



Beaverhill Bird Observatory Annual Report 2019

By
Sara Pearce Meijerink

April 2020

THANK YOU TO OUR SPONSORS

The Beaverhill Bird Observatory (BBO) extends a massive thank you to our many funders who supported our projects and conservation efforts in 2019. We could not have accomplished so much if it was not for you! So thank you to; Alberta Conservation Association, Alberta Gaming, Liquor and Cannabis Commission, TD Friends of the Environment, Nature Canada's Labatiuk Nature Endowment Fund, Birds 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 Dodd, to sponsor internships and another in memory of Mary Hughes Weir. THANK YOU!!

Note from BBO Head Biologist, Sara Pearce Meijerink

What another phenomenal year at the BBO! I would like to take this chance to thank all our amazing staff, dedicated board members, volunteers and funders for supporting the BBO in all the ways you do! We would not have been able to achieve all the following listed in this report without your help. This year, our BirdSmart Education program reached 16,000 students and 3,200 adults across Alberta educating the public and students about birds, conservation and climate change. We had another great migration and MAPS seasons, highlights including our first Black-throated Blue Warbler in 9 years, and our first EVER Rufous Hummingbird and Townsend's Warbler. We successfully installed new Alberta Parks signage throughout the natural area to improve visitor experiences and hosted Sonia Vallocchia and Jac Curry, two amazing full time volunteers who donated their sweat, strength, enthusiasm and time to the BBO in 2019. Thank you everyone for continuing to make the BBO community so wonderful to be a part of!

Table of Contents

Thank You to Our Sponsors.....	2
Note from BBO Head Biologist, Sara Pearce Meijerink.....	2
Chair’s Report 2019.....	4
List of Executive and Contact Information.....	5
Spring Report.....	6
Summer Report.....	8
Fall Report.....	12
New Signage.....	15
Weekly Updates.....	16
Intern Reports.....	17
BirdSmart Education Program	18
Alberta Nocturnal Owl Survey	20
Willet Newsletters.....	21
Recent Publications.....	22
2019 Financial Report.....	23
Acknowledgement of Donors.....	28

Chair's Report 2019

This year was one of the most productive in the history of BBO. We maintained all our education and research activities, established an endowment fund, grew our membership to over 600 people and made plans for a new education center to replace our aging lab. These many accomplishments are due to the many, dedicated efforts by our staff, board members and other volunteers; thank you for your contributions.

Our winter BirdSmart Education Program contacted over 16,000 people with almost 300 talks across Alberta. Our staff did the majority of the talks, worked on grant proposals, permits and the many varied paperwork exercises that are need to keep BBO so active.

Our summer activities of Big Birding Breakfast, Steaks and Saw-whets Super, Young Ornithologist Workshop and many internships continued successfully. Our staff conducted daily migration monitoring in spring and autumn and three MAPS (monitoring avian productivity and survivorship) projects through the summer. With the donation of signs from Alberta Parks, we replaced our hand made signs with professional, weather proof signs to better serve the public who visit the natural area.

We established an endowment fund with the Edmonton Community Foundation who provided matching funds to result in a fund of \$140,000 in BBO's name by years end! A great legacy that will serve BBO far into the future. I encourage you to consider donating to the BBO endowment now and in your will. An endowment of \$10,000 or more can be named as a permanent legacy of a loved one that will benefit BBO forever.

We ended the year in a very strong financial position which will allow us to move forward in 2020 with the construction of a new education center to replace our aging, small lab; a very exciting project. The center will be powered by solar panels, will have a cell tower with WiFi and a MOTUS station. MOTUS is a bird tracking system that is being used in eastern Canada and in the US to learn more about bird movements. This new building will allow us to expand our educational experience for visitors and participate in more research projects. The results of past research are included in the publications pages below.

All of these activities are made possible by our competent staff and dedicated board and volunteers. I have not named anyone in this letter for fear of leaving names out. Many people are named in the pages below. Each of your efforts are greatly appreciated. I thank you for your contributions to BBO and for your ongoing membership in our influential organization.

Think Globally, Act Locally.

Dr. Geoff Holroyd

List of Executive and Contact Information

First Name	Last Name	Position	Year Joined the Board
Geoff	Holroyd	Chair	1988 (1984)
Helen	Trefry	Vice-Chair	2014
Rose	Scott	Treasurer	2016
Thea	Carpenter	Recording/Membership Secretary	2013
Andra	Bismanis	Director at Large	2018
Laurie	Hunt	Director at Large	2015
Darren	McGregor	Web Designer	2005
Steve	Andersen	Director at Large	2016
Emily	Upham-Mills	Director at Large	2016
Alyssa	Bohart	Director at Large	2018
Julianne	Hayes	Director at Large	2019
	STAFF		
Sara	Pearce Meijerink	Staff	
Stephanie	Thunberg	Staff	
Karambir	Singh	Staff	
Emily	Grose	Staff – Spring & Summer	
Jeremy	Lambe	Staff - Summer	
Connor	Hawey	Staff - Fall	
Christian	Lunn	Staff - Fall	

