PRAIRIE BREEZE

THE LIVING PRAIRIE MUSEUM NEWSLETTER WINTER 2017

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Conservation and Furry Friends

The Living Prairie Museum is a great place for exercising your pet. But, our prairie is also endangered habitat, so home to rare, unique species that require our protection. Following some simple rules when enjoying the preserve can keep you, your pup, and the habitat happy and healthy.

1) Keep your dog on-leash.
LPM is a City of Winnipeg nature park, so keeping a dog on-leash in our parks is law, unless a park is designated as an off-leash area. Sometimes we forget why these laws are in place in natural areas. Our nature parks are examples of high-quality habitat. One of the ways to keep that habitat in excellent condition is to restrict the impact of pets on the soil, plants, and wildlife. Off-leash dogs are a serious threat to ground-nesting birds, small mammals, newborn animals, and rare plants. Off-leash dogs are also a threat to park patrons with phobias or prior traumas. It's important that our parks are a safe space for all members of the public.

2) Clean-up pet waste.
Piles of poop are no fun. Feces are not only unsightly and terrible to step in, but they can carry parasites or diseases that can spread to other animals. Feces may also hold medications prescribed to your pet that should not be present in our prairie. Waste bins are available in the museum and Prairie View Rd. parking lots.

3) Stay on the designated paths.
LPM is home to ~2 km of trail available for use from dawn to dusk. By staying on these trails, you limit soil compaction, advancement of invasive weeds, damaging sensitive plants, and harm to wildlife. Creating new trails means the loss of habitat, as well as difficult restorations that may take years to complete. If you're unsure of the trail system, maps are available in the guides at the entrance to the museum.

These three simple rules make a huge difference, and greatly assist museum staff in conserving this extremely rare habitat.

Great locations for off-leash exercise in Winnipeg:
http://www.winnipeg.ca/publicworks/parksOpenSpace/OffLeashDogParks/default.stm

Responsible Pet Ownership By-law:
http://clkapps.winnipeg.ca/dmis/docext/viewdoc.asp?documenttypeid=1&docid=6054

The Frozen Water of Life

"A lot of people like snow. I find it an unnecessary freezing of water. – Carl Reiner

Love it or hate it - our sudden dump of snow has transformed the prairie. At first glance it looks like a desolate blanket of white – or is it? Water is life – even when it is frozen.

Snowpack is made of air, impurities, and water (ice, liquid, and vapor). Air trapped in the snow helps it act as a thermal blanket. Liquid water is the great hydrator, dissolver, and leveler. Water vapour, although invisible, is no less important, forming life-saving buffers between snow layers.

Depending on where you measure temperature in snowpack, the results will differ. If there is 15 cm (6 inches) of snow, the temperature at the soil line is around 0°C (32°F) even though it may be -40°C/F above. Dry, fluffy snow has a higher thermal index and provides the best insulation. On the surface, snow reflects sunlight, protecting the snowpack from melting. This albedo effect (reflection of solar energy) counter-intuitively warms deeper layers.

Warming comes from more than just the Sun. Energy released by decomposers in the soil also provide heat. These pioneering colonies are the unsung heroes of the food chain, transforming detritus (dead or eroded materials) into nutrients, completing the cycle of life and death. Amazingly, some bacteria and fungi (snow mold) thrive in these snowy conditions. They utilize oxygen, soil nitrogen, and produce carbon dioxide (CO_2). Ever wonder what those tiny chimneys in the snow are venting? Water vapor released by rotting matter & respiration below sublimates to form granular-sugar-like snow - good for tunneling and forming air exchange vents.

The layers under the crust are known as the subnivean zone (sub = below + nivea = snow). The subnivean zone is the base camp for small mammals (voles, mice, shrews, and red squirrels). They are busy denning, tunneling, eating, and being eaten. Voles are the most populous species and are very vulnerable to predation. Only 10% will survive to spring. The rodents eat seeds, plants, insect eggs and larvae, as well as the nuts they've

The Frozen Water of Life (cont.)

cached away. As the snow melts, it reveals their labyrinths in the thatch – evidence of their hyperactive winter.

The species present in the snow change as we travel higher in the subnivean zone. Larger mammals like prairie chicken, grouse, and rabbits take refuge during storms and find rest from predation. Fox, weasel, and other predators don't live in this zone, but their acute hearing enables them to dive into this layer for a meal. Porcupines, wolverines, and bears dig dens in snow, rest between foraging, and raise their young.

Diving in for prey. Photo: Steve Hinch

The surface of the snowpack is known as the supranivean zone (supra = above) which is home to its own variety of wildlife. The compacted, icy snow in this area can make survival a challenge. For the deer, fox, coyote, weasels, and rabbits, ideal snow conditions are a matter of perspective. Compacted snow is hard for burrowers but better for rabbits who can reach higher shrubs, or small mammals like mice that can easily travel along the surface. Deer can punch through the ice with their sharp hooves to get to the plants below. However, breaking through the icy crust has its risks. Deer that cut their legs on the sharp edges can become vulnerable to infection.

Some living things avoid the snow altogether. For some amphibians, the best place to endure the winter is the mud below the snow. This means that the animal might freeze solid, so certain adaptations to these conditions exist. Some frogs, for example, pump glycerol and sorbitol into their cells to prevent rupture from the formation of ice crystals. They just thaw out in spring.

Snow is certainly more than just frozen water. Perspective is a useful tool when considering the interconnected, amazing life of the snowy prairie.

Do you have a classroom or day care that would like to learn more about wildlife in winter? The Living Prairie Museum offers Nature Comes to You: presentations and activities at your school.

Animals in Winter (preschool, kindergarten) - Learn about hibernation, migration, and adaptation through pictures and sounds.

***NEW* Adapting to Winter on the Tall Grass Prairie** (early years) - Snow layers, behavioural and structural adaptations, and climate change.

Thank you!

We had another great fall collecting seed. Our volunteers hand-collected prairie seeds from three prairie remnants in Winnipeg. These seeds allow museum staff to propagate new plants for future seed production and restorations.

Wishing you the best in 2017

2016 was a busy year for both the Friends and LPM staff. We're excited for what 2017 will bring: new Officers in the Friends, new exhibits, and more opportunities to enjoy the tall grass prairie.

MUSEUM STAFF

Sarah Semmler
Lois Grieger

Thank you for receiving your newsletter electronically.

UPCOMING EVENTS

Snowshoe Sundays

Join us for free, family snowshoeing!* No experience required, and we provide the snowshoes.

Our first event will take place Sunday, January 8th, then continue on the first and last Sunday of the month from January to March, weather permitting, 10 AM to 4 PM.

Snowshoes are lent out on a first come, first served basis.

Would you like to volunteer? Please call 204-832-0167

*Due to a limited number of snowshoes, we cannot accommodate day-cares, schools groups etc. Please call LPM to book a program!

Friends of the LPM Winter Speaker Series

Join us on Tuesdays, 7-8:30 PM, for another great season of fascinating presentations.

January 24th Laura Reeves - Making the most of your edible backyard.

February 7th David Daniels - Standing Medicine People hidden in the tall grass prairie.

February 21st Dr. James Roth - Food web interactions at the edge of the Arctic: Foxes and lemmings in northern Manitoba.

March 7th Dr. Emily McKinnon - Snow Buntings without snow: The costs of being a cold-climate specialist in a warming world.

March 21st - Endangered and threatened butterflies in Manitoba.

Members may register at any time. Non-members may call two weeks before the event to register.

Donations gladly accepted! More details on friendsoflivingprairie.org

Winnipeg

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