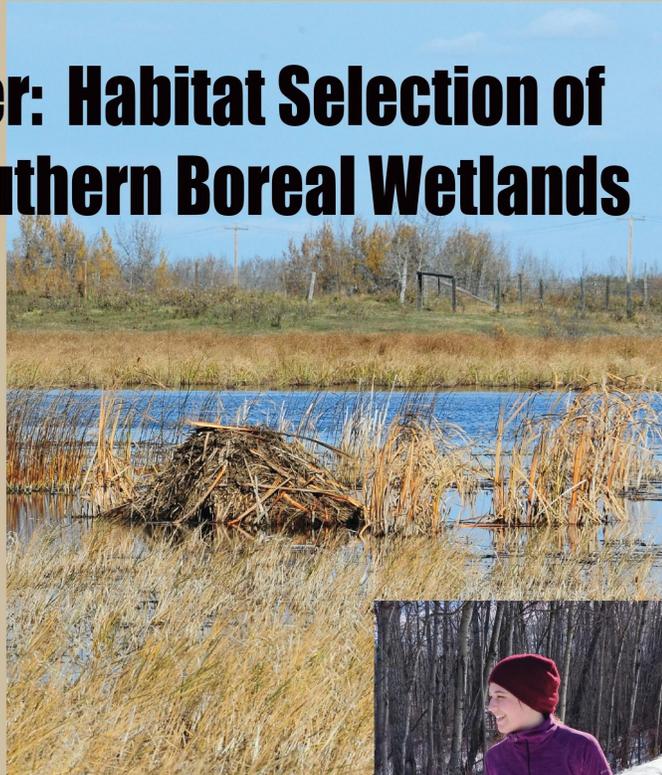


Home for the Winter: Habitat Selection of Muskrats in Southern Boreal Wetlands

BRIANNA LORENTZ

**Thursday,
November 24
7:30 PM
Kerry Wood
Nature Centre,
Red Deer**



Brianna Lorentz

Brianna will give a brief introduction to muskrats, then talk about her study area, her research project and what she has found out about habitat selection of muskrats (where they place their huts and push-ups) and how her research might be applied in the future.



Russ Amy

Brianna Lorentz is a 4th-year student at the University of Alberta, Augustana Campus. She is studying biology with a minor in environmental studies. Brianna has a passion for wildlife and hopes to work as a wildlife biologist when she graduates. She began a study last year looking at the winter habits of muskrats in southern boreal wetlands.

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SEASONAL SIGHTS AND SOUNDS OF ALBERTA: FEATHERS—MILLIONS OF YEARS OF PERFECTION

By Dr. Sally Stuart

Walking across the frozen ground in the early November light, I hear the sad rather mournful cry of the Tundra Swans with the occasional deep resonating call of the Trumpeter. Looking out across Cygnet Lake, their immaculate white plumage is reflecting the light.

Feathers define living birds. Much of the weight of a bird, often 2 to 3 times the weight of the skeleton, is due to its feathers. They are incredible structures, unique and complicated. In terms of form and function, as an anatomical structure, they are almost perfect.

When you think of all the functions of feathers, they are perfectly adapted not just for flight but also insulation, attraction of the opposite sex, even sound production in some species. Feathers grow in a complex fashion; it requires the interaction of the outer layer of the skin, the epidermis and the underlying dermis. Due to a signal from the dermis the epidermal cells sink downwards creating a feather follicle, then cells of the epidermis multiply, supplied with nutrients from the underlying blood vessels in the dermis. From this the mature feather develops, having a central shaft (rachis) then branches (barbs) with further branches (hooklets) on the barbs. By the time feathers are mature they are made up of dead cells full of a unique protein called beta keratin which provides the feather with hardness and protection.

