



Native Plant to Know

Joshua Tree

Yucca brevifolia

by Tammie Painter

With its zigzagging form and shaggy branches topped with clusters of spiky leaves, the Joshua tree (*Yucca brevifolia*) has been described as everything from dramatic to Dr. Seussian. Captain John Fremont, upon seeing the plant for the first time in the late 1800s, wrote that it was "the most repulsive tree in the vegetable kingdom." I, however, find the otherworldly appearance and natural history of this member of the Agave family fascinating.

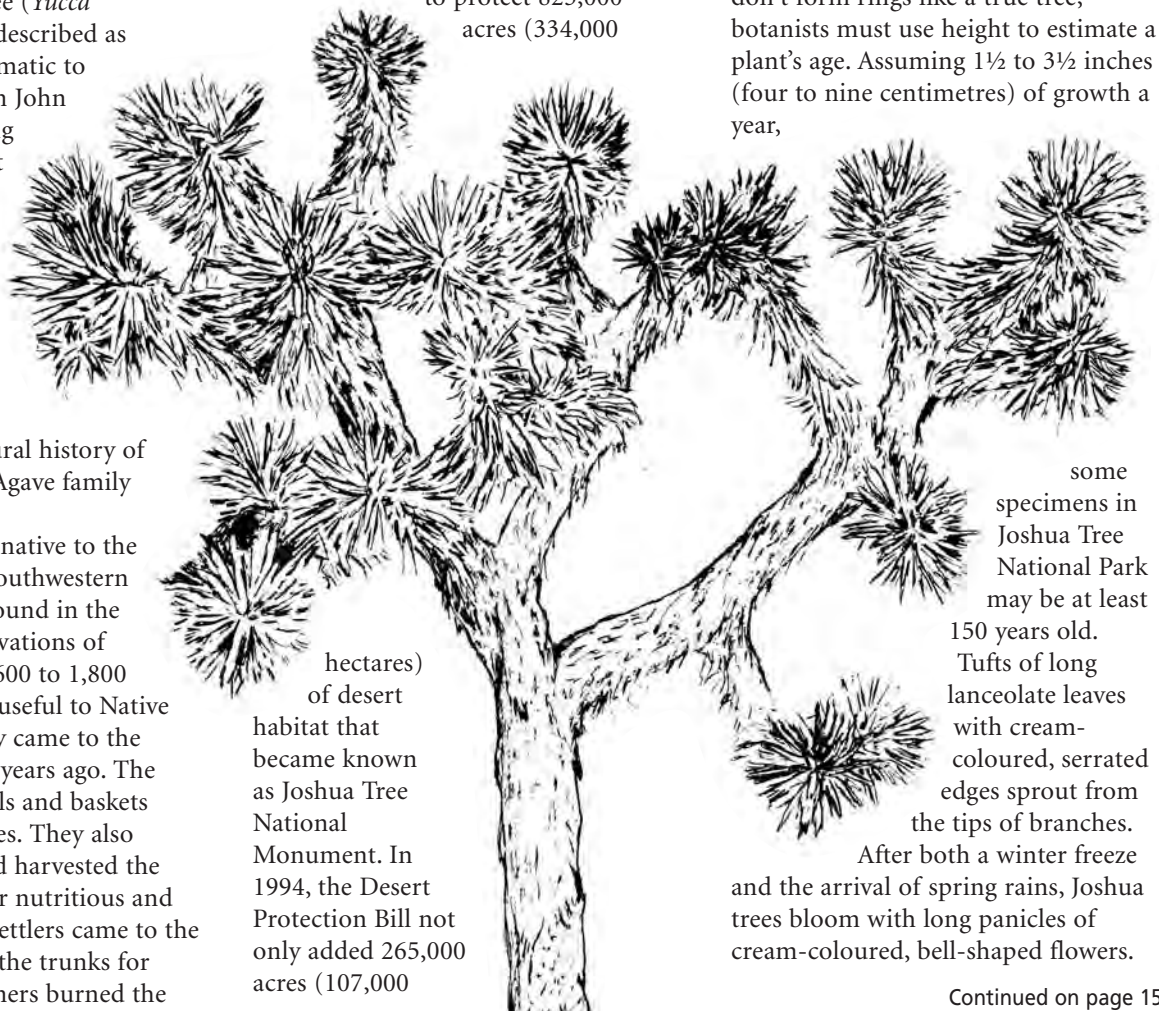
The Joshua tree is native to the high deserts of the southwestern U.S. and primarily found in the Mojave Desert at elevations of 2,000 to 6,000 feet (600 to 1,800 metres). It has been useful to Native Americans since they came to the region thousands of years ago. The Cahuilla wove sandals and baskets from the strong leaves. They also roasted the seeds and harvested the sweet flower buds for nutritious and tasty snacks. When settlers came to the West, ranchers used the trunks for fence rails, while miners burned the

trees to fuel steam engines.

In the 1920s, worried about the effects of development on desert species, activist Minerva Hoyt fought to protect 825,000 acres (334,000

hectares) to the protected area, but also made it a national park.

The Joshua tree's trunk is composed of a tangle of fibres. Since these fibres don't form rings like a true tree, botanists must use height to estimate a plant's age. Assuming 1½ to 3½ inches (four to nine centimetres) of growth a year,



hectares) of desert habitat that became known as Joshua Tree National Monument. In 1994, the Desert Protection Bill not only added 265,000 acres (107,000

some specimens in Joshua Tree National Park may be at least 150 years old.

Tufts of long lanceolate leaves with cream-coloured, serrated edges sprout from the tips of branches.

After both a winter freeze and the arrival of spring rains, Joshua trees bloom with long panicles of cream-coloured, bell-shaped flowers.

