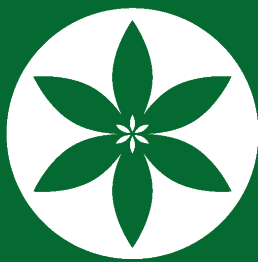


Newsletter of the Native Plant Society of Saskatchewan



# R O O T S

Vol. 26 No. 1

Spring 2021



*Maianthemum stellatum*

Star-flowered Solomon's-seal

Photo credit: Chet Neufeld

## Executive Directors's Message - Chet Neufeld



I hope everyone has been enjoying the warm weather. I know a lot of places still need a little rain, but dry spells are nothing new for our native plants. A lot of you have been submitting your native plant photos on our "Saskatchewan Native Plants" Facebook page, which is great because it gives us all a chance to see what's blooming, even if we don't get a chance to see them in nature. I

particularly like seeing plants that I don't commonly see in my area, such as those in our northern forests, because I rarely get the chance to visit (particularly since the pandemic). I also monitor the Facebook posts to let me know what's blooming in my area so that I know roughly what to expect to see when I go out hiking.

In addition to Facebook, we have our "What's Blooming" page on our website that is constantly updated with what species are flowering. You can find the link right on our homepage ([www.npss.sk.ca](http://www.npss.sk.ca)). We also have plant checklists for certain areas of the province, which you can find under our "Info Resources" section of the website. One set of checklists, for the Saskatoon Natural Grasslands, has separate checklists for flowers you'll likely see blooming in May, June, and July.

We will be looking at a lot of plants this summer here at the NPSS, as our projects are ramping up for the summer. We continue to benefit from the services of Hilary Pinchbeck as

our Project Coordinator and have recently contracted additional help. Natasha MacKintosh, who some of you may remember from past work with the NPSS, is back to assist us with various projects throughout the summer and into fall. We have also contracted Melanie Toppi with the Frenchman Wood River Weed Management Area to assist us with projects in the South of the Divide region in southwest Saskatchewan. We have also contracted Ken Donnelly and his company Beyond Attitude to assist us with community and stakeholder engagement related to our South of the Divide Invasive Alien Species Strategy project. We have never had such a large annual budget or as many large projects as we do this year and having five people working for the NPSS is also a first! Another recent change is that our long-time Treasurer, Jacey Bell, recently stepped off the board to pursue her master's degree. Thank you for everything you've done, Jacey, and best wishes for your future! Thank you also to current board member Luke Jorgensen for stepping into the role of Treasurer. I am fortunate to have such a great board.

With school coming to a close and the pandemic restrictions lifting, I'm sure that a lot of you are planning your summer getaways, and I hope that time in nature can be a part of that. If you're in the Saskatoon area and would like to get some fresh air and sunshine by volunteering to help plant native seedlings along highway #5, please let me know. Have a great summer and I hope to see you all soon!

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**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.

#### Deadlines: Submission Publication

Winter Issue: November 1 December 15

Spring Issue: February 1 March 15

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Fall Issue: August 1 September 15

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#### Membership Dues (Year End November 30<sup>th</sup>).

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.

**Get your photo on the cover of... ROOTS!** Submit your Saskatchewan native plant photos for future cover consideration to: [info@npss.sk.ca](mailto:info@npss.sk.ca)



Above: One of Saskatchewan's newly-discovered alvars. Photo by Michael Rudy

## Saskatchewan Alvars: Hidden in Plain Sight

Michael Rudy

Alvar is a globally imperiled 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.

Last year, while acting as the Botanist for the Saskatchewan Conservation Data Centre, I set out to find out whether alvar existed in Saskatchewan. It had never been found there before, and few people familiar with the habitat would have expected it to be — limestone and dolomite bedrock are quite uncommon in Saskatchewan, and much of the area where alvar could occur is very remote and densely covered with boreal forest, making access extremely challenging.

Nonetheless, my prior work in Saskatchewan had left me with a strong sense that there was still much to discover there, so I spent several weeks flagging possible alvar clearings using remote sensing. Because alvar patches can appear extremely similar to boreal wetlands and no predictive method exists yet to identify them, I focused on areas with known or

modeled limestone/dolomite bedrock, since these are essential pre-conditions for alvar. I excluded boreal wetlands by only selecting clearings that had no apparent hydrological context which could suggest that they were boreal bogs or fens. I also used the presence of trees growing in unusually straight lines to select target sites, as limestone and dolomite tend to fracture in long, straight cracks and trees confined only to these cracks suggest that soils are shallow — another diagnostic feature of an alvar.

