PRAIRIE BREEZE

THE LIVING PRAIRIE MUSEUM NEWSLETTER FALL 2018

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Migration Isn't Just for the Birds

As the days get shorter, temperatures drop, and food becomes scarce, animals of many kinds begin long journeys to their winter ranges. We're familiar with the travels of a variety of birds, from tiny hummingbirds to grand whooping cranes. We're also familiar with the multigenerational route of the monarch butterfly from Mexico to Canada. What other insects make seasonal journeys to new locations?

The Common Green Darner, *Anax junius*, is an impressive species of dragonfly in the darner family (Aeshnidae). Dragonflies in this family are characterized by long, narrow abdomens (often called tails) that remind observers of darning needles. They are some of the largest dragonflies in North America, with both adults and nymphs being formidable hunters. You might see these big dragons on the sides of buildings, or hanging tail-down from the underside of vegetation.

Common Green Darners are usually easy to identify because of their unique colour. Their thorax, the body segment after the head where the wings and legs are attached, is brilliant green. They have large wings with a golden hue. Their abdomen has a continuous dark line along the top (dorsally), and can range from reddish to grey. The colour variation is primarily the result of age and gender. Young adults (teneral, or recently emerged) have a reddish abdomen. In males, the abdomens shift from red to purple to bright blue as they mature. The females shift from red to brownish purple, or to grey-green. However, colour may also be related to temperature. When temperatures are low, male abdomens can appear closer to purple, becoming more vibrantly blue as the day warms.

Photo by Sarah Semmler

This species has both resident and migrant populations, but the individuals we see in Manitoba are migrants, likely from the southern U.S. I use "likely" here because the

Migration Isn't Just for the Birds (cont.)

exact routes taken by the migratory populations are still being worked put by researchers. An average adult may fly 900 km during their migration, but some may go as far as 3000 km.

The number of kilometers travelled in a day can vary. Some days are devoted to gaining as much distance as possible, while others are important stopovers for feeding. Days spent feeding are important for slowing the depletion of energy stores, especially when daily trips can be well over 100 km. Despite having 20% body fat before migration, dragonflies will have little fat reserves upon arrival.

Adults arrive in Manitoba quite early in the season. They gather around marshes and calm pools of water to mate in June. Eggs are laid in plant tissue below the water surface. Nymphs, the immature aquatic life stage of the dragonflies, may overwinter where temperatures are milder in Canada, such as Quebec and Ontario. They develop into adults in midsummer, reproduce, and lay eggs that become overwintering nymphs. In areas where nymphs cannot overwinter, such as Manitoba, the nymphs quickly develop into adults. They spend their summer feeding in preparation for their migration south. To complicate things further, both of these strategies may overlap in certain parts of its range.

Common Green Darner nymph. Photo by Twan Leenders.

Migratory Common Green Darners leave the province in fall to begin their long journey south. They may travel alone, or in large swarms that can include other migratory dragonfly species. These swarms may be the targets of predatory birds. Merlins, for example, have been observed swooping in and snatching dragonflies from the swarm.

Merlin with Common Green Darner prey. Photo by Carl Woo.

There is still work to be done before the migration of Common Green Darners is fully understood. As transmitters become smaller, it may be possible to track these insects over greater distances. Researchers are also looking at genetic markers and stable isotope analysis to better understand the movement of populations.

Fortunately, you can help researchers at home. You can record your observations on Dragonfly Pond Watch, either online or through a smartphone app. Your sightings can help solve the mysteries of this migratory dragon.

References:
Bonta, M. 2012. The migration of common green darners.
May, M.L. 2012. A critical overview of progress in studies of migration of dragonflies (Odonata: Anisoptera), with emphasis on North America.
May, M.L. and J.H. Matthews. 2010. Migration in Odonata: as case study of *Anax junius*. In: Dragonflies and damselflies: model organisms for ecological and evolutionary research.

Prairie Horticulture at the Museum

As the summer turns to fall here at the museum, we have shifted our focus from growing and weeding to collecting precious native seeds and putting our display gardens to bed for the season. That's right; along with 32 acres of tall grass prairie, we also maintain several garden beds that serve as both an opportunity for us to flex our gardener muscles and showcase the unique biology and brilliant horticultural value of native prairie plants in a garden setting. Additionally, the gardens are a valuable educational tool that allows us to highlight some really fascinating plant species that can be hard to spot out on the prairie.

