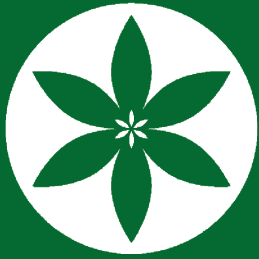


Newsletter of the Native Plant Society of Saskatchewan



R O O T S

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Summer 2021



Oenothera flava

Low Yellow Evening Primrose

Photo credit: Chet Neufeld

Executive Director's Message - Chet Neufeld



It seems like I say this every year, but where did the summer go? I guess time flies when you're having fun! We were certainly busy, which probably also explains why summer went so quickly. In fact, we had the busiest summer ever (yes, I say that every year too, but it's true!). While summer may have gone fast, it certainly wasn't ordinary. Between COVID-19 and prolonged, record high temperatures, it was a summer to remember. I normally include a buffer into our field work schedule

to accommodate for weather-related delays, but we didn't have a single rain delay all summer. Much to the dismay of farmers, most of our rain came during harvest. On a brighter, slightly selfish note, that same rain also ensured the survival of about 800 wildflower seedlings that we had recently transplanted (more on that later in the newsletter).

The one thing I really would have liked to have talked about is the return of our field trips, but sadly, COVID-19 had other plans and once again thwarted our attempts to resume them. However, the Saskatchewan Mycological Working Group was able to host some outings, and I can assure you that we are already planning field trips for 2022, so let's hope we can get back to foliage, friendship, and fun!

Our projects went extremely well, and I am thankful for all the partnerships that we rely on. I won't delve into each project, as you'll be reading more about these in this newsletter and future issues, but here are some of the highlights from this summer:

- We found new populations of provincially and nationally rare plant species.
- Our surveys also found other species at risk, including an Endangered species of moth called Gold-edged Gem (*Schinia avemensis*), of which only nine occurrences have ever been found in Saskatchewan.
- We added approximately 1,214 hectares (3,000 acres) of land to our Rare Plants and Ranchers program.
- Along with partner organizations, we surveyed nearly 100 kilometers of the South Saskatchewan River for Flowering Rush (*Butomus umbellatus*).
- Through a collaboration with local partners, we used goats to graze Leafy Spurge (*Euphorbia esula*) to protect critical habitat for species at risk, and to improve what is an otherwise intact and beautiful prairie landscape of about 2,266 hectares (5,600 acres).
- We continue to advance our South of the Divide Invasive Alien Species Strategy to benefit species at risk in the region (more about this later in the newsletter).
- Our Native Plants in the Classroom program has been going strong, and we have delivered hundreds of printed educational resources to schools across Saskatchewan, and our digital learning resources have also seen continued uptake. I have also visited Brightwater Science, Environmental and Indigenous Learning Centre, and have recently led botanical walks with school groups and an ecology camp for kids.

Even though the temperatures are dropping, we don't have any plan to slow down. I hope you're all able to get out at least a few more times this season; there is still plenty to see in our beautiful province.

CORRECTION

In the last issue of *ROOTS*, we missed including the logo of **Blazing Star Wildflower Seed Company** on the back of our newsletter where our sponsors and corporate partners are listed. Our sincere apologies. **Blazing Star Wildflower Seed Company** has been a long-time member and supporter.

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

Summer Issue: May 1 June 15

Fall Issue: August 1 September 15

Native Plant Society of Saskatchewan

P.O. Box 21099, Saskatoon, SK S7H 5N9

Phone: (306) 668-3940 Fax: (306) 668-3940

E-mail: info@npss.sk.ca Website: www.npss.sk.ca

Twitter: @NPSS_SK www.facebook.com/npss.sk

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.

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

Tackling Threats to Species at Risk in One of Saskatchewan's Priority Places

Located in southwestern Saskatchewan, the South of the Divide region is incredibly large, encompassing the Saskatchewan portion of the Milk River drainage basin, a 1,415,732 ha (14,157 km²) area (excluding Grasslands National Park) crossing 15 rural municipalities in the southwest corner of the province. The area is also very intact and diverse, with more than half of the landscape comprised of native prairie and hosting hundreds of plant and animal species, including dozens of provincially rare species and at least 13 Species at Risk. The area is so biologically important, it has been designated by Environment and Climate Change Canada as a Priority Place for Species at Risk conservation.

