BRUCE PENINSULA
BIRD OBSERVATORY
THE VOICE OF BIRDS ON THE BRUCE

MIGRATION MONITORING
AT
CABOT HEAD

SPRING 2020

by

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prepared
for

BRUCE PENINSULA BIRD OBSERVATORY

July 2020

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Citation: Menu, S. July 2020. Migration Monitoring at Cabot Head, Spring 2020. Unpublished report for Bruce Peninsula Bird Observatory

Preface

Cabot Head is a promontory of the northeast headland of the upper Bruce Peninsula in south-central Ontario. Cabot Head Research Station (CHRS) is situated on the western side of Wingfield Basin (at 45°15'N, 81°18'W) near the community of Dyer's Bay. In 2001, Cabot Head was designated as an Important Bird Area (IBA) by Birdlife International for its significant concentrations of migratory bird species. Both Ontario Parks and Bruce Peninsula Bird Observatory (BPBO) manage the Cabot Head Research Station.

The Breeding Bird Survey (BBS) is the principle method for monitoring bird populations in the United States and southern Canada. However, breeding ranges of many species in northern Canada are inaccessible to roadside surveys and are therefore poorly monitored by the BBS method. The Canadian Migration Monitoring Network (CMMN) is a nation-wide, Bird Studies Canada-led initiative, intended to assess changes in bird populations during migration. There are 25 stations across Canada where data are being collected for each bird species during the spring and fall migrations, typically through a standardized capture and observation protocol. Through continuous data collection since 2001, BPBO has demonstrated that Cabot Head is a significant site for monitoring migratory landbirds. In recognition of its importance and established migration monitoring effort, BPBO became a member of the CMMN in fall 2003.

BPBO was incorporated as a non-profit charitable organization in 2001 to initiate and direct ornithological assessments and monitoring at Cabot Head and the surrounding areas. Migration monitoring has been the primary focus of bird research at Cabot Head since 1998. This document reports on results of the spring 2020 migration monitoring season at the CHRS.

Executive Summary

In this document are summarized the results of migration monitoring at Cabot Head in spring 2020. This year, due to the Covid19 pandemic, the season was put on hold until special exemption was granted by Ontario Parks to run a modified monitoring with only one person. As a consequence, spring fieldwork began on May 8 (instead of April 15) and ended on June 10 for a total of 34 consecutive days of coverage, with a reduced array of six mist nets. A total of 147 species were detected during the monitoring period (2002 - 2019 average of 162 ± 6). A complete list of all species observed, with season Estimated Totals, days with observation, maximum and minimum daily totals, is provided in the appendix (as Table 4). A total of 632 birds of 49 species were banded and 22 birds of 10 species were recaptured. Ruby-crowned Kinglet, Palm Warbler, and Yellow-rumped Warbler (in decreasing, numerical order), represented 44% of the banding total were the One species, Eastern Kingbird, was banded for the first time in spring, and was the second ever captured. Daily diversity peaked during a five-day period in the second half of May, notably on May 20 when 85 species were observed.

The defining characteristic of spring 2020 was a cold, but relatively dry period with moderate weather throughout most of the season. The stable weather allowed for a good banding coverage, although only six (out of the normal 15) nets were in operation, due to the reduced staff. The daily census from May 8 to June 10 provides an excellent continuity in the long-term data set established by BPBO since 2002. Causal observations also provide additional information about bird migration at Cabot Head, although in a less standardized way. Banding data in spring 2020 are not directly comparable with previous seasons, because only a fraction of the net array was deployed. Nonetheless, some monitoring is better than none: consistency and persistence are absolutely essential for the integrity and quality of long-term monitoring. In that regard, the spring 2020 season was a success, as it provided high-quality data, notably the standardized, daily census, over most of the normal period (with only the first three weeks missed).

The entire list of all species observed, with relevant statistics, is given in Appendix I. For a more casual take on the spring 2020 season, an edited version of the blog is reproduced in Appendix II.

1. Methods

The migration monitoring program at Cabot Head like all CMMN stations follows a field protocol as it is essential for the production of population indices that data collection be consistent over the long term. At CHRS, fifteen mist nets are operated for six hours starting 30 minutes before sunrise, weather permitting. Personnel also complete a census done for one hour along a fixed route starting an hour after sunrise, where all birds seen or heard are recorded. Supplemental surveys such as visible migration counts and bay watches are completed when circumstances permit, but casual observation occurs all throughout the count period of seven hours. In spring 2020, as mentioned, the monitoring was done by only one person (the author of the current report), which required modifications of the protocol: the census was given priority and was performed every day. Only six nets, as opposed to the normal 15, (A1&2, B9&10, C14&15, chosen for their high rate of capture) were deployed. At first and for a few days, the nets A1 and A2 were open, weather permitting, 30 minutes before sunrise. When it proved to interfere too much with census, it was decided to open all the nets at once after census was completed for four hours.

2. Season Summary

Coverage

Fieldwork for spring migration monitoring began at CHRS on May 8 and ended on June 10, for a total of 34 consecutive days. Census and casual observation were performed every day (except during intense rain). Banding is more affected by weather and there was a total of five days without any banding and another four with half an hour or an hour of banding. Across the season, 20% of mist netting coverage (in hours) was lost. There were 20 days with "complete coverage" (i.e. all six nets open for four hours - or six as defined in section 1. Methods) which represents 59% of the (reduced) spring season. It is not quite possible to directly compared with previous seasons, but, the 2002-2019 average is 46% ± 12 of days with complete coverage.

Weather

Weather in spring 2020, from May 8 onward, was notably cold, but neither too windy, nor wet. There were only four days with precipitation, including snow on May 9 and thunderstorms on June 10, bracketing the season with poor weather. Rain tremendously affects migration, grounding birds and impacting their foraging abilities. It also precludes any banding, for birds' safety. Periods of high wind occurred quite infrequently this spring all throughout the season: only 12% of days (i.e. four days) experienced winds of at least 5 on the Beaufort scale. These strong winds did not always last during the entire morning, but they nonetheless affected banding operations, as nets in their paths had to be closed.

Besides rain, wind is a major factor that influences migration. It is difficult to accurately quantify such a dynamic component of the weather, especially because wind strength and direction are recorded only at the start and end of the count period. To characterize wind strength (on the Beaufort scale) and direction, we considered only the strongest wind during the count period of seven hours. Undoubtedly, this method would tend to over-represent strong winds. However, strong winds affect migration tremendously and their effect could probably be felt before they develop into a full windstorm. This spring, strong winds (at least five on the Beaufort scale) were very rare, happening only on four days. More than half the days (59%) experienced moderate wind (three to four on the Beaufort scale) and almost a third (29%) had light winds. Therefore, most of the monitoring period experienced light to moderate winds (Fig.1), allowing for nets to be fully open most of the time. Winds predominantly came from the East in spring 2020, regardless of strength: 41% of days experienced an East wind. Both during nocturnal migration and diurnal foraging flights, winds can induce migration drifts in birds and since Cabot Head is located on the northeast promontory of the Bruce Peninsula, an East wind has thus the potential to "push" birds away from it. However, a heavy visible migration is sometimes noted during periods of East wind, indicating that the interplay between weather and migration is not a simple one.

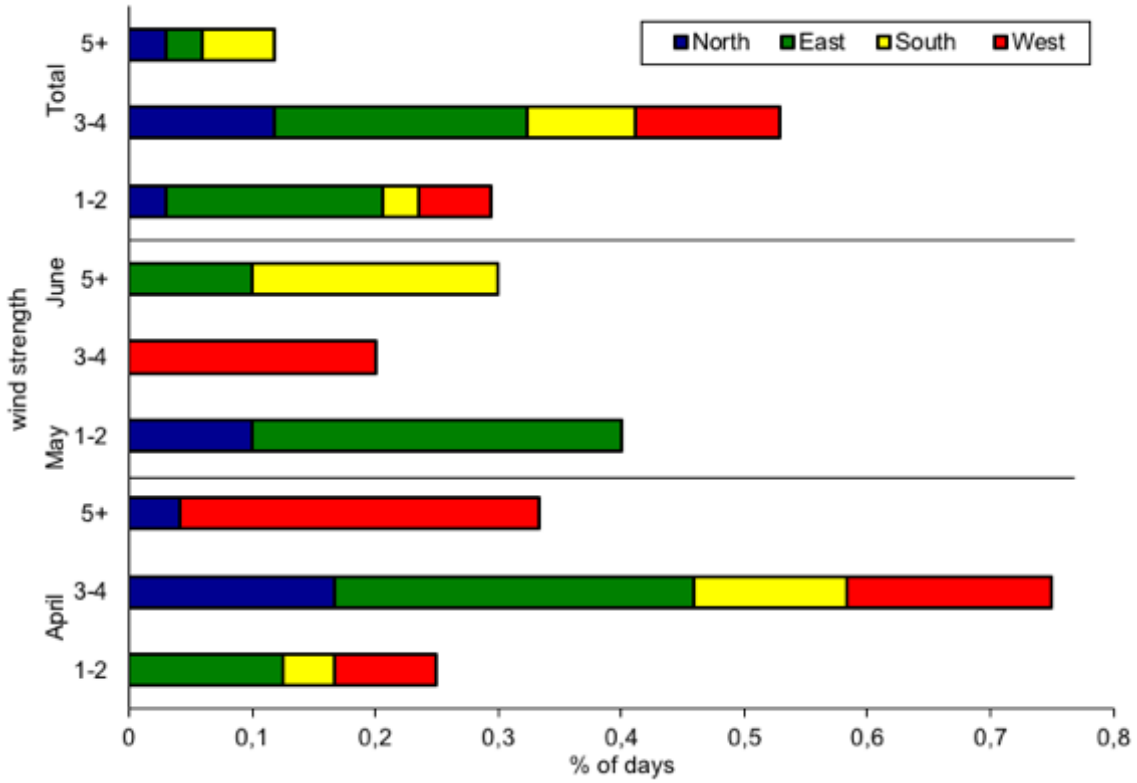

Figure 1. Wind pattern (strength on the Beaufort scale, direction and proportion of time) at CHRS, spring 2020.

Migration Monitoring

Waterfowl

Waterfowl migration through the Great Lakes region typically peaks in March and April. Because of the late start, less waterfowl was observed this spring. White-winged Scoters, the only species of scoters detected during the monitoring period, were observed on five occasions, with a high of 27 birds on May 18. Long-tailed Ducks were detected on four days in small numbers: two birds on May 17 and one bird (likely the same individual) between June 4 and 6. The June observations are the latest records of Long-tailed Ducks at Cabot Head and the first ones in June: the previous latest date was May 24. No Common Goldeneyes were detected this spring, even though observations occurred regularly in small numbers after May 8. Of interest, Buffleheads, were seen almost daily from May 8 (with a season high of 11 birds) May 15. One Red-necked Grebe was seen flying over Georgian Bay on May 12. Likewise, Horned Grebes were detected

only once, with two individuals on May 18. The three species of Mergansers (a mix of migrants and residents) were observed throughout the entire spring, although Hooded Mergansers are always observed in very small numbers on Wingfield Basin and most frequently in April. For that later species, observations occurred on two days (May 27 and 31) with only one bird. Numbers of Red-breasted Mergansers were unusually low this spring, although a total of 18 birds were seen on May 23. Common Mergansers were seen almost daily from May 8 to June 10, with the biggest flocks at the end of the season: tight groups of immature males and/or females were feeding and resting together (maximum of 17 birds on June 8 and 20 birds on June 9). It is likely that they are non-breeders or young birds.

