BRUCE PENINSULA
BIRD OBSERVATORY
THE VOICE OF BIRDS ON THE BRUCE

MIGRATION MONITORING AT CABOT HEAD

SPRING 2019

by

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prepared
for

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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 2019 migration monitoring season at the CHRS.

Executive Summary

In this document are summarized the results of migration monitoring at Cabot Head in spring 2019. Spring fieldwork began on April 15 and ended on June 10 for a total of 57 consecutive days of coverage. A total of 159 species were detected during the monitoring period. 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 5). A total of 2044 birds of 65 species were banded and 100 birds of 18 species were recaptured. Recapture data suggest that overall stopover rates at Cabot Head are low.

The defining characteristic of spring 2019 was a cold and wet weather throughout most of the season. As it is often the case, poor weather was more frequent early in the season, with strong winds, often accompanied by rain, completely precluding banding for seven days during the first 17 days of monitoring. In contrast, during the next 40 days, only five days of banding were lost due to rain and/or high wind. Very good coverage for banding (defined as at least 80 mist net hours, or more, out of a potential of 90 for any given day) happened only in 49% of the days during the season (28 out of 57 days). In spring 2019, the banding total of 2044 birds was the third-highest ever, after 2431 in 2002 and 2355 in 2016 (average of 1528 ± 457 banded birds, with a low of 876 in spring 2014). Three species, Ruby-crowned Kinglet, Palm Warbler, and Nashville Warbler (in decreasing order), represented 31% of the banding total. There were 14 days with banding totals over 50 birds (including four over 100 birds). Two days in May stand out for their record number of captures: 262 birds banded on May 10 and 251 on May 19. On May 6, 74 species were detected, the highest diversity of the spring. Two new species were banded for the first time ever at Cabot Head, Eastern Bluebird and Prairie Warbler.

The entire list of all species observed, with relevant statistics, is given in Appendix I. For a more casual take on the spring 2019 season, an edited version of the blog is reproduced in Appendix II.

The 2019 spring migration monitoring season was a success thanks to the efforts of the ten volunteer field biologists who contributed their time to this project.

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.

2. Season Summary

Coverage

Fieldwork for spring migration monitoring began at CHRS on April 15 and ended on June 10, for a total of 57 consecutive days. Census and casual observation were performed every day (except during intense rain). Banding is more affected by weather and there was an above-average total of 12 days without any banding. Across the season, 35% of mist netting coverage (in hours) was lost. The number of days with complete coverage (i.e. 15 nets open for six hours) was well below average (21 out of 57, i.e. 37%, compared to an average of 47% ± 13; Fig.1).

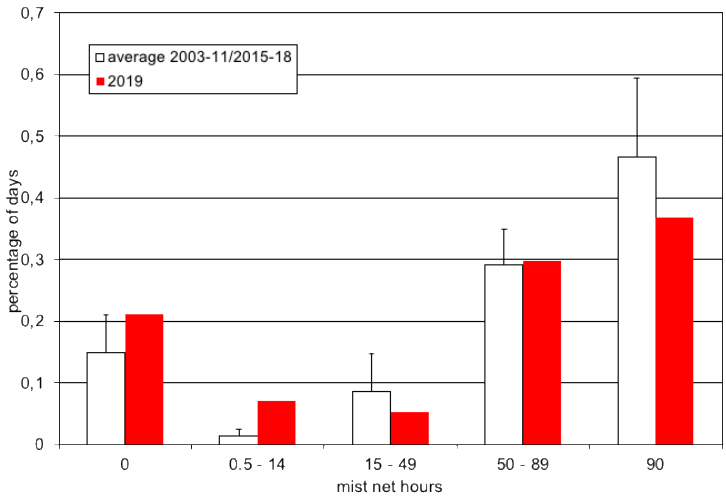

Figure 1. Coverage (in mist net hour) at CHRS, spring 2019.

Weather

Weather in spring 2019 was notably cold, windy, and wet. There were 12 days with precipitation, often heavy and lasting all day, other times in the form of short showers, distributed throughout the season. 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 often this spring all throughout the season: 46% of 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 and they were often accompanied by rain.

With 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 predominantly from the West and occurred on 26 days (46% of the season). Another 18 days (about a third of the season, or 31%) experienced moderate wind (three to four on the Beaufort scale). Therefore, most of the monitoring period experienced strong to moderate winds (Fig.2). North wind occurred much less frequently than winds from other directions this spring and were mostly concentrated in April and early May. There were very few occasions of strong North wind, which are conditions detrimental to migration. On the other hand, West wind were predominant throughout the season, often very strong. Both during nocturnal migration and diurnal foraging flights, winds can induce migration drifts in birds: Cabot Head being the northeast promontory of the Bruce Peninsula, a West wind has thus the potential to "push" birds towards it. Periods of predominantly West winds (especially being moderate to strong) throughout the season may have been a factor in the high levels of capture this spring.

