



Native Plant News

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Fall 2009

Gone to the Prairie Dogs

NPSS members explore
Grasslands National Park

By TARA SAMPLE
NPSS president

Early on the morning of June 20, 31 plant enthusiasts gathered at the Visitor Centre of Grasslands National Park ready to explore one of the largest intact parcels of native prairie in Canada and meet some of the plants and animals that call it home. They weren't disappointed.

Grasslands National Park is the only national park that conserves a portion of the mixed-prairie ecoregion. Located in the south central part of the province and broken into two separate blocks of land, it is home to some of the rarest species in Canada, including

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PHOTOS BY DAVID FREEMAN

A black-tailed prairie dog (above) barks a warning to tour participants. A pin-cushion cactus (*Escobaria vivipara*) begins to bloom (below).



PHOTO BY GLEN LEE

Desert wirelettuce (*Stephanomeria runcinata*), a rare \$1\$2 specimen found in Grasslands National Park in June.



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Native Plant News 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

Membership Dues (Year End November 30th)

Individual \$30

Family \$45

Student/Low Income \$15

Corporate \$200

Life \$500

Please contact the NPSS office for information about the lifetime membership instalment payment option.

PCAP renewed



PHOTO BY ANDREA KOTALIK

On June 23, the 26 partners of the Saskatchewan Prairie Conservation Action Plan (PCAP), including the Native Plant Society of Saskatchewan, renewed their commitment to prairie conservation during a ceremony held at the Royal Saskatchewan Museum in Regina. The 2009-2013 PCAP Framework marks the third consecutive five-year plan signed by the partnership, which consists of agencies and organizations representing producers, industry, provincial and federal governments, non-government organizations and research and educational institutions working toward a common vision of prairie conservation in Saskatchewan. *

Last chance to send us your photos

Time is running out on the NPSS photo contest!

Submit your photos of native plants and landscapes taken in Saskatchewan to info@npss.sk.ca by Oct. 30, 2009 – that's right, we've extended the deadline.

Winners will get their photos published in a special photo-only edition of the *Native Plant News* and all the bragging rights that go with it.

For each photo, state who took the picture and where it was taken. High quality digital photos (300 + dpi) are preferred although you can also mail printed photos to Box 21099, Saskatoon, Sask., S7H 5N9.

Good luck everyone! *

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RPR notes from the field

By SARAH VINGE

Rare Plant Rescue Coordinator,
Nature Saskatchewan

Rare Plant Rescue (RPR) had a very successful 2009 field season. For the second year in a row, the field staff has almost doubled – to a total of four search crew members, one summer assistant and the coordinator. With a bigger search crew, we are able to cover more ground looking for rare plants and visit with more landowners to spread the word about plant species at risk.

One of the most exciting sites we visited was to a recently-discovered occurrence of small-flowered sand verbena (*Tripterocalyx micranthus*) at a new location on Lake Diefenbaker, approximately 150km downstream from the closest previously-known location. The plants numbered in the thousands, making the site very useful for future monitoring of the species. Searches for more occurrences of western spiderwort (*Tradescantia occidentalis*) did not produce the same success as those for sand verbena, as only one new occurrence was found – and was in close proximity to other known plant locations. In the world of rare plants, however, any information – be it one more occurrence, a new site, or absence of data – is useful!

It appeared to be another bad growing year for slender mouse-ear-cress (*Transberingia bursifolia*) as very few stems were found in known locations in the province. As a result, RPR did not conduct searches for this species in 2009. Two other rare annual species, beaked annual skeletonweed (*Shinnersoseris rostrata*) and smooth arid goosefoot (*Chenopodium subglabrum*), were found incidentally during searches for hairy prairie clover (*Dalea villosa*).

The plants were growing in bare sand; one plant had an exposed root (due to the movement of the sand), which was interesting to see as we often do not get the opportunity observe rare plant parts that are normally found below the surface of the ground. This plant appeared to be healthy despite the exposed root.

Our monitoring of hairy prairie clover turned up a couple of instances of variation, including one plant that had leaves with no more than five leaflets,



PHOTO BY TARA SAMPLE

Hairy prairie clover (*Dalea villosa*).

and another individual that was considerably less hairy on the stem and leaves than a typical hairy prairie clover plant.

Monitoring hairy prairie clover is always bittersweet as we see first-hand the fight against leafy spurge (*Euphorbia esula*), as this noxious weed is present in the same locations where hairy prairie clover is found. We did spot some spurge hawkmoth caterpillars and flea beetles (leafy spurge pests) in those sites, and found spurge plants that had been grazed – evidence that landowners and rural municipalities are fighting back against this noxious species.

We have welcomed several new stewards into the RPR program in 2009 who, along with current stewards, are conserving habitat for rare plant species and other prairie flora and fauna. We thank all of our participating landowners for their dedication to conservation.