Contact Information:

Geoff Holroyd - chair@beaverhillbirds.com

Sara Pearce Meijerink – biologist@beaverhillbirds.com

Spring Report

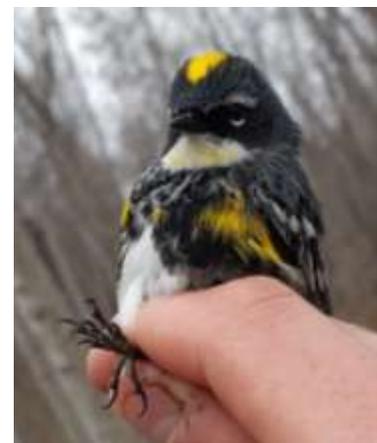
Migration Monitoring

Thirteen mist-nets (2, 2X, 8, 9, 9X, 50, 51, 52, 53, 54, 55, 56, and 57) were operated from May 1st to June 9th on days that were above zero degrees Celsius, relatively calm (wind below 20 km/h), and free of precipitation. A total of 2503 net-hours was accumulated this spring with only a few weather days that forced us to shut down banding operations for the day (Table 1). During spring migration 647 birds were captured, of which 491 were newly banded. Our number of captures were slightly higher than in 2018, but our species diversity was the same as last year with capturing a total of 44 different species!

Table 1. Numbers of captures, mist-netting effort, capture rates, and number of species caught during spring migration monitoring at the Beaverhill Bird Observatory since 2004.

	2004	2005	2006	2007	2008	2009	2010	2011
Total Captures	532	276	242	408	382	500	497	412
Birds Banded	424	196	169	318	288	351	333	241
Net hours (NH)	1809	1570	1615	1813	1828	1608	2016	1884
Capture Rate (birds/100 NH)	29.4	17.6	15.0	22.5	20.9	31.1	24.7	21.9
Species Captured	38	32	31	44	38	39	38	40
	2012	2013	2014	2015	2016	2017	2018	2019
Total Captures	459	324	841	810	849	996	607	647
Birds Banded	307	211	561	641	663	802	443	491
Net hours (NH)	1997	1884	2615	2859	3432	2031	2594	2503
Capture Rate (birds/100 NH)	23.0	17.2	32.2	28.3	24.7	49.0	23.4	25.8
Species Captured	39	36	43	45	54	51	44	44

May 17th to 24th was our busiest week of spring migration, with 248 captures and highlight captures included a Tree Swallow, a Blue-headed Vireo and a Ruby-throated Hummingbird! Our single busiest day of banding occurred on May 18th when we caught 52 birds of 12 species, including a Gray-cheeked Thrush and a flashy American Redstart. Other notable captures this spring included a hybrid Yellow-rumped Warbler, two Blue Jays, and the beautiful male Rufous Hummingbird!



Hybrid Myrtle/Audubon Warbler

Big Birding Breakfast

The Big Birding Breakfast was an enjoyable event once more this year, with many visitors and eager kids! We had a total of 73 adults and children on June 1st and 2nd making the breakfast another successful fundraiser and awareness days for the BBO! Rickie (the Northern Saw-whet Owl) entertained guests between net checks and staff completed crafts and played nature games with many kids while Geoff Holroyd and Andra Bismanis took visitors on nature walks. Everyone got to go on net checks, witness bird banding up close and personal, and many of the kids got to release the birds off their hands! A great weekend, enjoyed by everyone who came out!

Great Canadian Birdathon

The BBO staff and volunteers had a fantastic birdathon this year! 87 species were identified in a 24 hour period, starting with morning banding followed by birding at Amisk Creek, Tofield Llama pond, Elk Island and Whitemud Creek. Further, we had a total of 20 people participate in our birdathon this year, some of which who had never birded before, which was incredible! Highlight sightings included a Merlin, 17 species of duck, Least Sandpipers, and a Barred Owl. We raised \$2065 this year so a BIG thank you to all who donated and participated! Geoff and Helen also completed a birdathon to support BBO by visiting Amisk Creek, Tofield Llama pond, Elk Island and Lindbrook area, and they identified 104 species (between the two of them!) and raising over \$1,000!



