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YEARLY BANDING REPORT

Prince Edward Point Bird Observatory





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INTRODUCTION

Prince Edward Point Bird Observatory (PEPtBO) began monitoring bird populations in 1995 and has continued doing so for 27 consecutive years. Our mission is to monitor, report, and promote research on birds throughout their migration and breeding seasons. Our goal is to be an important and significant resource on the birds breeding and migrating through southeastern Ontario. PEPtBO is in a unique position at the intersection of the Atlantic and Mississippi flyways, which makes PEPtBO a key location in monitoring birds and helping identify the issues threatening their populations which could have far reaching implications within eastern North America and beyond.

At PEPtBO, scientific data we collect contributes to local, national, and international action, aiding in the protection and management of key habitat and the reduction of threats along migratory pathways. Through our education and outreach programs, we aim to inspire generations of people to advocate for the preservation of our wildlife and their habitats. Spending one day at PEPtBO helps visitors to understand the importance and value of bird diversity and survivorship. This year marked our final year with the Naturehood program which brought elementary school children to PEPtBO to learn about birds. PEPtBO has plans to introduce a new educational program targeting teens and young adults. Our hope is by focusing an older age group that may encourage interested students in pursuing study and advocacy in environmental conservation.

Our guiding principles include forming inclusive partnerships with government organizations, other non-profits organizations, educational institutions, the public, and other experienced biologists to work together for bird conservation. In our bird banding operation, we put the bird safety first by following the North American Banding Council (NABC) bander code of ethics and we act as stewards of the IBA while promoting stewardship to all visitors and volunteers. Through hands-on training and education, we hope to create lifelong passions for nature and spread appreciation for the environment for generations to come. Our organization also aims its efforts at inclusivity for all, through representation and opportunities for marginalized groups such as racialized groups, Indigenous Peoples, LGBTQ+ communities, and persons of all genders and differing abilities.

YEAR IN REVIEW

We demonstrated another incredible year for banding and birding in 2022. Our most challenging feat was the fall banding season, where over 10,000 birds were banded, accounting for 66% of the birds banded all year. This year we banded 15,924 birds of 112 species (Appendix A). This number of individual birds banded is the second highest at PEPTBO since 1995. We encountered 2,699 recaptured birds of 71 species. With the support of a great banding team and amazing new and returning volunteers we were able to accomplish and support all of our goals. Over the course of the three banding seasons our volunteers donated over 800 combined hours. This support from our volunteers is one of the quintessential reasons why we can operate all of our programs. Our spring migration monitoring program was a hit with the return of our Spring Birding Festival. The festival ran for ten days from May 14th to the 23rd. We hosted over 400 people throughout these days and many bird walks. Our combination of banding demonstrations and bird walks were huge highlights enjoyed by everyone. The spring season kept us entertained at every turn with a variety of unlikely captures. Our Monitoring Avian Productivity and Survivorship (MAPS) summer breeding bird program was also a success with our four sites situated around Prince Edward County. This was the second year that we have been working on our breeding bird program and with a minimum of 3 more years to go, we are slowly getting some interesting results. Our Bobolink research continued during the fall and is contributing to the population monitoring of this at-risk species. Our Fall Migration Monitoring Program was a successful season with a particularly large number of kinglets. With the help of our dedicated volunteers and devoted staff we were able to pull off a fall that kept us all on our toes. The Northern Saw-whet Owl monitoring program also continued this year and PEPTBO was able to introduce more opportunities for an immersive experience for the public during our nighttime banding program.

This year PEPTBO collaborated with Birds Caribbean, which is an organization aimed at developing a standardized bird banding and monitoring program for the Caribbean Islands. This year PEPTBO welcomed an intern from Antigua and Barbuda, Shannah Challenger. She was a great addition to our fall team and stayed with us for 5 weeks to learn a diverse number of skills that will help her lead and develop a banding program for her country and its islands. We were extremely grateful to have Shannah as an intern and to be able to spread our conservation science goals at an international level. Next year we plan to continue to collaborate with Birds Caribbean and train more of their prospective banders.

Fortunately, PEPtBO encountered no large impacts to the station in 2022. The only thing that affected our station this year was some minor flooding for the first part of the spring where our five non-standard net lanes had almost one foot of water; thus, not allowing us to open those nets due to the risk of birds falling in this water. Changes and natural effects like these are not uncommon to stations and are a key example as to why measurements of effort are taken.

As for our visual observations, we encountered 207 different species of birds at our site between April 10th and October 31st. This number is slightly above our average encounter of 200 species per season. This includes both census observations and combined visual observations throughout the day and evening. These records account for a high diversity of observations for Prince Edward Point. In fact, it is equal to 85% of the birds encountered in the entire county (238) during this time. It demonstrates that PEPtBO is a significant location for visual observations including banding operations. We were witness to many interesting observations throughout the year, the most notable being a Yellow-throated Warbler. This species once again visited the point, yet this time conveniently appearing directly between the banding station and the staff residences.

CANADIAN MIGRATION MONITORING NETWORK

PEPtBO has been a member of the Canadian Migration Monitoring Network (CMMN) since its beginning in 1995. This organization continues to contribute regular analysis and research with data collected from all member stations. This year, we continued our participation with CMMN and finalized our protocol review that ensures standardized data collection to enable proper trend analysis. The CMMN will be doing trend analysis on data from all observatories for the data acquired up to 2021. It will be interesting to compare this data set to previous analysis considering the interrupted coverage many stations experienced due to the Covid-19 pandemic. This information will be available on their nature counts website once completed. We encourage anyone to look into CMMN data if population trends are of interest to them.

MIGRATION MONITORING PROGRAMS

SPRING MIGRATION (APRIL 10–MAY 31)

This year we banded 4,441 birds of 94 species and recaptured 754 birds of 52 species (Appendix A) in the 50 days of banding that totaled 6,876.5 net hours. This total number of birds banded is above our yearly average and the number of species is an average number expected in the spring. This spring kept us quite busy as it averaged 65 birds per net hour. Being a high-volume station, we were kept busy most days and we had our second busiest day on May 11th when we banded 380 birds in one single day. Most of the birds banded were warblers, with a total of 19 species banded. The species of interest that day included Blue-winged Warbler (5), Brewster's Warbler (3), and Golden-winged Warbler (3). These species are not frequent captures, yet we captured many them on the same day. Golden-winged Warbler are a species of special concern for Ontario due to their high hybridizing rate with Blue-winged Warbler whose offspring are deemed Brewster's Warbler. The comparison of the three species below (**Photos 1**) shows the similarities between the two species and the hybrid. The loss of pure genetic material from Golden-winged Warbler through hybridization and loss of habitat threatens the Golden-winged Warbler.