If you would like to know more about Rare Plant Rescue or the province's plant species at risk, contact Nature Saskatchewan toll-free at 1-800-667-4668 or email rpr@naturesask.ca. *

Upcoming Events

October 2009

Native Prairie Speakers Series: "Restoring Native Prairie"

Oct. 15

12:10-12:50 p.m.

Royal Saskatchewan Museum
Auditorium, Regina, Sask.
Presented by Larry Gabruch, Director of Stewardship, Nature Conservancy Canada.
www.pcap-sk.org

November 2009

Workshop: Using Animal Behaviour to Improve Production and Landscape Health

Nov. 3 – 5

Brandon Research Centre,
Brandon, Man.

Dr. Fred Provenza will highlight behavioral principles and processes and discuss implications for managing dynamic forage systems.

www.mbforagecouncil.mb.ca

Saskatchewan Green Trades Conference

Nov. 13 – 14

Travelodge, Saskatoon, Sask.
Bringing together the province's commercial greenhouse growers, garden centre retailers, field vegetable producers and florists.
For more information or to become an exhibitor, contact Dorothy Long at (306) 387-6610.

www.saskgreenhouses.com

February 2010

9th Prairie Conservation and Endangered Species Conference

Feb. 25 – 27, 2010

Winnipeg, Man.

Held every three years, it brings together stakeholders to share ideas about sustaining native prairie and endangered species. For more information, call 1-866-532-6155.

www.pcesc.ca

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.

Pollinators & predators

By PETER LESICA

University of Montana

EDITOR'S NOTE: The original version of this article was first published in 2005 in *Kelsey*, the quarterly newsletter of the Montana Native Plant Society. It is reprinted here with the society's permission.

We are attracted to flowers because of their beauty; their colour and form enchant or intrigue us. However, other animals are attracted to flowers not for aesthetic reasons, but for matters of life and death.

We all know that flowers have evolved to attract insects that carry pollen between individuals and allow plants to produce seeds without inbreeding. Pollinators such as bees and butterflies are most noticeable. Then there are the insects that eat the flowers. Pull apart a seed head or developing fruit from most plants, and you're likely to find a beetle, fly or moth larvae feeding and growing.

Sometimes the same insect does both pollination and seed predation. Probably the most famous example of this comes from the yucca (*Yucca glauca*). The female yucca moth gathers pollen and places it on the stigma of a yucca flower. The moth then lays an egg in the ovary of the same flower, and the developing larvae feed on the developing seeds (my taxonomy professor used to quip that this was the first known case of a pistil-packing mama).

There are other animals frequenting flowers that are not pollinators or seed eaters. Most of us have reached to examine an inflorescence and been surprised by the presence of a bright white or yellow spider camouflaged among the flowers. Most often in our area these flower spiders are crab spiders, so-called because they hold their legs in a way that resembles a crab.

Spiders benefit from waiting on inflorescences because the flowers attract insects, but there is a less obvious advantage to frequenting flowers. Spiders are usually thought of as feeding solely on insects; however, crab spiders

A crab spider grabs a meal by ambushing a pollinator visiting sticky purple geranium (*Geranium viscosissimum*).

PHOTO BY
CANDACE NEUFELD



have been observed feeding on pollen and nectar. Researchers in Virginia found that mature male crab spiders do not capture prey, but instead feed on nectar while looking for a receptive female. Males that had nectar available to them lived 25 per cent longer.

So male spiders sip nectar, and the females prey on both pollinators and seed predators. It's obvious that pollinators have a positive affect and seed predators a negative affect on the plant.

So what is the overall affect on the plant?

The answer seems to be that it is different for each situation.

Recently, Reuven Dukas, a student at Simon Fraser University in Vancouver, attempted to answer this question with a series of experiments using artificial flowers much like hummingbird feeders. He placed a dead honeybee or a frozen spider on some artificial flowers but not others and compared how often honeybees visited them. Bees never landed on flowers with the dead bee and only 25 per cent of the time on flowers with the spider, but they landed 75 to 95 per cent of the time on those without the dead bee or spider. Dukas's study clearly demonstrated that the presence of a spider can deter pollinators.

We might expect that fewer pollinators means lower seed production, but his study did not directly address how plants are affected by their arachnid guests.

Nearly 30 years ago Svata Louda, then a student at San Diego State

University, devised a field study that did assess how and how much spiders affected seed output. She studied goldenbush (*Haplopappus venetus* = *Isocoma menziesii*). At least 11 species of insects feed on the inflorescence of goldenbush, while two bees and a wasp are the common pollinators. Spiders on the inflorescences of goldenbush had good and bad effects by reducing both pollination and seed predation.

