



Male flowers on Canada buffaloberry, *Shepherdia canadensis*

From Your Editor:

Welcome to the Wildflower News for May. This year ENPS is having three plant sales observing all the COVID protocols, and encouraging you to introduce a couple (or more!) of native wildflowers to your gardens. The bees and butterflies will be happy. Amazing how quickly signs of new growth are appearing and even the odd overwintering butterfly can be seen flitting about.

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- Saskatchewan's Alvars: Hidden in Plain Sight
- Ours to Save
- Nature Alberta magazine

LETTERS:

Thanks for another great newsletter. I loved Patsy's account of restoration projects and share her concern - how do we ensure we do more good than harm? It takes the right pioneer species, keystone species and time for the ecosystem, from the soil upwards, to recover. The best is to protect what we have from human pressure and repair degraded sites. Kind regards, Nikki

WN: Absolutely right Nikki, and something for which we need to build even more awareness.

Native Plants in Local Gardens and elsewhere...

Check out some selected posts WN has assembled of the first spring appearance of some of our local native plants.

From Alan Jones:
Prairie crocuses blooming in my garden,
April 22.



From Teresa Henderson; Went to the Fort Saskatchewan Prairie site today, April 15, and was thrilled to find some crocus starting to peek through. It must be spring!



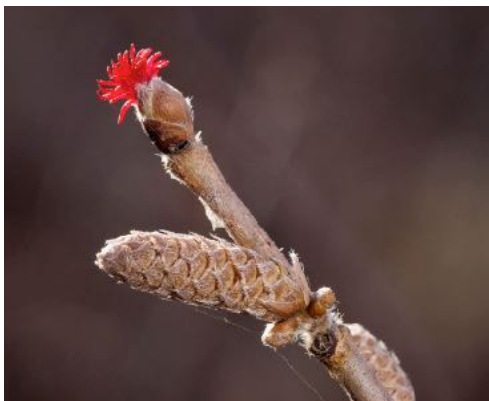
From Neil Harris: A dewy prairie crocus, *Pulsatilla nuttalliana*, at Gibbons badlands. Unfortunately, there were also signs of ATV use on the hillside!



From Judith Golub: April 23 - L. From an area north of Gibbons these crocus suffered from freezing temps and frost damaging the petals. R. At Opal Natural Area bright and sunny but cold!



Also from Neil Harris: On April 10, a bracing early morning walk at Fort Saskatchewan Prairie. Little sign of new growth except for the beaked hazelnut *Corylus cornuta*.



Growing in Patrick Kyle's garden on April 25: *Monarda fistulosa*, wild bergamot or beebalm - 2nd year growth; *Pulsatilla nuttalliana*, prairie crocus; *Symphyotrichum puniceum*, purple-stemmed aster - 2nd year growth.



From Manna Parseyan:
Three-flowered avens, prairie
smoke, or oldman's whiskers,
Geum triflorum, at Bunchberry
Meadows in a native plant bed.

From Natasha Stairs' garden:
Giant hyssop, *Agastache foeniculum*, and false dragonhead, *Physostegia
ledinghamii*.



EVENTS - if you would like us to list your event that involves native flowers, please email us at engedmonton@gmail.com by the 20th of the previous month.

30 Apr - 3 May - City Nature Challenge 2021 - Bioblitz in the greater Edmonton region.

Still a day or two to take part in this international bioblitz event where cities take part in some friendly competition to see who can observe the most species, and get the most participants, all over the world. It's a great opportunity to encourage people to get out and enjoy nature, and compile some valuable data at the same time.

Participation is via iNaturalist - all people need to do is take a photo of any organism with their digital camera or cell phone, and upload it to the iNaturalist site. Anyone with an account on the site can upload observations, and participate in identifying their own and others' observations. If you're familiar with iNaturalist, the Edmonton-area City Nature Challenge 2021 "project" is here: <https://www.inaturalist.org/projects/city-nature-challenge-2021-edmonton-metro-area>

Any observation in the **greater Edmonton area (including St. Albert, Spruce Grove, Stony Plain, Sherwood Park, Nisku, Leduc, Beaumont, and Devon)** that is uploaded between 30 April and 3 May 2021 will automatically be included in the tally of results. If you're not familiar with iNaturalist, you can find more info about it here: <https://www.inaturalist.org>. If you'd like more general information about the worldwide City Nature Challenge, you can find it here: <https://citynaturechallenge.org/>

Saturday, May 8th - **Bloomin' Garden and Art Show 2021**



ENPS will have native plants at this market, which will be held strictly outdoors this year. COVID restrictions will be in place, and further precautions will consist of only one entrance and one exit to the market; masks are required at all times; hand sanitizer at every table; and only 2 guests per vendor will be allowed into the market area.

