

Newsletter of the Native Plant Society of Saskatchewan



ROOTS

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Fall 2022

Linnaea borealis

Twinflower

Photo credit: C. Neufeld

Another Successful Summer of Field Tours

Grasslands National Park – July 9-10

If you attended the NPSS annual general meeting this past winter, you might remember Heather Facette's talk on Grasslands National Park restoration sites. On July 9th and 10th, the NPSS went to see this work in action! Before the field tour began, Parks Canada staff took us to see their seed collecting and cleaning processes they've been working on for these restoration projects. The park has been restoring several previously cultivated fields since the early 2000's and we were able to tour these areas and see what kind of changes have taken place over the last 20 years. The fields were each only seeded once with multiple kinds of grass species and a few different wildflower species. This was very evident while being out there; we even spotted some native species like rose and juniper that were not included in the seed mix that showed up through natural processes. These sites and the changes were incredibly inspirational when only 20 years ago they consisted of just bare soil!

On the second day, NPSS contractors Hilary Pinchbeck and Vicky Coffey lead a rare plant tour through the Eagle Butte trail located in the park. The tour started off strong by finding Tumble Grass (*Schedonnardus paniculatus*; S3) within a meter of the start of the trail! As the hike continued some of the other provincially rare species we spotted were Clustered Oreocarya (*Cryptantha celosioides*; S2), Common Squirrel-tail (*Elymus elymoides* ssp. *elymoides*; S3), Few-flowered Wild Buckwheat (*Eriogonum pauciflorum* var. *pauciflorum*; S3), White-stemmed Evening-star (*Mentzelia albicaulis*; S1), Gumbo Evening Primrose (*Oenothera caespitosa* ssp. *caespitosa*; S3), Runcinate-leaved Skeleton-weed (*Stephanomeria runcinata*; S3), Narrow-leaved Umbrellawort (*Mirabilis linearis*; S3), and Rocky Mountain Juniper (*Juniperus scopulorum*; S2).



Heading out on the Eagle Butte Trail in Grasslands National Park. Photo by Vicky Coffey

Mid-way through the hike we spotted a Greater Short Horned Lizard which is the only lizard species found in Saskatchewan and can be quite the rare sighting as they are a species at risk and completely blend into the terrain. After the hike, the tour continued at a different spot where Dwarf Woolly-heads (*Psilocarphus brevissimus*; S1, Special Concern) were found in 2021 by Parks Canada staff. This population of Dwarf Woolly-heads is the furthest east the species has ever been found in Canada. While searching around this area we also came across a Northern Leopard Frog, a species at risk, and another provincially rare plant found in ephemeral wetlands called Smooth Spike Primrose (*Boisduvalia glabella*; S3). It was such a great weekend spent touring around Grasslands National Park! Photos of this tour can be found on our Facebook page.



Getting a tour of Grasslands National Park's seed cleaning and storage facility. Photo by Vicky Coffey

Duck Mountain Provincial Park – July 29

Being on the eastern edge of Saskatchewan, Duck Mountain Provincial Park is special because it hosts plant species not commonly found (or found at all) much farther west. Add to that the diversity of habitats, including rarer habitats like fens, and you've got a botanical bounty. The last time we visited this park was back in 2015, and it's so big and beautiful that we felt it was time to revisit it. In addition to marvelling at the diversity of plants and habitats, we had an added goal of trying to find Golden-eye Lichen (*Teloschistes chrysophthalmus*) an Endangered species that was recently found in Saskatchewan. Based on where this lichen is found elsewhere, we chose the Pelly Point trail to search for it. Alas, we found none despite seeing a lot of other

Roots is a quarterly publication of the Native Plant Society of Saskatchewan (NPSS) and is one of the benefits of membership. Members are invited to submit articles, news, views, photographs and comments. Views expressed by the authors are not necessarily those of the NPSS.

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Winter Issue: November 1 December 15

Spring Issue: February 1 March 15

Summer Issue: May 1 June 15

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Membership Dues (Year End November 30th).

Individual \$30 Family \$45 Student \$15

Non-profit \$100 Corporate \$200

Life \$500 Please contact the NPSS office for info about the lifetime membership instalment payment option.

