrhizal fungi of neighbouring plants, such as sugar maple (*Acer saccharum*) seedlings. However, this study was conducted under greenhouse

PHOTOGRAPH BY ANDREW TANENTZAP

Look closely at this photo: deer have significantly reduced the density of understorey forest vegetation outside the exclosure.

conditions and studies to observe the long-term impacts of this phenomenon in field conditions have yet to be carried out.

Some researchers have hypothesized that non-native earthworms may be affecting the abundance of forest floor vegetation. These earthworms consume disproportionately large amounts of forest leaf litter which leaves exposed mineral soil. Native spring ephemerals therefore have a difficult time getting established on bare mineral soil.

Dr. Bazely does not believe that garlic mustard is evil incarnate but that its appearance is a symptom of a disturbed forest ecosystem. She is more concerned with the impact of alien dog-strangling vine (*Cyanchum rossicum* and *C. louiseae*). The choice to pull or not pull garlic mustard is a difficult one. Dr. Bazely has mixed feelings on the issue and says the choice should be site-specific, based on the history of the site and its seed bank composition. The Ontario Invasive Plant Council hopes to develop simple measurements every landowner can use to assess whether they need to get rid of garlic mustard. Dr. Bazely encouraged landowners to contact her if they would be interested in having her lab use their property as part of her seed bank and garlic mustard research (biology@yorku.ca).

Visit NANPS Website

At www.nanps.org, you'll learn about our conservation properties, find tips on how to build a rain garden, read guidelines for seed collection, enjoy lovely photos of native plants and find notices of upcoming events and volunteer opportunities. Past issues of *The Blazing Star* that are more than a year old are available at www.nanps.org/index.php/resources/blazing-star. You can also renew your membership or join NANPS online at www.nanps.org/index.php/about-us/membership/86.

A Guide to Hibernacula Design and Construction

By Vince Fiorito

Hibernaculum (hibernacula in the plural) is a zoological term referring to a place of abode in which a creature seeks refuge for the purpose of hibernation or overwintering.

Photograph by Vince Fiorito

*White trilliums (*Trillium grandiflorum*) and mayapples (*Podophyllum peltatum*) growing on the rootball of a fallen tree*

Hibernacula attract insects, spiders, amphibians, mammals, reptiles and even birds. I build hibernacula because I believe balanced ecosystems include both plants and animals. Also, I find the increased wildlife activity associated with hibernacula to be an entertaining highlight of my native plant gardens.

Hibernacula can occur naturally or be built by humans. Examples of natural hibernacula include bear dens, bat caves, beaver lodges and loose soil under fallen trees. Man made hibernacula include more elaborate, intentional structures or simply the loose soil under compost piles and crevices behind retaining walls.

Most hibernacula offer hibernators a welcome above-freezing microclimate during the winter. These conditions exist in underground chambers below the frost line or near moving water or they result when decomposing organic material generates heat.

If you decide to construct a hibernaculum, plan wisely. Hibernacula are long-term structures that evolve over time. Choose an out-of-the-way location where the hibernaculum won't become an obstacle. Leverage the site's existing structures (rocks, stumps…), grade (flat, sloped…), vegetation (trees, shrubs…) and edges (fences, walls…) to advantage. Hibernacula will attract different species based on size, depth, humidity and composition. Snakes and reptiles prefer well-drained crevices between rocks below the frost line. Chipmunks dig into soil to create tunnels and chambers to hoard food. Salamanders and toads bury themselves deep under leaf litter and loose soil.

A small hibernaculum of a few cubic metres or less may only support insects and a few small mammals. The larger the hibernaculum, the more life it can support. A large enough hibernaculum of the right design in the right location might even attract a bear. (Contact me if you think you have the right location!) Before starting, always prepare the hibernaculum's site with a thorough cleaning to remove undesired synthetic and contaminated materials (glass, plastic, treated wood, paint…).

The Brush Pile Hibernaculum

The brush pile hibernaculum recreates habitat associated with a fallen tree and requires clean organic material. Thanks to this winter's ice storms in eastern North America, you may already have an ample supply.