Invasive alien species have been identified as threats to multiple Species at Risk in the South of the Divide area, and while there has been work done on Species at Risk and invasive alien species, no large-scale project has directly addressed invasive alien species and its impacts to Species at Risk in areas where they co-occur. Complicating matters, there is also a general lack of invasive alien species occurrence data within the South of the Divide region.



Purple Mustard infestation. Photo by Hilary Pinchbeck.



One of the landscapes potentially threatened by invasive species in the South of the Divide. Photo by C. Neufeld.

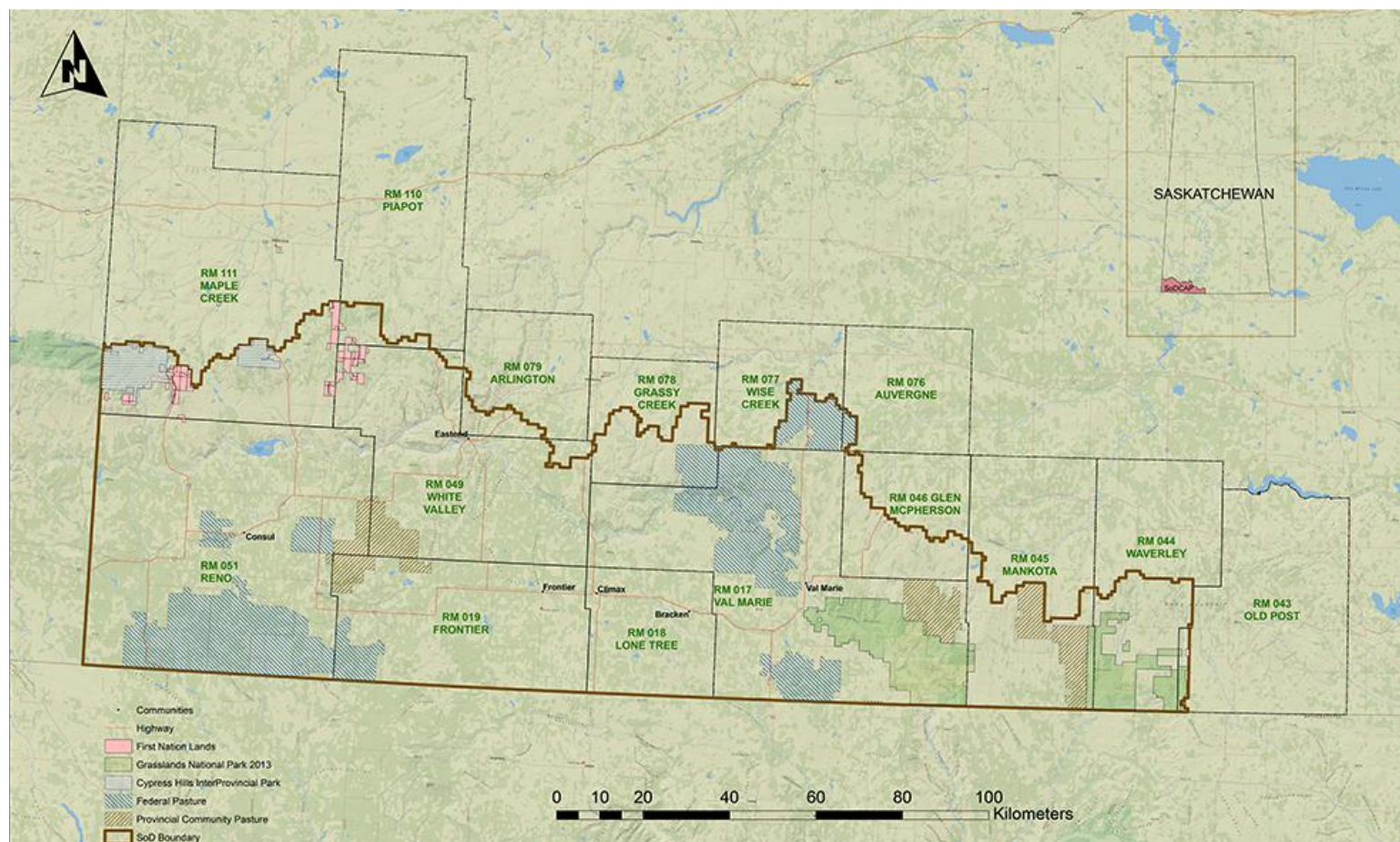
Now in its second year, the South of the Divide Invasive Alien Species Strategy is a collaborative project lead by the Native Plant Society of Saskatchewan aimed at supporting Species at Risk recovery through landscape-level invasive alien species mapping and management, which will be achieved by a combination of field surveys, development of a regional management plan, targeted outreach and engagement, local consultation, and financial support.

