Antennaria parvifolia, small-leaf pussytoes

From Your Editor:

Happy New Year!

Welcome to a new year and the Wildflower News for January. We here at the Edmonton Native Plant Society wish you and your family a happy, healthy and productive 2021.
With distancing and masking, may this plague have run its course and we'll be able to once again spend time together enjoying and learning about our native plants over the coming year!

Please remember that the opinions expressed in the articles are those of the author, and not necessarily of ENPS.

In This Issue:

LETTER:

I really enjoy getting the newsletter – it is always a pleasure to read and to look at the photos.
Thank you very much.
Linnea Ward

Thank you, Linnea, for taking the time to write to us. We're always happy to hear from our readers.

Native Plants in Local Gardens

From Natasha Stairs - Some native plants in my wintry garden:

Antennaria parvifolia, small-leaf pussytoes

Left: Symphyotrichum ciliolatum - Lindley's Aster

Right: Penstemon procerus, Slender Blue Beardtongue

From Patrick Kyle - Here are pictures of my back alley before and after with native plants. The before pictures are from google maps as I did not think to take a picture before I started to plant. The other pictures were taken July 16, 2020.

Before, from Google maps:

After:
Top left: wild bergamot, Philadelphia fleabane, rhombic-leaved sunflower, rhombic-leaved sunflower, goldenrod, Philadelphia fleabane, three-flowered avens, gaillardia, common tall sunflowers, three-flowered avens, gaillardia.

Top right: wild bergamot, Philadelphia fleabane, rhombic-leaved sunflower, (inside the fence spotted Joe-Pye-weed with blue-eyed grass along the fence).

Bottom left: gaillardia, Philadelphia fleabane, hairy yellow evening-primrose (tall ones), prairie sage, rhombic-leaved sunflower, goldenrod, meadow arnica, smooth aster, slender blue beardtongue, wild bergamot.

WN: Wow, that's quite a wonderful transformation, Patrick!

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.

Tuesday, January 19 - Natural Areas Association Webinar - Toward Improving Pollinator Habitat: Reconstructing Prairies with High Forb Density
The NAA is an American national, non-profit membership organization that is dedicated to the support and advancement of the community of natural areas professionals. For more information and to register for this webinar: https://www.memberleap.com/members/evr/reg_event.php?orgcode=AREA&evid=24060859
Time: 12:00 Noon EST = 10:00 p.m. MST
Fee: US$29.00 for non-members; free for members.

Saturday, January 23, **SAPAA (Stewards of Alberta's Protected Areas Association) AGM**; This will be an online meeting. More information regarding registration, etc., will be forthcoming on ENPS Facebook; or you may contact Patsy (nutmeg@telus.net) or Hubert (taubeha@shaw.ca)
Time: 10:00 a.m.

February 1-5 - Saskatchewan Prairie Conservation Action Plan's Virtual 8th Native Prairie Restoration/ Reclamation Workshop:

Restoration and Reclamation in a Changing Environment: Adapting to Change, Building Resilience

Manna Parseyan and Liz DeLeeuw of the Edmonton Native Plant Society are jointly presenting on the topic of *The Importance of Growing Locally Sourced Native Plants*.

For information on SPCAP and to register for the workshop:
https://www.pcap-sk.org/upcoming-events/nprrw-registration

An early bird entry fee of 150.00 is in effect until January 15th.

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

Update on the Epcor Solar Farm

The Edmonton River Valley Conservation Coalition (ERVCC) is contesting the City of Edmonton's recent approval of Epcor's solar farm project in the river valley with a legal claim against the City. Legal documents were submitted to Court of Queen's Bench on December 7. The main argument is that the City has failed to respect the river valley bylaw (7188) which is designed to protect it against development. The ERVCC is crowd-sourcing funding for the legal challenge. Donations can be made by e-transfer to info@ervcc.com. For more information, check the ERVCC's website at https://www.ervcc.com/epcor-solar-farm and scroll down.