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lichen species. We did find a wide array of interesting plants, including Nodding Trillium (*Trillium cernuum*; S2), Tall Blue Lettuce (*Lactuca biennis*; S3), a profusion of Western Jewelweed (*Impatiens capensis*) along a wetland edge, and the diminutive Small Enchanter's-nightshade (*Circaea alpina* ssp. *alpina*). The trail was a botanical cornucopia, as the rolling topography took us from drier hilltops to shorelines and everything in between. Next, we drove down the picturesque Ski Hill Road to Little Boggy Creek Fen, stopping once to see some rare Swamp Thistle (*Cirsium muticum*; S3) growing in the ditch. Once at the fen, we took the boardwalk in and quickly found numerous interesting and/



Tour participants explore a wetland edge along the Pelly Point Trail. Photo by Chet Neufeld

or rare plants, such as Blunt-leaved Bog Orchid (*Platanthera obtusata*), Sticky Asphodel (*Triantha glutinosa*), and Common Butterwort (*Pinguicula vulgaris*; S3), a carnivorous plant that traps small insects with its greasy leaves. We had noticed that the fen's vegetation has changed since our last visit, with far more rushes than we previously found. Though native species, these may impact the fen by shading out other species and by competing for resources. Many of us wondered if the boardwalk that was recently installed has changed the hydrology, making the area more hospitable to rushes. After exploring the fen, we visited a nearby meadow that was restored many years ago, which offered a unique suite of species from what we had seen so far. All in all, it was a great day. Photos of this tour can be found on our Facebook page.

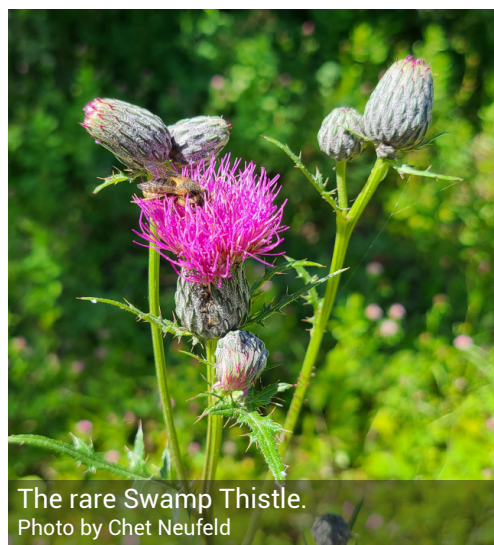
Nisbet Forest – August 20

Our summer field tour schedule rounded out with a walk through the beautiful Nisbet Forest. Located just north of Saskatoon, it is one of Saskatchewan's island forests and an important part of the province's forest habitat corridor. Because we plan these field trips while there is still snow on the ground, we have no idea what the weather is going to be like, but we always hope for the best. What Mother Nature delivered us was far from ideal: weeks of intense heat with no rain prior to the field trip, with the same conditions the day we visited. Our hardy crew endured, but we opted for a shorter route than initially planned due to health concerns for the group. Still, we were awarded with having the forest to ourselves, and found several wildflower species blooming, although the numbers were considerably less due to the drought. Perhaps more amazingly, we found several mushrooms about the size of dinner plates; rare finds indeed when there was no moisture for well over a month.

During all our field tours, any rare species we encountered was recorded and our observations were submitted to the Saskatchewan Conservation Data Centre, which will enable managers of these areas to make more informed decisions. All in all, the events were really successful and we're already preparing for our 2023 field tours.



An unidentified mushroom roughly the size of a dinner plate found on the Nisbet Forest tour. Photo by Chet Neufeld



The rare Swamp Thistle. Photo by Chet Neufeld



Common Butterwort, a provincially rare, carnivorous plant that inhabits the local fen. Photo by Chet Neufeld



Tall Blue Lettuce, rare in Saskatchewan. Photo by Chet Neufeld

Flowering Rush Update

This year we were once again busy tackling one of the most pressing threats to Saskatchewan's aquatic habitats: Flowering Rush (*Butomus umbellatus*). Originally from Europe, this invasive plant can grow as an emergent plant or fully submerged in several meters of water. Where it grows, it forms impenetrable mats, choking out native vegetation and destroying habitat. In Saskatchewan, it is designated as Prohibited on the Weed Control Act. Many places in Canada are already overrun by Flowering Rush, but Saskatchewan is relatively free of it and the NPSS is on the front lines, battling to ensure that our species and spaces are protected.