Finally, after weeks of planning, my long-suffering girlfriend Sabina and I were dropped off by boat at a remote lake several hours southwest of Flin Flon, where we began our hike. I felt that the odds of successfully finding alvar in Saskatchewan were so low that the first expedition had to happen the hard way, on foot.

After two days of bushwhacking to reach the first suspected site, we broke out of the boreal forest into the first clearing. It is a remarkably surreal feeling to walk out of the buggy northern boreal forest into a broad, grassy clearing dominated by wildflowers and dotted with prairie onions (*Allium schoenoprasum* var. *sibiricum*) and wild chives (*Allium textile*). It is like being instantly transported somewhere completely different, and very far away from where you actually stand.

There was soon no doubt that the clearings were indeed alvar, after checking the soil profile and looking closely at the plant community. What might easily have been mistaken for

just another wetland from the air was in fact solid ground, and a new habitat for Saskatchewan — likely the rarest in the province.

Above and beyond the rarity of the habitat itself, surveys at Saskatchewan's alvars ultimately confirmed extraordinarily high levels of rare species diversity, including at least five new species and one new genus to Saskatchewan. Nearly 45% of the species identified in 2020 are rare species or new species to the province, underscoring the extremely high conservation value of the sites.

Several species discoveries were particularly exciting, including *Cypripedium reginae*, the 'Showy Ladyslipper', which was found at the Limestone Lake site. This population is only the third known site in the province and an apparent rediscovery of the species, as it was thought to be extirpated from Saskatchewan. Two populations of *Asplenium viride*, the 'Green Spleenwort', represent the first records of the genus for Saskatchewan and apparently the first records of the species between the Alberta Rockies and the Great Lakes. *Dermatocarpon dolomiticum*, an unobtrusive but very unusual lichen species, is federally critically imperiled and the new population is something like 1,600 kms from the closest sites in the Great Lakes basin. And *Botrychium tenebrosum*, the 'Swamp Moonwort', is a new species of these enigmatic and rare ferns for Saskatchewan.

These findings only represent approximately three days of surveys, suggesting that further work will almost certainly uncover many more exciting findings.

After confirming the first site, I felt justified in requesting the use of a wildfire helicopter to visit two more clusters of predicted alvar, confirming them and documenting what is likely the most substantial 'pavement' alvar in Saskatchewan, near Cumberland Lake. This broad, flat area of bare dolomite bedrock is dominated by nonvascular species (mosses & lichens) with Wild Columbine (*Aquilegia canadensis*) flowers confined to the cracks. The area transitions into a limestone woodland, which is similar to an alvar but with higher tree canopy cover.

Although the total area of alvar in Saskatchewan is small (with fewer than a hundred hectares in the whole province), the biodiversity found there is spectacular, and the finding prompts many questions — How much more alvar remains to be found in Canada's remote boreal? Does Alberta also host alvars? What role are these remote boreal alvars playing in the dispersal and population genetics of the rare species they host so far away from the Great Lakes? For now, these questions will remain mostly unanswered, but one thing is clear — a predictive model of alvar distribution in the boreal is profoundly needed. If Saskatchewan's alvars have been overlooked for so many decades, where else do they await discovery?

But the most important question is — what comes next for these sites? Obviously, they are exceptional — the global rarity of the habitat, the abundance of rare species and new species to Saskatchewan, the extremely small area of alvar in Saskatchewan, and the complete lack of invasive plant species make this abundantly clear. They are objectively deserving of the highest



Above: Shootingstars (*Dodecatheon* sp.). Photo by Michael Rudy

class of protected area in Saskatchewan — an Ecological Reserve.

Unfortunately, however, all of the newly discovered alvars fall within an 'incentivised exploration area', wherein the province of Saskatchewan subsidises resource exploration by mining companies. Readers who wish to lend their voices to the conservation of Saskatchewan's alvars are encouraged to contact the Saskatchewan Ministry of Environment and the Ministry of Energy and Resources and support the permanent and complete protection of these unique and irreplaceable examples of Saskatchewan's biodiversity.

Executive Director's note: The Botanical Assessment Working Group, of which the Native Plant Society of Saskatchewan belong to, has recently designated Saskatchewan's known alvar areas as Important Plant Areas, and is communicating with the provincial government to ensure they receive the protection they deserve.

