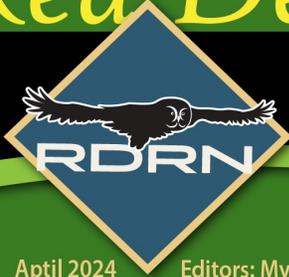


The Red Deer River Naturalist



April 2024

Editors: Myrna Pearman & Susan van der Hoek



Bee a Community Scientist: Understanding Plant-Pollinator Interactions in Alberta

Justine Doll is a master's student at the University of Calgary studying the impacts of urbanization on native plant-pollinator interactions and the benefits of community focused citizen science programs. Justine runs the Calgary Pollinators Project on iNaturalist and hosts community pollinator walks during the spring and summer to help teach people about the importance of pollinators.



Tory Blanchard (right) is Ojibway from Batchewana First Nation. After receiving an undergraduate degree from the University of Toronto, Tory completed an Honours Bachelor of Arts and is now pursuing a Master's degree in Ecology from the University of Calgary. Tory is interested in studying plant ecology and pollinator relationships, and is working on projects that involve collaboration with Indigenous communities.



All photos provided by
Tory Blanchard & Justine Doll

All are
Welcome



▶ 25

April 2024
7:00 PM
Kerry Wood
Nature
Centre
Red Deer

SEASONAL SIGHTS AND SOUNDS OF ALBERTA: EXTREME HIBERNATING, TRUFFLE - HUNTING JUMPING MICE

By Dr. Sally Stuart

With increasing hours of daylight (photoperiod) and the transition to spring, the first migrant birds have started returning to Alberta. Meanwhile other mammalian endotherms are stirring beneath the snow.

Some of the last mammals to emerge from their winter slumber are the jumping mice. These “extreme” hibernators are a fascinating group of creatures! Jumping mice are rodents in the Family *Dipodidae*, which also contains birch mice and jerboas. Their subfamily, *Zapodinae*, is made up of five species of small rodents, four of which are found in North America. There are only two species in Alberta, the Meadow Jumping Mouse (*Zapus hudsonius*) and the Western Jumping Mouse (*Zapus princeps*).

It is difficult to differentiate between these two petite species, although the Meadow Jumping Mouse weighs about 18 g while the Western Jumping Mouse is slightly heavier at about 28 g (*Alberta Mammals: An Atlas and Guide*).

The most remarkable anatomical characteristic of these mammals is their saltatorial (modified for jumping) hind feet, which they usually use for hopping. Because they are both shy and nocturnal, they are seldom encountered. However, when startled, they can bound away quickly thanks to their saltatorial feet. The Woodland Jumping Mouse (not found in Alberta) can leap an astonishing 3 m! These mammals also have long tails (the Meadow is shorter than the Western), which help with balance.

Jumping mice are usually found in moist habitats, not necessarily because of their desire to be close to water but probably due to the rapid growth of spring vegetation, ideal for concealment. Both species are excellent swimmers and apparently can dive for periods up to one minute.

Like many rodents, jumping mice have a pair of open-rooted yellow/orange upper incisors that continue to grow throughout their lives. The enamel is stained due to iron-containing pigments. Their incisors also have a distinct groove, which some scientists (e.g., David Macdonald, Editor of *The Encyclopedia of Mammals*) hypothesize helps to improve the cutting abilities as well as bolster tooth strength.

Emerging from hibernation in mid- to late May, jumping mice have a brief window of about four months in which to breed and prepare for the next hibernation. Their immediate survival depends on eating. Their diet consists mainly of seeds (especially grass), insects and fruit, although they will also consume subterranean fungi.

Their consumption of fungi was first discovered by Eleanor Dowding in 1955. She observed that Deer Mice and other rodents (including jumping mice) ate copious quantities of fungi in the genus *Endogone*. She detected the spores of this fungi in their digestive tracts, even though the fungi have not yet been recorded in the province. Many *Endogone* fungi species have a mutually beneficial relationship with trees: the trees obtain minerals such as phosphate ions from the mycorrhiza while the trees supply the fungi with organic material (e.g., carbon and glucose). Since jumping mice have a keen sense of smell, they

are able to locate the fetid smelling sporocarps. These small mammals must play a key role in the ecology of forests, eating and then distributing vital fungal spores via their feces.

