# PRAIRIE BREEZE

THE LIVING PRAIRIE MUSEUM NEWSLETTER SPRING 2017

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## Prairie pollination project a success

You may recall a post about our EcoAction project, *Education for Conservation: Prairie Pollinators and Beneficial Insects* in 2015. Funding for the project was secured by the Friends to allow museum staff to create pollinator conservation outreach programs and materials.

The project is now wrapping up, and we have good things to report. A new exhibit featuring our prairie pollinators is nearly complete. The exhibit content is being developed through the local outreach company Second Nature. Information about habitat, pollinator services, and conservation will be a primary focus. The exhibit will include a beautiful diorama of prairie plants and insects, the construction of which was lead by renowned Manitoba Museum exhibit production artist Betsy Thorsteinson. Content from our new exhibit will also be produced in mobile form. These mobile displays will be used during outreach programs, trade shows, and special events. The exhibit will launch in June 2017.

Museum staff developed two new outreach programs. A *Pollinators of Winnipeg* program targets gardening groups, home owners, land developers, and any who are interested in pollinator conservation. A second program, *Insect Basics,* focuses on education for school-aged children.

Museum staff were able to develop an educational brochure that covers many of the frequently asked questions about pollinator conservation. Insect identification, life cycle, nectar sources, nesting habitat, and overwintering habitat are all included. Be sure to pick one up on your next visit!

The grant allowed us to conserve and create tall grass prairie habitat in Winnipeg. We used our outreach materials to put pollinator conservation in the minds of city foreman, resulting in altered management, restorations, and protection of existing natural areas.

Staff were also able to establish a curated collection of local insect pollinators. This base-line species data will be extremely valuable for future conservation efforts.

We thank the Friends of the Living Prairie Museum, the City of Winnipeg, and the Government of Canada's Department of the Environment and Climate Change for making this project possible.

# How do plants know it's spring?

Humans look at calendars and watch the natural world for signs of spring. Melting snow, the first robin, cresting rivers, and of course the first greening. But how do plants know?

Botanists have known for a while that plants respond to sunlight. How? In a fascinating online article in Science AAAS, Fiona Proffitt features George Coupland's work. Coupland is a researcher at the Max Planck Institute for Plant Breeding Research in Cologne, Germany, who investigates green plants' internal hourglasses.

By engineering thale cress (*Arabidopsis thaliana*) – the lab rat of the plant world - he tested his hypothesis that a plant protein (CONSTANS mRNA) acts as an hourglass somehow filling and emptying daily. Levels of CONSTANS mRNA rise about 12 hours after dawn, continuing to increase through the night and drop during the day. In the short days of winter, CONSTANS mRNA is expressed through the long dark, but starts to increase as the days lengthen.

Coupland engineered a cress to maintain high levels of CONSTANS mRNA – a constant CONSTANS. He found 3 things: 1. More CONSTANS protein accumulates during the light phase of long days than short days. 2. The levels of photoreceptors (molecules that detect light of specific wavelengths) in plant leaves also changed with hours of light. 3. Only long days allowed sufficient CONSTANS protein to accumulate to stimulate genes that induce flowering.

Interestingly, photoreceptors sensitive to blue and far-red light (both components of sunlight) inhibit breakdown of CONSTANS protein. Complimentarily, another photoreceptor, triggers CONSTANS breakdown in reddish early morning light. It is not only the amount of light, but also the type of light, that directs the internal hourglass.

This fascinating study showed an intricate, interconnected, multilevel system of regulation and release between CONSTANS mRNA and photoreceptors.

"The force that drives the green fuse – drives the flower." Dylan Thomas.

You can see Fiona Proffitt's article in Science here:
http://www.sciencemag.org/news/2004/02/how-flowers-know-its-spring


*Prairie crocus by Amar Athwal.*

# Grouse or prairie chicken?

When a scientist discovers a new species, much thought is given to selecting the appropriate Latin name. This name is made up of two parts: a genus that reflects its relationship to its most closely related kin, and a species name that defines it as a unique life form within that genus. A Latin name clearly defines the species, but it can be a difficult system to manage for those outside of academia. A common name, or a name that can be used in every day life to identify a creature, is often utilized by the general public.