However, in her study the reduction in seed eaters more than compensated for the loss of pollinators because inflorescences with spiders produced more viable seeds than those that were unoccupied. Nevertheless, Louda admits that her results could have been reversed had the spiders arrived earlier and deterred more pollinators while allowing late-hatching seed predators to lay their eggs unimpeded.

Although goldenbush inflorescences with spiders produced more seeds, we don't know if this translated into a larger population of shrubs. The plant inflorescence is the scene of complex interactions among the different insects and spiders. But it's far more than a neutral stage because these animals affect and are affected by the plant.

Research to date suggests that there are no generalizations in such complex systems. Spiders may or may not enhance the performance of their host plants. Most likely it depends on what plant you're looking at and what year you're looking at it. One thing is sure, it makes a fascinating story.✱

PlantWatch autumn update

By *DEANNA TROWSDALE-MUTAFOV*

PlantWatch Saskatchewan Coordinator

PlantWatch Educators Guide

We are very pleased to announce the release of the PlantWatch Educators Guide. Based on a guide developed by Elisabeth Beaubien for Alberta PlantWatch, it includes great activities to support youth in collecting, submitting and interpreting PlantWatch data.

The guide includes many supporting activities related to understanding climate change, geo-referencing monitoring locations, interpreting graphs, tracking seasonal changes, etc. The curriculum connections for Grades 6 to 8 for science and math have been specifically highlighted for every province and territory across Canada. The Educators Guide can be downloaded from the PlantWatch website at www.plantwatch.ca.



PlantWatch Report

The results of an assessment of PlantWatch data from Churchill, Man., and from Labrador City and Northwest River, Labrador, have been posted on the PlantWatch site (www.plantwatch.ca). The report evaluated whether the date of first bloom of key indicator species had changed over time.*

NPSS membership fees are due once again

Well, it's that time of the year again.

For those of you paying by the year, your NPSS membership fee is due.

You will soon be able to renew your membership on our website once updates are complete, but for now a cheque in the mail will have to suffice. Some members are already paid up for 2010, so if you send in your dues we will just extend your membership to 2011. Those that are paid for 2010 will have a check mark next to their name on their address label on the back page.

Do you want to avoid having to remember to pay altogether?

Why not buy a lifetime membership. It's cheaper in the long run and you can pay in installments if you can't afford a lump sum. Thank-you to all who supported the NPSS in 2009 with their membership dues and donation of time and money!*

Busy summer for the NPSS

By *CHET NEUFELD*

NPSS Executive Director

The NPSS is always busy and this summer has been no different.

In May, we transplanted 5,000 native plant seedlings into our nursery in Regina. This nursery has been providing seed for schools across the province to establish their own patch of native prairie and also serves as a demonstration garden.

June saw many activities. We contributed seeds to the University of Saskatchewan native prairie demonstration site and had school kids "bison stomp" them into the ground. We consulted with the federal government on national invasive species framework and policies in Ottawa, and also gave an invasive species talk for Native Prairie Appreciation Week in Moose Jaw.

We also held our two summer field tours in June: one in Nipawin and one in Grasslands National Park – as you read on the cover of this issue. Near Nipawin, we ventured into the Maurice Street Wildlife Sanctuary to see the rare ram's-head lady's-slipper (*Cypripedium arietinum*) and other spectacular native wildflowers. Our summer tours are always popular, but the tour to Grasslands National Park broke an attendance record and resulted in many new members.

July was no less busy, with the NPSS hosting nature hikes at Pike Lake and the Ness Creek Music Festival. On July 29-31, we held our second annual Rare Plant Survey Techniques Course in Saskatoon. This course is designed to give people the tools they need to plan, conduct or oversee rare plant surveys. This is by far our most successful workshop; we have had people fly in from all across Canada to participate and are already half booked for next year!

Aside from our summer activities, the NPSS is involved with many long-term projects.

We are currently monitoring a section of highway seeded to native grasses by the Ministry of Highways and Infrastructure. This is the second year of a three year project and the results are promising as the grasses have established and are beginning to fill in the area.

We are also currently redesigning our website from scratch and loading it with much more information, which also means that we have to generate and/or update much of this information.

On the invasive species front, we have received funding to establish the Voluntary Codes of Conduct program, where greenhouses will agree to discontinue invasive species not covered by law and horticulture groups and gardeners will agree not to purchase invasive species.

If you have any questions about any of our projects or event, please contact me at 668-3940 or info@npss.sk.ca.*



PHOTO BY DAVID FREEMAN

NPSS summer tour participants walk across a stretch of native prairie in search of plants and signs of Plains bison.

Grasslands

Continued from Page 1

black-tailed prairie dogs, plains bison and desert wirelettuce (*Stephanomeria runcinata*).