Recent Alberta Parks Developments by Hubert Taube

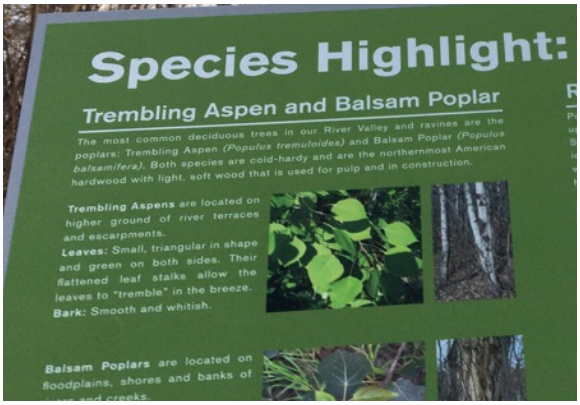
The closing and delisting process of Alberta's Parks, initiated in February 2020, has been terminated as announced by the government release on December 22.
The release unequivocally states:
"… no sites included under the Budget 2020 optimization plan will be delisted. All will remain open and accessible to Albertans. All will retain their current designations and associated protections."
The announcement also includes a listing of 170 Alberta Parks Partnerships in an attempt to justify the reversal; this is somewhat confusing since this listing contains many sites that had pre-existing arrangements.
On the other hand, missing from the new partnership list are the volunteer stewardship arrangements that the government has with various individuals and organizations. I will only mention two of them which some of you are familiar with: NW of Bruderheim and Halfmoon Lake Natural Areas.
So, attention has now shifted to the government's Crown Land Vision and the associated Survey on Sustainable Recreation on Public Lands, initiated by AEP on November 26. The deadline for submitting a survey response is January 15. The Alberta Environmental Network (AEN), CPAWS, AWA and others all have recommended responding. They provided response guides that you may want to consult when completing the survey: CPAWS guide, AWA guide.

One big issue that I see is the potential confusion that exists with the various terms used in connection with Crown Lands which is supposed to be a collective term including Public Lands and Protected Areas.
Few people are aware that Protected Areas consist of eight different categories: Provincial Parks, Provincial Wildland Provincial Parks, Provincial Recreation Areas, Wilderness Areas, Ecological Reserves, Natural Areas, Heritage Rangelands and the Willmore Wilderness Area.
The first three are governed by the Provincial Parks Act, the next four by the WAERNAHR Act and the last one by its own Act. Review and consolidation of all these Acts is long overdue, but very little progress has been made in the last ten years. Don't ask me about Public Lands. They have their own legal classifications which I'm not able to keep up with and, so, I will not comment on that here.
The Crown Land Vision seems to be initially centered on a new Trails Act which was of part the UCP Platform issued prior to the last election. The focus appears to be on OHV trails management and random camping, complete with associated establishment of user fees.
To me the approach seems backward: First we should have clear legislative and administrative clarifications of our lands system before delving into an all-encompassing concrete, "common sense" regulation structure for OHV trails.
In connection with this I would like to invite ENPS members to participate in the activities of SAPAA (Stewards of Alberta's Protected Areas Association, sapaastewards.com). This used to be an organization of government appointed "Parks Stewards" but our numbers have dwindled over time. Therefore, we have now opened up membership to any party interested in the protection of our "parks". Please consider participating in SAPAA's AGM to take place on January 23 and becoming a member of this organization. Further information will be provided on the ENPS facebook group. You can also contact Patsy (nutmeg@telus.net) or myself (taubeha@shaw.ca) about getting involved.

Common Names of Plants and Animals: a capitally punishing debate! - by Patsy Cotterill.

In the last issue of *Wildflower News* it was noted that different authors, notably Cherry and me, were using different conventions when we listed plant names. Cherry was using capitals for all parts of the common (or vernacular) plant names she referred to, and I was using lower case. For the sake of consistency we should probably decide on a uniform usage.

It's interesting, because this question came up earlier this year when several of us from the Edmonton Nature Club were working on some signage for Laurier Park at the request of City of Edmonton ecology staff, Catherine Shier and Kari Zral. Earlier we had done similar work for some signs in Whitemud Park South, and had used capitals for bird names (adopting usage by birders in the ENC), and had followed suit for animal species' names (e.g., American Red Squirrel). (It turns out we were wrong!) However, I declined to do so for plants, following the model of my bible, the Canadensys Vascan database, and instead used lower case (except of course at the beginning of a sentence, i.e., sentence case). When I proposed to do the same for plants on the Laurier signs, Catherine insisted on capitals, and I had to give in. Later on, the issue came up again on the ENC's email dialogue, NatureTalk, and engendered a surprisingly lively and lengthy debate, with people lining up on both sides for a tug-of-war, pro- and anti-capital.



