

## The WILLET

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Editor Richard Hedley

### A Challenge from the Chair: Donate to BBO's Endowment Fund, and have your donation <u>multiplied eight-fold!</u>

By Geoff Holroyd, BBO Chair

I am again challenging you to donate to our endowment fund. In 2019, BBO established an endowment fund with the Edmonton Community Foundation which has grown to \$450,000 in only four years thanks to your generous donations and to matching funds from an anonymous donor at ECF. This endowment fund now generates over \$15,000 per year to BBO. This funding provides secure salaries for our awesome staff. We want to grow this fund again this year.

If we can raise \$50,000 this year, we will have over half a million dollars generating funds to support BBO forever. Here's how your donation will be **multiplied by eight**:

- I will match all donations up to \$10,000, doubling your donations.
- The BBO board will match that amount again, quadrupling your donation.
- Then, the ECF donor will match the combined donations up to \$50,000, reaching an 8x multiplier!

With your help we can add \$100,000 to our endowment fund. Please read this poster and consider donating to BBO, marked 'Endowment Fund'.

Geoff Holroyd, Chair

CLICK HERE TO DONATE TO THE ENDOWMENT FUND.



# PROGRAM FOR ENVIRONMENTAL ORGANIZATIONS



Eligible environmental organizations who contribute up to \$50,000 per year to an existing or new endowment fund at Edmonton Community Foundation are eligible for up to 1-to-1 matching for 2023. If total gifts exceed the amount available for matching, gifts will be matched on a pro rata basis. Funds will be credited to a permanent EMPEO endowment fund for the organization at the end of each year.

**Territorial Acknowledgement:** Beaverhill Bird Observatory is located within Treaty 6 territory, a traditional gathering place for diverse Indigenous Nations, including the Plains Cree, Metis, Blackfoot, Saulteaux and Nakoda Sioux People, who are the original stewards of the Beaverhill Lake area since time immemorial.

#### **Summer and Autumn Seasons' Summary**

By Jana Teefy, Head Biologist

The Beaverhill Bird Observatory had a busy and successful field season with spring and fall songbird migration monitoring, fall owl banding, summer MAPS banding, and banding Tree Swallow, Purple Martin, and Northern Saw-whet Owl nestlings. We once again hosted 8 summer interns to monitor our bats, butterflies, Tree Swallows, House Wrens, and the Grassland Breeding Bird Grid; their reports will be posted on our website shortly (www.beaverhillbirds.com). Additionally, we monitored shorebirds, Least Flycatchers, Marsh Birds, and the Forest Breeding Bird Grid, started a plant inventory, and surveyed for invasive plant species. The BBO also hosted 10 youth for the Young Ornithologists Workshop, school field trips, fall songbird and owl banding events as well as Big Birding Breakfast and Supper and Saw-whets and lots of visitors to the natural area.

Heavy rain and flooding of the trails in July impacted our ability to operate rounds 9 and 10 of MAPS banding and prevented access to the BBO for some time. However, the biologists were excited to see herons foraging on Harrier



Flooding on Harrier Highway Photo by Jana Teefy

Highway and to have pools of standing water at the historical shoreline of Beaverhill Lake. Despite the flooding, 428 birds were captured during the MAPS banding, 1077 birds during the Spring Songbird Migration Monitoring, and 3050 birds during the Fall Songbird Migration Monitoring. Additionally, 190 Tree Swallow and 39 Purple Martin nestlings were banded. The owl banding season started with captures on opening night, surprisingly. A total of 294 Northern-saw Whet owls, 11 Long-eared Owls, and our first and only Boreal Owl since 2019 were captured, bringing our total captures for 2023 to 5090 birds. Along with the owls, a whopping 7 Northern Flying Squirrels were captured in the nets, which



Boreal Owl Photo by Jon Van Arragon

seemed to have had a successful breeding season thanks maybe to the moisture-loving mushroom crop. Highlight captures from the season included 4 Pileated Woodpeckers, 2 Blue Jays, a Baird's Sparrow, a Northern Shrike, and, of course, the Boreal Owl!

