

The Blazing Star



A PUBLICATION OF THE NORTH AMERICAN NATIVE PLANT SOCIETY

Native Plant to Know

Maidenhair Fern

Adiantum spp.

by Tammie Painter

The next time you walk along a stream or a forest path that leads to a waterfall, scout among the rocks and you'll likely find the cascading fronds of a maidenhair fern (*Adiantum* sp.). Dozens of species of *Adiantum* exist in the world's temperate and boreal regions. In western North America, you'll most likely come across *A. aleuticum*, while *A. pedatum* is typical in the east – although small pockets of the western species exist in the northeastern states and Canada's Maritime provinces.

These two species of *Adiantum* are also known as five-finger ferns, a reference to the five branchlets that often emerge from the main frond, much like the palmate veins of a maple leaf. Mature maidenhair ferns are 1 1/2 feet (half a metre) in height and width on average, but younger plants can be tiny, just a few centimetres tall and wide. The arcing stems, called stipes, have a lovely black sheen while the leaflets (pinnules) are a bright emerald green.

A. pedatum and *A. aleuticum* look so much alike that they were once thought to be the same species, but in 1991 it was discovered that the western form was indeed its own species rather than a subspecies of *A. pedatum*. The primary difference is that *A. aleuticum*

is able to grow as far north as the Aleutian Islands from which its species name derives.

Why is it called maidenhair? It is commonly believed that the name refers to the resemblance that either the fern's fronds or its hair-like roots have to a woman's flowing black hair. It is also said that if a woman can hold a frond of maidenhair fern without making the leaflets move, that is proof that she is still a maiden.

Another interpretation is that the name refers to the common usage of *Adiantum* as a hair tonic. This makes sense since, according to the Doctrine of Signatures, a plant's appearance is often a clue to which part of the body it will help. Since maidenhair looks like

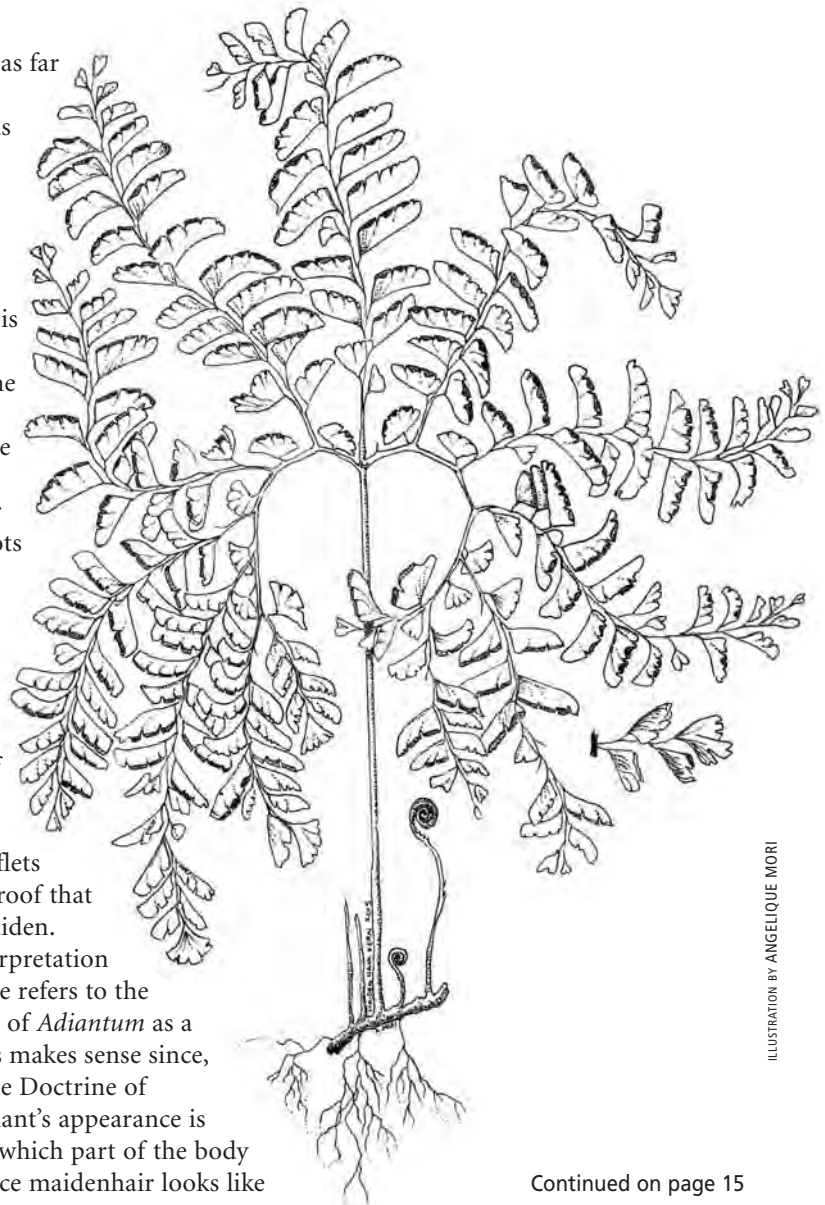


ILLUSTRATION BY ANGELIQUE MORI

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The *Blazing Star* is . . .

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Editorial

In a letter to the editor of the *Globe and Mail* titled Lawn Love, the writer claimed, "Lawns preserve moisture in the soil, helping to prevent evaporation." The letter went on to say, "As for planting native species – nice idea, romantic, but completely impractical when you have neighbours who view such plantings as weeds."

After reading this letter extolling the so-called virtues of lawns, I felt I had to respond since I found several statements erroneous and misleading. It gave the impression that lawns conserve water. If that were true, why has California doubled a rebate program encouraging homeowners and golf course owners to rip out grass? The letter to the editor also cautioned against planting native plants, imagining one's neighbours would view them as weeds. How would anyone know what their neighbours think of native plants and why should they care? Whether or not native plants are romantic, they are, unlike turf grass, sustainable, sensible, evolving, stunningly beautiful, fascinating and, in my experience, they require less maintenance.