Photograph by Vince Fiorito

Brush pile in summer

PHOTOGRAPH BY VINCE FIORITO

A brush pile hibernaculum in summer

Instead of burning or hauling away dead trees and branches resulting from the storms, consider using this "windfall" for a hibernaculum.

The first step in building a brush pile hibernaculum is to loosen up the site's surface, making it easier for the future inhabitants to dig tunnels. Next, create a stable foundation with the biggest logs. If the site is sloped, partially bury some of the largest logs to aid stability. Arrange the logs so that they have crevices, gaps and open spaces between them, large enough for the hibernaculum's target species. Fill the gaps between the foundation logs with woodchips, leaves, grass cuttings and/or other organic material which will decompose, create heat and warm the brush pile hibernaculum's interior. Then progressively add smaller logs, branches and sticks filling in the exposed open spaces. Once all the wood has been placed, add plant cuttings, leaves, wood chips and grass cuttings to create roof-like insulating structures over the open interior spaces.

Decomposing organic material in the brush pile hibernaculum attracts insects (including lacewings, assassin bugs and bumble bees), grubs, slugs and spiders, which in turn attract fireflies, toads, wrens, warblers and woodpeckers to eat them. Rotting wood supports mosses, mushrooms and other species of fungi. Deep inside, the warm microclimate provides winter nesting sites for mice, squirrels, rabbits and groundhogs. These small mammals then become prey for hawks, weasels, foxes, coyotes and other predators.

I've observed that most people don't immediately appreciate the beauty of a pile of dead branches which is why I tend to construct brush pile hibernacula in discreet locations, hidden behind an outbuilding or shrubs. I highly recommend taking advantage of a brush pile's trellis-like structure to grow vines. If you are in a hurry to hide your brush pile, consider planting Virginia creeper (*Parthenocissus quinquefolia*) and river bank grape (*Vitis riparia*) around the edges. Any vigorously growing native vine should create the desired camouflaging effect. Showier vines include virgin's bower (*Clematis virginiana*), trumpet creeper (*Campsis radicans*) and American bittersweet (*Celastrus scandens*).

Enhance the appeal of the brush pile with fruit-bearing shrubs to attract birds. Choose plants that grow tall while providing food and cover. Examples of suitable vegetation include blackberry (*Rubus canadensis*), raspberry (*Rubus strigosus*), elderberry (*Sambucus canadensis*) and nannyberry (*Viburnum lentago*). Complete the brush pile with companion plantings of tallgrass prairie species. You will want fast growing, tall forbs like perennial sunflowers (*Helianthus* spp.), cup plants (*Silphium perfoliatum*), asters (*Symphyotrichum* spp.) and

PHOTOGRAPH BY VINCE FIORITO

The same hibernaculum in winter

Continued on page 10

Continued from page 9

goldenrods (*Solidago* spp.). Cup plants provide an additional benefit: the leaves form a cup around the stalk to create a tiny reservoir that holds rainwater or dew for birds and insects to drink.

The brush pile hibernaculum will compress over time as the organic material decomposes into rich compost. You can maintain its original size by continually adding twigs, branches and leaves. The end result should be a focal point of wildlife activity in your garden that resembles a thicket rather than a pile of dead wood.

Photograph by VINCE FIORITO

A well-camouflaged coyote attracted to the activity near the hibernaculum

The Rock Pile Hibernaculum

Rock pile hibernacula create habitat for cold-blooded animals which are more accurately described as ectotherms. Ectothermic snakes, reptiles and amphibians are among Ontario's most threatened species. The primary stress for these animals in our area is habitat loss due to agriculture, industry and urbanization. Rock pile hibernacula can help these species survive human disturbance and assist in their recovery.

Many ectotherms will seek out warm surfaces like dark, sun-exposed rocks when they are active to raise their body temperature. In the fall, they seek frost-free overwintering sites which are safe from predators. Rock pile hibernacula remain above freezing throughout the winter because they have crevices which reach underground chambers below the frost line.