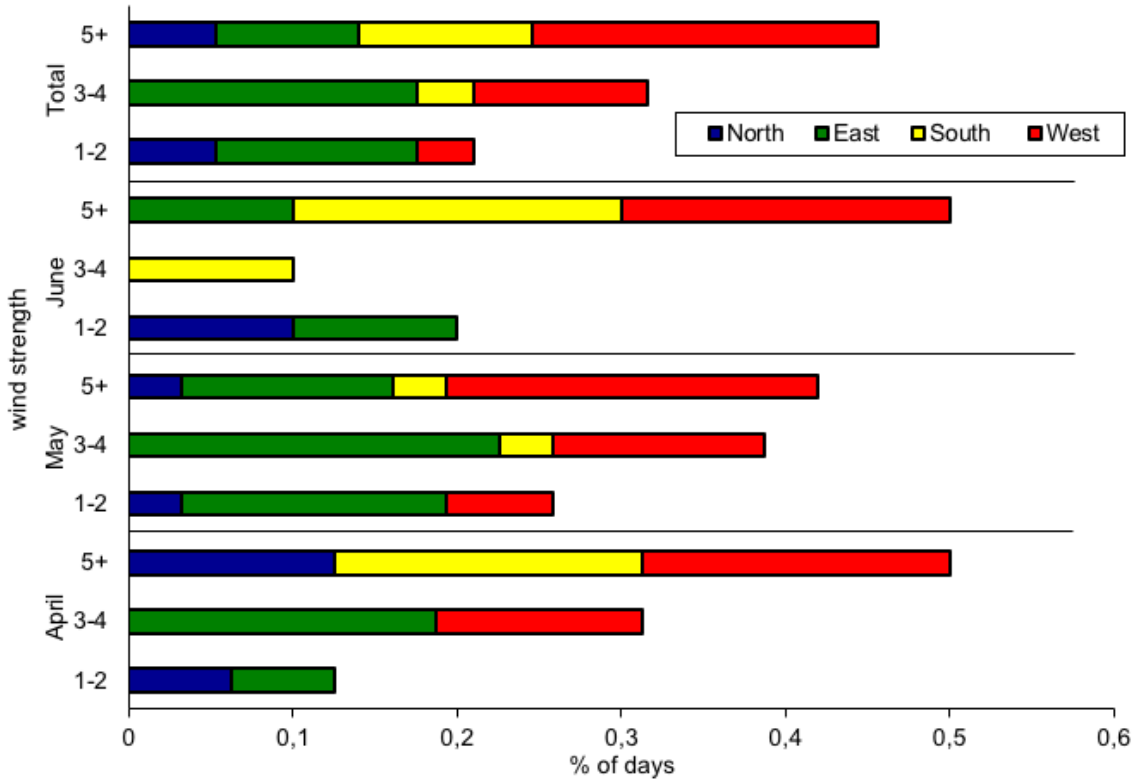

Figure 2. Wind pattern (strength on the Beaufort scale, direction and proportion of time) at CHRS, spring 2019.

Migration Monitoring

Waterfowl

Waterfowl migration through the Great Lakes region typically peaks in March and April. As was the case in the previous four spring seasons, very few waterfowl were observed this spring. White-winged Scoters, the only species of scoters detected during the monitoring period, were observed only on two occasions, May 12 with four birds, and May 20 with only one bird. Long-tailed Ducks were detected slightly more, on seven days from April 17 to May 6, ranging from one bird to a maximum of seven birds. Buffleheads, and to a lesser extent, Common Goldeneyes, were seen more regularly on Wingfield Basin. Buffleheads were detected daily from April 15 to May 17, with up to 23 birds (on April 23), but mostly with single-digit numbers. A late bird was seen on May 27. Common Goldeneyes were observed from April 18 (with a season high of seven birds) to May 4. Red-necked Grebes were seen off Cabot Head only once, on May 20, with only one bird.

On the other hand, Horned Grebes were detected more often, with one or two individuals seen on seven occasions, from April 16 to May 8. 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. Observations occurred on seven days with only one bird, except on April 28 with two birds. Numbers of Red-breasted Mergansers were usually low this spring, although a total of 13 birds were seen on April 25 and May 6, and a group of 19 birds on June 8. Common Mergansers were seen almost daily from April 15 to June 10, with the biggest flocks at the end of the season: tight groups of mostly males feeding and resting together (maximum of 15 birds on June 3 and 20 birds on June 6). It is likely that they are non-breeders or young.

