



WILDFLOWER NEWS

“Growing Nature’s Garden”

From your editor:

The ENPS has been kept busy this winter getting organized for the growing season ahead. We have taken the opportunity to take a mentored look at ourselves and our society; we have engaged in seed processing and seed stratification workshops and various outreach activities involving hosting our display table and giving presentations in community venues. Our website reconstruction team has been working hard in preparation for the coming launch of our new website. Our growers who use indoor grow lights have already begun seed stratification to replenish our stocks of plant plugs.

Just a note: to keep our newsletters running and our website lively we are going to be relying more on input from our members and volunteers – please don’t be shy if you have something to share!

We’d also like to send a message of thanks to the executive of the Orchid Species Preservation Foundation who allow us to hold our board and other meetings in the attractive, salubrious, conservatory-like surroundings of their premises!

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Alaskan birch at Bunchberry Meadows, on New Year's Eve, before the snows came! Photo P. Cotterill

Events



Native plant seeds can be purchased at the following locations!

Available Now

- Apache Seeds, 10136-149 Street NW
- Wild Birds Unlimited
- Wildbird General Store
- Salisbury Greenhouse at the Enjoy Centre (limited to 12-14 species)

Available Mid-March

- Earth's General Store
- Salisbury Greenhouse at Sherwood Park

Sakaw Gardens 3rd Annual Seedy Saturday

Date: Saturday, March 16, 11:00 a.m. - 3:00 p.m. Mountain Standard Time
Location: Sakaw School, 5730 11a Avenue

We will have 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.

Edmonton Seedy Sunday

Date: Sunday, March 24, 11:00 a.m. - 4:00 p.m. Mountain Standard Time
Location: Alberta Avenue Hall, 9210 118 Ave NW

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:

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Patsy Cotterill, editor | Melanie Watson, acting publisher

www.edmontonnativeplantsociety.ca/

Reports

Second Annual Everything Gardening Exchange, February 24

By Manna Parseyan

ENPS participated in this event at the Strathcona County Library on Saturday, from 11:00 am to 2:30 pm.

Our two tables successfully drew a substantial crowd, comprising individuals keen on learning about Edmonton native plants, volunteering, and seeking guidance on cultivating native seeds and plants. People ranged from having extensive

knowledge of native plants to no knowledge.

Simultaneously, informative gardening talks took place in an adjacent room, including a presentation by Manna Parseyan titled "Growing Native Wildflowers in Your Urban Garden: A Sustainable Choice."

We also distributed gaillardia and meadow blazingstar seeds, and offered advice on cultivating these plants, along with samples of our handouts.



Liz Deleeuw at one of the ENPS tables. Photo: N. Stairs

Stratifying and Seeding Workshops

By Liz Deleeuw

The two Stratifying and Seeding Workshops ENPS held on February 15 and 29 at the Orchid Resource Centre were so popular that some people who attempted to register had to be turned away!

There were two work tables at each workshop. Cherry Dodd and Manna Parseyan presided over the Seeding Table demonstrating how to sow



Volunteers pay close attention at the workshop. Photo: K. Spencer



Preparing material for stratification. Photo: K. Spencer

seeds that do not need stratifying into pots, as well as (at the second workshop) potting up some blue giant hyssop seedlings. Liz and Kate Spencer took charge of the stratifying table where seeds were placed in the stratifying mixture. Participants took home some of the stratified seeds while leaving others for ENPS to grow.

Plans are to repeat the workshops next year.

For more information on growing native plants, click here to check out [June Flanagan's source on the ANPC website](#) .

Seed Packaging

By Mary-Jo Gurba-Flanagan

A big thank-you to everyone who came out for the first (January 27) and second (February 24) seed packaging events held at the Orchid Resource Centre, ensuring that ENPS is well stocked. A third session will be taking place on March 9 at the same venue, to fill in a few gaps in seed species identified since Mary-Jo supplied the majority of stores that carry ENPS merchandise (see page 2)

A final workshop may be held in the fall if necessary.