This is a shortened version of the spring report. You can find the full version on our website: <http://www.beaverhillbirds.com/media/1835/2019-spring-report.pdf>

Summer Report

Highlights

The 2019 summer season covered June 20th to August 10th. Throughout the summer, programs were operated by Head Biologist Sara Pearce Meijerink, Assistant Biologist Emily Grose, and Summer Assistants Jeremy Lambe, Karambir Singh, and Stephanie Thunberg. The MAPS program (Monitoring Avian Productivity and Survivorship) was operated for six rounds, with a total of 638 birds captured. This is the most captures the BBO has ever had during its 31 years conducting MAPS! For the fourth consecutive year, the BBO has hosted the Geoff Holroyd Young Ornithologist Workshop and BBO staff mentored 9 youths from across Canada. Workshop attendees spent a week on site learning about bird banding, bird conservation and biological sciences. Staff also conducted nest searches, statistical analysis through R-studio, presented education programs to the public, retirement homes and outreach events, and interacted with visitors. During the summer 12 interns continued to operate programs including; breeding bird surveys, Tree Swallow nest boxes, House Wren nest boxes, bat surveys, and butterfly surveys.

BLAB

The BLAB station is located near the banding lab (N53.38055° W112.52737°) with the majority of the nets situated to the southeast of the lab. Historically when this station was first established, the habitat was described as being young willow, aspen and poplar near water. However, during the 29 years since then, forest succession has occurred and along with the fluctuating water levels of the Beaverhill Lake, the habitat can now be described as mixed aged aspen and poplar forest. Banding at the BLAB station occurred on June 10th, June 21st, July 2nd, July 11th, July 20th, and August 5th.

BLAB experienced a relatively busy year, boasting a total of 100 birds composed of 14 different species. There was an effort of 350 net hours, for a capture rate of 28.57 birds per 100 net hours. Like previous years, Least flycatchers were our most frequent species captured (62), accounting for 62% of all birds caught, followed American Robins (19), Hermit Thrushes (6) and Red-winged Blackbirds (3). Other noteworthy captures include Rose-breasted Grosbeaks (2), Ruby-throated Hummingbird (1) and a Yellow-bellied Sapsucker (1).



An American Robin

SOPO

The SOPO station (N53.37936° W112.51921°) is located at the intersection of Harrier Highway and Flicker Freeway in the Beaverhill Natural Area. It borders Sora Pond and Lister Lake and the habitat there comprises mixed aged aspen and poplar forest which transitions into willow that borders the two water bodies. Banding occurred at the SOPO station on June 12th, June 26th, July 4th, July 12th, July 26th and August 7th.

This year SOPO had both fantastic species diversity and numbers, totaling 33 different bird species and 336 captures. There was an effort of 350 net hours, for a capture rate of 96 birds per 100 net hours.

Least flycatchers were caught the most (95), followed by Yellow Warbler (41), Red-winged Blackbird (40), and Black-capped Chickadees (35). Other noteworthy captures include a Black-throated Blue Warbler (1), a Ruby-crowned Kinglet (1), a Sora (1), a Common Grackle (1) and an Eastern Kingbird (1).



An Eastern Kingbird

LILA

The LILA station (N53.37216° W112.52930°) is located on Harrier Highway beside the shoreline of Lister Lake, just east of the viewpoint. The habitat is mixed age aspen and poplar, transitioning into willows that border Lister Lake. Banding at the LILA station occurred on June 13th, June 27th, July 9th, July 17th, July 27th, and August 8th.

This year LILA suffered from continuously unfavorable weather, reducing the total net hours significantly relative to the BLAB and SOPO stations. However, despite the weather LILA nets managed to catch 202 birds. There was a net effort of 303.5 hours, for a capture rate of 66.26 birds per 100 net hours. Least flycatchers were caught the most (78), followed by Black-capped Chickadees (30), Yellow Warblers (14), and Song Sparrows (13). Other noteworthy species include Cedar Waxwings (9), Yellow-bellied Sapsuckers (10), Gray Catbirds (2), Baltimore Orioles (2) and a Common Yellow-throat (1).



Karambir Singh and a Black-capped Chickadee

Other Banding

Throughout summer, staff banded Tree Swallow nestlings from 205 nest boxes, hailing from the New, Spiral, and Road grids. Tree Swallow nestling banded occurred from June 20th to July 4th. A total 566 Tree Swallow nestlings were banded, including 5 Mountain Blue Bird nestlings. A total of 23 adult Tree Swallows were also banded.

Geoff Holroyd brought his hummingbird trap out to the Young Ornithologist Workshop, and later during Migration Monitoring with staff. He banded 12 individuals, 6 banded at the Beaverhill Bird Observatory, and 6 at the Trefry's residence, including 5 new bands, and one return from 2017.



A Ruby-throated Hummingbird.