Time: 10:00 am to 4:00 pm.

Location: Alberta Avenue Community Centre, 93 St. and 118 Ave.

Saturdays, May 29 and June 5 - ENPS Plant Sales at Wild Birds Unlimited - the same native wildflower plants will be available at each event.

Time: 10:00 am to 4:00 pm.

Location: 12204 107th Ave

Saturday, May 29 - Fulton Place Gardener's Swap - Bring your extra plants, tools, books, and yard decor to trade for someone else's extras. We will not be counting points/items coming in or going out so there is no paper. There will be reps from the invasive plant group and the Edmonton native plant society. There is a native plant swap table, so pot up and bring your extra native plants or seedlings!

There will be limited access to the hall washrooms and no snacks. Masks are required.

Time: 9:00 am to Noon

Location: Fulton Community Hall, 6115 Fulton Road.

June 11-14 - **Edmonton BioCity Challenge**

City Nature Challenge (CNC) is an event to document the biodiversity of nature occurring within a particular city. More details will be available in the June 2020 Wildflower News and on the ENPS Facebook page.

NEWS... If you have a news item involving native plants that you would like posted, please email us at engedmonton@gmail.com

Parkland County and Chickakoo Lake Development submitted by Deborah Bloomer. Photos by author.

A \$22 million chapel, enclosed walkway, 40 room guest lodging with ensuite bath, meeting and administration rooms, staff accommodations, 200 seating indoor dining and seasonal outdoor dining, recreation hall, a large landscaping project, with underground parking and a future monastery is being developed in the Chickakoo Lake area. Many trees have been clear-cut and hills taken out, flattened and land scraped away. There are plans for a biomass plant using trees on the acreage for heat.

The Carmelite Centre made a water diversion application to draw 6,355 cubic metres of water (4,500 gal per day) for a development near Chickakoo Lake with a deadline to respond in 30 days.

The water licensee says that the Carmelite Centre can draw up to twice the application amount if they need to and rate the Aquifer as Q20, which they say is good enough for 20 years. There are 68 neighbouring wells within a mile radius.

Chickakoo Lake Area Water Protection Group began as a group of 4 who learned quite by coincidence of this water diversion application and acted quickly to notify the neighbourhood and community. They have set up a facebook group and created a poster to engage – learn, educate and share. There now are over 600 members. Although the group wishes to state their concerns and wants to appeal, they have been told by AEP that the permit will go through.

There is deep concern for this sensitive nature habitat area, wildlife corridor, and bird sanctuary - as well as for the neighbourhood and community quality of life, a dramatic increase in traffic, dust, exhaust, noise and 24-hour lighting to accommodate a 24-hour schedule.

For further reading: ["Parkland County residents raise environmental concerns over \\$22M church development near Chickakoo Lake"](#);

["Parkland County residents blindsided by \\$22M church development in 'ecologically sensitive area'"](#);

["Residents feel left in dark on impending \\$22 million Mt. Carmel Centre development"](#)



A young moose who was born late in the season and triumphed through winter with his mother eating twigs and bark.

Facebook group: [Chickakoo Water Protection Group](#)



If any of our readers live in Parkland County, and are concerned about this, you can contact the mayor and councillor:

Mayor Rod Shaigec rshaigec@parklandcounty.com

Division 3 Councillor Phyllis Kobasiuk pkobasiuk@parklandcounty.com

A mystical view of Chickakoo Lake.

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The American Prairie at Wakehurst

Wakehurst is a house and botanic gardens in West Sussex, England, owned by the National Trust but used and managed by the Royal Botanic Gardens, Kew. The American Prairie at Wakehurst is gradually taking shape to become a stunning sea of grasses and wildflowers.

Covering six acres, the new landscape will evoke the herbaceous wild plant communities of North America.

Not only a beautiful and immersive visitor attraction, the prairie will also be a 'living laboratory' for Wakehurst and Kew scientists to learn more about this critically endangered global habitat.

There are a couple of videos that are worth watching included on both sites.

