



The Red Deer River Naturalist

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MARCH, 2019

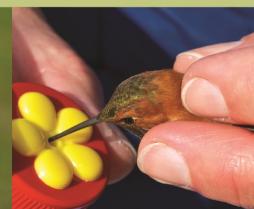
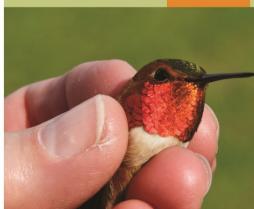
Banding Hummingbirds

28

March 2019

7:30 pm
Kerry Wood
Nature
Centre
Red Deer

Susanne Maidment will be sharing an evening with us on the natural history of hummingbirds and how to band them.



All photos by Susanne Maidment

General Meeting/
Refreshments 7:30 PM
Speaker 8:00 PM

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SEASONAL SIGHTS AND SOUNDS OF ALBERTA: HAIR, HARES AND THE WHITE-TAILED JACKRABBIT

By Dr. Sally Stuart

It was November 28th, fresh snow had fallen and the ground outside my office at Red Deer College displayed a highway of footprints belonging to *Lepus townsendii*, the White-tailed Jackrabbit. Everyone commented on the large numbers of these white rabbits on the campus. My mind drifts back to Cardiff University, where at the age of 20, I am attentively listening to the Ecology Professor describe the classic example of predator-prey life cycles. The slide shows a wintry Canadian landscape, with a lynx pursuing a Snowshoe Hare.

The White-tailed Jackrabbit belongs to the family *Leporidae* (which includes rabbits and hares), but it is actually a hare belonging to the genus *Lepus*. Members of this family look like athletes built for speed, with long hind limbs and huge flexible ears which are exceptionally good at detecting predators.

One of the intriguing attributes of the White-tailed Jackrabbit is its hair, which changes colour according to the seasons. Hair is, of course, an obvious characteristic of mammals. It is a complicated structure with similarities to feathers. However, hair and feathers evolved independently millions of years ago. It looks as if an early ancestor of land vertebrates diverged into two branches. One branch led to mammals with skin that is rich in various glands and hair, the other gave rise to reptiles with feathers and scales.

In order for hair to develop, the outer layer of skin—the epidermis—requires a signal from the underlying dermis which causes the epidermis to sink down to form a hair follicle. Within the follicle, hair is formed from the epithelial cells of the epidermis; the hair shaft which we see consists of dead cells.

Specific cells called melanocytes produce the pigment melanin which gives hair its colour; it also contains chemicals such as metals which are deposited from the environment. Fascinatingly, we now know that it also accumulates some hormones such as cortisol and may thus be used to measure long term stress!

Moult of hair is not unusual, because exposed hair is subject to wear and tear and ordinarily has a cycle of growth, rest, shedding and replacement. What is unusual is that hair can actually change

colour with the moult. White-tailed Jackrabbits moult in the fall from brown to white, then back again in spring from white to brown. A similar colour change is found in over 20 species of mammals and birds, all found in the northern hemisphere.

The obvious adaptive advantage of moulting is to provide camouflage. It may also play a minor role in temperature regulation as the structure

of white hair is different from brown: the central cells of white hair appear to contain lots of air which may aid insulation.

What determines the change of colour? The mechanisms—which vary from species to species—are complex, and despite much research, not well understood. However, the main factor appears to be photoperiod (daylight length). Specialized photosensitive cells in the retina of the eye, called ganglion cells, respond to light, sending a message to the central circadian clock area of the brain. This clock works on a 24-hour cycle, regulating physiological processes and communicating with the melatonin-producing pineal gland, which is also situated in the brain. Melatonin appears to be produced at a rate which is inversely proportional to day length. This in turn controls the pituitary gland, which regulates production of prolactin. Prolactin is the hormone that influences hair growth, development and colour. Higher levels of prolactin result in more pigmentation. Temperature does not appear to control the moult, but it may influence the process: research on Snowshoe Hares has found that snow and cold spring temperatures can slow the moult but cannot prevent it. Similarly, in the fall, it can accelerate hair growth once started.

If photoperiod determines timing of the moult, what about the future when climate change might cause changes in the timing and duration of the snow cover? Will the result be many more examples of “mismatch” camouflage? Will these changing conditions make the White-tailed Jackrabbit and similar species more vulnerable to predation?