The BBO was excited to initiate a project to track migrations of Saw-whet Owls using nano-tags in a backpack configuration which are detected by the MOTUS stations across North America. A resoundingly successful "Sponsor an Owl" fundraiser was launched in the spring, which funded all 50 nanotags. The nanotags were deployed on a variety of ages and sexes of saw-whets and we will be monitoring their movements closely for the next 2 years. (See the two articles in this issue about this project).

The Purple Martin colony had its second successful breeding year with 22 of 24 nest cavities having successful

nests. We are delighted to have an established colony and are planning to further study this species in the coming summer seasons.

In addition to the Tree Swallow nest monitoring internship, the interns worked with researcher, Dr Ivy Schoepf, of the University of Alberta on a study of haemosporidian infection. She is studying a correlation between avian malaria-carrying parasites and nest site selection.

The BBO was happy to host the 7<sup>th</sup> annual Geoff Holroyd's Young Ornithologists Workshop for young birders from as close as BC and Alberta and as far away as Massachusetts and Japan! The youth spent the week learning to band, age, sex, and extract songbirds from mist nets, learned various wildlife monitoring techniques, went pond dipping for aquatic invertebrates,



The 2023 YO team. Top: Cala Jorgensen, Toby Ye, Heather Trocher, Helen Trefry, Ethan Denton. Middle: Jon van Arragon, Jana Teefy, Sierra Jamieson, Alex Zbylut, Paul Jacques, Quinn Desilets, Geoff Holroyd. Bottom: Braxton Igne, Dave Lawrie, Jay Froese, Jewels (dog), Mianna Popik, William Buswell, Gwendolyn Bateman-Dungey, Karin Higuchi

completed a shorebird survey, did a falconry tour, released ducklings with WildNorth, heard talks about nesting Tree Swallows and endangered Burrowing Owls and did a big birding day.

Three new education ambassador birds joined the BBO this year – Tansi the Great



Nina, the Burrowing Owl Photo by Jana Teefy

Horned Owl, Nina the Burrowing Owl, and Keith the Red-tailed Hawk. The biologists had the pleasure of hosting the owls at the station for handling training for our winter BirdSmart Education Program where they travel to classrooms, afterschool groups, daycares, retirement facilities, and private events to present on birds, conservation, and climate change.

Additionally, this winter brings hopes of another new project – the BBO is partnering with researchers in eastern Canada to band and study Snow Buntings, which are nomadic wintertime birds that look like toasted marshmallows!

The BBO would like to thank the many volunteers who helped with banding operations, hosting events, and chipped in with meal prep and dishes for Big Birding Breakfast, Supper and Saw-whets, and the Young Ornithologists Workshop. Your help is much appreciated! And we thank all our sponsors and donors who make all these activities possible.

#### **Supper and Saw-whets 2023**

By Logan Bradley

We had the pleasure of hosting over 100 ticketed guests for our annual Supper and Saw-Whets event over two nights, October 23<sup>rd</sup> and 24<sup>th</sup>. The owls were a bit slow to appear on the first night, and it wasn't until late that we captured two saw-whets. On the second night, however, they showed up in droves and we captured 10 saw-whets without much



Guests enjoy a meal at the observatory on a summer evening. Photo credit: Geoff Holroyd

delay. Among these was our 100th owl for the season!

In addition to the owling and a superb meal, guests had the opportunity to spend time with three of our educational ambassador birds: Nina the burrowing owl, Tansi the great-horned owl, and Keith the red-tailed hawk. They also had the chance to learn more about our new Motus tagging project directly from our chair, Geoff Holroyd. Our second night featured a fantastic performance by award-winning singer-songwriter Mallory Chipman, whose music is strongly influenced by the vocalizations of our native Alberta bird

species and the challenges they are facing. Many thanks to all the kitchen volunteers, especially Helen Trefry, and others who helped make the event such a success!



Singer-songwriter Mallory Chipman provided the evening's entertainment. Photo credit: Geoff Holroyd.

#### An Early Fall Migration at the BBO

By Jon Van Arragon, Assistant Biologist

One of the exciting things about monitoring bird migration is that every season is slightly different. Some species might be more abundant than in previous years, while others can be noticeably absent. I have been monitoring migration with the BBO for 3 years, and in that time I've gained a good sense for the "normal" timing of migration for the species found in the natural area.

