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SEASON'S GREETINGS!

ACT SOON! During this season of Giving, please consider donating to our new Beaverhill Bird Observatory Endowment Fund with the Edmonton Community Foundation. We are excited to kick off this new Fund, with the goal of eventually providing lifelong support to our organization. **By contributing before December 12th, 2019 your donations are eligible for up to 2-to-1 matching by the Edmonton Community Foundation.** Receive a tax receipt and leave a legacy behind now or remember BBO in your will.

Visit: <https://www.ecfoundation.org/funds/beaverhill-bird-observatory-endowment-fund/> For questions about this fund please contact chair@beaverhillbirds.com

**The 2020 Annual General Meeting of the Beaverhill Bird Observatory will be held on 16 April 2020, starting at 7pm at THE HEADQUARTERS Restaurant, Sherwood Park Plaza
Address: #101, 100 Granada Boulevard, Sherwood Park**

'Tis a season of Thanks!



BBO could not accomplish all their programs without the dedicated efforts of our Staff, Board members (Chair Geoff Holroyd), and volunteers. Some gathered for an end of banding celebration! Thanks to hosts Roland and Sonia Perrott.

Photo by: Jeremiah Kennedy

Meet Andra Bismanis, one of our newest Board Members: “I joined the BBO Board in January 2018 after a fateful meeting with Helen Trefry at the Edmonton



Airport where we were both killing time due to flight delays. She asked me if I was interested in being on the Board and I said yes! I had been to BBO a few times prior to that and was impressed by the wide breadth of scientific and educational activities that the organization was involved in in support of bird conservation. Since I am an avid birder and wished to become more involved in bird and habitat conservation, joining the Board was an easy decision. Since then I have pitched in where I can at BBO special events and the numerous initiatives the Board is involved in.

I have a M.Sc. degree from the University of Northern British Columbia where I studied the effects of forest harvesting on boreal forest birds in northeastern British Columbia and am currently working as an environmental consultant in Edmonton.”

Owl Migration Monitoring by Sara Pearce-Meijerink

No BBO program on site is more popular than owl season! BBO hosted over 450 visitors and captured 475 owls (4 species) this fall.

Sara Pearce Meijerink, Connor Hawey, Christian Lunn, Jeremy Lambe, Josue Arteaga-Torres, and long-term volunteer Jac Curry, ran BBO’s owl migration monitoring program this fall. Four mist nets with a male Northern Saw-whet Owl audio lure were utilized from September 1st to November 7th, two mist nets with a Female Northern Saw-whet Owl audio lure were set from September 8th to November 7th, two mist nets with a Boreal Owl audio lure were set from October 8th to November 7th, and one mist net with a Long-eared Owl audio lure was set from September 1st to November 7th. **991.5** playback hours were accumulated this fall.



Photos: Sara Pearce-Meijerink

Table 3. Total number and type of capture per species during 2019 owl migration monitoring at Beaverhill Bird Observatory (BBO). Repeat captures were banded in 2019 at BBO, Return captures were banded at BBO in a previous year, Foreign captures were banded at a location other than BBO, and Other captures were caught in a mist net but released un-banded.

Species	Banded	Repeat ¹	Return ²	Foreign ³	Other ⁴	Total
Northern Saw-whet Owl	413	22	1	6	2	444
Long-eared Owl	25					25
Boreal Owl	4					4
Great Horned Owl	2					2
TOTALS	444	22	1	6	2	475



Steaks & Saw-whets 2019. Children and adults crowd in to watch Sara Pearce-Meijerink band a wild Northern Saw-whet Owl (Photo: Helen Trefry)

Steaks and Saw-whets 2019

As always, the annual Steaks & Saw-whets fundraiser was very popular. Hosted on September 27th and 28th, the events sold out. With about 130 visitors joining us over the two nights, lots of fun was had by all. There were kids' activities and make-your-own owl headband craft, "Ricki" the educational Saw-whet Owl was there along with "Hawkeye", the Hawk Owl, making his debut, and we successfully caught many Northern Saw-whet owls so everyone got to witness the bird banding process up close and personal. Flying squirrels at the feeders, migrating waterfowl overhead, and coyotes in the background all add to the experience. Many visitors are repeats.