Some large flocks of Canada Geese were detected at the beginning of the season: daily totals of 184, 389, and 141 birds on April 17, 18, 19, respectively. More typical is the strong passage seen in late May - June, associated with 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 100 birds, May 31, with 139 birds, and on June 6, with 184 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, much smaller numbers of these species are seen now compared to previous years.

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 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, this year, numbers were quite low compared to some other springs. Sharp-shinned Hawks were observed almost daily from April 15 to May 22, but mostly in single-digit numbers, with high of 45 birds on April 18 and 48 birds on May 7, for a season total of 295 birds (well below the average of 408 ± 104). Daily totals of over 50 birds have occurred almost every spring for this species, occasionally multiple times in a single season, with five days exceeding a hundred individuals (highest count of 216 Sharp-shinned hawks on May 1, 2011).

Broad-winged hawks were also seen sparingly this spring, with a high of 55 birds on April

30, and a season total of 132 birds, well below the average of 495 ± 331 birds. Large variations exist in season total, though, for this species, with a (previous) low of 153 in spring 2009 and a high of 1283 in spring 2013.

A total of 14 species of raptors were detected in the spring, including Rough-legged Hawk, with one bird on April 18 and 20, and Cooper's hawk, with a single observation of one bird on April 18. The pair of Bald Eagle is still present at Cabot Head, sitting on eggs as early as April 15. As a consequence, this species is seen almost every day of the season, with the occasional passing immature birds. A total of six Bald Eagles were counted on April 25. 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 the presence of a fierce competitor like the Bald Eagle is a deterrent. This spring, one Osprey was detected in four occasions during the monitoring period (from April 18 to May 30).

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 even barely detected in years of 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 2019, detections occurred only on four days from April 21 to May 5, and only three birds were banded.

Brown Creepers are also early migrants but their migration extends well into early May. This spring, they were detected in small numbers almost every day from April 16 to May 11. Only in three days did their detected totals reach double-digit: 18 birds on April 17, 22 on April 22, and 13 on May 5. The majority of detection was through banding, with 65 birds banded, including two birds in June. Sharing a similar migration pattern, Golden-crowned Kinglets are however much more numerous, often one of the most numerous birds banded, especially in early season. That was the case in April 2019 when a total of 119 Golden-crowned Kinglets were banded. This spring, the sex-ratio of captured kinglets was almost balanced, with 73 males and 79 females, an indication of a late spring. Some years, barely any male Golden-crowned Kinglets are captured, having moved

through before the monitoring starts: the sex-ratio (numbers of males divided by numbers of females) ranges from 0 (in 2008 and 2012) to 1.24 (in 2009) for an overall value of 0.64. Sometimes, it is the entire migration of this species that is missed: seasonal numbers banded have fluctuated from three and nine birds (!) in 2008 and 2012 (respectively) to 666 in 2016.

Blackbirds, notably Red-winged Blackbirds and Common Grackles, move through in early season as well, often in highly visible diurnal flights. Large movements occurred between mid-April and early May, with daily highs of 333 Common Grackles on April 18, as well as 185 Grackles on April 23 along a season high of 36 Red-winged Blackbirds. Rusty Blackbirds, not always easily separated from other Icterids, were seen in small numbers throughout the season, except on May 5 when 51 individuals were tallied.

American Robins can also be seen in large numbers during the day but, this spring, they were counted in double-digit numbers only in five days, with the highest total of 46 birds on April 18. 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, with peak numbers this year of 47 birds on April 18, 53 on April 21, and 40 on April 22.

Eastern Phoebes are the hardiest of the Tyrant Flycatchers, wintering in the southern USA and arriving early on the breeding grounds. One bird was already present on April 15 this year. 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 was observed almost every day of the entire spring season. Movements of migrating birds are thus complicated to separate from local birds. On April 18, six Eastern Phoebes were counted, the highest daily total of the season, possibly reflecting some movements. This species likely migrates through Cabot Head before mid-April, as it is observed and banded in good numbers only during late springs.

Tree Swallows were first detected on April 17, with observations on almost every day afterwards in April and throughout the rest of the season. The highest numbers detected were 26 birds on April 25 and 22 birds on May 16. The almost daily observations are mostly due to the pair of Tree Swallow breeding in the nest box near the station. A Northern Rough-winged Swallow was seen on April 25. This species was sporadically observed throughout the season, in five other days, mostly in June, and with a high of four birds on June 5. 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, only two birds

were seen, on May 16 and 22. 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 61 this year. The first detection in 2019 was one bird on May 4, and the highest daily count was four birds on May 14, 15, and 16. Previous daily highs between 20 and 40 birds were not uncommon in the early years of monitoring. In spring 2019, most observations were of one or two birds, consisting of a potential pair using the nest under the porch of Wingfield Cottage. Barn Swallows used to breed in good numbers in the shipwreck in the basin but it is too derelict to be of use now. No Barn Swallows were detected in April: the first two birds were seen on May 1.