Photograph by VINCE FIORITO

A stone staircase can serve as a rock pile hibernaculum

Simply digging a hole below the frost line and then filling it with rocks may be ineffective. During a spring thaw or heavy rain, this structure may fill with water and could drown the inhabitants. Ideally, you want to construct your hibernaculum on a south-facing slope and dig laterally into the side of the hill. The foundation layers and innermost recesses of the rock pile hibernaculum should be accessible, well drained and well below the frost line. Create access to, and drainage away from, the interior with weeping tile and coarse gravel. Since this part of the structure will be hidden, you can also use broken clay tiles and pots, brick, smashed concrete and other clean recycled materials. Poured concrete can create stable roof-like structures over open interior spaces and act as a load-bearing base that blocks surface level sand, gravel, soil and debris from washing into the underlying open spaces and restricting access to the interior caverns. Dark rocks can passively generate heat with solar energy. Flat rocks on the surface can act like stepping stones, allowing easy access for future maintenance. Once the rocks are placed, wash gravel and sand into the surface level openings. Fill the gaps between surface rocks with topsoil, creating an insulating layer and foundation for companion plants.

Remember that the purpose of some of the rocks is to create warming surfaces for cold-blooded animals. Since you are not trying to create shade or shelter above the surface, typical rock garden plants work well for a rock hibernaculum. Look for shorter, smaller grasses and forbs that thrive in narrow crevices with minimal soil in full sun. Recommended rock garden favourites include early saxifrage (*Saxifraga virginiensis*), nodding wild onion

(*Allium cernuum*), blue-eyed grass (*Sisyrinchium montanum*), long-leaved summer bluet (*Houstonia longifolia*), prairie smoke (*Geum triflorum*), yarrow (*Achillea millefolium*), prickly pear cactus (*Opuntia humifusa*), Carolina puccoon (*Lithospermum caroliniense*), Virginia spiderwort (*Tradescantia virginiana*), cylindric blazing star (*Liatris cylindracea*), pearly everlasting (*Anaphalis margaritacea*), large-flowered beardtongue (*Penstemon grandiflorus*), tall thimbleweed (*Anemone virginiana*), sundial or wild lupine (*Lupinus perennis*) and silverweed (*Potentilla anserina*).

Photograph by Vince Fiorito

Eastern cottontail rabbit

The brush and rock pile hibernacula described above are just two possible designs that create above-freezing microclimates. Aquatic versions of both types exist along shorelines and streams providing overwintering habitat for mudpuppies, frogs, turtles and fish. Hybrid versions combine rocks and organic material. A hibernaculum can be a showy centerpiece in your garden or a subtle feature. Either way, it creates habitat for wildlife, an increasingly necessary service native plant gardeners can provide in our developed world.

Vince Fiorito lives in Burlington, Ontario but grew up in Thunder Bay. His family had a log cabin in a remote wilderness area where he learned to cross-country ski, canoe, fish, hunt and trap. As a teenager, he taught himself wilderness survival techniques that required a knowledge of local native plants. Visit ***Sheldon Creek Watershed Wildlife****: http://s1325.photobucket.com/user/vfiorito/story/48749 .*

Photograph by Ron Hepworth

Thimbleweed makes a great rock garden plant.

Calendar of Events

May 15-18, 2014
Growing Native: 34th Annual Florida Native Plant Society Conference
Fort Myers, Florida
Visit www.fnps.org/conference.

June 5-7, 2014
Native Plants in the Landscape Conference
Millersville, Pennsylvania
To view the conference brochure www.MillersvilleNativePlants.org. Call (717) 871-2189 or email nativeplantsatMU@gmail.com.

June 9-14, 2014
Botany Workshop at Isle Royale National Park
Sponsored by the Isle Royale and Keweenaw Parks Association and taught by botanist Janet Marr, this workshop is open to anyone with beginner/intermediate plant identification knowledge interested in learning about early summer flora native to this species-rich Lake Superior island. Contact Kristine Bradof at 906-482-7860 or kbradof@irkpa.org.

June 14, 2014
Gardening For Nature – Creating Sustainable Landscapes For Home, School And Business
Calvin College Bunker Interpretive Center
Grand Rapids, Michigan
Phone 616-526-7601.