My response appeared in the *Globe's* Letters to the Editor section on September 28. Here it is:

Milkweed Love

Yes, lawns preserve moisture, but to do so they demand frequent watering, mowing and feeding (Lawn Love – letters, Sept.25). Most maintenance is done with gas-powered equipment, sometimes by several workers cutting and blowing clippings with attendant stress-inducing noise, allergens, dust and pollution.

Is it really worth it when one could enjoy the tranquility and the beauty of native plants while helping sustain valuable pollinators and water?

How many monarchs and giant swallowtails do lawns attract?

A letter writer contends that neighbours may consider natural plantings weeds. Does she think *Globe* readers have such low self-esteem, they are inhibited from forgoing thirsty lawns for native plants because they fear what neighbours may think?

Some Torontonians have even begun growing common milkweed to attract monarch butterflies. Our climate is changing and our gardens must adapt.

Harold Smith, North American Native Plant Society, Toronto



Harold Smith's backyard with foxglove beardtongue (Penstemon digitalis) in foreground

PHOTOGRAPH BY HAROLD SMITH

NANPS ANNUAL GENERAL MEETING HIGHLIGHTS

The **Richard Woolger Cultivation Award** was given to Peter Fuller of Fuller Native and Rare Plants Nursery in Belleville, Ontario for his successful cultivation of often rare and difficult-to-propagate woodland plants and for promoting awareness of native flora for biodiversity.

Volunteers of the Year Awards: **Anne Butt** was honoured for her multi-year contributions to our annual plant sale, mailings of *The Blazing Star*, seed packaging and NANPS displays. **Peter Kelly** was NANPS executive director in a part-time paid position for one year and then as a volunteer last year. He was honoured for “contributing invaluable guidance, suggestions and outreach opportunities, and helping to move NANPS forward as an organization.”

Susan Chan, a pollination biologist and expert on native bees, gave the keynote address on **Native Plants from a Bee’s Perspective**. Of the 400-odd native bees in eastern North America, most are solitary and critical pollinators of native plants and food crops. She discussed the dangers inherent in the use of neonicotinoid pesticides on plants and subsequently on our bee populations. In her role as program manager of Farms at Work in Peterborough, Ontario, Susan works with regional farmers and landowners to protect and encourage wild pollinators.

Featured speaker **Susan Walmer of the Oak Ridges Moraine Land Trust (ORMLT)** gave an overview of her organization. ORMLT is a citizen-directed charity that maintains and manages a system of nature reserves protected through conservation easements, restricted covenants and donations of property. Currently, over 1,500 hectares (over 3,700 acres) are protected. The Oak Ridges Moraine is a landform unique to southern Ontario which extends 160 kilometres (100 miles) from the Niagara Escarpment to the Trent River system. It sustains the health of many watersheds and the species that live there. Permeable sands and gravels deposited by glacial meltwaters collect precipitation which slowly recharges the deep aquifers underground. The groundwater is released into 65 watercourses that flow north and south into Georgian Bay and Lakes Ontario, Simcoe, Scugog and Rice.

Welcome to our two new directors. **Colleen Cirillo**, Director of Education at the Toronto Botanical Garden, has studied and worked in the environmental field for over 20 years with a focus on urban greenspace issues and sustainability. **Matey Matov**, who takes over the role of treasurer, has a degree in forest conservation science and works for the City of Toronto’s Forestry Department.

STAY IN TOUCH WITH NANPS ON SOCIAL MEDIA AT WWW.FACEBOOK.COM/NATIVEPLANT AND @TNANPS.

WANTED: MORE SEEDS

Make this the year you participate in the NANPS Seed Exchange by collecting seeds from native plants. Send them separated by species and identified with the source/parentage to NANPS Seed Exchange, Box 84, Station D, Toronto, Ontario, M9A 4X1. If you’re unsure how to collect the seeds of given plants, contact seeds@nanps.org. Thank you for your valuable contribution to native plant restoration.

BEWARE OF BURDOCK

Common or lesser burdock (*Arctium minus*), a Eurasian import, is present in all provinces and throughout the United States, growing along roadsides and in waste places where soil has been disturbed. This biennial sends down a deep taproot then forms a basal rosette of leaves in its first year and flowers in its second summer. Its seeds are hooked burrs spread by hitchhiking on any living being that passes by. Birds will sometimes eat the seeds. They may also get snagged in the Velcro®-like burrs, unable to extricate themselves, and die of starvation and exposure. NANPS director Bill Ford says, “I frequently rescue finches and other small birds this time of the year while walking my dog in Toronto’s ravines [also a huge problem on Toronto’s Leslie Street Spit - Ed.]. It is really distressing seeing them caught on the burrs. When I go for walks on my farm in the late spring and early summer, I carry a long-handled clipper and lop burdocks off at their base, which usually does the trick. A great website which references the injury to birds from this plant is <http://ontariowildflowers.com/mondaygarden/article.php?id=166>.”



PHOTOGRAPH BY EVAN CANTOR

A bee drinking from a violet aster (Aster lanceolatus hesperius) in Evan Cantor's garden in Boulder, Colorado.

Escarpment Biosphere Conservancy Protects Natural Wonders

by Bob Barnett

Something was thrashing about in the bushes, so I went for a closer look. Standing on a slab of limestone, I saw two Massasauga rattlesnakes smashing at each other in the shrubby cinquefoil (*Dasiphora fruticosa*). Every



PHOTOGRAPH BY BOB BARNETT

One-flowered cancer-root (*Orobanchae uniflora*)

20 seconds they would crash heads and twist their necks together. After I'd taken about 70 photos, one snake finally slunk away. I guess the other one got the girl, who – I suddenly realized – was twitching in the shrubbery near my feet much too enthralled with the masculine display to care about my presence. This exceptional experience, at Alvar Bay, a nature reserve created by the Escarpment Biosphere Conservancy, will forever be imprinted on my personal movie reel of great conservation moments.

Coincidentally, that morning, my wife

Anna and I had taken our grandchildren out with Bruce Peninsula National Park naturalist Tony Abbot on a snake watch. He mentioned the dominance dance phenomenon, but he had yet to see one. Lucky me!