The objectives of the strategy will be achieved through the following broad actions:

Action 1. Invasive alien species mapping on Species at Risk habitat and adjacent lands within the South of the Divide area.

Progress to date:

Our invasive alien species surveys will have mapped at least 1,000 occurrences by the end of the season, bringing the total invasive species occurrences found by our project to over 2,000 in two years.



South of the Divide Region. Image courtesy of SODCAP.

Purple Mustard (*Chorispora tenella*), a new invasive alien species for Saskatchewan was found and eradicated.

Our survey efforts have greatly increased the total number of invasive alien species observations in the South of the Divide region, giving a clearer picture of the state of the threat and helping to guide Species at Risk conservation efforts.

Species at Risk encountered were also mapped. All data will be submitted to the respective provincial and federal databases.

Action 2. Develop an invasive alien species management plan for the South of the Divide region containing short and long-term strategies to eradicate and/or manage invasive alien species.

Progress to date:

Ken Donnelly and his company Beyond Attitude Consulting have been contracted to assist with stakeholder engagement. Ken has years of experience with invasive species issues across North America. The feedback collected by Ken and his team will provide direction for strategic planning related to our project and the region.

A local stakeholder advisory group is being formed to help

guide the consultation process, ensuring that it is a bottom up, grassroots approach that will be well-received on the local level. If you or anyone you know would like to participate in the advisory group, contact the NPSS (all advisory group members must live in the South of the Divide region).

Weed risk assessment modeling has been completed on 8 invasive plant species not yet present (or present in extremely low levels) in the South of the Divide region to determine the threat level they pose. These results will help focus invasive species prevention, early detection/rapid response, and management efforts. More weed risk assessments are planned.

Action 3. Deliver funding at the local level to activities that support the invasive alien species strategy.

Progress to date:

We are currently reaching out to landowners in the South of the Divide region with invasive species issues, particularly those that have Species at Risk and/or critical habitat, to assist them both logistically and financially (dollar matching). Please contact us if you or anyone you know who owns land in the South of the Divide region would benefit from our dollar matching incentive.



The beautiful Frenchman River Valley in the South of the Divide region.

Photo by Chet Neufeld.

Action 4. Introduce outreach programming to garner acceptance for the invasive alien species strategy, and to support local engagement on Species at Risk and invasive alien species issues.

Progress to date:

We have, in collaboration with our partners, developed weed fact sheets for nearly every species on the Weed Control Act (47 to date), and will develop fact sheets for the remaining species by the end of 2022. The finished fact sheets are currently being uploaded to the Saskatchewan Invasive Species Council website (www.saskinvasives.ca). We are also developing invasive species webinars to be delivered soon. Additionally, other related materials on invasive species and/

or Species at Risk, either developed by us or our partners, have been distributed across the region.

Action 5. Conduct an annual project review.

Progress to date:

Many of our annual objectives have already been accomplished, and we are currently planning 2022 activities based on the successes from this year. A full review will be conducted toward the end of the year.

We are committed to fully achieving all our project objectives to safeguard Species at Risk in the region and will continue cooperating with local stakeholders even after the project has wrapped up to ensure long-term success.