How, where and when did feathers evolve? Originally they were thought to have evolved from scales. This is no longer believed to be the case. Scales are produced when the genes responsible for feather development are turned off. It is inconceivable that structures as sophisticated as modern feathers could have evolved directly for the function of flight. Scientists now know that many

dinosaurs were feathered and in 2003 Prum and Brush developed a theory for how feathers may have evolved. They envisioned them developing in 5 stages, starting with single hollow shafts, which then subdivided and gradually became more complex until the modern feather emerged. Feathers do not preserve well. Despite this evidence of feathers is found from fossils and this has supported the theory of Prum and Brush. Furthermore, an amazing study published in Science in 2011 by Ryan McKeller and colleagues used 11 feathers from preserved amber. The amber was collected from the Grassy Lake area in Alberta and was dated to the late Cretaceous period. These feathers are different from “conventional” fossil feathers as they have retained their 3D shapes and are preserved in greater detail. Feathers representing all stages of feather development were found, the oldest feathers (proto feathers) belonging to non-avian dinosaurs were indeed filamentous but more sophisticated feathers from species which would definitely have been able to fly were also found. Scientists are left with a dilemma in terms of when exactly feathers evolved. After all, Archaeopteryx which appeared to have well developed feathers is about 150 million years old, yet Dilong, for example, an ancient dinosaur with simple filamentous feathers probably used for insulation is only 125 million years old.



Looking back over Cygnet Lake I watch mesmerised as the swans meticulously preen themselves. Instinctively they know that the maintenance of their feathers is key to their survival. They will depend on them as they migrate south, and when they return north they will protect them in the often harsh northern climate. Yet again we can marvel at how beautifully adapted this biological structure is.

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NOVA CHEMICALS COMMUNITY NATURE TRAIL

By Keith Kline

This fall I scheduled a bird focus trip to Nova Chemicals Community Nature Trail on the advice of Jim Robertson. Jim lead our two hour visit. So what's the Nova chemicals Community Nature Trail? I was surprised at what I found. Nova Chemicals spent a few years planning and developing the site. Jim Robertson was on the planning committee.

The site consists of 220 acres with Jones creek meandering through it. The area is made up of wetlands that have been created by beavers. The area is a mixture of wetlands, brush and grass so it a variable habitat.

There are five km of well-maintained gravel trails, with bridges and raised wooden walkways. There are benches in case you get weary. I'd just park on the bench and get patient and watch the birds go by. We saw 19 bird species on Sept. 17 when we visited. I will cer-

tainly take the birding group back out in the breeding season.

If you Google Nova Chemicals Community Nature Trail, you will get directions to the site and a map of the area. I was pleased to see what Nova had done to the area and I hope they keep it that way for all to enjoy.



16.09.2016

“WE CAN DO BETTER” AN INTERPROVINCIAL GATHERING TO DISCUSS SHARED WATERS

By Josée Méthot and Tjarda Barratt

On a beautiful fall prairie morning on September 20th 2016, approximately 30 people gathered near the Alberta-Saskatchewan provincial border to discuss our shared waters, upstream and downstream dynamics, and how we might work together across borders.

Rivers know no borders. As they flow across a landscape, so too do they flow through our lives, tracing a story of natural and human history, and ignoring political lines. These rivers act as connectors, linking remote landscapes with communities far downstream – a thread among us.

In Alberta, three mighty rivers—the Red Deer, Bow and Oldman—flow across the landscape from west to east, all three rivers are fed from the Rocky Mountains and their waters travel across provinces en route to Lake Winnipeg, and ultimately to Hudson’s Bay.

From origin to outlet, these rivers roam across a huge portion of Canada’s interior landscapes. Yet somehow, despite the obvious hydrologic thread that connects us as Canadians, we forget to reach out to people living upstream and downstream of us. With this in mind, the Red Deer River Watershed Alliance (RDRWA) and partners decided it was high time to connect with more of our neighbours downstream. We decided to host an event - a tea party! – and invited guests from Alberta and Saskatchewan to the confluence of the Red Deer and South Saskatchewan Rivers.

On a beautiful prairie fall morning we met in the Village of Empress in eastern Alberta – only 500 meters from the provincial border. We were a diverse group, including people from Alberta and Saskatchewan watershed groups, municipal and provincial governments, the University of Saskatchewan, municipal water management groups, First Nations, and local residents. Our task for the day was therefore to help transcend boundaries, to connect “upstreamers” with “downstreamers.”