For more photos of the alvars as well as video footage, please visit Michael's website at: <https://www.meanderphotography.ca/Alvar>

**Right: A pavement alvar, featuring a broad slab of flat, bare dolomite bedrock with a community dominated by mosses, lichens, creeping juniper, and wildflowers. Photo by Michael Rudy.**



## Spring 2021 Project Update

Hilary Pinchbeck, NPSS Project Coordinator

Over the past few months I have been working on updating a few of our management plans for properties that are a part of the Rare Plants and Ranchers program. I've also been helping to finish up the recently submitted final management plan for our work done last summer at Environment and Climate Change Canada's Nashlyn Pasture. The management plans we put together include all the information we had collected at the site, any information from past surveys, and the conclusions and recommendations we have drawn from these. These management plans are valuable for conserving native prairie and the vulnerable species found within them. When surveying a site, it is important that we survey not only once, but periodically over time and use consistent methods. For example, the properties in the Rare Plants and Ranchers program are surveyed every 5 years and the transects we visit are the same ones that would have been monitored in past years. It is important to monitor populations of plants, so we are able to protect them long-term. Periodic monitoring allows for the detection of downward trends or alterations to the plant community that may otherwise go unnoticed.

Our management plans include particular sets of corrective actions needed to reverse the decline of certain plant species and the best ways to implement the changes. These

changes may include suggestions like implementing wildlife friendly fencing, fencing off degraded waterbodies and installing off-site watering points, controlling invasive species, managing woody encroachment and more. Landowners are able to contact us at any time with questions or concerns about their property so that together we are insuring the best possible protection and management of plant species at risk and the native prairie they depend on.

### NPSS Membership Survey

Of course, the Native Plant Society of Saskatchewan is about plants, but it's also about you. Without our members, we wouldn't be able to do all of the things that we do. Occasionally, we like to survey our members to see what their interests are and to make sure that we're meeting their needs. That's where you come in. We'd appreciate you taking our short, nine question survey. Your answers will be anonymized and will help guide our society. Everyone who participates will be automatically entered to win a free annual membership. You can access the survey here:

<https://www.surveymonkey.com/r/W9D6KQ3>

To submit your native plant related event to our events list, send your information (including date, contact, phone number and location) to [info@npss.sk.ca](mailto:info@npss.sk.ca).

## Get Social While Distancing

Whether it's COVID-19, the weather, a combination of the two, or some other reason that's keeping you indoors more than usual lately, there's no reason why you have to feel isolated. The NPSS has many ways that you can connect with us and other like-minded native plant enthusiasts. We encourage you to follow them all!



### Facebook

We're very active on Facebook! Our page, Native Plant Society of Saskatchewan (<https://www.facebook.com/npssSK>), has 2,940 followers and reaches thousands of people every month. This is our main social media platform for posting interesting articles and events.

We also have a Facebook group called Saskatchewan Native Plants – Native Plant Society of Saskatchewan (<https://www.facebook.com/groups/1767293223307278>). This group has 2,654 members and is open to all experience levels. Here, people can post their native plant photos to show others or for identification. It's a great way to meet people and learn about native plants, including rare plants and those that grow in habitats that you might not visit often. The activity in this group really picks up going into spring and summer.

Our newest addition is the Saskatchewan Mycological Working Group (<https://www.facebook.com/SaskMycology>).

This group is an opportunity to post photos, ask questions, and view articles and event notices related to fungi.



### Twitter

We currently have 544 followers on our Twitter page ([https://twitter.com/npss\\_sk](https://twitter.com/npss_sk)), and regularly post interesting articles, events, and updates related to native plants and the NPSS.



### LinkedIn

If you're professionally involved with native plants, join our LinkedIn group (<https://www.linkedin.com/groups/6555524/>). Here, we post career opportunities, promote professional connections, and discuss related topics.

In addition to these forums, there are other outlets where we will offer virtual connections, including:

- Invasive species webinars in early summer.
- Wild About Saskatoon's NatureCity Experience.

We are also looking at converting our learning modules for the Saskatchewan Master Naturalist Program to digital format. This will not only serve our audience better during the pandemic but will be useful in reaching people in rural/remote regions even after large social gatherings are permitted.



## Have You Seen This Plant?

The COSEWIC Status Report for Small-flowered Sand-verbena (*Tripterocalyx micranthus*) is currently being updated. If you have any recent observation data for this rare grassland plant that has not been submitted to the Saskatchewan Conservation Data Centre, or Environment and Climate Change Canada, please contact Chet Neufeld at [info@npss.sk.ca](mailto:info@npss.sk.ca) by August 15, 2021.