Photos 1: Comparison of a After Second Year male Golden-winged Warbler (Left), Second year Brewster's Warbler (Middle) and After Second Year Blue-winged Warbler (Right).
Photo credits: Jessica Daze

Our most interesting recapture of the year was Yellow Warbler originally banded in Ohio in 2019 as a second-year bird, meaning it had hatched in 2018. It is interesting to encounter birds from as far away as Ohio, let alone an older bird as Yellow Warblers are usually known for high site fidelity. It is possible this bird was moved to PEPtBO by strong winds coming from the west.

The top ten species banded this spring (**Table 1**) includes an interesting change to the expected numbers from the previous years. This year the number of Golden-crowned Kinglet and Brown Creeper were higher than what has been seen in the last 10 years. We did not expect this volume of birds, but on the night of April 13th we had notable light winds from the south. These conditions are perfect for bringing birds north during migration. Due to the winds being light it meant that many birds that were migrating that night took landfall at PEPtBO since we are the first major landform they encounter after crossing Lake Ontario. Therefore, on the morning of April 14th we were surprised with an influx of 3 major species, Slate-colored Junco, Brown Creeper, and of course Golden-crowned Kinglet, which offered us a banding day of 419 birds. The April 14th captures of these three species accounted for half of the total captures of each individual species for the entire season. Other than the unexpected big day in early April the top 10 species are similar to last year.

Table 1: Top 10 number of bird captured in spring

COMMON NAME	ALPHA CODE	2022	2021	2019
Yellow-rumped (Myrtle) Warbler	MYWA	500	130	315
Golden-crowned Kinglet	GCKI	376	95	63
Ruby-crowned Kinglet	RCKI	267	323	325
Magnolia Warbler	MAWA	266	228	123
White-throated Sparrow	WTSP	209	223	253
Yellow Warbler	YEWA	191	171	83
Blue Jay	BLJA	173	365	111
Slate-colored Junco	SCJU	166	184	98
Brown-headed Cowbird	BHCO	156	108	137
Brown Creeper	BRCR	154	70	75

*Banding could not occur in 2020 due to Covid restrictions

HIGHLIGHTS

This spring we had many species highlights. The most important thing to note with these highlighted species is that their native ranges rarely extend into southeastern Ontario. There are 2 species that we do not catch often that made an appearance this spring, a Yellow-breasted Chat and a White-eyed Vireo. These birds have not been captured at PEPTBO since 2017; therefore, finding them in the nets 5 years later was quite exciting. Finally, the most exciting capture of the spring was a first for the station, an Acadian Flycatcher, which was captured on the last day of spring banding! These flycatchers are part of the *Empidonax* genus which is infamous for having the most difficult to identify species. Fortunately, with the careful eye and expertise of the banding staff we were able to confirm the species. It is possible that we may encounter more of these birds at PEPTBO in coming years as climate change continues to promote the movement of Carolinian bird species into southeastern Ontario.



Photos 2: *Second year female Yellow-breasted Chat (left) Second year White-eyed Vireo (middle), Second year Acadian Flycatcher (Right). Photo credits: Jessica Daze*

Another bird of interest was an American Crow frequenting our ground traps. Eventually this crow ended up in one of our traps and we banded the first crow in 25 years. An interesting fact about this crow is that it was a breeding female with an advanced brood patch which we would not have been able to know without having captured her. This means that this American Crow was likely done sitting on eggs by the end of May when it was captured.

CENSUS AND VISUAL OBSERVATIONS

We observed a large variety of birds as, expected in most spring seasons. This year our average number of species observed in our standard 30-minute surveys was 35, with a maximum of 59. This high number of species is an effect of the short migration window birds have when migrating north to their breeding grounds. The constrained period means many species show up all at once allowing us to observe a concentrated number of birds and species. Our most note-worthy observations for the season were a Yellow-throated Warbler which showed up on April 14th. This warbler is an early migrant whose typical range ends in Pennsylvania. This interesting observation marks the second year in a row this species was observed, and we are curious to see if this will be a continuing occurrence. The final interesting observation we had was a Fish Crow. These birds are nearly impossible to differentiate between American Crow unless they are vocalizing. This meant that the strange sound of a Fish Crow made a big impact on the station. It was observed multiple days in a row making its regular appearance for over a week.

Our waterbird and raptor observations this year were fairly typical for a spring migration season with small numbers of raptors present in good diversity, and large rafts of sea ducks using Lake Ontario before moving to their breeding rounds. In terms of raptors, we had the greatest view of Snowy Owl on our very first day of banding (**Photos 3**). Snowy Owl are occasional visitors to PEPTBO but rarely stay this far south into the first weeks of April. When it comes to our waterbird observations, we were lucky this year to see occasional groups of Brant moving through the point announcing their presence with their barking calls. With a narrow migration route, it was a privilege to see these Brant before they moved north to their breeding ground in the arctic.



Photos 3: Snowy Owl Observed
on the first day of banding!
Photo Credit: Vaughan Group

DAILY ESTIMATED TOTALS

The Daily Estimated Total (DET) is the estimate of the number of birds and species during a typical monitoring period. This means that PEPTBO combines both observations, census, banding data (new birds and recaptures) to determine this estimate. Our average estimated total was 74 species. The highest DET for 1 day was on May 13th where 95 species were observed. This total is a great accomplishment for a busy bird day and 6 hours of observation.

FALL MIGRATION (AUGUST 15-OCTOBER 31)

This year the fall felt like a slow burning flame turning into a volcanic eruption with many echoes. We banded an impressive 10,812 birds of 92 species and recaptured 1,695 birds of 57 species. All of this was done over 10,678 net hours within 75 days. This means that our average number of birds banded was 144 per day. This was also the 2nd busiest fall since the stations beginning and 4,000 more birds than the average of 6,600 birds. The season was marked by two important and interesting major bird activities. After a slow start to the season during the first three weeks, a strong north wind promoting migration brought an incredible number of birds the banding team was not expecting. There were 717 birds banded on September 8th. Our second challenge of the season was the gigantic influx of the smallest birds we band, Ruby-crowned and Golden-crowned Kinglet. This caused us to call on our volunteers, family, and friends to help process all these birds and keep them safe. These two combined kept us wildly busy but definitely interested in the progression of bird migration through Prince Edward Point.

The top ten birds banded in the fall (**Table 2**) are exactly as expected given our crazy explosion of kinglets. With almost 4,000 kinglets banded in a span of 52 days from our first capture to our last, this season averaged 75 kinglets banded per day. This contrasts with 2021 where we averaged 39 kinglets per day. The other birds in our top 10 are not uncommon to be seen in our top 10 except for the Black-capped Chickadee. This year was an irruption year for chickadees, where 394 were banded. Irruptions are moments where non-obligate migratory birds such as chickadees and boreal finches move in large numbers in years of low food availability or high-density competition. This means that every so often based on seed crop cycles and years of high productivity, a significant number of birds move through the Prince Edward Point area. Looking at past chickadee capture number, 22 in 2019, 149 in 2020, 38 in 2021 we can see a small cycle of peaks and valleys which are typical with irruptive species. Next year we anticipate the number of chickadees to be lower, but we may be surprised.

