



WILDFLOWER NEWS

"Growing Nature's Garden"

From your editor:

The days are getting appreciably longer and we have now had some snow, so things are definitely looking up, and towards spring. Some of our keener, plant-growing members have already started the annual propagation cycle indoors.

The ENPS executive has taken advantage of the winter and a relaxation of outdoor commitments to do some navel-gazing: we have checked our vision, mission and values statements and given consideration to how well we are meeting our objectives and what we need to do in the future. We will share some of our plans in an upcoming newsletter. As always, we welcome feedback and suggestions from our members. We want to know what your expectations of ENPS are.

One of our plans is to involve more of our members who have indicated an interest in volunteering with ENPS to help us in our various tasks, both with board duties, including serving on ad hoc committees, and with our field projects.

To do this we will be canvassing these members on what their particular interests are, and providing more details on where we need help, in both the website (coming soon) and the newsletters. We also plan to expand our expertise in using social media to do a better job of providing information on how to grow native plants.

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Smooth aster, *Symphyotrichum laeve*, 2022-12-30. Photo: P. Cotterill

Title: Alpine Plants Please Stand Up; Central Group

Date: Wednesday, Feb. 28, 2024 6:00 p.m. Mount
Location: U of A, BioSciences Building, Room B-
Register: Email CAPSG coordinator Diana Tirlea
deetirlea@gmail.com.

Presentation given by Kristen Andersen, pres
and co-steward of Whitehorse Wildland Prov
will be an opportunity to look at specimens in
herbarium on the floor above.



Title: 3rd A

Dates: Saturday, March 16, 11:00 a.m. - 3:00 p.m.
Location: Sakaw School, 5730 11a Avenue
Register: Email volunteer@enps.ca

ENPS will be participating in the Sakaw Gardens Seedy Saturday. We will have some seedlings, seeds, Go Wild! books, brochures and cards for sale. Other vendors that will be attending include the Edmonton Horticultural Society and One Garden YEG.

Title: Edmonton Seedy Sunday

Dates: Sunday, March 24, 11:00 a.m. - 4:00 p.m.
Location: Alberta Avenue Hall, 9210 118 Ave NW
Register: Email volunteer@enps.ca

ENPS will have lots of seeds for sale at this event. Come early for best selection. Visit the Edmonton Seedy Sunday website for more details.

Please send compliments, concerns and questions to info@enps.ca
To unsubscribe, or subscribe, email info@enps.ca
Wildflower News editorial board:
Patsy Cotterill, Liz Deleeuw, Susan Neuman and Melanie Watson
Patsy Cotterill, editor | Melanie Watson, acting publisher
www.edmontonnativeplantsociety.ca/

Reports

Patrick Kyle is doing his part to educate our local public about the importance of native plants and native pollinators, based on his personal experiences in his native garden. He gave two presentations at the Strathcona County Garden Club on January 11, 2024 at the Strathcona Community Centre.

He reports as follows:

“Unfortunately, this turned out to be the first very cold night of the winter.

Only 37 people ventured out and took advantage of the free, heated underground parking, which was much fewer than expected. My first presentation was “Native Bees in a Native Garden” and was approximately 45 minutes long. I showed a lot of pictures of native bees on native flowers and explained the importance of having both native bees and native flowers.

After a coffee break I gave a second 20-minute presentation, “Blooms and Bees from Gravel and Grass,” which was about how I turned my back alley into a native flower garden. In my presentation I explained how easy it is to grow native flowers.”



Showcasing Edmonton's Native Plants

Manna Parseyan's January 31st presentation, hosted by the Central Alberta Plant Study Group at the University of Alberta, on "Showcasing Edmonton's native plants and their vital role in addressing environmental challenges while contributing to biodiversity conservation," attracted a large audience.

45 people attended and 15 more had to be turned away owing to limited seating in the fifth floor lab in the BioSciences building.

With an abundance of slides, most of them taken in her own garden, Manna demonstrated how native plants are the basis of the food chain for a variety of insects and birds, even in the suburbs. She also provided landscaping tips.

Five members of the ENPS were also in attendance at the meeting and helped answer questions after the presentation.

The number of young people showing interest in native plants was encouraging, and the event provided good publicity both for the ENPS and Arnica Wildflowers.