Geoff Holroyd Young Ornithologist Workshop

This is the fourth consecutive year the BBO has hosted the Geoff Holroyd Young Ornithologist Workshop for youth, ages ranging from 15- 18 years of age. Workshop attendees came from all over Alberta and Canada, including Kelowna B.C., Brantford Ontario, and Montreal Quebec. All participants had the opportunity to experience our Migration Monitoring and MAPS banding program. By the end of the week, almost every youth was banding and able to extract birds from the net with supervision. Afternoons provided networking opportunities for the young birders, where guest speakers came out to share their knowledge and experience. Guest speakers included Geoff Holroyd (Hummingbird Banding and Tree Swallow talk), David Lawrie (Moths and Butterflies), Helen Trefry (Peregrine Falcon Conservation and tour), Gord Court (Owl Conservation), and Kim Bloome (Wildlife Rehabilitation). Staff led the Young Ornithologists on a Big Birding Day around the BBO, Tofield wetlands and Elk Island National Park. Our keen

young birders stayed up until 4:30am tallying up 116 different species, including a Short-eared Owl in the natural area! During the workshop we borrowed songbird specimen from the Canadian Wildlife Service collection, allowing the youth to practice their aging/sexing skills. Kim Bloome from WildNorth treated us to a duckling release that went swimmingly, and David Lawrie help us collect and identify butterflies throughout the natural area.



The 2019 Young Ornithologists!

This is a shortened version of the summer report. You can find the full version on our website: <http://www.beaverhillbirds.com/media/1869/summer-report-2019-draft.pdf>

Fall Report

Songbird Migration Monitoring

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 (Table 2) despite the colder temperatures staff experienced in October. 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 2. 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.



Boreal Chickadee



Irene 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.

Owl Migration Monitoring

Head Biologist Sara Pearce Meijerink and Assistant Biologists; Connor Hawey, Christian Lunn, as well as nightly hires; Jeremy Lambe and Josue Arteaga-Torres, and long-term volunteer Jac Curry, led BBO's owl migration monitoring program this fall. Four mist nets with a male



Long-eared Owl
Photo Credit: Irene Crosland

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. Nets were only operated on evenings that were calm, warmer than minus 15 degrees Celsius, and relatively free of precipitation.

991.5 playback hours were accumulated this fall (384 playback hours for male Northern Saw-whet Owl, 326 playback hours for female Northern Saw-whet Owl, 196 playback hours for

Long-eared Owl, and 85.5 playback hours for Boreal Owl). For a total of 475 owl captures (444 Northern Saw-whet Owls, 25 Long-eared Owls, 4 Boreal Owls and 2 Great Horned Owls) which resulted in a capture rate of 47.9 owls/100 playback hours (Table 3).

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

Education, Outreach and Other Activities

During songbird banding, we had a number of visitors join us in the mornings, including a home school group and Lakeland College! Laurie Hunt also brought out her students from NAIT to do some vegetation surveys at BBO for their field school. The data they collected will hopefully help BBO map out the progression of forest succession that has occurred in the Beaverhill Natural Area in the last 35 years.

This year our annual fundraiser Steaks & Saw-whets was a huge hit! Hosted on September 27th and 28th, we sold out both nights (and accidentally oversold one night). With ~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, Rickie the educational Saw-whet Owl was there along with Hawkeye the educational Hawk Owl making his debut, and we successfully caught many wild owls so everyone got to witness the bird banding process up close and personal!

The owl banding season has become very popular and this year we hosted over 450 visitors on site. With a more structured schedule for visitors this year, General Public on Wednesdays and Thursdays, large groups to book Fridays and Saturdays, this gave staff a couple nights a week off to focus on the office tasks associated with this research. Many of the large groups that came out for owls included; a Girl Guides Troop, MacEwan Biological Science Faculty, University of Alberta Outdoors Club, Tofield Library, NAIT Biology Science Club (2 nights), Alberta Chapter of the Wildlife Society (2 nights), City of Edmonton Staff, and the Augustana Wildlife Society.

This is a shortened version of the fall report. You can find the full version on our website: <http://www.beaverhillbirds.com/media/1880/2019-fall-report-final.pdf>

New Signage

Over the course of this spring and summer BBO staff along with volunteers installed new Alberta Park Signs throughout the Beaverhill Natural Area. A HUGE THANK YOU to Greg Ottaway for helping BBO to install these signs and teaching us the regulations around sign installation. Another thank you goes out to Helen and Phil Trefry, and Geoff Holroyd for helping to supply tools and equipment. We also would like to thank Sonia Vallocchia and Geoff Holroyd for volunteering their time in assisting with installation. The new signs look very professional and polished and should greatly help with future visitor experiences when visiting the Beaverhill Natural Area.



Our staff and volunteers proudly posing beside the first of many new Alberta Parks signs being installed in the Beaverhill Natural Area. From Left to Right: Greg Ottaway, Emily Grose, Sonia Vallocchia, Karambir Singh and Jeremy Lambe.