As a whole, the timing of fall migration this year was unusually early. When we opened our nets for the first day of fall migration monitoring on July 20<sup>th</sup>, we were already catching species that breed in the boreal forest and migrate south. We had already documented large numbers of Tennessee Warblers, and other migratory species like Ovenbirds and Black-and-white Warblers made early appearances as well. Was their appearance due to fires in the boreal forest, a local insect boom, or both?

In a typical year, we expect our songbird captures to peak in early September. This year, however, we experienced our highest single day of captures on August 19th. One of the most surprising captures was a Wilson's Warbler we caught on August 8th, as we usually don't encounter this species until September! The most dramatic differences in migration timing were apparent in songbirds that breed in the boreal forest, so the early arrival of these



This adorable Wilson's Warbler was caught on August 8<sup>th</sup>, far earlier than typical for the species! Photo by Jon Van Arragon

species could be linked to the widespread forest fires and dense smoke that impacted boreal regions this year.

Our owl migration was a little more typical in timing, but still a few days ahead of the usual schedule. The busiest nights were October 3 and 5, a bit ahead of the usual October 8<sup>th</sup> peak. Our owl captures also declined very abruptly once the snow hit: we didn't catch a single owl from October 25<sup>th</sup> until the end of the season on the 29<sup>th</sup>!

While these timing differences are likely just yearly anomalies, they still provide an interesting insight into the lives of our birdy friends. It'll be exciting to see what the next season brings!

#### BirdSmart Education

During the winter months, the BBO operates an education outreach program called BirdSmart Education. Our staff give in-person presentations with a live bird of prey to all grade levels (pre-k to 12) that are tailored to match the Alberta Curriculum and focus on birds, conservation and climate change. Presentations are also available to afterschool groups, seniors homes, birthday parties and more! Book your presentation today to meet a live bird of prey and learn about the natural world.



Click **HERE** to learn more.

#### It's Smart to Support BirdSmart

By Geoff Holroyd, BBO Chair

BBO is so proud of our winter education program that we copyrighted the name 'BirdSmart'. Last winter, our amazing staff gave 222 presentations to 17,500 students and 1,000 adults, a 50% increase over the previous winter. Free from the constraints of the pandemic, they were back in schools, seniors' homes, youth groups and even a few birthday parties. Elementary schools comprise most of the audiences where we talk about topics that are grade-appropriate from the Alberta School Curriculum. Accompanied by a live raptor, falcon, or owl, which is shown at the end of the talk, our positive presentations hit home with action items that children can do right away to promote conservation and reduce impacts on climate change. The BirdSmart Education program reached students across the province including Alder Flats, Beaumont, Calmar, Camrose, Cooking Lake, Drayton Valley, Edmonton, Fort McMurray, Fort Saskatchewan, Gibbons, Hastings Lake, Lac La Biche, Leduc, Red Deer, Sedgewick, Sherwood Park, Spruce Grove, St. Albert, Stony Plain, Swan Hills, Tofield, Wainwright, Westlock, and Winfield. Our positive messages received a 5-star rating on the teachers' survey. 100% of survey respondents said they would book another presentation with BBO in the future, and 100% of respondents also said they would recommend the BirdSmart program to other teachers. BirdSmart Education is increasingly being recognized as a classroom resource, with many teachers booking presentations year after year. We even gave presentations at both intermissions at an Oilers and at an Oil Kings' game in Roger's Place! A big thank you to last winter's presenters outgoing head biologist, Sara Pearce Meijerink, current head biologist, Jana Teefy, and assistant biologist, Jon Van Arragon, with occasional talks by our Chair, Geoff Holroyd. With ten presentations per week mostly booked for this winter we thank Jana, Jon, Jasper and Logan for their great work in advance. To support BBO's BirdSmart program, donate now by clicking here.



Jon and Maple during a classroom presentation.

#### **BBO** Fundraiser

Please consider supporting the Environment and BBO by visiting tru-earth.sjv.io/BBO or Scan QR code to place an order. BBO earns 20% on all purchases made through this link.





#### **BBO** Merchandise

The BBO now has an online merchandise store! Purchase t-shirts, hoodies, crew necks, and more with the BBO logo or an adorable Northern Saw-whet Owl on it.

Check it out today!





The Beaverhill Bird Observatory is again featured as an Edmonton Oilers Community Spotlight.