Calling All Citizen Scientists!

If you live in the South of the Divide region or plan to visit the area, we encourage you to help us with our project. All you need to do is use the iNaturalist or iMapInvasives apps (free download wherever you get your apps), add our project, and record your invasive species sightings. Even if you aren't sure about your identification, you can take a photo as part of your observation, and we will confirm its identity.

Our project on iNaturalist and iMapInvasives is called South of the Divide Invasive Species Mapping and can be found through the Projects tab on the apps. The links for the desktop versions are:

<https://www.inaturalist.org/projects/south-of-the-divide-invasive-species-mapping>
<https://imapinvasives.natureserve.org/imap/services/page/Project/1117.html>

Roadside Pollinator Habitat Pilot Project

Last year, the Native Plant Society of Saskatchewan was contacted by the Ministry of Highways to help establish a pollinator corridor. The two organizations have had a close partnership for over a decade, with several collaborations through the years. Recent construction on highway 5 east of Saskatoon was wrapping up, and the Ministry wanted to try something new: creating habitat for pollinators. Studies suggest that roadside corridors can provide a net benefit to pollinators, so we were happy to help. After a few site visits to determine the best location, we set to work designing the best seed mix that would benefit pollinators while also being budget friendly and conforming to the Ministry's various standards, such as vegetation height to minimize visual obstruction.

In late fall of 2020, once construction had ceased and the soil was prepared for seeding, a mix of native grasses and wildflowers were sown into a roadside area almost a kilometer long (native grass was used for the entire project and was seeded into both ditches for the length of the reclaimed area). Seeding went very well and soon after we were lucky to get a thick blanket of snow to cover the site and provide thermal protection and spring melt-water.

Throughout the winter, wildflower seedlings were being grown by Shelley Heidinger and her team at SaskPower's Shand Greenhouse in Estevan. By June, approximately 800 wildflower seedlings were ready to be planted (some were already flowering!). Due to the extremely hot summer temperatures, we opted to wait until we had cooler planting weather, which came in August. The Ministry of Highways mustered a team of volunteers, and together we planted all the seedlings in a single day. The wildflowers were planted in dense, species-specific clusters, with the hope that they can outcompete weeds and help to spread by



Ministry of Highways crew planting wildflower seedlings.
Photo by Chet Neufeld.

Wildflowers	
Common Name	Scientific Name
Yarrow	<i>Achillea millefolium</i>
Canada Anemone	<i>Anemone canadensis</i>
Prairie Sage	<i>Artemisia ludoviciana</i>
Dwarf Milkweed	<i>Asclepias ovalifolia</i>
White Prairie Clover	<i>Dalea candida</i>
Purple Prairie Clover	<i>Dalea purpurea</i>
Blanketflower	<i>Gaillardia aristata</i>
Northern Bedstraw	<i>Galium boreale</i>
Three-flowered Avena	<i>Geum triflorum</i>
Maximilian Sunflower	<i>Helianthus maximilianii</i>
Dotted Blazing Star	<i>Liatris punctata</i>
Bergamot	<i>Monarda fistulosa</i>
Prairie Rose	<i>Rosa arkansana</i>
Black-eyed Susan	<i>Rudbeckia hirta</i>
Canada Goldenrod	<i>Solidago canadensis</i>
Old Field Goldenrod	<i>Solidago nemoralis</i>
Rigid Goldenrod	<i>Solidago rigida</i>
Golden Alexander	<i>Zizia aurea</i>
Native Grasses	
Common Name	Scientific Name
Blue Grama	<i>Bouteloua gracilis</i>
Nodding Brome	<i>Bromus anomalus</i>
Northern Wheatgrass	<i>Elymus lanceolatus</i>
Slender Wheatgrass	<i>Elymus trachycaulus</i>
June Grass	<i>Koeleria macrantha</i>
Green Needle Grass	<i>Nassella viridula</i>
Western Wheatgrass	<i>Pascopyrum smithii</i>
Little Bluestem	<i>Schizachyrium scoparium</i>

Table 1. List of all wildflower and grass species used within the pollinator corridor.

seed and rhizome throughout the rest of the site. After planting, the seedlings were monitored and watered nearly every day for roughly two weeks to ensure they established. Periodic monitor-



Newly transplanted Yarrow seedling. Photo by Chet Neufeld.

ing continued after that, and we were fortunate to receive some rain during that time as well.