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The *Blazing Star* is . . .

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In Memory of Jim French

This letter came to NANPS from Larry Lamb, a former president and director of the Canadian Wildflower Society (CWS), precursor to the North American Native Plant Society, in honour of James French, NANPS honorary director and co-founder who passed away last year.

Dear Sir or Madame,

This donation is in memory of Jim French. Jim's vision for a native wildflower organization was a landmark for change. The most important aspect was that native plants, formerly ignored at nurseries and by landscapers, are now appreciated for their aesthetic, artistic and cultural heritage, not just for their valuable practical and scientific aspects. There are native plants at virtually every nursery across the continent. Many specialise in them. The interest Jim pioneered has spread GLOBALLY!

I was happiest when I shared and promoted Jim's vision as a director and president of CWS for nearly a decade.

Jim will be missed. My deepest sympathy to Natalie and family. Despite several attempts, I never got to walk with Jim through his Stoney Lake garden. I really regret missing this opportunity.

Sincerely,

Larry Lamb

Woodstock, Ontario



PHOTOGRAPH BY ERIKA THIMM

NANPS members celebrating Jim French. From left to right standing: Jim Hodgins and Donna McGlone. Kneeling: Unidentified person, Erika Thimm, Lorraine Johnson, unidentified person, Jim French, John McGlone, Richard Woolger, Deb Dale and Trish Murphy. If you happen to know the names of the unidentified persons, please email editor@nanps.org.

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Please mail your donation to our new address:

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Have you ever wondered what our bestsellers are? Butterfly milkweed (*Asclepias tuberosa*) tops the list. Other species that sell well are trilliums (*Trillium* spp.), bloodroot (*Sanguinaria canadensis*), prairie smoke (*Geum triflorum*), bee balm (*Monarda didyma*), wild ginger (*Asarum canadense*) and wild columbine (*Aquilegia canadensis*).

For more information, visit nanps.org.



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Would you care to discuss that?

by Robert G. Mears

For the past decade my wife Coleen Zebeluk and I have been replanting an acreage in southern Manitoba to native tallgrass prairie. We've been involved with the local native flora, fauna and conservation community through events, lectures, tours, etc. It's good to rub elbows with people who share your interests.

Replanting native ecosystems involves research (which, as you know, is time-consuming) and trial and error (which can be costly). We've discovered that people who care about the natural world have a wealth of knowledge — from the big picture to the details. We've also noticed that people with a passion for nature love to share what they know and help each other find ways to protect what's left and bring back some that has disappeared.

There are more than 100 native flora and/or fauna organizations in Canada and the United States, triple that number of informal groups on Facebook and Yahoo. Most groups emphasize either flora or fauna. But the two are not mutually exclusive. What's more, it's important to consider affiliates — fungi, lichens, nematodes and micro-organisms — as crucial participants in healthy ecosystems. Most people who interact with nature, either as a native ecosystem restorer or a backyard gardener, are aware that all life forms contribute to the intricate dance of nature. For example: many plants and insects have specific relationships. The replanting Coleen and I did inadvertently provided habitat for painted lady butterflies. We found out why when talking with a local native plant vendor. Pussytoes (*Antennaria* spp.) are host plants (a primary food source) for the caterpillars, while prairie sage (*Artemisia ludoviciana*) is the preferred plant for cocooning. We have the two species growing close together. And, as the photo illustrates, the adults love blazing star



PHOTOGRAPH BY ROBERT G. MEARS

Painted lady butterfly on meadow blazing star (Liatris ligulistylis)

(*Liatris* spp.) nectar.

Local internet groups are important. Regional differences, from one locale or ecosystem to another, underscore the need for them. Yet, across the continent there are many commonalities. For example: how to prepare an area for planting, whether to sow seed or plant seedlings, how to eradicate exotics, how to attract birds

or butterflies, what's best for wild bees. While flora might be different from one location to another, planting protocols are the same whether you're in California or New Brunswick. Consider, as well, that certain ecosystems spread over vast territories. For example, tallgrass prairie — part of The Great Plains — stretches from southern Manitoba to the Gulf of

Mexico. Flora, fauna and affiliates interact with each other and they and the ecosystems they inhabit are pan-continental.

Connecting the dots

I've also been designing, building and hosting websites for nine years. I use open source software. Communication in that sector is often by way of forums or discussion boards many of which are international. I use them all the time and often find my question has been answered.

Sometimes it's just a link to the solution, but that's what I'm after.

Forums are a precursor to platforms such as Facebook, LinkedIn or Google groups. They all service online communities where people exchange information, help one another and even make friends or business contacts. However, on the local native plants Facebook group, I received a response to a question about seed viability, but couldn't find the answer again when I looked for it later.

The following characteristics set topical discussion boards apart from social media:

- focus • depth • categorization •
- searchability • retrievability •

It occurred to me that an online forum devoted to improving conditions for native flora, fauna and affiliates would be a good thing. It could be a platform where:

- Experts interact more with self-informed naturalists and novices.
- Once it exists, information is easily

found.

- The same details do not need to be discussed over and over.
- Participants are directed to pertinent worthwhile information saving time for everyone.
- Successes and failures are shared which helps establish best practices.
- People lobbying for this or that can learn from others who have done the same.

As I said, research is time consuming; trial and error is costly. Had a forum on the subject at hand existed when we started 12 years ago we would likely have saved a lot of time and money. And we'd be further along.

Will it fly?

The concept of a forum appealed to me so much that I set one up. It is presently called "Native Biota." The web address is:

<https://nativebiota.studiofive.ca/>

But ideas are only as good as the

people who adopt them. To be of any value a forum requires participation.

