



Editor Richard Hedley

A busy summer continues at the Beaverhill Bird Observatory

This summer, some sense of normalcy returned to the Beaverhill Bird Observatory. Migration monitoring and MAPS monitoring has continued as it has in the past few decades, and visitors are welcome back to enjoy the new and improved Research and Education Centre at the BBO. A number of events have been held this spring, with more planned for the fall.

Upcoming Events

- **Songbird Banding Events** occurring every weekend starting August 13 to September 18 ([tickets currently on sale!](#))
- **Owl Banding Events** occurring every Thursdays through Sundays starting September 22 to October 30 (ticket sales begin in September)
- **Supper and Saw-whets** weekend of September 24 & 25 (ticket sales begin in September)



Don't miss this year's owl banding sessions!

Migration monitoring & MAPS

Migration monitoring, the backbone of the BBO's studies, took place from May 1 to June 9. A total of 938 birds were captured in the mist nets, a significant rebound from a lackluster year in 2021. A highlight this spring was the addition of seven new nets in the willows closer to Beaverhill Lake. These seven nets captured birds at more than five times the rate of the standard nets! These new nets will be integrated into the normal banding operation in the coming years.

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.

Other highlights included capturing a Ruffed Grouse on the first morning of banding, and catching two Tree Swallows, an Eastern Kingbird, a Fox Sparrow, a Purple Martin, and an Evening Grosbeak – all species that are rarely captured in mist nets at the BBO. For more details on the spring banding activities, see the [2022 Spring Report on our website.](#)



*Two of BBO's rarer spring captures. Left: an Eastern Kingbird.
Right: a Fox Sparrow.*

This year was another successful year of operating MAPS, Monitoring Avian Productivity and Survivorship program, in partnership with the Institute for Bird Populations. At the BBO we have 3 MAPS stations that we net once every 10 days to monitor our local breeding songbird populations. We successfully accumulated 635 net-hours and captured 477 birds across all three stations, for an area-wide capture rate of 75.1 captures/100 net-hours. Our most captured bird species included Least Flycatchers, Yellow Warblers and Red-winged Blackbirds. Highlight species included a Veery, Common Grackle, Nelson's Sparrow and an Eastern Kingbird! For full details of our MAPS programs, please read [the 2022 Summer Report](#), which will be published on our website in September.

Fall migration monitoring began on July 20th and already, as of September 1st, our staff have captured 51 different species, with more soon to arrive! Highlights from this autumn's migration monitoring include Bay-breasted Warbler, Red-breasted Nuthatch, lots of Magnolia Warblers and American Redstarts, as well as the inevitable return of Myrtle Warbler's, whose presence indicates that the autumn season is fully upon us!

Opening the new building

An exciting development was the official opening of the new Research and Education Centre at the BBO, which will no doubt help kick off a new era of events, research and activities at the observatory.

The new two-story building will allow the BBO to comfortably host groups of visitors inside while bird banding is occurring, and the second story will allow us to host speakers during formal presentations and other group activities. The building was formally opened during a ceremony in June attended by various donors. More recently,



Left: Geoff Holroyd, BBO Chair, cuts a ribbon to celebrate the opening of the new building. Right: Geoff ascends the tower to reorient the old solar panels.

the new solar power system is back online – a system complete with its very own Tesla Powerwall to store excess power! The solar-battery combination is expected to provide sufficient power for during peak fall activities, when day light is getting shorter and electrical needs increase with staff needing power to charge audio lures, and lights on in the evenings during owl banding. This system is also powering our MOTUS tower which will help researchers track birds tagged with small nano tags as they pass by the area. To learn more about MOTUS visit <https://motus.org/>

Big Birding Breakfast

The first major event to be held at the new Research and Education Centre was the Big Birding Breakfast in May. Lovely weather greeted about 80 visitors, big and small, that made the return of the BBB so enjoyable. Former BBO head banders Kevin Methuen and Amelie Roberto-Charron, from Kugluktuk, remind us that it is not just the birds we look forward to seeing again as they migrate in the spring. THANKS to: Janos Kovacs for

donating his crepe making skills and BBO Board member Christie Campbell and BBO volunteer Myrthe Van Brempt for helping Helen Trefry (event organizer) in the kitchen.



