



# PRAIRIE BREEZE

THE LIVING PRAIRIE MUSEUM NEWSLETTER

FALL 2015

## INSIDE THIS ISSUE:

What's New: Museum Equipment	1
Genetic Research at the Living Prairie Museum	2
Local Schools Creating Butterfly Habitat	3
Upcoming Events	4

## FALL INTERPRETIVE CENTRE HOURS

Open Sundays 10-5 pm  
until the end of October

## Fall/Winter Volunteer Opportunities

See p. 4 for details.

Get the latest news here:

**TWITTER**

@LivingPrairie



**facebook**

## What's New: Museum Equipment

### Caeb Mini Baler

We purchased some very useful equipment that will make habitat management a little easier.

The Caeb Mini Baler (Mountainpress MP 550) is a small, versatile round-baler attachment for our BCS. It produces a 20 kg bale every 40 seconds, each wrapped in woven, agricultural netting.



This piece of equipment is an important tool for habitat management. Haying prairie mimics the effects of wildfire or grazing by removing standing vegetation. If this material isn't removed, it builds up annually, making it difficult for new plants to get enough sunlight in spring.

Large farm equipment isn't suitable for small prairie remnants, and the weight of an agricultural tractor can cause compaction. This lightweight, hand-operated baler is a low-impact alternative.

### Cabinet and Cornell Drawers

This was our second summer collecting pollinating insects. With approximately 1500 specimens and counting, we needed some new storage space.

We recently purchased a cabinet and six Cornell drawers. These units are specially made for entomological collections and are very important for the safe storage of our specimens.

The drawers have glass lids for a clear view of the insects within, and the pine frames fit very tightly to limit access to dermestid beetles. Dermestids are museum pests which can very quickly eat through a collection.



We're in the process of moving our specimens from their temporary boxes to the new drawers.

This cabinet will help ensure these specimens are available for study for decades to come.

## Genetic Research at the Living Prairie Museum

The Living Prairie Museum was presented with an interesting opportunity last spring. We were invited to take part in a research project with Dr. Jeffrey Marcus, Associate Professor at the University of Manitoba. He proposed sampling and sequencing the DNA of the arthropods (creatures with a jointed exoskeleton, such as insects and spiders) at the museum to further our knowledge of the species present in the tall grass prairie. At the same, this would allow his university students to learn valuable skills in the lab and field.

Dr. Marcus' research focuses on genetics, including phylogenomics (linking genetics and evolution) and computational biology (modeling), with particular emphasis on the colour patterns of butterfly wings. He is also interested in giving university students hands-on research experience, including collecting specimens, genetic analysis, and species identification.

With much to learn about the genetics of our prairie arthropods, we happily agreed to take part. Many of the organisms in this habitat have been described by their physical features (morphology). More recently, short sequences of DNA, or DNA barcodes, have been used to determine or confirm identity. This approach has helped verify the identifications made by morphology, and in many interesting cases, has found new species or redefined our understanding of the lineage of a species.

Yet, as handy as the standard DNA barcodes are, they are only 650 bases (or "DNA letters") long, meaning that there isn't enough information to make clear species identifications in some cases. Dr. Marcus and the undergraduates in his classes will be building an improved barcode for each specimen from the museum. Each new barcode will be 15,000 bases long. Many more letters will mean much more reliable identifications.

Over the summer of 2015, Dr. Marcus and his

crew of students collected arthropods active during the day and night. Night sampling included the use of a light trap on the observation deck of the museum. Day-active arthropods were collected with aerial nets.

J. Marcus



U of M student Melissa Peters sampling the prairie.

Dr. Marcus estimates about 350 species have been collected, with more becoming clear as the specimens are examined.

The genetic information collected during this project will be shared world-wide. This project is part of Barcode of Life, a global initiative to create a database of DNA barcodes from the eukaryotic life on Earth. Ultimately, the sequences unique to each species will be deposited online in Genbank, a global-use depository of genetic information. In addition, duplicate specimens will be submitted to the growing collection at our museum. We're very excited to be a part of this interesting research, and to have our specimens contribute to this fascinating field of biology.