Here's an excerpt: "Prairies are important, but they are also severely under threat. This ecosystem once covered vast areas of central North America. Now only 1% of tallgrass prairies exists, while under 25% remains of mid and shortgrass prairies. This makes it one of the world's most threatened ecosystems. The threats these prairies face include invasive plant and animal species, industrial action, human disturbance, agriculture, urban development and the division of the land."

<https://www.kew.org/wakehurst/whats-at-wakehurst/american-prairie>

https://www.kew.org/read-and-watch/what-is-a-prairie-north-american-prairie?utm_source=w-enewsmark&utm_medium=enewsletter&utm_content=aprilnewsletter%20220421&utm_campaign=w-americanprairie&dm_i=4THF,HOHC,2EDZ3F,23AYT,1

ARTICLES:

A Short List on the Virtues of Native Plants by Lorne Fitch, P. Biol.

As humans we tinker and experiment. Those traits led us, in the fertile valleys of the Middle East, the terraced paddies of China, on the slopes of the Andes and throughout valleys in Mesoamerica to domesticate cereal grains, rice, lentils, cotton, potatoes and corn, all of which originated in wild plant stocks. The development of agriculture through plant crosses and breeding allowed humans to expand and increase in all portions of the globe, save the Arctic and Antarctic.

In the process we have forgotten, neglected and overlooked the virtues of native plants. As colonizers of the prairies, and always from somewhere else, there has been a consistent feeling the land inherited needed "improvement". Stepping back from our origins in agriculture and the agents of change we have been for landscapes, it's time to recalibrate our expectations with a better sense of the virtues of native plants.

Here is a short list on the virtues of native plants:

Native plants are adapted to local conditions of climate, soil, slope, aspect, and moisture variability. They were born in place with several thousands of years of trial, error and adaptation that selected the ones with the inherent capabilities to survive and thrive throughout the range of natural variability. Their genetic material has stood the test of time and stands to continue to meet the challenge climate change brings. A native, or indigenous plant is one that occurs within a particular landscape without direct or indirect human actions.

Native plants have adapted to a variety of soil chemistry situations (e.g., high salinity, calcium carbonate) and soil conditions (e.g. anaerobic sites, a variety of soil textures).

The root systems of many native plants grow deep, tapping subsurface moisture at depth. This enables native plants to be resilient to drought conditions. The deep root systems of many native plants, especially trees and shrubs are the

essential “glue” that bind stream and river banks together making them resistant to erosion.

Native plants develop as a team; there is competition for essential resources but competition is minimized to fill niches and to take advantage of the ebb and flow of moisture conditions, seasons and life histories. There is redundancy and overlap in the roles native plants play; this creates ecosystems with resilience to change. Over time, native plants have developed natural defences against many pests and diseases. Native plants attract beneficial insects which prey on other pest insects.

Native plants are soil builders, energy recyclers, moisture conservers and erosion preventers. They work in concert and synergy with soil microbes and invertebrates in many of these tasks, such as transforming atmospheric nitrogen to forms useful to plants. Nitrogen fixation with certain groups of soil micro-organisms, in symbiosis with native plants provides a major part of the nitrogen in circulation on Earth.

Native plants don't require artificial amendments, like domesticated agricultural species do, to maintain productivity. Over the long haul, over the range of natural variation, native plants are consistently productive and less subject to boom and bust cycles. These plants provide low, or no-cost management.



Geum triflorum, three-flowered avens, and *Cerastium arvense*, field mouse-eared chickweed, in an open field.



Goldfinch getting seed from rhombic-leaved sunflower, *Helianthus pauciflorus* subsp. *subrhomboides*

Native plants are key to maintaining native wildlife species and form the basis of the food chain. The timing of flowering, fruit and seed production is tied to the life cycle of many wildlife species. The structure of native plants is essential to nesting success, survival of young, thermal cover, escape cover and essential winter food. Native plants are essential habitat for native pollinators, which provide benefits to many adjacent agricultural crops. The mechanism for recovery efforts for species at risk is often the availability, integrity and scale of native landscapes available.

Native plants successfully sequester large amounts of carbon, and assist in moderating the amount of human-caused emissions that are responsible for climate change.

Native plants provide long-term economic and ecological stability. Conventional agriculture replaces free ecosystem services with the requirement for costly, non-renewable energy to maintain production.