I have just now had a peek at online resources, and honestly, you could spend your whole Christmas holidays reading the commentaries. In a nutshell, it seems that the official practice, including that used by scientists, is, wait for it… to use lower case for common names of plants and animals. The ornithologists, however, are a holdout, following the tradition of American ornithologists practised since the middle of the 19th century at least, and maintained today by the American Ornithological Society's North American Classification Committee, the body in charge of common names. Their big-gun argument is that use of capitals avoids ambiguity. So, for example, nobody confuses a gray Catbird with a Gray Catbird. (I like the example, a black rat versus a Black Rat (*Rattus rattus*) better!) I'm sure a similar confusion may exist among plants, but probably nobody cares.

I should, of course, make the proviso that plant names that begin with a proper noun, for example, the name of a person or a geographic entity, do have capitals. Hence, Nuttall's evening-primrose, Missouri goldenrod, Athabasca willow, and so on. Even common names that are only derived from a proper name are not capitalized; an example given online is bougainvillea, named after Louis Antoine de Bougainville. (Anyone who has been to Hawaii or elsewhere in the tropics will be familiar with this colourific vine.) That hyphen in "evening-primrose" prompts me to another observation. Hyphens are a whole other can of worms, but I tend to be a stickler for them in botanical names

because they demand that little extra smidgin of taxonomic recognition. Evening-primrose needs a hyphen because it is not a primrose and primrose only makes up part of its name. Likewise, golden-aster.

Editors generally (and now Wikipedia, I might add), tend to be rather keen on lower case, regarding unnecessary or random capitalization an expression of a writer's self-indulgence, an attempt to give their subject matter greater importance. The *Edmonton Journal* does not even make a distinction between the City of Edmonton (i.e., the corporation) and the geographic area; both get lower case city (although not Edmonton, of course). I think I know why. To type capitals takes greater physical effort, and anything that requires effort means we humans are more likely to make mistakes, resulting in this case in the dreaded fault of style inconsistency.

So, because it's easier to be lazy, and for some other reasons, I suggest we use lower case for plant names in WN in future. Cherry may, of course, want to disagree with me. Plants are important.

I should just point out that Latin or scientific names are a different kettle of fish, guarded by professionals who follow a set of rules that brook no argument. A species name consists of a genus name and a specific epithet. The genus name is always capitalized, the specific epithet not. Both names are *italicized*. With plants, the abbreviations for subspecies, subsp. , and variety, var., are not italicized. For the italicization or otherwise of higher taxa, please consult Canadensys Vascan.

For a good laugh from an editor's point of view: check: https://www.audubon.org/news/case-history

Photo of sign in Laurier Park by P. Cotterill.

Planting your Pollinator bed Part 2 - Plants for Semi-shade by Cherry Dodd.

Last month we covered plants that would be suitable for a sunny bed. However a lot of gardeners don't have a lot of sun and are looking for species that don't mind a bit of shade. Well, the good news is that several of the flowers mentioned last month are generalists and they don't mind some shade. These are Giant Hyssop, Harebell, Arctic Aster, Low Goldenrod, Stiff Goldenrod, Smooth Fleabane, Monarda, and Early Blue Violet. These species won't grow in deep shade, but are fine in a semi-shaded location.

Here are some other species that thrive in semi-shade.

Heart-leaved Alexanders, *Zizia aptera*
This is a wonderful plant for butterflies and other beneficial insects. The bright yellow flowers appear in June and July. They are flat-topped to provide a landing pad and resting spot for butterflies and bees. Heart-leaved Alexanders are quite short, 30 cm to 60 cm, and they have attractive glossy leaves. They self-seed, so with luck you will have more plants. This is an easy to care for species that enjoys being in a damp location. However it will still thrive with regular moisture conditions.

Showy Aster, *Eurybia conspicua*
This is a robust, bushy plant with large leaves. It's medium tall, 60 cm to 120 cm, and in August and September it has clusters of beautiful purple or pinkish flowers. Showy Aster is easy to grow and usually doesn't self-seed. It will grow from a single plant into a larger patch of several plants bound together, but it is easy to divide if it gets too big for the space.