Get your discounted Edmonton Oilers game tickets **HERE**!

BBO receives proceeds from each ticket sold and will be featured live at an Oilers game!

#### **BBO's MOTUS tower scores big time**

By Geoff Holroyd, BBO Chair

When we turned on our 80-foot tower and MOTUS station on August 17, 2021, we didn't know what birds might pass by. We needed the high tower to clear the treetops so that we could get cell phone and Wi-Fi signals. At ground level the trees and especially their leaves prevent access to these communications needs. I remember students texting then throwing their phones into the air while standing on a picnic table to get their message out. John Scott found the used tower and arranged for its installation. The Canadian Wildlife Service purchased the MOTUS hardware, and the Edmonton Nature Club funded its installation by professionals. To top it all off, Kuby Solar installed the power system to bring it all to life.

Now that it's up and running, when a bird with a nanotag flies within 15 km of our tower, the tag's signal is picked up and its serial number is decoded. The record is then automatically sent to Birds Canada's central computer where the information is made available on their website <a href="www.motus.org">www.motus.org</a>. One word of caution: surfing motus.org can be addictive!



A white-throated Sparrow, like those that passed by the BBO MOTUS tower in 2022 and 2023.

The first bird to be picked up by our tower was a White-throated Sparrow that was tagged by Ken Otter, University of Northern BC near Prince George, about 700 km due west of BBO on May 26, 2022. Subsequently three other White-throats from his and another BC project went past BBO in 2023. Their winter detections show that these individuals flew east then south into the mid-west USA. BBO seems to be on their autumn migration route with the sparrows being detected on August 9, September 26 and October 3 and 4. So far, we have not detected any White-throats on their spring migration.

An important set of records occurred when 25 different Bank Swallows visited us in the second half of July. These Bank Swallows had been tagged by teams led by

Canadian researcher Sarah Endenburg of Carleton University and Alaska researcher Julie Hagelin with Alaska Fish and Game near St. Albert, Alberta, Fox Creek, BC, Whitehorse, Yukon and Fairbanks, Alaska. The projects seek to better understand the migration routes and migratory phenology of the species, which is listed as Threatened under Canada's Species at Risk Act. The two projects tagged 178 swallows and 25 visited us on their southward migration.

Bank Swallows, like other swallows, are renowned for their flying prowess. This was exemplified by a trip undertaken by one bird from Fairbanks to BBO – a distance of 2326 km – in only four days. The bird averaged 27 km/h for four days straight. Other

individuals did that flight in five and six days, calculated based on their last detection in Fairbanks and first detection at BBO.

The swallows from Whitehorse and Fort St. John were not as fast, presumably because the swallows stopped somewhere en route or just weren't pick up by the local MOTUS stations. Some appeared to stay for a few days at Beaverhill Lake, but most were only detected briefly. However, two were only briefly at Beaverhill but then detected 24.5 and 27 hours later near Brandon, Manitoba for an average speed of 34 and 37 km/h, respectively. These swallows flew right past Beaverhill then overnight to cross Saskatchewan! Another swallow was south of Saskatoon, 282 km from BBO in 9 hours for an average speed of 29km/h. These 25 swallows demonstrate that Beaverhill Lake is an important migration site for the western populations of Bank Swallows. Between the sparrows, the swallows, and the owls (see the next article), the installation of MOTUS has begun to paint a deeper picture of the lives of birds that pass by the BBO and rely on Beaverhill Lake. The ability to glimpse into the lives of migratory birds in this way is exciting – a privilege that previous generations could only dream of. The early returns on the MOTUS station can only be described as a resounding success. The question is, what will next year hold? Stay tuned to find out!



A Saw-whet Owl sleeping in the morning after getting a nanotag. Photo by Sian Ford



BBO's 80' communications tower with MOTUS antennae, and cell and WiFi dishes on top. Photo by Geoff Holroyd

#### **Following our Saw-whets**

By Geoff Holroyd, BBO Chair

Our new project to follow saw-whet owls using the MOTUS network is producing amazing results. First, thank you to those members who sponsored a nanotag. With 50 tags sponsored we were able to undertake a major project to learn more about this iconic small and mighty owl. After researching other projects to track saw-whets with nanotags, I concluded that the attachment method – a leg harness with the tag sitting on the rump of the owl – was not adequate. All the projects that I reviewed on the MOTUS website appeared to show that many owls were not detected after they were released. The leg harness comprises two pieces of elastic fabric holding the tag over the owl's rump. I suspect that with a strong raptor beak designed for cutting, the owls were able to cut through the elastic and lose the tag. I have no proof but didn't want to use our tags with low chance of results.