Our south facing beds between the interpretive centre and Ness Avenue were installed in 2016 with pollinators and learning in mind. Plants were chosen to ensure that flowering times were staggered throughout the growing season to keep the pollinators well fed. Planting high diversity also allowed us to experiment with what plants are best suited to different locations within these beds. For example, crocus thrives in well drained areas and has succeeded best tucked just underneath the awning in a sandy patch of soil. Now a little more mature, we are working to thin out some of the more voracious spreaders, like wild bergamot and giant hyssop, to ensure the full diversity remains represented!

New in 2018 are two renovated gardens at the east entrance of the interpretive centre. These beds had come to mimic the wild and tightly intermingled growth of a natural prairie mixed with non-native plants, and required a trained eye to pick out the variety of species within them. The new changes are an opportunity to familiarize people with lesser known species and to inspire greater native plant diversity in conventional garden settings.

One of the new gardens features native prairie grasses. Though many folks are comfortable identifying Big and Little Bluestem grasses, fewer are familiar with the brightly coloured flowers of Leiberg's panic grass, the striking, zebra-striped seed awns of speargrass, or the structural, early season flower spikes of prairie junegrass. Once fully established, our grass bed will showcase the diversity in form, colour, flower, and seed structure of the eleven stunning native grass species found on our site.

2016 vs. 2018, south pollinator garden

Similarly, there are a great number of unsung flowering forbs that are well suited to a home garden. These can be easily overlooked on our prairie site because they are often tough to spot due to their low growth habit, brief flowering time or their sparse distribution on site. Many of these have fascinating biology that we wanted to more readily highlight for museum visitors by growing them close to the interpretive centre. Examples include the semi –parasitic nature of the vibrant, yellow hoary puccoon; the deceptive pollination tactics of the yellow lady slipper; the fleshy, edible seed pods of ground plum or the insect dependent seed dispersal tactics of the Seneca snakeroot!

As they are still young, these two newly renovated beds have not reached their full potential, so as we soon cover them with some straw mulch for winter we look forward to a brilliant display in the spring!

Thank You

Our fall seed collecting was a great success. We included our Seed Plots in the list of locations and are extremely happy with the results! We had a great harvest that will be perfect for restorations in 2019.

Know a Teacher?

Public hours are over, but we're still busy educating kids about nature. Nature Comes to You brings the prairie to the classroom. See LPMs website for available programs.

MUSEUM STAFF

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Thank you for receiving your newsletter electronically.

UPCOMING EVENTS

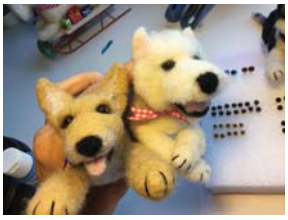
Fundraiser Felting Class for Manitoba Mutts Dog Rescue

Create a felted version of your dog! Space is extremely limited. **Registration fees are required in advance.**

Please schedule an appointment with museum staff to make your payment. Exact change in cash, or make a cheque payable to Judy Zeke.

Saturday, December 8th. 1:00 to 5:30 PM. $55 fee includes all materials needed to create your pup, including glass eyes and noses.

Wildlife kits will also be available for purchase for $10. Needles for wildlife kits are available for an extra fee.



Winter Speaker Series

Get ready for another season of interesting speakers! We're busy finalizing dates for our presenters.

The Winter Speaker Series takes place every other Tuesday in January to March. Our five sessions cover topics relevant to Manitoba. Sessions usually fill up, so keep an eye on both the Museum and Friends websites for updates. We'll also send a notice to the membership once all of our speakers are confirmed.

The Up Close with Owls presentation (with a live owl) was extremely popular, so we'll be working to have Jim Duncan return. We also have a session on mushrooms, white-tailed deer, and rare plants!

Dates:
Jan 15 and 29, Feb 12 and 26, March 12.

FRIENDS OF THE LIVING PRAIRIE MUSEUM

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