

# Bats Are Amazing but are facing several conservation challenges



Little Brown Bat  
by Brock Fentoni



Dr. Robert Barclay

▼  
**April 22, 2021**

7:30pm-9:00pm

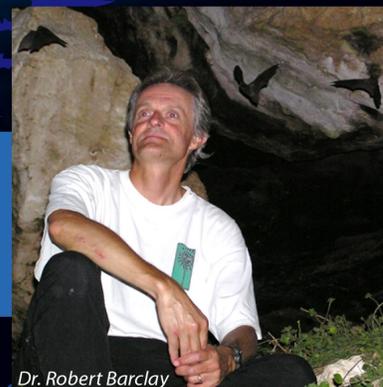
**RDRN Zoom Virtual Series**

Join the meeting here:

Meeting ID: 843 0309 0577

Passcode: 116558

Dr. Robert Barclay is a professor in the Department of Biological Sciences at the University of Calgary. He teaches in courses spanning first year undergraduate to graduate, focusing on ecology, animal biology and conservation biology. He and his students conduct research on questions involving those topics, focusing mostly on bats. Although most of the research is done in western and northern Canada, he has had the opportunity to work in Australia, southern Africa and Central America.



Dr. Robert Barclay

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# WINTER INSECTS

By Don Wales

I have always been fascinated by the adaptations of organisms that must struggle for existence in harsh environments—e.g., desert plants, alpine/arctic plants, and winter insects. Insects, especially, adult forms, do not do well in temperate winters unless they are well underground, under snow or in water under the ice.

As a lifelong chionophile, I do come across insects with special adaptations that enable them to remain active during the winter. My favorite and most conspicuous is the wingless crane fly or snow fly, *Chionea valga*. On first observation it looks like a spider on the snow but closer examination shows six



robust legs that can propel the insect at a dizzying speed of 1.3 metres per minute if unimpeded.

Wingless crane flies are Dipterans (flies) related to those huge, winged crane flies that are often spotted on the outside walls of our houses. Wingless crane flies do not feed and are just out on the snow “looking for love.” They have to “get to it” as they have less than two months to live. Their larvae are living and feeding in the decaying leaf litter under the snow. The adults have no competition and few predators. They emerge from their hiding places under flakes of bark at around 0 C but often as low as -10 C. They lack wings since the muscles required for flight are fast twitch that cannot function in subzero temperatures. Their dark bodies warm by long and short-wave radiation, taking advantage of the slightly warmer air temperature at the snow surface (it is slightly warmer than the rest of the air column). While they are dormant, they are able to withstand freezing with an antifreeze in their hemolymph (insect blood) described in some literature as a glycerol-like or glycine-rich protein that prevents ice crystals from forming and damaging the sensitive cell structures of the insect. The glycine rich protein is unstable in heat so holding a crane fly in your warm hand for a couple of minutes will denature the protein and kill the insect. As an aside, researchers are looking at this protein as a better way of preserving transplant organs and to make better ice cream. Who knew?

Besides the wingless crane flies that are primarily found in the mountains and foothills west of us, there is another insect, a snow scorpion fly (*Hypogastrula nivicola*) that looks similar. Then, late in the winter and into the warm days of spring, adult stoneflies (Order Plecoptera) emerge from

their nymphal homes in flowing water and are found on the snow.

On a macroscopic level another fascinating “insect” is the springtail, *Collembola sp.* Springtails have been reclassified into a subphylum called Hexapoda based on some very primitive characteristics including internal mouthparts, no trachea (breathing tubes found in insects) and the fact they molt through their entire lifecycle but with no adult and pupal form as such (ametabolous). Insect are also in this subphylum. In the spring, what looks like dirt on the snow are actually massive numbers of springtails often collecting in the shaded part of a ski track. They can be so concentrated that they actually impede the glide of the skis. Getting down close suddenly this “dirt” starts to jump. Springtails have an appendage under their body called a furcula that is held in place with a structure called a tenaculum. When released in just 18 milliseconds, the furcula catapults the springtail into the air. On one occasion I stared at a sandwich I had laid on the snow not recalling that I had put pepper on it. It was not pepper, but on the plus side it was a good protein supplement!

One other insect that we do not see but know is present in the winter is the adult form of the Mourning Cloak Butterfly (*Nymphalis antiop*). They overwinter beneath loose tree bark, in tree cavities and unheated buildings. They emerge from their “hibernation” on a warm spring day sometimes as early as March. They mate, lay eggs and go through a lifecycle during the summer. These butterflies start to look a little ragged into late spring but sometime in early fall, new adults emerge and these will likely be the ones that overwinter.