Weekly Updates

BBO's summer and fall staff completed the weekly banding summaries that keep the public up to date on our activities at the observatory. These updates were a fantastic way for the general public to monitor our progress through the field season and find out when the migrants were arriving. Be sure to follow us on Facebook and Twitter where we post these updates in 2020! To view weekly updates from 2019, visit the banding summaries page of our website:

<http://beaverhillbirds.com/updates/banding-summaries/>



*From Top to Bottom, Left to Right we have:
Connor Hawey, Karambir Singh, Stephanie
Thunberg, Emily Grose and Sara Pearce Meijerink*

Intern Reports

The BBO was happy to have twelve student interns this year. Four interns monitored Tree Swallow nest boxes, two monitored House Wren nest boxes, three conducted breeding bird surveys, two monitored bats, and one conducted butterfly surveys. Every intern group had a mentor to help guide them throughout the study period to ensure each project was successful. Board member, Laurie Hunt, organized the BBO internship program, which was funded by SCiP (Serving Community internship Program). These interns allowed the Observatory to complete many more projects than the staff would have been able to do on their own, which we are very grateful for. Intern reports produced in 2019 can be viewed on our website:

<http://beaverhillbirds.com/publications/student-interns/>



2019 BBO Interns!

BirdSmart Education Program

Every year the BBO's BirdSmart Education Program continues to grow and flourish across the province of Alberta. Our educational presentations bring live education owls and falcons into the classroom to teach students about birds, conservation and climate change. All of our presentations are tailored to match the Alberta Curriculum, making it easier for teachers to incorporate these topics with what the students are already learning. During the last winter of 2018/2019 the BirdSmart program, expanded to not only the Edmonton and surrounding areas, but also Stettler, Barrhead, Stony Plain, Morinville, Mulhurts, Drayton Vallye, Camrose, Wetaskiwin, St. Albert, Ardrossan, Cochrane and Calgary.



Student with Colonel, the Barred Owl

Our program operated from September 22nd, 2018 until June 20th, 2019, and in that period, a total of 245 presentations were given to audiences ranging from preschool to seniors. The majority (85.7%) of presentations were to school classrooms reaching approximately 5734 students and 434 adults from 88 different schools (some schools were visited more than once).

Other presentations were given to approximately 13,051 people at 41 adult and youth group organizations. Together seniors' homes, adult presentations and youth groups, including Scouts, Brownies and Beavers covered the majority of the non-school presentations, reaching approximately 786 people from 35 presentations. In addition to presentations BBO staff and volunteers attended an additional 14 events reaching approximately

12,237 people. The Oil Kings Hooky Hockey event had the largest impact, reaching over 10,000 people, 9,000 of which were students. At that event BBO staff had a display and our head biologist was featured on the Videotron for two – 5 minute presentations about bird conservation and climate change to all the hockey fans.

Additional people were reached during events, such as; science fairs, retail store events, private parties, and festivals. During events, staff manned an educational booth complete with BBO program information and a live owl.

To monitor the program's success and receive audience opinions and feedback, a post-presentation survey was sent to all presentation participants through SurveyMonkey.com. Out of

75 questionnaires completed, the majority of respondents (95%) believed the impacts of climate change on birds was introduced in an age appropriate manner and 87% of respondents thought the presentations increased the viewers' understanding of climate change on birds and our environment. An astounding 99% of teachers would recommend BBO's education program to other teachers and 96% of respondents would participate in the education program again!



BBO Board members, Emily and Alyssa representing the BBO with an educational display booth and Rickie the Northern Saw-whet Owl.

If you would like learn more about our BirdSmart Program, please visit our website at: <http://www.beaverhillbirds.com/environmental-education/birdsmart-program/> .

If you would like to book a presentation with our biologists and one of our educational owls, please contact our education staff at: education@beaverhillbirds.com

2019 Update for Alberta's Nocturnal Owl Survey

By Lisa Takats Priestley

The Alberta Nocturnal Owl Survey has been running for 18 years. The survey is now coordinated by STRIX Ecological Consulting and Beaverhill Bird Observatory. We had 190 volunteers survey 96 owl survey routes across Alberta. Boreal and Saw-whet Owl numbers were high, but large owl numbers were average for the survey. Due to cold weather and deep snow conditions, owls were breeding later in the spring, and many volunteers reported hearing more owls in round two of surveys. Although Edmonton, Calgary, Red Deer, and Peace River have high numbers of volunteers, Alberta still needs more routes covered in the north and in the prairies. If you would like to participate in 2021 please contact Lisa Priestley E-mail: lisa@strixeco.ca or phone: 780-662-4909. Surveys are run twice between March 20 and May 5. Please provide a general area you would like to survey, and a mailing address. Survey packages are mailed in February. Due to COVID-19 concerns we are not recommending further surveys in 2020.