Typically, large flocks of Canada Geese are detected in late May - early June, when they undergo a moult migration. Major movements of Canada Geese (daily total over 100 birds) in late spring this year were somewhat limited and occurred only on May 30, with 167 birds, June 7, with 156 birds, and on June 9, with 196 birds.

The water level in Georgian Bay and Wingfield Basin continues to be at its highest since 2002. Most of the rocks on the eastern side of the Basin are now underwater and cannot be used as roosting sites for gulls and cormorants as they have historically been. Thus, smaller numbers of these species are seen now compared to previous years. However, gulls, and to a lesser extent, cormorants, have started to use the "tip", a rocky point, which represents the end of the strip of land enclosing Wingfield Basin on its western side.

Raptors

A substantial migration of soaring raptors occurs only in spring over the Bruce Peninsula, as the landform acts as a gigantic funnel for these species who are reluctant to fly over big bodies of water. Sharp-shinned Hawk and Broad-winged Hawk are the species of raptors detected in the highest numbers at Cabot Head. However, the former migrates mostly in April and early May: this year, only the tail end of the passage, made mostly of immatures, was observed, with high of 20 birds on May 16 and 17, for a season total of 104 birds (2002-2019 average of 401 ± 104).

Broad-winged hawks migrate mostly in late April and early May, so were mostly missed this spring, but there can be substantial numbers later in the season. Between 2002 and 2019 (18 years time), there have been 16 days between April 26th and June 6th with totals over 100 birds, where a little over half of them were observed before May 8. No such concentration was recorded

in spring 2020, with the season high of 556 broad-winged hawks on May 20 and 58 on May 25, with a late small flock of 28 birds on June 9.

A total of 13 species of raptors were detected in spring, including Golden Eagle, with possibly the same bird observed on May 18 and 20, and a Cooper's Hawk, with a single observation of one bird on June 3. A pair of Bald Eagles is still present at Cabot Head but appeared to have skipped nesting this year. Nonetheless, the pair still occupies their territory, making this species one that have been observed almost every day of the season, with the occasional passing of an immature or other adult bird. A total of five Bald Eagles were counted on May 27. On the opposite, Ospreys are rarely seen, and, when detected, they rarely linger around Cabot Head. Maybe there is a dearth of available fish for them or perhaps the presence of a fierce competitor like the Bald Eagle is a deterrent. This spring, one Osprey was detected only once during the monitoring period, on May 23, and also after the end of the daily period, on May 20.

Passerines and near-passerines

Short-distance migrants

Among passerines, the short-distance migrants are the earliest to arrive and pass through Cabot Head, with some species barely detected in years with an early spring. For example, the American Tree Sparrow is a very early migrant, with most of its migration missed at Cabot Head, especially if good weather comes early. However, this species has been detected and captured every spring, albeit very often in single digit numbers. In spring 2020, however, it was not observed at all, even though there have been sightings after May 8 in the past. Over the past eighteen years (2002-2019), American Tree sparrows were observed on 21 days out of a total of 145 days and eight of them were in spring of 2002.

By definition, then, most of the short-distance migrants were - at least partially - missed in spring 2020, since monitoring started on May 8. Brown Creepers have a migration that extends well into early May. This spring, they were detected in small numbers (one or two birds) regularly from May 8 to 21, with five birds banded. Sharing a similar migration pattern, Golden-crowned Kinglets are much more numerous, often one of the most numerous birds observed and banded, in early season. However, their migration usually tapers quickly in early May. Indeed, with observations from May 8 to 19, numbers were in single digit, for three days when they reached

between to 25 birds. A total of 29 birds (27% of them males, or a sex-ratio of 0.38) were banded, which is relatively high given the time period. Of interest, banding totals in May the previous 18 spring seasons have been higher than 29 birds in three seasons. Moreover, the sex-ratio for years with over 20 birds banded in May varies from 0.07 to 0.35, indicating that migration is dominated by females at this time of year. Combining all years (2002 - 2019), only 21 Golden-crowned Kinglets have been banded after (and including) May 8. The 2020 spring total and sex-ratios are quite remarkable and strongly suggest a very late migration for Golden-crowned Kinglets this year.

Blackbirds, notably Red-winged Blackbirds and Common Grackles, move through in early season as well, often in highly visible diurnal flights. Large movements usually occur between mid-April and early May, so were missed this year. The bigger flocks in May were on May 20, with 99 Red-winged Blackbirds and 53 Common Grackles. Rusty Blackbirds, not always easily separated from other Icterids, were seen in small numbers throughout the season, with a high of 17 birds on May 20 as well.

American Robins can also be seen in large numbers during the day in early spring. Unlike the Blackbirds this spring, they were counted in double-digit numbers only once after May 8, with 13 birds on May 20. It is likely that any Robins observed the other days were mostly local birds. The Northern (Yellow-shafted) Flicker is also a very visible early migrant. Its migration at Cabot Head is concentrated from mid-April to early May, so only the tail end of passage was observed this year, with good numbers between May 13 and 17.

Eastern Phoebes are the hardiest of the Tyrant Flycatchers, wintering in the southern USA and arriving early on the breeding grounds. This species is very vocal and visible, so it is easily detected. It also breeds - or attempts to - at Cabot Head, so it is no surprise that it is observed almost every day the entire spring season. That was again the case in 2020, with one to four Eastern Phoebes detected daily, likely local birds. This species migrates through Cabot Head mostly before mid-April, as it is observed and banded in good numbers only during late springs.

Tree Swallows are usually first detected around mid-April. This year, the highest numbers detected were 18 birds on May 18. The almost daily observations are mostly due to the pair of Tree Swallow breeding in the nesting box near the station. Northern Rough-winged Swallows were seen somewhat regularly from May 8 to June 7, usually one or two birds, but with a high of seven individuals on May 12 (a number not seen in the last few years). The Bank Swallow is a medium-to long-distance migrant, as some winter in the southern USA but others go to South America. It

is a common bird in steep decline, as reflected by trends at Cabot Head. This spring, one bird was seen on May 20 and two birds on June 4. Barn Swallows (a long-distance migrant) have had an even more marked decline at Cabot Head from seasonal totals in the hundreds to a total of 12 birds this year. The first detection in 2020 was of six birds on May 20. The other observations of the spring were on May 26 and 28, with three birds each day. Barn Swallows used to breed in good numbers the shipwreck in the basin but it is too derelict to be of use now.

A few species of warblers are short-distance migrants, with (all or parts of) wintering grounds in the southeastern USA, notably Yellow-rumped, Pine, and Palm Warblers. These species usually arrive at Cabot Head as early as mid-April. Most sparrow species are short-distance migrants, with wintering ranges usually confined in North America. At Cabot Head, Song Sparrow and Dark-eyed Junco are usually the first species of sparrows detected. The migration of Song Sparrows occurs before mid-April, as observation and banding totals are almost always low and likely of local birds. Dark-eyed Juncos, on the other hand, migrate mostly in the second half of April and into early May. With monitoring starting on May 8, not a single Junco was detected this year. There have been observations after May 8 in previous years, except in the last three years. White-throated and White-crowned Sparrows are two other numerous species of sparrows, with a slightly different migration timing. The former usually migrates earlier than the later, with a peak migration in late April - early May. The migration of White-crowned Sparrow is more variable across the year but there are hardly any observations in April: birds arrive in early May (first detections ranging from May 1 to 10), with numbers quite rapidly and decline as sharply after mid-May. This spring, the highest daily counts were 63 White-throated Sparrows and 10 White-crowned Sparrows, both on May 14. With first detections on May 13, numbers of White-crowned Sparrows were at a record low this spring, with a season total of 15 birds detected. Detected Totals in spring for this species quite variable, ranging from a - previous - low of 28 birds in 2019 to a high of 344 in 2013 (average: 153 ± 78). However, totals of less than 60 birds have previously occurred only in four springs (2011, 2017, 2018, and 2019).

Long-distance migrants

Long-distance migrants include a wide variety of birds, from hummingbirds to flycatchers to vireos to warblers. The main characteristics are the long distances flown between their breeding and wintering grounds, which are usually separated by hundreds, if not thousands, of kilometers. At Cabot Head, this diverse group tends to arrive from early May to early June, depending on species and conditions, making the month of May, especially mid-May, the busiest and - some would say - the most exciting time of year for birdwatching.

Overall species diversity increased rapidly in the first half of May as many species arrived at the upper Bruce Peninsula: numbers of species detected grew from 36 on May 8, (the first day of monitoring) to 85 on May 15 (58% of the spring total). From May 16 to May 23, another 44 new arrivals were detected, bringing the total number of species detected to 88% of the spring total. The remaining 17 days of monitoring brought 18 additional species, a mix of late migrants and occasional species.

On the first day of monitoring this year, May 8, five species of warblers were detected, which is a relatively small number. For example, in spring 2019, 13 species of warblers were detected by May 8. The next five days brought only four more species. A major influx of new species of warblers occurred from May 14 to 16, when nine species were detected, bringing the season total to 18. Afterwards, the pace of new arrivals slowed markedly: it took 11 days, from May 17 to May 27, to add the last seven species of warblers detected, bringing the spring 2020 total of 25 species of warblers (Fig.2). On May 21, 21 species of warblers were detected, the highest number of the season. The last warblers to arrive were detected after mid-May, with Canada and Blackpoll Warblers both on May 20, Wilson's Warbler on May 25, and Mourning Warbler on May 28 (Fig.2 on page 15). The sequence of warbler arrivals is relatively consistent between years, from early- to late-migrant species, although dates of first arrivals do vary for individual species.

Except for Blue-headed Vireo, a short-distance migrant which returns in April (first detection this year on May 13), Vireos arrive at Cabot Head in mid-May, with the occasional very early birds in early May. This spring, first detections were all on May 20 for Warbling, Philadelphia, and Red-eyed Vireos. Of the three species, the Red-eyed Vireo is the more common at Cabot Head, being notably a relatively abundant breeder on the Bruce Peninsula. In eastern North America, the Warbling Vireo reached the northern limit of its breeding range in Ontario, where it barely extends into the southern shield, occurring there in very low densities. Densities are also

very low in the northern Bruce Peninsula. It is indeed a rare bird at Cabot Head, with seasonal totals ranging from one single bird (in seven spring seasons) to 11 and 14 birds in 2009 and 2002, respectively. In 2020, it was observed on four occasions. Of interest, the poorly named Philadelphia Vireo breeds in the Boreal Forest and is quite abundant in Ontario. Nonetheless, it is not observed frequently at Cabot Head: this spring, there was only one sighting on May 20. It is a late migrant, as all first detections were on May 17 or later, except in 2013 (May 4) and 2014 (May 11). Red-eyed Vireo is also a late migrant, with most sightings from mid-May onwards, although the earliest detection was April 30, in 2005. Being a persistent singer, it is easily detected: after its arrival on May 20 this spring, it was missed on only two days during the rest of the season. Despite its general and local abundance, it is not often captured in the nets, as it tends to stay high in the canopy. A total of 4 birds were banded this spring (2002-2019 average of 14 ± 8; range of 6 in 2016 to 39 in 2013).