Lindley's Aster, *Symphyotrichum ciliolatum*
This species is adaptable and will also grow in sun if given adequate water. Lindley's Aster is 70 cm to 90 cm tall, and it blooms in July and August with plenty of clusters of purple flowers. Lindley's Aster self-seeds occasionally and will slowly grow into a larger patch. All native asters are host plants for the caterpillars of our native Crescent and Checkerspot butterflies. So if you see holes in the leaves, don't worry. It just means you might have butterflies next year.

Nodding Onion, *Allium cernuum*
This cute little plant should be at the front of the bed. It is only 20 cm to 40 cm tall with grassy foliage and bright pink, nodding flowers that appear in June and July. Its bulbs and leaves are edible although the taste is quite strong. If you decide that you would like more plants, your wish will be granted the following year because Nodding Onion self-seeds abundantly. Fortunately they have small, shallow root systems and so are easy to weed out.

Blue-eyed Grass, *Sisyrinchium montanum*
What a beautiful, small and delicate plant, only 10 cm to 25 cm tall. The flowers are like small blue stars and appear in June and July. The leaves are very grass-like because Blue-eyed Grass is a member of the Iris family. This flower prefers a damp spot, but will be happy with regular moisture conditions. It self-seeds, but its abundance in your garden will vary from year to year and will depend on weather conditions. If it's a dry spring you will only see a few, but if we get a wet spring like last year, then you will see them suddenly popping up everywhere. However, they are so tiny and so beautiful that you will welcome all of them.

Prairie Buttercup, *Ranunculus rhomboideus*
This cheerful tiny plant, only 10 cm to 20 cm, starts blooming in April as soon as the snow disappears and it is still blooming in May. It is quite happy in a sunny spot, but doesn't mind shade because it flowers before the trees leaf out and cast shade. The small, bright yellow, shiny flowers look like a ray of sunshine on the ground when everything else is still brown.

Canada Violet, also known as Western Canada Violet, *Viola canadensis*
This short ground cover, 15 cm to 30 cm, is a tough plant that has a long blooming period from May to August. The typical violet flowers are white, sometimes with a touch of pink. This species can deal with most conditions and even grow in deep shade. It can be quite invasive because it self-seeds as well as spreading by rhizomes. However, it is a useful plants to have to areas where not much else will grow. All violet species are hosts to the caterpillars of Fritillary butterflies. However you will never see the caterpillars because they hide elsewhere during the day and only feed at night.

Joe Pye-weed, also known as Spotted Joe Pye-weed, *Eutrochium maculatum*
If you are looking for a show stopper, Joe Pye-weed is your plant. It's a bushy plant whose height ranges from 60 cm to 200 cm depending on water conditions - the more water, the taller the plant. In August it blooms with large, flat-topped clusters of dusty pink flowers. The flower clusters are so compact that native bees shelter in them during rain storms or on cold days. Joe Pye-weed is one of my favourites, and it is also a favourite of butterflies and bees who appreciate the abundant nectar source that the flowers provide.

Alpine Hedysarum, *Hedysarum alpinum*
Another bushy plant, but this one really does look like a small bush, 50cm to 80cm tall. It dies back to the ground each winter and starts anew each spring. In July it has flower spikes that range in colour from pale pink to rose-pink. The seeds pods are very unusual. They hang down from the plant in small green chains. Once the chains turn brown and dry, the seeds can be harvested. The roots are edible and in the mountains they are a favourite food of grizzly bears. Alpine Hedysarum is a member of the pea family and will add nitrogen to your soil.

Purple Peavine, also known as Pink Peavine, *Lathyrus venosus*
Yes, it's a vine, but it only grows to 100cm to 150cm tall and it is quite colourful with showy pink/purple flowers in July. Provide it with a support or a fence and it will be a lovely patch of colour. It doesn't seem to self-seed much, but it can be easily grown from seed.
Purple Pea Vine is another nitrogen-fixing plant that will enrich your soil.