Table 2: Top 10 number of birds banded in fall

COMMON NAME	ALPHA CODE	2022	2021	2020
Golden-crowned Kinglet	GCKI	2,087	954	363
Ruby-crowned Kinglet	RCKI	1,808	1,190	397
Blue Jay	BLJA	520	500	129
Yellow-rumped (Myrtle) Warbler	MYWA	503	1,037	123
Slate-colored Junco	SCJU	443	70	33
Black-capped Chickadee	BCCH	394	38	149
Northern Saw-whet Owl	NSWO	329	336	242
Magnolia Warbler	MAWA	326	378	115
American Redstart	AMRE	299	162	96

The craziest day in recent PEtBO history is definitely September 8th, the day we banded 717 birds of 43 species (**Table 3**). This day started off fairly regularly with the expected distribution of birds after the light north winds we had overnight. After the first hour of banding the sound of bird chips emanating from the forest had increased so much so that from the banding lab, we noticed large flocks moving by the station. By this point we were expecting a busy day. From then on, we were consistently hammered with over 80 birds per net round (30-40 minutes) which meant we had two teams delegated into either banding or extracting. We called in support from every volunteer on the roster to try and maximize our effort. This resulted in us being able to accomplish the majority of the day with only losing 30 minutes of mist-netting due to the backlog of birds at the station. We constantly monitored birds' safety to ensure that we would not be stressing birds out more than necessary. Luckily each bird had a healthy amount of fat, the winds were not too strong, and the weather was temperate. The seven most abundant species banded were all warblers. We theorize that the arrival of all these birds in such high numbers was due to the low-quality migration conditions that caused a backlog of birds waiting to move south. These top seven birds are northern breeders; thus, their timed migration was likely delayed due to weather conditions. It was exciting to witness the strong push of these warblers as many of these species are at risk due to habitat loss on their wintering grounds in the neotropics. A species of note on the list is the Cape May Warbler. Their fall average sits just below six individuals yet in one day we banded 21 individuals. The complete list of birds capture in one day (**Table 3**) truly demonstrates the diversity and excitement of the day.

Table 3: Busiest fall day!

COMMON NAME	ALPHA CODE	BANDED INDIVIDUALS
Blackpoll warbler	BLPW	113
Magnolia Warbler	MAWA	86
American Redstart	AMRE	77
Bay-breasted Warbler	BBWA	59
Tennessee Warbler	TEWA	49
Northern Parula	NOPA	45
Nashville Warbler	NAWA	29
Red-eyed Vireo	REVI	25
Swanson's Thrush	SWTH	22
Cape May Warbler	CMWA	21
Black-throated Green Warbler	BTNW	20
Blackburnian Warbler	BLBW	20
Black-throated Blue Warbler	BTBW	17
Chestnut-sided Warbler	CSWA	15
Bobolink	BOBO	15
Yellow-rumped (Myrtle) Warbler	MYWA	14
Philadelphia Vireo	PHVI	12
Western Palm Warbler	WPWA	12
Wilsons Warbler	WIWA	9
Yellow-bellied Flycatcher	YBFL	6
Blue-headed Vireo	BHVI	5
Cedar Waxwing	CEDW	5
Least Flycatcher	LEFL	4
Red-breasted Nuthatch	RBNU	4
Trails Flycatcher	TRFL	3
Black-and-white Warbler	BAWW	3
Ovenbird	OVEN	3
Northern Waterthrush	NOWA	3
Canada Warbler	CAWA	3
Scarlet Tanager	SCTA	3
Sharp-shinned Hawk	SSHA	2
Rose-breasted Grosbeak	RBGR	2
Eastern Phoebe	EAPH	1
Warbling Vireo	WAVI	1
House Wren	HOWR	1
Hermit Thrush	HETH	1
Gray Catbird	GRCA	1

COMMON NAME	ALPHA CODE	BANDED INDIVIDUALS
<i>Common Yellowthroat</i>	COYE	1
<i>Chipping Sparrow</i>	CHSP	1
<i>Field Sparrow</i>	FISP	1
<i>Song Sparrow</i>	SOSP	1
	Total	717
	Species	43

This year we faced a significant challenge in the kinglet department. Every year we estimate the number of birds we will be banding and order an appropriate amount from the bird banding office which regulates all bands and permits used to do the research that we do. This year we ran into an issue when we first noticed the supply of 0A bands (the smallest band we use) dwindling due to the volume of kinglets being captured. Because of the huge influx of kinglets, our banding staff needed to scour the country and other observatories to attempt to get a loan from other stations to be able to band all the kinglets we were getting. Unfortunately, it seems like every station was starting to encounter the same problem we were. This meant that we needed to do a big shuffle of bands to be able to supply ourselves to the end of the season. We collaborated with a professor from Trent University, McGill Bird Observatory, and the Tadoussac Bird Observatory, as well as the Bird Banding Office (BBO) to be able to accomplish our banding of the kinglet movements. With express overnight shipments, 4-hour road trips and lots of volunteers we managed to accomplish the impossible and band every kinglet we captured with some days getting down to the wire with as few as 45 0A bands left!



Photos 4: Female Ruby-crowned Kinglet (Right) and male Golden-crowned Kinglet (Left).

Despite the excitement of catching and banding this many birds, our goals of research extend beyond that. We use recapture data to try and estimate how long a bird uses a stop over site before moving on to their next stop in their migration sequence. From recapture data we are trying to determine how long it takes for birds to build up fat reserves that they will use for the next leg of migration. Kinglets that are known to have low recapture rates from year to year are one species that we can use to determine stop over length since on average they spend a decent amount of time at our station to refuel before making a big jump across the lake in the fall. This can be observed by the 460 recaptured kinglets in the fall. The way we measure fat can be very subjective, yet our banders agree to a scale on levels from 0 to 7. Level 7 is rarely observed as it usually represents every inch of the bird's body to be covered in fat which is usually seen in extremely long distant migrants like shorebirds. Our short flight kinglets and warblers typically reach up to a level 5 before starting a new migration leg. Levels are described as 4 being the mid point where birds' furcular hollow, which is the depression towards the throat along a bird's collar bone, is full to the top making a seamless finish with the birds' muscles. Their translucent skin allows us to blow on the birds and observe their fat content. A hollow devoid of fat or remnants of fat is what we would call a 0. Using this data we were able to determine at what fat content these birds tend to leave and estimate the amount of time it takes to build up those reserves. Despite having very limited data we noticed that our previously banded kinglets would remain on site for up to one week; some kinglets opted for two weeks. Those noticed to have fat when arriving would typically move on. Of the 460 birds recaptured 15% of them were recaptured with 0 fat. Fifty percent of the birds had 1 fat or less. It is assumed in the banding community that birds with levels of 4 and higher are usually ready to migrate and will rarely be recaptured after this point. This was observed with only 8% of our recaptured kinglets representing a fat score of 4 or more. This year a frequent flyer Golden-crowned Kinglet visited our nets over 7 times. We observed that over its two weeks stay its fat fluctuation was a gradual increase of 1 fat level per 3 or 4 days. This means that by its departure two weeks later its fat level had reached level 5 and was ready to move.