The tricky thing with common names is that they aren't necessarily unique to one species, or a species may have multiple common names. For example, saskatoons are also known as serviceberries, some refer to merlins as sparrowhawks, and tamarack and larch get used interchangeably. The confusion with common names exists when describing a prairie icon, the prairie chicken.

"Prairie chicken" is used to identify several species of birds; some that are common, and another that is extirpated (no longer occurs within its expected range) from Canada.

*A male Greater Prairie Chicken showing the yellow throat sacs used in courtship displays. Photo by Doug Dance.*

The Greater Prairie Chicken (*Tympanuchus cupido*) used to be present within the Canadian prairie region through to the southern U.S. It was estimated that one million birds occupied the prairies around 1900, but with hunting and development, the numbers dropped significantly. Today, the prairie chicken is no longer found in Canada, with sightings believed to be the result of migration. Our nearest populations exists in northern Minnesota where it is designated as a species of special concern.

When people claim to have seen a prairie chicken in Manitoba, they are usually referring to a grouse. There are two species of grouse that are often called a prairie chicken: the Ruffed Grouse (*Bonasa umbellus*) or the Sharp-tailed Grouse (*Tympanuchus phasianellus*). You are most likely to encounter a Ruffed Grouse in forested areas, while the Sharp-tailed Grouse can be found in grasslands and forest edges. Both species are present in the province year-round.

*A male Sharp-tailed Grouse showing the purple air sacs and lack of the feathered collar found in prairie chickens. Photo by Mark Lockwood.*

So, next time someone makes reference to a prairie chicken, don't get overly excited about discovering a new population...it's probably your friendly neighbourhood grouse.

## Thank you!

We had record attendance during the Winter Speaker Series. Of the five sessions, three were standing room only. Our presenters loved your great questions and interest in their studies.

Thank you for your generous donations throughout the series.

## Volunteers Needed

We'll be enlisting your help with transplanting seedlings! Watch your inbox for volunteer opportunities.

## MUSEUM STAFF

Sarah Semmler
Lois Grieger
Kelly Ferrand
Marika Olynyk
Lyle Kokesch

Thank you for receiving your newsletter electronically.

# UPCOMING EVENTS

## Prairie Planting Workshops

Instructor John Morgan of Prairie Habitats Inc. will teach you how to successfully grow native prairie plants at home. Find out how prairie species can be included in your landscape designs, and why using native plant material is important for biodiversity and conservation.

Workshops include a presentation, discussion, and seed prep demonstration. Prairie seeds will be available on site.

Call to register for one of the following sessions:

| | |
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| Saturday, April 15th | 9:30 - 12:30 PM |
| Tuesday, April 18th | 6:30 - 9:30 PM |
| Sunday, April 30th | 1:00 - 4:00 PM |
| Tuesday, May 2nd | 6:30 - 9:30 PM |
| Saturday, May 6th | 9:30 - 12:30 PM |

Fee: $35 plus GST. Friends of Living Prairie Museum receive a $10 discount

## Prairie Plant Sales

Join us for our annual native plant sales with Prairie Flora!

Please see prairieflora.com for a list of available species and pre-order information.

| | |
|---|---|
| Friday, May 19 | 3:00 - 6:00 PM |
| Saturday, May 20 | 10:00 - 4:00 PM |
| Sunday, May 21 | 10:00 - 4:00 PM |
| Sunday, May 28 | 10:00 - 4:00 PM |
| Sunday, June 25 | 10:00 - 4:00 PM |

Winnipeg

**LIVING PRAIRIE MUSEUM**
**2795 Ness Avenue Winnipeg, MB R3J 3S4**
**Tel: 204-832-0167 Fax: 204-986-4172 E-mail: prairie@winnipeg.ca**
http://www.winnipeg.ca/livingprairie
www.livingprairie.org
www.friendsoflivingprairie.org