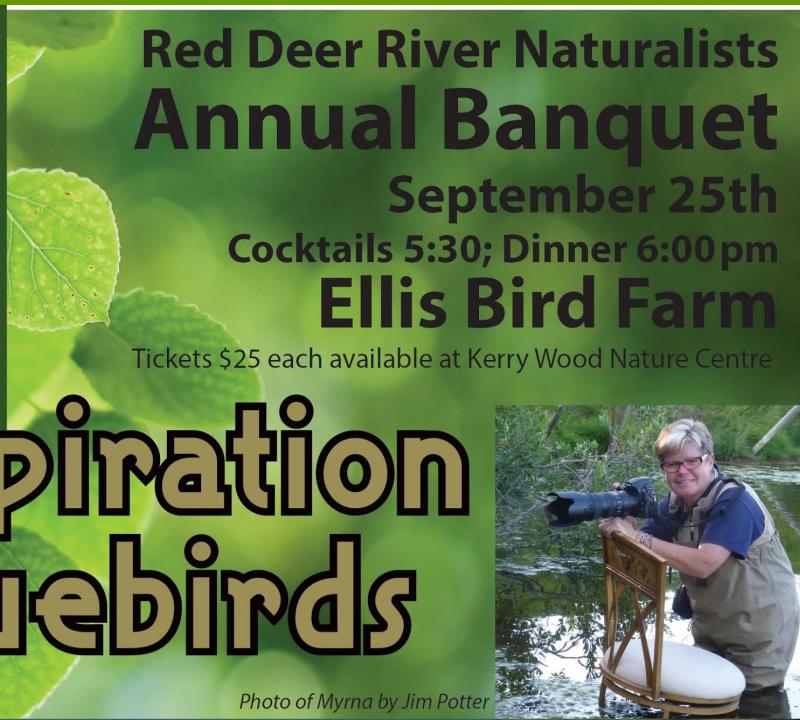
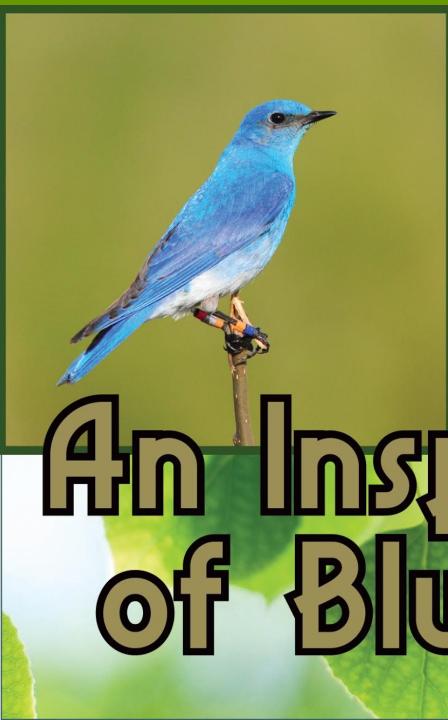




The Red Deer River Naturalist

Editors: Myrna Pearman, Judy Boyd, Dorothy Dickson

September, 2015



An Inspiration of Bluebirds

Photo of Myrna by Jim Potter

Myrna Pearman will talk about how the passion of Charlie and Winnie Ellis has touched the lives of thousands. She will give a brief overview of the history of Ellis Bird Farm, share some ground-breaking news on Mountain Bluebird migration, and talk about how she shares her love of nature through photography and writing.



Myrna Pearman has been the Biologist and Site Services Manager at Ellis Bird Farm since 1986, where she has overseen the development of the site into a popular and respected education and research centre. She is a keen nature photographer and writer, and in her spare time loves to travel, mountain bike and kayak. She has authored or co-authored several books, writes a monthly photo essay in the Red Deer Advocate and has a regular column in *The Gardener* magazine.

**NOTE: DUE TO LIMITED
SPACE, ONLY 70 TICKETS WILL
BE SOLD.**

Wildlife photos by Myrna Pearman

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SEASONAL SIGHTS AND SOUNDS OF ALBERTA

AUDITORY ACUITY OF THE OWL

By Sally Stuart

In the early hours of the morning in mid-September, I was awoken by a cat-like screeching sound coming from the poplar trees at the front of the house. Half asleep yet fascinated, I started recording through the open window. Occasionally I heard the hooting of an adult Great Horned Owl (*Bubo virginianus*). Later, when analysing the sounds in a sonogram, I realised the higher-pitched screeching was the call of the young owl. Since it was late in the season, I guessed that it was probably begging the parent for food.

Owls are phenomenal creatures, beautifully adapted in terms of structure and function. Most owl species, like the Great Horned Owl, are dusk or night-time hunters. How do they locate prey such as a running mouse in the dark, often in a wooded area? One solution is to listen carefully, because their major sensory adaption is auditory acuity.

Most birds are similar to humans and hear best in the range of 1-5 kHz, with sensitivity decreasing quickly at lower and higher frequencies. Owls are an exception as they are remarkably sensitive to sounds which would be inaudible to humans. Perhaps this sensitivity is not surprising considering that the adult call—although made up of a series of harmonics—has a predominant frequency of about 0.4 kHz.