Removing Flowering Rush along the South Saskatchewan River. Photo by Chet Neufeld

Watrous Wetland

For the fourth year in a row, our surveys detected no Flowering Rush. This is an incredible success for us and for the local ecosystem, as ten years were spent transforming a 5-acre wetland from being heavily infested by Flowering Rush back to its original state. During this time, immeasurable effort by countless volunteers were dedicated to manually removing all the Flowering Rush, an incredibly difficult and painstaking task. We will revisit the site in 2023 to ensure that it is still free of Flowering Rush and, if so, will consider the project on this site complete. Thanks to Madeline Berezowski for volunteering with us during our surveys.

South Saskatchewan River

The news is less positive from the South Saskatchewan River, where a population of Flowering Rush from Alberta is moving downstream. Initially escaping into a tributary of the South Saskatchewan River at Calgary, it has slowly but steadily moved downstream and has infested much of the Alberta portion of the river, and now occupies portions of the South Saskatchewan River in our province as far east as Cabri Regional Park. Once again, this year we canoed portions of the South Saskatchewan River

between the Alberta border and Saskatchewan Landing Provincial Park searching for and removing invasive Flowering Rush. Both shorelines of roughly 50 km of the river were searched in an effort to prevent its spread downstream and protect this beautiful river. We also spent a land-based day manually removing approximately one kilometer of Flowering Rush from the south side of the river near Estuary, SK. The good news is that we didn't find Flowering Rush any further downstream than last year. The bad news is that spring floods and the current will continue to push infestations downstream, and there are many occurrences of Flowering Rush along the Saskatchewan portion of the river that remain, not to mention that Alberta's Flowering Rush is the source of the problem, and little is being done to deal with it there. Also, we don't know how many Flowering Rush are growing completely submerged. Previous drone surveys have indicated what looks to be Flowering Rush growing beneath the water, but we were unable to use divers this year to confirm and remove them due to the strong current, unknown bottom hazards, and murky water. More than just mapping and eradication, our work on the river is showing detailed year over year change of a very complex and variable situation and giving us better predictability and efficacy. As an aside, we were also able to record other invasive species and rare species, which were submitted to their respective databases. Probably the most exciting incidental find was when we stopped for lunch on shore and found a population of Smooth Goosefoot (*Chenopodium subglabrum*), a provincially rare plant (S3) and a federal species at risk (Threatened). We saw a lot of neat wildlife as well, including cow and calf moose and a golden eagle. Thanks to our volunteer Jeremy Irvine and the South Saskatchewan River Watershed Stewards for their time, and Meewasin Valley Authority for the canoes and trailer. Thanks also to



Vicky Coffey surveying for Flowering Rush. Photo by Hilary Pinchbeck



Water-based surveys for Flowering Rush have been very effective on the South Saskatchewan River. Seen here are Hilary Pinchbeck and Vicky Coffey. Photo by Chet Neufeld

John and Katherine Conkin for the generous donation of their canoe in perpetuity, which will give us greater flexibility regarding water-based projects in the years ahead.

Cutarm Creek

In the fall of 2021, NPSS Project Coordinator Hilary Pinchbeck had gone out to Cutarm Creek and the Cutarm Reservoir because we were given notice that there were some known sites of Flowering Rush. One occurrence of the plant was found along the creek; however, we weren't able to survey the entire creek last year. This past September, NPSS Project Technician Vicky Coffey and Hilary surveyed half of the Cutarm Creek (south of Highway 8 to the Qu'Appelle River, approximately 10 km) on foot for Flowering Rush. They immediately found 3 plants when they arrived (and where they were last year) but over the next three days of hiking, they did not see another single plant! Hilary and Vicky ended up running into the provincial government who were surveying north of Highway 8, and they mentioned that they had found hundreds of plants and were treating them with herbicide. This will continue to be an area to keep on our watch list in the future. We were unable to survey the Cutarm Reservoir this year and hopefully we will be able to next field season. Though it will take some time, we consider eradication at this site to be achievable. Over our three days of hiking every step we took we saw Northern Leopard Frogs jumping. It was quite an amazing sight! Additionally, we came across one provincially rare plant: Closed Blue Gentian (*Gentiana andrewsii* var. *dakotica*; S2). We will continue to work with stakeholders and do whatever it takes to ensure that Flowering Rush does not move further into the province. This project was made possible by Saskatchewan Ministry of Environment's Fish and Wildlife Development Fund and your donation dollars at work.