Should you choose to investigate, this one has two main parts:

- A growing number of categories and boards, some of which await their first post.
- A category to discuss the forum itself.

It also has a number of other features which you will discover once you register.

Should you choose to participate, you can start a topic or message, add a link or help sort out some practical details, not the least of which is the name of the board.

Your contribution will help us all.

Robert G. Mears is a visual artist, designer and naturalist. He can be reached at robert@studiofive.ca or studiofive.ca. To read about the tallgrass prairie replanting project he and Coleen are working on (and to view some gorgeous photos), visit silverplains.ca.

The forum is comprised of a number of layers which are set up as:

- Categories
 - Boards
 - Topics
 - Messages
 - Replies

Categories have sub-Categories called Boards. Within each Board are Topics which have Messages and Replies.

PHOTOGRAPH BY ROBERT G. MEARS

Protecting the Moraine

by Jane Zednik

I love the Oak Ridges Moraine. It is simply glorious. The ever-changing local views take my breath away and often bring tears to my eyes. Every day on this hilly property near Garden Hill, Ontario that I call home, the sights and sounds are subtle, sublime and untranslatable.

My husband, landscape artist Harry Stooshinoff, and I have lived on the eastern section of the Oak Ridges Moraine since 1993. This unique landscape was formed 12,000 years ago by advancing and retreating glaciers. Rolling hills and river valleys cover 1,900 square kilometres (730 square miles), extending over a large swath of southern Ontario. Rampant clear-cutting in previous centuries denuded the land with the resultant devastating floods and soil erosion. It was only through the herculean efforts of foresters Edmund Zavitz and A.H. Richardson and conservationist Verschoyle Benson Blake that millions of trees were planted to help reforest this extraordinary landform which acts as a giant hydrologic filtration system, providing clean drinking water for over a quarter of a million people.

The Government of Ontario brought in the Oak Ridges Moraine Conservation Act and the Oak Ridges Moraine Conservation Plan at the dawn of this century as measures to protect its ecological integrity, although many argue that both the legislation and plan are deeply flawed. The conservation plan is currently under review, with amendments expected in spring 2017.

The 9.5-hectare (23.5-acre) property we purchased was comprised mainly of non-native brome grass and weed-filled hayfield. For reasons unknown, a two-hectare (five-acre) climax forest (with trees 75-120 years old) at the southern end had not been cleared. This deciduous forest connects to wooded areas on several abutting properties that constitute a designated Significant Woodland, which is part of

the greater Ganaraska Forest, southern Ontario's largest continuous block of forest.

Our woodland consists primarily of sugar maple (*Acer saccharum*), red oak (*Quercus rubra*), black cherry (*Prunus serotina*), beech (*Fagus grandifolia*) and ironwood (*Ostrya virginiana*) with a few stately hemlocks (*Tsuga canadensis*) in the interior. The perimeter hosts birch (*Betula* spp.), pignut hickory (*Carya glabra*) and red osier dogwood (*Cornus sericea*), which delights with its brilliant red branches in the winter. Along the hedgerow that defines the western edge of the property, hawthorns (*Crataegus* spp.) and butternuts (*Juglans cinerea*), a Species at Risk, dominate. The eastern edge is defined by a windbreak planted in the early 1980s consisting of white spruce (*Picea glauca*), poplar (*Populus* sp.) and non-native Scots pine (*Pinus sylvestris*).

To our dismay, a wide old hedgerow was cut down on the property to the east of ours and many trees and hedgerows have recently been removed on the large property to the west. The extensive land alteration can be seen on Google Earth satellite maps.

We wanted to address fragmentation on our land by connecting the large southern forest to the woodland to the north, providing natural linkage areas and wildlife movement corridors. We realized that restoration of the mature woodland would be impossible – and perhaps not desirable. Retaining large swaths of open field provided many habitats for wildlife. We left a buffer zone beside the old butternut trees in the hopes that the few nuts they produced might grow into seedlings. This proved to be a wise decision; over a dozen butternut seedlings have established themselves within the buffer zone.

With the help of Ganaraska Region Conservation Authority (GRCA) staff and inexpensive stock from the government-run tree nursery in Orono, we started at the north end of our property and planted 150 native

shrubs such as bush honeysuckle (*Diervilla lonicera*), which was already present in pockets, Canada fly honeysuckle (*Lonicera canadensis*) and viburnums such as hobblebush (*Viburnum lantanoides*) and downy arrowwood (*V. rafinesqueanum*) to form a central understory. The following year, over 2,500 coniferous tree seedlings were planted around the shrub zone including white spruce, white pine (*Pinus strobus*), tamarack (*Larix laricina*) and white cedar (*Thuja occidentalis*).

The plan was to fill in the field between this planting and the existing hardwood forest but in 1995 the government closed down their nurseries. This put the cost of massive tree planting out of reach for us.

Over the years, we scrounged tree seedlings and shrubs from stewardship councils, tree auctions and nurseries such as the terrific Peterborough Ecology Garden. Around our house we planted a variety of Carolinian trees such as fringe tree (*Chionanthus virginicus*), yellowwood (*Cladrastis lutea*), hackberry (*Celtis occidentalis*), the pretty spring-flowering redbud (*Cercis canadensis*), Ohio buckeye (*Aesculus glabra*), bladder nut (*Staphylea trifolia*), black walnut (*Juglans nigra*), shagbark hickory (*Carya ovata*), the endangered American chestnut (*Castanea dentata*), bur oak (*Quercus macrocarpa*) and more butternuts, including transplants from a nearby old farmstead, to name but a few. Wildlife-attracting shrubs such as nannyberry (*Viburnum lentago*), wild raisin (*V. cassinoides*), hobblebush, chokeberry (*Aronia melanocarpa*), spicebush (*Lindera benzoin*), serviceberry (*Amelanchier canadensis*) and others were also planted.