Myrtle and Pine Warblers, the earliest of the warblers, were the first warbler species to be detected this spring, both on April 18. Both species were detected sparsely in April, with observations in only a few days (seven and six days for Myrtle and Pine, respectively), and in relatively small numbers, except on April 26 when 21 Myrtle Warblers were counted. Only a third species of warbler was detected in April, the (Western) Palm Warbler, with one bird on April 24. It is certainly a reflection both of the late spring and poor weather during monitoring in April. Numbers of warbler species and individuals detected increased rapidly in early May (see below).

Most sparrow species are short-distance migrants, with wintering ranges usually confined in North America. At Cabot Head, Song Sparrow and Dark-eyed Junco were the first species of sparrows detected, on the first day of monitoring. Because of a local population, migration of Song Sparrow is not easily monitored, but, this spring, there was a strong movement of birds on April 23, when 33 individuals were counted, of which 16 were banded. The latter total is the highest daily total for Song Sparrow banding: in the previous 17 springs of banding, all daily banding totals are in single-digit, except for April 18, 2009, with ten Song Sparrows banded, and April 24, 2018, with 14 birds banded. It is likely that the bulk of this species' migration is usually missed at Cabot Head, occurring before mid-April, except during some late springs, as in 2009, 2018, and 2019. Dark-eyed Juncos, on the other hand, migrate mostly in the second half of April and into early May. This spring, they were detected almost daily from the first day of monitoring until May 7, and only occasionally afterwards. This species breeds on the Bruce Peninsula in small densities, so birds detected after mid-May are likely to be from the local populations. 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 latter, with a peak migration in late April - early May. This spring, the highest daily counts were 88 and 36 White-throated Sparrows on May

5 and 6, respectively, and 12 White-crowned Sparrows on May 15. Numbers of White-crowned Sparrows were at a record low this spring, with a season total of only 28 birds detected. Detected Totals in spring for this species is quite variable, ranging from a - previous - low of 40 birds in 2018 to a high of 344 in 2013 (average: 153 ± 78). However, totals of less than 60 birds have previously occurred only in three springs (2011, 2017, and 2018).

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 85 on April 30 (i.e., 53% of the season total) to 130 on May 15 (82% of the spring total). From May 16 to May 23, another 22 new arrivals were detected, bringing the total number of species detected to 96% of the spring total. The remaining 17 days of monitoring only brought seven additional species, the so-called late migrants. There were a certain number of days with no new species throughout the monitoring period, not restricted to the end of the season, reflecting a stalled migration at various stages of the spring.

After detection of only three species of warblers in April, there were an influx of new species of warblers in early May, both in numbers and diversity, reaching 11 and 15 species detected on May 6 and 10, respectively. In three days, between May 4 and 6, ten new species of warblers arrived at Cabot Head. The next major influx was on May 10, when five new species were detected that day. Afterwards, the pace of new arrivals slowed markedly: it took 18 days, from May 14 to May 31, to add the last seven species of warblers detected, bringing the spring 2019 total of 25 species of warblers (Fig.3). On May 23, 20 species of warblers were detected, the highest number of the season. A daily total of 19 species were detected on May 19, 24, and 26. The last warblers to arrive were detected after mid-May, with Wilson's Warblers on May 17, Canada Warbler on May 23 and Blackpoll Warblers on May 24 (Fig.3). The last species to arrive was

Mourning Warbler, on May 31, the only detection of that species this year. 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 April 23), Vireos arrive at Cabot Head in mid-May, with the occasional very early birds in early May. This spring, first detections were on May 6 for Warbling Vireo, May 17 for Red-eyed Vireo, and May 24 for Philadelphia Vireo. 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 2019, it was observed in three occasions. On the opposite, 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 were sightings on four days, for a total of five birds. 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 17 this spring, it was missed only in a few days (of inclement weather) 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. The banding total of 16 birds this spring is just above the spring 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 detection this year on May 6. However, it was not detected again until May 16, and then, almost daily until the last detection on May 28. Yellow-bellied Flycatchers were detected regularly from May 20 to June 7, with a season detected total of 21 birds in 12 days. On the contrary, Traill's Flycatchers (Willow and Alder combined) were barely detected, with banding accounting for half of the eight birds counted during four days (from May 30 to June 8). The first Great Crested Flycatcher was on May 11, with only four other subsequent days with observations, the last one of

two birds on June 9. Eastern Kingbirds were more commonly seen, from May 19 to June 9, with one to three individuals at a time. Eastern Wood-Pewees were recorded during the same time frame as Eastern Kingbirds, mainly detected through their characteristic song. Finally, one Olive-sided Flycatcher was heard on May 31 and June 6.