Native plants are an effective tool for land reclamation/restoration providing a long-term solution to issues of erosion, salinity and non-native plant invasion.

Biodiversity, a measure of ecological integrity, is greater on landscapes consisting of native plants.

Late successional plant species (of which most are native species) are more efficient than agronomic species at converting solar energy into biomass.

Native plants provide aesthetic appeal, diversity and beauty. There are heritage, spiritual and cultural values associated with native plants.

Native plants are used in the development of new foods, medicines and industrial products.

Native grasslands and forests supply a number of important ecosystem services, such as forage production, topsoil conservation, water capture, storage and purification, flood control, pollination and carbon storage. These landscapes and the plants that make them up perform these services for free, with appropriate management. Whatever the question is, the answer has to involve native plants!

Lorne Fitch is a Professional Biologist, a retired Fish and Wildlife Biologist and a past Adjunct Professor with the University of Calgary.

Photo credits: *Geum triflorum* - J. Golub; goldfinch - T. Stieben.

Analysis of fossil pollen has given us a fairly good idea of how some landscapes developed. Nevertheless, a problem for successful restoration is that we weren't around to witness the conditions under which many of these natural plant communities were established in the first place. I was particularly struck by this difficulty a few years ago when I was on a field trip to the Gardiner Ranch near Longview. The Gardiners belong to a long-settled ranching family. Along with other members of the Pekisko Group in their area, they have done more than anyone to preserve the foothills fescue grasslands of the Foothills Parkland Natural Subregion where they raise cattle on native grasses. Rolling hills covered in foothills rough fescue (*Festuca campestris*) and forbs are dotted with clumps of almost uniform beaked willow (*Salix bebbiana*). But the willow clumps do not seem to be associated with any particular topography or hydrology, e.g., bottom lands or hollows. And even if they were, how did their propagules get there and establish in an ocean of grass (assuming the grass came first). Think of what it would take to create this landscape artificially! (Rough fescue grasses are not pioneering species and do not regenerate naturally after disturbance). Willows could no doubt be planted at considerable expense but likely would have to be fenced off to protect them from the depredations of cattle and deer.

Restoration research reveals the uncertainty principle

Much academic research is directed towards restoration of grasslands of industrially degraded sites (as in the Boreal Region or in the mountains) or in the improvement of habitat for endangered wildlife species. Basing academic credentials on research projects in restoration can be a dicey business. Autumn Watkinson's PhD thesis entitled "Case Study of Restoration of Sagebrush Grasslands" required learning how to re-create sagebrush habitat for sage grouse, a federal species-at-risk. To do this she had not only to figure out how to grow and establish silver sagebrush (*Artemisia cana*) but also the plant's lifespan and the density of canopy that would be needed to provide effective habitat. She found that the sagebrush seeds germinated well in the lab, but refused to do so in the field; nor did the transplants flourish, a situation we are all too familiar with. They could not out-compete the fast-growing weeds; applying fertilizer in the field only gave extra advantage to the weeds. Later she discovered the technique of nutrient loading, applying nitrogen at different doses and on different schedules to the seedlings at an appropriate stage of their growth. She found a combination that worked and confessed her great relief and joy when she returned to her plots in Grasslands National Park one day and found sturdy, grey shrubs growing in neat, weed-free rows. Her resourcefulness and persistence paid off, but I couldn't help thinking how brave she was to risk her doctorate on such a trip into the uncertain complexities of nature!

Nutrient loading involves supplying nutrients to seedlings in excess of their immediate growing needs. When transplanted they have a nutritional reserve and a buffer against environmental vicissitudes such as competition from weeds that promotes better growth. Staff at the NAIT Centre for Boreal Research, experimenting with tree species, have found that alfalfa pellets are effective in boosting seedling and root biomass, a technique that we could possibly try on our own seedlings. NAIT research staff have also experimented with seed germination and found that such unlikely things as carbon nanotubes, electromagnetic fields and (more likely) gibberellic acid have facilitated germination under particular conditions. Much of this research is directed towards reforestation of oilsands landscapes and receives funds from industry.