Growing is on the Go: Neonates, a Sampling of This Year's Seedlings

Seedlings of the Edmonton Native Plants grown by Manna Parseyan of Arnica Wildflowers in 2024 are ready to be potted up in individual pots.



rhombic-leaved sunflower, *Helianthus pauciflorus* ssp. *subrhomboideus*



wild blue flax, *Linum lewisii*



slender blue beardtongue, *Penstemon procerus*



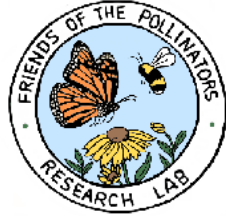
meadow blazingstar, *Liatris ligulistylis*



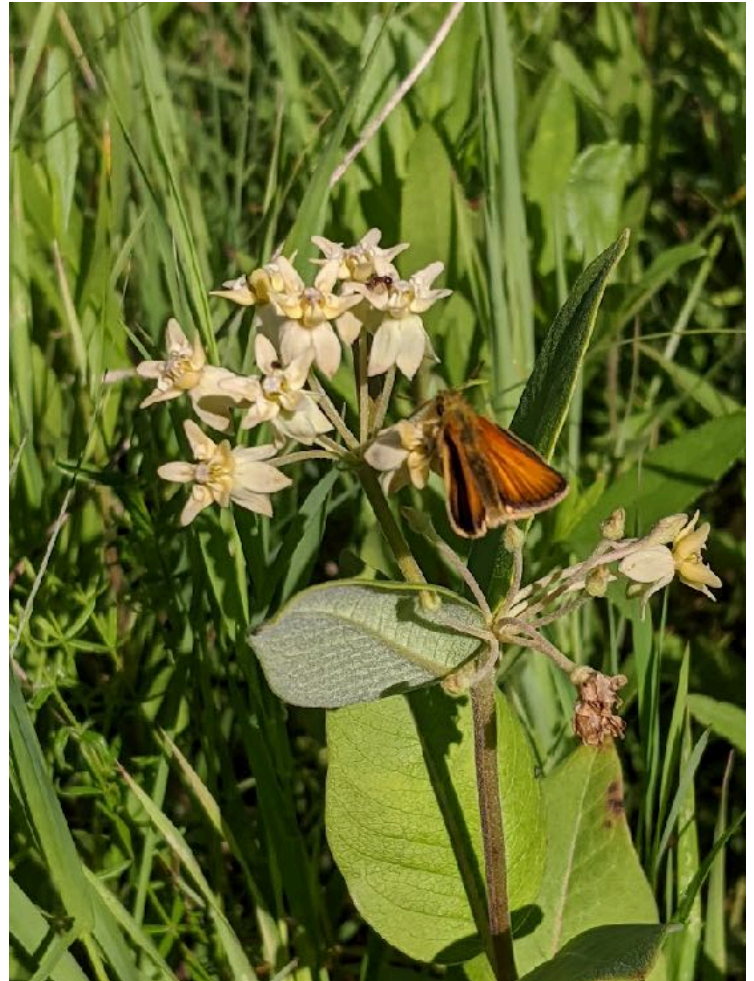
monarda, bee-balm, *Monarda fistulosa*

Monarch Research at the Fort Saskatchewan Prairie

By Janine (Jasper June) Heber,
Graduate Student of Yorkville
University



This summer, our research was focused on studying the current and historical presence and abundance of migrating monarch butterflies in Alberta. Monarch butterflies make an incredible multi-generation migration from Mexico to North America each year. Monarch butterflies face many barriers to their migration, including the loss of suitable milkweed in their summer breeding habitats to pesticides and habitat loss. To study monarch butterflies, it is important to understand the availability and abundance of their hostplant milkweed. Hostplants are plants that organisms need to survive. Alberta is home to three types of native milkweed: low milkweed, showy milkweed, and green comet milkweed. Survey areas were chosen based on historical sightings of monarch butterflies with milkweed. Fort Saskatchewan Prairie was chosen as one of these natural areas because of the presence of low milkweed. Thanks to volunteers' and workers' dedication and hard work, Fort Saskatchewan Prairie has seen the restoration of many different native plants and wildflowers that support pollinators.



European skipper on low milkweed at Fort Saskatchewan Prairie, 2020-07-17. Photo: M. Parseyan



This citizen science report posted to iNaturalist found monarch larvae in Fort Saskatchewan Prairie in 2020.