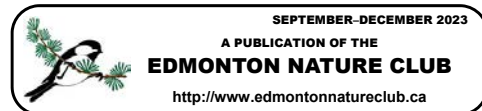
Guidelines for Planting Native Wildflowers

Manna had an article published under this title in the Edmonton Nature Club's magazine *The Parkland Naturalist*.

Manna recommends that, rather than mixing your native plants with non-native flowers and lawn grass, allocate a specific area of your yard for your native wildflowers. Native species don't need watering when established (after the second year, if they are sited properly) and don't need any fertilizers, pesticides, or other chemicals, unlike non-native plants and lawn grass.

You can [read the entire article by clicking here](#).

THE PARKLAND NATURALIST



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Scandia Roadside Native Grassland Restoration Project in Camrose County – 2023 update



Common Tall Sunflower, *Helianthus nuttallii*, planted adjacent to a ditch culvert, 2023-08-01. Photo: B. Bohmer

By Brenda Bohmer

It feels really good to witness the increase in biodiversity as the site evolves and matures.

2023 was the third year of this restoration project. We see more texture, colour and more signs of the fauna that use this restored ditch corridor. June Osborne and I, who are the self-appointed custodians of the site, devoted more time to walking with clear intentions of observing these

changes and looking for clues left by the wildlife – such as tracks, droppings, fur, feathers, webs, ground nests and burrowed holes.

Otherwise, much of our time and effort was spent on weeding (which, in 2023, was predominately pulling annual sow-thistle, and Canada thistle) and planting and tending to the wildflowers which have generously been provided by the ENPS.

Somewhat of a disheartening reality is that the



Gaillardia, *Gaillardia aristata*, wild blue flax, *Linum lewisii*, and unidentified grass, 2023-06-23. Photo: B. Bohmer

invasive smooth brome is re-entering the ditch. Fortunately, the invasion is only in a specific segment of the ditch where the smooth brome already existed on the field side of our site. As an experiment, we have planted a thick, no-space planting of Canada goldenrod and hairy flat-top white asters to compete with the smooth brome. Time will tell.

Our commitment to learning and adapting continues and we look forward to the 2024 growing season.

For more information - Brenda Bohmer
bbohmer@xplornet.com



Blue grama, *Bouteloua gracilis*, 2023-08-23. Photo: B. Bohmer

Articles

Is There a Future for a Native Flora in the City of Edmonton?

By Patsy Cotterill

The Naturalization, Reclamation and Restoration Plan or NRRP

Coming soon to a website or media near you will be the City of Edmonton's latest iteration of its green spaces program, the NRRP (Naturalization, Reclamation and Restoration Plan), the stated purpose of which, according to their [online document](#) is to "provide processes and best practices to bring maintained turf and depleted land areas back to a more natural state of vegetation and ecological function." As well, the City plans to plant two million new trees by 2050. ENPS has been informed that the City will be publishing two documents, a policy statement on the NRRP, for City Council and public consumption, and a handbook to guide its practitioners. ENPS looks forward to getting a copy of the latter, if possible, because the devil will be in the details.

Members of a society that promotes the fortunes of native plants should be happy with naturalization, making our city more natural, right? Unfortunately, as a keen observer of plant life in our city, I for one am far from convinced that this is a good way to enhance native plant diversity and genetic integrity in Edmonton.

History of Edmonton's green space awareness

To be fair, cities are not in the business of preserving or re-creating native floras. They exist to provide a place for people to live and work. Green spaces are being increasingly valued for promoting health and other benefits to urban residents but remain somewhat secondary to a municipality's main responsibilities.

To its credit, in the 1970s and '80s the City of Edmonton began to realize that its expansion was causing the loss of natural areas and local native populations as well as agricultural land, and it identified some of these areas with a view to preserving them, in whole or in part. (This exercise was stymied from the start because much of the land in question was privately owned and too inflated in value – because of anticipated urban development – for the City to purchase.)

The City developed management plans for some of the areas it saved, and intends to create others, but it has almost completely failed to implement any management of them to date. Most of these natural areas have been effectively ignored, possibly for reasons of budget, but also likely because the City has not understood the need for management. (I fear this lack of understanding may also apply to naturalization programs.)