Local restoration projects

The Edmonton area, nominally in the Central Parkland Natural Subregion of Alberta but close to the Dry Mixedwood Natural Subregion of the Boreal Natural Region, has few examples of natural grassland. These are or have been mostly confined to saline or solonchic soils as in the north-east of Edmonton or to steep, south-facing clay slopes in the river valley where tree growth is inhibited. Even the sandy soils of the Devon Dune complex in the southwest are naturally forested with jack pine or aspen, only open when they have been cleared for pasture or cultivation. Natural succession on most of our moderately drained soils is therefore to forest. Attempts to create grassland where tree growth is possible must therefore fight a natural trend. However, the major problem following ground disturbance is the incursion of non-native smooth brome grass (*Bromus inermis*), which has proven to be supremely adapted to our climate and soils. A secondary problem, where trees exist in the vicinity, is the encroachment of poplar. Because smooth brome and poplar are both colonizing species and can easily co-exist long term we have a large number of these stable but depauperate plant communities. Where grassland communities exist on our clay-loam soils they need to be maintained by burning, mowing or grazing, something which most municipalities, as I indicated in Part One, are unwilling to do. Small-scale attempts at restoration, such as at Bunchberry Meadows on the Devon Dune, St Albert along the Sturgeon River and formerly cultivated fields in upland parts of Wagner Natural Area, consequently involve reforestation, the planting of trees being easier and having greater likelihood of success. Wetland restoration is also considered to be relatively easy, because native wetland species are better adapted than upland weeds to soil saturation, and propagules are transported naturally by wind or birds.



Reclamation of Mill Creek-Roper Pond by the City of Edmonton in 2007. A pleasant scene but the herbaceous vegetation at least almost certainly consists of cultivars. The only natural communities are the forests within the remnant Mill Creek ravine. Another problem with local restoration is the shortage of wild propagules from which to produce genetically local stock. This is a “hybrid” ecosystem if ever there was one!

An example of a local restoration that will be interesting to watch over the coming years is taking place at Bunchberry Meadows. In June 2019 a mechanical technique called rough-and-loose mounding was employed to create hillocks and hollows and de-compact the soil in areas around the parking lot, driveway and dugout. The idea was that poplar seeds would drift in naturally, germinate in the microsites of the moist hollows and produce dense stands of saplings that would eventually thin out to a normal stand of forest. Unfortunately, poplar seed production in 2020 was low, and the seedlings did not materialize, although there is presumably still time for this to happen. The backup plan has been to plant poplar stakes, collected from nearby roadside trees, at least in the peaty soil around the dugout. Donated jack pine saplings were also planted and so far appear to be doing well. ENPS volunteers have planted grasses and forbs in sandy soils in this area and the mounded peaty soils of the dugout, where riparian species have also been introduced. Whether these plants can spread and become significant community members will be worth watching. Personally, I would love to see an experiment to strip smooth brome and Kentucky bluegrass from some of the meadows, which would then be planted with native grasses such as needle-and-thread, porcupine grass, June grass, sand grass and bearded wheatgrass, grasses that we know thrive in open, sandy soils to the north of Edmonton. Expertise derived from a successful project of this type could be applied to the Edmonton’s Natural Area NW 384, which has a similar sandy hill, once cultivated, now a field of brome and thistles. I would point out here that removal or control of smooth brome usually involves a combination of treatments, usually burning, tilling and herbiciding. Herbicide is an essential tool in the restoration toolkit, and recent societal trends to outlaw herbicides have not been helpful to restoration. Annual spraying of large crop acreages with pesticides may well affect human, biodiversity and soil health, but the infrequent, localized application of herbicides for restoration is another thing altogether. In my opinion it is justifiable, provided that the desired results are ultimately obtained.



Rough-and-loose mounding technology around the dugout pond in Bunchberry Meadows in June, 2019. The soil here is much more organic than most of the dune areas, having been used as a watering hole for domestic stock. The foreground area was planted with poplar stakes in late 2019. The northern part (left) has been planted by the ENPS as a pollinator garden. The rest of the area is currently covered in sown grass and weeds.

The problem of regeneration in natural areas

This is just my opinion, and I seem to be out of step with a lot of authorities, but generally, the importance of disturbance in maintaining plant diversity seems to be little recognized by our local land managers. The idea seems to be that if you have a natural area it must be left natural, that is, you don’t need to do anything to it, except possibly get rid of regulated weeds and plant some trees. An example I could give is of the decadent willow thicket at the south end of Wagner Natural Area’s Marl Pond Trail, which for years has consisted predominantly of dead wood. Were it to be cut back to stump level it would produce an abundance of flowering shoots that would be of benefit to pollinators, insects in general (and therefore birds), as well as improving the aesthetics of the trail. I also wonder if the accumulation of logs seen in the vicinity of trails (often due to windthrow) is not a management problem that needs to be addressed.