The Lake Huron shoreline along the Bruce Peninsula in Ontario is dotted with cottages, but the Escarpment Biosphere Conservancy (EBC) is working hard to ensure that a significant portion is preserved in perpetuity. We have created 11 reserves on Cape Hurd to date, protecting 416 hectares (1,030 acres) of ecologically significant land and four kilometres (2½ miles) of the Great Lakes shoreline. Our Alvar Bay property is contiguous to four other properties creating a 160-hectare (400-acre) bulwark against encroaching development. You can't see or hear cottagers and sailboats passing by are rare. Our friends have been moved to tears by the untouched beauty of the

undulating limestone formations stretching far into the lake.

You approach the Alvar Bay shore along a 1½ kilometre (almost a mile long) gravel track; it's driveable, but better appreciated on foot. Typical native plant species brush against you as you walk: red osier dogwood (*Cornus sericea*), many species of goldenrods (*Solidago* spp.), New England asters (*Symphyotrichum novae-angliae*) and others. A mixed forest of eastern white cedar (*Thuja occidentalis*), balsam fir (*Abies balsamea*) and a few straggly hardwoods survive in the thin soil. When the forests of the Bruce were harvested around 1900, the loggers left cedar slash in huge piles. No surprise that lightning fires wiped out all the trees. Only a small corner of the peninsula was left unburnt, at Cape Hurd. It was probably the northwest wind that fanned the flames, pushing it away from our precious remnant of ancient, twisted, giant cedars.

Rare species that inhabit Alvar Bay include limestone oak fern (*Gymnocarpium robertianum*) and dwarf lake iris (*Iris lacustris*). In the spring and early summer fringed



PHOTOGRAPH BY BOB BARNETT

Massasauga rattlesnakes in dominance display

polygala a.k.a. gaywings (*Polygala paucifolia*) and ram's head lady's slippers (*Cypripedium arietinum*) and other lovely orchids are found in damp shady spots. The fall brings monarch butterflies which use Cape Hurd as an important landing area. The reserve is a segment of a globally rare alvar where 400-million-year-old glacial erratics from Sudbury and points further north were deposited on the shoreline. The limestone shore itself is created from the skeletal deposits of sea creatures from an ancient tropical sea. Fringed gentian (*Gentiana crinita*), early-flowering eastern columbines (*Aquilegia canadensis*), sticky tofieldia (*Tofieldia glutinosa*), delicate wind-blown harebells (*Campanula rotundifolia*) and Kalm's lobelia (*Lobelia kalmia*) grow in abundance in the rock clefts while ancient cedars dot the landscape, sculpted by the wind and ice over many decades.

The Barney Lake Reserve is accessible from the Cape Hurd Road along a rocky trail. As you walk over successive ridges, you find glacial striations, not scoured clean as they are on the shore of Alvar Bay, but filled



PHOTOGRAPH BY BOB BARNETT

Alvar Bay shoreline

in with rock deposits and humus. Depending upon the season, you will see lady's slippers (*Cypripedium* spp.), white and red trilliums (*Trillium grandiflorum* and *erectum*), sunny yellow Canada lilies (*Lilium canadense*), brilliant red cardinal flowers (*Lobelia cardinalis*) or white

camas lily (*Camassia scilloides*). You just have to keep coming back every few weeks for a new feast for the eyes.

Barney Lake comes into view through a gap in the forest growth and presents a mirror of tea-coloured water with a typical alvar lake bottom, the flat rock clearly visible. Perhaps there's an intrepid soul out there willing to explore the shoreline by kayak to fill in our species list. (You should be aware that the wetlands at either end of the lake make blazing a trail quite a challenge. But think of the fascinating species you may discover!)

As the Cape Hurd Road turns north from Barney Lake, the trail for EBC's Welch Hackney reserve appears on the west. The trail continues through an open alvar meadow, fens and meadow marshes, wooded areas and the exposed bedrock characteristic of this Lake Huron coastal area. On this narrow property, we're fortunate to have dwarf lake iris and lakeside daisy (*Tetraneuris herbacea*), both provincially Threatened species. Between this reserve and Barney Lake is the Hobson property, which EBC hopes to purchase. Acquisition of these 38 hectares (94 acres) would

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PHOTOGRAPH BY BOB BARNETT

Barney Lake

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preserve the entire tip of Baptist Harbour, including 370 metres (1,200 feet) of Lake Huron shoreline within a provincially significant Area of Natural and Scientific Interest (ANSI). Important species on this property include Hill's thistle (*Cirsium pumilum*), dwarf lake iris, limestone oak fern, Massasauga rattlesnake and the eastern ribbonsnake. The limestone formations at the shores of Baptist Harbour are astounding: right-angled ridges that look like the remnants of ancient Roman encampments, so well engineered are they by the forces of nature. Until the property is acquired and trails are built, access is fraught with difficulty – you have to blaze your way through dense balsam fir and spruce (*Picea* spp.) thickets, suffering the indignity of getting well and truly stuck before being pulled through the bush by your companions.

Is it enthusiasm or obsession that drives us to protect and preserve these



PHOTOGRAPH BY BOB BARNETT

Dwarf lake iris

wonders of nature? It hardly matters. What's important is that they remain undeveloped to provide habitat for rare plants and animals, and to be appreciated by nature lovers young and old for millennia to come.

Bob Barnett is the landowner relations director of the Escarpment Biosphere Conservancy. He leads nature walks and provides maps and plant and animal lists

to anyone interested in visiting EBC reserves. Contact him at rbarnett@escarpment.ca. To make a donation to the conservation of ecologically important Niagara Escarpment lands or see some of the properties protected to date, visit www.escarpment.ca. Reports on the flora and fauna of Alvar Bay and Barney Lake are also available through EBC.

A Season in the Native Colorado Garden

by Evan Cantor

I used chicken wire to protect my young quaking aspens and gambel oak from the predations of mule deer for 15 years. We live across the street from Bear Creek in Boulder, Colorado, in the middle of their local migration route. I once found a fawn, almost a newborn, lying beside the sidewalk. I was alarmed by the creature's proximity to the street and picked it up in my arms, thinking I would move it to a safer spot. The fawn cried out like a baby and the mother came trotting around from the backyard. All it took was one look. I gingerly placed the fawn back on the ground and tiptoed away.