Jana with her first tagged saw-whet

With my background attaching satellite transmitters as a backpack on bigger raptors, I set out to design a backpack for saw-whets. Satellite transmitters have attachment hoops that are used to hold the transmitter on the back of peregrine falcons, burrowing owls and several other species that I have studied. After three weeks of trials and searches for materials, we were able to deploy the first nanotag on a saw-whet at BBO on September 16. With help from Jana, Helen, Nicolette and Jerry we made improvements that made the attachment process faster. A US colleague, David Johnson recommended a new fabric tape called Spectra. Nicolette offered surgical needle drivers. Jerry Till brought a dental floss threader when he visited from lowa. An old receiver could be tuned to confirm that the nanotags were turned on. After I had attached 15 tags, Jana did one and what a difference. Her 18 years of

experience as a veterinarian technician showed. She knew what a needle driver was and how to use it. She reduced the attachment time from 15 minutes to 10 and was much neater.

We are now at the end of October with only one nanotag left to deploy. The last one will be used to test reception distances with a new receiver that will arrive this month, and various antennae. The plan is to look for tagged owls with the receiver this winter.

Since some tags were deployed over a month ago, we have exciting results to share. The first thing we have learned is that the owls often remain around BBO for a surprising length of time. We had assumed that owls that we caught were passing through and would be gone from the natural area within a day or two. The nanotags tell a different story. Two tags hold the records for staying within 15 km of BBO's MOTUS tower (our detection radius) for almost a month. Other owls remained for a week or so before heading further on their migration. During this time the owls are completing their body moult, which could explain the extended pause. After the nesting season, adults moult some wing feathers, and both adults and young moult their body feathers. In September, most owls are still moulting body feathers. The occasional adult is still regrowing wing feathers. In October, the body moults are complete. The owls are fatter, presumably ready for migration. And some have migrated!

The second thing we have learned is that saw-whet owls sometimes make unexpected movements southward. Bird banding records have always suggested that most owls migrate southeast, across the prairies into eastern US and Canada. BUT, and it is a big but, most owl banding stations are located to the east. Very few banding stations are south and west of us. And that is where the first owls went. Two traveled south-west to Sylvan Lake and were detected on the same night by a personal station installed by Myrna Pearman, retired director of the Ellis Bird Farm. The next owl was detected on the shore of Koocanusa Lake, 500 km southwest of BBO on the BC-Montana border; this owl then went south into Idaho. Four others were detected in Montana: one south of Waterton Lakes National Park which then joined two others south of Missoula. One of these then went south into Idaho. The fourth owl went into northeastern Montana. Finally another owl was detected in central Washington state. Thus,8 owls have been detected away from BBO in the first month of the project. And none have flown east as predicted by bird band recoveries.

Movements of
Saw-whet Owls from
Beaverhill Bird
Observatory
until
10 November 2023



We can hardly wait for the 'rest of the story'. The nanotags emit a signal every 31.7 seconds. Each pulse has the tag's serial number encoded in the signal. The relatively large pause between signals should extend the battery life of our tags for two years. Where will these owls travel and be detected by MOTUS towers? Two years of travel and records will tell us a great deal about their migrations and habitats across North America. One highlight of the project was a visit by Jerry Till, a biologist at the Hitchcock Nature Center in Iowa. Jerry flew to BBO specifically to learn how to attach nanotags in a backpack on the owls. Apparently, no one else has done this and he wanted to see our project firsthand. With this experience he can qualify for a US permit to attach nanotags next year.

And a second highlight was the interest shown by owl researchers and conservationists at the Global Owl Conference in La Crosse, Wisconsin. I attended the conference from October 23-26 and gave a demonstration of our attachment technique to many attendees who were keen to learn. We will publish our technique this winter so that others can learn what we have done.

Watch for the next update when our owls have more to tell us. Thank you again to those who sponsored nanotag(s) which allows this project to be initiated. They and your contribution to BBO is the key to our many programs. THANKS.