Non-duplicate detection rates (owls/station×10) during the 2019 Alberta Nocturnal Owl Survey (STRIX Ecological and Beaverhill Bird Observatory 2019).								
Species	YEAR							
	2012	2013	2014	2015	2016	2017	2018	2019
Boreal Owl	0.51	0.3	0.41	0.41	0.39	0.44	0.26	0.38
Barred Owl	0.25	0.16	0.18	0.21	0.21	0.20	0.23	0.21
Great Gray Owl	0.14	0.07	0.10	0.11	0.12	0.09	0.10	0.14
Great Horned Owl	1.99	1.64	1.85	2.12	2.06	2.04	1.86	1.95
Long-eared Owl	0.16	0.30	0.32	0.29	0.26	0.29	0.25	0.28
Northern Pygmy Owl	0	0	0	0	0.01	0	0.02	0.01
Northern Saw-whet Owl	2.83	1.35	1.75	2.02	3.01	1.67	1.42	2.56
Short-eared Owl	0.02	0	0	0.01	0	0	0.01	0
Number of Routes	99	100	98	98	99	98	97	96
Number of Volunteers	190	185	192	186	190	192	187	190

Willet Newsletters

The Willet is the official newsletter of the Beaverhill Bird Observatory. Three editions are produced annually, containing information about upcoming events, stories from the field and more. In 2019, these 3 issues were produced by BBO Vice-chair of the Board, Helen Trefry, and sent out to our membership. Helen Trefry has been writing and editing our Willet Newsletters for the last 5 years, and has done a wonderful job at that! If you have enjoyed reading our Newsletter, you have her to thank!

If you would like to read editions of past Willets from 2019 or later, click the following link:
<http://www.beaverhillbirds.com/publications/the-willet/>



Helen Trefry, our amazing Vice-Chair, with Moxie, one of her Peregrine Falcons that she hunts with for falconry

Recent Publications

The Beaverhill Bird Observatory is an active participant in many research projects. Although we spend a lot of time in our education program, our research continues often not noticed. As you can see from the list below, we have been involved in a wide variety of research projects either directly or we have facilitated others to do research in the Beaverhill Natural Area and beyond. We thank all the research collaborators for allowing BBO personal to participate in these projects.

Gow, E.A., S.M. Knight, D.W. Bradley, R.G. Clark, M. Bélisle, T. Blake, D.W. Winkler, E.S. Bridge, L. Burke, R. D. Dawson, P. Dunn, D. Garant, G. Holroyd, A. Horn, O. Lansdorp, A.J. Laughlin, M. Leonard, F. Pelletier, D. Shutler, L.M. Siefferman, C.M. Taylor, H. Trefry, C. Vleck, D. Vleck, L. Berzins, L.A. Whittingham, R. Norris. **2019**. Effects of spring migration distance on tree swallow reproductive success within and among flyways. *Frontiers in Ecology and Evolution*, section Behavioral and Evolutionary Ecology

Bourgeois, K.D. **2019**. Response of Birds to Habitat Types, Temperature, and Precipitation in Central Parkland Natural Subregion of Beaver County, Alberta. MSc thesis in Environment and Management, Faculty of Social and Applied Sciences, Royal Roads University Victoria, British Columbia, Canada.

Macias-Duarte, A., C.J. Conway, G.L. Holroyd, H.E. Valdez-Gomez, M. Culver. **2019**. Genetic variation among island and continental populations of Burrowing Owl (*Athene cunicularia*) subspecies in North America. *Journal of Raptor Research* 53(2):127-133.

Lifshitz, Natalia. **2019**. Ornamental colouration as an indicator of environmental pollution with application to the tree swallow (*Tachycineta bicolor*). PhD thesis in Ecology, Department of Biological Sciences, University of Alberta

Knight, S.M., E.A. Gow, D.W. Bradley, R.G. Clark, M. Bélisle, L.L. Berzins, T. Blake, E.S. Bridge, L. Burke, R.D. Dawson, P.O. Dunn, D. Garant, G.L. Holroyd, D.J.T. Hussell, O. Lansdorp, A.J. Laughlin, M.L. Leonard, F. Pelletier, D. Shutler, L. Siefferman, C.M. Taylor, H.E. Trefry, C.M. Vleck, D. Vleck, L.A. Whittingham, D.W. Winkler, D.R. Norris. **2019**. Non-breeding season movements of a migratory songbird are related to declines in resource availability. *Auk*

Lehikoinen A, A. Linden, M. Karlsson, A. Andersson, T.L. Crewe, E.H. Dunn, G. Gregory, L. Karlsson, V. Kristiansen, S. Mackenzie, S. Newman, J.E. Roer, C. Sharpe, L.V. Sokolov, Å. Steinholtz, M. Stervander, I-S. Tirri, and R.S. Tjornlov. **2019**. Phenology of the avian spring migratory passage in Europe and North America: Asymmetric advancement in time and increase in duration. *Ecological Indicators* 101:985–991.
<https://doi.org/10.1016/j.ecolind.2019.01.083>

Pearce Meijerink, S. **2018**. Observations of water levels in Beaverhill Lake in 2017. *Nature Alberta*. 48(1):26-27.