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. The first Veery and Swainson's Thrush arrived a day apart, May 10 and 11, respectively. They were then detected sporadically throughout the rest of the season. First arrivals of these two species are quite variable, ranging from early May - even late April in one occasion for each species - to May 20, in 2009 for both species, and May 21, 2017 for Swainson's Thrush. The Gray-cheeked Thrush is the rarest and latest, with, this year, only one individual detected on May 31.

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 14 in the afternoon 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 occurred only in three years (out of the previous 17), 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. 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, including 2019, with May 10, 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).

The highest diversity of species observed in the spring season was achieved on May 6, with a total of 74 species. On that day, among others, there were six species of sparrows and 11 species of warblers detected. The first Scarlet Tanager was also observed, among the 11 new species for the season were detected on that day.

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 and captured in good numbers at this time and into June, with quite a few recaptures as well (See Recaptures). This species represents the majority of banded birds at this time of year. For example, on May 31, 23 American Redstarts were banded, with 13 more on June 6. Red-eyed Vireo is the only species banded in more than one or two birds a day during this period, with, notably, six birds banded on June 1.

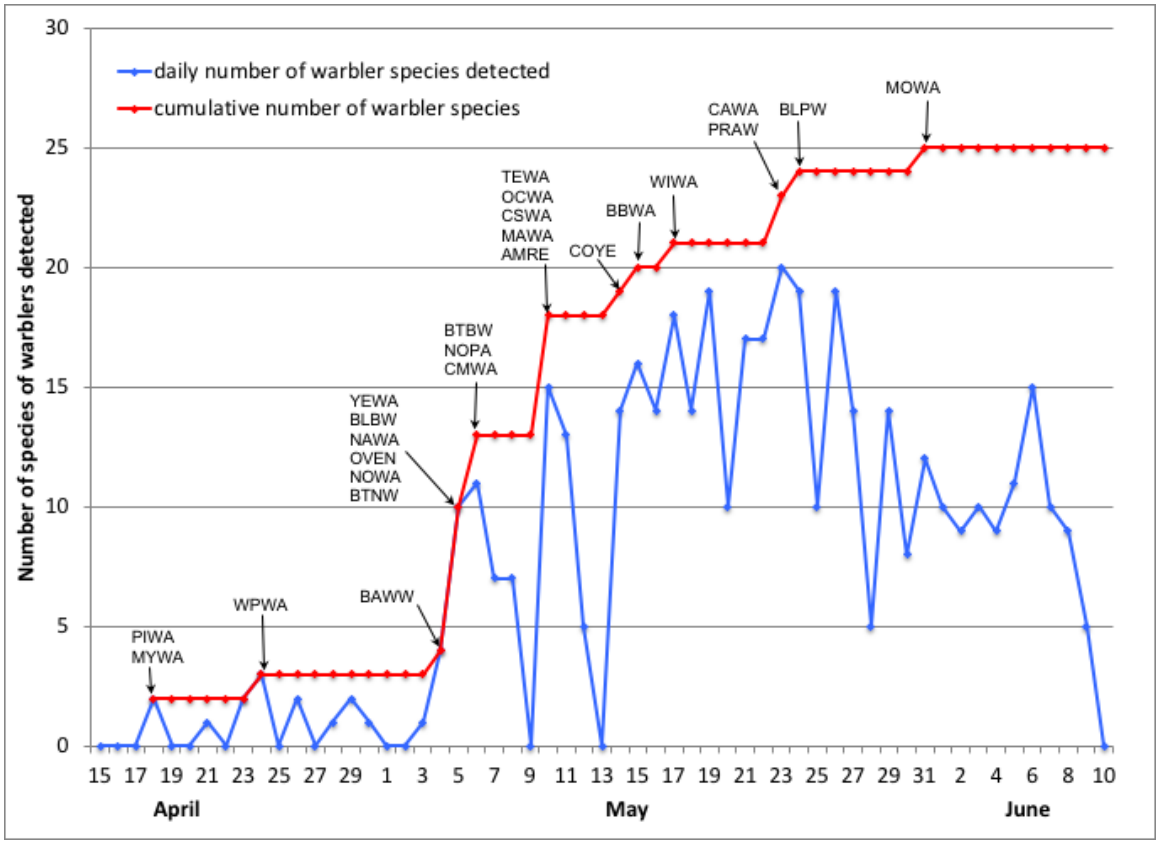

Figure 3. Daily and cumulative numbers of species of warblers detected at CHRS in spring 2019. Alpha codes denote date of first detection. (MYWA: Myrtle Warbler; PIWA: Pine Warbler; WPWA: Western Palm Warbler; BAWW: Black-and-White Warbler; YEWA: Yellow Warbler; BLBW: Blackburnian Warbler; NAWA: Nashville Warbler; OVEN: Ovenbird; NOWA: Northern Waterthrush; BTNW: Black-throated Green Warbler; BTBW: Black-throated Blue Warbler; NOPA: Northern Parula; CMWA: Cape May Warbler; TEWA: Tennessee Warbler; OCWA: Orange-crowned Warbler; CSWA: Chestnut-sided Warbler; MAWA: Magnolia Warbler; AMRE: American Redstart; COYE: Common Yellowthroat; BBWA: Bay-breasted Warbler; WIWA: Wilson's Warbler; CAWA: Canada Warbler; PRAW: Prairie Warbler; BLPW: Blackpoll Warbler; MOWA: Mourning Warbler)

Fall-out days

A "fall-out" is the result of severe weather preventing birds from continuing their migratory flight and causing them to drop down on the ground to rest, take shelter, and feed. Such events can impact large numbers of birds of many species at the same time, notably after crossing large bodies of water, or it might be more subtle and not as easily detected, affecting only a few species.

On May 10, there was an overcast sky, fog patches, and a strong West wind. During the first half of the morning, there were relatively few birds around. Suddenly, it all changed: birds were everywhere, falling down from the sky and filling the nets more quickly than we could extract them. The fog and West wind may have prompted birds to drop down to the ground but why later in the morning is a mystery. A total of 261 birds of 20 species were banded, with most of the captures in the second half of the day. It is the highest