This citizen science report posted to iNaturalist found monarch larvae at Fort Saskatchewan Prairie in 2020. This past summer, low milkweed had an excellent year and were abundant in the prairie. Two adult flying monarchs were spotted flying through the area in 2023. However, no caterpillars were discovered this year in the research plots. Nevertheless, it is helpful for monarch butterfly conservation to understand the abundance of milkweed in the summer breeding ranges. Our milkweed surveys at Fort Saskatchewan Prairie counted

1200 milkweed plants in our three research plots! In the fall, I was grateful to harvest some low milkweed seeds to share with the community and plant in other natural areas. Our historical analysis discovered that monarchs have come to Alberta every year in the last 10 years. Learn more about our ongoing research project @friendsofthepollinators on Instagram or on our [website](#). You can help monarch butterflies in Alberta by planting milkweed and other native wildflowers. Thank you to everyone behind the conservation work and native plant restoration at the beautiful Fort Saskatchewan Prairie.

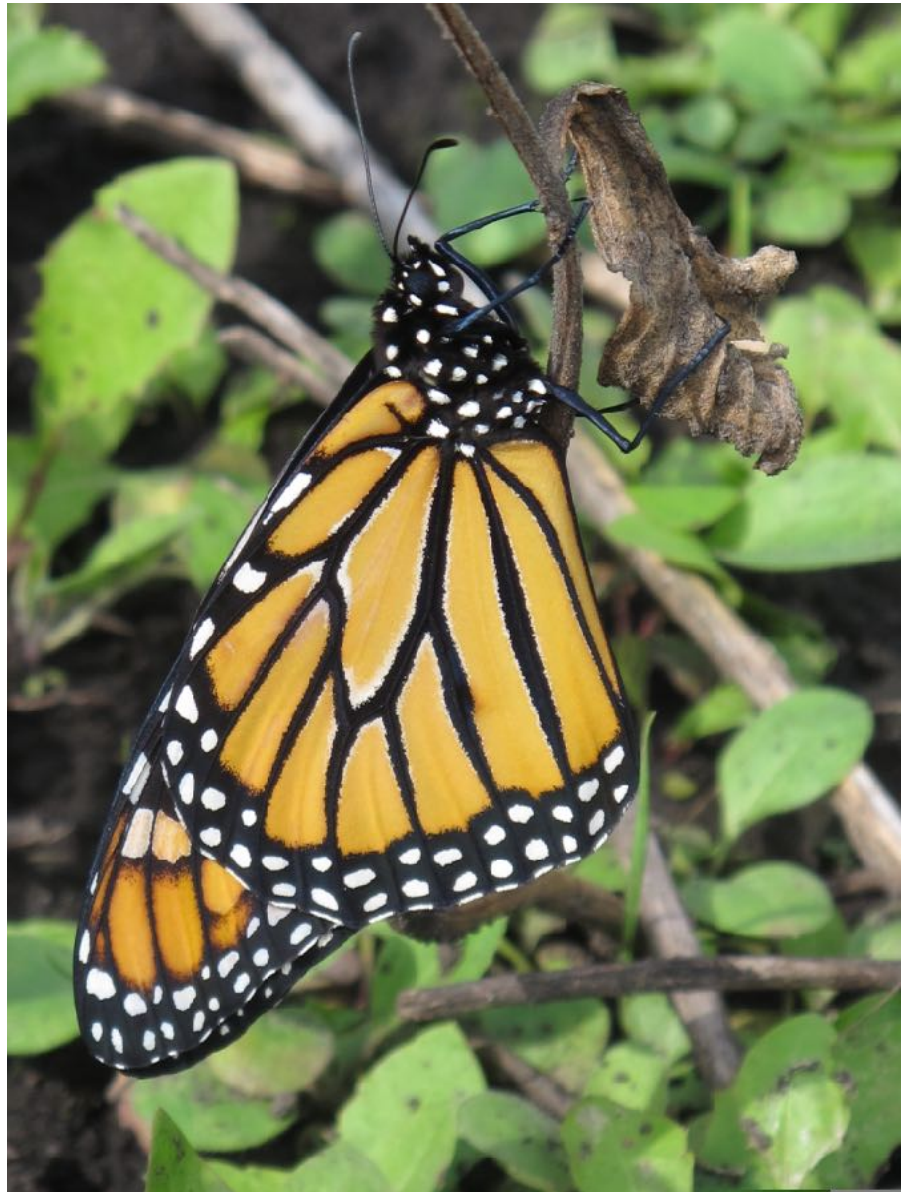
Biography: Janine (Jasper June) Heber is a Yorkville University graduate student, artist, and researcher. They are committed to the interdisciplinary research of monarch butterflies in Alberta, which motivated them to create the Friends of the Pollinators Research Lab. In addition to working on a monarch community resource book over the last few months, they enjoyed working as an assistant biologist, helping to monitor owl migration. They are passionate about improving the health of local communities and ecosystems.