History of Naturalization in Edmonton

Naturalization has been under way in Edmonton since at least the 1990s. It consisted largely of planting trees and shrubs along major roadside embankments. Most of these trees are not native to the Edmonton region, such as pines and Siberian larch, but the benefits have been better-looking roadsides, corridors and habitat for wildlife, and some mitigation of climate and urban heat effects. I have no quibble with the street trees, such as the stately elms that were planted long ago, and the northwest poplars and laurel-leaved willows in the parks as valued components of the urban tree canopy that do not stray from where they are planted.

In more recent decades naturalization has been applied more broadly to various green spaces, including stormwater management facilities, aka constructed wetlands and parks. In my opinion,

naturalization of constructed wetlands has produced mixed results. Excavating a pond and creating a natural riparian fringe, often rimmed by willows, is easy enough, since few non-natives can withstand waterlogged soils, but the engineered, well-drained, surrounding slopes, traditionally sown with Kentucky bluegrass, present more of a challenge. The idea is now to stop mowing, to save operational costs and allow other vegetation to encroach. Three years ago the City announced an ambitious plan to expand the naturalization of its constructed wetlands, but withdrew it a year later, possibly because consultants advised that it was not a money-saver. (Planting would be necessary more often than not, and planting mortality is high, requiring much replacement.) Currently the City is eyeing boulevards and other green spaces as targets for naturalization and possibility exploring the feasibility of community involvement.

The terms passive and active naturalization now appear to be passé

In early versions of plans the City's pitch to the public was that naturalization would result in increased native biodiversity, with associated benefits to native pollinators and other fauna, but here again it has since backed off on this. What the City seems to have increasingly accepted is that "passive naturalization," as opposed to "active" planting, will not produce an acceptable result and that deliberate planting will frequently be necessary. However, no clear intention to plant native species and native plants of wild origin has been articulated. Rather the speed with which the NRRP will be implemented suggests that the City will use commercially available non-native cultivars of shrubs and non-native herbaceous material that display the ecosystem traits they are looking for, for example, quick growth, good ground cover to exclude weeds, and value for pollinators. Indeed, this may be an expression of the trend towards seeking nature-based solutions, such as the aforementioned constructed wetlands to deal with stormwater, and the planting of trees to improve air quality and mitigate climate change and the heat island effect.

We will have a better idea of what's what when the NRRP and tree planting initiative, introduced in 2022 to gauge public reaction, are rolled out.

What are the challenges to using native plants in naturalization and restoration?

- **Lack of knowledge of native plants and know-how of their propagation and establishment**

Back to the NRRP. So far, the City has mostly undertaken "turf conversion," whatever that means exactly, but starting with a cessation of mowing. If the City's goal is to achieve even semi-natural plantings, where is the expertise for this to come from, I ask? To my knowledge there is little scientific literature to guide restoration in Central Parkland habitats, and although some of our local academics are experimenting with growing natives for oilsands reclamation, there seems to be no economic incentive for similar research for settled areas. Test plots set up as part of a U of A's master's thesis in 2016 yielded little useful information; only six forb species were found to perform adequately in field trials and of woody plants only white spruce and snowberry did well. Trial plots planted with a variety of herbaceous species at Oldman Creek Nursery likewise yielded no useful data; weed control was not implemented and the plots were soon ploughed under. A plot at the Provincial Nursery near Horsehills had somewhat better results but only when seeded densely and subjected to weed control. This leaves me doubting that the City has undertaken or has access to the necessary research to achieve successful restoration on even a small scale.

- **The City lacks examples of successful naturalization**

Roadside tree planting aside, the City appears to have no successful field templates it can refer to. A social equivalent to the NRRP might be doling out drug prescriptions to a populace without having conducted clinical trials. Failure to implement Natural Area Management Plans over the last couple of decades has meant that the City has

missed the chance to learn lessons in adaptive management. Pylypow and Roper Pond constructed wetlands were planted with non-native legumes for ground cover despite management plan recommendations for reclamation with natives; with the exception of an expanded aspen forest and a few planted shrubs at Roper Pond, a native species is hardly to be seen at either site. (Ironically, Roper Pond still displays a faded “Parks, Naturally” sign.) My biggest gripe of all is Schonsee Wetland in the northeast, shown on the city’s naturalization map as a large yellow naturalization area. It was excavated and re-contoured over a dozen years ago, presumably to create a permanent water body for aesthetic reasons, but these artificial hills and valley are now a waste land of neglected weeds. An artificial island in the lake is an island of weeds. While wildlife and some humans may relish a piece of waste land, most naturalists and members of the public with an eye for aesthetics expect higher standards of re-vegetation.