It's late February and I find myself searching anxiously for signs of the White-tailed Jackrabbit, eager to observe the changing of its pelt from white to brown.



Photo by Kathryn Kopciuk



MEMBER'S PHOTOS



DID YOU KNOW?

By Susan van der Hoek

A group of foxes is called a **SKULK**. The Oxford English Dictionary defines "skulk" as a "number, company, or gathering of persons or animals given to skulking." Skulk as a verb, while a synonym of "lurk," may also mean "to move in a stealthy or sneaking fashion, so as to escape notice."



Top: Rick Tallas shared these images of a Barred Owl, and a Porcupine. Angela MacLean submitted the image below of a (quite bald) House Mouse eating beneath her bird feeder.



THE RED DEER RIVER NATURALISTS A 120-YEAR ROLLING HISTORY

Rod Trentham will share the history of RDRN at the monthly meeting of the Central Alberta Historical Society.



Red Deer Museum and Art Gallery

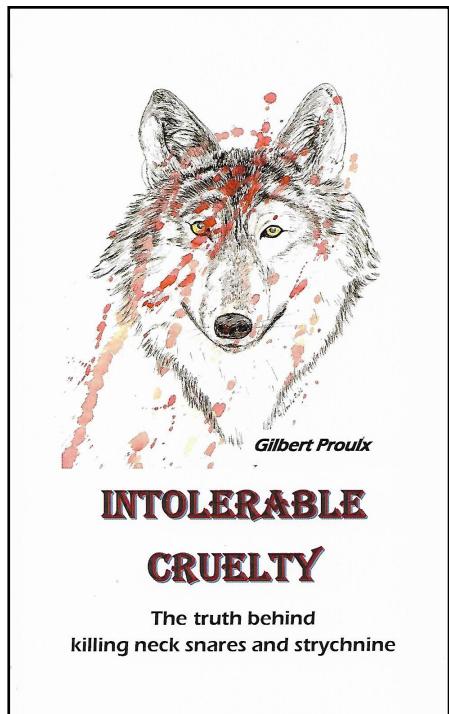
Wednesday March 20 . 7:00 PM



BIRD FOCUS

By Keith Kline

RDRN is asking for bird watchers to email their bird sightings within the area covered by the Central Alberta Birding Trail map to RDRN at rdrn.nature@gmail.com. Results are posted at <https://birdingtrailsalberta.com/central-alberta-bird-sightings-2019/>. The Central Alberta Birding Trail map can be downloaded from the RDRN website. The RDRN website also has the downloadable Central Alberta bird checklist.

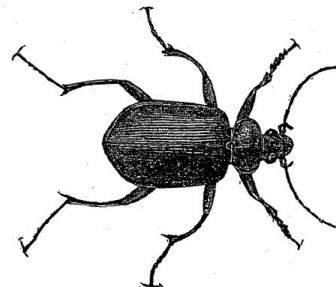


Neck snares and strychnine both cause incredible suffering. This book by Dr. Gilbert Proulx, outlines all the reasons why both these practices should be banned. This book is against cruelty. A must-read for all who care about how we treat wildlife.

Available from Alpha Wildlife Management: alphawildlife.ca/product/intolerable-cruelty-the-truth-behind-killing-neck-snares-and-strychnine/

INSECT FOCUS

Wednesdays • KWNC
10:00 AM — 12:00 PM



March 20: Diptera and Coleoptera Review

April 17: Hymenoptera

May 15: Review



It's a Thongbird!

WAINWRIGHT WILDLIFE SOCIETY PRESENTS ANNUAL SHARP-TAILED GROUSE WATCH!!

Tours run mid-April to mid-May • Cost: \$25/Adult and \$15/Student
Laurence Hoover: 780-842-2399 ljhoover@hotmail.com
Sheldon Frissell: 780-806-3668 frissell4@gmail.com

The Red Deer River Naturalists, the first natural history organization to be established in Alberta, was incorporated as a society in 1906. 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 7:30 p.m. on the fourth Thursday of most months at the Kerry Wood Nature Centre, 6300-45 Ave., Red Deer, AB. Non-members are welcome.

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

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<http://wearenaturalwise.blogspot.com>

Our thanks to NOVA for underwriting the cost of newsletter printing

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**Cover
Poster by
Doug
Pederson**

Photos, unless otherwise noted,
by Myrna Pearman