While decaying logs are part of natural decomposition processes, they also take up extraordinary amounts of ground space for growing plants. Have you ever seen anyone in Edmonton's natural areas cutting down trees in order to promote regeneration of suckers, rather than just purely for human safety or sightlines?

The problem of roadside "wildflower" restoration

People sometimes query why we can't have strips of wildflowers alongside Alberta roads as is the case in certain states, especially in the U.S. While it seems not impossible to introduce more natives into the existing grass (usually smooth brome), maintaining linear corridors of native herbaceous species would require huge inputs of labour and money. As it is, tame grass can be easily mown for useful hay and weedy forbs herbicided to maintain highway visibility. The City of Edmonton cannot even afford to keep its existing horticultural beds weed-free! Aspen and a variety of shrubs could, however, presumably be planted; in many provinces and U.S. states where the natural vegetation is forest you can drive for miles along forested highways. (Conifers cast shade which in the winter tends to maintain ice on the highways.) The most successful of the City of Edmonton's naturalization experiments seem to involve pine and white spruce plantings along Whitemud Drive; for some reason, aspen has not flourished. Alternatively, native grasses could be sown and then mowed. Roadsides appear to present good candidates for extending natural communities towards Tallamy's goal of a "Homegrown National Park." On financial considerations alone, however, creating and maintaining forb-grass communities could be daunting tasks.



This heavily disturbed area at Nisku Prairie has been the focus of restoration efforts over the last several years. (Note the smooth brome in the foreground). Despite our attempts to introduce a diverse prairie flora with home-grown transplants following removal of annual weeds, this area has largely been overtaken by perennial and undesirable smooth brome and the native but weedy Canada goldenrod. It does not resemble the more natural communities elsewhere in the Prairie.

Trudy Haracsi

Smooth brome and the dynamics of community change

Much of the research literature reveals the unpredictability inherent in so many restoration experiments. Nevertheless, one can draw lessons from it, such as the need to look at the results long-term, and perform appropriate data collection and long-term monitoring. (Plant communities change with time and may look very different decades after a restoration.) In a paper published in *Native Plants Journal* in 2020, authors Val-Jo Anderson and Robert L. Johnson document how 20-year trial plots in Utah rangelands went from smooth brome dominance to a failed native seeding with weeds, to an emerging native community dominated by weeds to a diverse native plant community consisting of 10% shrubs, 20% native grass, 35% native forbs and 20% smooth brome in a subordinate role. Still to be determined is how the community will fare when subject to wild ungulate and domestic livestock grazing. The authors note that smooth brome was introduced into the Intermountain West in the early 20th century to stop soil erosion and produce forage that could withstand grazing by domestic animals; crested wheatgrass (*Agropyron cristatum*) was deployed for the same purpose in the more arid rangelands. (Crested wheatgrass has been used in the Edmonton area to control slope erosion, but does not appear to be aggressive. It is much more commonly seen farther south.)

Novel ("hybrid") ecosystems

Neither type of experimentally restored community in Utah was considered to be stable and resilient after 20 years (the crested wheatgrass experiment failed miserably and the smooth brome-moderated community has not been tested under grazing conditions (which tend to favour brome). Given this fact, the authors make a startling observation. Because smooth brome imparts stability to a community, it may in fact be the preferable state, at least for rangeland functionality and where climate change and wildfire continually threaten to create disturbance. In ecological theory, native plant diversity is considered to equate to functional diversity, because different species have different functional traits that lead to better exploitation of resources, stability and resilience, enabling the community to recover from what ecologists term perturbations. The authors theorize that non-native plant species that have become naturalized may in fact be well able to provide the functional traits that lead to community stability in perturbed situations. They conclude: "... functional diversity may have to be achieved using novel plant communities composed of species that can establish and achieve ecological functionality regardless of origin." They recognize the preference for natural communities, but consider the huge cost of full-scale "community replacement" (with very uncertain consequences)

and suggest that “species augmentation” (what municipalities wrongly call naturalization) is the better bet. So much for my vision of fields of waving native grasses in Bunchberry’s meadows! The evidence is incontrovertible, of course, that our local ecosystems that are worth managing because of their high native species content are already “hybrid” ecosystems, a mix of natives and naturalized non-natives, some of which might be outright weeds, such as at Fort Saskatchewan and Nisku Prairies. Nevertheless, looking upon oceans of brown, layered monocultures of smooth brome in the spring, or comparing a brome-infested aspen stand with one that has a diverse shrub understory, I am not willing to concede colonial victory to this grass just yet.