Black walnut seedlings grew quickly and produced many nuts. Seedlings that sprang up in the yard courtesy of squirrels and chipmunks have been successfully transplanted into the larger plantations. We hope that one day they will connect our mature

woodland with the woods to the north of our property. The beautiful, exotic Kentucky coffee trees (*Gymnocladus dioicus*) that we planted outside their normal growing zone in an open field as a brutal test of their survival skills have thrived. These unique looking trees have produced many seeds which we offered through the NANPS seed exchange this year. They have a 75-80% germination rate.

In 2004, new funding for tree plantings became available through Trees Ontario. A couple of years later, with financial help from them and the Oak Ridges Moraine Foundation, and design planning advice from GRCA, we put 700 each of white pines, red pines (*Pinus rubra*) and white spruce in the open field between the area planted in 1994-1995 and the climax deciduous woodland. 2007 was a

terrible drought year, but, to our amazement, over 70% of the tree seedlings survived. The eastern perimeter and areas where the conifers failed have since been planted with black walnut, red maple (*Acer rubrum*), hackberry, cedar and other tree seedlings found on the property or started from seed. Last fall we added red mulberry (*Morus rubra*) seedlings grown from seed that we collected from a local specimen that's over 100 years old. We're anxious to see if they will overwinter.

Another ecological enhancement was the creation of a large pond in 2004. Creatures such as water newts, spring peepers, green frogs,

toads, a young painted turtle and various snake species found it quickly and made it into a fascinating ecosystem. An annual delight is the arrival of yellow-spotted salamanders that make their way several hundred metres from the old woodland to breed in the pond. My husband mows a connective strip through the field to facilitate this amazing journey.

White trillium (*Trillium grandiflorum*), dog's tooth violet (*Erythronium americanum*), wood fern (*Dryopteris* sp.), meadow rue (*Thalictrum* sp.) and Pennsylvania sedge (*Carex pensylvanica*) are the dominant groundcovers in the deciduous woods, with naked flower trefoil (*Desmodium nudiflorum*) and the late summer bloomer big-leaf aster (*Eurybia macrophylla*) gracing the northern perimeter. To enhance biodiversity, we are introducing other native understorey plants such as wild ginger (*Asarum canadense*), wild leek (*Allium tricoccum*) and wood aster (*Eurybia divaricata*) which have been grown from seed, purchased from local nurseries or rescued from woodlots facing clearing.

Our greatest challenge is controlling invasive species such as European buckthorn (*Rhamnus cathartica*), autumn olive (*Elaeagnus umbellata*) and especially dog-strangling vine (*Vincetoxium rossicum*) which has become a horrible problem in both the woodland plantations and the large field. Dealing with it has become a daily chore from spring to fall since control is critical. Dog-strangling vine can produce up to 32,000 seeds per square metre, growing in monospecific stands. It creates dense shade, outcompeting native plants for space, water and nutrients. Its roots produce chemicals through allelopathy that prevent neighbouring plants from growing.

In recent years, wild grape (*Vitis* spp.), a woody deciduous vine that is spread by hungry birds and will climb over any shrub, tree, or fence post that can

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PHOTOGRAPH BY JANE ZEDNIK

The west side of the pond. Native plants include *Monarda punctata* (horsemint), *Coreopsis tripteris* (tall coreopsis) and *Eryngium yuccifolium* (rattlesnake master). The pond is surrounded by native trees and shrubs such as Kentucky coffee tree, yellow-wood (*Cladrastis lutea*), white and red pine, white spruce and gray dogwood (*Cornus racemosa*).



PHOTOGRAPH BY JANE ZEDNIK

The path into the mature woodland where native plants, including species at risk, are being planted to increase biodiversity.

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offer support, has taken over large areas of the field and parts of the regeneration planting. It forms a canopy that will block enough sunlight to significantly reduce a tree's ability to grow or to smother out seedlings. Last year's drought, the second driest year since 1914 according to Environment Canada, presented a real challenge to the newly planted red maples and hackberries, with half expiring despite almost daily watering.

Almost all the old beech trees in the mature woodland have succumbed to beech bark disease, a non-native insect-fungus complex caused by beech scale in combination with canker fungus. We hope the remaining seedlings develop resistance. Another introduced pest, the pine shoot beetle, attacked the terminal shoots of some white pines, but we've pruned out affected branches and we're hopeful that we've destroyed these pests.

Despite legislation, there is no real protection for woodlands and hedgerows on the Oak Ridges Moraine. Thousands of trees are being cut down to make way for industrial wind energy facilities. Legislated setbacks can be effectively ignored by developers and existing setbacks are not adequate to deal with the new realities of dense residential, commercial and industrial development. Agri-business has led to

the virtual extinction of hedgerows which function as vital wildlife movement corridors. No government ministry is taking into account the cumulative impact of hedgerow removal and woodland clearing. Municipalities often lack the will to enact by-laws to protect forests. Some uninformed public works departments among the dozen municipal governments on the moraine clear trees or mangle them (using the dreaded flail mower) – even destroying Species at Risk – oblivious to their value as wildlife habitat and movement corridors, erosion controls and groundwater recharge systems.

Utility companies employ heavy-handed vegetation control measures continually reducing the tree canopy across the moraine, without replacing lost trees, and spraying questionable herbicides even in significant recharge areas or areas of high aquifer vulnerability. The region's population is on the rise and new highway extensions are putting added pressures on remaining ecosystems.

