



PRAIRIE BREEZE

THE LIVING PRAIRIE MUSEUM NEWSLETTER

SUMMER 2019

INSIDE THIS ISSUE:

Sheep Grazing Project Complete	1
New Findings Caution Monarch Rearing	2
Cont...	3
Upcoming Events	4

SUMMER INTERPRETIVE CENTRE HOURS

July - August
7 days/week, 10:00 - 5:00

UPCOMING EVENTS

Thursday Theme Days

Monarch Butterfly
Festival

See p. 4

Get the latest news here:

friendsoflivingprairie.org



Sheep Grazing Project Complete

As far as staff can tell, the grazing trial at Living Prairie Museum was a big success.

Grazing has always been a component of prairie ecology. Historically, mammals like elk, pronghorn, horses, and bison played a major role in seed dispersal and the suppression of woody plants. Without these grazers, prairie diversity can suffer, and invasive species introduced by human activity can gain an advantage.

Livestock animals have become an important tool in grassland management. Cows are not a good option in an urban environment, but sheep and goats have been used in other Canadian cities to manage habitat.

We teamed up with Millar Safety and Environmental Services, Prairie Habitats Inc, and a local sheep farmer to bring grazers back to our prairie. We selected two sites that needed extra attention - smooth brome, Kentucky bluegrass, and Canada thistle (actually from Europe) were becoming too problematic for hand pulling. The sites were burned in April to knock back these invasives. After a month and a half of recovery, they were grazed by the sheep for

a double dose of control. We hope to weaken these invasives to allow warm season native species to have a chance to dominate once again.

We'll be monitoring the recovery of these sites, but observations show good results so far. We hope we can include grazers in our management activities again next season.



North site after a week of grazing. The sheep ate most species down to the soil, including our invasive targets.



Just a month later, the site is bouncing back with an abundance of big bluestem.

New Findings Caution Monarch Rearing

A new research paper has caused a stir amongst monarch enthusiasts - raising monarchs in captivity may be harming these beloved insects.

Monarch butterflies are charismatic creatures whose conservation crisis has captured the attention of North Americans for years. With a population decline of almost 80% in the last two decades, the public has played a devoted role in changing that trajectory. Though annual monarch populations are far from stable, there have been improvements since the most devastating census ever taken: In 2013-14, overwintering butterflies in Mexico covered less than 1 hectare, which was in stark contrast to the 18 hectares of the mid 90s. The 2018-19 surveys showed 6 hectares of overwintering monarchs.

Why have monarchs captured the attention of people of all ages and walks of life? It could be due to how easily the caterpillars take to captive existence. We covered captive rearing in our winter issue, but an understanding of terms is important, so here is a brief recap. Captive rearing involves raising an insect in a confined space, often indoors, during its most vulnerable stages (egg to adult). This is intended to protect the insect from the parasites, diseases, and predation that it may encounter in nature. There are two sources of monarchs involved in captive rearing: Wild caught monarchs or those purchased from a commercial butterfly farm.

We have cautioned against purchasing commercial monarchs in the past, but this new paper gives us more reason to shy away from farmed butterflies. Farmed butterflies have already been found to harbour higher than normal parasite loads, as well as other illnesses, that can be spread to the wild population when released. Now, researchers from the University of Chicago have also found that commercial monarchs have difficulty migrating.

Elise Tenger-Trolander was looking for monarchs for her research, so she purchased butterflies from a commercial source. She hoped they would provide a convenient supply for her work and that they would be a good representation of the wild population. Instead, she found that these monarchs had a fundamental difference: They could not properly orient themselves during migration, so could not travel to Mexico for the winter.



This inability to migrate appears to be linked to two factors, **genetics** and **environmental cues**.

Genetics

If we think back to our lessons in basic biology, evolution is descent with modification - the genes that give a living thing a leg-up in life are conserved, while others are lost. Through evolutionary time, monarchs who survived migration passed this ability on to their offspring through their genes. This continues today, as monarchs that are successful migrators pass on their genetic code to the first spring generation annually. When monarchs are commercially raised, they are continuously bred without migration being a component of survival. Without this selective pressure on their genes, the coding becomes altered. The farmed butterfly reproduces whether the migratory genes are intact or not.