Tyrant Flycatchers are also late migrants (with the exception of Eastern Phoebe), arriving at Cabot Head usually around mid-May. Least Flycatcher is the earliest in the group, with its first and last detections this year on May 13 and June 9, respectively. It was detected daily between May 13 and 27 (except for two days). Yellow-bellied Flycatchers were detected regularly from May 20 to June 4, with a season detected total of 19 birds in 14 days. On the contrary, Traill's Flycatchers (Willow and Alder combined) were barely detected, with banding accounting for three of the five birds counted during five days (from May 26 to June 4). The first Great Crested Flycatcher was on May 24, a rather late detection. However, its loud call and song were easily detected throughout the rest of the season (with only four days with no observations in that two-week period). The first detection for Great Crested Flycatcher has shown a tremendous range across the previous 18 spring seasons, from as early as May 6 (in 2011) to as late as May 26 (in 2005, 2006, and 2017). Except for the later date, all first detections have been at or before May 21, with seven springs before May 14. Eastern Kingbirds were commonly seen between May 20 and 28 (with a season high of eight birds on May 20), but only seen on two other days (June 4 and 5) afterward. The first Eastern Wood-Pewees were recorded the same day as the first Eastern Kingbirds (May 20), but were also recorded regularly for the rest of the season, mainly through their characteristic song. Finally, one Olive-sided Flycatcher was heard on May 23 and 25.

Of the four species of Catharus thrushes seen at Cabot Head, three - Veery, Swainson's and Gray-cheeked Thrushes - are long-distance migrants with wintering ranges mostly in South

America. All thrushes can be quite secretive when silent and, more often than not, detections are through banding. However, these species are overwhelmingly captured in the first few hours of banding (see 4. Banding Data Analysis), which means they were likely missed this year, since nets were open two hours after sunrise. Indeed, only one Hermit Thrush and three Swainson's Thrushes were banded this spring, which, with one sighting of a Swainson's Thrush on May 14, represents the totally of detections for these two species. Two Veeries were heard singing on June 3 and one on June 7. No Gray-cheeked Thrushes were captured or observed this spring. The modified protocol of spring 20202 definitely reduced the capacity of monitoring Catharus thrushes.

As with the warblers discussed above, there can be variations in dates of first detection within a general time window for a specific species. For example, two species easily detected when present, Ruby-throated Hummingbird and Common Yellowthroat provide some perspective in fluctuations in arrival dates. This spring, they arrived a few days apart: on May 15 for the Common Yellowthroat and May 17 for the hummingbird. These dates represent a late arrival for these two species: First detections of Common Yellowthroats after May 14 (included) occurred only in four years (out of the previous 18), with May 18, in 2011 being the latest. Likewise, hummingbirds are usually first observed between May 5 and 13, with the two latest dates being May 15 in 2003 and May 18 in 2011. This spring represents the second latest first detection for Ruby-throated Hummingbirds, tied with spring 2019. Among the most common species of warblers at Cabot Head, it appears that Common Yellowthroat has the widest range of first arrival. Arrival dates for American Redstart, for example, have been very consistent throughout the years: The first detection has been between May 8 and 10 for 13 years out of 18, with two earlier years (May 1 in 2013 and May 4 in 2010) and three later years (May 12 in 2004 and 2017 and May 13 in 2002). However, spring 2020 marks the latest detection ever, at May 16. According to eBird, the earliest observation of American Redstart on the Bruce Peninsula was May 13 at Sauble Beach (ebird.org).

The highest diversity of species observed in the spring season was achieved on May 20 and 21, with a total of 85 and 81 species, respectively. On that day, among others, there were all four species of vireos and 20 species of warblers detected. The first Scarlet Tanager was also observed, among the 17 new species for the season were detected on that day (See the inset Big days, for more details). Diversity of 80 or more species detected are very rare at Cabot Head: in the past 18 years, they have happened only in 18 days, always in spring.

At the end of May, birds were starting to establish territories, sing and chase potential

competitors and mates. Migration always slows down at this time of year, with only the late migrants continuing to move through Cabot Head. American Redstarts were observed frequently and in high density but captures were in very low numbers, with only a total of 42 birds banded. It is, of course, impossible to directly compared with the previous spring seasons (low of 74 banded American Redstarts in 2017 - high of 273 in 2009). Combining all springs (2002 - 2019), the six nets deployed in spring 2020 capture about 61% of all redstarts. Considering the limited hours as well, we may roughly estimate that twice as many redstarts could have been banded with the normal set-up, about 80 birds. It is possible that there was a very limited migration of American Redstart in spring 2020, with birds spending a limited amount of time at Cabot Head, as indicated by the fact that no birds banded this spring got recaptured. However, there was quite a few recaptures of American Redstarts banded in previous seasons (See Recaptures).

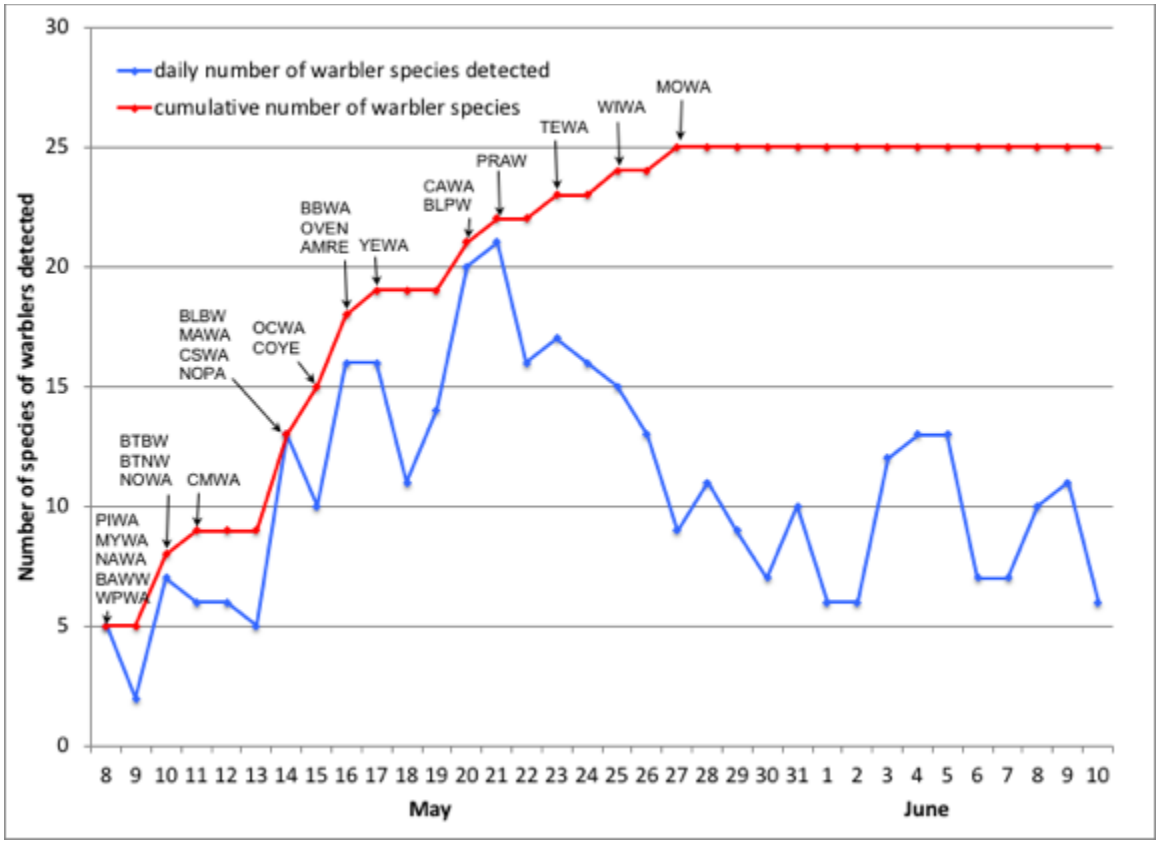

Figure 2. Daily and cumulative numbers of species of warblers detected at CHRS in spring 2020. Alpha codes denote date of first detection. (MYWA: Myrtle Warbler; PIWA: Pine Warbler; WPWA: Western Palm Warbler; BAWW: Black-and-White Warbler; NAWA: Nashville Warbler; NOWA: Northern Waterthrush; CMWA: Cape May Warbler; BTNW: Black-throated Green Warbler; BTBW: Black-throated Blue Warbler; CSWA: Chestnut-sided Warbler; MAWA: Magnolia Warbler; BLBW: Blackburnian Warbler; NOPA: Northern Parula; OCWA: Orange-crowned Warbler; COYE: Common Yellowthroat; OVEN: Ovenbird; AMRE: American Redstart; BBWA: Bay-breasted Warbler; YEWA: Yellow Warbler; CAWA: Canada Warbler; BLPW: Blackpoll Warbler; PRAW: Prairie Warbler; TEWA: Tennessee Warbler; WIWA: Wilson's Warbler; MOWA: Mourning Warbler)

Big days

Big days, in the birding world, refer to a search for the highest diversity of species. At Cabot Head, "big days" simply happen when diversity reach at least 75 species. On May 20, this spring, a total of 84 species were counted during the seven hours of monitoring (with an 85th species observed just after the end of monitoring). Migration was mostly stalled during the previous days, but on the early morning of May 20, birds were pouring out from the brilliant blue sky in a multihued mix of diversity and in incredible numbers against a fresh East wind. Most birds were flying just a little too high and too fast to be positively identified, except maybe in a broad category, like "Warbler sp.", with 500 of these counted in total. A total of 20 species of warblers were identified, with a First-of-Year (FOY) Blackpoll Warbler, and many of them in very high numbers: Nashville, Chestnut-sided, Blackburnian, Black-throated Green Warblers, as well as Northern Parula and American Redstarts. As an example, there were five Northern Parulas at once in a few trees, mostly males; and later, three females in one cedar.

Many Rose-breasted Grosbeaks were moving through, achieving a record daily high of 24 birds counted, with up to five of them in a tree at once. Most of them were second-year males, as evidenced by the brown wing and tail feathers contrasting with the jet-black wing coverts. The FOY Scarlet Tanager was one single bright red streak against a deep blue sky. The FOY Indigo Bunting burned blue in a white birch, posed long enough for me to admire its, well, indigo feathers. A smattering of male Baltimore Orioles brought deep orange and raven black, to compete with diminutive Blackburnian Warblers and American Redstarts.