Finally, the bird of interest amongst this crazy season was the seldom captured and threatened species, the Red-headed Woodpecker. These woodpeckers have been declining in populations due to habitat loss (primarily logging) and insecticide use degrading food abundance. The capture of this bird was an interesting occurrence as this bird had not been observed in the recent weeks and suddenly one appeared in our ground traps. We were glad to see this hatch year bird which indicated that a pair had reproduced successfully and could be helping fight the decline of this species. We hope that observing and catching the Red-headed Woodpecker becomes a common occurrence in the years to come.



Photos 5: Hatch Year Red-headed Woodpecker. Photo credit: Jessica Daze

CENSUS AND VISUAL OBSERVATIONS

This year our fall census period on our 1.2 km trail for 30 minutes provided us with an average of 23 species per day with days as low as 12 and as high as 37. This average was on par with last year's fall census results. We did not notice as many birds in the first 30-minute census this year as we did last year. Despite having had busy migration mornings it seems like the numbers only increased over time with peak observations being about one hour after sunrise. The best observation during census this year was a Peregrine Falcon hunting and catching a bird in mid air. Their very fast arial movements make almost boom-like sounds, which is what alerted us to this display. As for visual observations the majority of the observations reflected most of the captures with exceptions like our waterbirds. This year the return of arctic breeding duck species seemed to have taken longer than last year. This is usually due to the temperate conditions in northern climates. Usually, we start seeing ducks on Lake Ontario when water in boreal and arctic climates start to freeze.

DAILY ESTIMATED TOTALS

We encountered the most species on the September 24th. We observed 81 species including many warblers that were still in the area and some of the later migrating species making early appearances like Rusty Blackbird, Slate-coloured Junco, Purple, and House Finch. Another noteworthy observation of that day was observing more than eight species of raptors which is rare as we do not currently have a raptor monitoring program. We hope to include one in the future to properly track these species as our pilot hawk-watch program in 2021 showed us that it would be of interest to continue one, but unfortunately our resources currently do not allow that.



Photos 6: *After Hatch Year Evening Grosbeaks (Female left, Male right) banded near the end of the fall season. Photo credit: Jessica Daze*

SPECIAL PROGRAMS

BOBOLINK PROGRAM

Bobolink, which are categorized as a species at risk, have been an important part of PEPTBO's monitoring program since 2008. This year continued our Bobolink research program with no issues. We managed to band 175 Bobolinks in 528 net hours. Despite this number being lower than previous years, swings in population numbers can be normal and our visual observations were on par with those of the previous couple of years. Determining age and sex of these birds is usually done by a combination of wing chord and tail shape but in some rare cases adult males will retain coloration and plumage from the breeding season (Photos 7). It will be important to continue to monitor this species as their habitat (open fields with tall grass) is threatened by agricultural practices. The importance of our monitoring of this species could play an important role in the conservation of grasslands.

Our 2021 intern, turned 2022 ABIC, Jessica Daze, has almost completed her manuscript which will hopefully be published this year. Keep an eye out on our webpage and other journals for its publication.



Photos 7: Face of an adult (After Hatch Year) male bobolink with retained adult facial plumage.
Photo credit: Jessica Daze

NORTHERN SAW-WHET OWL MONITORING PROGRAM

Owl monitoring had been occurring at Prince Edward Point for over 50 years yet PEPTBO has only been doing consistent Northern Saw-whet Owl banding for 23 years. This species has a high foreign recapture rate providing us with substantial data about their general movements throughout a finite area. This year we were able to continue our Northern Saw-whet Owl program to study this nocturnal migrant species. Over the six weeks of the program, we were able to band for 128 hours. This means we lost around ten days of banding due to inclement weather. This year we banded 329 Northern Saw-whet Owl, 10 Barred Owl, 1 Long-eared Owl, and 1 Eastern Screech owl. These numbers are within the average number of birds banded during standard net hours. The number of Barred Owl was remarkably high this year requiring some adjustments to our approach at banding. Considering that Barred Owl target Northern Saw-whet Owl (photos below) in the nets, we implemented more frequent net runs to ensure our study species was safe. This year we even recaptured one Barred Owl that we had been banded earlier in the season, suggesting it was staying in the county.

Finally, after years of the Covid-19 pandemic preventing us to have large public events for our owl program, we were able to host multiple groups of people to teach them about this program. Unfortunately, some groups were welcomed on days that had poor conditions for owl migrations, where no owls were captured. Despite this disappointment we were able to present attendees a program they would have seldom known to exist.



Photos 8: Barred Owl (Left). Photo credit: Jessica Daze

Northern Saw-whet Owl (Right). Photo credit: Vaughan Group

MONITORING AVIAN PRODUCTIVITY AND SURVIVORSHIP PROGRAM

The Monitoring Avian Productivity and Survivorship (MAPS) program started at PEptBO in 2021 and we just completed our second year. This program will help us develop trends for the breeding bird populations in Prince Edward County with respect to the bird's survivorship and productivity as the name suggests. We require a minimum of five years to be able to start making more accurate trend analysis for the program; therefore, we are still in the preliminary stages. This year we experienced a slightly lower number of birds banded than our first year. This is expected since in most cases the first year of monitoring is composed of strictly new birds and no recaptures. In our second season we encountered a high number of recaptured birds accounting for many of the total processed birds.

Our current four sites are Rocky Point (ROMP), Miller Family Nature Reserve (MFNR), Maple Cross Coastline Reserve (MACR), and Sandbanks Provincial Park (SNDB). The ROMP station is in the Prince Edward Point National Wildlife Area, where we expanded our partnership with CWS to run this breeding bird program. Our MFNR station, in association with the Prince Edward Hastings Land Trust, is located on Hilltop road and is along the Prince Edward County south shore. The MACR station in association with Nature Conservancy Canada (NCC) is along Helmer Road also along the PEC south shore. Finally, SNDB in association with Ontario Provincial Parks is in the Sandbanks Provincial Park. Each station offers a diversity of habitat that harbors potential for a wide variety of species. Despite these differences there are generalist species that can be found at all or most stations such as Song Sparrow and Yellow Warbler.

This year's effort at MFNR was challenged as only six of our original net lanes were accessible due to flooding around the other net lanes. Over time throughout the season, we were able to reopen some of the nets but our captures were affected. We attempted to mitigate the loss of the four net lanes by adding two new lanes in non flooded areas. We will continue to monitor these two net lanes in the following years in case flooding becomes an issue once again.