Following a brief lunch, it was time to go on a real adventure to the confluence. Conditions were near perfect as we arrived at the

banks of the river, a mix of blue skies, golden grasses and a warm wind. Eager to take in the majestic scenery, the group went for a walk through the native grasses, and hiked up to a lookout point to view “our” Red Deer River join up with “their” side of the South Saskatchewan River.



It was time for a tea ceremony. We held the tea ceremony to symbolize our connections with the river and with one another, regardless of any political boundaries. Water was taken from the river, filtered, boiled and steeped with Saskatoon tea.



On top of a small hill, the group gathered in a circle as the tea was poured into beautiful porcelain teacups. Gary gave a blessing in Cree, and with the confluence as our backdrop, we drank in true outdoorsy style.

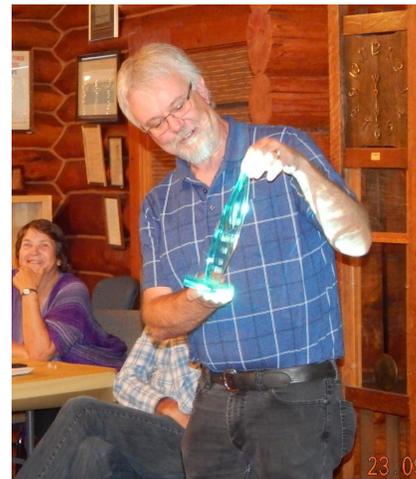
We closed the day with a sharing circle. Everyone shared their opinion of the day, what they learned, and what they would carry forward with them. Etched in the minds of participants were memories of the two rivers, Gary’s stories of the delta, new relationships, new knowledge and new ideas. It was a powerful way to end the day.



Photos by RDRWA

CONGRATULATIONS PHIL!

Long-time RDRN member and Past President, Phil French, was awarded the *Owl Award* at the September RDRN banquet. Thank you, Phil, for all your hard work on behalf of RDRN!



Beauty Everywhere: Nature Photo Essays by Myrna Pearman

Book Launch and Book Signing
Kerry Wood Nature Centre
Sunday, December 4 • 2:00–4:00 PM



On September 20, Claudia Lipski and Myrna Pearman were hiking at the Battle Lake 4-H Centre when they happened upon a small cluster of bright blue mushrooms. An inquiry to Dr. Charley Bird was passed on to local mycologist, Lu Piening, who identified them as *Stropharia aeruginosa*. According to the Alberta Fungal Database, it has been found only twice in Alberta, at Lambert Creek near Edson. In Europe (where it is also rare), the common name is listed as Verdigris Roundhead. It is inedible and may be hallucinogenic. But what a beautiful mushroom!

Beauty Everywhere:

Nature Photo Essays by Myrna Pearman



FIVE YEARS OF RED DEER ADVOCATE COLUMNS



Judy and Larry Boyd recently hosted three former Red Deer River Naturalist members, Liz and Bill Heinsen of Calgary and Margaret Coumts of Victoria. It was nice to see these former (and very active!) RDRN members again.

NOTICE: RDRN would be grateful for volunteers to help fold and mail out the monthly newsletter. Please contact the RDRN through email if you can help.

NOVEMBER 16: TUNDRA FLOWERS OF EASTERN GREENLAND — COLORFUL LIFE IN A HARSH LANDSCAPE

FLOWER FOCUS



Photo by Don Wales

10:00 AM • KWNC

Call Don for details (403 343-2937)

NATURE HIKES WITH KEITH KLINE

All hikes are on Saturdays and start at 1:30 PM. For more information, contact Keith Kline at redkline@hotmail.com or call 403-347-6883

November 5: Gaetz Lake Sanctuary—Meet at Kerry Wood Nature Centre

November 19: Riverbend Upper trail—Meet in the first parking lot on the right as you enter.

November 26: Bower Woods—Meet across from 37 Selkirk Blvd. Do not go to the house or ring the doorbell. Just wait on the opposite side.

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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Our thanks to NOVA for underwriting the cost of newsletter printing



Front Page Poster
by Doug Pederson

Photos, unless
noted otherwise,
by Myrna
Pearman