We started the morning with Grasslands National Park client services supervisor, Colin Schmidt, who led us on a hike of 70 Mile Butte. During the hike we conducted a biodiversity blitz, where participants were asked to record as many plants as they could identify. After three hours of searching we found 94 species, including 11 that are provincially-rare. Several participants also encountered rattlesnakes warming themselves in the morning sun and common night hawks could be heard and seen swooping above our heads.

While we explored the butte, Colin helped us train our prairie eye. With his guidance we were able to view the land before us as not just a landscape, but a home for plants, animals and people.

He also explained that the butte got its name from the North West Mounted Police, who found the butte was approximately 70 miles from Fort Walsh to the west and 70 miles to Wood Mountain Post in the east – and was also a wonderful spot for getting a birds eye view of a large tract of their patrol area. Before that, the First Nations used the butte as a gathering place, as could be seen by the remnants of teepee rings on top of the butte.

After lunch we met up with senior park warden, Wes Olson, at a spot where the herd of reintroduced plains bison had been spotted not long before. While it appeared that the bison had moved on, Wes – a renowned breeder of plains bi-



PHOTOS BY DAVID FREEMAN

(Above) Butte candle (*Cryptantha celosioides*). Candace Neufeld (top, right) examines a specimen with her hand lens. A black-tailed prairie dog (right) checks to see if the coast is clear before exiting its den.



son and a warden at Elk Island National Park for 25 years – found evidence of their activity in the area and we were all able to handle some bison undercoat that they left behind.

The return of bison to this landscape is an amazing story. Wes explained how the landscape we stood on had been shaped, in part, by the millions of bison that roamed the Great Plains for thousands of years prior to European settlement. Their marks are still visible today in the form of wallows and perhaps even

the spots where their massive carcasses decomposed. In these spots, the vegetation structure and composition is different from that of the surrounding area.

The great herds were nearly driven to extinction in the later part of the 19th century. After a 120 year absence, the plains bison returned to Grasslands National Park in 2005. Wes said that the new population of bison are still very young (the oldest are five years old) and so they are still learning how to be bison. They are only starting to wallow

and may in time return to some of the old wallows in the area.

In the afternoon we met up with Laura James, resource management warden at the park. Laura walked us through several sites in different stages of restoration. It was interesting to learn that herbicide application has been helpful in reducing weeds and crested wheatgrass crops, while maintaining some of the cryptogams (mosses, lichens and spike mosses) that are typically absent in restoration projects.

Despite their efforts to restore land once broken for farming back into native prairie, she showed us how long and complicated the process is – it is expected to take more than a decade for each field to even resemble functioning native prairie.

The final leg of the tour was a self-guided, late-afternoon drive past one of several prairie dog towns within the park. Thousands of black-tailed prairie dogs could be seen going about their daily business curiously watching what we were doing – and not letting us get too close. It was amazing to see how devoid of vegetation the town was due to their activity. 🌱



PHOTO BY DAVID FREEMAN

Park warden and plains bison expert, Wes Olson, discusses the Grasslands National Park herd with NPSS tour participants. Here he shows the group some of the bison undercoat. If you're in Regina on Nov. 24, consider taking in his lecture "Bison Success in Saskatchewan" at 7:00 p.m. at the Royal Saskatchewan Museum Auditorium.



PHOTOS BY DAVID FREEMAN

Colorado rubberweed (*Hymenoxys richardsonii*) grows out of a rocky slope on the edge of 70 Mile Butte (above). Meanwhile, a rattlesnake takes a defensive posture as it is disturbed by tour participants while it tries to sun itself in the morning sun on the top of the butte.



Sask. Book Awards nominee



PHOTO BY DAVID FREEMAN

NPSS member Nora Stewart's book *Cultivating Our Roots: Growing Authentic Prairie Wildflowers and Grasses* is a People's Choice nominee for the 2009 Saskatchewan Book Awards. Good luck Nora! *

George F. Ledingham Herbarium invites you to view its collection

The George F. Ledingham Herbarium at the University of Regina is awaiting your visit.

The herbarium invites you to visit and study its plant collection, which can provide you with information about plants in Saskatchewan and around the world.

The Herbarium's 70,000 plant specimens are an excellent resource for investigating plant morphology and taxonomy and improving identification skills. For example, you can compare rare plant specimens with specimens of similar common species, or study multiple specimens to understand the diversity in morphology across a species and the morphological changes that occur during the growing season or determine historical locations of species.

If, in the past, you have been reluctant to work in the herbarium due to the mothball odour, we have a solution. Do consider visiting us.

Please contact Elizabeth Barker (student assistant) at (306) 585-4861 or (306) 530-2620 or by email at barker1e@uregina.ca for more information about the George F. Ledingham Herbarium or to book a time to visit. *

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