July 16-19, 2014
Cullowhee Native Plant Conference
Dayton, Ohio
Cullowhee, North Carolina
Visit www.wcu.edu.

August 1-3, 2014
Midwest Native Plant Conference
Sixth Annual MWNP Conference: Connecting People and Nature
Visit www.midwestnativeplants.org.

September 20-21, 2014
Maryland Native Plant Society Conference
Cecil County, Maryland
Visit www.mdflora.org/2014conference

See page 3 for NANPS Events.

Bioblitz Discoveries in the Kawarthas

by Ian Attridge

"Those looked different from the other plants, so I thought I had best collect a bit of one," said a visibly excited Anne as she laid out the bag of long leaves on the picnic table. Soon we were all gathered around, waiting for Don's inspection. Sure enough, it was a green arrow-arum (*Peltandra virginica*), a nationally and provincially rare plant. "There is a large population at Gananoque on Lake Ontario," Don noted, "but otherwise it is not found in many places in Ontario and fewer places in Quebec. Where it is found, it usually grows in abundance." That was the case here, where Anne counted about 40 clumps of the impressively large, tropical-looking plant that begged to be noticed.

Anne Barbour, Kawartha Field Naturalists, and Don Sutherland, Natural Heritage Information Centre, supported a large group of volunteers in a "bioblitz" on a large Emily Creek property, east of Lindsay in the City of Kawartha Lakes, Ontario. The Kawartha Land Trust (KLT) had organized this broad inventory of plants and animals and put the call out to its many local partners.

KLT protects ecologically important lands around the Kawartha region and works with landowners and others to foster community engagement and conservation in the area. KLT is part of a vibrant and successful network of land trusts across Ontario and North America.

PHOTOGRAPH BY IAN ATTRIDGE

Kawartha Land Trust bioblitz explorers

From 5 a.m. to 5 p.m. on a sunny day in late June, 15 volunteers from the provincial Natural Heritage Information Centre, Kawartha and Peterborough Field Naturalists, City of Kawartha Lakes Flora project, Fleming College and others fanned out across the property. It didn't take us long to make notable discoveries!

Our early-bird crew explored the north end of the property. This area includes grasslands, large woodlands and a trail along a creek that winds through many bog and fen features. While the dew still hung heavy on the grass, we spotted bobolinks and meadowlarks, and Don found some interesting sedges (*Carex chordorrhiza*, *C. limosa* and *C. livida*) at the edge of the swamp.

Mid-morning, we made a rendezvous with a later crew less inclined to fly out of bed with the early birds. We pulled out maps, described the boundaries of the property and then set up our field equipment at the boathouse. Crews of diverse field skills formed and explored new parts of the property. Books and binoculars in hand, we completed circuits out to the edge of the heronry and along the forest/field edge and we covered a new section of the treed fen trail.

Two teams also headed out onto the open water in canoes to explore the cattail marsh. Our crew documented birds and plants, including some beautiful light pink rose pogonia orchids (*Pogonia ophioglossoides*). Paddling along the eastern shoreline,

PHOTOGRAPH BY IAN ATTRIDGE

Emily Creek

our friends made less distance than expected but found more in the details of the heavy floating vegetation. The Odonata specialist concentrated on dragonflies and damselflies while the botanists collected, among other treasures, bog rosemary (*Andromeda glaucophylla*), northern bog birch (*Betula pumila* var. *glandulifera*), sage willow (*Salix candida*), smooth twig-rush (*Cladium mariscoides*) and the unusually large leaves and spathe of the arrow-arum.

Photograph by Anne Barbour

*Grass pink (*Calopogon tuberosus*)*

Through the Kawartha Field Naturalists, Anne and a leading botanist, Dale Leadbeater, have organized an inventory of plants in the City of Kawartha Lakes. Their teams have been invited to visit properties throughout this county-sized municipality; they now have a good sense of what is typically found where. But then there are the anomalies such as the green arrow-arum. Anne was thrilled to add this rare wetland denizen to her growing list for the municipality along with the rose pogonia, the sedges and other treasures yet to come.