A stable but depauperate “hybrid” ecosystem. West-facing slope vegetated by aspen suckers and smooth brome in the river valley close to Kinnaird Ravine. Natural vegetation on this slope would likely be a mixed wood with poplar and spruce and native shrubbery. Alternatively, it could be an open slope with grasses and forbs such as Canada ryegrass, green muhly, green needlegrass and prairie sagewort. To restore it would take considerable expense and would risk erosion – not something the City is likely to be interested in. (December 2020)

Reclamation and restoration will continue, even though our best efforts may result only in novel or hybrid ecosystems. In the Edmonton area afforestation with trees and shrubs, and wetland rehabilitation, will likely be the most cost-effective and satisfying activities. Nevertheless, it remains important to maintain our grassland communities, even if they become living museums. Why? They should be valued not only as providers of ecosystem services, as habitat for species, including presently common as well as threatened and endangered ones, as study-fodder for scientists, but also for the sake of our moral integrity. We need to know what has been lost, and what the costs of achieving our present prosperity have been to other species, as part of the broader picture of full-cost accounting of our population levels and lifestyles. At least we should understand that the land has been irrecoverably changed by “eco-imperialism” and it can never be the same again, even if humans were to remove ourselves from that picture. However, involving volunteers and citizen scientists in restoration activities will help produce a caring culture for the future, and hope will be the incentive.

References:

Anderson, VJ, Johnson, RL. 2020. Roughing up smooth brome and dethroning crested wheatgrass with native plants: dominant to subordinate on Utah rangeland. *Native Plants Journal* 21 (3) 281-289. <http://npj.uwpress.org>

Watkinson, Autumn. “Case Study on Restoration of Sagebrush Grasslands.” Webinar presentation to Alberta Agrologists, January 14, 2021.

<https://www.pc.gc.ca/en/nature/science/conservation/arnoise-sagebrush>

Recommended Reading:

A review of Annora Brown’s *Old Man’s Garden: The History and Lore of Southern Alberta Wildflowers*, rev. ed. Rocky Mountain Books, 2020. By Natasha Stairs.

I read this book on an overcast day in early spring, and I couldn’t help but think that it was the perfect book for the end of winter. Annora Brown’s descriptions of the wildflowers she encountered during her lifetime as a painter and naturalist in Southern Alberta felt like sunshine on a summer’s day.



In her own words, “this is a book of gossip about the flowers of the west. Its purpose is to gather under one cover some of the legend and lore that is to be found lying about in odd corners, not easily available to those whose reading time is limited. It has been no more possible to mention all the flowers of the country than it would be to mention all one’s friends in an evening’s chat; but it is hoped that the bits of gossip included will change the flowers from strange botanical specimens to friends.”

Legend, lore and gossip it has aplenty, and the conversational descriptions of the flowers are so visual that I felt in some instances as though I was reading a painting in words. Most are accompanied by a black and white scratchboard print of the flower. This new edition, published in 2020, also includes a selection of colour-plates of Annora Brown’s later paintings from the Brown Collection at the Glenbow Museum in Calgary. She is a painter about whom Albertans should know more, and perhaps this reprinting of her book will help to

bring her into the spotlight.

I borrowed this book from my local library when I was looking for information on native plants of Alberta. It’s not what you need if you want a definitive and current guide, but it is worth reading for the sheer number of interesting snippets of information pertaining to the history of the region. In her light, chatty voice, Brown leads the reader on a vivid journey through nature and place that blends her interest in Indigenous traditional knowledge and legend with the exploits of Europeans whose names are reflected in the Latin nomenclature of the native plants we search for a glimpse of on the prairies and mountain slopes today.

WN: A review from the Fort Macleod Gazette: [Rocky Mountain Books has republished Fort Macleod artist Annora Brown’s book, ‘Old Man’s Garden.’](#)

Websites of the Month:

Saskatchewan's Alvars: Hidden in Plain Sight

Alvar is a globally imperilled and unusual group of calcareous habitats characterised by shallow mineral soils over limestone or dolomite bedrock, a natural lack of trees, abundant rare species populations, and an unusual prairie-like plant community. It occurs in only five countries worldwide. In Canada, almost all known alvar is found in the Great Lakes Basin in Ontario, though it is also known from Manitoba, Quebec, Newfoundland, and the Northwest Territories.