Meet: Andrew Cook, PhD Candidate at the University of Alberta, studying the **ecology and evolution of vane dwelling feather mites** and conducting his field work at BBO. So, just what is he up to and what is an "obligate ectosymbiont"? Read more about this interesting work; summary (and photos) here provided by Andrew:

Obligate ectosymbionts complete their entire life cycle on a host, relying on the host for habitat and food resources. This relationship can result in an array of strategies used by the symbiont to maintain contact with the host, ranging from chemical defenses to avoid the host immune responses to morphological features that allow a symbiont to 'fit' on or in their host.

Vane-dwelling feather mites (Order Sarcoptiformes: Superfamilies Analgoidea and Pterolichoidea) are a great example of the latter. These mites complete their entire life-cycles on their avian hosts, including the eggs, juveniles (larva, protonymphs, tritonymphs), and adults. Being obligate symbionts means that vane-dwelling mites require direct contact between hosts for transmission, so are typically passed from parent to offspring, between mating pairs, and/or in communal roosts. There is a prevailing misconception that all ectosymbionts negatively impact the health of their host. This is likely driven through the visible skin irritation caused by parasitic mites (e.g. Order: Mesostigmata) and/or the feather damage that results from chewing lice (Class Insecta; Order Psocodea; Suborder Ischnocera and Amblycera). This is not the case for vane-dwelling mites, who are believed to be either commensal (no effect on host fitness) or mutualistic (beneficial to the host). The most supported evidence currently suggests these mites clean the wing's surface through consumption of fungal spores and preen oil.

White-throated Sparrow



Vane-dwelling mites (as their name implies) occupy the ‘vaned’ surface of flight feathers, including primaries, secondaries, and retrices. Most species can be found on the ventral side of the wing, although a few can be found on the dorsal surface under the greater coverts (e.g. *Trouessartia*) or on the tail. When occupying the ventral wing surface, vane mites live between the barbs and along the shaft or rachis of the feather. This restrictive microhabitat allows mites to avoid accidental dislodgement during the movement of feathers during flight or regular preening by the host. Given this close relationship between mites and birds, and the restrictive microhabitat used by the mites, does this result in positive trends between host and mite body size (known as Harrison’s Rule)? And is this mediated through feather microstructures?

My current PhD thesis research at the Beaverhill Bird Observatory (BBO) is looking to address these questions. By taking images of living mites on the wings of banded birds caught during spring and fall migration, we can begin to characterize occupancy both along the wing and within a feather. We can also check the orientation of the mites, to see how feather mites are making the most of their ‘narrow’ homes. To accomplish this, I take images of bird wings during banding efforts at BBO. This allows me to observe living mites on the birds to determine how they are using this space (e.g. orientation) and which parts of the wing they are found on. After imaging, I remove mites from the wing to bring back to the lab for measurement. This minimally invasive procedure allows us to assess if mite body size correlates with their host and which measures of mite body size (e.g. height,

length, width) are most strongly correlated with feather microstructures such as inter-barb space and barb height.



Andrew Cook

This research would not be possible without the generous allowance of the Beaverhill Bird Observatory for me to be on site and integrate with their banding teams. Bird banding is such an essential practice, and the BBO marries this well with research initiatives and outreach. During my time on site I had the privilege to engage with enthusiastic school groups and the Young Ornithologists group, and share my own small piece of ornithology. I enjoyed my 2019 field season with the BBO crew, and look forward to a productive 2020 field season.

Memberships to BBO are still \$10 for Lifetime- a great gift! Available online www.beaverhillbirds.com

Songbird Migration Monitoring by Sara Pearce-Meijerink

From July 20th to October 20th thirteen mist nets (2, 2X, 8, 9, 9X, 50, 51, 52, 53, 54, 55, 56, and 57) were operated for 6 hours daily starting 30 minutes before sunrise, weather permitting. Nets were not opened or were closed if temperatures were below zero degrees Celsius, wind was above 20km/hr at the net level, and/or if there was any precipitation. A total of 4555.25 net hours was accumulated despite the colder temperatures staff experienced in October (Table 1). 1262 birds were captured, 1040 of which were new bands. While our numbers weren't as high as last year, our species diversity was still fantastic with 58 different species captured!

Table 1. Numbers of captures, mist-netting effort, capture rates, and number of species caught during fall migration over the last twenty-one years at the Beaverhill Bird Observatory.