one-day total for the season and the second-highest one-day total ever. A few specific one-day records were achieved: 36 Nashville Warblers were banded, while the previous record was 33 birds on May 13, 2002; 49 Yellow-rumped Warblers got banded, slightly more than the 45 of May 21, 2002; an astounding 16 Cape May Warblers were banded, compared to the previous high of 5 birds on May 24, 2005; finally, an unbelievable 98 Palm Warblers were banded, smashing the previous record of 30 birds on May 14, 2002. That total of Palm Warbler is actually higher than the total of the whole season for all previous Springs, except two. In one day, we thus banded more Palm Warblers than we usually band over the course of a typical entire spring season.

On May 19, another fall-out occurred, of even greater importance. Because of strong wind at dawn, nets were not open right away. But birds were noticeably… everywhere: on the ground (for example, three male Blackburnian Warblers foraging together), in the shrubs and trees (four male Scarlet Tanagers in the same birch), flying low in big groups. With wind slightly abated, five nets got open: they were filling up so quickly that it was decided to do a net run right away after coming back. The first net, A1, had 15 birds in it, after less than 10 minutes of being open, while 17 birds were in the second net, A2. After extracting all the birds from A1 and A2, it was decided to close all the nets: A2 got closed then, but A1 was already packed with birds again. Moving on to the next one, it was also filled with birds, as well as the last two. It was nonetheless possible to close the third net, A4, rapidly. Afterwards, it was a race against time, as it took almost four hours to close the remaining three nets.

With only five nets open from 30 minutes to 4 hours, 251 birds of 28 species (including 19 of warblers) were banded. The total of mist net hour was only 11, as compared to a potential of 90 mist net hours. With all nets open for six hours and the same capture rate, it is potentially 2,000 birds that we could have caught! Which would have been impossible to process in a safe and reasonable manner…

There were a few one-day records shattered again that day. We caught seven Bay-breasted Warblers, a tie with May 22, 2007. It is not a very common species banded at Cabot Head, with record totals of seven in 2010, eight in 2008, and 11 in 2002. A total of ten Blackburnian Warblers were banded, most of them bright adult males. It is more in that one day than we usually band in a whole spring. The previous one-day high is seven in May 29, 2002, with the highest season total of 11 in 2010 and 13 in 2002. All the other Springs, there are nine or less Blackburnian Warblers banded. During the previous fall-out day this season, we had 16 Cape May Warblers. On May 20, it was only 11, still more in one day than in a whole season, since the highest count for a spring is nine in 2002. There was eight Northern Parula banded. The previous one-day high is five birds on May 17, 2003. Only one to four birds are usually banded in a whole spring season, with the exception of nine birds in 2003. And, finally, the highest totals for this amazingly incredible day go to Magnolia and Nashville Warblers: 52 Magnolia Warblers were banded, compared to the previous high of 29 on May 17, 2002; and 48 Nashville Warblers were banded, compared to 26 on the previous 2019 fall-out day and 33 on May 13, 2002.