## SECRETS OF SALAMANDERS EDMONTON NATURE CLUB SPEAKER SERIES FRIDAY, APRIL 16 AT 7:00 PM

**Speaker: Julie Lee-Yaw, Assistant Professor,  
University of Lethbridge**

The secrets of salamanders will unveil the distribution and diversity of Alberta's unseen wetland inhabitants. In her talk, Julie will introduce the long-toed salamander and other amphibians that live in the province. She will also discuss the work her lab is doing using genetic data to understand diversity in this group of species and the factors that shape their geographic distributions.

Zoom Registration Link: [https://us02web.zoom.us/meeting/register/tZMrceCpqz0sHNAqGtDORkt\\_8MrvvuFrQgyw](https://us02web.zoom.us/meeting/register/tZMrceCpqz0sHNAqGtDORkt_8MrvvuFrQgyw)

Thank you to [Edmonton Nature Club](#) for inviting our entire Nature Network to join them for their speaker series.

**MOSS BALL ALERT** Zebra mussels have been found in moss (marimo) balls imported and sold in Alberta. Moss balls are used in aquariums and it is critically important for them to be properly disposed of.

For more information please check out the website (below) or call 1-855-333-2628(BOAT)

<https://open.alberta.ca/publications/alert-zebra-mussels-in-moss-marimo-balls>

## **LOVE OUR EASTERN SLOPES. UPCOMING DOCUMENTARY FROM RDRN BOARD MEMBER, TRAVIS BOSCHMAN**

*Love Our Eastern Slopes* is a documentary in the making, telling the story of Alberta's sacred eastern slopes. The mission of the documentary is to tell the secrets of this wilderness and to introduce its wildlife, its waters, and even some of its people to the rest of the world. **From Travis:** *I grew up camping, fishing and exploring the various Clearwater River tributaries up the Forestry Trunk Road and taking family walks to Ram River Falls to take in the incredible views. I spent time floating down the South Ram River, as a child I sat around the camp fire listening to my dad tell ghost stories about the old man under the falls at Livingstone Falls, and I have awoken in the morning to the sound of wolves howling. These hills have brought me so much joy and connection to nature in my life. I can't stand to see them destroyed.*



Fundraiser: <https://gofund.me/3bde31c6> Website: <https://www.tbphotographs.com/love-our-eastern-slopes>

You Tube Channel/Trailer: <https://www.youtube.com/watch?v=viDhDJX4DdU>

**FROM THE RDRN ISSUES COMMITTEE:** Coal mining in Alberta's East Slopes will have significant environmental impacts if it is allowed to proceed. We are currently being asked to submit our comments to the Government of Alberta about whether or not we want this activity to occur ( <https://www.alberta.ca/coal-policy-engagement.aspx> ). There is a massive amount of publicly available information to review and looking through all of it would be an overwhelming task. To make it easier for RDRN members to understand the issue, we have selected a few articles and news releases that help to point out why the RDRN is deeply concerned about proceeding with any coal mining in Alberta's East Slopes.

**Map** which outlines the scope of potential coal mining operations in Alberta: [https://robsonfletcher.maps.arcgis.com/apps/Embed/index.html?webmap=a717811c073b42af99e9727e6b10cc8c&extent=-122.7476%2C48.6463%2C-106.5208%2C55.0585&zoom=true&scale=false&legendlayers=true&disable\\_scroll=false&theme=light&fbclid=IwAR0JWGclOj5Pc\\_xzlh2jhbvAP8Me6bz4M8WzRe2sw77LmX4tjhl3emTtg](https://robsonfletcher.maps.arcgis.com/apps/Embed/index.html?webmap=a717811c073b42af99e9727e6b10cc8c&extent=-122.7476%2C48.6463%2C-106.5208%2C55.0585&zoom=true&scale=false&legendlayers=true&disable_scroll=false&theme=light&fbclid=IwAR0JWGclOj5Pc_xzlh2jhbvAP8Me6bz4M8WzRe2sw77LmX4tjhl3emTtg)

**A general overview:** <https://oldmanwatershed.ca/blog-posts/2020/7/30/coal-mining-in-the-oldman-watershed>

**In-depth review of environmental hazards** associated with the Grassy Mountain Mine Project which is generally applicable across the Eastern Slopes: <https://www.ceaa.gc.ca/050/evaluations/document/132194?culture=en-CA>