NPSS AGM Registration Now Open

Plan now to attend the upcoming NPSS annual general meeting and conference on February 11-12, 2023 at Wanuskewin Heritage Park in Saskatoon. This year's theme is "Resiliency in the Face of Climate Change" and addresses a complex and distressing topic in a proactive and constructive way. Listen to selected presentations related to the theme by top notch speakers featuring cutting edge research and innovative projects.

2023 will return to the in-person, two-day format of our annual general meeting. We encourage everyone who attends to wear a mask.

Saturday's events will begin with the business portion of our meeting, and then transition to a set of great presentations. Speakers include Dr. Andreas Hamann from the University of Alberta, Dr. Eric Lamb from the University of Saskatchewan, Renny Grilz from Meewasin Valley Authority, Adrienne Tastad with South of the Divide Conservation Action Program, and more. Our film screenings will include "Brother Buffalo" and "Preserving the Prairies". The full agenda will be finalized and released very soon.

On Sunday, the Aquatic Ecosystems learning module of our Saskatchewan Master Naturalist program will be delivered, which forms part of the core competencies of the program, so anyone wanting to attain their Saskatchewan Master Naturalist designation must take it. The Aquatic Ecosystems module will guide participants through the complexities of our rich diversity of aquatic habitats in a fun and interactive way.

We are keeping our costs extremely low for this two-day event in the hope that as many people as possible will be able to attend. You will not find a better deal anywhere! As you'll notice when registering, there is an option to attend only one of the two days but attending both days gives you a discount, as does being an NPSS member. Memberships purchased at the time of registration will allow you to register for the NPSS member rate.

Register online through the following link:

<https://www.npss.sk.ca/store/events/2023-npss-annual-general-meeting-and-conference>

Thanks to our long-time partner and Platinum Sponsor, Saskatchewan Polytechnic, for supporting this event!

We hope to see you there!

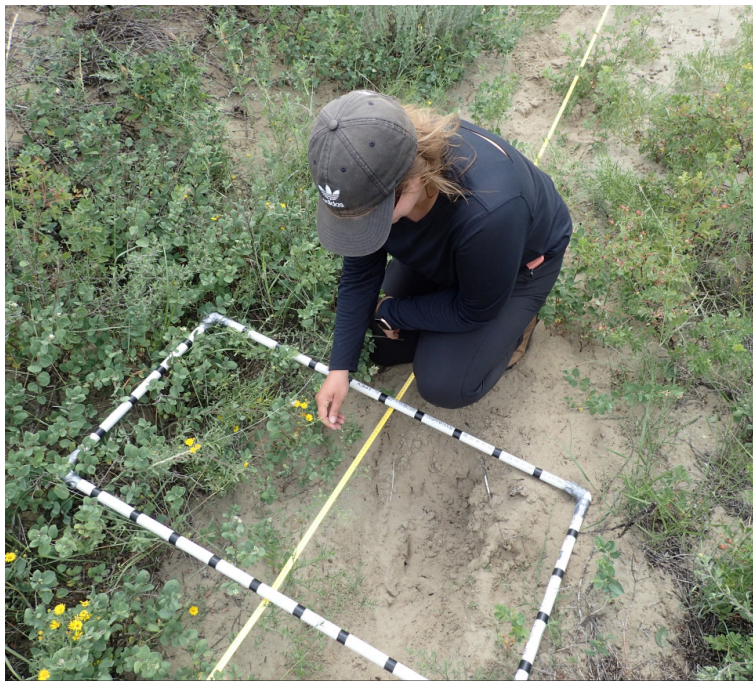


Rare Plants and Ranchers Fall Update By Hilary Pinchbeck, NPSS Project Coordinator