- **The City lacks native plant material**

Another problem is that native plant materials available for such restoration are not immediately available. The speed at which the NRRP will be deployed is a strong disincentive to using natives. There will be insufficient time to harvest and propagate native material, or develop the expertise needed for growing it. Natives after all have not, unlike horticultural plants, been bred for reliable germination and fast growth, indeed, often opposite characteristics are adaptive in natural environments. Past usage and present information suggest commercial crop plants such as clover and alfalfa will be used as nitrogen-fixing plants on degraded soils instead of native legumes, and existing cultivars of native shrubs and non-native trees will be purchased from nurseries.

- **Naturalized species will become increasingly accepted as time goes on**

It seems likely that the biomass of native material could actually decrease with naturalization, rather

than increase. Introduced species change their status as time proceeds, including invasive ones especially. They become naturalized (in the true, scientific sense of the word), and are recognized as accepted members of the indigenous flora. Good examples are smooth brome and reed canarygrass, grasses that form monospecific patches that exclude native species. Most of Edmonton’s waste spaces and all open areas in the river valley are already monopolized by smooth brome. Are we ready to accept this in our naturalization conversions? Various introduced species with appropriate ecosystem function may become acceptable. Because the disturbed habitats of urban areas are particularly conducive to non-native species which over centuries have become adapted to disturbed habitats in countries with a far longer history of agriculture than Canada, we can expect to have an increasingly colonial flora.

- **Non-native pollution (spatial and genetic) of natural environments**

My biggest fear is that an expansion of non-native or non-local material through naturalization will contaminate native plant communities present in existing natural communities such as the river valley and ravines, wetlands and natural tree stands. This too will result in an actual decline in native plant genetics. It may also result in the decline of some native species, or replace native with non-native equivalents in the future. Let me give a possible, hypothetical example. American vetch, a native, nitrogen-fixing member of the pea family, is a common inhabitant of local meadows and woodlands. In recent decades, its relative, the non-native tufted vetch, has become increasingly abundant. So far tufted vetch seems to be confined to more open areas, such as in parks and roadsides, but could it adapt to becoming a denizen of woodland and natural grassland, and in its invasiveness oust American vetch? It will almost certainly be a problem weed in City tree plantations.

Any answers?

What are the solutions? Calgary has had some success with restoration, creating roadside embankments planted with grassland forbs. Edmonton should not give up. It should proceed with tree-planting, abandoning shoe-horning trees into park land where residents value their open spaces in favour of planting large tracts of trees that will provide corridor function and connection to the river valley. If the City could bring itself to use prescribed burning to promote regeneration it could achieve native poplar forests far more cheaply than by planting individual trees.

- **Experiment with small-scale restoration**

The City should try some restoration on a small scale, recognizing that it will take decades to determine the effects of such experiments; meanwhile monitoring and adaptive management will be essential to gain experience. It could consider tackling specific ecological problems, such as how to avoid dandelions taking over as grass deteriorates with drought on steep slopes above constructed wetlands. Instead of trying to dictate to nature, and suggesting to a gullible and/or sceptical public that it has all the answers, the City should take a humbler, less prescriptive and more descriptive approach to nature.

How can ENPS fulfil its mission?

Where does all this leave ENPS and its native plant gardeners? We are doing our bit for native plant populations, but can we have more influence? It is all very well for entomologist Doug Tallamy of the eastern U.S. to speak of a

Homegrown National Park whereby private property owners create continuous tracts of native cover by planting oak trees and thereby shore up the native insect populations. Trees carefully tended are fairly easy to grow, but unfortunately our forests do not adequately reflect the diversity of our parkland communities. I think ENPS has important roles to play in critiquing the City's efforts and interacting with city residents who will be both involved in and confounded by the NRRP.