In this most diverse day, the four species of vireos were observed, FOY for Warbling, Philadelphia, and Red-eyed, alongside the previously detected Blue-headed! The Tyranidae family was also well represented: Yellow-bellied and Least Flycatchers, FOY Eastern Wood Pewee, the local Eastern Phoebes, and quite a few Eastern Kingbirds. Bank and Barn Swallows were also observed for the first time this Spring, adding diversity to the usual Tree and Northern Rough-winged Swallows. One single Chimney Swift flew by. Among raptors, there were kettles of Broad-winged Hawks, accompanied by a few Red-shouldered and Red-tailed Hawks. A Peregrine Falcon was also seen briefly. The Golden Eagle returned at the end of the monitoring period to claim the 84th species mark! The 85th species was an "unofficial" Osprey, flying so low and so close I could distinctly see its yellow eyes.

On May 21, the shy was still clear and calm. There were no wave-upon-wave of migratory birds flying high. However, birds were still very much present: 81 species (including two only detected through banding) were counted. Seven of these species were different from the preceding day, notably one Red-bellied Woodpecker and three Red-headed Woodpeckers, all seen in a span of a mere few minutes. There were far fewer Rose-breasted Grosbeaks, but more Baltimore Orioles, than the previous day. Warblers were again at their peak with 21 species, including a rare Prairie Warbler.

On May 23, diversity was still high, including new arriving species, and a total of 76 species detected (including 17 of warblers). Diversity was not as high on May 24, but as a coming storm was approaching, there was a strong passage of many birds. Most notably, Scarlet Tanagers were streaming through the area, with a tally of 16 in about 30 minutes, and a record-breaking total of 23! Adult males in scarlet and black, second-year males in scarlet and black and brown, and females in more subdued yellow and green: all age and sex classes were moving through. There were also lots of Magnolia and Blackburnian Warblers, with totals of 22 and 17, respectively. The storm arrived mid-morning, dimming bird activity, which may be why "only" 64 species were detected that day.

3. Unusual Records

There are many ways an observation can be considered an unusual record at Cabot Head: a bird out of range; a bird with an overall low population on the Northern Bruce peninsula; a bird whose preferred habitat is not present at Cabot Head; a bird which is rare overall, either at provincial or continental levels; and, finally, a bird detected far outside its normal temporal or numerical range. Below is the list of the spring 2020 unusual records, in chronological order.

One Field Sparrow was detected over several days from May 8 to 16, and much later, on May 29. One Red-throated Loon was observed over Georgian Bay on May 11. There were five days with observations of Peregrine Falcon throughout the season (from May 13 to June 5), all of one bird. Clay-colored Sparrow was observed on May 14 (one bird) and May 15 (two birds), while a Vesper Sparrow was detected on May 22, 25, and 30. A Green Heron was detected on May 16. One Caspian Tern was observed on May 16 and 22 and one to four Common Terns were observed almost daily from May 29 to June 9. Both species of terns can be observed every spring in small numbers. A Solitary Sandpiper was seen flying fast on May 18. A young Golden Eagle was observed on May 18 and 20. A Great Horned Owl was flushed at the end of census over the Pine Barrens on May 20. Observations of one Chimney Swift occurred on May 20, 21, and 28. One Red-headed Woodpecker, and then, two almost together, were seen on May 21. That same day, a male Prairie Warbler, first detected by its song, was observed in full view for a few minutes. Blue-gray Gnatcatchers were seen on May 23, with two birds, and one bird heard and seen on May 24 and 25. A Northern Mockingbird was seen on May 28 and in the afternoon of June 3. A pair of Northern Shovelers were seen briefly flying over Wingfield Basin on May 28. The call of a Semipalmated Plover led to its observation on May 30. A Brewer's Blackbird, perched and calling for a few minutes, was detected on May 31.

For only the second spring, no Northern Goshawks were seen in 2020 (missed also in 2009).

4. Banding Data Analysis

The season of spring 2020, as mentioned, is absolutely unique due to the global pandemic of Covid19 and - hopefully - will remain the sole outlier in the long-term monitoring at CHRS. With a modified and reduced protocol, banding was nonetheless possible from May 8 to June 10, with a total of six nets operating from four hours after census (i.e. two hours after sunrise). Consequently, banding data cannot be directly compared with previous years. A total of 632 birds of 49 species were banded in spring 2020. As usual, a few species were banded in high numbers whereas the vast majority had only a few birds banded (Table 1, with details in Table 2). The spring banding average of 2002 - 2019 is 1589 ± 498 birds, with between 61 and 74 species captured.

Throughout banding this spring, captures ranged from one bird to 78 birds of eight species on May 8, which was the first day of monitoring (Fig.3). There were five days with totals over 50 birds, which is quite remarkable given the net set-up. The most common species banded was Ruby-crowned Kinglet, with 104 birds (2002-2019 average of 137 ± 76; range of 55 in 2012 to 292 in 2014). The second most common species was (Western) Palm Warbler, with a total of 99 birds banded, which represents the fourth highest total despite the limited net set-up. The average of 2002 - 2019 is 79 ± 56 birds, but with tremendous variations. Most years, the banding total is between 38 and 64 birds, with one spring at 79 birds (in 2016), one at 95 birds (in 2012). The three highest totals are 145, 218, and 219 birds, respectively, in the years 2007, 2019, and 2002. During the previous spring seasons, 67% of trapped Palm Warblers were captured in the six nets deployed in 2020. Because nets in 2020 were open two hours after sunrise as opposed to 30 minutes before sunrise, birds could also have been missed that way. Between 2002 and 2019, 18% of all Palm Warblers captured during the first two and a half hours of banding: early hours do not seem to be critical for capturing this species. Nonetheless, a potential of 191 Palm Warblers ((99 + 99*18%)/67%) could have been captured in total if following the normal protocol. The actual 2020 banding total, as well as the high levels of observations, indicates a strong passage of this species at Cabot Head this year. The third highest banding total is for the Yellow-rumped (Myrtle) Warbler, with 77 birds. This species has shown even more variations in spring banding totals than Palm Warbler, with a low of 16 birds in 2015 and a high of 246 birds in 2002. Totals higher than a hundred birds have occurred only on four spring seasons over the last 18 years. The 2020 total is actually the fifth highest banding total. Like Palm Warblers, visual observations also indicated a

strong movement through Cabot Head, with high numbers from May 8 to 20.

American Redstarts have regularly been banded in high numbers in spring at Cabot Head: 2002-2019 average of 179 ± 53, with totals above one hundred every spring except in 2017 (with 74 banded redstarts) and a high of 273 in 2009. This year, a total of 42 American Redstarts were banded, with the first captures on May 17 and last on June 4. The highest one-day total was on May 26 when 13 American Redstarts were banded. The six nets deployed in spring 2020 have captured in previous springs about 61% of all redstarts captured. Timing of capture is also important: of the 3066 American Redstarts captured in the springs 2002 -2019, 51% were captured from the opening time to two hours after sunrise. The early hours of capture are more crucial to American Redstarts than Palm Warblers, for example. Thus, a potential half of all captures were missed in the six nets, which, on average, catch 61% of all redstarts: as a consequence, the potential captures in spring 2020 could have been approximately 104 birds, which would still represent a low total compared to previous years (except spring 2017). In June this year, this species was captured only in two of the seven days with banding, even though its migration extends well into June and it is also locally abundant, an indication of low numbers.

Relatively good numbers of Nashville (38 birds banded) and Magnolia (42) were attained this spring. Apart from the exceptional springs of 2002 and 2019 (with, respectively, 227 and160 birds banded), banding totals of Nashville Warblers were between 11 and 60 birds in spring. With the same caveats explained above, the spring 2020 banding total indicates a strong passage of this species, especially on May 16 when 14 birds were banded. Outside of the springs of 2002 and 2019, daily totals of 14 Nashville Warblers (or more) have only happened on three occasions.

Another set of species were banded in interesting numbers this spring, in comparison to previous years, with a total of 11 Cape May Warblers banded, mostly in two days: May 17 and 19, with six and four birds banded, respectively. It is actually the second-highest spring season total, after the record of 28 birds in 2019. Other previous spring banding totals have been in the single digits, from a low of one bird (in 2003 and 2011) to a high of nine (in 2002) and three years without any captures. A total of eight Blackburnian Warblers were banded in spring 2020, above the 2002-2019 average of 6 ± 5 birds. The high Standard Deviation value indicates large variations between years, with three years above ten birds banded and eight years with only one to three birds banded. Bay-breasted Warbler banding totals present the same kind of variation: 2002-2019 average of 4 ± 4 birds, high of 11 and 14 in 2002 and 2019, respectively, and nine years with only one to three birds

banded. In spring 2020, five Bay-breasted Warblers were banded. Visual observations of these three species were also higher during the spring.

On May 23, one Eastern Kingbird was captured, the first ever in spring. There has been one Eastern Kingbird banded on 21 September 2002 previously. This species is regularly seen at Cabot Head but tends to favour open habitats and to stay high in treetops, which reduces the chance of capture. Among all the birds captured, one Yellow-rumped Warbler and one Golden-crowned Kinglet show some white feathers, an indication of leucism (Photo 1).

Photo 1: Wing of a Yellow-rumped Warbler (left) with one white secondary; A Golden-crowned Kinglet (right) showing lots of white, instead of green, body feathers

As exemplified above, comparing the spring 2020 banding results with previous seasons offers some values in perspective, despite the limited monitoring. The capture rate, determined by dividing the number of birds caught by the number of hours for which the nets were operated, is a measure of banding that could easily be compared between seasons, regardless of the number of nets in operation. However, in spring 2020, we selected the consistently five top nets in terms of capture rate (A1&2, B9&10, C15) and simply added C14, since it is close to C15 and was not adding any significant constraint for net checks. As a consequence, we can expect capture rates to be much better in spring 2020 than in previous years. This is indeed the case, with weekly capture rates above average, sometimes up to six times the average, from May 8 to 28. However, the capture rate was much lower than average during the last two weeks of monitoring, especially in late May and early June (Fig.4). Weekly numbers of banded birds partially reflect variation in capture rates (Fig.4), with the obvious caveat that fewer absolute captures are to be expected in spring 2020. Total for the May 8-14 week in 2020, with 294 birds, was above average despite the limited number of nets. It is actually the fourth highest weekly total in the 19 years of monitoring.

Having only six nets set-up in spring 2020 made it easier to have all of them open for the entire, albeit reduced, monitoring period. As a consequence, 80% of the potential mist net hours were realized. However, when compared to the normal set-up of 15 nets, the number of mist nets realized during the five-week period corresponds only to 19% of the full potential. Conditions allowed for a complete banding operation (all six mist nets opened for four hours) during 59% of the monitoring period.

Table 1. Number of species banded in spring 2020 at CHRS according to their banding total.