	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Total Captures	2745	1740	2095	1734	1315	975	1256	1969	1079	892	875
Birds Banded	2172	1433	1758	1464	1093	818	1089	1525	952	723	718
Net hours (NH)	2533.5	2843.25	3678.5	4173.75	3818	3229	2787	3476	3534	3400	3671
Capture Rate (birds/100NH)	108.5	61.2	56.9	41.2	34.4	30.2	45.1	56.6	30.5	26.2	23.8
Species Captured	58	55	56	62	57	60	59	63	52	58	51

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Total Captures	880	701	978	631	738	1641	1721	1918	2029	1261
Birds Banded	708	589	776	628	618	1393	1390	1620	1692	1040
Net hours (NH)	3190	3678	3683	3144	2565	4478	4174	4202	4128	4555.25
Capture Rate (birds/100NH)	27.6	19.1	26.6	20.1	28.8	36.6	41.2	45.6	49.2	27.7
Species Captured	60	53	57	45	46	58	53	52	62	58

The five most commonly caught species this fall were Myrtle Warblers (288 birds captured, representing 22.8% of all captures), Least Flycatchers (202 captures, 16.0% of total), Black-capped Chickadees (138 captures, 10.9% of total), Orange-

crowned Warblers (94 captures, 7.5% of totals) and Tennessee Warblers (48 captures, 3.8% of totals). These five species account for 770 captures or 61% of the 1261 birds caught (Table 2).



Boreal Chickadee



Irene Crosland with a Merlin



Philadelphia Vireo

There were some noteworthy captures at the BBO this fall, including two Boreal Chickadees, a Bay-breasted Warbler, a Townsend's Warbler, a number of Philadelphia Vireos and a pair of Merlins! We often don't catch Boreal Chickadees or Bay-breasted Warblers as they prefer coniferous forest habitat, and the 4 Philadelphia Vireos were a huge surprise to see! The Townsend's Warbler was the first one captured in our history and the pair of Merlins was a delight for our staff and dedicated volunteer Irene Crosland to process.

Table 2. Total number and type of capture per species during the 2019 fall songbird migration monitoring at Beaverhill Bird Observatory (BBO). Repeat captures were banded in 2019 at BBO, Return captures were banded at BBO in a previous year, the Foreign captures were banded at a location other than BBO, and Other were captures that were caught in a mist net but released un-banded.

Species	Banded	Repeat ¹	Return ²	Foreign ³	Other ⁴	Total
Alder Flycatcher	2					2
American Goldfinch	5		1	1	1	8
American Redstart	22	1			1	24
American Robin	2					2
American Tree Sparrow	43					43
Bay-breasted Warbler	1					1
Black-and-white Warbler	1					1
Black-capped Chickadee	48	73	13		4	138
Blackpoll Warbler	9					9

Blue Jay	1					1
Blue-headed Vireo	3	1				4
Boreal Chickadee	2					2
Brown-headed Cowbird					1	1
Canada Warbler	10					10
Cedar Waxwing	1					1
Clay-coloured Sparrow	5	2				7
Common Yellowthroat	4					4
Connecticut Warbler	1					1
Downy Woodpecker	10	5	3		1	19
Fox Sparrow	2					2
Golden-crowned Kinglet	3	1				4
Grey-checked Thrush	1					1
Grey Catbird	1					1
Hairy Woodpecker	2		1	1		4
House Wren	14	5	3		6	28
Hermit Thrush	4					4
Least Flycatcher	140	33	10		19	202
Lincoln Sparrow	6					6
Magnolia Warbler	14	3				17
Merlin	2					2
Mourning Warbler	1					1
Myrtle Warbler	283	2			3	288
Northern Waterthrush	7					7
Ovenbird	20					20
Orange-crowned Warbler	94					94
Philadelphia Vireo	4					4
Pine Siskin	2					2
Red-eyed Vireo	2					2
Red-breasted Nuthatch	13	1				14

Red-winged Blackbird	1					1
Ruby-crowned Kinglets	42	2			1	45
Sharp-shinned Hawk	1					1
Slate-colored Junco	21					21
Song Sparrow	3				1	4
Sparrow Sp.					1	1
Swainson's Thrush	35				2	37
Swamp Sparrow	1					1
Tennessee Warbler	44	3			1	48
Townsend's Warbler	1					1
Trail's Flycatcher	17					17
Warbling Vireo	9	3	2	1	2	17
Western Palm Warbler	2					2
White-breasted Nuthatch	6	2	1			9
White-throated Sparrow	10					10
Wilson's Warbler	14					14
Northern Flicker	1					1
Yellow-bellied Flycatcher	2		1			3
Yellow-bellied Sapsucker	2					2
Yellow Warbler	43	1			1	45
TOTALS	1040	138	38	3	45	1261