An example of naturalization at Pylypow Constructed Wetland is below. Admittedly, this is in Public Utility Lot, so standards may be lower than in residential areas. But what would these standards be, and would the City maintain them?



Pylypow Constructed Wetland, 2023-07-29. Photo: P. Cotterill



Buckbrush or western snowberry, *Symphoricarpos occidentalis*, in garden, 2022-12-30. Photo: P. Cotterill.

Agriculture Shines Light on Wildflowers for Crop Pollination

By Kate Wilson

A growing initiative in agricultural landscapes is the establishment of wildflowers at the edge of crops, to support bees and other pollinators. Estimates are as much as 35% of the world's crops and food plants rely on pollination from insects. And just as global pressure to increase crop yields is intensifying, producers are scrambling to find ways to address the decline in the number and diversity of pollinators – particularly bees. So, researchers are turning their sights toward the use of these field-edge wildflower plantings, to get on-the-ground data and give farmers some practical management strategies.

In my review of the latest research, two features stand out. One is that research is fairly new; the earliest study I could find was from 19 years ago. The other is the value of native species versus non-native, for both bees and crop-edge wildflowers. In the following small sample of research, both are investigated.

A [Canadian study](#) in 2017 found that small-scale flower plantings are a simple and effective strategy to encourage insect pollinators. Fifteen farmers from Alberta's Peace River valley and southern Saskatchewan and Manitoba were supplied a seed mixture, which they sowed along field edges. Interestingly and perhaps unfortunately, the research team used non-native wildflowers in a commercially available mix, as the intent seemed to be more focused on pollination rather than supporting native biome. Either way, over the two years the project recorded significantly more pollinators, especially wild bees, in planted plots than control plots.

A focus of the study was biodiversity. The authors noted that one of the benefits of a diverse population of pollinators – including bees, butterflies and wasps – is the provision of crop pollination in situations such as colony collapse of honey bees, or to provide pollination at times when native bees are inhibited by poor weather.

In her [thesis](#) at the University of Guelph in 2013, a graduate student found that even small-scale restoration has big impacts in croplands for farms in southern Ontario growing corn, saskatoon berries, squash, melons and beans. Restored habitat accounted for 33% of the total richness and 72% of the total abundance of native bees.

A compelling part of her report was that intensive and widespread agriculture faces a 'pollination paradox.' The industry may need to increasingly depend on native pollinators for crop production, while at the same time farming-related activities are destroying their habitat.

In the US, researchers at the [University of Arkansas](#) recommend conservation of what remaining natural areas there are in the landscape. Their 2020 report focused on solitary bees, due to their importance in pollination and the dearth of information on these bees, which make up 70-90% of native bees world-wide.

Another US researcher from the University of California highlights the [benefits of wildflower plantings](#) for crop pollination and for resilience in terms of insect biodiversity. She emphasizes diversifying farming systems so as not to rely solely on honey bees, and to manage for native bee pollinators.

In another study in 2023, researchers at the University of Wisconsin found that the [effects of field-edge flower plantings](#) on bee abundance, nesting success and crop pollination was dependant on the landscape context. They noted recent studies suggesting that flower plantings may be less effective in landscapes with either very low or very high amounts of non-crop habitat. Also, managing field edges for naturally-occurring flowers over time may matter more than flower plantings for short-term increases in bee abundance.

An element that always shows up in research, either implicitly or explicitly, is the importance of buzz pollination. Also known as sonification, this

feature of many native bee species is a highly valued trait, particularly since introduced honey bees (*Apis mellifera*) do not have this capacity.

Solitary bees in particular utilize buzz pollination, which releases pollen held by the flower's anthers. Upwards of 60% of crops have been identified as relying on sonification for optimal pollination, and native bees that have the trait include *Bombus* (bumblebees), *Nomia* (a genus of sweat bees), and *Oxaea* and *Protandrena* (subfamilies of the Andrenid bees).

In a [2023 study from South America](#), researchers in Chile attributed high fruit quantity and quality of blueberry crops to wild bees' capacity for buzz pollination.

While they proposed wild bees as a sustainable alternative to managed bees, they also acknowledged this was driving producers to pressure governments to allow the importation of a non-native bumblebee (*Bombus terrestris*). Since it is highly invasive, strict laws prohibiting the movement of bumblebees are now in place in some countries. The Chilean study was to look at the performance of native bees on fruit yield, and they suggested a selection of the native and highly efficient species as a good alternative to *B. terrestris* importation.