Much of the forest habitat in southern Ontario, specifically the Oak Ridges Moraine, is under private ownership but these ecologically significant lands are broken into thousands of small woodlands surrounded and

intersected by roads, farms and rural and urban development. Small fragmented woodlots do help wildlife but they don't have the same conservation value as large woodlands with deep forest interiors. The provincial government would do well to consult with woodlot owners in the way it does with farming communities to sustain and enhance tree canopy coverage, especially interior habitat.

Only 200 years ago, forest stretched across southern Ontario. On our property we've attempted to provide natural linkage and wildlife movement corridors and increase the rapidly disappearing, crucial forest interior. The property is now criss-crossed with wildlife trail systems, some well-worn. A colony of wild turkeys finds the 2007 plantation an ideal location for nesting, and animals from amphibians to insects, birds and mammals are finding suitable habitats to nest and raise their young. We cannot replicate the natural heritage of the past and only time will tell if our efforts enrich biodiversity, but the process has definitely enriched our lives.

Jane Zednik works on her artistic pursuits and hunts for books to supply her book trade when not tending over 30 garden beds, roaming her property or working enthusiastically to protect the Oak Ridges Moraine.



The 2007 planting of white and red pine and white spruce seedlings in the field that connects the large 1993-1994 planting to the north and the mature woodland to the south. The large trees in the background are butternuts.

PHOTOGRAPH BY JANE ZEDNIK



Spotted salamanders make the long trek to breed in the pond each spring. It is not unusual to see a dozen in the shallow end.

PHOTOGRAPH BY JANE ZEDNIK

Chinook Zone Gardening

by Arden Nering

When I started working in the nursery and landscape trade over 20 years ago, I learned quickly that the mainstream gardening industry did not cater to unique and challenging environments such as the Chinook zone of southern Alberta. Customers would often get their gardening ideas from TV or magazines published in the United States or featuring gardens from Toronto or Vancouver. Honest growers would dash their clients' dreams of exotic trees, shrubs, vines and perennials, while designers and growers with less integrity or perhaps just lacking in knowledge and experience would let them spend their money on unhardy plant material. Ours is a low climatic zone number that is prone to shifting, a Zone 1 or maybe 1B, sometimes a 2B, but those numbers don't always make sense. The temperature charts and zone descriptions provided to help homeowners determine whether a beautiful garden centre plant will live



PHOTOGRAPH BY ARDEN NERING

Hairy false golden aster

here often fail to take into account the Chinook winds and crazy temperature variations that characterize our area.

Chinooks occur when warm, moist winds from the Pacific Ocean blow inland and are forced up by the Rocky Mountains where the moisture is lost to precipitation leaving warm, dry winds to howl down on the eastern slopes and across the foothills, to eventually die out on the vast prairie. As I write this piece in January, the snow, which was knee deep two days ago and retained by -20 to -30C temperatures (-4 to -22F), is quickly being devoured by winds that slam into our house southwest of Calgary at up to 100 kilometres (60 miles) per hour and shake the windows. Rivers form, ponds fill and the ground is laid bare. Sometimes the warm weather stays for a day or two and sometimes it's weeks before there is another snowfall and the temperatures drop back down to the freezing lows that might be considered normal for the time of year... except that in the Chinook zone there is no normal. One

year we have winter with a few Chinooks and the next we have a Chinook with a few winter snowstorms.

Roots trapped deep in still frozen soil cannot replace moisture lost to days of drying winds, especially when the top inch where the crowns of plants are nestled freezes and thaws again and again over the winter. Raised beds are also susceptible to the damaging freeze/thaw cycle. Extreme temperature fluctuations create wounds on the southwest sides of trees that have felt the warm gaze of the sun all afternoon before being plunged into a deep freeze as an arctic weather front moves back in. Towns and cities create micro-climates that allow gardeners and growers to push the envelope by placing tender plants on the east or north side of buildings and heavily mulching or even wrapping them in burlap for extra protection. Shelter, plant placement and water in the fall are important – don't send your plants into the winter dry. Sometimes in the spring, innumerable cedars (*Thuja* spp.) and fancy junipers (*Juniperus* spp.) will be dead or so unsightly that homeowners remove them rather than waiting for them to

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PHOTOGRAPH BY ARDEN NERING

Castilleja sp.

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recover. An observant local grower once told me that the native aspen poplars (*Populus tremuloides*) are never fooled by Chinooks, waking up only when spring is truly on the way. In order to survive and prosper in the Chinook zone, plants must be able to tell the difference between a Chinook followed by weeks of warm weather in February and the onset of spring.

Both urban and rural gardeners are challenged by these conditions. Establishing trees, shrubs and flower gardens in areas with little protection from the Chinook winds can be time-consuming, frustrating and expensive so it is important to choose plants that are hardy. The idea of creating a naturalized space as part of a landscape design is new partly because native plants were not available until recently.

When I decided to start growing native perennials I heard comments like “We don’t grow/sell native plants because nobody wants them” and “We want to use native plants but nobody sells them.” This was an opportunity for me and other native plant producers to offer satisfying alternatives for property owners. I believe the challenges created by

Chinook conditions have allowed native plants to come into favour in southern Alberta and support the growth of the native plant industry here in ways they have yet to do in more stable, predictable or warmer climates.

As a native wildflower grower, I help people look past the unprepossessing plant in the pot to the long-term benefits of growing it. Native plants often don’t appreciate being confined to a pot and can’t always compete at the point of sale against cultivated plants that may have been selected for production partially because they grow well and look good in a pot, but do not necessarily do well over the long haul. Take native lupines (*Lupinus* spp.): they are so deep rooted



Sticky geranium

PHOTOGRAPH BY ARDEN NERING

that no matter which pot you put them in all the roots are squeezed at the bottom trying to get out. They look somewhat bedraggled in a pot, but if you start them directly into the garden from seed, they germinate easily, grow quickly and look beautiful. Sticky geranium (*Geranium viscosissimum*) is a large plant which will go dormant in a pot by mid-July, looking half dead and therefore unsaleable until the following spring. It behaves this way because its survival mechanism when faced with unfavourable conditions is to go dormant and try again next year. The ability to outlast challenging growing conditions makes native plants a good option and great investment.