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; a bird which preferred habitats are 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 2019 unusual records, in chronological order.

There were ten days with observation of Peregrine Falcon throughout the season (from April 17 to May 24), all of one bird except on May 7 when two birds were observed. One Field Sparrow was detected on April 18, and much later, on May 22 and 23. An Eastern Whip-poor-will was heard on the evening of April 25, the earliest date on record, beating the previous one of May 3, 2018 by a full week. A Northern Goshawk was seen on April 28 and May 14. One Red-throated Loon was observed over Georgian Bay on April 29 and another one on May 16. A Northern Mockingbird was seen in the afternoon of May 4. Evening Grosbeaks were detected on four occasions, starting on May 5. A Blue-winged Teal, a Rock Pigeon, and a Vesper Sparrow were seen on May 6. A House Sparrow, very rare at Cabot Head, was seen on May 8. A Clay-colored Sparrow was seen on May 15 and 28. A Barred Owl was heard on May 16, the third spring in a row with detection. A Lesser Yellowlegs was heard on May 17. A Chimney Swift was seen very briefly on May 19. One Red-headed Woodpecker was seen on May 21. In the afternoon of that same day, two Short-billed Dowitchers were observed resting at the tip. A Green Heron was detected on May 23, the same day that a female Prairie Warbler was feeding in the cedars near the station. On May 24, just after the monitoring period, a male Prairie Warbler was singing and feeding in the low bushes along Wingfield basin. On June 6, a second-year female Prairie Warbler was banded, a first for Cabot Head.

For the first time since I have been monitoring at Cabot Head, there was no sightings of Golden Eagles this spring.

4. Banding Data Analysis

Spring 2019 has the third highest banding total since migration monitoring started in its present form in 2002, with 2044 birds of 65 species banded in total (Table 2). It is about 500 birds more than the spring banding average of 2002 - 2018 (1528 ± 457 birds). As noted previously, there were 13 days fully lost due to bad weather (or, about 23% of the period). Four days out of 44 days with banding account for 37.5% of the banding total (see fall-out days for a detailed review). Only a few species were banded in record low numbers, most notably Swainson's Thrush with only nine birds banded compared to an average of 26 ± 10, with a previous low of 12 birds in 2003. On the other hand, nine species were banded in record high numbers, seven of them warblers. Most remarkable is the 218 Western Palm Warblers banded, just one bird shy of the 2002 record and well above the average of 71 ± 46. Prairie Warbler and Eastern Bluebird were banded for the first time at Cabot Head (see below).

Ruby-crowned Kinglet, with 261 birds banded, represents 13% of the seasonal total, and the species most banded this spring. Despite migrating wholly within the monitoring period, there are great variations in numbers banded of this species, from a low of 55 birds in spring 2012 to a high of 292 birds in spring 2014. Western Palm Warblers, as noted, were banded in record numbers, with 218 birds, and 11% of the season total. Nashville Warbler, with 160 birds banded, represents 8% of the season total, but also the second highest season total after 2002 (when 237 Nashville Warblers were banded). The range in any other years is between 11 (in 2017) and 60 (in 2003). Golden-crowned Kinglet and American Redstart, with 152 and 145 birds banded respectively, account for 7% of the seasonal total. For American Redstart, it is the fourth lowest total but not as bad as the record low of 74 birds of spring 2017. The top five species account for 46% of the banding total this spring. Typically, only a few species are captured in numbers over 50 individuals while most species are banded in low to very low numbers (Table 1). Red-breasted Nuthatches were banded in record numbers this spring, with 57 birds captured, well above the average of 9 ± 9. There was a strong southward movement of adults last fall and it is possible that many birds, after surviving the winter, were returning to their breeding grounds.

Numerous variables affect the capture rates including population dynamics, weather conditions during migration, vegetation changes at the site, food availability, etc. Capture rates varied greatly on a weekly basis (Fig.4). The capture rate is determined by dividing the number of

birds caught by the number of hours for which the nets were operated. Thus, variation in capture rate reflects variation in those two parameters, which are themselves dependent upon various conditions (weather being the major one). Mist net hours are primarily lost when weather conditions (i.e. rain or strong wind) render it unsafe to capture birds thus forcing net closure. In spring 2019, weekly capture rates were consistently above average, except for one week. The May 15 - 21 weekly capture rate reached a record high this spring, mostly due to a record number of birds banded rather than a low number of mist net hours. Except for two weeks (April 16 - 23 and May 22 - 28), mist net hours were around average.

Weekly numbers of banded birds partially reflect variation in capture rates (Fig.4). Half of the weeks show an average number of banded birds, whereas there are three weekly record numbers, and only one week of below average number of banded birds. Of course, a week is a rather arbitrary temporal division, mostly useful to smooth the extreme daily variations in banding (see Fig.6) and to allow comparisons between years.