Smiling faces at the Big Birding Breakfast. Top left: visitors watch as a Red-winged Blackbird is banded. Top right: Kitchen helpers Janos, Sara and Myrthe made crepes. Bottom left: Kevin and Amelie visited from the arctic. Bottom right: Sara and the kids doing crafts.

2022 Geoff Holroyd Young Ornithologists' Workshop

BBO's sixth Young Ornithologists Workshop ran from July 30th to August 5th with 11 teens attending from Alberta, Saskatchewan and Oregon. The students faced some weather challenges with showers and winds shutting the nets down at times but all were able to learn the art of extracting birds from nets and banding them, while also practicing their ID and ageing skills. They honed their aging skills even further with bird specimens loaned by the Canadian Wildlife Service to study. They also had field trips to learn about: butterflies from expert David Laurie, passive acoustic monitoring (Richard Hedley), raptors (Helen and Phil Trefry), wetlands (Matthew Turnbull), as well as listening to speakers (Geoff Holroyd, Sara Pearce Meijerink, Myrthe Van Brempt and Robyn Denn). One of the highlights is always the Big Birding Day as it allows the students to search for birds in a variety of habitats, including Beaverhill Lake, Elk Island National Park and areas east of Tofield. Despite rain, wind and a van repair, the students worked from dawn to dusk to tally 115 species. They also discovered that the Visitor Center at Elk Island National Park is an ecological trap for wood frogs which were trapped due to the design of the building, leading to a certain death – this was reported to the Park.

Thanks to the staff and numerous volunteers who assisted with food and events for this very busy week and we hope to see some of the students back at BBO. Thanks to the ENC for their continued support of the YO Workshop as well as those parents that contributed after the event. A special thank you to workshop coordinator, Helen Trefry!!



Back Row: Jacob Norbert, Patrick Goa, Nicholas Robinson, David Grinevitch, Helen Trefry (workshop coordinator), Hazel and Emma Hudson (visitors), Scarlett Camilleri, Avery Leece, Felicity Bit, Cherish Lyda.

Front Row: "Raven", Geoff Holroyd (BBO Chair), Kale Worman, Shane Abernathy (BBO staff), Jana Teefy (BBO staff), Jon Van Arragon (BBO staff), Myrthe Van Brempt (BBO volunteer), Gabrielle Watson, and Sophia Roppo.

Missing: Sara Pearce Meijerink (BBO staff) and "Taiga"

Other station improvements

Aside from the main building, a few other upgrades have been made to the station. A new and much-improved – some might even say luxurious – outhouse has been installed near the station. It has been fondly nicknamed “the Louvre”, a mash-up of loo and louvre. A big thank-you to the Edmonton Community Foundation and Claystone Waste, who made donations to support the construction of the new outhouse.



Geoff Holroyd accepts a donation from Claystone Waste.

Another upgrade was the resurfacing of the entrance road to the BBO. Near the end of June BBO took delivery of 9 truckloads of gravel at 12 tons per load, or 108 tons! The trucks from Sonni Trucking did the major spreading of the gravel, but the finer work was left to Bob Schwartz who generously donated the use of his bobcat, and to volunteers Hazel, Karen, Theodore and Geoff, and to staff members Shane and Jana. We were able to improve about 300m of the vehicle trails that access the BBO. Many thanks to them and to the funders Alberta Conservation Association and Claystone Waste Ltd, and to you for your donations.



Gravel is deposited on the entrance road.

Wild boar passing through the Beaverhill Natural Area?

In early July, BBO staff found what appeared to be several wild boar digs throughout the natural area. Wild boars have recently become a hot-button conservation issue in Alberta, since they are expanding in number across much of the province. Notably, boars have been seen along the eastern edge of Elk Island, just a few kilometers from the BBO.

Wild boars are among the most damaging and problematic invasive species in the world, as they are voracious omnivores and can harm crops as well as native ecosystems. Photos of the boar digs documented inside the Beaverhill Natural Area were passed on to the Alberta government, and cameras have been set up to attempt to photograph the elusive beasts. While many digs sites were spotted in early July, no fresh sign have been seen since then. Hopefully they are just passing through the area and will find somewhere else to call their home.



A boar dig near the BBO.