One of the biggest obstacles that native plants must overcome is negative stereotyping. Often they are labelled less attractive or appealing than plants from “somewhere else.” Some wildflowers are considered weedy and invasive, and yet seed mixes are often expected to create instant wildflower meadows. Confusion over what constitutes a wildflower seed mix can lead to disappointment. Expectations based on annual (non-native) wildflower mixes fizzle when faced with the reality of native perennial mixes that don’t explode into blooms in the first year, but germinate over several years and don’t produce flowers for at least a year. Where is the advantage? Native



PHOTOGRAPH BY ARDEN NERING

Looking west towards the Rocky Mountains from a favourite collection site in the Porcupine Hills of Southern Alberta.

perennial mixes offer long-term solutions whereas annual mixes are cheap, short-term fixes that will soon need attention – there is no such thing as a “no maintenance” landscape.

Native plants are as diverse as cultivated plants. Some are aggressive while others are extremely slow growing. Some prefer more shade while others need sun and some have big showy flowers but only bloom for a few days, while others may have a very long blooming period with small flowers. The advantage that native plants have over cultivated plants when used in their native environment is their lineage; adaptations developed over eons have allowed them to survive and prosper independently. In rural settings, the abundant deer are rarely interested in the native plants in your yard when they can get them in so many other places, but those exotic petunias on your deck look enticing. The bonus of using native plants is that they support biodiversity. Milkweed (*Asclepias* spp.) is a now famous example of how removing a native plant species can seriously threaten the ability of other creatures to survive. Thankfully, many people have taken up the cause of the monarch butterflies by planting milkweed in their communities to create corridors for the monarchs’ yearly migration from Mexico to Canada.

Doing your homework and choosing the right plant in the right place is the best way to get satisfying results. Certain native wildflowers, such as prairie sage (*Artemisia ludoviciana*), wild yarrow (*Achillea millefolium*) or fireweed (*Chamerion angustifolium*), that are aggressive spreaders, probably do not belong in urban gardens but these plants are exactly what rural property owners

with big spaces should be planting – they give alien weeds some serious competition. Everyone loves paintbrushes (*Castilleja* spp.) with their fabulous combinations of yellow, white, pink, red and sometimes even purple, and the brilliant orange



Arden's beloved, iconic Red Shed Sales Hut was salvaged from an old farmstead.

blooms of wood lilies (*Lilium philadelphicum*), but both require a commitment to get established and they're not really suited to new gardens. Paintbrushes are semi-parasitic and need to have access to the roots of host plants to flourish; they are best planted into established gardens where they can quickly make connections. Although paintbrushes can be found growing in the ditches in Jasper and Banff national parks, they do not tolerate the Chinook winds around Calgary and will only grow in sheltered sites with some snow protection. Wood lilies are very slow growing, taking five to seven years to produce their first flower. In their first few years, they are very small and can easily be lost in the fray as weed seedlings, inevitable in new gardens, erupt around them.

Some of the earliest spring flowers in southern Alberta are native, such as the purple-flowered prairie crocus (*Anemone patens*), low townsendia

(*Townsendia sericea*), and pretty, daisy-like cut-leaved fleabane (*Erigeron compositus*) which blooms profusely for three or four weeks. These plants can have their bloom period interrupted by a blizzard only to emerge from the snow unfazed. On the other end of the growing season, native perennials that flower late in the fall like smooth aster (*Aster laevis*) and hairy false golden aster (*Heterotheca villosa*) have extended bloom times to take advantage of whatever conditions occur. They will be in flower and in seed at the same time to hedge their bets, ensuring that at least some of their seeds will mature before winter hits (anytime between September and December in the Chinook zone.) These early and late season plants provide nectar and pollen for insects that then become

food for birds and other animals.

As more and more natural spaces are disturbed and native plants are replaced with acres of lawn or sterile plants, it is vital that we consider the impact and benefits of native plants. In regions that experience challenging growing conditions, native plants offer frustrated gardeners new options for success. Without the challenges created by these regional conditions, we may never have considered native plants for our gardens. Along the way we have broken down old stereotypes and learned that native plants have much more to offer us than solutions to our landscaping problems.

Arden Nering and her husband Troy own Wild About Flowers, a specialty nursery focused on native perennial wildflowers of Alberta and the journey towards creating low-maintenance, chemical-free, sustainable landscapes. They were the winners of the Globe and Mail Small Business Challenge for Alberta in 2015.

PHOTOGRAPH BY ARDEN NERING

A Path to Restoration: Healing Gardens

by Dan Bissonnette

Imagine stepping into a garden that has been designed specifically to optimise health and well-being. Imagine an outdoor space that is nearby and accessible, yet makes you feel as if you are miles away from the stresses and cares of everyday life.

I had this exact experience in 1993, on my first encounter with a healing garden. In early June, I was invited to visit some new friends and their garden. I drove to their home after an especially stressful day at work. The troubles of my job were still on my mind when I pulled into their driveway and made my way to their door. However, once my hosts greeted me and escorted me to their garden, my mood lightened considerably. Even though it was only a short distance to their garden, I felt as if I had stepped into a different world that allowed me to discard my stressful thoughts and find focus and serenity.