Banding total	1 - 10	11 – 50	51 – 100	>101
Number of species	35	11	2	1

Table 2. Banding total of species in spring 2020 at CHRS, 2002 - 2019 average (and standard deviation), maximum and minimum totals for 2002 - 2019, and number of previous springs with captures.

group	Species	2020	Av.	StDev	Max.	Min.	Nb of springs with capture
Cuckoos	Black-billed Cuckoo	2	2	1	4	1	5
Hawks	Sharp-shinned Hawk	4	19	7	34	10	18
Tyrant Flycatchers	Yellow-bellied Flycatcher	4	13	6	24	3	18
	Traill's Flycatcher	3	14	9	32	4	18
	Least Flycatcher	10	13	5	23	6	18
	Eastern phoebe	1	6	5	23	1	17
	Eastern Kingbird	1					
Vireos	Blue-headed Vireo	4	4	2	8	1	15
	Red-eyed Vireo	4	15	8	39	6	18
Crows & Jays	Blue Jay	14	61	85	264	10	18
Chickadees	Black-capped Chickadee	5	49	89	365	2	18
Nuthatches	Red-breasted Nuthatch	1	11	15	27	1	17
Creepers	Brown Creeper	5	48	47	200	8	18
Kinglets	Golden-crowned Kinglet	29	146	168	666	3	18
	Ruby-crowned Kinglet	104	137	76	292	55	18
Thrushes	Hermit Thrush	1	15	7	30	6	18
	American Robin	2	7	4	16	1	18
Mockingbirds & Thrashers	Gray Catbird	4	11	5	19	1	18
	Brown Thrasher	4	6	3	12	1	18
Finches	American Goldfinch	1	6	11	41	1	15
New World Warblers	Orange-crowned Warbler	3	10	8	31	2	18
	Nashville Warbler	38	51	57	237	11	18
	Northern Parula	2	4	4	9	1	11
	Yellow Warbler	1	10	7	25	1	16
	Chestnut-sided Warbler	3	14	7	28	4	18
	Magnolia Warbler	32	89	41	198	29	18
	Cape May Warbler	11	5	7	9	1	15
	Black-throated Blue Warbler	11	27	11	64	18	18
	Myrtle Warbler	77	63	56	246	16	18
	Black-throated Green Warbler	14	25	8	41	13	18
	Blackburnian Warbler	8	6	5	13	1	16
	Pine Warbler	5	2	2	10	1	15
	Palm Warbler	99	79	57	219	34	18
	Bay-breasted Warbler	5	4	4	11	1	14

group	Species	2020	Av.	StDev	Max.	Min.	Nb of springs with capture
New World Warblers	Blackpoll Warbler	1	2	1	5	1	13
	Black and White Warbler	15	54	17	91	25	18
	American Redstart	42	179	53	273	74	18
	Ovenbird	4	28	10	53	12	18
	Northern Waterthrush	3	4	3	13	1	18
	Common Yellowthroat	17	38	12	66	23	18
	Wilson's Warbler	2	14	8	34	4	18
	Canada Warbler	6	16	5	26	8	18
New World Sparrows	Chipping Sparrow	3	24	26	101	5	18
	Field Sparrow	1	4	7	26	1	11
	Song Sparrow	1	16	10	34	4	18
	Lincoln's Sparrow	4	12	7	25	4	18
	Swamp Sparrow	3	6	3	13	3	18
	White-throated Sparrow	16	56	24	104	13	18
Cardinals	Rose-breasted Grosbeak	2	4	4	18	1	17

Av.: average; stdev: standard deviation; Max: Maximum; Min: Minimum; Nb.: Number

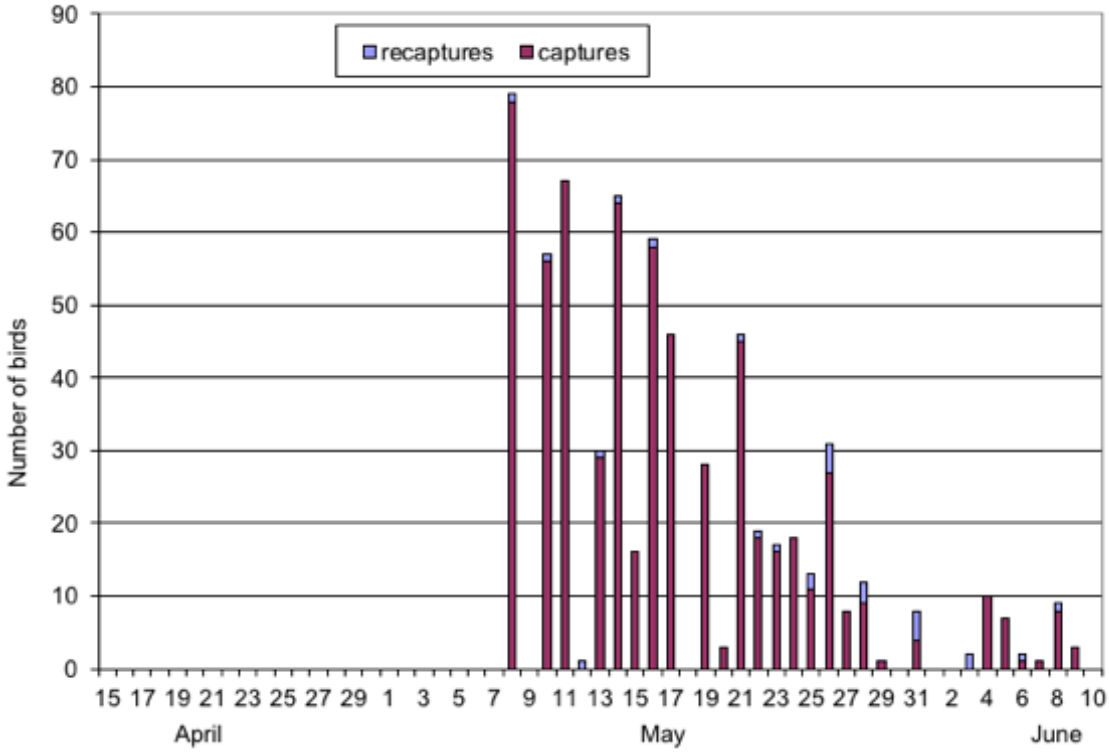

Figure 3. Daily number of captured and recaptured birds at CHRS, spring 2020.

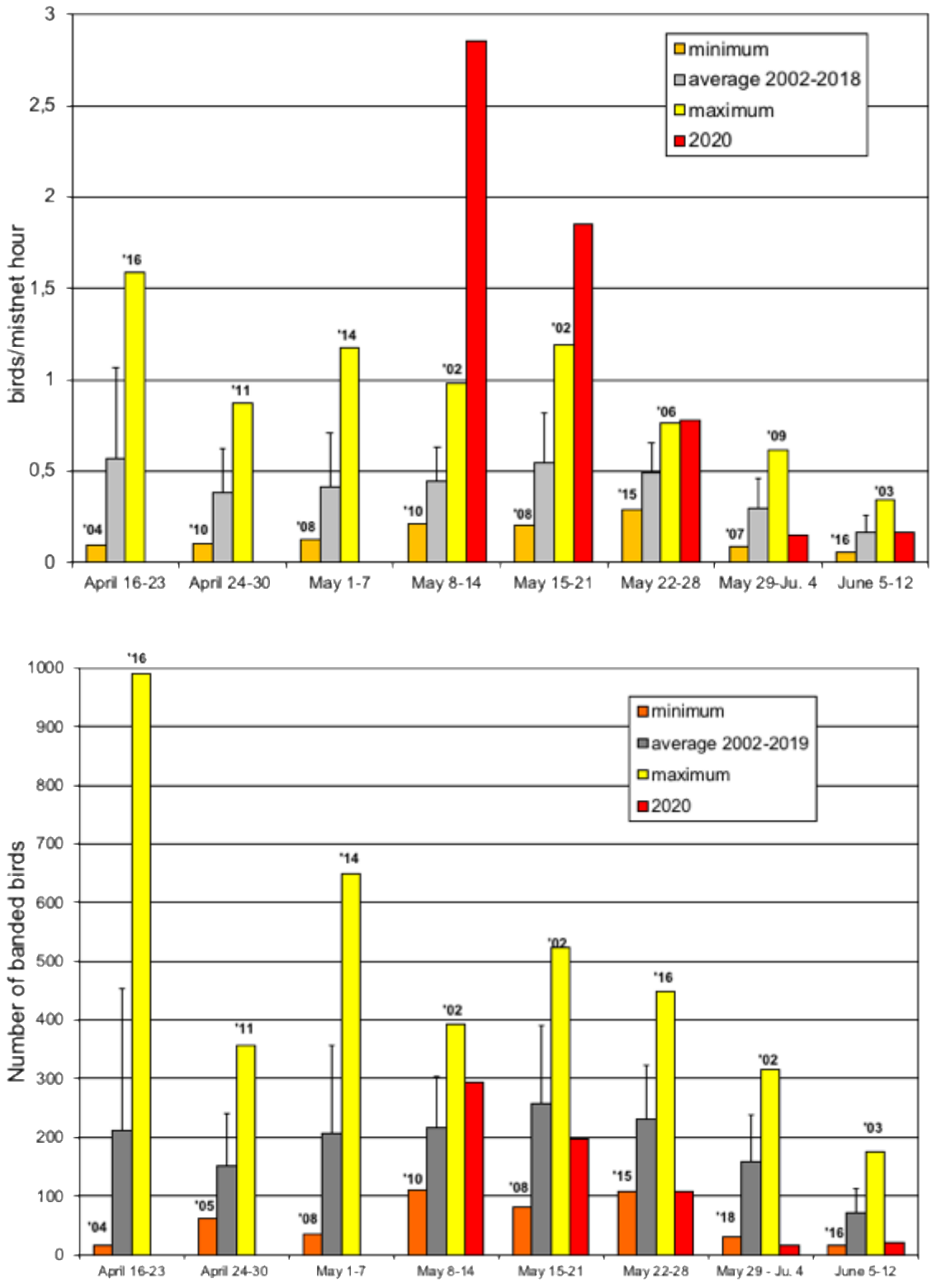

Figure 4. Weekly capture rates (top) and number of banded birds (bottom) at CHRS during the spring season (average 2003-2018, minimum and maximum (with corresponding year) and 2020). Error bars show Standard Deviation.

5. Recaptures

The rate of recapture (recaptures include birds banded within the spring season and birds from previous years or other locations) at Cabot Head was low in spring 2020. There was a total of 26 recaptures for 22 individuals of 10 species from May 8 to June 6. Among the recaptured birds this spring, 13 individuals of four species were banded in previous seasons at Cabot Head. No American Redstarts banded in spring 2020 were recaptured, which is highly unusual. In total, 18 birds were recaptured only once, with the remaining four birds recaptured on two occasions.