Monarch caterpillar on low milkweed, Oldman Creek Nursery, 2012-07-04. Photo: P. Cotterill



Monarch chrysalis on Canada buffaloberry at Oldman Creek Nursery, 2012-07-28. Photo: P. Cotterill



Newly emerged monarch butterfly at Oldman Creek Nursery, 2012-07-28. Photo: P. Cotterill

Prairie Restoration Notes

By Patsy Cotterill

The presentation by Emma Leavens of Penn State Extension on November 6, 2023 entitled: “Plant Diversity Above and Below Ground: The Case Study of a Tall Grass Prairie” was mainly about restoration in tall grass prairies in the American Midwest. Nevertheless, it was possible to derive some nuggets of information and guidance from it relevant to our situation here in the Central Parkland of Canada where we have fescue prairie grassland remnants and, farther south, mixedgrass prairie.

First, Emma pointed out that there are several kinds of diversity:

- biological diversity (the sum total of organisms in an ecosystem)

- species diversity (consisting of the number of species and their relative abundance). Note: the same number of species can be present but diversity is still low if one or a few species are dominant and others infrequent.

- genetic diversity (the collective variability among genes in the population of a species)

- trait diversity (variability in physical attributes of a group of organisms, such as height, habit, leaf size and shape, height of flower stalks, nitrogen-fixing ability, root type, roles (e.g., grasses don't provide for pollinators but do feed their larvae)

- phylogenetic diversity (PD) (how many different plant families are included). Often phylogenetic diversity captures trait diversity.

Leavens drew a number of conclusions from her work at the experimental, recreated (i.e., non-remnant) Morton Arboretum Schulenberg Prairie in Illinois (in existence since 1962). Here hundreds of 2-metre by 2-metre plots were seed-sown and planted with plugs either with monocultures of prairie species or polycultures of 15 species with the aim of finding out: what species combinations

led to the greatest diversity, what species combinations proved most resilient, and what type of diversity was most predictive of outcomes.

Leavens noted that it is normal for species richness to decline (i.e., species disappear) over the first few years, although diversity may increase somewhat later on. High phylogenetic diversity (which is more characteristic of remnant prairies rather than restored ones), tends to remain high even if species richness is reduced. PD means that species tend to complement each other in function, leading to higher productivity in the ecosystem, and together

with trait diversity tend to reduce species loss.

She suggested that in native garden situations, neighbours should try to plant representatives of different families, to create phylogenetic diversity, which is also correlated with trait and functional diversity. (This could definitely be applied in a community garden situation.)

According to Emma Leavens: one-tenth of one percent of the original tallgrass prairie remains in North America. It is among the ecosystems with the highest diversity per square metre on Earth. It is dependent on fire, including fires that have been set by humans for thousands of years.