As a professional horticulturist I had visited many gardens over the years, but this one stood out. So much of my career had been saddled with

budgets, deadlines and the latest garden fads, which made this particular landscape seem like an oasis of inspiration. That experience left a lasting impression on me.

I recalled that experience vividly 20 years later, when I began to develop the first educational program on healing gardens in Windsor and Essex County in 2013. The objective: to develop an adult evening course that would teach people how to plan and construct their own healing gardens. Then, as now, the concept of healing gardens and their benefits were not

widely understood, so many of my peers did not understand exactly what I had in mind. Some people thought that this new program would focus on medicinal plants. Others guessed that this would be a therapeutic garden program.

I did not want to develop a course on herbal medicine, which I felt would have limited appeal and could result in a lawsuit if a participant had an adverse reaction to using a herbal concoction that he or she learned about in my class. Nor was I interested in developing a therapeutic garden program, since I had neither the qualifications nor the patience to prescribe therapeutic activities to people in nursing homes and long-term care centres.

I envisioned a garden

that would promote emotional healing. I wanted people to take their landscape plans beyond a series of quick tips that might appear in the lifestyle section of their favorite newspaper or an entertaining tutorial on YouTube. I wanted each person to consider their garden as more than just a pleasant diversion, but rather as a venue for meaningful conversation and a means to personally reconnect, both with the world around them and themselves. Finally, I wanted people to experience their gardens as I had 20 years earlier, as a refuge from everyday worries and a source of insight and inspiration.

A healing garden in this context can be defined as any space created and maintained to promote physical, mental and spiritual well-being. It may be large or small, public or private. This can include different types of gardens, such as memorial, meditation, tranquility or peace gardens. Collectively, they are also referred to as sacred spaces. They can be used to address a variety of mental and emotional challenges, ranging



Tall meadow rue (Thalictrum polygamum) creates early summer interest in this porch-side serenity garden.

PHOTOGRAPH BY DAN BISSONNETTE



Trumpet vine (Campsis radicans) growing on a rustic arbour forms a welcoming entrance to a healing garden.

PHOTOGRAPH BY TED KLOSKE

from short-term stress to chronic illness and psychological trauma.

While this description may sound simple, developing a curriculum intended to train people how to create their own sacred spaces proved to be anything but. To begin with, the history of healing gardens is both very old and relatively new, originating in a variety of traditions and philosophies with different forms of expression throughout time and place. Although these gardens are often quiet, peaceful places, they are not exclusively passive and often include areas for walking or possibly yoga or Tai Chi. They would also engage people from all walks of life and circumstances. Furthermore, these landscapes should also accommodate people emotionally as well as physically, by addressing their personal challenges through subtle yet effective design techniques.

As I continued to explore the characteristics of healing gardens, one defining trait that became apparent was their grounding in sound planning and design principles. Authentic sacred spaces are never put together haphazardly. Even seemingly simple healing gardens often require more planning than larger conventional gardens. Every effective healing garden begins with a set of design considerations that balances traditional practices with modern psychological principles. While I did not want to turn my new educational program into an extensive course on landscape architecture, I understood the need to include enough practical information so that participants would avoid common design-related mistakes and create healing gardens that effectively met their needs.

Within the shared design principles that unite healing gardens, there remains a great deal of creative freedom and practical adaptability. This allows healing gardens to be ideal venues for native plants and other natural elements. While this may come as a pleasant surprise to some of us, this is actually in harmony with a

number of garden traditions that influence modern healing gardens. Japanese gardens, for example, emphasize landscape choices that honour the spirit of the land, which makes incorporating indigenous plants a perfect fit with these gardens. Authentic healing gardens also require that you identify and remove any element or activity that may create a toxic experience, which logically includes invasive exotic plants. These gardens also include the principles of sanctuary, which can make them a welcoming refuge for wildlife and the natural habitats that support them. The sanctuary principles of healing gardens are not just limited to wildlife; they can be faithfully applied to people as well, resulting

in a garden that supports feelings of security and authenticity.

Hundreds of people have participated in the Healing Gardens Program to date and I've observed three significant benefits to them. First, acquiring some practical landscape design and construction skills gives participants a new means of personal expression. The second and most obvious benefit is the creation of a personal sanctuary that is specific to their individual needs and preferences. Third is the synergistic effect of the first two benefits, in that each participant derives a sense of empowerment by creating his or her own sacred space.

The Healing Gardens Program has been growing and expanding since its launch in early 2014. In the first year, I developed a travelling workshop to serve communities across southern Ontario. The first regional event took place in Toronto in 2015, where I conducted a workshop in partnership with the North American Native Plant Society.

In 2016, an opportunity to expand the program on a different level



PHOTOGRAPH BY BARBARA BELLAIRE

Black-eyed Susan (Rudbeckia hirta) and purple coneflower (Echinacea purpurea) grace a perennial border at the entrance of a healing garden.

presented itself. This began with a conversation with representatives of the Windsor Chapter of the Sexual Assault Crisis Centre to create a specialized version of the Healing Gardens Program for adult survivors of sexual abuse. This was a daunting task, but I was not alone in this effort, since I had help from two social workers and an adult survivor. After a great deal of consultation and effort, we developed a revised curriculum that led to the launch of a pilot course in October. Given the name "Reclaiming the Sacred", it was the first program of its kind in Canada.

Despite the lingering social stigma

Continued on page 14

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and personal challenges that adult survivors of abuse face, the results of this pilot program proved to be very encouraging. For the individuals who took part, the discussions relating to sacred spaces and sanctuaries took on an added meaning. Since their personal spaces had previously been violated, they found the experience of creating a healing garden to be cathartic and a significant step in their personal healing journey.