**Fines in other jurisdictions due to coal mining pollution:** <https://www.cbc.ca/news/canada/british-columbia/teck-fined-60m-contaminating-bc-rivers-1.5965646>

**Costs associated with water treatment** due to selenium pollution generated by coal mining in other jurisdictions: <https://www.thefreepress.ca/news/clear-water-teck-water-treatment-facility-nears-completion/>

**Fines in Alberta** due to coal mining pollution: [https://en.wikipedia.org/wiki/Obed\\_Mountain\\_coal\\_mine\\_spill](https://en.wikipedia.org/wiki/Obed_Mountain_coal_mine_spill)

**Concerns about a current lack of water quality monitoring** downstream of coal mines in Alberta: <https://www.cbc.ca/news/canada/edmonton/alta-coal-contamination-1.5895835>

**A recent opinion article:** <https://calgaryherald.com/opinion/columnists/opinion-when-no-means-no-in-mining-albertas-treasured-eastern-slopes?fbclid=IwAR1LltdYkQyYcHRzJpvTQ2QNtAJnszXEBx09NSrrAcB8u-Nm7oI0TIIWUo>

If you wish to delve further into this issue a large compilation of coal related articles is located in the files section for the Facebook group "Protect Alberta's Rockies and Headwaters" <https://www.facebook.com/groups/albertansagainstcoal/about>. If you are not a Facebook follower simply searching on "selenium" and "coal mining" will result in a vast amount of material to absorb. *Please take the time to inform yourself about this issue, respond to government surveys and spread the knowledge you have acquired.*

## **NATURE ALBERTA IS OFFERING RDRN MEMBERS A FREE LIFETIME MEMBERSHIP!**

Nature Alberta connects and supports clubs like ours across the province. When you join Nature Alberta as a member, you add another voice in support of the active appreciation and conservation of Alberta's natural environment. [NatureAlberta.ca](https://naturealberta.ca) provides a central place for clubs from all over the province to promote their events. They publish *Nature Alberta Magazine* quarterly, filled with informative articles and beautiful photography. You can check it out for free online or subscribe to receive your own print copies at [naturealberta.ca/magazine](https://naturealberta.ca/magazine). Your membership supports all these initiatives and more. Members also get 10% off books in their [online store](#). [Click here](#) to become a Nature Alberta Lifetime Member today. Email Steph at [info@naturealberta.ca](mailto:info@naturealberta.ca) for more information.



**FLOWER FOCUS:** Don Wales will be conducting the April Flower Focus meeting by Zoom. Feel free to contact him at [don@hexapod.ca](mailto:don@hexapod.ca) for meeting details. The May and June meetings will be held outdoors.



## Flowers of the Yukon with Caroline Harris April 21, 2021

### DID YOU KNOW

By Susan van der Hoek

A group of woodpeckers is known as a **descent**. This makes sense because most woodpeckers start at the tops of trees and work their way downwards. A group of Pileated Woodpeckers is known as a **crown** while a group of Northern Flickers is known as a **guttering**.



### IN MEMORIAM:

#### HAZEL HOLOBOFF (1929-2021)

The RDRN lost a long-time member, Hazel Holoboff, in February. Hazel was keenly interested in nature and for many years attended RDRN meetings and summer field trips. She had a wonderful sense of humour, which will be remembered by many. RDRN members extend our sympathies to Hazel's family.

If desired, donations in Hazel's honor may be made to MRWC [www.medicinriverwildlifecentre.ca](http://www.medicinriverwildlifecentre.ca) or to a charity of the donor's choice. *Photo submitted*



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 PM on the fourth Thursday of most months by Zoom. 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

### Board Notes

Reminder: 2021 memberships are due!

*Greetings from the Board - Tony, Don, Rod, Bob, Daryl, Rick, Anto, Travis, Kirstin, Christine, Dean, Myrna*

We have 495 Facebook members, 263 Twitter members and 190 Instagram followers.

RDRN continues to be busy on many fronts.

- Our new Strategic Plan is almost finished
- Our committee structure has been reorganized and the committees are re-defining their roles (finance and planning; policy; human resources; communications; public education and programs; conservation issues)
- Policies and Procedures are being updated
- Nature 2021 details are getting finalized
- A temporary Administrative Manager has been hired (details will be shared in the May newsletter)
- We continue to advocate for our region's natural capital and respond to issues such as coal development on the Eastern Slopes
- We are still debating the best way to invest RDRN's bequest from the Janet (Jaffary) Tack Bequest estate
- We continue to offer RDRN programs such as Flower Focus and Speaker Night as online ZOOM events

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