We discovered that deer will eat almost anything. To the horror of a friend, I had planted staghorn sumac (*Rhus typhina*) in my native scheme. Staghorn grows all over the riparian



Curlycup gumweed

zones in the foothills just west of town and it turns bright red in the fall, so I thought it both appropriate and desirable. But I was told my friend's

mother had staghorn in her yard for many years which invaded the sewer line and cracked the house foundation. Perhaps I got lucky when the deer grazed mine down to stubs and then to nothingness.

One intrepid deer even tried the prickly pear (*Opuntia polyacantha*). It was a food source of ancient pedigree for Native Americans, but I doubt any aboriginals ever consumed cactus fruit without first de-spining the thing. I can only imagine the shocked animal's reaction as it got a mouthful of cactus barbs.

When I started this native garden in 1989, almost the entire property was lawn. I promptly set to work transforming it. In the "way-back" of the property, as my wife Robin and I call it, I planted some non-natives to create a privacy screen and then let the grass grow beneath it. The tall lawn grass became an issue after we

PHOTOGRAPH BY EVAN CANTOR

objected to the maniacal barking of dogs in the house behind ours. That was my first introduction to Boulder's weed ordinance. Grass grown to seed or over 12 inches (30 centimetres) tall was (and is) officially a weed. The dog owner used the weed ordinance against me in our negotiations, but eventually both she and the obnoxious canines left. The grass stayed.

In the side yard, I planted junipers (*Juniperus* spp.) and transplanted local yuccas (*Yucca glauca*) from private property. I let the grass grow here as

policewoman. She claimed the grass was neither ornamental nor a xeriscape and constituted a fire hazard. I would either have to trim it to below 12 inches or receive a summons. There would be no arguing with the law, so I got the mower out and did my duty. It felt like involuntarily shaving my head. I felt bad for the grass but the officer hasn't been back since and the grass once again does its thing.

I envisioned an exclusively native plant scheme for the front yard where

centimetre) tall shrubs and are now 30 foot (nine metre) tall trees, creating a wonderful little oak woodland. Squirrels have planted the acorns all around and I have transplanted some of the sprouts to other locations. Both provide a colourful autumn leaf display, the aspens turning butter-gold, the oaks a reddish rust. Beneath the oaks and aspens, creeping hollygrape (*Mahonia repens*) turns red in the fall. Creeping phlox (*Phlox multiflora*), green almost the year round, has spread happily under the woody canopy as well. Both hollygrape and phlox grow throughout the mountains in Colorado.

At the edge of this montane pocket, also turning red in the fall, are specimens of wild rose (*Rosa woodsii*), transplanted from private property, and big bluestem grass (*Andropogon gerardii*), saved from development at the edge of town by the city's Open Space Park managers. "Big Blue" is sometimes called turkeyfoot grass because of the three-pronged seed heads.

One of the pleasures of creating a native plant scheme is the number of native volunteers that tag along to join the party. Since they have made the choice to colonize the open spaces, the volunteers thrive and, come autumn, they steal the show, mainly in my prairie grassland.

Many years ago, my neighbour to the south transplanted items from his mountain property to a rock garden in his front yard. One of the plants was a golden aster (*Heterotheca fulcrata*). Up in the high country and in the foothills, golden aster is a small plant with a few flowers. But at 5,500 feet (almost 1,700 metres) elevation in South Boulder, they grow into full three foot (one metre) tall bushes. They are so happy here that you might call them invasive if they weren't native. Just like rabbitbrush, they are prolific colonizers. The asters are covered in clusters of yellow blossoms in the late summer and early fall, and

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PHOTOGRAPH BY EVAN CANTOR

Violet aster (*Aster lanceolatus hesperius*)

well. This tall grass stayed green for over 20 years, even in hot dry summers with no watering whatsoever. I regarded it as both ornamental and a successful xeriscape that encouraged native plant colonization and a fair number of native species did establish themselves. Rabbitbrush (*Chrysothamnus nauseosus*), sweet clover (*Melilotus officinalis*) and curlycup gumweed (*Grindelia squarrosa*) were all welcome volunteers.

Wildfires in Boulder County in 2012 increased the paranoia of city officials and I was cited by a diligent

I established a small montane grove surrounded by plains grassland. Despite mule deer predation, it's worked pretty well over 24 years. It has a southwest exposure and can get baking hot. The montane grove provides fall colour and the plains grassland a springtime flower display.

I discovered that the location didn't always agree with my quaking aspens (*Populus tremuloides*). They like moister soil, but, with a little attention from me, a few of them have hung on. The real winners in this lottery were the gambel oaks (*Quercus gambelii*). They started out as two foot (60

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coveted by honeybees. By the end of October they put out clouds of seed. I've had to cull them to prevent their takeover of the yard. The bushes get bigger and bigger, branching out from



PHOTOGRAPH BY EVAN CANTOR

Rabbitbrush

a low central axis. Left to their own devices, they choke out whatever might be next to them. They have strong taproots, so I dig a little when I wish to get rid of one altogether. Nonetheless, when covered with yellow blossoms they are a beautiful coda to summer.

Blooming alongside the golden asters are several species of Rocky Mountain asters. Their flower clusters come in a variety of colours. Little white blossoms (*Aster falcatus*) emerge in profusion on small ground-loving specimens. On the taller, showy varieties (like *Aster foliaceus*), numerous clusters of flowers range from pale lavender to deep purple, with some magenta in between. These plants all came to my garden unbidden but not unwelcome. Not as prolific as the golden asters, the tall purples droop in times of heat and drought, but always pop back after a rain. They transplant well and I have encouraged them. Like their golden cousins, they are smaller at higher elevations, but in my prairie grassland they form medium-sized bushes. The purples are more columnar than the

goldens and not nearly as jealous of the space around them.