Replacing our other bunkhouse

Nuthatch Nest, our second beloved bunkhouse, is long past its 'best before' date. It was refurbished with old materials from Raven's Roost in 2018, but the old insulation and aging fiberboard are far from adequate. The proposed replacement would have three narrow rooms with bunkbeds in each. Only slightly larger than the current building, it would allow dawn songbird banders and nighttime owl banders to have separate quieter rooms instead of one shared space. The current estimate for the construction is \$53,000 by our master carpenter Colin Maclellan. We hope to tear down the old building on October 22 as we finish songbird banding for the season. Colin would build the new one in the same place ready for spring 2023.

We need your help to accomplish this ambitious replacement. Please consider a tax deductible donation towards the new bunkhouse.

[CLICK HERE to donate to the bunkhouse \(via Keela\)](#)



Current Nuthatch Nest bunkhouse showing its 30+ years.

BBO Endowment Fund

In 2019, BBO established an endowment fund with the Edmonton Community Foundation which has grown to over \$345,000 in only three years thanks to your generous donations and to matching funds from an anonymous donor at ECF. This endowment fund now generates over \$10,000 per year to BBO. We want to continue growing this fund.

If we can raise \$50,000 this year, then the ECF donor will match that amount and we will have almost half a million dollars in our endowment fund, generating funds to support BBO forever. Please read the poster on the following page and consider donating to BBO, marked 'Endowment Fund'.

[CLICK HERE to donate to the BBO Endowment Fund \(via Keela\)](#)

ENDOWMENT MATCHING 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 2022. 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.

In order to qualify:

- The organization's primary mandate must be environmental in nature, including but not limited to: renewable energy, energy conservation, and climate change; environmental education; land, habitat, and wildlife conservation; urban planning, transportation, parks and agriculture; waste management; and air and water quality.
- The organization must have received an ECF community grant or FDI since July 2017.
- The net income from the endowment fund(s) must be used to support environmental work in Edmonton and/or northern Alberta.
- Organizations must be registered charities.

Ineligible organizations:

- Those whose primary mandates are to support animal welfare or recreation.
- Government bodies and qualified donees other than registered charities are not eligible.

The deadline for 2022 donations is December 15.

Give. Grow. Transform.

For more information and to let us know about your participation, please contact:
Noel Xavier, Director, Donor Services Nxavier@ecfoundation.org 780-426-0015 ext. 109

www.ecfoundation.org

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Introducing six new BBO board members

There was quite a bit of turnover in the BBO board this spring, with 5 board members leaving to focus on other things, and six new ones joining the board. We thank outgoing board members Thea Carpenter, Andra Bismanis, Laurie Hunt, Steve Anderson, and Amelie Roberto-Charron for their service over the years. These new members bring a diversity of experience, and the BBO is excited to have them on the board. Below is a brief introduction from the new board members:

Christie Campbell

I am a passionate bird and nature lover who wants to give back to the awesome organization and people of the BBO and all of the important education and research they provide the community. In my spare time I love to paddle, ski, hike and cycle – all the things that get me close enough to quietly observe nature at its finest.

Brendan Casey

I am a PhD candidate at the University of Alberta studying avian ecology. My research explores how bioacoustics and modern remote sensing (LiDAR and satellite imagery) can help us understand how birds respond to forestry. Prior, I managed projects for several community and environmental non-profits. When I am not doing fieldwork or staring at computer screens, I spend most of my time training for footraces, doing house renovations, and trying to get garden plants to grow. I am excited to join the BBO board and promote community engagement in bird research and conservation in Alberta.

Pat Chan

I am a retired business consultant and for the last 15 years I have called Edmonton home. Raised in central BC, I have lived and worked in Vancouver, Los Angeles and Charlottetown before moving to Edmonton. I have always been an enthusiastic amateur birdwatcher and birdwatching is an important part of any travel plans whether I am travelling locally, throughout Canada or internationally. I never travel without binoculars and a bird guide. I am very concerned about our natural biodiversity. I support efforts to not only preserve wilderness but to study and ensure that our plants and animals have a place to call home. I have been on a number of non-profit boards including the Canadian Parks and Wilderness Society, Northern Alberta chapter and the PEI Island Nature Trust. In the spring, I can be found wading through the flooded spring trails in Beaverhill or cruising country side roads at 30 kph checking out the ponds. Throughout the year I like wandering through the many parks and woodlands in the Edmonton area. Please wave or say hello if you see me.