**Left: Small-flowered Sand-verbena**  
(*Tripterocalyx micranthus*)  
**Photo: Candace Neufeld, ECCC**

## Survey of Canadian Plant Conservation Practitioners and Researchers

Dr. Jenny McCune (University of Lethbridge) is looking for participants for an online survey on the gaps in plant conservation and research in Canada. It takes about 15 minutes to complete and is anonymous. Please pass it along to anyone you know who work in plant ecology/evolution/conservation. Dr. McCune is especially eager to get non-academic participants. You can find the survey here:

[https://uleth.qualtrics.com/jfe/form/SV\\_0kCq8elH656TIhM](https://uleth.qualtrics.com/jfe/form/SV_0kCq8elH656TIhM)  
<https://www.google.com/>



Born of a necessity to return fire to the landscape, the Canadian Prairies Prescribed Fire Exchange (CPPFE) is a collection of agencies that recognize fire as key ecological driver, and is acting to build capacity for its use as a conservation management tool. Years of discussions and mutual support, aided by a generous financial head start from the Weston Family Prairie Grassland Initiative, resulted in the CPPFE coming to fruition in January of 2021. The group's main areas of focus are: 1) learning and training opportunities, 2) prescribed fire planning assistance, 3) the facilitation of equipment and resource sharing, and 4) acting as a

hub for current fire science and grassland fire knowledge.

Our first priority is an Introduction to Prescribed Fire course, which, with the help of the University of Saskatchewan, will be available to any and all interested in the practice of prescribed fire by the Fall of 2021. We also have a website, [www.grasslandfire.ca](http://www.grasslandfire.ca), where fire practitioners can find planning resources and information on how we can help. We encourage groups and landowners to get in touch with us, and we'd be happy to support in whatever way we can.

Looking forward, we're developing workshops and training events that will let interested parties get boots on the ground and get their hands dirty. Collectively, our group manages millions of hectares of grasslands and parklands across western Canada, and has years of experience using prescribed fire, safely and effectively, to help manage healthy prairies. Years of suppressing natural fires have led to a loss of grassland ecosystems, a loss of suitable habitat, a decrease in plant and animal biodiversity, and a build up of fuel that leads to uncontrollable wildfires. We understand that fire is an essential component of those ecosystems and that more fire is needed to address the accelerating decline of biodiversity occurring in our prairie. There's a safe and responsible way to do it, and we'd be happy to have you join along for the journey.

Dinyar Minocher,  
CPPFE Coordinator



Left: Prescribed fire underway.  
Photo by Renny Grilz

**This issue's COVER PLANT –***Maianthemum stellatum*

A perennial plant and member of the Liliaceae (Lily) Family, Star-flowered Solomon's-seal is widespread in Saskatchewan, ranging from the U. S. border north to the Precambrian Shield. On a continental scale, it can be found as far north as Alaska, south to the Carolinas, and coast-to-coast in an east-west distribution. The look of this graceful plant belies its toughness, because while it can be found in moist woods, shrub and grassland areas, it is equally at home in harsh, dry sandhills. Single records in Saskatchewan have also been reported from a saline flat, a rock outcrop, and a cultivated field.

Once established, Star-flowered Solomon's-seal tends to form colonies due to its aggressive rhizomes. This can help to stabilize areas, especially in sand dunes. In forests, its shade-tolerance and spreading nature make it a common understory plant where it occurs. Its clusters of delicate, white flowers provide nectar for pollinators in late May through June, while its berries are consumed by ruffed grouse in the fall. Some Indigenous groups also traditionally ate the berries, while others used the roots to flavour dishes. Other uses of the root included chewing it or making a tea to relieve coughs and in treating burns when used as a poultice.

Horticulturally, Star-flowered Solomon's-seal makes a great no maintenance plant once established. It can be grown from seed (germination is enhanced by a cold-warm-cold stratification) but is much easier to grow from rhizomes. It excels as a component of a shade garden but must be planted with other aggressive species to keep it in check or it will dominate the planting. When grown with other species, its foliage adds variety and form, while its sprays of tiny, white flowers add sparks of interest. Even after flowering, the striped berries continue to hold the eye as they change from green to red and finally black-purple.

This project was undertaken with the financial support of:  
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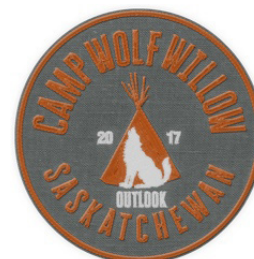
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