Perspective on Non-native Plants Part Two: The Problem of Invasives Text and photos by Patsy Cotterill

In the previous article I gave the definition of invasive plants as those which originated in another region or country than the one in question but have spread in the areas to which they have been introduced to endanger, outcompete and replace native vegetation communities.

Globally-known invasives

Most of us have heard of the classic plant invasives of global infamy. Examples include common water hyacinth, *Eichhornia crassipes*, the fast-growing weed of tropical and subtropical freshwaters, and the kudzu, *Pueraria montana*, the climbing vine member of the pea family that smothers vegetation in the southeastern U.S. Closer to home is the aforementioned garlic mustard, *Alliaria petiolata,* that has invaded forests of northeastern North America and the mid-West and is currently doing a number in our own Mill Creek Ravine.

Our local invasives are introduced grasses

However, I am of the opinion that our worst local invasives largely fly under the radar; common and abundant, they are grasses that have been introduced for forage; mostly unrecognized by the public and even by land managers, and deliberately cultivated by farmers, they hide in plain sight. As someone who pays attention to the health of our natural areas, I have come to hate most of them. I refer to Kentucky bluegrass, *Poa pratensis*, smooth brome, *Bromus inermis*, reed canarygrass, *Phalaris arundinacea*, and the meadow foxtails, *Alopecurus pratensis* and *A. arundinaceus*.

Kentucky bluegrass is a native of Eurasia and in England is called smooth meadow-grass, where it is a common but not usually a dominant component of the vegetation. Alfred W. Crosby in *Ecological Imperialism: The Biological Expansion of Europe, 900-1900*, writes that with the colonization of America east of the Mississippi in the 17th century, native forage grasses succumbed to the trampling and grazing of settlers' cattle, sheep and goats and were replaced by European grasses, in particular a mix of white clover and *Poa pratensis* called "English grass." The rhizomatous habit of Kentucky bluegrass makes it ideal also as a turf grass in cool, temperate regions. En masse, its purple-tipped spikelets impart a bluish hue to the sward, hence the American name. The typical, introduced subspecies of this species, subsp. *pratensis*, is a major component of our remnant prairies in the Central Parkland region of Alberta, meaning that what we usually think is native prairie is in fact a very mixed or "hybrid" ecosystem. Canadensys Vascan lists six subspecies of *P. pratensis* as present in Canada (including subsp. *pratensis*), two which are native in Alberta, subsp. *alpigena* (which is alpine) and subsp. *agassizensis*, a lowland form that is rare. I suspect that if anyone could collect enough propagules of this last and grow them into a commercial population they could make a considerable amount of money selling to restoration companies. Many of the plants I come across, especially on poor soils, have much narrower leaves than the average succulent lawn grass, and I wonder whether this is the result of growing conditions or whether another subspecies, *angustifolia*, has not also been introduced to Alberta. Perhaps this warrants further investigation.

Left: Kentucky bluegrass at Fort Saskatchewan Prairie, 18 June 2014.

Right: smooth brome, Kinnaird Ravine, 2 July 2009.

Smooth brome. Although the annual brome species, downy brome, *Bromus tectorum*, and barren brome, *B. sterilis,* cause havoc in plant communities in the drier parts of North America, our particular nemesis on the moist clay-loams

of north-central Alberta is the introduced perennial brome, *B. inermis* subsp. *inermis*. Also called Hungarian brome, it is a native of Europe where it seems to be a minor member of floral communities. It has more or less taken over North American grasslands (except in the south) since its introduction in the late 19th century. Spreading locally by means of rhizomes to form dense, long-lived, clonal patches that outcompete and exclude native species, this is the grass you see everywhere here: in hayfields, roadsides, waste ground, poplar forests, the Edmonton river valley, and of course, in prairie remnants. It is a tall, robust grass with a spreading panicle when in flower and flat, relatively broad leaves that (at least in our area) have a characteristic crimping of the blade. It can grow in a variety of soils including sands, although on very infertile soils it needs the assistance of a nitrogen-fixing legume. It continues to be sown for forage and for rehabilitating degraded areas, such as after burns, or to control erosion. A similar species, *Bromus pumpellianus*, which differs from the introduced species in having hairy lemmas, leaves and stem joints and usually longer awns, occurs in natural habitats.