Staff surveyed birds along a 40 minute standardized census route every morning from July 20th until October 20th. Each year, census results are combined with daily banding totals and other incidental observations to produce a Daily Estimated Total (DET) of the number and type of species migrating through the Beaverhill Natural Area. All observations are posted on e-bird.com. This fall large flocks of adult and juvenile Black-crowned Night Herons along with Great Blue Herons were regularly spotted out by the weir. Thousands of Sandhill Cranes were heard and seen flying overhead on migration, along with thousands of Snow and Ross Geese, Greater-white Fronted Geese and Canada Geese. We also observed a decent number of Rough-legged Hawks this fall and Common Ravens, out by the lakebed. Before the

season was over, a flock of Snow Buntings was spotted, marking that winter would soon be upon us.

The Return of the Beaverhill Snow Goose Festival



Photo by Gerry Beyersbergen

BEAVERHILL LAKE SNOW GOOSE FESTIVAL - History and Renewal By Vanita Eglauer (Town of Tofield Recreation Co-ordinator) and Geoff Holroyd (BBO Chair)

What had 4,000 to 6,000 people searching for thousands of Snow Geese in two days near the town of Tofield, Alberta? The Beaverhill Lake Snow Goose Festival, launched in 1993 and held near the end of April for 10 years.

The festival was established as a celebration of spring bird migration, an opportunity for nature enthusiasts, bird watchers, and interested members of the general public to view many species of birds that stop at and near Beaverhill Lake on their migration northward. This family-oriented celebration provided transportation and tours and

hikes around Beaverhill Lake and Beaver County led by naturalist volunteers. In the town of Tofield, a trade fair and numerous activities provided additional options for visitors.

At the time, the Snow Goose Festival was one of the most popular and successful events of its kind in Canada, if not all North America. An estimated 3,400 people attended the first festival, and over 6,000 people participated in its last year (April 20–21, 2002). The festival ran “rain or shine,” but participants generally were richly rewarded by the sight of thousands of Snow Geese and other migratory bird species.

Local leaders and partner organizations involved in establishing the festival included the Town of Tofield, Ducks Unlimited, Canadian Wildlife Service of Environment Canada, Edmonton Natural History Club/Edmonton Bird Club, Alberta Environmental Protection/Fish & Wildlife, Beaverhill Bird Observatory Beaver County, and Strathcona County, to name a few! Volunteer guides had an orientation manual for background. Local businesses, schools, artisans, nongovernmental organizations, and the general community provided on-site volunteers, concessions, art shows and displays, activities, and financial support for the event. Held in the Tofield arena and curling rink, the trade show featured 40 displays and live music through the weekend.

Sixty bus tours carried 2,200 people on 1.5-, 2-, or 3-hour tours to look for Snow Geese, waterfowl and other spring birds. Sometimes a brilliant male Western Bluebird was the highlight if spotters could not keep track of moving flocks of geese. Some bus tours started and ended in Edmonton, several of them catering to inner city youth and families that did not have private vehicles to drive to Tofield. Despite the best efforts of guides and drivers, a few busses became stuck in the soft spring roads.

The Beaverhill Bird Observatory led hikes through the Beaverhill Natural Area that included bird-banding demonstrations and refreshments. The *Tofield Mercury*, the local weekly newspaper, produced a free souvenir program newspaper full of interesting articles as well as orientation for visitors. Some years a banquet was held, with a guest speaker and delicious supper. Major partners included the John Janzen Nature Centre (pre-registrations) and *CFRN-TV* and the *Edmonton Journal* (media support). From advertising, to event set-up, to provision of tour guides and spotters both before and during the Festival, the partners, their staff, and volunteers were invaluable to the success of the Snow Goose Festival.