As summer gives way to fall, rabbitbrush flowers. Often mistaken for sagebrush, rabbitbrush is a common shrub in the steppe environment, from the dry high plains to seemingly endless sagebrush flats in the sometimes cold, high elevation desert. Like the asters, it thrives in the lower foothills west of Boulder where the high plains meet the Rocky Mountain foothills. Rubbery-looking greenish-grey limbs are covered in clusters of buttery yellow flowers. Rabbitbrush can grow quite large. Occasionally a powerful windstorm will detach one of the big ones from its root and blow it away like a tumbleweed. Part of the strong taproot remains, guaranteeing

that a new plant will pop up the following spring. Strong colonizers, they too must sometimes be disciplined. Although there might be a few volunteers, my several specimens mostly originated from one plant transplanted from private property.

Alongside the rabbitbrush, Rocky Mountain sagebrush (aka fringed sage, *Artemisia frigida*) goes into flower. *A. frigida* is a modest sage, usually low to the ground. Like most sagebrushes, it exudes a wonderful aroma from the crushed silvery gray leaves and it gets taller when it flowers. The blossoms are small and ray-less, little nodding yellow buttons. This hardy species is found at all elevations in Colorado from the plains to the alpine tundra.

When fall comes to an end and cold winds herald the return of winter, the season's legacy remains. Gambel oaks cling to a few shriveled brown leaves and golden aster seeds hang heavy in place of last week's flower display. They are ready for re-distribution, perhaps attached to the fur of a passing raccoon in the night. Squirrels are busy burying acorns. As these critters are forgetful little fellows, tiny oaks will pop up next spring. In Colorado, spring comes in February and sometimes doesn't leave until July. More about that another time!

Evan Cantor is a musician, artist and gardener. Autumn is one of his favourite seasons.



Big bluestem

PHOTOGRAPH BY EVAN CANTOR

Wildlife Oasis in Scarborough

by Irene Fedun

“When I was a kid walking through farmers’ fields,” says Alan Bell, “I would see mice impaled on hawthorns – the work of shrikes. I’d see bobolinks, meadowlarks, muskrats, deer, pheasants.” Now those same fields have been engulfed by development; new and bigger houses, high rises, shopping malls and highways have sprung up where wildlife once thrived and tranquility ruled. Alan, with his luxuriant property, seems like the lone holdout from another time, providing sanctuary for birds, bees and other wild animals.

Over the past decade, Alan has transformed his yards, front, back and sides, into a native plant haven. The only exceptions are the huge vegetable patch, but that provides food for him and innumerable insects, and a few cultivars left over from his mother’s garden. Even the asphalt driveway (Alan is a lifelong cyclist so he has little use for it) is slowly giving way to the determined push of plant life.

His native plant conversion was prompted by a desire to bring more pollinators and predator insects to his organic vegetable garden (and his aversion to lawn mowing.) Meadow blazing stars (*Liatris ligulistylis*)



PHOTOGRAPH BY ALAN BELL

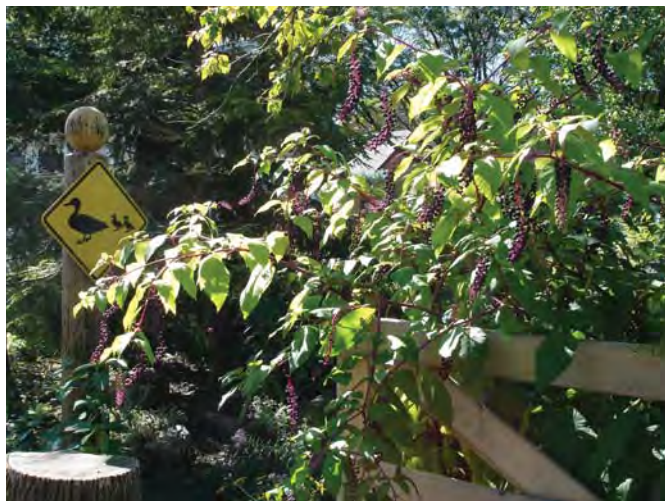
Native plants, such as Joe-pye-weed, are lovely even when they're not in bloom.

seemed a good place to start since monarch butterflies adore them. Alan acquired the seeds and learned to propagate the blazing stars producing dozens of plants one year. The response was astounding: thousands of monarchs arrived in his yard to sip nectar from the purple spikes. The butterflies seemed to be as numerous as leaves on his maple tree. Alan frantically called friends, ran out into the street to drag people into his yard

and contacted the media to get them to come and take photographs. Only one TV station showed up to film this extraordinary event. Tragically, most of the meadow blazing stars died out the following year and Alan has only a smattering of them in his yard now. Coincidentally (or not), monarch butterfly numbers have decreased significantly.

Alan soon added serviceberries (*Amelanchier* spp.) and nannyberries (*Viburnum lentago*), both wildlife food sources, and spicebushes (*Lindera benzoin*), the host plant for the spicebush swallowtail butterfly. Then came two American bittersweet vines (*Celastrus scandens*), to cover the three-metre (10-foot) high arbour. Alan hadn’t banked on such exuberant growth which needs to be pruned regularly.

His first native plant bed replaced a slowly disintegrating deck under a mature Norway maple (*Acer platanoides*). Dogwoods (*Cornus* spp.), wild ginger (*Asarum canadense*), Solomon’s seal (*Polygonatum biflorum*), ostrich ferns (*Matteuccia struthiopteris*), mayapples from a friend’s place (*Podophyllum peltatum*), both white and red trilliums (*Trillium grandiflorum* and *erectum*), blue cohosh (*Caulophyllum thalictroides*) and other natives created a cool woodland retreat right outside his back door. Trout lilies (*Erythronium americanum*), which came from a plant rescue and are notoriously difficult to get to bloom, are now starting to flower among the other shade-lovers.



PHOTOGRAPH BY ALAN BELL

Phytolacca americana (American pokeweed) is a tall perennial whose berries are eaten by birds such as the brown thrasher and gray catbird, but probably not ducks.

Native trees and shrubs (over 100 individuals now) were added to keep company with a mature, uncommon-to-Canada pin oak (*Quercus ellipsoidalis*), a huge sugar maple (*Acer saccharum*), spruces (*Picea* spp.) and the silver maple (*Acer saccharinum*) planted by Alan when he was six years

the white berries has a black dot in its centre and grows on a short thick red stalk attached to the longer stem.

Thanks to rescued, purchased and donated plants, the garden has become lush and wild, with staggered flowering and seeding to benefit wildlife. For example, the front yard

lanceolata, both yellow, both lovely). The flowering season ends with several species of asters.