Longer photoperiods suppress hibernation and stimulate reproduction. A brief respite of about four months is all the time the females have to produce one or perhaps two litters of four to seven young. They then prepare again for hibernation, often as early as October. For about two weeks prior to this prolonged period of dormancy, they must consume vast amounts of food. It is stored in the form of adipose tissue, usually subdermal and abdominal, reaching weights of up to 35 g. Ethan Brem et al. (2021) found that the short photoperiod induces this pre-hibernation fattening. The fat acts as an energy reserve throughout the long months of hibernation. Many individuals perish due to insufficient fat reserves, which is not surprising considering that (depending on location and weather) they may spend up to 10 months of the year in hibernation! The above authors also determined that cold ambient temperatures promote entry into the prolonged sleep of hibernation.

Jumping mice either make or locate small dry subterranean shelters, up to 1 m underground. Lining the chamber with grass and leaves, they then seal the entrance and curl up into a tight compact ball, encircled by their tails. They then enter a state of torpor by reducing their body temperature to just above freezing and dropping their heart rate, respiration rate and metabolic activity. They apparently do not store food in their hibernation burrows and do not feed at all during this time, although they may wake up periodically to urinate.

It is difficult to determine the status of jumping mice on the landscape. In the past (before our cats were restricted to an indoor life), I would encounter the occasional dead body. Distribution maps from *Alberta Mammals: An Atlas and Guide* indicate that both species are common, with the Meadow Jumping Mouse occurring in the northern part of the province while the Western Jumping Mouse is found in the south. However, observations from iNaturalist show only 26 records for Alberta, many of which were found dead.

These elusive creatures tell us there is much to learn about the nocturnal world, small mammals and extreme hibernation. However, their relationship with fungi is probably the most intriguing. After all, fungi are essential to all aspects of life on this planet.

**RDRN Social Media: 1818 Facebook Members;
315 X Followers; 464 Instagram Followers**



*Thank you David!
We would like to
thank David Russell
(left) for (still!) gener-
ously donating one of
his beautiful wooden,
hand-turned bowls to
each monthly speaker.
Much appreciated!*

BIRD FOCUS OUTINGS WITH CHRIS OLSEN

Outings start at 10:00 AM unless otherwise noted and usually finish up by about 1:00 PM. Directions, maps and travel details are posted on the RDRN website. Be sure to check the website for schedule changes or destination updates. We're an inclusive group that learns from each other, and birders of all skill levels are welcome!

April 6—McKenzie Trails Park to Riverbend – meet in the main parking lot at Mackenzie (shuttle as required)

April 13—Gaetz Lakes Sanctuary – meet in the Nature Centre

April 20—Maskepetoon Park – meet in the playground parking lot (Kerry Wood Drive/Oak Drive)

April 27—Wainwright Sharp-tailed Grouse Watch – Full but contact Chris if you would like to be put on a wait list

April 27-28—Tofield Snow Goose Festival – Advance registration required for tours – see the Tofield website

May 4—Heritage Ranch – meet in the first parking lot

May 11— Migratory Bird Day! Raven Brood Trout Station – meet at the picnic shelter

Use the *Alberta Discover Guide*, the Birding Trails Alberta website or any mapping app. Please car pool if possible. Wear sturdy hiking footwear (bring ice cleats if required), carry water, wear layers, and bring a snack, rain gear, a hat, insect repellent, sunscreen and bear spray. Contact Chris re: medical issues or if you have questions (780-581-4430).

NATURE CENTRAL UPDATE WITH CATHY STEELE

A total of 10 participants enjoyed an educational and interesting mild spring walk on March 16 through the Open Creek Natural Area, located 25 km west of Rimbey. Most of us learned new terminology about the patterned peatlands that we walked through: linear strings and farks form a ribbed pattern from water that flows through the gently sloping terrain. It was interesting to see those features come to life as we hiked northwards toward the creek. This area was filled with tamarack (larch) trees and is best accessed during the winter when the ground and wet pools are frozen.