Reed canarygrass. This is another native of Eurasia that was introduced into North America in the mid-19th century for forage. It is a very tall perennial grass with wide, erect, flat blades and a panicle that is expanded at flowering time but otherwise closed up into a dense spike. It can occur as patches in moist parts of prairies but is more often found in open, wet situations such as along shores and ditches. It is, however, extremely tolerant of a range of soil conditions, including inundation and drought. Like the previous species it is strongly rhizomatous. This is what the Missouri Department of Conservation has to say about it:
“It is a major threat to marshes and natural wetlands because of its hardiness, aggressive nature and rapid growth. Native wetland and wet prairie species are replaced after several years of reed canary grass presence. It is of particular concern because of the difficulty of selective control.”

Yet we in Alberta seem to be unaware of this threat! One problem may be that it is often considered to be native, which does not ring alarm bells to the extent that non-natives do, and land managers may not feel they are justified in removing it. Yet the situation is more complex than this. It is now recognized that the most invasive populations are introduced genotypes and cultivars (which continue to be bred for increased palatability). Native populations do exist, and Kershaw and Allen in *Vascular Flora of Alberta* note that they “are smaller, often with small, purple-tinged seed-heads, and with practically all stems flowering; they tend to form sparse stands” compared with the swath-forming exotics with larger, greenish seed-heads. (It will be interesting to see if we can find native populations in our area.)

Some of the wetland hollows in Bunchberry Meadows have extensive stands of reed canarygrass. My instinct would be to attempt to control it as part of the management plan for the conservation area.

However, it was an experience on Enoch Cree Nation property this summer that really hardened my attitude towards this plant. To inspect a wetland where an oil well had been located involved traversing a vast expanse of the grass, high-stepping exhaustingly through a foot-trapping monoculture of it until we reached open water. A more natural wetland not far away by comparison contained willows, awned and other sedges, common mint and skullcap, water-hemlock, sow-thistle, docks, bog orchids and other species, and presented easy if wet walking.

Reed canarygrass in flower at Nisku Prairie (Blackmud Creek boundary), 24 June 2017.

Meadow foxtails. Following the pattern, my fourth and fifth selections are also rhizomatous perennial grasses that have been introduced from Eurasia. They are increasingly being used in western Canada for forage and habitat mitigation (they are even used to replace foxtail barley, *Hordeum jubatum,* in moist pastureland, this species being unpalatable because of its long awns). These closely related aliens have since found likeable accommodation in our prairies, fields, roadsides and ditches. Both species range from 30-110 cm tall, but *A. pratensis* is the more obviously

tufted grass, while *A. arundinaceus* sends up solitary stems from along its creeping rhizomes, frequently enough to form consolidated patches. Both resemble timothy, *Phleum pratense,* but the dense, cylindrical spike of timothy is rough to the touch, whereas that of the meadow foxtails is soft-hairy. They also flower earlier, at the end of May to mid-June, about three weeks ahead of timothy. Local botanist Derek Johnson has distinguished between local populations of these two meadow foxtails and provided a key in the Rogues' Gallery section of the Alberta Native Plant Council website.

Meadow foxtail, *A. pratensis,* was first recorded on 24 June 2002 in Nisku Prairie. It was found in moist areas in the south field and at the north end of the middle field where a pipeline disturbance had occurred. It is now abundant in spots in all fields, and especially on the flatlands bordering Blackmud Creek which it shares with the dominant reed canarygrass. Derek first saw creeping meadow foxtail, *A. arundinaceus,* under the bridge below Whitemud Drive in Snow Valley in 1987, and it is likely still there. This species also occupies the ditch area at the corner of Atim Road and Highway 16 at the access to Wagner Natural Area. Derek believes that only a return of prolonged drought years may set it back. Ksenija Vujnovic, formerly of Alberta Environment, reported that Public Lands seeded creeping meadow foxtail on leased parcels on the west shore of Beaverhill Lake in the 1980s to improve forage for cattle and to compete with foxtail barley!

Left: meadow foxtail in Nisku Prairie, 25 June 2020.

Right: creeping meadow foxtail in ditch near Wagner Natural Area, 14 June 2009.

Is control of invasives feasible?