As humans, we use our two ears to locate sounds using differences in intensity of the sound and comparing the time the sound arrives at each ear. Many owls enhance this by features such as asymmetrical ears; one ear opening being lower than the other. The tube (auditory meatus) which leads from the opening into the middle ear is large and complex, again differences in size and shape may be found between the two ears.

Feathers also aid in hearing, although not perhaps as ex-

pected. The large tufts of feathers on the head of the Great Horned Owl, features for which it is named, have little to do with hearing. Instead, the rings of facial feathers around each eye (known as the facial ruff) actually collects and helps direct the sound towards the ear openings. Finally, the cochlear, the part of the ear which converts sound waves into electrical messages to send to the brain, is enormous relative to the size of the bird. It contains large numbers of sensory hair cells, again far more than would be expected for their size.

Other owl senses are also well developed, particularly the eyes. The problems for the eye is obviously the low level of light available. Owls typically compensate for low light levels

by having enormous eyes, with very large pupils which allow a great deal of light to enter and stimulate the retina where the sensory cells are located. Furthermore, they have large numbers of the sensory cells called rods which respond to low light intensity and are responsible for black and white vision. Owls also have a vascular membrane, the tapetum lucidum, behind the retina. This membrane reflects the light back through the retina to further stimulate the retinal cells. All of these adaptions help produce a much brighter image.

If you are an efficient night time predator, it is advantageous to both hear well and be relatively silent. When flying, owl wings produce a low frequency sound, less than 1 kHz. The owl achieves this by having specialised adaptions of their feathers which both help to reduce air turbulence and minimise the rubbing of overlapping feathers. Interestingly mice are relatively insensitive to sounds lower than 3 kHz so they can't hear them approaching!

For their size, weighing in at about 1.5 kgs, Great Horned Owls are incredible predators. Evolution has produced an animal with extraordinary sensory perceptions, especially hearing. However, I am relieved not to have such auditory acuity. Stepping outside the door into the countryside at night and listening to the sounds of thousands of mice scurrying around would definitely be sensory overload!



MEMBER'S PHOTOS—SUMMER 2015

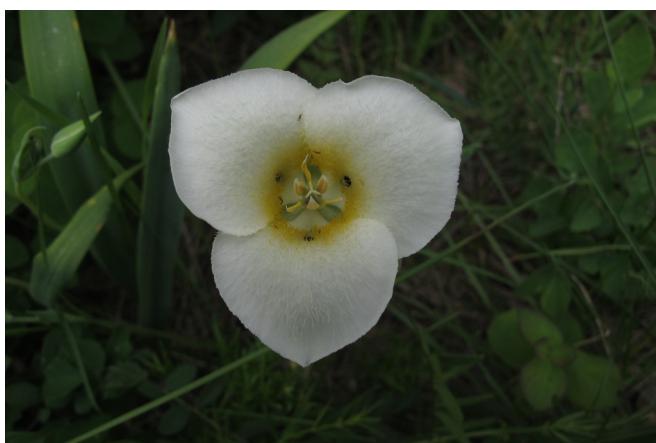


Bonnie Mullin: (from top left) Don Wales with a grasshopper in Waterton; crazy ground squirrel in Waterton; Yellow Warbler and babies in Saskatchewan.

Bill Heinsen: Moose on Smith-Dorian Highway; Shooting Star

NATURE TRIPS

In September, Keith Kline will lead Sunday afternoon walks at Heritage Ranch. The dates will be September 13, 20 and 27. Meet him in the first parking lot at Heritage Ranch at 2:00 PM. Keith will point out plants, birds and any other critter that happens to be around. Please phone Keith at 403-347-6883 for details.



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. Deadline is the last Friday of the month.

FLOWER FOCUS

There will be no Flower Focus in September. However, the October Flower Focus will be on October 21 in the McCullough House starting at 10:00 AM.

FLOWERS OF WATERTON LAKE NATIONAL PARK

Enjoy a review of the flowers we saw on our field trip to the Waterton Lake Flower Festival this spring presented by Bonnie Mullin and Bertha Ford.

WATERTON TRIP

by Don Wales

Eight members of RDRN Flower Focus group attended the Waterton Lake Flower Festival. The trip was made possible by an anonymous donor to RDRN which covered accommodation and the registration fees for the festival sessions.

Members were free to attend sessions that matched their interests and as it turned out, their mobility issues. We joined field trips that explored the prairie riparian interface, 101 wildflowers along a short section of the Bertha Falls trail, lake side flowers below the Prince of Wales hotel, roadside flowers and flowers of the Rowe lake trail among others. Some took part in macro photography sessions and craft sessions. We also took in two evening presentations that were offered. The weather was superb with only a few minor rain showers that did not impact the sessions.

The outing culminated in a field trip to Horseshoe Basin that we did on our own prior to our departure to Red Deer.

Top Photo: Mariposa Lily by Don Wales

Bottom Photo: RDRN Flower Focus group in Waterton

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