Alan is especially fond of blue flowers and another one that he looks forward to every year is great blue lobelia (*Lobelia siphilitica*). A great big patch of lobelia and white Culver's root (*Veronicastrum virginicum*) graces his backyard contributing to the biodiversity of his own private wilderness.

Alan refers to the giant compost pile at the back as "the heart of the garden." He adds "tons" of compost to the soil every year. He also refuses to rake leaves, throwing wood chips on top, gradually conditioning the heavy clay soil over the years. A heavier mulch of wood chips goes on the paths. Left to rot wherever they stand or fall, logs and stumps encourage the growth of fungi. "The ecology of the yard is changing all the time," Alan points out.

Birds and other animals contribute. Gray catbirds and robins swoop in and devour berries of many shrubs, later



PHOTOGRAPH BY ALAN BELL

Front yard meadow

old, that stand sentinel at the back of the yard. A two-metre (seven-foot) black cherry (*Prunus serotina*) and a young mountain paper birch (*Betula cordifolia*) came from a NANPS-organized rescue of plants destined to be bulldozed under the construction of Highway 404. Many forbs, grasses and ferns from this massive rescue effort found a new home in Alan's yard as well. Downy yellow violet (*Viola pubescens*) with its delicate blossoms that provide early spring nourishment for emerging pollinators was one. Other prized finds included sharp-lobed hepatica (*Hepatica acutiloba*, a spring ephemeral), Jack-in-the-pulpit (*Arisaema atrorubens*), delicate sedges (*Carex* spp.), field pussytoes (*Antennaria neglecta*) and baneberries, both the red (*Actaea rubra*) and the white (*Actaea pachypoda*). The latter is commonly known as doll's eyes because each of

bursts to life in the spring with the delightful pink blossoms of an eastern redbud tree (*Cercis canadensis*) and the charm of pussy willows (*Salix discolor*). Soon these give way to spectacular lupines (*Lupinus perennis*), bottle gentians (*Gentiana andrewsii*, a particular favourite of Alan's because of its gorgeous blue), majestic Joe-Pye weed (*Eutrochium maculatum*, a heaven on earth for bees on sunny days), mauve-flowered wild bergamot (*Monarda fistulosa*), tall and lance-leaved coreopsis (*Coreopsis tripteris* and



PHOTOGRAPH BY ALAN BELL

Liatris ligulistylis is much loved by monarch butterflies.

pooping out the squeaky clean seeds in new places where, with luck, they will germinate and grow. Red-eyed vireos feast on the dark blue berries of alternate-leaf dogwood (*Cornus alternifolia*), a shrub that grows in great profusion in Alan's yard and puts on a spring-flowering spectacle. All five species of dogwood in his garden do double duty, providing nectar and pollen-rich white blossoms in the spring for the pollinators and nutritious berries for the birds in the fall. Bumble bees buzz from flower to flower delighting in Joe-Pye weed (Alan can't say often enough that the bees just love this plant), tall ironweed (*Vernonia altissima*, with its glowing purple flower bursts), wild bergamot (a clump just popped up in the backyard one year even though it had only been planted in the front), boneset (*Eupatorium perfoliatum*) and other bee magnets.

Alan readily admits that the birds have given him much-appreciated gifts over the years, wild black raspberry (*Rubus occidentalis*) being one

example, but he also notes that maintaining this garden is a lot of work. As he puts it, "The garden became masochistically addictive."

He needs to be selective about which plants he puts in. They cannot be delicate or sensitive because they will not survive regardless of how much tender loving care he showers upon them. "They have to be able to duke it out with the others." The boulevard in front of his house is a prime example of this.

After talking with his local councillor and getting permission from the city to plant the boulevard some seven or eight years ago (it seemed like there was a lot of anti-naturalization sentiment floating about in those days), Alan planted wild strawberries (*Fragaria* spp.), violets (*Viola* spp.), a few feathery prairie smokes (*Geum triflorum*), some sedges (*Carex* spp.) and a bit of silverweed (*Potentilla anserina*), all low-growing plants to satisfy the city's height requirements for boulevards. The silverweed has all but taken over,

leaving the other plants fighting for small patches of earth.

A while back (before he knew that guerilla gardening was not sanctioned by the North American Native Plant Society, even with the



PHOTOGRAPH BY ALAN BELL

Spiderwort (*Tradescantia virginiana*)

best of motives), Alan set out one night with a flashlight, a shovel and a friend to dig out a cluster of three hawthorns (*Crataegus* spp.) languishing in an isolated part of the neighbourhood. He remembered from his childhood how hawthorns had been common in the area and wanted to preserve at least a few. It was back-breaking work made more arduous by the likelihood of being stabbed by long thorns, but in the end the hawthorns were transplanted into his yard and thrived.

Why does he do it? Why all this effort to reintroduce native plants and encourage them to flourish? Alan puts it simply, "It seems like the right thing to do."

Irene Fedun is the editor of The Blazing Star. Alan Bell was one of the 2014 NANPS Native Plant Garden Award winners.



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Pinyon Pines

by Sally Wasowski

Pinyon pines (*Pinus* spp.) are beloved in the American west for their firewood, their delicious seeds and their fragrant greenery. The name “pinyon pine” is beautifully alliterative but redundant as the word pinyon is an Anglicized version of piñon, the Spanish word for pine.

Pinyon woodlands extend from far western Texas to southern California and from southern Wyoming to Mexico. The pinyons are co-dominant with junipers (*Juniperus* spp.) and these short open forests are called pinyon-juniper woodlands.

There are currently four recognized species of pinyon in North America. Colorado pinyon (*Pinus edulis*), the most common, is a single-trunked tree usually 20 to 30 feet (six to nine metres) tall with a 30-foot crown. The needles are two inches (five centimetres) long, in bundles of two. California pinyon (*P. quadrifolia*) has four needles per bundle, Mexican pinyon (*P. cembroides*) three and the aptly named oneleaf pinyon (*P. monophylla*) has one leaf per bundle.



PHOTOGRAPH BY SALLY WASOWSKI

This photo shows the bundles of two needles on *Pinus edulis*.