Michael Rudy went searching for, and found, three clusters of alvar sites in remote northern Saskatchewan. There are less than 100 hectares of alvar in the whole province and nearly 45% of the species there are listed as rare in Saskatchewan. He is working hard to get these Alvars protected.

<https://www.meanderphotography.ca/Alvar>

Ours to Save

Compiled by the Nature Conservancy of Canada and NatureServe Canada 2020. There are over 300 plants and animals that are uniquely Canadian - not found anywhere else in the world. Here’s a list of endemic vascular plants found in Alberta:

Arnica louiseana	Lake Louise Arnica	Nationally endemic, known only from Alberta and British Columbia.
Braya humilis ssp. maccallae	McCalla's Braya	National endemic, known only from Alberta and British Columbia.
Braya humilis ssp. porsildii	Porsild's Braya	National endemic, known from Alberta, British Columbia, and the Northwest Territories.
Castilleja purpurascens	Purple Paintbrush	Endemic to British Columbia and possibly from Alberta.
Corispermum hookeri var. hookeri	Hooker's Bugseed	National endemic, known from Alberta, Manitoba, the Northwest Territories, Ontario, and Saskatchewan.
Crataegus aquacervensis	Elkwater Hawthorn	National endemic, known only from Alberta (S2) and Saskatchewan.
Crataegus rivulodamensis	Adams Creek Hawthorn	National endemic, known only from the Cypress Hills Interprovincial Park area in Alberta and Saskatchewan.
Crataegus rivulopugnensis	Battle Creek Hawthorn	National endemic, known only from Alberta and Saskatchewan.
Crataegus rubribracteolata	Red Bracteole Hawthorn	National endemic, restricted to the Cypress Hills in Alberta and Saskatchewan.
Erigeron trifidus	Three-lobed Fleabane	Nationally endemic, known from Alberta and British Columbia.
Gentianopsis detonsa ssp. raupii	Raup's Fringed Gentian	Nationally endemic, only occurring in Alberta and the Northwest Territories.
Lechea intermedia var. depauperata	Impoverished Pinweed	Nationally endemic, known from the Lake Athabasca sand dunes of Alberta and Saskatchewan.
Oxytropis campestris var. davisii	Davis' Locoweed	Nationally endemic, known from Alberta and British Columbia.
Salix raupii	Raup's Willow	Nationally endemic, known from Alberta, British Columbia, the Northwest Territories, and Saskatchewan.
Salix tyrrellii	Tyrrell's Willow	National endemic, known from the Athabasca Sand Dunes of Alberta, and Saskatchewan.
Stellaria longipes ssp. arenicola	Lake Athabasca Starwort	National endemic, known only from the Athabasca Dunes of Alberta and Saskatchewan.

Read more:

<https://storymaps.arcgis.com/stories/23b1ba2f0e2e46ce9a8c27412f414fc1>

Nature Alberta Magazine

This Spring 2021 issue has a lot of great information to offer - make sense of the situation in Alberta's Eastern Slopes... be inspired to join other citizen scientists for the City Nature Challenge... learn all about swift foxes, beavers, and even secretive salamanders... And Nature Kids will learn how to attract pollinators with "bee bombs!"

There is also an article that will help people to wade through the multiple plant books out there and find the one(s) right for their level of interest.

Catch it today, free on their website at naturealberta.ca/magazine!



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You can now become an Edmonton Native Plant Society member for life. Memberships are \$20 and can be purchased by emailing enpgmembership@gmail.com or visit one of our booths at plant events in your area.

Aims of the Edmonton Native Plant Society:

- ❖ Promote knowledge of the Edmonton area native plants.
- ❖ Conserve our native plant species and their habitats.
- ❖ Preserve native plant species and habitat for the enjoyment of present and future generations.
- ❖ Educate individuals, business and local governments about native plants.

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From left to right: *Populus tremuloides*, male aspen poplar flowers; female aspen flowers; female aspen seed capsules developing; *Populus balsamifera*, male balsam poplar flowers; female balsam poplar flowers.
All photos: P Cotterill.