The total number of banding days this year totaled 29 days instead of 28. This was due to an encounter of an unforeseen thunderstorm at ROMP causing the crew to return the following day to finish the monitoring of the site. We banded 671 birds of 47 species between four stations (**Table 4**) and recaptured 250. This number is lower than the total birds encountered in summer 2021, but with more years of data we will continue to monitor the trends.

Recaptures are one of the main tools we use during our analysis for our breeding birds' program. This means that with birds returning from year to year we can determine both

longevity and site fidelity. Of the birds encountered 54 of them were returning birds from previous years returning to the same site to breed. Each site had a proportionate amount of returning birds that were demonstrating site fidelity. The most interesting recaptures of previous years were birds that were not originally banded through our MAPS program. At ROMP we recaptured a Black-capped Chickadee and Baltimore Oriole both banded in 2019 during our PEptBO Migration Monitoring Program. Furthermore, we recaptured a Yellow Warbler banded in 2016 at the same station. Finally, we recaptured two birds banded in 2015 on the same day, a Rose-breasted Grosbeak and a Gray Catbird. These recaptures were made a full 1.5 km away from their originally encountered location. These captures can have big impacts on our understanding of breeding bird migration patterns and their ultimate breeding location. This new information could inspire future research opportunities that would combine migration monitoring and breeding bird programs.

Now that we are in our 2nd year of monitoring breeding birds in our four sites throughout Prince Edward County, we are starting to see small trends in productivity and survivorship. From 2021 and 2022 data we observed strong survivorship in birds born in 2020 (2nd year birds banded in 2021). In contrast we noticed that after second year birds and hatch year birds banded in 2021 had a similar return rate for the station. When looking at productivity we noticed that the number of hatch year birds produced in 2021 was similar the number banded in 2022. In the next few years, we will be interested to see the trends evolve and change, helping us learn more about productivity and survivorship.

Table 4: MAPS capture data for all 4 sites

COMMON NAME	ALPHA CODE	ROMP	MFNR	MACR	SNDB
Downy Woodpecker	DOWO	6	2	1	0
Hairy Woodpecker	HAWO	0	1	2	1
Eastern Wood Pewee	EAWP	1	0	0	0
Yellow-bellied Flycatcher	YBFL	3	0	1	0
Trails Flycatcher	TRFL	3	1	10	2
Least Flycatcher	LEFL	2	2	1	0
Great-crested Flycatcher	GCFL	1	1	1	0
Eastern Kingbird	EAKI	1	0	0	1
Warbling Vireo	WAVI	2	0	0	1
Red-eyed Vireo	REVI	8	3	1	0
Blue Jay	BLJA	0	0	3	2
Black-capped Chickadee	BCCH	7	4	8	19
Brown Creeper	BRCR	1	0	0	0
Carolina Wren	CARW	1	0	0	1
House Wren	HOWR	5	4	6	8

COMMON NAME	ALPHA CODE	ROMP	MFNR	MACR	SNDB
Veery	VEER	1	0	0	1
Swanson's Thrush	SWTH	0	0	1	0
American Robin	AMRO	5	7	3	21
Gray Catbird	GRCA	4	10	24	3
Brown Thrasher	BRTH	2	3	3	1
European Starling	EUST	0	0	0	0
Cedar Waxwing	CEDW	15	0	3	6
Blue-winged Warbler	BWWA	1	0	0	0
Tennessee Warbler	TEWA	1	0	0	0
Nashville Warbler	NAWA	0	1	6	0
Yellow Warbler	YEWA	58	1	38	1
Chestnut-sided Warbler	CSWA	1	0	1	0
Magnolia Warbler	MAWA	0	1	6	1
Pine Warbler	PIWA	0	0	0	1
Black-and-white Warbler	BAWW	1	5	3	0
American Redstart	AMRE	1	1	10	0
Ovenbird	OVEN	0	3	3	0
Northern Waterthrush	NOWA	0	4	0	0
Common Yellowthroat	COYE	24	8	26	2
Canada Warbler	CAWA	1	0	0	0
Eastern Towhee	EATO	0	0	3	3
Chipping Sparrow	CHSP	0	3	4	0
Clay-colored Sparrow	CCSP	0	1	2	0
Field Sparrow	FISP	0	5	8	10
Song Sparrow	SOSP	56	14	24	11
Swamp Sparrow	SWSP	0	1	0	1
White-throated Sparrow	WTSP	0	6	10	0
Northern Cardinal	NOCA	2	0	4	2
Rose-breasted Grosbeak	RBGR	14	2	2	0
Red-winged Blackbird	RWBL	10	0	0	1
Common Grackle	COGR	2	1	0	0
Brown-headed Cowbird	BHCO	1	0	0	1
Baltimore Oriole	BAOR	5	0	0	1
American Goldfinch	AMGO	0	3	6	2
	Total	245	98	224	104
	Species	32	28	32	26

WILDLIFE HIGHLIGHTS

MAMMALS

PEPtBO is not only host to a wide variety of birds but also a wide range of other wildlife types and species. This year we encountered many deer at our location not only within our netting area but also in the roads and fields of the wildlife area. Their presence was not only noticeable but in fact many of them seemed like sizeable adult female deer. Unfortunately, this caused us to lose a few of our nets due to the deer running through them because of their relative transparency.

Other mammal species present in high numbers included Eastern Deer Mice and Eastern Cottontail. The presence of mice was quite noticeable in the buildings/sheds and often seen throughout the nights during our owl banding program, where numbers almost triple that of the sightings from last year. As for cotton tail, we noticed a high number of young rabbits and multiple generations. This was reflected in the constant flushing of rabbits in the early mornings when opening nets and their feeding habits in the evenings.

This year Red Squirrel were outnumbered by the quantity of chipmunk. Again, this year we also encountered our local beaver in the spring and River Otter. Finally, we noted an absence of Red Fox within the station area, but coyote numbers seemed normal for the year. It is possible that with these observations of high herbivorous mammals that more predatory species of both birds and mammals will increase in the next couple years due to their higher availability of food sources.

HERPTILES

This year was a decent year for the observation of snakes, frogs, and turtles. We encountered five different species of snakes, three species of turtles, and four species of frogs. Garter Snake continued to dominate in numbers but this year we saw a significant increase in the number of Smooth Green Snake and Dekay's Brown Snake. These are smaller snakes, and their numbers were quite high with over five of each encountered. Considering their smaller size, finding them was difficult, yet we still managed to see many, suggesting that there was a much higher number in the area. In terms of turtles, we encountered three different species at the station. Due to their large movements on land the endangered Blanding's Turtle was the most frequently encountered. The presence of Snapping and Painted Turtle were around average for the area. Frog species were the same as previous years with Spring Peeper and Chorus Frog making their loud debuts in the spring with Grey Tree Frogs following later in the spring. This year Leopard Frog seemed to have had a great reproduction season as in some wet days it was practically impossible to walk around our site without seeing them jump away from our feet.