All the pinyon nuts are edible for humans, other mammals and birds.

The Colorado and oneleaf pinyons form the bulk of the pinyon-juniper woodlands, with the Colorado dominant in the Rocky Mountains

and the oneleaf prevalent in the western Great Basin of Utah and Nevada. The juniper trees co-dominant with pinyons, from east to west, are alligator juniper (*J. deppeana*), whose thick bark is reminiscent of the texture of the crocodilian's back, Rocky Mountain juniper (*J. scopularum*) with its drooping foliage, oneseed juniper (*J. monosperma*), Utah juniper (*J. osteosperma*) known for its showy reddish purple berries, western juniper (*J. occidentalis*) and California juniper (*J. californica*).

In most ecosystems with co-dominants, one species is the pioneer and the other is longer lived. In

this case, the junipers live over a thousand years, while the pinyons are more likely to live only a few centuries and much less than that when challenged by drought. By 2001, after three years of drought, I had lost 100 pinyons on five acres (two hectares), but none of my junipers. The pinyons that died were my tallest – 25 feet (eight metres) high. Trees 15 feet (four and a half metres) and shorter survived, but with subsequent dry years they have also started dying, killed by the Ips engraver beetle. In 1996, there were no dead branches on my pinyons. Now every tree has dead limbs and brown needles.

Pinyon-juniper woodlands require an average of 10-15 inches (25-40 centimetres) of precipitation a year to be healthy. To receive sufficient snowmelt in winter and rain in late summer, and to minimize evaporation, pinyons live at elevations between 4,500-9,000 feet (1,370-2,740 metres). They typically form a transition from the higher-elevation ponderosa (*Pinus ponderosa*) ecosystems and the sage brush (*Artemisia* spp.) steppes or desert



PHOTOGRAPH BY SALLY WASOWSKI

Snow provides much-needed moisture for the pinyon-juniper woodland

grasslands.

Mesa Verde and many of the other large-scale Native American communities in New Mexico and the Four Corners region were built in pinyon-juniper woodland. That gave access to the richest habitat, as pinyon-juniper woodland blends into ponderosa savannah and sagebrush. The tall straight trunks of ponderosa trees gave building beams, while the grasses and shrubs that grew underneath them attracted elk, mule deer, bighorn sheep, jackrabbits and cottontails, all hunted for meat. Sagebrush indicated the best soil for crops. Pinyon nuts and acorns fed humans, squirrels, wood and kangaroo rats, mice and many species of birds, mostly Corvidae such as Clark's nutcracker, scrub jay, Stellar's jay, pinyon jay and magpie, valued for their feathers. Hummingbirds, also prized for their bright feathers, fed on understory flowers such as paintbrush, pine sap and, I suspect, insects caught in the sap. All these creatures are still present in pinyon-juniper woodland along with their predators: coyotes, foxes and bobcats. Only the wolves are missing, and there are currently efforts to reintroduce them as humans no longer kill enough deer and elk to keep a healthy balance between plants and animals.

American Indians also ate the pinyon nuts and made flour from the acorns of the native oaks. Pinyon nuts are oily and highly nutritious. They take three years to ripen in short cones only two inches (50 millimetres) long. Then the tree needs a few years of good rains to recover from the stresses of reproduction before it starts another batch. A pinyon tree can produce nuts at 25 years old, but its most productive years are from 75 to 200 years.

Juniper provided medicine and both pinyon and juniper were used for firewood.

Some form of scrub oak is usually a component of pinyon-juniper woodland. Gambel oak (*Quercus*

gambelii) is the oak native to the area where I live in New Mexico. It stays quite short in pinyon-juniper woodlands, but grows almost to tree size among ponderosas. Other shrubs, starting at the higher, cooler, moister end of pinyon-juniper woodlands are snowberry (*Symphoricarpos* spp.), mountain mahogany (*Cercocarpus* spp.), sagebrush (*Artemisia* spp.), rabbitbrushes (*Chrysothamnus* and



PHOTOGRAPH BY SALLY WASOWSKI

Pinyon-juniper is in the foreground. The taller trees in the far right foothills are ponderosa. The darker green trees on the mountain sides are mixed conifers. The bare patches — burned 30 or more years ago — are oak or aspen, but the conifers have re-established themselves.

Ericameria spp.), cliffrose and antelope bitterbrush (*Purshia* spp.), banana and plains yuccas (*Yucca bacata* and *glauca*), Mormon tea (*Ephedra* spp.), low-growing cacti (*Opuntia* spp. and *Echinocereus* spp.), white bursage (*Ambrosia dumosa*), creosote (*Larrea tridentate*) and Joshua tree (*Yucca brevifolia*). These shrubs are mostly waist to head high and solitary. When found growing directly under a pinyon or a juniper, they likely served as the nurse plant for that tree. A thick layer of duff or needle litter under the shade of both pinyons and junipers discourages rival seedlings.

seed bank.

However, I decided to save a few trees around the house by watering. The result has been fascinating. Just by leaving the sprinkler on overnight three times a summer, I have coaxed cool-season bunch grasses like muttongrass (*Poa fendleriana*), Indian ricegrass (*Oryzopsis hymenoides*), New Mexico feathergrass (*Hesperostipa neomexicana*) and needle and thread (*Hesperostipa comata*). Heartened, I scattered seed from locally harvested sleepy grass (*Acnatherum robustum*) and blue grama (*Bouteloua gracilis*)

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and they have taken hold and spread. Various short yellow composites have appeared to brighten spring, summer and fall along with the bright pink, very short Santa Fe phlox (*Phlox nana*). Three kinds of buckwheat (*Eriogonum* spp.), the ground-hugging rosettes of Easter daisy (*Townsendia exscapa*), two species of penstemon (*Penstemon* spp.) and the lavender-flowered, clump-forming dwarf lousewort (*Pedicularis centranthera*), all originally present in miniscule numbers, have multiplied. There are numerous representatives of a lovely evergreen woodland sedge (*Carex rossii*). I gathered seeds from two kinds of paintbrush (*Castilleja* spp.), a globemallow (*Sphaeralcea coccinea*) and native plants from the neighbourhood which germinated and have started spreading. (The two

Castilleja bloom from earliest spring to hard frost. I've found that my nesting hummingbirds arrive and leave timed to the availability of their nectar.)