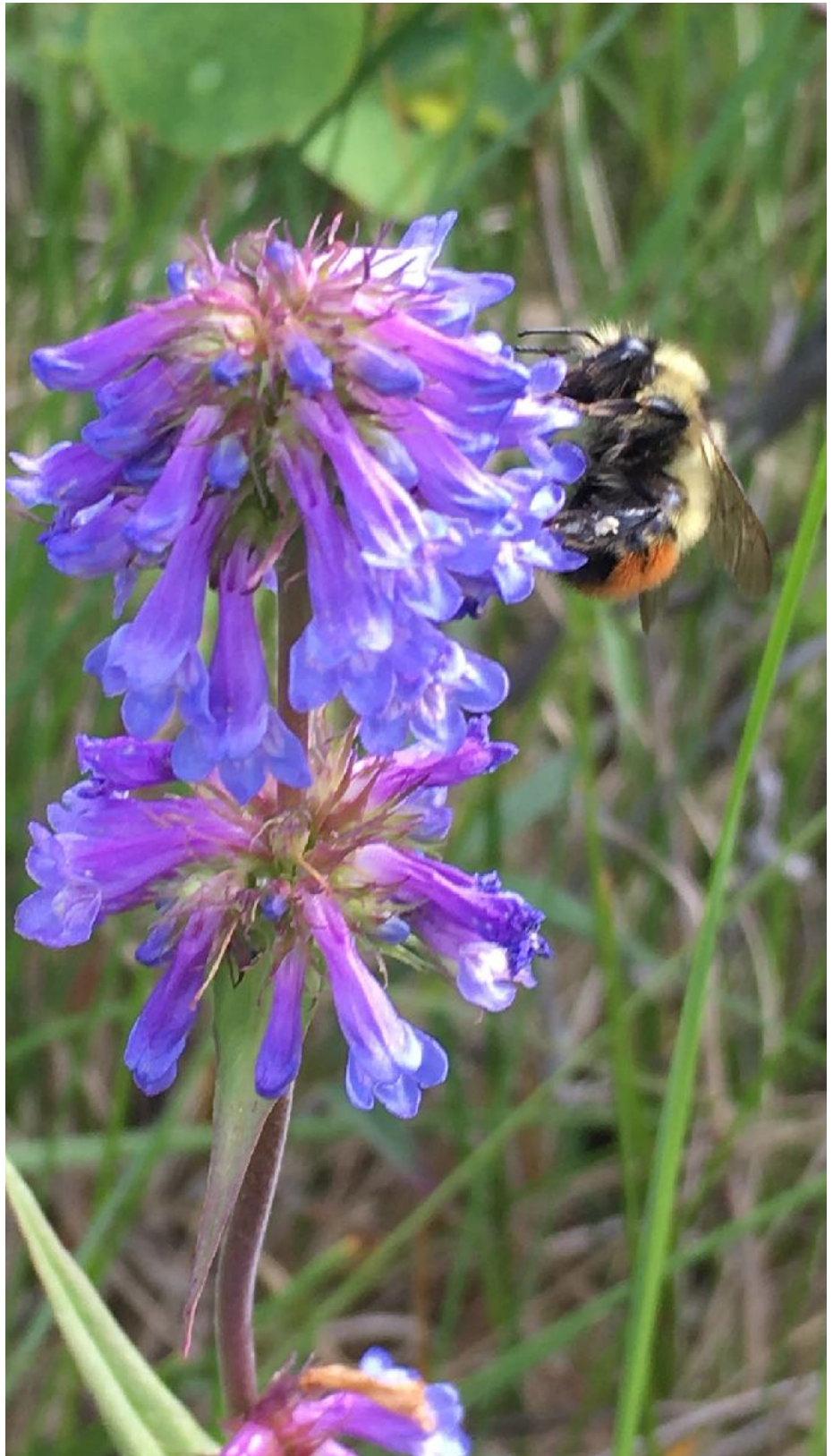
A number of take-home points were food for thought.

1. The importance of planting for phylogenetic (family) diversity.

Even though we suggest planting patches of species rather than one or few plants of a single species in order to create an aesthetic effect, Leavens recommends that native gardeners should aim for a variety of species in the garden and variety among neighbours. It is also important to aim for trait diversity which is often correlated with PD and functional diversity. This prompts me to try to plant more legumes in our beds and restorations, which tend to get ignored because they are difficult to grow.

2. It is important to include grasses, especially if drought is to become more frequent. Grasses have deep, fibrous, abundant, fine roots, which hold soil together, sequester carbon and are highly mycorrhizal; they are also short-lived, contributing to the organic matter of the soil. (Kentucky bluegrass has very short roots, so even though it is possibly superior to the coarser and more aggressive smooth brome grass, it should not be sown.) Intermediate and poverty oatgrasses might make good substitutes, with bearded wheatgrass, of which it is very easy to obtain seeds, doing better on coarser-grained soils.