- Gow EA, L. Burke, D.W. Winkler, S.M. Knight, D.W. Bradley, R.G. Clark, M. Be'lisle, L.L. Berzins, T. Blake, E.S. Bridge, R.D. Dawson, P.O. Dunn, D. Garant, G. Holroyd, A.G. Horn, D.J.T. Hussell, O. Lansdorp, A.J. Laughlin, M.L. Leonard, F. Pelletier, D. Shutler, L. Siefferman, C.M. Taylor, H. Trefry, C.M. Vleck, D. Vleck, L.A. Whittingham and D.R. Norris. **2018**. A range wide domino effect and resetting of the annual cycle in a migratory songbird. *Proceedings (B) of the Royal Society Bulletin* 286:2018.1916. <http://dx.doi.org/10.1098/rspb.2018.1916>
- Knight, S.M., D.W. Bradley, R.G. Clark, E.A. Gow, M.B. Elisle, L.L. Berzins, T. Blake, E.S. Bridge, L. Burke, R.D. Dawson, P.O. Dunn, D. Garant, G.L. Holroyd, D.J.T. Hussell, O. Lansdorp, A.J. Laughlin, M.L. Leonard, F. Pelletier, D. Shutler, L. Siefferman, C.M. Taylor, H.E. Trefry, C.M. Vleck, D. Vleck, D.W. Winkler, L.A. Whittingham, and D.R. Norris. **2018**. Constructing and Evaluating a Continent-Wide Migratory Songbird Network across the Annual Cycle. *Ecological Monographs*, 0(0):1–16
- Valdez-Gómez, H.E., G.L. Holroyd, H.E. Trefry and A.J. Contreras-Balderas. **2018**. Home Ranges, Habitats, and Roosts of Wintering Burrowing Owls in Agricultural Landscapes in Central Mexico. *Journal of Raptor Research*, 52(2):178-190.
- Hood, G.A., G.T. Hvenegaard and A. McIntosh. **2018**. Natural goods and services in a mixed-use landscape. Department of Science, Augustana Campus, University of Alberta, Camrose, Alberta, T4V 2R3. Final Report prepared for Beaver County.
- Hood, G.A., G.T. Hvenegaard and A. McIntosh. **2017**. Ecological sustainability in rural landscapes. Department of Science, Augustana Campus, University of Alberta, Camrose, Alberta, T4V 2R3. Final report prepared for Beaver County.



Beaverhill Bird Observatory Society

Financial Statements
December 31, 2019

Beaverhill Bird Observatory Society			
Statement of Operations			
For the year ended December 31, 2019			
	2019		2018
Revenues			
Grants	128,636		94,273
Casino	37,134		40,546
Donations	187,850		91,283
Presentations and talks	30,485		23,189
Events	4,761		4,760
Memberships	2,260		1,640
Miscellaneous	2,150		465
Conference Income	2,590		-
Casino interest income	702		208
Promotional Item Sales	2,133		-
Total Revenues	398,701		256,363
Cost of Goods Sold			
Cost of Promotional Items for Sale	1,482		-
Gross Profit	397,219		256,363
Expenditures			
Salaries	156,153		133,543
Presentation Expenses	3,011		
Depreciation	2,745		6,666
Travel	10,438		13,099
Small equipment	12,467		6,870
Young Ornithologists' Workshop	1,720		1,374
Office expenses	3,088		4,674
Conference expenses	4,966		825
Bursaries	200		700
Events	1,487		1,719
Laboratory supplies	2,007		2,272
Occupancy costs	1,069		1,084
Bank charges	630		496
Repairs and maintenance	1,582		2,314
Licenses, dues and memberships	55		70
Total Expenditures	201,618		175,707
Net income (loss)	195,601		80,656
Net assets, January 1	174,704		94,048
Net assets, December 31	370,305		174,704

Beaverhill Bird Observatory Society			
Statement of Financial Position			
As at December 31, 2019			
	2019		2018
Assets			
<i>Current assets:</i>			
Cash	150,860		48,751
Restricted cash - casino	34,089		47,465
GICs	105,700		75,000
Restricted GIC - casino	-		25,000
Accounts receivable	8,559		14,569
Prepaid expenses	848		626
Undeposited Funds	2,519		150
Inventory	484		
Goods and services tax receivable	635		414
Total Current Assets	303,695		211,975
<i>Non-Current Assets:</i>			
Property and equipment	30,737		33,482
Beneficial Interest in Assets Held in Endowment	140,697		
Total Non-Current Assets	171,434		33,482
Total Assets	475,129		245,457
Liabilities and Net Assets			
<i>Current Liabilities:</i>			
Accounts payable	4,003		60
Prepaid Revenue	-		350
Deferred grant income	44,640		5,358
Current portion of deferred casino income	27,850		37,135
Total Current Liabilities	76,492		42,903
<i>Long Term Liabilities:</i>			
Deferred Casino Income	-		27,850
Deferred Grant Income	28,332		
Total Long Term Liabilities	28,332		27,850
Total Liabilities	104,824		70,753
<i>Net assets:</i>			
Unrestricted net assets	229,608		174,704
Net Assets Restricted for Endowment	140,697		
Total Net Assets	370,305		174,704
Total Liabilities and Net Assets	475,129		245,457