Birds banded in previous years and recaptured in the spring (Table 3) are most likely local resident breeders. The Black-capped Chickadee was banded as a Hatch-Year on 11 September 2019 and recaptured first on May 8, then on June 6 of spring 2020. Of the six birds banded before fall 2019, all but the Black-and-white Warbler have a history of recapture at Cabot Head, that is, there have been recaptures between the original banding and the present season (Table 3). The oldest known recaptured bird this spring is an American Redstart banded as an After-Second-Year in spring 2016, meaning it was hatched before 2015: this bird is thus at least 6-yr-old.

Table 3. History of recaptures by species and time of banding for birds banded prior to and recaptured in spring 2020.

B_yr	Banding season	Species	age at banding	2017	2018		2019		2020
				spring	spring	fall	spring	fall	spring
2016	spring	American Redstart	ASY	1			1		1
2018	spring	Black-and-white Warbler	ASY						1
		Red-eyed Vireo	ASY					1	1
	fall	American Redstart	HY				1		2
2019	spring	American Redstart	SY					1	1
		American Redstart	SY					1	2
	fall	American Redstart	HY						1
		American Redstart	AHY						1
		American Redstart	AHY						1
		American Redstart	AHY						1
		American Redstart	AHY						1
		American Redstart	AHY						1
		Black-capped Chickadee	HY						2

B_yr: Banding year; SY: Second-Year; HY: Hatch-Year; AHY: After-Hatch-Year; ASY: After-Second-Year

7.0 Conclusion

After 18 years of monitoring following the same protocol, outside events (the global Covid19 pandemic) forced BPBO to reduce and adapt the spring bird migration monitoring at Cabot Head. Monitoring was still completed daily, but from May 8 to June 10, with only six nets run by one person. Nonetheless, the standardized census was done every day during that time, providing the continuity that is so essential in long-term monitoring. These additional observations and reduced banding added useful information and helps to bring more details that refine our knowledge about the natural history of bird migration on the upper Bruce Peninsula.

Weather conditions were relatively moderate, allowing for very good coverage. Despite the late start, it was clear that migration was quite delayed, with heavy movements of usual early migrants like Palm and Yellow-rumped Warblers happening up to mid-May. Diversity was very high in late May: during the five-day period of May 20 - 24, a combined total of 113 species were detected, representing 77% of the season diversity. May 20 in itself was exceptional with 84 species detected.

This spring, there were a high number of unusual records, indicating a sustained observation effort, despite the reduced staffing. Among the most notable sighting were the Red-throated Loons over Georgian Bay, previously seen at four spring seasons and the immature Golden Eagle seen on two days (after this species was missed in spring 2019). However, it would be rather misleading to rank sightings, as every observation brings its own reward, and increases our knowledge, understanding, and appreciation of the natural world. For example, observations and (the limited) banding revealed relatively high numbers for a few species, like Palm Warblers, despite the dismal migration of the previous fall. Having a consistent and long-term monitoring (or as close as possible) provides invaluable insights into the natural world of bird migration, even more so in the face of a changing environment.

Cabot Head is truly an amazing place to experience and share the beauty of nature. Continuing migration monitoring at CHRS contributes to the efforts of the CMMN and ultimately to the understanding and monitoring of bird populations.

Acknowledgements

As a non-profit, volunteer-based initiative, the Bruce Peninsula Bird Observatory would not be operable without the overwhelming support of its membership, financial supporters and volunteers. BPBO wishes to thank Ontario Park and Parks Canada (Bruce Peninsula National Park), for their continued support.

The author wishes to thank all the members of the Bruce Peninsula Bird Observatory, for their support during the field season. It is an honour and a privilege to work again for BPBO.

Appendix I

Table 4. Season Totals of species observed in spring 2020 at Cabot Head Research Station, with maximum and minimum daily totals, number of days with observation, and dates of first and last observation.

Group	Species	Season Total	Daily max.	Daily min.	Days with obs.	First day	Last date
Ducks, Geese & Swans	Canada Goose	1009	196	1	31	8 May	10 June
	Wood Duck	30	23	3	3	17 May	4 June
	American Black Duck	1	1	1	1	2 June	
	Mallard	15	3	1	7	16 May	3 June
	Northern Shoveler	2	2	2	1	28 May	
	White-winged Scoter	37	27	1	5	8 May	19 May
	Long-tailed Duck	5	2	1	4	17 May	6 June
	Bufflehead	29	11	1	7	8 May	15 May
	Hooded Merganser	2	1	1	2	27 May	31 May
	Common Merganser	233	20	1	29	8 May	10 June
	Red-breasted Merganser	74	18	1	19	11 May	10 June
Grouse & Turkeys	Ruffed Grouse	44	3	1	25	10 May	8 June
	Wild Turkey	2	1	1	2	13 May	18 May
Grebes	Horned Grebe	2	2	2	1	18 May	
	Red-necked Grebe	1	1	1	1	12 May	
Pigeons and Doves	Mourning Dove	10	2	1	9	14 May	9 June
Cuckoos	Black-billed Cuckoo	17	4	1	11	27 May	9 June
Swifts	Chimney Swift	3	1	1	3	20 May	28 May
Hummingbirds	Ruby-throated Hummingbird	55	5	1	20	17 May	10 June
Cranes	Sandhill Crane	80	6	1	27	8 May	8 June
Sandpipers & Phalaropes	Killdeer	2	1	1	2	14 May	23 May
	Greater Yellowlegs	5	1	1	5	8 May	27 May
	Lincoln's Sparrow	7	4	1	4	14 May	28 May
	Solitary Sandpiper	1	1	1	1	18 May	
	Spotted Sandpiper	45	7	1	21	12 May	10 June
	Semipalmated Plover	1	1	1	1	29 May	
	Wilson's Snipe	10	2	1	9	14 May	31 May
Gulls & Terns	Ring-billed Gull	375	35	2	31	8 May	10 June
	Herring Gull	61	7	1	25	10 May	10 June
	Caspian Tern	2	1	1	2	16 May	22 May
	Common Tern	28	4	1	13	24 May	9 June

Group	Species	Season Total	Daily max.	Daily min.	Days with obs.	First day	Last date
Loons	Red-throated Loon	1	1	1	1	11 May	
	Common Loon	166	14	1	30	8 May	9 June
Cormorants	Double-crested Cormorant	141	31	1	22	8 May	10 June
Herons & Bitterns	Great Blue Heron	15	4	1	9	21 May	6 June
	Green Heron	1	1	1	1	16 May	
Vultures	Turkey Vulture	372	50	3	25	8 May	10 June
Osprey	Osprey	1	1	0	2	20 May	23 May
Hawks, Kites & Eagles	Bald Eagle	51	5	1	27	8 May	10 June
	Northern Harrier	3	1	1	3	15 May	10 June
	Sharp-shinned Hawk	104	20	1	17	8 May	4 June
	Cooper's Hawk	1	1	1	1	3 June	
	Red-shouldered Hawk	11	5	1	5	20 May	8 June
	Broad-winged Hawk	253	58	1	12	16 May	9 June
	Red-tailed Hawk	17	4	1	11	8 May	6 June
	Golden Eagle	2	1	1	2	18 May	20 May
Typical Owls	Great Horned Owl	1	1	1	1	20 May	
Kingfishers	Belted Kingfisher	13	2	1	12	8 May	27 May
Woodpeckers	Red-headed Woodpecker	3	3	3	1	21 May	
	Red-bellied Woodpecker	2	1	1	2	21 May	5 June
	Yellow-bellied Sapsucker	1	1	1	1	15 May	
	Hairy Woodpecker	10	2	1	9	17 May	8 June
	Northern Flicker	164	25	1	29	8 May	9 June
	Pileated Woodpecker	20	2	1	19	8 May	8 June
Falcons	American Kestrel	2	1	1	2	10 May	27 May
	Merlin	32	2	1	20	10 May	10 June
	Peregrine Falcon	5	1	1	5	13 May	5 June
Tyrant Flycatchers	Olive-sided Flycatcher	2	1	1	2	23 May	25 May
	Eastern Wood-Pewee	19	2	1	14	20 May	9 June
	Yellow-bellied Flycatcher	10	4	1	6	20 May	4 June
	Traill's Flycatcher	5	1	1	5	26 May	4 June
	Alder Flycatcher	1	1	1	1	28 May	
	Least Flycatcher	47	8	1	16	13 May	8 June
	Eastern Phoebe	55	4	1	30	8 May	10 June
	Great Crested Flycatcher	18	3	1	12	24 May	9 June
	Eastern Kingbird	38	8	1	10	20 May	5 June
Vireos	Blue-headed Vireo	11	3	1	6	13 May	25 May
	Warbling Vireo	8	3	1	4	20 May	25 May
	Philadelphia Vireo	1	1	1	1	20 May	

Group	Species	Season Total	Daily max.	Daily min.	Days with obs.	First day	Last date
Vireos	Red-eyed Vireo	108	12	1	20	20 May	10 June
Crows & Jays	Blue Jay	1634	207	1	30	8 May	10 June
	American Crow	194	16	1	33	9 May	10 June
	Common Raven	40	5	1	21	10 May	10 June
Swallows	Tree Swallow	114	18	1	31	8 May	10 June
	N. Rough-winged Swallow	36	7	1	14	8 May	7 June
	Bank Swallow	3	2	1	2	20 May	4 June
	Cliff Swallow	2	2	2	1	2 June	
	Barn Swallow	12	6	3	3	20 May	28 May
Chickadees	Black-capped Chickadee	143	16	1	29	8 May	10 June
Nuthatches	Red-breasted Nuthatch	27	5	1	12	20 May	9 June
Creepers	Brown Creeper	12	2	1	9	8 May	21 May
Wrens	House Wren	1	1	1	1	9 June	
	Winter Wren	7	2	1	6	16 May	24 May
Gnatcatchers	Blue-gray Gnatcatcher	4	2	1	3	23 May	25 May
Kinglets	Golden-crowned Kinglet	81	25	1	11	8 May	19 May
	Ruby-crowned Kinglet	560	86	1	15	8 May	24 May
Thrushes	Eastern Bluebird	100	10	1	20	10 May	10 June
	Veery	3	2	1	2	3 June	7 June
	Swainson's Thrush	4	1	1	4	14 May	26 May
	Hermit Thrush	1	1	1	1	14 May	
	Wood Thrush	4	1	1	4	14 May	25 May
	American Robin	110	13	1	29	10 May	9 June
Mockingbirds & Thrashers	Gray Catbird	32	5	1	14	13 May	4 June
	Northern Mockingbird	1	1	1	1	28 May	
	Brown Thrasher	67	7	1	25	10 May	10 June
Starlings	European Starling	119	33	1	13	13 May	5 June
Waxwings	Cedar Waxwing	623	78	3	16	25 May	9 June
Pipits	American Pipit	1	1	1	1	21 May	
Finches	Purple Finch	12	3	1	9	10 May	8 June
	American Goldfinch	224	27	1	26	8 May	9 June
New World Warblers	Tennessee Warbler	2	1	1	2	23 May	25 May
	Orange-crowned Warbler	6	1	1	6	15 May	21 May
	Nashville Warbler	160	42	1	29	8 May	8 June
	Northern Parula	68	15	1	15	14 May	5 June
	Yellow Warbler	62	19	0	14	17 May	9 June
	Chestnut-sided Warbler	69	35	1	14	14 May	3 June
	Magnolia Warbler	108	22	1	23	14 May	10 June