3. All plots in the Schulenberg Prairie were tilled and herbicided prior to planting, and maintained by weeding. (As a member of the webinar noted regarding native plants: “Low maintenance does not mean *no* maintenance!”)



Slender blue beardtongue (*Penstemon procerus*) with orange-belted bumblebee (*Bombus ternarius*) at Nisku Prairie, 2022-06-22. Photo: P. Cotterill

Management also included prescribed burning.

4. One audience member questioned what one can do if burning isn't feasible, and the answer given was that mowing in spring is something of a substitute, with the mown material being returned to the land in the form of compost. It seems to me that it would be possible to do this even if the main grass component was smooth brome, provided that it wasn't allowed to head out before mowing.

5. Leavens recommends that native plant gardeners keep track of their pollinators: all pollinators, bees, beetles, ants and flies, etc. (This would make a good citizen science project.)

Successful tallgrass prairie restoration has taken

place in southern Manitoba, and work is ongoing with mixedgrass prairie restoration in the southern Prairie Provinces. I once lamented at a meeting, however, that range management was taken seriously in the States, but was seemingly ignored in Canada. I was informed curtly that this was because the U.S. had a lot more money, and generally the excuse given for lack of innovative management and restoration by land trusts is lack of resources. But is that good enough? The last time I looked Canada was a fully functional country, spending money on a lot of things. Our prairie and parkland grasslands certainly need attention, management and restoration if we are to live up to our national and international conservation responsibilities!



Volunteers raking mown hay at Nisku Prairie, 2020-06-04. Photo: M. Parseyan

Nisku Prairie is an example of remnant moist fescue prairie. Mown hay can also be used to smother tall weedy grasses such as creeping meadow foxtail.

Articles

Weeds and Disturbance - the Cons and Pros - Part 1

By Patsy Cotterill

The Characteristics of Weeds

Weeds are usually the first (and sometimes the only) inhabitants of disturbed ground, which is why they feature so prominently in our gardens, urban green spaces and waysides, and cultivated fields. A common definition is that a weed is a plant that is not wanted, but this is a cop-out, a non-scientific definition that gives no hint of the typical characteristics of weeds. These are: ability to grow fast (i.e., having short life cycles) and reproduce quickly and abundantly by seed and often by rhizomes. These features allow weeds to colonize denuded ground in a short period of time, taking advantage opportunistically of new space and resources. Most of our weeds are non-native, having come from lands which have a much longer history of disturbance due to agriculture. Some natives have weedy tendencies too, especially if they are adapted to pioneering in infertile soils.

Where surroundings are natural, with a source of native plants, as time elapses since disturbance, weeds are usually replaced by different, native species that form stable communities in it for the long haul. Weeds become minor members of the community, possibly occurring in small pockets of disturbance. In more human-dominated situations, however, weeds can form stable communities in themselves, as evidenced for example in persistent areas of smooth brome and Canada thistle.

How to deal with weeds? Since weeds are responsible for huge agricultural losses much effort and expense has been directed towards dealing with them. On a

smaller scale, home gardeners may find my critique of an article that appeared in the *Blazing Star*, the newsletter of the North American Native Plant Society, of some practical interest.

Landscaper Larry Weaner, writing in the summer, 2022, issue of *Blazing Star*, observes that any small disturbance of the soil encourages seeds in the soil seed bank to germinate. For this reason, he advocates cutting weeds at the base rather than pulling them up by the roots. He claims that he can cut about four weeds in the time it takes to pull one out by the roots. I don't think this



Goldenrod at Fort Saskatchewan Prairie: 2021.08.11. Photo: P. Cotterill

Native species often have weedy characteristics that allow them to spread quickly and dominate environments. These are usually successional species and may or may not persist for long periods. Members of the Canada goldenrod complex are known as “old field” weeds and can dominate well-drained, abandoned grassland environments indefinitely. They do provide pollinator and other ecosystem services but are not conducive to biodiverse plant communities. I do not plant Canada goldenrod but do plant other species of goldenrod as good colonizers of denuded ground.