Warren Finlay

I have been an avid birder since my childhood. I have several decades of Breeding Bird Survey experience and have banded numerous songbirds. I am a Distinguished Professor Emeritus in the University of Alberta's Faculty of Engineering and am a Fellow of the Royal Society of Canada.

Kimberly Fulton

I discovered BBO 4 years ago and couldn't believe such a wonderful location, and resource was so close to Edmonton. I've enjoyed birding, hiking, and simply sitting under a tree and watching the forest around me many times. I thought my background in tourism and non-profit organizations might help contribute to the organization's continued success.

Richard Hedley

I am a postdoctoral researcher focusing on using acoustic recordings to monitor bird populations across Alberta. In September, I will start a new job with as a Species at Risk biologist with the Alberta government. I have two young daughters, and have really enjoyed bringing them out to the BBO for banding. Seeing the great work that the BBO does and the potential it has to inspire a passion for conservation in the public made me want to volunteer for the board this past spring.

Introducing a vagrant volunteer: Myrthe Van Brempt

Hi! My name is Myrthe and I am a volunteer at BBO for the current field season. Coming all the way from Belgium, where I grew up in the beautiful city of Bruges, I am happy to have found my way to BBO through my passion for owls. So, how exactly did I end up here?

On a late Sunday evening, I watched an online presentation of the International Owl Center about burrowing owl research given by BBO chair Geoff Holroyd. Little did I know, Geoff was able to keep my attention to the screen talking about his interesting project with a lot of enthusiasm and some good old jokes. As a recently graduated biologist, I was looking for an opportunity to gain more experience in the field of conservation and preferably with owls, as these amazing birds won my deepest interest in the last few years. I ended up writing to Geoff asking if there was any possibility to join him in the field in one of his research projects, of course with my resume attached, never expecting a reply but worth a shot. And guess what? The next day I checked my emails and read that I was welcome at BBO. What a great surprise – thanks a lot Geoff!



Myrthe with a young Northern Saw-whet Owl.

It took me a while to believe that I was actually going to go to Canada, a country I always wanted to visit because of the magnificent nature and wildlife. Moreover, I was really excited to finally see the Northern Saw-whet Owl: the subject of my Master's thesis. I did a MSc in Climate Change Ecology at the University of Ghent and wrote my thesis on saw-whet owl migration phenology. However, I was unable to visit North-America to conduct field work because of the Covid-19 pandemic. Now I am really happy to have the opportunity to work with saw-whet owls at BBO, and to get involved in other research and conservation projects in the Beaverhill Natural Area.

I have always loved the outdoors and been fascinated by animals, but it was only during university that I got interested in birds more specifically and got involved in bird banding and other nature-related volunteering work. On weekends I started to join hobby banders in Belgium and go bird watching with friends in Belgium and abroad. When I moved to Finland for an exchange at the University of Oulu, I developed my passion for owls by being stunned by a beautiful Great Gray Owl looking at me right in the eyes. Since then I went to look for owls in my free time, got in contact with owl banders to join them and started painting more owls. In Finland I also volunteered on conservation and monitoring projects for Ospreys and Ruffs. Other than volunteering, banding birds and just spending time in the outdoors, I like to fill my free time with painting, yoga/hand standing, cooking and backpacking.

I am curious where life will take me and what jobs I will end up doing; hopefully working in the field with birds (maybe owls?) somewhere around the globe. There is one thing I am certain of: my experience at BBO will help me become a better biologist and conservationist.

That is about it, see you around at BBO!

Myrthe Van Brempt

John Scott – Volunteer Extraordinaire

It takes a lot of people to run the Beaverhill Bird Observatory and all deserve a huge thank you. John Scott is one such volunteer who has contributed a great deal in the past few years, and deserves a special Thank You. In 2018, we ordered a do-it-yourself cabin package to replace the old Ravens' Roost bunkhouse. John, Al De Groot and a few volunteer supporters built the new bunkhouse during the autumn.