Beaverhill Bird Observatory Society			
Statement of Cash Flows			
For the year ended December 31, 2019			
	2019		2018
Operating Activities			
Net income (loss)	195,608		80,656
<i>Items not affecting cash:</i>			
Depreciation	2,745		6,666
Deferred casino income	(37,134)		(26,795)
Deferred grant income	64,535		17,795
<i>Changes in non-cash working capital:</i>			
Decrease in accounts receivable	6,010		(6,599)
Increase in prepaid expenses	(222)		(356)
Increase in Inventory	(484)		-
Increase in goods and services tax receivable	(221)		(224)
Decrease in Prepaid Revenue	(350)		350
Increase in accounts payable	3,943		(2,298)
<i>Net cash provided by operating activities</i>	234,430		69,196
Investing Activities			
Redemption of GICs	70,000		50,000
Purchase of GICs	(100,000)		(75,000)
Redemption of Restricted GICs	25,000		70,000
Purchase of restricted GICs - casino	-		(95,000)
Beneficial Interest in Endowment	(140,697)		(23,017)
<i>Net cash used in investing activities</i>	(145,697)		(73,017)
Net (increase) decrease in cash	88,733		(3,821)
Cash, January 1	96,216		100,037
Cash, December 31	184,949		96,216
	184,949		
Cash is composed of:			
Cash	150,860		48,751
Restricted cash - casino	34,089		47,465

Acknowledgement of Donors

BBO is very thankful for the many donors who included us in their charitable donations in 2019. Here is a list of everyone who donated \$50 and more. We also thank those who donated less, but space does not allow a list of others. Your contributions are greatly appreciated. Our apologies for any omissions.

<p>Organizations >\$1000 Alberta Community Environment Action Grant Program Alberta Conservation Association Alberta Gaming and Liquor and Cannabis Commission Birds Canada's Great Canadian Birdathon Edmonton Community Foundation's EMPEO Fund Edmonton Nature Club Nature Canada's Charles Labatiuk Nature Endowment Fund Serving Communities Internship Program TD Friends of the Environment</p>	<p>Donors >\$1000 Anonymous in memory of Mary Hughes Weir Andra Bismanis Gary Dodd Carole Dodd Dr. Geoff Holroyd Lynn and Robert Holroyd Dale Paton Phil and Helen</p>	
<p>Companies and Organizations >\$500 - \$999 Clean Harbors (Ryley) Wild Bird General Store</p>	<p>Donors >\$500 - \$999 Patrick Chan Leslie Duncan Douglas Hube Kent and Dan Hunter Fund</p>	<p>Bill and Natalia Labatiuk Lynn Maki Bill Paulsen Kate Read Ed Wasyliw Pamela Webb</p>
<p>Companies and Organizations >\$500 - \$499 Busy Bee - Tofield Fuse Consulting Kent and Dana Hunter Fund Lakeland College Biology Club Spencer Environmental Consultants, LLC. University of Alberta Biology Club Wildlife Stewardship Society of Camrose TELUS</p>	<p>Donors >\$50 - \$499 Steve Anderson Peter Balagus Michael Bradstreet Fred de Boer Ian Brusselers Glen Bowe Emesa Dukai-Branscome Stephanie Christensen Kathleen Daintith Cory Dickinson Vivek Dibrel Loney Dickson Lynne Dickson Judy Fairweather Brent Flesher Stella Gillespie Joanne Gorda John Holroyd Leslie Holroyd Douglas Hube Sarah Hudson Janice Hurlburt Dr. Glen Hvenegaard Norm Jackson</p>	<p>Linda Kershaw Peter Kershaw Joan and Janos Kovaks Carole Brooke Martens Gerald McKeating Alora Nelson Nick Nguyen Stan Nordstrom Francois Noel Wayne Oakes Dr. Michael Ocana Inger Paulsen Dr. Ron Ramsey Bill Reynolds Robert Sabulka Alfred Scott Paula Siwik Don Thacker Rebecca Warren Will Warren Tony Vesseur Cheryl Vesseur Janis Vos Olga Yanishewski Shirley Zylstra</p>