Fueled by a shared meal and our initial successes, two canoes set out in the afternoon under bright sunshine to explore the further reaches of the marsh. Here, the cattails (*Typha* spp.) transition to sedges (*Carex* spp.), with their floating mats of vegetation, before cedar (*Thuja* spp.) and tamarack (*Larix laricina*) start to infiltrate the marsh edges to form the swamp forest ringing this ancient water body.

"Ditch the shoes and canoes," I challenged the crews. Soon we were carefully weaving our way over the sedge mat, bare feet in the cool water. Amid the waving leaves and swamp sparrow calls, sundews (*Drosera rotundifolia*) and pitcher plants (*Sarracenia purpurea*) added their purpley hues to the tapestry. We caught glimpses of unusual forms and a dash of colour against the brown background. Closer inspection revealed tall white bog orchid (*Platanthera dilatata*), another uncommon plant for Ontario and new to the City of Kawartha Lakes list. A further look in the fen and we were able to find bright grass pinks (*Calopogon tuberosus*) and the less conspicuous bog arrow-grass (*Triglochin maritima*), alpine clubrush (*Trichophorum alpinum*), and tiny bog bedstraw (*Galium labradoricum*), plus another new record for the municipality, slender cottongrass (*Eriophorum gracile*).

Altogether we recorded 250 plants, including 6 new plants for the municipality, 21 birds and 31 dragonflies and butterflies. The weather and volunteer effort were fabulous! The botanists have followed up with detailed identification discussions and they've expressed interest in another visit.

While the bioblitz contributed to the documentation and understanding of the area's biodiversity, it helped the Kawartha Land Trust in another way: developing a management plan to guide the ecologically aware landowner with his future stewardship plans. Over the fall, KLT involved Fleming College's Ecosystem Management students to help identify property features, classify vegetation communities and make recommendations for good management practices on the property.

This partnership between KLT and Fleming College was just the latest in a series of collaborations in the area. Ecosystem Management students had also conducted an inventory and plan for a nearby 290-hectare (715-acre) KLT wetland property while Geomatics program students had modelled ways to ecologically connect patches of priority natural features. Trent University graduate students are

Photograph by Anne Barbour

*Green arrow-arum (*Peltandra virginica*)*

Continued on page 14

Continued from page 13

also involved, beginning with carbon dioxide and methane measurements that will help demonstrate the ecological and financial value of this provincially significant ecosystem.

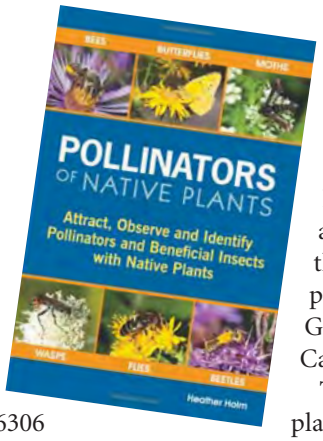
The KLT bioblitz demonstrated the power of partnerships. Through collaboration with the landowner, local institutions and non-profit organizations, KLT was able to discover new species for the area and contribute to a variety of scientific initiatives. This knowledge was then applied to foster good stewardship and wider conservation. Most beneficial of all will be the relationships that were developed to spur new connections, discoveries and opportunities in the future.

Ahh, can't wait until it's field season again…

Ian Attridge is an ecologist, lawyer and the Kawartha Land Trust's Lands Manager. He loves exploring special places in the Kawarthas and helping landowners here and elsewhere achieve their conservation goals. Visit www.kawarthalandtrust.org or call 705-743-5599 for more information.

New & Noted

Pollinators of Native Plants: Attract, Observe and Identify Pollinators and Beneficial Insects with Native Plants
By Heather Holm
Pollination Press LLC
ISBN-10: 0991356306
ISBN-13: 978-0991356300
Paperback, 320 pages, USD/CAD $29.95
Available at www.pollinatorsnativeplants.com/ (along with downloadable 11 x 8.5"posters of native bees on native plants) or www.amazon.com/gp/product/0991356306



Do you remember when energy conservation measures were brought in, recycling efforts were promoted and composting of kitchen waste was encouraged? The next movement in the continuum of reducing our collective footprint (and saving us money) should be aimed at another aspect of our lifestyle – our garden choices. We are discovering that lawn and other exotic landscape plants are not as ecologically – or financially – sound as native plants.