At the beginning of 2017, I was fortunate to receive a grant that will allow the Reclaiming the Sacred Program to continue as a travelling workshop in communities across southern Ontario. The first workshop was organized in London on April 1. There are enough project funds remaining to cover the cost of three more workshops. This is open to all groups that serve survivors of sexual abuse, from large agencies to grassroots community groups. I



PHOTOGRAPH BY BERNARD BENETEAU

A green frog feeling at home on a fragrant water lily (Nymphaea odorata) in a sanctuary garden.

encourage anyone interested in learning more about this unique resource to visit www.reclaimingthesacred.org.

Whether seeking a quiet retreat after a stressful day at work or a means of recovery from a life-altering event, a healing garden can be a useful tool for personal rejuvenation. Healing gardens are interactive sanctuaries for people, plants and wildlife. While

transporting us away from the stresses and

cares of everyday life, they help guide us back to our authentic selves by fostering meaningful conversations and inspiring transformation and restoration.

Dan Bissonnette is an author, teacher, landscape designer, habitat consultant and past winner of the NANPS Native Plant Garden Award. He continues to organize the Healing Gardens Workshop as well as the Reclaiming the Sacred Workshop and can be reached at dannaturescape@gmail.com.

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The flowering triggers branch growth and, once the flowers fade, new limbs emerge from where the panicles had been.

This flowering is also the basis of the Joshua tree's symbiotic relationship with the yucca moth. As the moth lays her eggs within the flower's ovary, she also picks up pollen. When she moves on to another flower, it becomes pollinated. The larvae later feed on the tree's seeds, but if too many eggs are laid to allow extra seeds for reproduction, the tree has the ability to abort the eggs. Because Joshua tree flowers are primarily pollinated by the moth, its loss could be detrimental to the plant so the tree and moth play a delicate balancing act.

The Joshua tree plays other key roles in the high desert ecosystem. Desert lizards clean insects from the trees; woodrats and other rodents obtain moisture from the trunk and make nests with fallen leaves; and, using the serrated leaves as a home security system, Scott's orioles build nests in the tree's branches. These smaller species in turn support larger desert dwellers like owls and coyotes.

Although it

If conditions are right, Joshua trees produce tall panicles of flowers from late winter to early spring.

looks tough, the Joshua tree faces several problems, including an indirect threat from air pollution. Nitrogen from air pollution seeps into the soil to fertilize non-native grasses. These invasive grasses spread, then fuel and intensify flames during fire season, destroying huge swaths of Joshua trees. When the grasses are absent, the sparse desert landscape provides a natural firebreak leading to less intense fires from which Joshua trees can recover.

While the Joshua tree is protected under the Mojave National Preserve and by many local ordinances, its limited range and its reliance on the yucca moth for pollination make it

vulnerable. With climate change,

U.S. Geological Survey scientist Ken Cole predicts the species will lose 90% of its range and may disappear from

Utah and Arizona within the next 80 years.

The tree, once reliant on the extinct desert sloth to spread its seeds, now has little ability to increase

its range since its seeds lose viability after passing through the digestive tracts of birds.

Luckily, Joshua

Individual Joshua tree flowers measure six centimetres across and provide a nursery for yucca moth larvae.

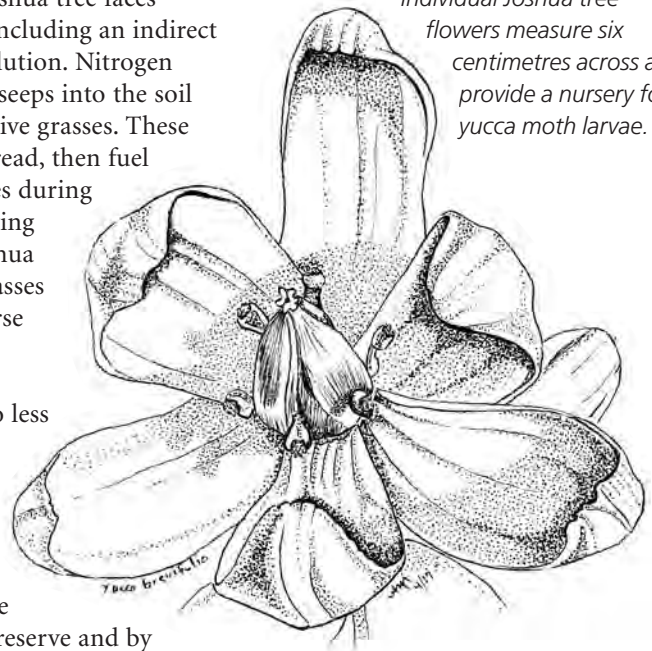


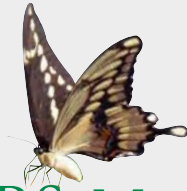
ILLUSTRATION BY ANGELIQUE MORI

trees can be grown readily from roots, offshoots and seeds (all are available commercially.) It has been suggested that "assisted migration" by humans such as plantings in high desert gardens or along roadsides could increase the plant's range and offset some losses caused by climate change and invasive species.

In the garden, the Joshua tree provides height as well as structural and textural interest. Despite its unique appearance and low maintenance – including drought tolerance – some homeowners and land developers in desert boom towns despise the Joshua tree. Ignoring local protections, they destroy the plants by drowning the roots. Given the Joshua tree's challenges and its importance to the desert ecosystem, high desert gardeners should be encouraged to see the tree as beneficial, rather than a nuisance, to ensure that this intriguing plant thrives for centuries to come.

Tammie Painter lives in Portland, Oregon, where she enjoys watching her hive of honeybees buzzing among her native plants. Tammie is the author of several articles and books, and an artist with a love for botanical subjects.

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