Group	Species	Season Total	Daily max.	Daily min.	Days with obs.	First day	Last date
New World Warblers	Cape May Warbler	59	19	1	11	11 May	26 May
	Black-throated Blue Warbler	86	30	1	14	10 May	9 June
	Myrtle Warbler	924	136	1	18	8 May	25 May
	Black-throated Gr. Warbler	231	49	1	31	10 May	10 June
	Blackburnian Warbler	91	26	2	12	14 May	4 June
	Western Palm Warbler	602	86	1	16	8 May	4 June
	Pine Warbler	35	5	1	16	8 May	9 June
	Prairie Warbler	1	1	1	1	21 May	
	Bay-breasted Warbler	17	4	1	8	16 May	26 May
	Blackpoll Warbler	13	2	1	9	20 May	5 June
	Black-and-white Warbler	103	14	1	29	8 May	10 June
	American Redstart	485	66	2	25	16 May	10 June
	Ovenbird	75	16	1	21	16 May	10 June
	Northern Waterthrush	9	2	1	7	10 May	5 June
	Mourning Warbler	11	3	1	8	27 May	9 June
	Common Yellowthroat	142	15	1	23	15 May	10 June
	Wilson's Warbler	9	7	1	3	25 May	3 June
	Canada Warbler	16	3	1	11	20 May	9 June
New World Sparrows	Eastern Towhee	5	1	1	5	10 May	23 May
	Clay-colored Sparrow	3	2	1	2	14 May	15 May
	Chipping Sparrow	96	26	1	26	8 May	10 June
	Field Sparrow	8	1	1	8	8 May	29 May
	Vesper Sparrow	3	1	1	3	22 May	30 May
	Savannah Sparrow	5	1	1	5	14 May	25 May
	Song Sparrow	80	7	1	32	8 May	10 June
	Swamp Sparrow	1	1	1	1	14 May	
	White-throated Sparrow	115	63	1	21	8 May	8 June
	White-crowned Sparrow	15	10	1	6	13 May	22 May
Cardinals & allies	Scarlet Tanager	42	23	1	10	20 May	8 June
	Northern Cardinal	2	1	1	2	22 May	25 May
	Rose-breasted Grosbeak	49	24	1	8	13 May	24 May
	Indigo Bunting	13	2	1	10	20 May	10 June

Group	Species	Season Total	Daily max.	Daily min.	Days with obs.	First day	Last date
New World Blackbirds	Bobolink	1	1	1	1	23 May	
	Red-winged Blackbird	436	99	1	25	8 May	9 June
	Eastern Meadowlark	3	1	1	3	10 May	21 May
	Rusty Blackbird	47	17	4	5	13 May	21 May
	Brewer's Blackbird	1	1	1	1	31 May	
	Common Grackle	346	53	1	29	8 May	9 June
	Brown-headed Cowbird	10	8	1	3	14 May	21 May
	Baltimore Oriole	33	13	1	8	13 May	4 June

Appendix II

An edited version of the blog published during the spring 2020 monitoring season.

Winter's last gasps? May 8, 2020

On May 8th (the 75th anniversary of the end of WWII in Europe), snow and sun played a duet or danced a tango or, even, a waltz! Is it the last appearance of Mr. Winter and its white tears? It is too early to tell: after all, we are only in early May!
[…]
In a major turn of events, BPBO received an exemption from ON Parks, allowing us to return to Cabot Head and run a reduced monitoring program. And when I say "us", of course, I mean "yours truly". I am actually writing these lines from Cabot Head, as the sole occupant of the station. It is wonderful to be back and to be able to run the migration monitoring, even if three weeks late and in a reduced capacity, notably with only six nets deployed instead of 15.

[…] It is with a renewed sense of gratefulness and appreciation that I settled back at the station, keenly aware of my privilege and good fortune and dedicated even more to appreciate each moment, including the blustery cold North wind and incessant snow squalls that still continue! So, today, May 8th, was the first official day of migration monitoring for Spring 2020 at Cabot Head and it started with a bang! There were large waves of warblers, mostly Yellow-rumped and Palm, moving through, once the sun was high. They flew low and spent a lot of time in the bushes and on the ground, looking for insects in the cold air. As a consequence, when a wave of birds moved through, the nets got filled quickly: there was not much time to ease back into the life of a bird bander, when 19 or 25 birds are caught at the same time, in one net! In total, I banded 78 birds of eight species, including 38 Yellow-rumped Warblers and 26 Palm Warblers. These two species are usually early migrants, so having so many of them at this time of year seems to indicate a later than usual migration. The other warblers observed and/or caught during the day were Nashville, Black-throated Green, Pine, and FOY Black-and-White. Again, all species that tend to be among the first to arrive.

There will be much more to come, of course, as soon as the coldness of this wintery blast releases its iron grip, and I will be ready!

Warblers! They are a-coming! May 15, 2020

It was still wintery for a few more days over the past week, notably May 9, when snow was falling hard and long. Only six brave species were detected during the one-hour census! It is a notably cold and late Spring, with delayed arrivals of many species. There are still big waves of Yellow-rumped and Palm Warblers moving through, even though they are the earliest species of warblers to arrive back on the breeding grounds: mid-May feels a bit like late-April!
Nonetheless, there has been a constant trickle of new species almost every day, urged on by the passing time, the slow greening of the Earth and fueled by midge emergences (for the insectivorous species, of course). As soon as the temperature warms up a little, midges appear in large numbers at Cabot Head, providing plenty of sustenance for a feeding frenzy of hungry migrants! A migratory bird is always hungry.
After the snow, May 10 dawned clear and cold, with a newly-arrived Brown Thrasher greeting the sun with its vast repertoire of songs. A handsome male Black-throated Blue Warbler was the First-of-Year (FOY), as always smartly sporting its striking, and never out of fashion, black, blue, and white costume. Other FOY that day were a Black-and-white Warbler (never flashy, always impeccable) and a Northern Waterthrush, the latter caught in a net. This species is never easy to actually observe, enjoying thick tangles of flooded undergrowth and letting the world know of its presence mostly through a loud song.
Strong and cold North winds blew all morning of May 11, when nets stayed furled and birdlife was sparse, except for the numerous Palm and Yellow-rumped Warblers and Kinglets (mostly Ruby-crowned, the Golden-crowned long since moved through). The excitement that day came from a distant, and fast flying, Red-throated Loon low over Georgian Bay.
On May 12, only two nets were open for five hours, but they kept me busy: a total of 68 birds were caught, with an amazing total of 28 Palm Warblers. In all previous 18 years of Spring banding, there has been only four (4!) days with as many or more Palm Warblers banded: 28, 29, or 30 birds for three of these days but an extraordinary 99 birds during a fall-out event on May 10, 2019!
The first flycatcher of the season was a Least Flycatcher on May 13. On that day, I heard the first tell-tale meowing of the Gray Catbird for the season. There was a respite at the nets, with only 29 birds captured, including the first Blue-headed Vireos (a species often detected in April).
It was still cold on May 14, with an overcast sky and an increasing East wind, announcing the coming rain. Likely because of the impending inclement weather, there was a notable push of migrants, with nine new species detected, and a great overall diversity and number. The delicate voice of the FOY Wood Thrush carried over the basin in the early moments of dawn. There were lots of sparrows, including White-throated Sparrows (12 banded), for a total of nine species (FOY Lincoln's, Swamp, and Clay-coloured Sparrows). Later in the day, a FOY Swainson's Thrush was briefly glimpsed. The 13 species of warblers seen that day were displaying their bright colours everywhere, with some favourite of mine included in the mix, like Northern Parula, Blackburnian (Oh! Blackburnian), and Cape May Warblers.
But still there was no American Redstarts! And even as of May 15, it remains absent. In 13 of the previous 18 Springs, American Redstarts have been detected between May 8 and 10, with two earlier dates and three later (but never later than May 13). Its arrival is likely a question of a day

or two now: American Redstarts have arrived on the Bruce Peninsula, with eBird sightings on May 14 and 15 on the west coast (Oliphant and Stokes Bay). I was consoled, on May 15, by FOY Orange-crowned Warbler and Common Yellowthroat.
As I was writing this blog, the sky finally cleared and lured me outside to soak up some sunshine. A raucous of crows alerted my interest toward the tip of land where Wingfield Basin opens up to the bay: I watched an adult Bald Eagle on the shore with legs and talons hidden by rocks. Suddenly, a Double-crested Cormorant appeared and escaped from underneath the eagle and swam away to safety. This is when I realized that the Bald Eagle was completely wet! That is one lucky cormorant.

Addendum: American Redstarts have arrived!! On the morning of May 16, alongside FOY Bay-breasted Warbler.

A mad dash to the final line! May 24

Despite the much anticipated - and extremely late - arrival of American Redstarts on May 16, not much of note happened during the first few days of the second half of May: between May 16 and 19, daily diversity ranged between 42 and 52 species, with no major movements of migrants. The weather was still quite cold, with frequent overcast conditions and East winds. No precipitation fell at the station during this time but rain was frequent to the South of us, which could have slowed migration.
I write “not much of note happened” but that is slightly misleading: it is Cabot Head after all! That said, a Green heron was seen flying over Wingfield Basin on May 16, a species seen only occasionally around the station; on May 18, an adult Peregrine Falcon was perched on Middle Bluff for a long while; later, that day, a fast flying shorebird crossed the sky, intent on a destination known only to itself. The pure white belly, short neck and legs, and all dark wings gave it away as a Solitary Sandpiper. Still on May 18, alarm calls of crow alerted my gaze across Wingfield Basin, where I discovered a very large bird flying low along the shoreline mobbed relentlessly by two crows: an eagle but not a bald one, instead an immature Golden Eagle! It perched briefly on the top of a spruce, but, still being harassed by the black sentinels of the woods, it took off to find a quieter spot. Luckily for me, that spot was a large log underneath Middle Bluff, where I could admire it at leisure. I was delighted: having missed it last Spring (for the first time in all my Spring seasons), and having resigned myself to not seeing it this year. Indeed, all observations but three have been before May 8, which is when I started monitoring in the strange year of 2020. But, there has been later observations: in 2015, it was May 18, and in 2011, it was May 25 and 29 (likely the same bird that year). After a while, the 2020 Golden Eagle finally took off once more and disappeared towards the southern horizon, only to better return about an hour later for a much appreciated Encore!
Despite that exciting observation, it was a somewhat subdued few days in terms of migration, which made the following few days even more striking. On May 20, it was a mad dash to the finish line! As if held up for a long time, birds were pouring out from the brilliant blue sky in a multihued mix of diversity and in incredible numbers against a fresh East wind. Most birds were flying just a little too high and too fast to be positively identified, except maybe in a broad category, like “Warbler sp.” (unknown warbler): I got about 500 of these at the end of 6 hours of observations! But I also properly identified 20 species of warblers, with a FOY Blackpoll Warbler, and many of them in hard-to-believe numbers: Nashville, Chestnut-sided, Blackburnian,

Black-throated Green Warblers, as well as Northern Parula and American Redstarts. As an example of this striking event, there were five Northern Parulas at once in a few trees, mostly males; and later, I would observed three females in one cedar.