The movement to envision our gardens as part of – and not apart from – ecosystems has been slowly developing. In 2007, Dr. Douglas W. Tallamy implored us to welcome wildlife by *Bringing Nature Home*. Through research, he has shown us the connection between native plants, insects, birds and a diverse, healthy ecosystem.

In 2011, The Xerces Society, a leader in the effort to conserve North America's native pollinators, published *Attracting Native Pollinators: Protecting North America's Bees and Butterflies*. They emphasized the need to provide healthy habitats for pollinators and the connection between pollinators and the food we eat.

Now, Heather Holm, a horticulturalist/landscape designer pulls us right into the garden to get up close and personal with pollinators and beneficial insects on native plants. Heather spent the last 10 years observing and photographing insects. The result was this field guide which profiles 67 species of perennial, native plants of the Midwest, Great Lakes Region, northeast and southern Canada and their pollinators.

This guide helps us choose the right plants for our garden and identify the pollinators that visit – affirmation that we are helping our local ecosystems. Her book could not have come at a better time when even the mainstream is bemoaning the lack of pollinators, particularly the iconic monarch butterfly and European honey bee.

Why the buzz about Heather's book? She brings native plants and their flower visitors together in one concise tome that is portable enough to accompany forays into the garden or field. It's a thorough primer on pollination, pollinators, threats to them and some solutions. In *Native Plant-Insect Interactions*, plant species are slotted into three types of habitat: prairie, woodland edge and wetland edge. Each section is organized alphabetically by genus with two-page treatments, while several plants have four-page spreads and a couple of very pollinator-popular plants, such as swamp milkweed (*Asclepias incarnata*), have lavish, six-page treatments.

Heather shows her design chops with each page colour coordinated to the three habitat categories and quick visual guides showing flowering period, habitat (light requirements, soil type and moisture regime) and range maps. Icons alert us to honey bee/hummingbird visitors and larval host plants.

*Green sweat bee (*Agapostemon *sp.) on New England aster (*Symphyotrichum novae-angliae*), Toronto, September 2013*

PHOTOGRAPH BY CHARLES ISCOVE (THE LOCAL SCOOP)

For each plant species, we are treated to a profile: height, flower, leaf, fruit and root details. We are given a list of complementary plants that flower around the same time and typically in the same habitat. This is great information for someone putting bunches of plants together for sequential blooms. You will find yourself lingering over Plant Notes and Insect Notes which might include tips on planting and the type of bee (short- or long-tongued) accessing nectar. Who knew bloodroot (*Sanguinaria canadensis*) flowers provide pollen but no nectar?

Subsequent pages of each plant species are devoted to foraging behaviours and pictures of pollinators and other beneficial insects, i.e., bees, wasps, flies, beetles, ants, butterflies and moths. Bees are the focus owing to their efficiency in pollinating flowers (by virtue of specialized pollen-collecting structures not found on other insects) but some fly species are also effective pollinators. Syrphid flies are the most common and abundant visitors of marsh marigold (*Caltha palustris*).

Other than butterflies and moths, most insects are not identified down to species level. It is as much a reflection of the popularity and ease of identifying some of our insects as it is

*Bumble bee (*Bombus *sp.) on stiff goldenrod (*Oligoneuron rigidum*) with hoverfly (*Syrphidae*) incoming.*

PHOTOGRAPH BY CHARLES ISCOVE (THE LOCAL SCOOP)

a gap in our knowledge base. Many, like the mining bees (*Andrena* spp.), have about 400 species in North America and are difficult to tell apart in the field. On the other hand, only 46 bumble bee species are found north of Mexico. With such a manageable number to identify, I'll be consulting the newly released *Bumble Bees of North America: An Identification Guide* by Paul H. Williams, Robbin W. Thorp, Leif L. Richardson and Sheila R. Colla.