This year our Rare Plants and Ranchers project had us surveying in the Elbow area for Western Spiderwort (*Tradescantia occidentalis* var. *occidentalis*) and Smooth Goosefoot (*Chenopodium subglabrum*), and in the Estevan area for Buffalograss (*Bouteloua dactyloides*). NPSS Project Technician Vicky Coffey and I spent about 4 weeks in the Elbow area surveying two community pastures. The pastures in this area struggle with Leafy Spurge (*Euphorbia esula*; Noxious), but nonetheless we were able to find Smooth Goosefoot (S3) and Western Spiderwort (S1). We also found a few other provincially rare species, including Bur Ragweed (*Ambrosia acanthicarpa*; S2), Schweinitz's Flatsedge (*Cyperus schweinitzi*; S3), Narrow-leaved Umbrella-wort (*Mirabilis linearis*; S3), Beaked Annual Skeleton-weed (*Shinnersoseris rostrata*; S2), Sand-dune Wheatgrass (*Elymus lanceolatus* ssp. *psammophilus*; S2), Flat-topped Broomrape (*Orobanche corymbosa* ssp. *mutabilis*; SNR), and Few-flowered Aster (*Almutaster pauciflorus*; S3). In addition to the plants, we found

(*Asclepias verticillata*; S2). There were 8 rangeland health assessments completed here along with 8 vegetation transects, and one riparian assessment.

This project was undertaken with the financial support of Environment and Climate Change Canada and the Saskatchewan Ministry of Environment.



Hilary conducting a habitat assessment.
Photo by Vicky Coffey

three occurrences of the Gibson's Big Sand Tiger Beetle (*Cincindela formosa gibsoni*; S3) which is federally listed as Threatened. We also came across a few other species that are provincially listed: Sutured Long-horned Beetle (*Batyle suturalis*; S2), Red Fiery Hunter Beetle (*Calosoma calidum*; S2), and Sprague's Pipit (*Anthus spragueii*; S3B). In total, we produced 19 rangeland health assessments, 10 riparian health assessments and 19 vegetation transects were surveyed.

During the first week of August, Vicky surveyed four properties near Estevan, SK. This year Vicky was successful in locating Buffalograss on three of the properties and came across a few other provincially rare species here including Prairie Bird's-foot-trefoil (*Lotus unifoliolatus* var. *unifoliolatus*; S3) and Whorled Milkweed



Western Spiderwort. Photo by Hilary Pinchbeck



Few-flowered Aster. Photo by Hilary Pinchbeck

Rose Creek Ranch Conservation Grazing Project Update

By Hilary Pinchbeck, NPSS Project Coordinator

Rose Creek Ranch is in southwestern Saskatchewan near Eastend and comprises approximately 3,600 acres. The area is diverse and beautiful, with rolling hills, steep slopes, treed coulees, riparian corridors, vast swaths of native prairie, and provincially and nationally rare species. The Rose Creek Ranch Conservation Grazing Project is aimed at controlling Leafy Spurge (*Euphorbia esula*) on the ranch through targeted grazing using goats. This approach is needed because Leafy Spurge occurs in sensitive areas such as riparian corridors and species at risk habitat where traditional control methods like herbicide are not the best option. Furthermore, research shows that goats can be very effective at reducing the density of Leafy Spurge when used long-term; Leafy Spurge can comprise up to 80% of a goat's diet, and dietary overlap between goats and cattle is only 5-20%, meaning the two can coexist on the landscape without competing for forage.

2022 was the second year in which we collected data on the effects of goat grazing on Leafy Spurge. Once again, the field season blew by way too quickly and the last field project of the year was to revisit the Leafy Spurge assessment transects that were initially monitored back in early summer. In June, we had measured Leafy Spurge cover,

among other things, before the goats started grazing the areas, and in September we remeasured Leafy Spurge cover after a season of targeted grazing. Also in June, we added an additional two transects in a new monitoring area on the property where the goats have not previously been. In September, all 14 transects were revisited, and the impact of the goat grazing was quite clear, even before we started the data analysis. Only dead stems of Leafy Spurge remained and there was no new growth found anywhere on the transects. During these last surveys, we also came across a Badger which is another species at risk in Canada that had not previously been recorded on the property!