When we wanted to replace our old lab with our new Education and Research Center, John volunteered to be the main contact with Maclellan Carpentry. John did all the paperwork to get approvals by Alberta Public Lands and Beaver County. He and our treasurer Rose ordered the interior furniture for this center. He also arranged the 80' communications tower with both Internet and cell receivers, installed the MOTUS research station and a security system, the rainwater tower and the bulk propane tank.

On top of these huge tasks, John also built and donated two state-of-the-art Purple Martin apartment colony boxes which replaced our old one. The martins appreciated this effort and nested in them this year (see the article by Jana elsewhere in this issue of Willet).

A BIG THANK YOU TO JOHN and everyone else who contributes time and effort to make BBO such a special place.



Al De Groot and John Scott with the newly finished bunkhouse, Ravens' Roost in October 2018

Often heard but seldom seen – the secretive rails of Beaverhill Lake

By Jon Van Arragon

Beaverhill Lake is used by wide variety of waterbird species, most obviously during migration when massive flocks of birds gather to feed and molt. However, not all of the lake's residents are quite so conspicuous. One group in particular migrates under the cover of darkness and is far more often heard than seen as they skulk through densely vegetated marshes. These are the rails, a group of waterbirds that are as fascinating as they are secretive.



*The Sora is Alberta's most plentiful rail species, yet they can still be extremely difficult to see!
Photo credit: Gerald Romanchuk*

Given how secretive they are, you may not be familiar with what a rail is. Rails are generally found in marshy, densely vegetated areas. Their skinny bodies allow them to squeeze through gaps in vegetation unnoticed – these birds truly are as thin as a rail! Long legs and extended toes allow the rails to walk across submerged vegetation while feeding on aquatic plants and invertebrates. A rail is superficially similar to a sandpiper in appearance and habits, but they have much shorter wings and prefer to forage in densely vegetated ponds instead of on open mudflats.

There are 3 species of rail found in Alberta, all of which breed in Beaverhill Lake. These are the Sora, the Virginia Rail, and the Yellow Rail. Sora are the most common species by far, easily located by their distinctive 'whinny' call in marshes across the entire province. The Virginia Rail and Yellow Rail are both more localized to the eastern half of Alberta, but occupy similar marshy habitats to those favoured by the Sora. The breeding call of the Virginia Rail is a series of abrupt and metallic 'tick-it' phrases given in quick succession, but they can give a wide range of other grunting vocalizations as well. The breeding call of the Yellow Rail, heard primarily at night, is a series of distinctive but easily overlooked ticking sounds reminiscent of two stones being tapped together.



The Virginia Rail has a uniquely long and colorful bill compared to the other Alberta rails. Photo credit: Gerald Romanchuk

In light of their reclusive habits, it's no surprise that rails are not well studied and their population trends poorly understood. From what little information we do have, it is very



Of all the rails found in Alberta, Yellow Rails are by far the most secretive. Photo credit: Gerald Romanchuk.

clear that human-driven landscape changes are putting significant pressure on rail populations. The Alberta Wildlife Act designates the Sora as a sensitive species and notes that the loss of wetland habitat has resulted in Alberta's population declining by over 50% since 1994. The Yellow Rail is listed as a species of special concern under the federal Species At Risk Act, but their exact population trends aren't known in many parts of the country. The same can be said for the Virginia Rail, while it has received no special

designation the exact status of its populations are not known within Alberta. With wetland habitats being drained, degraded or destroyed locally and country-wide, it is reasonable to assume Yellow Rail and Virginia Rail populations are suffering similar declines to the Sora.

Given the declines of these species, what can be done to help? Because rails are generally understudied, more research into their populations and status is extremely valuable for informing recovery plans. In the summer of 2017 Jeremy Lambe, a summer biologist with the BBO, conducted surveys of Lister Lake for rails and other marsh birds. While these surveys did not produce any sightings of Yellow or Virginia Rails they did document a large number of Soras foraging in the cattails and mudflats. This summer, assistant biologist Jana Teefy has conducted similar surveys following a standardized protocol, which includes playing the breeding call of all three rail species using a portable speaker at each survey point. Rails will respond vocally if they hear another bird singing in their territory, making our detection rate of these secretive birds much higher than in prior surveys. This year's surveys have confirmed the presence of breeding Virginia Rails and a plethora of Soras in Lister Lake, but Yellow Rails were unfortunately not detected. We hope to continue these surveys into the future to better assess local populations of these incredible birds.