Photos 9: Smooth Green Snake (Left) Dekays Brown Snake (Right). Photo credits: Jessica Daze

ARTHROPODS

This year insect numbers were not obviously different than previous years. The regular swarms of midges arrived with the spring and summer flooding around the banding station. We also had our regular movement of Green Darner Dragonflies from the August 15th to September 20th. This is when hundreds of thousands of dragonflies flood the skies around PEPtBO feeding on little insects such as midge swarms and mosquitos. As hunting insects, it is nice to see dragonflies defending the skies from pesky mosquitos while they use that nutrition to prepare for their own migration south. As PEPtBO was historically a field used for grazing, we often encounter hundreds of

grasshoppers in our more open habitat net areas. We are swarmed yearly with a huge number of these especially in the fall from August to September.

This year we noticed a low number of Monarch Butterflies throughout the point. Despite not seeing many during the spring and summer a decent number of them started moving south during fall migration. This could indicate that the breeding territory around the banding station is not as conducive to keeping monarch around. This species that feeds and breeds on milkweed plants and is a species-at-risk federally. This is significant because they are strong indicators, like birds, of changing environmental conditions. CWS is actively doing monarch counts around the national wildlife area to keep track of populations and to hopefully promote strong reproductive habits. Unfortunately, the biggest risks to these butterflies are like those affecting birds, which is degradation of stop-over and wintering habitat. Hopefully with continued research the government will be able to influence international policy to protect vulnerable species.

Insects play an important role in bird health and productivity therefore keeping an eye out on both insect numbers and bird numbers will in combination be able to give us more clue on how best to protect our vulnerable environment.



Photos 10: *Monarch Caterpillar. Photo credit: Jessica Daze*

ACKNOWLEDGEMENTS

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PROGRAM FUNDERS



HOW YOU CAN HELP

PEPtBO relies heavily every year on the help of hundreds of people. Through our daily volunteers, generous donors, and in-kind supporters we have been able to accomplish all of our duties. We host many events and activities to draw in our supporters which we advertise on all our online platforms. Spreading the word and accumulating more support is how PEPtBO will be able to grow and accomplish bigger and better things.

Spreading awareness about the observatory is a great way for us to spread our message aimed at the conservation of birds.

APPENDICES

APPENDIX A: ALL BIRDS BANDED

COMMON NAME	ALPHA CODE	SPRING	SUMMER	FALL	TOTAL
<i>Sharp-shinned Hawk</i>	SSHA	0	0	31	31
<i>Coopers Hawk</i>	COHA	0	0	1	1
<i>Merlin</i>	MERL	1	0	1	2
<i>Black-billed Cuckoo</i>	BBCU	0	0	2	2
<i>Mourning Dove</i>	MODO	22	0	0	22
<i>Yellow-billed Cuckoo</i>	YBCU	0	0	1	1
<i>Eastern Screech-Owl</i>	EASO	0	0	1	1
<i>Barred Owl</i>	BDOW	0	0	10	10
<i>Long-eared Owl</i>	LEOW	0	0	1	1
<i>Northern Saw-whet Owl</i>	NSWO	0	0	329	329
<i>Red-headed Woodpecker</i>	RHWO	0	0	1	1
<i>Red-bellied Woodpecker</i>	RBWO	1	0	0	1
<i>Yellow-bellied Sapsucker</i>	YBSA	1	0	16	17
<i>Downy Woodpecker</i>	DOWO	1	9	14	24
<i>Hairy Woodpecker</i>	HAWO	2	4	2	8
<i>Yellow-shafted Flicker</i>	YSFL	11	0	4	15
<i>Pileated Woodpecker</i>	PIWO	1	0	0	1
<i>Olive-sided Flycatcher</i>	OSFL	0	0	1	1
<i>Eastern Wood Pewee</i>	EAWP	15	1	14	30
<i>Acadian Flycatcher</i>	ACFL	1	0	0	1
<i>Yellow-bellied Flycatcher</i>	YBFL	20	4	80	104
<i>Trails Flycatcher</i>	TRFL	20	16	27	63
<i>Least Flycatcher</i>	LEFL	50	5	59	114
<i>Eastern Phoebe</i>	EAPH	20	0	68	88
<i>Great-crested Flycatcher</i>	GCFL	19	3	6	28
<i>Eastern Kingbird</i>	EAKI	0	2	0	2
<i>Blue-headed Vireo</i>	BHVI	34	0	226	260
<i>Warbling Vireo</i>	WAVI	1	3	1	5
<i>Philadelphia Vireo</i>	PHVI	12	0	32	44

COMMON NAME	ALPHA CODE	SPRING	SUMMER	FALL	TOTAL
Yellow-throated Vireo	YTVI	0	0	1	1
Red-eyed Vireo	REVI	71	12	183	266
White-eyed Vireo	WEVI	1	0	0	1
Blue Jay	BLJA	173	5	520	698
American Crow	AMCR	1	0	0	1
Black-capped Chickadee	BCCH	7	38	394	439
Red-breasted Nuthatch	RBNU	1	0	92	93
White-breasted Nuthatch	WBNU	1	0	51	52
Brown Creeper	BRCR	154	1	296	451
Carolina Wren	CARW	1	2	1	4
House Wren	HOWR	31	23	32	86
Winter Wren	WIWR	10	0	27	37
Golden-crowned Kinglet	GCKI	376	0	2087	2463
Ruby-crowned Kinglet	RCKI	267	0	1808	2075
Blue-gray Gnatcatcher	BGGN	0	0	1	1
Veery	VEER	6	2	17	25
Gray-cheeked Thrush	GCTH	2	0	74	76
Swanson's Thrush	SWTH	59	1	193	253
Hermit Thrush	HETH	31	0	164	195
Wood Thrush	WOTH	14	0	0	14
Eastern Bluebird	EABL	0	0	2	2
American Robin	AMRO	57	36	11	104
Gray Catbird	GRCA	119	41	21	181
Brown Thrasher	BRTH	15	9	7	31
European Starling	EUST	1	0	0	1
Cedar Waxwing	CEDW	8	24	39	71
Blue-winged Warbler	BWWA	10	0	0	10
Brewster's Warbler	BRWA	3	0	0	3
Golden-winged Warbler	GWWA	6	0	1	7
Tennessee Warbler	TEWA	36	1	115	152
Orange-crowned Warbler	OCWA	1	0	4	5
Nashville Warbler	NAWA	102	7	121	230
Northern Parula	NOPA	15	0	83	98
Yellow Warbler	Yewa	191	98	52	341
Chestnut-sided Warbler	CSWA	79	2	43	124
Magnolia Warbler	MAWA	266	8	326	600