Check out the glossaries and charts. For bee or predatory wasp-native plant interactions, the popularity of some plants, such as wild bergamot (*Monarda fistulosa*) or purple prairie clover (*Dalea purpurea*), stands out. Each flowering timeline chart is arranged by one of the three habitat types. It presents all of the plant species and gives a more refined schedule of flowering at a glance. It's all about encouraging us to plan our gardens for sequential blooms to keep pollinators satisfied. We're given templates in the form of garden plans: boulevard for sun-dry and shade-mesic, bioswale/ditch (wetland) and woodland edge. Heather has even assembled plans to target certain types of insects such as bumble bees or leafcutter bees.

If your yard is anything like mine, it's a little patch of pollination paradise in a lawn-locked landscape. The only action on my street is around my island oasis with its steady stream of aerial acrobatics on a colourful palette of wildflowers. I would like my neighbours to jump on board, too.

Our neighbourhood has just received the annual coupon book with energy-saving tips and incentives. I'd like to see the day when another coupon book appears with facts on native plants and their benefits, including discounts for purchasing locally sourced, native plants at nurseries and garden stores.

Review by Janet Harrison
Janet is the editor of The Local Scoop, *www.TheLocalScoop.org. (Here's the inside scoop on* Pollinators of Native Plants *– it may be available for purchase at the NANPS Plant Sale on May 10th.)*

Continued from page 1 – **Red Huckleberry**

symptoms. Research shows that this bark tea has anti-inflammatory properties, perfect for the aches, pains and fever that accompany colds. The leaves, which contain quinic acid that may help reduce the build-up of uric acid, a problem for gout sufferers, were traditionally brewed into a medicinal tea. More recent studies have proven the tea stabilizes and even lowers blood sugar levels making it a promising option for people with high blood sugar (hyperglycemia) and some forms of diabetes.

Although I haven't delved into the medical benefits of red huckleberry, I love the fact that this easy-to-maintain shrub produces edible berries even in my shady yard. Taking a cue from nature, I established my shrubs on an old log that had started to decompose. If you don't have your own nature-made nursery, you can grow red huckleberry in acidic, well-drained soil that is rich in organic matter. Keep the plant out of direct sun and remember to water during long summer dry spells.

Even if you don't prefer the taste of the fruit, you can still enjoy red huckleberry for its ability to attract birds. In my garden, thrushes, warblers and orioles are just a handful of the visitors that feast on the berries that serve as a vital source of calories and nutrients for them. While birds are a delight to watch, gardeners in bear or deer country should keep in mind that these mammals and many others also enjoy the bounty red huckleberries provide.

Tammie Painter, "writer of fact, fiction and plenty of stuff in between," lives in Oregon. Her book, Going Native: Small Steps to a Healthy Garden, *was reviewed in the winter 2014 issue of* The Blazing Star. *Contact Tammie at painterwrite@yahoo.com.*

JOIN NANPS

SPRING 2014

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.**

_____ $10 / 1-year full-time student membership – digital version only of *The Blazing Star* (All other members now have the option of receiving the digital version of *The Blazing Star* in colour or the mailed version in B&W. Memberships are for a calendar year from Jan.1 to Dec. 31)

_____ $25 / 1-year regular membership

_____ $40 / 2-year regular membership

_____ $60 / 3-year regular membership

_____ $200 / 5-year Sustaining Membership includes a $100 tax receipt

NAME: _____

ADDRESS: _____

_____

PHONE: _____

EMAIL: _____

Do you wish to receive *The Blazing Star* electronically? _____

Join online at www.nanps.org or complete this form and mail with cheque to NANPS, Box 84, Station D, Toronto, Ontario M9A 4X1. For info, call (416) 631-4438; e-mail nanps@nanps.org.

NORTH AMERICAN
NATIVE PLANT SOCIETY

P.O. Box 84, Station D
Toronto, Ontario, Canada
M9A 4X1

CANADA POST / POSTES CANADA

Postage paid / Port payé
Publications Mail / Poste-publications
PM41578532