Across the pond in the UK, wild edges on croplands are increasingly being implemented. In a [six-year study between 2005 and 2011](#), researchers investigated wildlife-friendly habitat on the edges of low yielding fields of wheat, oilseed rape and beans. They found it boosted overall crop yield, as well as wildlife and insect species, and that crop yield increased year over year – up to 25-35% for beans.

In mainland Europe, a [2015 report from France](#) notes that because the area devoted to pollinator-dependent crops has increased faster than that of non-dependent crops worldwide, demand for animal pollination services is rising at the same time that pollinator abundance and diversity are declining. One of their recommendations is that farmers encourage a particular pollinator species, depending on what crop they're growing. For example, for better bean

production in the UK, farmers need populations of the long-tongued bumblebees and should sow wildflower strips with deep flowers such as white deadnettle (*Lamium album*) and red clover.

In a [2021 study in Sweden](#), flower strips enhanced bumblebees in croplands, but only those that had few honey bees. Their numbers diminished when managed honey bees were brought in. They recommend avoiding the addition of honey bee hives in combination with flower strips, particularly in landscapes with few floral resources.

There are detractors to wildflower crop edges, who argue that they will attract pests such as birds, rodents and weeds. Recent studies in California show that strips of flowers along field edges actually [export beneficial insects into adjacent crops](#) for enhanced pest control. In another [experiment in Belgium](#), researchers found that wildflower strips did not favour the conservation of insect pests.

The jury is also still out on the dynamic between native and non-native wildflowers. This was highlighted in the December issue of *Wildflower News*, page 10, reported by Patsy Cotterill. Dr. Heather Kharouba's research observed that non-native plants were well integrated into the diet of butterflies, but with more visits to non-natives later in the season, when natives had finished flowering.

Wildflowers strips in your own back 40

While the agri-science community agrees that more research is needed, pollinators and wildflowers don't consult with scientists or, for that matter, with the natural world on how to interact with their environment. They respond from innate and interdependent mechanisms.

So, whether you're gardening to maximize vegetable yield or to nurture a naturally evolving native bed, you can always steer your efforts to one of participation with the wider network of living systems' relationships.

In its [2015 guidelines](#), the US based Xerces Society For Invertebrate Conservation recommends three steps for using wildflower strips to improve pollination. While the guidelines are



Wildflower strip in the experimental farm of Gembloux Agro-Bio Tech (University of Liège). Photo: Séverin Hatt

geared toward croplands, they're just as relevant to your home garden – take a tally of resources already on your property, adapt your landscaping or garden design, and do your research.

This approach may incorporate native or non-native species or both, or diverse plantings as well as selected species, but what it always relies on is building a base of knowledge. Which can be one of the best rewards!

Some Resources:

North American Pollinator Protection Campaign <https://pollinator.org/nappc>

Society for Ecological Restoration <https://www.ser.org/>

SER Western Canada <https://chapter.ser.org/westerncanada/about-us/>

Selecting Plants for Pollinators – A Regional Guide for Farmers, Land Managers, and Gardeners In the lower Mainland <https://www.pollinator.org/PDFs/Guides/LowerMainland.ver6.hires.pdf>

A bit of fun....

Weed Story....

Weed 1. "I object to being called a weed. It is discriminatory and derogatory, even xenophobic!"

Weed 2. "Yes, I want to be called an anthropophyte, a plant that takes advantage of living in the company of humans. Humans are always going to be around, and I will be too."

Weed 3. "I want to be called a neophyte, and welcomed as a new plant to the neighbourhood. Eventually, I will become naturalized, and be fully accepted. Then people will stop trying to kill me."

Weed 1. "Be careful, though. Even if you are naturalized, if you are aggressive and a danger to society you will still be hounded and subject to capital, or should I say, radical punishment."

Weed 3. "Good advice. I will keep a low profile and try to fit in."



Canada buffaloberry, *Shepherdia canadensis*, in front garden, 2022-12-30. Photo: P. Cotterill



Stiff goldenrod, *Solidago rigida*, 2022-12-30. Photo: P. Cotterill