COMMON NAME	ALPHA CODE	SPRING	SUMMER	FALL	TOTAL
Cape May Warbler	CMWA	72	0	103	175
Black-throated Blue Warbler	BTBW	25	0	168	193
Yellow-rumped (Myrtle) Warbler	MYWA	500	0	503	1003
Black-throated Green Warbler	BTNW	68	0	56	124
Blackburnian Warbler	BLBW	37	0	46	83
Pine Warbler	PIWA	3	1	1	5
Western Palm Warbler	WPWA	17	0	80	97
Yellow Palm Warbler	YPWA	1	0	0	1
Bay-breasted Warbler	BBWA	91	0	180	271
Blackpoll warbler	BLPW	4	0	267	271
Black And White Warbler	BAWW	30	9	45	84
American Redstart	AMRE	64	12	299	375
Ovenbird	OVEN	34	6	39	79
Northern Waterthrush	NOWA	19	4	19	42
Mourning Warbler	MOWA	11	0	0	11
Common Yellowthroat	COYE	58	60	80	198
Hooded Warbler	HOWA	4	0	0	4
Wilson's Warbler	WIWA	26	0	42	68
Canada Warbler	CAWA	23	1	23	47
Yellow-breasted Chat	YBCH	1	0	0	1
Scarlet Tanager	SCTA	23	0	10	33
Eastern Towhee	EATO	8	6	23	37
American Tree Sparrow	ATSP	2	0	2	4
Chipping Sparrow	CHSP	34	7	22	63
Clay-colored Sparrow	CCSP	1	3	0	4
Field Sparrow	FISP	11	23	19	53
Savannah Sparrow	SAVS	0	0	2	2
Fox Sparrow	FOSP	11	0	15	26
Song Sparrow	SOSP	50	105	93	248
Lincoln Sparrow	LISP	18	0	1	19
Swamp Sparrow	SWSP	23	2	1	26
White-throated Sparrow	WTSP	209	16	227	452
Eastern White-crowned Sparrow	EWCS	31	0	17	48
Slate colored Junco	SCJU	166	0	443	609
Northern Cardinal	NOCA	5	8	12	25

COMMON NAME	ALPHA CODE	SPRING	SUMMER	FALL	TOTAL
<i>Rose-breasted Grosbeak</i>	<i>RBGR</i>	45	18	9	72
<i>Indigo Bunting</i>	<i>INBU</i>	3	0	0	3
<i>Bobolink</i>	<i>BOBO</i>	0	0	175	175
<i>Red-winged Blackbird</i>	<i>RWBL</i>	39	11	0	50
<i>Rusty Blackbird</i>	<i>RUBL</i>	2	0	0	2
<i>Common Grackle</i>	<i>COGR</i>	98	3	9	110
<i>Brown-headed Cowbird</i>	<i>BHCO</i>	156	2	0	158
<i>Baltimore Oriole</i>	<i>BAOR</i>	36	6	2	44
<i>Purple Finch</i>	<i>PUFI</i>	9	0	16	25
<i>House Finch</i>	<i>HOFI</i>	0	0	7	7
<i>American Goldfinch</i>	<i>AMGO</i>	26	11	46	83
<i>Evening Grosbeak</i>	<i>EVGR</i>	0	0	16	16
	Total	4441	671	10812	15924
	Species	94	47	92	112

APPENDIX B:

ALL RECAPTURES

COMMON NAME	ALPHA CODE	SPRING	SUMMER	FALL	TOTAL
<i>Sharp-shinned Hawk</i>	SSHA	0	0	3	3
<i>Broad-winged Hawk</i>	BWHA	0	0	1	1
<i>Northern Saw-whet Owl</i>	NSWO	0	0	16	16
<i>Mourning Dove</i>	MODO	9	0	2	11
<i>Downy Woodpecker</i>	DOWO	1	0	3	4
<i>Hairy Woodpecker</i>	HAWO	1	1	5	7
<i>Yellow-shafted Flicker</i>	YSFL	6	0	3	9
<i>Yellow-bellied Flycatcher</i>	YBFL	0	0	1	1
<i>Least Flycatcher</i>	LEFL	0	0	5	5
<i>Eastern Phoebe</i>	EAPH	1	0	2	3
<i>Great-crested Flycatcher</i>	GCFL	4	1	0	5
<i>Blue-headed Vireo</i>	BHVI	0	0	5	5
<i>Philadelphia Vireo</i>	PHVI	0	0	5	5
<i>Red-eyed Vireo</i>	REVI	9	8	25	42
<i>Blue Jay</i>	BLJA	66	3	117	186
<i>Black-capped Chickadee</i>	BCCH	37	21	168	226
<i>Red-breasted Nuthatch</i>	RBNU	0	0	25	25
<i>White-breasted Nuthatch</i>	WBNU	0	0	19	19
<i>Brown Creeper</i>	BRCR	23	0	49	72
<i>Carolina Wren</i>	CAWR	1	1	0	2
<i>House Wren</i>	HOWR	33	8	6	47
<i>Winter Wren</i>	WIWR	1	0	1	2
<i>Golden-crowned Kinglet</i>	GCKI	37	0	134	171
<i>Ruby-crowned Kinglet</i>	RCKI	12	0	326	338
<i>Gray-cheeked Thrush</i>	GCTH	0	0	5	5
<i>Swanson's Thrush</i>	SWTH	9	0	12	21
<i>Hermit Thrush</i>	HETH	9	0	20	29
<i>American Robin</i>	AMRO	42	7	2	51
<i>Gray Catbird</i>	GRCA	17	18	2	37
<i>Brown Thrasher</i>	BRTH	3	1	2	6
<i>Cedar Waxwing</i>	CEDW	0	0	3	3
<i>Tennessee Warbler</i>	TEWA	0	0	2	2
<i>Orange-crowned Warbler</i>	OCWA	0	0	1	1