is entirely true, at least not for our weeds. Our annual weeds such as stinkweed, shepherd's purse, flixweed, chenopods such as lamb's quarters, annual hawksbeard when in flower, and hemp-nettle are quickly pulled and possibly involve less stooping. Some of these plants overwinter as rosettes, including biennials such as bull thistle, Canada thistle, caraway, garlic mustard, and perennials such as dandelions, and as such must be dug, that is, unless they are allowed to flower the following season before cutting or pulling. Weaner's argument is that even if a cut weed regrows several times, the time taken to cut it will still be less than the time taken to pull it by the roots, and it will eventually run out of energy competing with the surrounding vegetation. This may be true for small gardens and consolidated patches of weeds that can be mown, but to deal with weeds individually by cutting sounds highly inefficient in the large space of a natural area or reserve. It is not true for dandelions, where food production and storage take place in the rosette and taproot, and neither can be cut or pulled but must be dug.

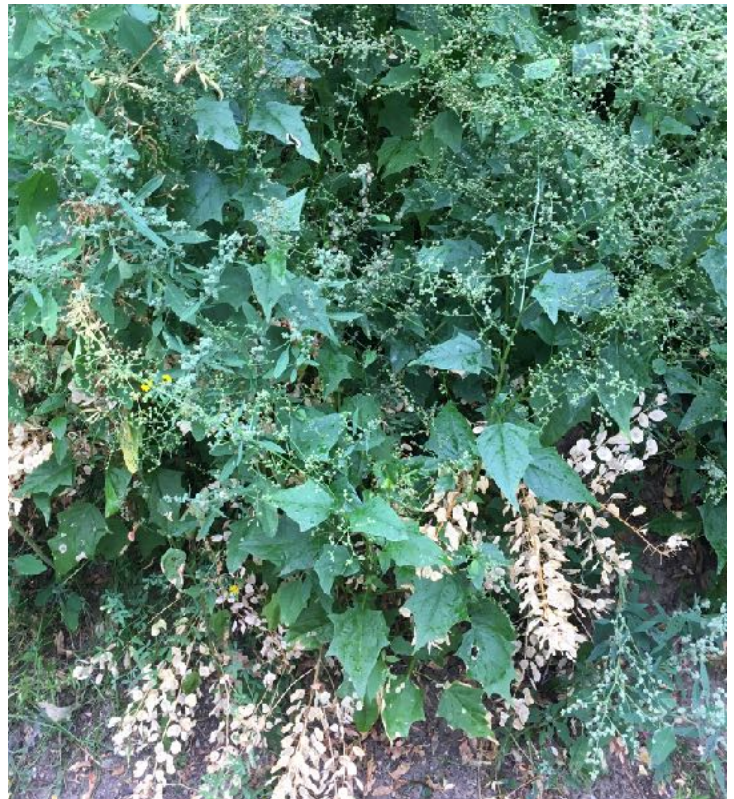
Unfortunately, at least in areas that have been subject to human-caused disturbance such as urban or agricultural areas, the surrounding vegetation is likely also to be weedy. Annual weeds are followed by perennial weeds, particularly grass, which enters as seeds but in most species spreads by rhizomes and forms stable populations. It may be worth removing the seed heads to avoid further contribution to the seed bank, but cutting will not result in weed-free ground.

Herbicides

Weaner makes no mention of the use of herbicide. Indeed, in the confined space of a garden, it is theoretically feasible to remove all unwanted plant material by mechanical means, although in practice many people will not be willing to sacrifice sufficient leisure time. But if herbicided, a plant will die in situ, without soil disturbance and consequent stimulation of germination. This is especially necessary for perennials with rhizomes,

where digging cannot remove the whole plant system. However, repeated applications will likely be necessary to catch the regrowth from surviving rhizomes. Depending on the herbicide, it can have residual effects on the soil, suppressing weed germination for years, but also preventing re-planting.

The article will conclude with Part 2 in the April issue of *WN*.



This picture of a "weed complex" was taken on the edge of a trail at top-of-bank in the Edmonton river valley. Photo: P. Cotterill

The large plant is maple-leaved goosefoot (*Chenopodium simplex*) which is native all across Canada except the far north, and frequents disturbed ground. At bottom right is a small example of common lamb's-quarters (*Chenopodium album*), a common, edible, non-native garden weed. Also present is a strand of annual bedstraw or cleavers (*Galium aparine*), non-native to Alberta. The spikes of bleached pods belong to the annual weed stinkweed (*Thlaspi arvense*).