Dr. Glen Hvenegaard and his students surveyed over 1,000 participants in the 2000 festival. The majority of them (59%) were from Edmonton, with another 22% from within 25 km of Edmonton. Remarkably, 2% were Canadians from other provinces and 2% were from other countries. In a festival of 5,000, that means 100 people came from outside Alberta and 100 from outside Canada. One lady travelled by bus

from Nevada to Edmonton to Tofield to see the geese and enjoy the festival! When she approached one of the organizers for directions and told her story, he took her on a personal tour to ensure that she saw Snow Geese and other birds.

The survey estimated that 5,000 participants injected \$100,000 into the Tofield economy in two days. Because most of them were local, their average expenditure was about \$22 per person. Their reasons for attending were varied, including to learn about geese, to be outdoors, and to enjoy a social outing. Good weather was obviously a key to a successful festival, but with warm buses and lots of indoor activities, the festival was not totally dependent on sunny days in April.

In 1993, when the festival began, there were only 10 such wildlife festivals in North America, and the Snow Goose Festival arguably attracted the largest audience. By 2002, 240 festivals were held across the continent. [In 2010, 90 festivals were held in Canada, 22 of them in the three prairie provinces.](#) These festivals offer many benefits to participants, who learn about wildlife biology, conservation, habitat, climate change, and a myriad of other issues.

Years of drought led to reduced water levels in Beaverhill Lake, which in turn resulted in a declining number of birds in the immediate area, longer bus rides to reach them, and fewer accessible viewing sites for this spectacular spring display. Some of the major sponsors withdrew their support of the festival as staff and managers changed. Tofield alone was unable to replace the expertise, which led to the decision to suspend the festival after 2002.

The Edmonton Nature Club with the leadership of Bob Parsons continued the spring tradition with their “Snow Goose Chase Tours,” providing guided bus tours for youth and adults from Edmonton. Family-friendly wildlife displays were set up in the Tofield Community Hall on a Saturday. Sponsorships for the buses and volunteer guides were coordinated by the Edmonton Nature Club.

In the spring of 2019, the Edmonton Nature Club did not offer Snow Goose Chase Tours. Nature Alberta’s Nature Kids Program organized a “Celebration of Wildlife” tour of Miquelon Provincial Park and the [Beaver Hill UNESCO Biosphere Reserve.](#)

In June 2019, a dozen or so representatives of interested organizations met in the Tofield Council Chambers and agreed to work towards a renewed festival in April 2020. We encourage you to watch for more news, and offer your time and support for this highly anticipated renewal of the festival. With more water in Beaverhill Lake and the spring return of huge Snow Goose flocks, the time is ripe to reintroduce residents of central Alberta and beyond to our spring wildlife festival. We thank Judith Johnson and Gerry Beyersbergen for comments on an earlier version of this article.



Volunteer Diane Anderson assists at a BBO display at the Strathcoan Wilderness Centre with “Hawkeye”, one of our educational owls, held here by Takisha Mix-Chafe. Photo: Helen Trefry

Beaverhill Bird Observatory’s **BirdSmart Education Program**

It is not too late to book a talk by a BBO staff, with an owl, for your group or class this winter. Topics are varied and tailored to the age of the group.

Contact education@beaverhillbirds.com to book or check out beaverhillbirds.com for more information.

THANKS TO OUR FUNDERS

Finally, the BBO extends a massive thank you to our many funders. Our 2019 fall operations were made possible by financial support from the Alberta Conservation Association, Alberta Gaming, Liquor and Cannabis Commission, TD Friends of the Environment, Nature Canada's Labatiuk Nature Endowment Fund, Bird Studies Canada's Baillie Fund, the Alberta Community Environment Action Grant Program, Serving Communities Internship Program (SCiP), Fortis Alberta, Edmonton Nature Club, Busy Bee Tofield, Clean Harbours (Ryley) and personal donations. **We give a special thank you to the generous donations of Carole and Gary Dodds and another in memory of Mary Hughes Weir. THANK YOU!!**

A BIG THANKS ALSO TO ALL THE VOLUNTEERS THAT STEPPED FORWARD TO VOLUNTEER FOR OUR DECEMBER CASINO, making the life of the organizer for casino volunteers so much easier!



Look at the cool owl eyes on these new BBO toques. These will be on sale at events where BBO is represented, including the kick off to the Edmonton Christmas Bird Count at King's College Friday December 13th at 7:30 pm. Geoff Holroyd will have them on hand to keep you warm while out birding!