So, is there anything to be done to save our native ecosystems from the onslaughts of these invasives, which clearly can outcompete the natives? My researches online indicate that a number of control measures are being tried, especially in some American states. (Our neighbours to the south seem much more attuned to the threats to their prairies and wetlands from these species than we are in western Canada.) Control methods tested and recommended range from cutting or digging small infestations by hand, to mowing where appropriate, to spring and fall burns with and without herbicides, to use of herbicides alone, often over several years, with glyphosate probably being the most popular choice.

For the two remnant prairies/aspen parkland patches that I am familiar with, burning is out of the question. Not that it cannot be done, but that it is not a matter of policy or priority with the land-owning municipalities concerned, whose focus is parks or agriculture, not native plant ecosystems. This leaves as options for control mowing, which one local county is willing to do, and using herbicides. I assume, I think rightly, that for anything involving this magnitude of weed control, we have a very limited resource base of volunteers. (Burning is likely not useful for removing smooth brome as it can stimulate shoot growth from the rhizomes and remove growth-inhibiting litter.) A method recommended on the IUCN's global invasive species database might be within our or local municipal capability: it is to cut smooth brome off at the boot stage (i.e., while the flower head is still enclosed in the sheath) at about a height of 46-61 cm. Failing that, the website suggests chemical control via spring applications of glyphosate.

What's the bigger-picture answer with invasives?

A depressing realization from my online research was the extent to which the cattle industry is responsible for these invasive forage grasses, not only because of the initial introductions during settlement times, but also because of their continuing use and development to the present day. Big-budget agriculture is still developing cultivars, the better to expand their useful range. (It's a cogent argument to turn vegetarian!) An interesting statistic produced by the Alberta Biodiversity Monitoring Institute shows how the abundance of reed canarygrass is closely correlated with the human footprint!

Agriculture must certainly not be allowed to expand onto marginal lands in the Boreal. As ever, pristine or near-pristine natural areas must be monitored and jealously maintained.

Another disappointing fact is that these species are being used in remediation. For example, a 2008 report on the revegetation of the Coal Valley Mine southwest of Edson showed that 30% of wetland species sown were of reed canarygrass, among a host of other non-native species. As well, more resources need to be put into growing native plants for the restoration industry.

I suspect that, unfortunately, modern industrial agriculture and restoration ecology operate in silos. What we also need, of course, is the "cultural transformation" that ecologist Doug Tallamy is calling for, a change that recognizes that most important for keeping humans and indeed everything alive are native plant communities and functioning, diverse ecosystems.

The intriguing botanical/ecological question of why these introduced species do so well in North America and elsewhere is one for another day. However, a combination of wide genetic diversity (often of hybrid origin, and some cases bred for by man), "weedy" characteristics such high reproductive capability, and available habitat in an appropriate climate, seems to have a lot to do with it.

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Alberta Biodiversity Monitoring Institute: Reed canarygrass https://www.abmi.ca/home/data- analytics/biobrowser-home/species- profile?tsn=99003926#:~:text=Reed%20Canary%20Grass%20is%20a,and%20Boreal%20Forest%20Nat ural%20Regions.

IUCN: leaflet on smooth brome: http://www.iucngisd.org/gisd/species.php?sc=1223

Report of an evaluation of reclaimed wetlands in the Coal Valley mine area, January 2008: https://open.alberta.ca/dataset/79e4a433-6947-42d3-9601-2ad7222eebf6/resource/69ba07c4-0bd7-4b1c-a3fc-6676bda556d9/download/appendix08reclaimedwetlands.pdf; page 7

Websites of the Month:

Homegrown National Park

Douglas Tallamy, a scientist and environmentalist who wrote *Bringing Nature Home: How You Can Sustain Wildlife With Native Plants* and *Nature's Best Hope: A New Approach to Conservation That Starts in Your Yard*. Look for a review on the latter in next month's Wildflower News. These are written from an American point of view but the principles are applicable everywhere. These principles of the 'Homegrown National Park' from the book are laid out on this webpage: https://homegrownnationalpark.com/faq-2/nullam-quis-risus

Meet The Ecologist Who Wants You To Unleash The Wild On Your Backyard

An article on Douglas Tallamy citing him as being 'Fed up with invasive species and sterile landscapes and urges Americans to go native and go natural', from the Smithsonian Magazine.
https://www.smithsonianmag.com/science-nature/meet-ecologist-who-wants-unleash-wild-backyard-180974372/

SPECIAL LATE ADDITION

As many of you are aware, the Eastern Slopes and its associated native flora (including the endangered whitebark pine) and fauna are under threat of destruction from the granting of coal strip-mining leases. WN has compiled a list of sites that you may be interested in reading a few of. Some are fund-raising for fees to cover taking the Alberta Government to court on a number of charges, others are Facebook groups dedicated to stopping the mining, or websites with information. Although ENPS is indeed Edmonton-based, the destruction of native habitat and the poisoning of our water concerns us.