Osborne Field in Wagner Natural Area near Spruce Grove. Photo: P. Cotterill

Until recently an old field of timothy grass, the conditions in 2023 allowed an explosion of Canada thistle populations which have been present for several years in smaller numbers. Common dandelions are also abundant. Left untreated, or absent significant drought, the thistles could persist indefinitely. Herbicide can kill Canada thistle but requires repeated applications. A possible solution might be to treat with herbicide for a couple of years and then plant trees and shrubs. A small “eco-island” of planted trees and shrubs is shown in the middle background against the row of trees demarcating an acreage property. Biological control of thistle is being tried but is proving insufficient to stem the tide.

Native Garden Profiles (a series)

Common Bearberry, Kinnikinnick (*Arctostaphylos uva-ursi*)

Common bearberry is a prostrate, trailing sub- or dwarf shrub in the heath family, with shiny, obovate leaves and small, pink, bell-like flowers in spring that are replaced by red, berry-like fruits in late summer. In nature it is found on well-drained, coarse, often sandy soils, in jack pine forests, open slopes and roadside banks. It is circumpolar and widely distributed across Canada and in Alberta.



Common bearberry in fruit amidst jack pine leaf litter, Halfmoon Lake Natural Area, 2016-08-16. Photo: P. Cotterill

Other Features

- Deep-rooted, it is a good sand binder, controlling erosion, and its branched, sprawling stems are capable of rooting, making it a good patch-former and ground cover.
- Its leaves are hard and leathery, well adapted to retaining moisture in droughty soils, and they are evergreen, an adaptation to infertile soils, persisting from one to three years before turning purple and dying.
- The flowers may be buzz-pollinated like blueberry and cranberry flowers. Bumble bees vibrate their thorax muscles against the flowers forcing out the pollen. (This needs verification.)
- Common bearberry is the alternate host for spruce broom rust, aka yellow witches' broom, caused by the fungus *Chrysomyxa arctostaphyli*, a disease exclusive to spruce trees in North America. The infestation is marked by black spots on the leaves.

- It has an alpine cousin, formerly in the same genus, alpine bearberry (*Arctous rubra*). This plant, confined to alpine habitats, is similarly prostrate but the leaves are crinkly and the fruits much juicier.
- Bearberry has Indigenous uses in traditional medicine, and as a component of pemmican and smoking mixtures.

Garden Value

Although in nature it is found on sandy soils, it will grow well in garden soils provided they are well-drained, where it provides good ground cover. Each fruit, technically a drupe, contains 1-5 seeds that need to be scarified and stratified to reduce the seed coat and break dormancy. Because germination is tricky, however, it is easier to plant stem portions, and the plant is also available commercially as plugs. I planted some stem pieces on an artificial mound in my garden and it has now filled in, although with room for other plants to push through. (For example, other plants that grow well with bearberry are prairie crocus and cut-leaved anemone.) The leaves provide food for some moths and caterpillars.

ENPS does not normally sell seeds, but we could provide seeds upon request.



Common bearberry in flower in E.C. Manning Provincial Park, B.C., 2010-06-11. Photo: P. Cotterill



The paintbrush is growing on a rocky island in a mountain stream along with the purple-flowered river beauty or broad-leaved fireweed (*Chamaenerion latifolium*) in the left of the picture. 2014-08-14 Photo: J. Novak

This picture of great red paintbrush (*Castilleja miniata*) in the mountains of B.C. is by mountain-lover Jiri Novak and was taken in 2014-08-14. It is a welcome image for a wintry day. The flowers of this species come in several different colours, including pink, red, yellow, orange and white, often confusing identifiers who think they are dealing with different species. It is easily the commonest of the dozen *Castilleja* species occurring in Alberta. Essentially a foothills and mountain species, giant

red paintbrush populations start appearing about 100 km west of Edmonton. The plant is not easy to grow, perhaps because it is a semi-parasite, with roots attaching to those of neighbours to steal nutrients, and does not seem to persist for long after transplant. (If anyone has had a different experience, please let us know!) Once a member of the figwort family, Scrophulariaceae, the species has now been transferred to the broomrape family of parasitic members, Orobanchaceae.