That day, there were also many, many Rose-breasted Grosbeaks: a record daily high of 24 birds were counted! Most of them were second-year males (born last year), as evidenced by the brown wing and tail feathers contrasting with the jet-black wing coverts (the small feathers of the "shoulder"). I could sometime see up to five of them in a tree at once!

A feast of feathers and colours! The FOY Scarlet Tanager was one single bright red streak against a deep blue sky. The FOY Indigo Bunting burned blue in a white birch, posed long enough for me to admire its, well, indigo feathers. A smattering of male Baltimore Orioles brought deep orange and raven black, to compete with diminutive Blackburnian Warblers and American Redstarts.

In this most diverse day, the four species of vireos were observed, FOY for Warbling, Philadelphia, and Red-eyed, alongside the previously detected Blue-headed! The Tyranidae family was also out in full force: Yellow-bellied and Least Flycatchers, FOY Eastern Wood Pewee, the local Eastern Phoebes, and quite a few shrieking Eastern Kingbirds flying fast in their striking white and black. Bank and Barn Swallows were also observed for the first time this Spring, adding diversity to the usual Tree and Northern Rough-winged Swallows. One single Chimney Swift flew by the only way swifts know; fast and furious! It is a species so easy to miss for that reason. Among raptors, there were kettles of Broad-winged Hawks, accompanied by a few Red-shouldered and Red-tailed Hawks. A Peregrine Falcon was also seen briefly. And, to crown the morning, her majesty the Golden Eagle returned at the end of the monitoring period to claim the 84th species mark! The 85th species was an "unofficial" Osprey, flying so low and so close I could distinctly see its yellow eyes [unofficial because recorded after the seven hours of monitoring but still very much appreciated].

Reaching, let alone surpassing, 80 species detected in the seven hours of monitoring has not happened often in the history of Cabot Head: in the previous 18 Spring seasons (Diversity in Fall is always lower), 18 days have achieved this milestone, with the still quite unbelievable record of 99 species on May 21, 2011.

After such an eventful day on the 20th, May 21 started with stillness of air and coolness of head: there were no wave-upon-wave of hurrying migrants crossing the still impeccably blue sky. I proceeded with my day, duly noting every species seen but not quite realizing that there were still so many of them. The lower numbers probably fooled me and I was quite shocked that the daily tally reached 81 species (including two only detected through banding)! Seven of these species were different from the preceding day, notably one Red-bellied Woodpecker and three (3!) Red-headed Woodpeckers, all seen in a span of a mere few minutes. There were far fewer Rose-breasted Grosbeaks, but more Baltimore Orioles, than the previous day. Warblers were again at their peak with 21 species, including a rare Prairie Warbler! I was first alerted to its presence by its thin, buzzy, ascending song before being able to observe it for a few minutes. I noted all the telltale marks: the white outer rectrices, the yellow face and body with black streaking on the flanks, the black crescent under the eye, the thin black eye line, the dull green cap and back, as well as the hard to see little chestnut feathers on the back. It is only the fourth Spring season with a sighting, a definition of rare for sure.

Finally, there was some respite for my eyes and ears on May 22 when "only" 60 species were detected, although including a Vesper Sparrow and a late White-crowned Sparrow. It felt like Summer was here: a lot of birds were singing on territory, the trees were proudly showing off

their fresh green leaves, angry hummingbirds were fighting for access to the feeder. Nonetheless, migration is not over yet, as shown on May 23, with still new species to arrive: among the 70 species detected (including 17 of warblers), there were FOY Tennessee Warbler and Olive-sided Flycatchers, typical late migrants. The days in the pastures and fields of southern Bruce paid off when I (finally!) heard the flight call of a Bobolink, duly confirmed with a visual observation. Another call gave away not one but two Blue-gray Gnatcatchers, an almost yearly occurrence at Cabot Head, despite the fragile toehold this species has on the Bruce Peninsula.
On May 24, there was no day off for yours truly: up again and eager to see what the day might bring, "expect the unexpected". But I was definitely not expecting the spectacle of Scarlet Tanagers streaming through the area, with a tally of 16 (sixteen!) in about 30 minutes, and a record-breaking total of 23! Adult males in scarlet and black, second-year males in scarlet and black and brown, and females in more subdued yellow and green: it was as though all age and sex classes were eager to reach their destinations before the storm, as the western horizon was darkening and the ominous rolling thunder was getting closer and closer. There was indeed a strong movement again on that day, with, notably, lots of Magnolia and Blackburnian Warblers. I even doubted my eyes, thinking I might do some double counting: the warblers were lingering and feeding a lot in the trees, as opposed to the mad dash of a few days ago. However, when one net was filled at once with four (4!) Blackburnians and three Magnolias, I realized that I was likely underestimating their numbers. The storm arrived mid-morning, dimming bird activity. But not for our resident Bald Eagle: I observed it dining on a Cormorant at the tip under driving rain! After the one that escaped two weeks ago, the eagle had been successful on Wednesday, I noticed when I surprised it while going out in my kayak. It seems that the eagle has become specialized in preying on Cormorants.
These were unique days, the ones every birdwatcher dreams of, when the marvels of migration are in full display in both number and diversity.

What do you call a flock of Nighthawks? May 31, 2020

After the mad dash to the finish line, it now feels as though birds are busy establishing territories, singing loud and clear throughout the mornings, chasing each other over border disputes, planting metaphorical roots on a tiny piece of land for their breeding season. Nonetheless, migration is still occurring for some species, the so-called "late migrants", which are still actively migrating in-late May and early-June. They are actually not late, but right on time, being late only by comparison to the earlier species, many of which have long since reached their destination, when Spring slowly changes into Summer. After their first observations on May 23 for both, Olive-sided Flycatcher and Tennessee Warbler, late-migrants, were seen again on May 25 but not again over the past week. Another late-migrant species, Wilson's Warbler, was also detected for the first time on May 25, through banding, and again, visually, on May 26.
Other new arrivals include Black-billed Cuckoo, which repetitive song first was heard on May 27; on that same day, the cheery-cheery-up of a Mourning Warbler was also heard for the first time. It seems that this bird took a liking to Cabot Head: the male has been singing constantly most mornings since arriving, with a unique display of showmanship on May 31 when it perched in full view on the hydro wire! Mourning Warblers are denizens of dense shrubs, very rarely seen. I have never, ever seen one fully in the open like that one!
[…] Cedar Waxwings arrive late at Cabot Head: indeed, the first ones were observed on May 25 this year, with small flocks seen almost daily afterwards.

Late-May is also the time when American Redstarts start to take their place at Cabot Head, with their variable, high-pitched songs. At this time, they're also likely to be caught in the nets, notably on May 26 when 13 were banded, the highest total so far this Spring.
[…] the first observation of Common Nighthawk this spring was on May 24, with only one bird […]. However, over the following several evenings, numbers steadily grew, to the point where a whole parliament could have been filled (pre-COVID, that is). On the evening of May 25, 24 birds were detected, with a few only through their calls; on May 26, 35 birds were counted; the following evening, May 27, […] the nighthawk call, er, called me to attention. Quickly, I realized that there were more than just a few of them flying around. Scanning the horizon with my binoculars, I realized it was in fact a lot: as best as I could, I started counting them and tallied an astonishing 221 birds! It felt like the whole horizon was filled with their dancing flight. On May 28, a more "reasonable" 12 birds were counted. The following few days brought bad weather (or good, as rain was needed around here), so none were detected.
Maybe a large flock of nighthawk should be called an astonishment of Nighthawks, because that's how I felt to witness so many at once!
Most importantly, keep your eyes up in the evening and your ears sharp for their calls! And maybe don't bother with fancy names for groups of animals.

Walking with dragonflies! June 10

In June, Spring slowly turns into Summer, with increasing warmth, blooming and blossoming, and territorial birds singing their little hearts out. Nonetheless, the migration monitoring continues for the first ten days of June. It allows us to fully cover the migration period of the last species to move through; the Wilson's Warblers, the Grey-cheeked Thrushes, the Alder Flycatchers.
This Spring, though, very little movement was documented during that period with, notably, not a single bird from the aforementioned three species! Maybe they were simply missed through a combination of less nets deployed and a solo observer, who could not look everywhere at all times, despite trying his hardest. Thrushes are notorious lurkers of the undergrowth and are rarely observed: more often than not, it is through their ethereal songs that we know of their presence.
Regardless, a total of 81 species were detected during the ten days of monitoring in June, with some remarkable ones. A Palm Warbler was heard singing and then observed on June 4, a late observation for this species, whose migration tends to peak in early-to-mid-May. Sightings in June are rare, although it has happened in seven Spring seasons in the previous 18 ones, with the latest ones on June 9 (in 2002 and 2018). A lone Long-tailed Duck was seen over Georgian Bay for three days in a row, from June 4 to 6, at a time when it should have made it to the Arctic to breed. A Northern Mockingbird was seen on June 3, possibly the same bird seen on May 28.
Banding was slow during this ten-day period, with a few days missed due to high wind, like the last day (June 10) when thunderstorms and furnace-hot winds blew from the South. However, on June 4, a surprise awaited me in net A1: two Black-billed Cuckoos caught together! Now you have to know that this species is not often banded, either in Spring or Fall, at Cabot Head: that was the case in five previous Springs, usually one or two birds per season, with the exceptional four banded Cuckoos in Spring 2008. With this background information, you'll understand better my excitement at seeing these two birds struggling in the net. It was with some trepidation that I "calmly rushed" to the net, if I may use this apparent contradiction to describe how one must approach a net: birds of a certain size, like cuckoos or woodpeckers or sharp-shinned hawks, are

barely tangled in the nets and more often than not escape when the human approaches them. Hence, one has to be fast but not hurried, and with a calm demeanor, so as to not frighten the bird more and arrive before the bird can escape. It was a strategy I had to use a few more times on that June 4: the nets also captured a Sharp-shinned Hawk and a Brown Thrasher!

The welcomed warmth washing over the land in this late-Spring has brought forth life and critters utterly dependent on it. Dragonflies have now emerged in numbers, especially Chalk-fronted Corporals (https://en.wikipedia.org/wiki/Chalk-fronted_corporal). This species can be quite abundant at Cabot Head and likes to congregate on the sunny road to the station, which is our return path to the banding lab, after checking the nets. So, on warm and sunny days, I could be walking with dozens and dozens of dragonflies, accompanying me for a little while, before darting away on important dragonfly business. I remember some mornings when the entire road section is filled with hundreds of these flying marvels. When I walk with dragonflies, I know that the Spring season is coming to a close, that bird migration is behind us, that it is then the time of settling down and raising families.

[…]

Stéphane