If you'd like to learn more about the progress of the project, Dr. Marcus will be giving a presentation during our winter speaker series on **February 2nd, 2016**. You can also read about his previous Barcode of Life project through the University of Kentucky here: [http://home.cc.umanitoba.ca/~marcus/Marcus\\_etal\\_2010.pdf](http://home.cc.umanitoba.ca/~marcus/Marcus_etal_2010.pdf)



## Local Schools Creating Butterfly Habitat

This was a great summer to be a butterfly in Winnipeg. We helped five local schools plant prairie flowers that will serve as host plants and nectar sources for a variety of butterfly species.

Our Butterfly Gardening at Schools program is intended to create habitat for butterflies using native flowering species. Many school grounds are areas of low diversity, dominated by lawns and concrete with little refuge for wildlife. Our butterfly gardens provide a small piece of prairie with perennial flowering species adapted to our local conditions. The selected flowers bloom all summer long, provide food for caterpillars, and offer nectar to butterflies. At the same time, these gardens are aesthetically pleasing and create a connection between youth and nature in an urban environment.

We do our best to make sure the gardens are successful. First, we meet with the members of the school that will be involved in establishing and maintaining the garden, usually in early May. We discuss site location, preparation, watering and weeding, and long-term care. We return to the school in late May-early June to educate the students about the garden. This includes a presentation on the flowers they will be planting and the butterflies they'll be attracting. We also emphasize the importance of creating habitat and increasing diversity. We then help the school with planting, providing the flowers and tools, and teaching them about garden care. Finally, we return to the garden twice over the summer while school is out to help with weeding and watering.

Butterfly garden flowers are grown by Prairie Originals, and are specially selected to provide food and shelter for our native butterfly species. Many caterpillars are very specific about what they eat, so their host food plant must be present for them to develop. For example, monarch caterpillars require milkweed leaves,

greater fritillaries require violets, and American painted ladies require pearly everlasting.

### Flowers for the future

Student involvement in the garden is a big part of its success. Early Years students often become the stewards of the garden until they move on to junior high. The students take part in all aspects of garden care, and even help create signage and decorations for the garden. The garden becomes a great teaching tool, while also allowing the students to leave a prairie legacy for future children to enjoy.



A beautiful butterfly garden at R.F. Morrison school. The first photo was taken in early July, the second in mid August.

We were thrilled with the number of schools that took part in our program last summer. It was great to see how teachers, parents, and students can work together to create a home for local wildlife. With proper care, these gardens will provide habitat, education, and enjoyment, year after year.

## THANK YOU!!

We've had very enthusiastic and knowledgeable volunteer seed collectors so far! It's been great to have the extra help. These seeds are an important component of habitat remediation and restoration.



## MUSEUM STAFF

Kyle Lucyk  
Danielle Trudel  
Sarah Semmler  
Eric Melvin



Thank you for receiving your newsletter electronically.

## UPCOMING EVENTS

### Fall/Winter Volunteer Opportunities

#### Seed Collecting Events

Join us on Wednesday evenings for seed collecting in prairie remnants around Winnipeg. You can keep some of the seeds you collect!

Collecting occurs on Wednesdays at 6:00 pm, weather permitting. Be sure to check our website (link below) for dates and locations.

#### Winter Seed Cleaning

Our seed plots can be very productive, so we often need a little help over the winter to clean and weigh the seeds we collect. We will send out notifications and post updates on twitter and facebook when help is needed. Thank you for your assistance!

### Winter Speaker Series

We're getting ready for another great round of speakers. Our series will take place on Tuesday evenings, 7pm, beginning on January 19th.

You can look forward to interesting topics such as bat conservation, DNA barcode research on the prairie, ground squirrel biology, and much more.

More details to come in our winter newsletter. We hope to see you there!



#### LIVING PRAIRIE MUSEUM

2795 Ness Avenue Winnipeg, MB R3J 3S4

Tel: 204-832-0167 Fax: 204-986-4172 E-mail: [prairie@winnipeg.ca](mailto:prairie@winnipeg.ca)

Websites: [www.winnipeg.ca/publicworks/naturalist/livingprairie/](http://www.winnipeg.ca/publicworks/naturalist/livingprairie/)

Twitter: @livingprairie Find us on Facebook