Throughout the summer, we monitored the seeded area to track establishment of the seeded species and to detect any threats, particularly weed infestations. What we found was that the native grass species were germinating and growing very well, despite the hot, dry summer. In fact, many individuals were producing seed which is unusual for a first-year perennial native grass, especially given the harsh growing conditions. Most of the wildflower seed did not germinate yet but is likely remaining dormant, so we will probably see a flush of seedlings next year. Although there was a flush of annual weeds, very few perennial weeds were found. While perennial weeds can pose significant

challenges, annual weeds are typically not a problem as they are quickly outcompeted as the native plant community establishes and may even act as a cover crop in the first few years.

We are very optimistic about how this site will progress over the years, and the benefits it will provide to the countless pollinators it will serve host to. For our part, we will continue our involvement as long as the Ministry of Highways will have us. Thanks are due to the many organizations who made this possible: the Ministry of Highways for conceiving and initiating the project, Skinner Native Seeds for providing the seed, SaskPower's Shand Greenhouse for producing the wildflower seedlings, and Renny Grilz and Meewasin Valley Authority for watering the seedlings during their establishment.

Back to School for our Budding Botanists

With students hitting the books once more, we'd like to remind everyone that the Native Plant Society of Saskatchewan has a wealth of native plant learning resources on our website here:

<https://www.npss.sk.ca/info-resources/educational-resources>

From teacher lesson plans to online games and other digital resources, we have something for every age group. We also have printed copies of some of our digital resources and can send them free of charge to anyone wanting them. We will be adding new content soon, so check back often.

This issue's COVER PLANT- *Oenothera flava*

Low Yellow Evening Primrose (*Oenothera flava*) is not well known in Saskatchewan, even amongst keen naturalists, and basically unheard of in horticultural circles. However, this plucky little plant deserves much more appreciation.

Ranked as an S3 (rare) in Saskatchewan, Low Yellow Evening Primrose occurs in clay soils in the southern part of the province on floodplains and other similar areas, as well as roadsides, usually as single plants or small clusters. The plants are perennial and consist of a low growing basal rosette of leaves, usually less than 30 cm across, with a stout taproot. The leaves are dark green and deeply incised, giving them a wavy appearance. Borne on a short stalk, the flowers are yellow and about the size of a loonie, but they bloom only at night, which is probably why most people haven't seen it. Because of its night-flowering, it is likely pollinated by a host of moth species, although curiously it is recognized by pollination ecologists as attracting many native bees. It blooms in June and flowers last little more than a night, but many flowers per plant are produced. Once pollinated, seeds are formed in columns in chambered, leathery capsules held low in the rosette. The capsules are so tough that it likely takes a significant amount of weathering before they finally release their seeds, probably to ensure that conditions for germination will persist long enough to develop new plants.

Flowering at night also probably counts against it for horticultural use because there's not much to see during the day. However, the basal rosette of leaves can be quite attractive on their own, especially against the backdrop of a rock garden, where it would thrive. Additionally, although it flowers at night, it begins flowering at dusk, and lasts until just after dawn, so there are brief periods when you can enjoy the flowers without a flashlight. In fact, the flowers open quite quickly (10-15 minutes), and you can actually watch them, which is thoroughly fascinating. Furthermore, if you are gardening to help pollinators and you have a yard that consists of only day flowering species, you are only supporting half of the pollinators that visit your yard. Adding a species like Low Yellow Evening Primrose would benefit many species. Finally, the seeds of Low Yellow Evening Primrose germinate easily and once established, absolutely no care or attention needs to be given to them.

If you are ever lucky enough to find Low Yellow Evening Primrose about to flower, take the time to stay around and watch; you'll be one of the fortunate few that have!

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