The rest of the year will be spent analysing data, creating maps and reports, and communicating with the ranch. We plan to pursue funding for at least an additional year to maintain the momentum that has already been generated and ensure long-term success. Thank-you to everyone involved, including the Rose Creek Ranch, Lee Sexton, and South of the Divide Conservation Action Program.

This project was undertaken with the financial support of Environment and Climate Change Canada.



One of the many beautiful vistas on the Rose Creek Ranch.
Photo by Hilary Pinchbeck



Vicky conducting an assessment. Photo by Hilary Pinchbeck

President's Message Andrew Stewart

It seems all too quickly we have found ourselves back into the depths of a prairie winter. It is a time for reflection as well as a time for looking forward, and I am excited to say that both will be front of mind for the NPSS board members over the coming months. The board will be undergoing governance training as well as strategic planning to help shape the path for the NPSS!

It is amazing what the NPSS has accomplished since it was first brought into existence over 27 years ago. From educational outreach, to supporting species at risk, to eradication of prohibited weeds the NPSS has, and will continue to play, a vital role in promoting and maintaining vibrant and healthy plant communities across the province.

I look forward to the opportunity to sit down with the rest of my fellow board members to discuss the opportunities and

objectives for the NPSS going into the future. I would also like to take the opportunity to thank all of the NPSS board for their time and dedication. We have a truly amazing group of individuals. Specifically, I would like to thank Jacquie Bolton who is stepping down from the Secretary position. Jacquie has been a steadfast member of the board for several years and while she is stepping down from her executive duties, I am very glad that she will be continuing to provide valued insight as a board member. I would also like to thank Mandie Jensen, who joined the board last fall, and has stepped in to take over the Secretary's duties.

I am also looking forward to seeing everyone as we plan to return to an in-person AGM format this winter. Which means that the winter is not just a time for reflection but also for celebration!

This issue's COVER PLANT

Linnaea borealis

Twinflower is a common plant in Saskatchewan's forests. It is widely distributed across North America, occurring in every province and territory in Canada, and from coast to coast in the northern United States and as far south as New Mexico. It is circumboreal, occurring in many European and Asian countries as well. Twinflower prefers cool, shady forests, growing in moister habitats, and preferring acidic, organic soils.

Until 2013, Twinflower was the only species in the genus, but recent genetic work has muddled the waters somewhat. A member of the Honeysuckle Family (Caprifoliaceae), Twinflower is a perennial, and has a creeping (sometimes mat-forming) growth habit, with individual stems reaching up to 2m long. The slender, wiry stems are covered with glossy, evergreen leaves arranged in pairs. The tiny, light pink flowers are bell-shaped and occur in pairs (hence its common name) that nod at the top of short stalks. If you can get low enough to smell them, the flowers will reward you with a sweet scent. Small hairs, some glandular and some not, cover the stems, leaves, flowering stalks and even the flowers. The whole plant is so unobtrusive that most people likely walk right past this plant without even noticing.

Its ability to tolerate deep shade and creep along the ground makes it a hardy groundcover, able to grow under multiple layers of other, taller plant species where most others cannot. Its evergreen leaves may offer an advantage in spring and late fall when the taller forbs are absent, allowing it to capture a little extra sunlight.

A variety of insects pollinate Twinflower, including bees, flies, and moths. Research has shown that Twinflower is unable to pollinate close relatives, so it must have pollinators able to travel far enough distances to find less closely related individuals or have a variety of less closely related individuals growing nearby in order to produce viable seed.

In a garden setting, Twinflower is a welcome addition to a shady area and grows harmoniously with others. However, the challenge is to find a supplier, which can be downright impossible. Currently, the NPSS has no commercial source for Twinflower. The best way may be to get cuttings from someone who does have it, or to try and salvage it from an area where it will be destroyed. Native plants should never be dug from the wild. Seeds are not recommended and are even harder to find than plants.

The genus *Linnaea* is named for the father of modern botany, Carolus Linnaeus, who reportedly had his portrait painted with the flower because of his fondness for it.



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