Alberta decision to open Rockies to coal mining to face court challenges in new year
https://globalnews.ca/news/7541259/alberta-coal-mining-rockies-court/?fbclid=IwAR1J3UY-g75ZY_EzCP6Acn6VksSze4PUBlLYhFXcP03RRXfke_RjpRhIoak

"Save the Mountains" team are focusing on is taking the UCP government to court in January to legally challenge how they rescinded the 1976 Coal Policy. If successful that should at least pause coal exploration.
https://www.facebook.com/savethemountainrange/posts/205409654643596?comment_id=205437587974136&notif_id=1609537170693403&notif_t=feedback_reaction_generic&ref=notif

Excellent video! Beautiful footage, such passionate ranchers and such an important story for Albertans to become aware of. Watch the hunter's video of the Grassy Mtn. that comes immediately after as well. We need to support these groups as much as possible, in any way we can.
https://youtu.be/w_ktNoGeWPU?fbclid=IwAR0bvq5shS3QUI8g0eDx217QCC2Xq2hqUZCUlHyncCAl7RTOu79KAZweT2E

Grassy Mountain strip-mining is under federal review and anyone can send their comments to the federal **Impact Assessment of Grassy Mountain Coal Mining project**. You do have to log in, but it's an easy process.
https://www.iaac-aeic.gc.ca/050/evaluations/proj/80101?fbclid=IwAR2837W-e9RVQ1V5C60mdmZn8kit4syOi0IqJlCgZGFA0mH1Gx4ebI3VWcI
From Kevin Van Tighem - some important points for your letter! "Being a project review panel, they are less interested in hearing about our feelings than they are about hearing cogent arguments supported by facts. So I would encourage anyone submitting comments to focus on hard arguments about, for example, the critical importance of the area as a source water region for the southern prairies, the lack of proven technologies for eliminating pollution by selenium and other salts and contaminants, the extreme winds in the area and the effect they will have both on spreading dust (contaminated with selenium etc.) and evaporating water, the presence of pure strain Westslope cutthroat trout (a federally-listed threatened species) in Gold Creek and their need for cold clean water year round, the presence of endangered white bark pine in the project area, etc. The panel is likely to approve the project (regulators are notorious for their light touch on the brake pedal) but they can still kill it if they apply rigorous enough conditions in prescribing mitigations for the issues we raise. And those conditions will establish precedents for future mine proposals (which are now inevitable given the provincial government's shameful abandonment of a Coal Policy that once protected the area)."

Views by a couple of well-versed, engaged-on-the-issue people, Andrew Nikiforuk and Kevin Van Tighem, who should have been among the first to be consulted re strip-mining in the eastern slopes.
https://www.youtube.com/watch?v=jf0pL6BeFGA&feature=share&fbclid=IwAR0SHizBVonUNhmZD6iZTb9mIOmheri3Ap7wXi62uEfk06qID8FEE4ru_Ss
Start watching and listening at the 13:17 mark.

Useful sites for those concerned about coal strip mining in the mountains and foothills of southwestern Alberta and wanting ideas on how to help protect the land, streams, trout and existing land uses:
https://www.ab4coalfreesw.ca
https://cpaws-southernalberta.org/coal-campaign/
https://www.livingstonelandowners.net/coal-mining
https://www.facebook.com/savethemountainrange/
https://www.facebook.com/NiitsitapiWaterProtectorshttps://

If you are pro conservation, care about the health of Alberta's land, wetlands, streams or fish and wildlife, and are on Facebook, check out this page:
www.facebook.com/ABconservationvoters/

Lifetime ENPS Membership
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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Police car moth on common tall sunflower.