From my reading, these plants were present in pinyon-juniper woodlands before European livestock were grazed all year on the lands, so it is encouraging that there is still viable seed in even the most unpromising of sites. Descriptions of pinyon-juniper habitats by Alvar Cabeza de Vaca, a Spanish explorer, in 1536 indicate that Native Americans cleared the woodlands, planted crops for a few years until the soil wore out and then moved on to clear another site and let the old one regenerate. This was the same slash and burn agriculture practised in Europe 6,000 years ago. Between lightning and Amerind fires

(fires started purposefully by Native Americans to keep their landscape highly productive for edible animals), many pinyon-juniper woodlands burned every 10 to 30 years. The fires swept the ground consuming grasses, herbs, understory shrubs and the short pinyon and juniper seedlings. This regimen ensured enough sunlight for grasses and forbs to quickly

regenerate – a savannah effect. This kind of cool fire cleanses and refreshes a pinyon-juniper woodland. Where there had been crown fires, de Vaca described a patchy effect with clearings 15-150 feet (4½-45 metres) wide, sometimes meandering like paths.

In a crown fire both pinyons and junipers are destroyed. Snowberry, Gambel oak and other thicket-forming understory shrubs resprout after a fire, often greening up with the first rain. The roots of these nurse plants hold the soil and minimize erosion. Their foliage provides shelter for seedling pinyons and junipers. Modern-day observations indicate that it takes at least 25 years for the pinyons and junipers to grow tall enough to re-establish pinyon-juniper woodland after a crown fire. Without sufficient rainfall or seed sources nearby, sometimes regeneration doesn't happen.

Unregulated by fire, over-grazed and challenged by climate change, the present pinyon-juniper woodlands fall into four categories. Some are spreading downhill to invade sage scrub where there are no fires to burn out the pinyon seedlings. Some are going uphill to invade ponderosa habitat because the ponderosas have not been able to regenerate after a fire or clearcutting. Some areas have bare soil where the woodlands are unlikely to burn unless a nearby fire and strong winds create a crown fire. And in some woodlands the pinyons are crowded so closely together that lightning can cause a crown fire.

Like other western ecosystems, our pinyon-juniper woodlands are struggling to adapt to changing conditions.

Sally Wasowski has written 10 books on gardening with native plants with her late husband Andy. Her home is near Taos, New Mexico in pinyon-juniper woodland where she has found pottery, a metate, arrowheads and other Native American artifacts.



PHOTOGRAPH BY SALLY WASOWSKI

Woodland sedge, paintbrush, yellow composites, penstemons and grasses germinated around the pinyons, junipers and sagebrush after Sally started watering off her porch.

Continued from page 1 – **Maidenhair Fern**

hair, it was thought to solve hair-related problems.

While Native Americans did use *Adiantum* as a hair wash to improve the sheen of their locks, there is little evidence to support the claim that the plant can cure baldness. Still, the herbalist John Gerard reported that a European species of *Adiantum* once restored “the king’s” (likely James I of England) beard and hair after they had been pulled out. (Unfortunately, there are no details about the circumstances that lead to someone tearing out the king’s hair and beard.)

The genus name *Adiantum* is the Greek word for “without wetting” and refers to the way water beads on and drips from the fronds of maidenhair without the plant ever seeming to get wet.

Native Americans also used mashed maidenhair fronds as a poultice to stop bleeding and to heal wounds. Recent studies have proven the plant’s efficacy in speeding up wound healing and in preventing chronic wounds like bed sores. Although less studied, other historic health claims for maidenhair fern include alleviating congestion and asthma, rheumatism, fever, and kidney and liver ailments. Beyond their traditional medicinal uses, the fronds of maidenhair were and still are a decorative element of handwoven baskets.

Once established in the garden,

maidenhair ferns are a reliable and tough plant rarely bothered by pests or deer. Maidenhair grows best in humus-rich soil that is continually moist but not soggy. In the wild, these plants bury their roots in the crevices of rock faces. In the garden, you can use this growth habit to add beauty and prevent erosion along rock walls or hillsides. Maidenhair ferns will do best in full to dappled shade, in a spot that receives constant moisture and good air circulation. My garden is very shady, but my clay soil has thwarted any attempts to grow maidenhair ferns. However, I am lucky to see them when I hike along the waterfalls of the Columbia River Gorge.

It’s unlikely that maidenhair ferns will take care of your bald patches, but these exquisite plants are sure to beautify bare spots in your shade garden.

Tammie Painter is the author of Going Native: Small Steps to a Healthy Garden and an artist who often finds inspiration in the botanical world around her. You can learn more about her work at Tammie Painter.com.

Calendar of Events

JANUARY 8-9, 2016
Ecology And Physiology Of Plants In Winter: Surviving The Big Chill
Saukville, Wisconsin
Details at wildones.org.

JANUARY 30, 2016
20th Annual Toward Harmony With Nature Conference
Oshkosh, Wisconsin
Presented by the Wild Ones Fox Valley Area chapter. Visit wildones.org.

FEBRUARY 25-26, 2016
2016 Land & Water Summit
Albuquerque, New Mexico
Presented by the Xeriscape Council of New Mexico and Arid LID. Keynote speaker: Dr. Richard Heinberg, author of *Afterburn: Society Beyond Fossil Fuels*. Email Xquestions@xeriscapenm.com or <http://xeriscapenm.com> for more information.

WILD ABOUT FLOWERS

A native plant company in Okotoks, Alberta, called Wild About Flowers was one of 10 regional winners in the 2015 Small Business Challenge Contest sponsored by the *Globe and Mail* and Telus. The awards recognize outstanding businesses in Canada’s north, west and central regions. When asked why she thought her company won, Arden Nering responded, “I think the timing is right for native plants as the public becomes more aware of how our environment is being affected by human activity, especially because of the decline of monarch butterflies and mounting concern about pollinators like bees. I think the judges liked the idea that we actually go out into nature and collect our seed – that was our ‘challenge.’” To learn more about their work, visit wildaboutflowers.ca.

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