COMMON NAME	ALPHA CODE	SPRING	SUMMER	FALL	TOTAL
Nashville Warbler	NAWA	1	2	4	7
Northern Parula	NOPA	0	0	3	3
Yellow Warbler	YEWA	72	53	14	139
Chestnut-sided Warbler	CSWA	0	0	10	10
Magnolia Warbler	MAWA	28	1	63	92
Cape May Warbler	CMWA	1	0	9	10
Black-throated Blue Warbler	BTBW	0	0	59	59
Yellow-rumped (Myrtle) Warbler	MYWA	7	0	30	37
Black-throated Green Warbler	BTNW	3	0	0	3
Blackburnian Warbler	BLBW	2	0	1	3
Western Palm Warbler	WPWA	2	0	1	3
Bay-breasted Warbler	BBWA	2	0	37	39
Blackpoll warbler	BLPW	0	0	3	3
Black And White Warbler	BAWW	4	2	8	14
American Redstart	AMRE	2	1	46	49
Ovenbird	OVEN	1	1	7	9
Northern Waterthrush	NOWA	3	0	0	3
Common Yellowthroat	COYE	8	34	32	74
Wilson's Warbler	WIWA	1	0	4	5
Canada Warbler	CAWA	2	0	2	4
Scarlet Tanager	SCTA	1	0	0	1
Eastern Towhee	EATO	3	3	11	17
Chipping Sparrow	CHSP	16	0	6	22
Field Sparrow	FISP	5	8	0	13
Fox Sparrow	FOSP	0	0	2	2
Song Sparrow	SOSP	36	61	44	141
Lincoln Sparrow	LISP	1	0	0	1
White-throated Sparrow	WTSP	14	3	126	143
Eastern White-crowned Sparrow	EWCS	15	0	20	35
Common Grackle	COGR	42	2	0	44
Slate colored Junco	SCJU	68	0	197	265
Northern Cardinal	NOCA	4	2	1	7
Rose-breasted Grosbeak	RBGR	1	6	0	7
Indigo Bunting	INBU	1	0	0	1
Red-winged Blackbird	RWBL	16	0	0	16

COMMON NAME	ALPHA CODE	SPRING	SUMMER	FALL	TOTAL
<i>Brow-headed Cowbird</i>	<i>BHCO</i>	70	0	0	70
<i>Baltimore Oriole</i>	<i>BAOR</i>	0	2	0	2
<i>Purple Finch</i>	<i>PUFI</i>	0	0	2	2
<i>American Goldfinch</i>	<i>AMGO</i>	2	1	0	3
	Total	754	250	1695	2699
	Species	52	26	57	71

APPENDIX C: ALL FOREIGN RECOVERIES

BAND NUMBER	SPECIES	ORIGINAL BANDING DATE	OBSERVATORY	LOCATION	RECOVERY DATE	LOCATION	AGE AT RECOVERY
1014-98987	Northern Saw-whet Owl	2018-10-13	Prince Edward Point Bird Observatory	Milford, ON	2022-03-17	Cherry Valley, New York, USA	5 years old
2651-83793	Brown-headed Cowbird	2021-04-29	Prince Edward Point Bird Observatory	Milford, ON	2022-05-19	Newark Wayne County, New York, USA	3 years old
2731-22526	Brown-headed Cowbird	2022-04-18	Prince Edward Point Bird Observatory	Milford, ON	2022-04-22	Syracuse, New York, USA	2 years old
1372-76546	American Robin	2018-05-05	Prince Edward Point Bird Observatory	Milford, ON	2022-05-17	Grifton, North Carolina, USA	5 years old
2791-52888	Brown-headed Cowbird	2021-04-20	Prince Edward Point Bird Observatory	Milford, ON	2022-07-23	Foreman's Brand Bird Observatory	3 years old
1104-27078	Northern Saw-whet Owl	2021-10-09	Prince Edward Point Bird Observatory	Milford, ON	2021-06-11	Pennington, New Jersey, USA	2 years old
1104-26678	Northern Saw-whet Owl	2019-10-11	Prince Edward Point Bird Observatory	Milford, ON	2022-11-02	Newton Square, Pennsylvania, USA	5 years old
1104-27449	Northern Saw-whet Owl	2021-10-13	Prince Edward Point Bird Observatory	Milford, ON	2022-10-28	Long Point Bird Observatory	3 years old
1104-26914	Northern Saw-whet Owl	2019-10-18	Prince Edward Point Bird Observatory	Milford, ON	2022-11-09	Bergton, Virginia, USA	4 years old
1104-27071	Northern Saw-whet Owl	2021-10-07	Prince Edward Point Bird Observatory	Milford, ON	2022-10-28	East Concord Banding Station	3 years old
1104-27301	Northern Saw-whet Owl	2020-10-21	Prince Edward Point Bird Observatory	Milford, ON	2022-11-02	Bliss, New York, USA	4 years old
104-27375	Northern Saw-whet Owl	2021-10-01	Prince Edward Point Bird Observatory	Milford, ON	2022-09-16	Tadoussac Bird Observatory	Over 5 years old
1104-27643	Northern Saw-whet Owl	2022-09-29	Prince Edward Point Bird Observatory	Milford, ON	2022-10-28	Newton Square, Pennsylvania, USA	Hatch year
1104-27676	Northern Saw-whet Owl	2022-10-03	Prince Edward Point Bird Observatory	Milford, ON	2022-11-08	Marion County, West Virginia, USA	Hatch year
1124-15148	Northern Saw-whet Owl	2022-10-05	Prince Edward Point Bird Observatory	Milford, ON	2022-10-27	East Concord, New York, USA	Hatch year
1104-26922	Northern Saw-whet Owl	2019-10-18	Prince Edward Point Bird Observatory	Milford, ON	2022-11-07	Stevens Point, Wisconsin, USA	Over 5 years old
1124-15143	Northern Saw-whet Owl	2022-10-05	Prince Edward Point Bird Observatory	Milford, ON	2022-10-27	New York, USA	Hatch year
1124-15148	Northern Saw-whet Owl	2022-10-05	Prince Edward Point Bird Observatory	Milford, ON	2022-10-27	New York, USA	Hatch year
1124-15241	Northern Saw-whet Owl	2022-10-14	Prince Edward Point Bird Observatory	Milford, ON	2022-11-07	West Virginia, USA	Hatch year
1104-27676	Northern Saw-whet Owl	2022-10-03	Prince Edward Point Bird Observatory	Milford, ON	2022-11-08	West Virginia, USA	Hatch year
1144-25557	Northern Saw-whet Owl		Unknown	Minnesota	2022-10-03	Prince Edward Point Bird Observatory	3 years old

BAND NUMBER	SPECIES	ORIGINAL BANDING DATE	OBSERVATORY	LOCATION	RECOVERY DATE	LOCATION	AGE AT RECOVERY
1124-00749	Northern Saw-whet Owl		Unknown	Monroe County, PA	2022-10-10	Prince Edward Point Bird Observatory	3 years old
1124-00620	Northern Saw-whet Owl		Unknown	Pennsylvania USA	2022-10-25	Prince Edward Point Bird Observatory	3 years old
1124-10509	Northern Saw-whet Owl	2020-10-30	Unknown	Cayuga Ontario	2022-10-24	Prince Edward Point Bird Observatory	3 years old
1104-37336	Northern Saw-whet Owl	2020-10-11	Unknown	Milbridge, Maine, USA	2022-10-09	Prince Edward Point Bird Observatory	3 years old
1245-56901	Broad-winged Hawk	2022-08-30	Sandy Pines Rehab Centre	Napanee Ontario	2022-09-05	Prince Edward Point Bird Observatory	Hatch year
2900-02368	Yellow Warbler	2019		Ottawa County, Ohio, USA	2022-04-30	Prince Edward Point Bird Observatory	Over 4 years old