An easy way that anyone can contribute to the conservation of rails is by documenting any rails you see or hear using citizen science programs such as eBird. If you are interested in seeing or hearing rails for yourself, a great place to do so is the weir between Lister Lake and Beaverhill Lake. Preservation of wetland habitat is also key for the health and survival of Alberta's rails, as it is for the wide variety of other insects and animals that depend on them. If you are a landowner with suitable wetlands on your property, consider

leaving them intact so that you can play an important part in protecting living things – both seen and unseen!

The plight of Alberta's rails goes to show that even the most inconspicuous of marsh birds is still dramatically affected by human activity. The next time you find yourself walking alongside a marsh, keep an ear out for these incredible and secretive birds. With enough patience and luck, you might even be able to see one wander past the edge of the cattails.

The outstanding oriole occupation of Beaverhill Lake

By Shane Abernethy, Assistant Biologist, Beaverhill Bird Observatory

Perhaps our favourite time of year is when the Baltimore Orioles reappear in the Beaverhill Lake Natural Area surrounding the Beaverhill Bird Observatory. Who can blame us, really? These brightly coloured nectar-feeders are immensely charismatic, and a vocal, orange-and-black herald that summer is right around the corner. In a typical year, we capture a small handful of them, typically between 10 and 15, during our migration monitoring operations. These birds are fitted with a uniquely numbered band, have some measurements taken, and are released back into the wild. This was not a typical year.



A male Baltimore Oriole captured at the BBO.

During the five weeks of spring migration, we banded not ten, not twenty, but a jaw-dropping forty-seven Baltimore Orioles! On one day, we captured 18, a number equal to the total number banded in the previous year. Several of the orioles captured that day were recaptures that had been previously banded, but that might demonstrate just how many of those birds were within our Beaverhill Natural area. For a period of several weeks, it felt like you couldn't go anywhere without seeing two or three or even four males chasing each other out of disputed forest territory, or hearing their chattering territorial call or their clear, melodic song.

And it's not just us. Many of the bird observatory's visitors have commented that they too have seen an unusual number, or in places where they have never been spotted before. For some reason, the local population of orioles has skyrocketed.

Some brief investigation has left more questions than answers. Our early hypothesis was that last year was a particularly productive year, and that an unusually large number of orioles survived the winter. This would be signaled by a particularly high ratio of young to old birds, since around 70% of birds hatched in a given year don't survive that winter. However, now that the season's done and the numbers are in, we're finding that's not the case. Of the orioles captured, most of them were older birds that hatched some time before last year.

Maybe something happened on migration to push a larger than normal number of orioles this way? It's not uncommon for well-timed storms, wildfire smoke or unusual wind currents to push birds off their intended path and concentrate them in specific areas, but



A bright male Baltimore Oriole.

as far as we could tell this was a pretty ordinary spring with nothing that would move large masses of birds off course.

What if they all got the idea that this was just a good spot? Last year, the Natural Area had a severe infestation of leaf-roller caterpillars, which defoliated a good number of trees but are also a favourite food of most blackbirds, Orioles included. If they did come here to munch on an endless buffet of leaf-rollers, they'll be sorely disappointed, though. While we're seeing the signs of leaf-rollers on our trees, they have yet to become near as numerous as they were last year.

Another possibility opens the issue to the landscape scale: perhaps they visited elsewhere on their way north, but in the absence of suitable habitat continued further north than usual to central Alberta, which this year they found more to their liking. Folks elsewhere in the oriole's breeding range may be concerned about the lack of birds. This speaks to the importance of monitoring bird numbers in many locations to determine if a decrease is landscape-wide or just a redistribution of birds in the available habitats from year to year.

Odd irruptions like this and the unanswered questions around them go to show the importance of this kind of long-term monitoring. One of the primary purposes of bird banding is to understand bird migration and how it changes over time, as well as to use our up-close looks at birds for valuable insights about their biology and survival from year to year. Exceptional years like this one are important data points, but ones that often leave a frustrating amount of mystery for years.

But then again, we're not really complaining. The bottom line is that we got to band forty-seven Orioles, and treat our visitors to many close up looks of these gorgeous birds.