## Bat house occupancy of the Little Brown Bat in the Beaverhill Natural Area: Implications of bat house design in relation to sun exposure

Maria Mejia, BBO intern

The BBO has maintained about 40 bat boxes in the Beaverhill Natural Area for several years in an effort to encourage Little Brown Bats to occupy the early successional forest. The boxes provide roost sites for male bats and maternity sites for females. Natural roost sites are limited because of the narrow trunks in the trees and lack of any alternate cavities. I surveyed the number of bats in the roost boxes in 2023, then analyzed the occupancy of boxes from 2020 to 2023. The number of maternity colonies increased from 6 occupied in 2020 to all 12 occupied in 2023. Several hundred female bats successfully raised their single pups in the natural area this year thanks to the conservation efforts of BBO. My analysis of these boxes showed that those with partial or direct sun were preferred over boxes that were always in the shade. The bats especially preferred boxes that received direct sun in the mornings or evenings. There was no preference for habitat type (in forest, forest edge or in grassland) presumably because all the boxes are close enough to open areas where they can feed on insects in the evenings. I recommend that more boxes be established within the natural area to increase the local bat population.

I would like to thank the Beaverhill Bird Observatory's biologists, staff, and volunteers for the opportunity to participate as a bat intern. A special thanks to Lizelle Odendaal and Erin Low for their guidance and support as mentors. A huge thanks to Jazper O'Driscoll for being an incredible intern partner venturing together during the late nights and always making sure we both got home safe. I thank The Alberta Conservation Association and the Dodd family for funding my internship. My complete report can be found at <a href="http://beaverhillbirds.com/publications/student-interns/">http://beaverhillbirds.com/publications/student-interns/</a>



Beaverhill Bird Observatory bat house designs. (a) Large brown single chamber. (b) Brown large multi-chamber. (bi) Blue medium multi-chamber. (c) Small red single chamber. (ci) Small red single chamber on edge habitat. (a,c) Large brown single chamber (left) and small red single chamber (right) (photos by Maria Mejia, 2023).

#### Wildlife Camera Highlights

By Jasper June, BBO Staff Member

Wildlife cameras provide useful data for monitoring wildlife over time without human disturbance. Beaverhill Bird Observatory has three trail cameras that record wildlife presence in the area. This data is then analyzed by our team after the season. Wildlife cameras also have the benefit of monitoring at night, allowing us to record the activity and presence of animals who are largely nocturnal. Animals we have documented include white-tailed deer, mule deer, moose, coyotes, porcupines, snowshoe hares, and skunks.

By comparing this year's trail camera data to the previous year, we can also notice changes in population trends and wildlife presence. For example, this year, there was a



A female white-tailed deer trailed by a fawn.

decrease in the number of striped skunks seen on the cameras at Beaverhill Bird Observatory. In 2022, there were several skunk sightings recorded on the cameras, while in 2023 there were none. Consistently, last year, there was a high number of skunks seen by the public in Beaver County, and the Edmonton Area<sup>1</sup>. Similarly, there was also a decrease in the number of coyotes, porcupine, and moose recorded on our trail cameras. Mule and white-tailed deer sightings on our trail cameras have remained relatively consistent across 2022 to 2023.

Research has shown that animals notice wildlife cameras and pay attention to them<sup>2</sup>. Many animals became curious about the presence of our wildlife cameras. Check out a couple of our favourite moments from this year below!





- $1. \quad \text{Komadina, S. (2022). More skunks being spotted in Edmonton: `We can learn to live with them'. \\ Global News. \ \text{https://globalnews.ca/news/8954792/edmonton-skunk-population/}$
- 2. Meek, P. D., Ballard, G. A., Fleming, P. J., Schaefer, M., Williams, W., & Falzon, G. (2014). Camera traps can be heard and seen by animals. *PloS one*, *9*(10), e110832. https://doi.org/10.1371/journal.pone.0110832



The Beaverhill Bird Observatory is a proud member of the Beaver County and Tofield communities. We thank our many supporters and funders that are shown below along with personal donations including in memory of Mary Hughes Weir and the Wainwright Wildlife Society. Visit www.beaverhillbirds.com for more information.





































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