New Findings Caution Monarch Rearing cont...

Environmental Cues

The exact mechanisms that assist monarchs in determining departure times and destinations are still being clarified by researchers. It's true that there is genetic coding, but the functioning of that coding is also entangled with environmental cues. These cues include daylight hours, angle of the Sun, and temperature. They can also include the declining quality of milkweed as the season progresses. When monarchs are raised indoors, they do not have access to these natural cues as they develop. It is possible that the lack of these cues alters their ability to interpret seasonal timing, or that their absence inhibits the migratory genes' proper functioning.



The results of this research raise concerns about the role of commercial monarchs in conservation. If few of these insects can actually complete migration, that could mean that well-meaning monarch supporters are releasing duds that contribute very little to the recovery of the species. It could be doing more harm than good; if these butterflies do reproduce, they'll be passing on genes that have been altered by farm conditions that could impact the wild population.

Do these findings also represent the results of captive rearing wild-caught monarchs? This is probably one of the most common activities for

the average monarch enthusiast to get involved in. Unfortunately, this study also found that monarchs kept indoors for less than a week showed an altered ability to migrate.

These findings are important tools for conservation. We can use them to adjust our practices so that our actions have favourable impacts. Here are a combination of recommendations from conservation organizations and researchers:

- 1) Avoid purchasing and releasing large numbers of commercial monarchs for conservation purposes.
- 2) Rear up to 10 wild-caught monarchs per season.
- 3) Keep monarchs outdoors. You can use mesh covers for plants, or construct an outdoor enclosure.
- 4) Feed caterpillars on rooted milkweed when possible. If feeding leaf clippings, rinse well.
- 5) Release monarchs in the same location they were found when possible.
- 6) Do not take monarchs indoors after early July. These are likely part of the migratory generation that greatly require environmental cues.
- 7) Clean enclosures between uses with a 10% bleach solution. Rinse well.
- 8) Plant lots of native milkweed!

More information here:

<https://www.theatlantic.com/science/archive/2019/06/hand-reared-monarch-butterflies-dont-migrate/592423/>

<https://monarchwatch.org/blog/2019/07/09/tagging-wild-and-reared-monarchs-best-practices/>

Thank You



If funding allows, the Friends Board of Directors would be interested in supporting a sheep grazing project at LPM next season! Thank you for encouraging innovative approaches to habitat conservation.

MUSEUM STAFF

Sarah Semmler
Lois Grieger
Kelly Ferrand
Josh Pearlman
Cam Bush



Thank you for receiving your newsletter electronically.

UPCOMING EVENTS

Monarch Butterfly Festival

Join us for the Living Prairie Museum's 13th annual Monarch Butterfly Festival on **Sunday, July 21st**, 12:00 to 4:00 PM. This event takes place rain or shine and admission is free.

This all-ages festival has many activities to enjoy. Presentations by local scientists, storytelling, displays of live monarchs, crafts, guided hikes, a native prairie plant sale with Prairie Flora and more!

Receive one free milkweed per family while quantities last.

Thursday Theme Days

Free, family Theme Days take place July 11th to August 22nd, 10:00 to 11:00 AM. Activities include a presentation on a prairie topic followed by an activity. Our one-hour programs are best suited for ages 4 - 11. Please dress for the conditions!

Registration is available two weeks prior to each Theme Day, but Friends of the Living Prairie Museum members may register at any time. Registration is limited to families - child care groups may book an education program by appointment.

July 11th - Toothy Grins

July 18th - Four Feet Under

July 25th - Brushing Blooms

August 1st - Bountiful Bison

August 8th - Paws and Claws

August 15th - Who Grows There?!

August 22nd - The Ants Go Marching

Full descriptions of each session can be found on the Living Prairie Museum and Friends of the Living Prairie Museum websites.

Please call the museum to register!



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