Purple Martins occupy lakeside homes at Beaverhill Lake

By Jana Teefy, Assistant biologist, Beaverhill Bird Observatory

The refilling of Beaverhill Lake is increasing bird diversity as noted by the Beaverhill Bird Observatory (BBO). The water levels in the lake are up again this year, and staff at the observatory are seeing, hearing, and catching a higher volume of wetland species this year and have banded species that they haven't caught in many years. One species that the observatory staff are particularly excited to see at the lakeside is the Purple Martin.



*Purple Martins at the BBO nest boxes.
Photo by Jana Teefy.*

Purple Martins showed some interest in the observatory's colony boxes over the past couple of years, but their nest attempts failed. After many years of maintaining a nesting box, the BBO is excited to report that we finally have a successful breeding colony of Purple Martins. We saw more and more Purple Martins at the colony boxes during the daily census in the spring and were hopeful they would try to breed here. We gave the martins time to establish their nests before lowering the boxes to survey them. Between the 2 colony boxes, there are 24 nesting cavities and staff were delighted to find 9 nests, 8 with eggs and one with hatched chicks. When we lowered them a week later, we found 11 occupied nests – 5 of which had hatched young! We went from one failed nest in the last few years to suddenly having a breeding colony – the first ever Purple Martin breeding colony in BBO's history.

What brought on the success this year? Our theory is that it was spurred by the combination of the 2020 replacement of nesting boxes with an updated, Starling-proof design, along with the return of water to the lake. Beaverhill Lake has a history of drying up and filling up on a roughly 50-year cycle – this was the third time in recorded history that the lake has gone dry. Its most recent dry-up was in the mid-2000s, and the water started to return to the lake in a large way in 2016. Since then, the lake has been filling more and more each year. As it fills, the emergent vegetation dies off and exposes more open water. Last spring was the first time we could see open water in the lake from the shoreline in two decades! However, last year's heat wave and lack of precipitation depleted the water levels. This year, we've had lower temperatures until recently and plenty of precipitation. We can see even more open water and a definitive shoreline! The visible open water is getting closer to the historical shoreline, which is where the Purple Martin nesting boxes are located.



*Purple Martin colony nesting box at
BBO. Photo by Jana Teefy.*

Purple Martins are aerial insectivores in the swallow family with an adorable bubbly chortling song. They are cavity nesters that have come to rely solely on human-provided nesting boxes for breeding. Preferring condo-style nest boxes, these colony breeders nest in large groups near sources of open water with high insect populations. Sadly, insectivore populations are down by 50% over the past 20 years. This population decline is linked to insecticide use, habitat loss, and nest site competition with invasive bird species, like the European Starling. A popular group of insecticides called neonicotinoids are applied to agricultural seeds to prevent loss from insects. Neonicotinoids are applied topically but enter waterbodies via runoff and kill off entire insect populations in their larval forms before they can emerge from the water. Many terrestrial insects, like dragonflies, mosquitos, and midges, have an aquatic component in their lifecycles. This eliminates food sources for many birds, like Purple Martins and Swallows, and affects entire food chains.

As a migratory species, Purple Martins fly to Brazil to overwinter and return to the nesting areas in the spring to breed. Their route takes them to the Yucatan peninsula, where they pause to moult before completing the journey. Because Purple Martins are colony nesters and nesting box space is limited, they will venture out to find vacancies when their colony boxes are at capacity. Recent examples of their ability to find new nesting sites include the first Purple Martin colony in Calgary in 60 years and the breeding colony at the Beaverhill Bird Observatory near Tofield, both established this year.

The staff have been busy banding the young at their Purple Martin colony. Once the chicks are between 11 and 15 days old, they will receive a lightweight aluminum band with a unique 9-digit serial number. These bands can be used to track Purple Martin migration, dispersal, survivorship, and colony returns. We don't know what the future holds for Beaverhill Lake and thus the newly established breeding colony, but we are hopeful the Purple Martins will return to the boxes in the spring to breed. In the meantime, the staff are enjoying the cheery chortling of the Purple Martins before they venture south. With a bit of luck, the colony will return next spring. We may need a third colony box to accommodate them!



A male Purple Martin. Photo by Jonathan Kells, BBO intern