Once we reached Open Creek, we could see the difference between the larch-dominated forest to the south and the mixed-wood forest to the north. We walked along the winding frozen creek for about one km and then followed an old trail back to our vehicles.

We enjoyed several stops along the way to listen to birds and to take a closer look at the mosses, lichen and plants. Labrador Tea poked up from the snow in abundance just south of the creek. Another phenomenon that caught our attention were several areas that looked like "dirty" snow. Upon closer inspection, we could see that

the "dirt" was actually snow fleas! These tiny, wingless insects are usually consuming leaf litter on the forest floor but often appear on the snow surface as they search for mold and other decomposing matter to consume.



Thank you to Ed Karpuk, Tony Blake and Myrna Pearman for sharing information about the landforms, mosses, lichen and more.

We encourage everyone to visit protected areas! Check out our website for details naturecentral.org. We also invite stories and images from anyone who visits these areas epc.rdrn.nature@gmail.com. Follow Nature Central on Facebook and watch for upcoming events on naturecentral.org and rdn.ca.



FLOWER FOCUS WITH JIM ROBERTSON

Wednesday, April 17
10:00 am @ KWNC

Wildflowers of the Belly River area of Waterton Lakes National Park



IN THE ALBERTA WILDERNESS! BY DON AUTEN

Most of my trail cam photos of skunks are captured during spring when there is still plenty of snow, before the landscape starts to green up. The warmer weather draws skunks out of their winter dens, but more importantly, their breeding season commences in March.

Skunks are polygamous, so the males are now actively looking for females. After mating, the males settle into a quieter summer routine of foraging for food while the females give birth and raise their young.



DID YOU KNOW: BY SUSAN VAN DER HOEK

There are 10 species of grouse in North America. *Photos from left, top (missing—Lesser Prairie Chicken). Sage Grouse from Wyoming, Rock Ptarmigan from Svalbard, Willow Ptarmigan from Alaska. Dusky Grouse (Dendragapus obscurus) lives in dense rocky mountain forests; Spruce Grouse (Canachites canadensis), lives in conifer-dominated forests but will disperse into deciduous forests in the mountains, boreal forest and parklands; Ruffed Grouse (Bonasa umbellus), lives in mixed and poplar forests (it is the most widely distributed game bird in North America); Sharp-tailed Grouse (Pedioecetes phasianellus), lives in open habitats, mostly grasslands, grassy meadows and open pastures; Greater Sage Grouse (Centrocercus urophasianus), endangered, found only in sagebrush flats in southeastern Alberta; Greater Prairie Chicken (Tymppanuchus cupido) has been extirpated in Alberta since the early 1960s, lives in brushy areas across the U.S. Great Plains; Lesser Prairie Chicken (Tymppanuchus pallidicinctus), rare, now found only in the southern Great Plains; Rock Ptarmigan (Lagopus mutus) lives in barren rocky tundra and is rare in northern Alberta; Willow Ptarmigan (Lagopus lagopus), winters in open forests in northern Alberta and found all year in shrub willow meadows high in the northern Rockies; and White-tailed Ptarmigan (Lagopus leucurus) lives in rocky areas dominated by willow and alder thickets at or above tree-line. Will move to lower elevations in the winter.*



The Red Deer River Naturalists, the first natural history organization to be established in Alberta, traces its roots to the Northwest Entomological Society, founded in 1898. The objectives of the society are to foster an increased knowledge, understanding and appreciation of natural history, and to support conservation measures dealing with our environment, wildlife and natural resources.

Annual membership is \$15.00 for individuals and \$20.00 for families.

Regular meetings are held at 7:00 PM on the fourth Thursday of most months at Kerry Wood Nature Centre. Non-members are welcome.

Members are encouraged to contribute to this newsletter. The deadline is the last Friday of the month.

Box 785 Red Deer, AB T4N 5H2 Phone/Fax: 403.347.8200

rdn.nature@gmail.com
www.rdrn.ca
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