In spring 2019, 65% of the potential mist net hours were realized, compared to a range of 58% in spring 2004 to 92% in spring 2010, with an average of 73% ± 1. Poor weather conditions either precluded opening any mist nets for a total of 13 days (23% of the season, mostly concentrated in the first half of the season), or only a portion of the 15 nets or a portion of the day (Fig.5). Conditions allowed for a complete banding operation (all 15 mist nets opened for six hours, i.e. 90 mist-net hours a day) during only 37% of the monitoring period. Coverage of 80 mist-net hours or more was realized during 49% of the monitoring period.

Table 1. Number of species banded in spring 2019 at CHRS according to their banding total.

Banding total	1 - 10	11 – 50	51 – 100	>101
Number of species	32	21	6	6

Table 2. Banding total of species in spring 2019 at CHRS, 2002 - 2018 average (and standard deviation), maximum and minimum totals for 2002 - 2018, and number of springs with captures.

group	Species	2019	Av.	StDev	Max.	Min.	Nb. of springs with capture
Hawks	Sharp-shinned Hawk	12	19	7	34	10	18
Woodpeckers	Downy Woodpecker	1	1	0	1	1	3
	Hairy Woodpecker	1	2	1	3	1	6
	Yellow-Shafted Flicker	5	5	3	12	1	17
Falcons	American Kestrel	1	1		1	1	2
Tyrant Flycatchers	Eastern Wood-pewee	2	2	1	3	1	13
	Yellow-bellied Flycatcher	13	13	6	24	3	18
	Traill's Flycatcher	4	15	9	32	4	18
	Least Flycatcher	9	14	5	23	6	18
	Eastern phoebe	8	6	5	23	1	17
Vireos	Blue-headed Vireo	5	4	2	8	1	15
	Red-eyed Vireo	16	15	8	39	6	18
Crows & Jays	Blue Jay	38	63	88	264	10	18
Chickadees	Black-capped Chickadee	69	48	91	365	2	18
Nuthatches	Red-breasted Nuthatch	57	9	9	27	1	17
Creepers	Brown Creeper	65	47	48	200	8	18
Wrens	House Wren	4	2	1	3	1	8
Kinglets	Golden-crowned Kinglet	152	146	173	666	3	17
	Ruby-crowned Kinglet	261	130	72	292	55	17
Thrushes	Eastern Bluebird	2					
	Veery	5	10	6	22	1	17
	Gray-cheeked Thrush	1	3	2	8	1	15
	Swainson's Thrush	9	26	10	43	12	17
	Hermit Thrush	32	14	6	30	6	17
	Wood Thrush	1	3	2	6	1	16
	American Robin	6	7	4	16	1	17
Mockingbirds & Thrashers	Gray Catbird	2	11	5	19	1	17
	Brown Thrasher	3	6	3	12	1	17
Finches	Purple Finch	1	2	1	3	1	9
	Pine Siskin	1	2	1	3	1	7
	American Goldfinch	23	5	10	41	1	14
New World Warblers	Tennessee Warbler	5	2	1	6	1	11
	Orange-crowned Warbler	23	9	8	31	2	17
	Nashville Warbler	160	44	52	237	11	17
	Northern Parula	15	3	3	9	1	10

group	Species	2019	Av.	StDev	Max.	Min.	Nb. of springs with capture
New World Warblers	Yellow Warbler	4	10	7	25	1	15
	Chestnut-sided Warbler	30	14	6	28	4	17
	Magnolia Warbler	100	89	43	198	29	17
	Cape May Warbler	28	4	2	9	1	14
	Black-throated Blue Warbler	36	27	11	64	18	17
	Myrtle Warbler	111	60	56	246	16	17
	Black-throated Green Warbler	38	24	8	41	13	17
	Blackburnian Warbler	18	5	4	13	1	15
	Pine Warbler	1	3	2	10	1	14
	Prairie Warbler	1					
	Palm Warbler	218	71	46	219	34	17
	Bay-breasted Warbler	14	4	3	11	1	13
	Black and White Warbler	61	53	18	91	25	17
	American Redstart	145	181	54	273	74	17
	Ovenbird	18	29	10	53	12	17
	Northern Waterthrush	2	4	3	13	1	17
	Mourning Warbler	1	8	4	17	2	17
	Common Yellowthroat	34	38	13	66	23	17
	Wilson's Warbler	4	15	8	34	4	17
	Canada Warbler	12	16	5	26	8	17
New World Sparrows	Eastern Towhee	2	2	1	2	1	6
	American Tree Sparrow	3	11	12	52	1	17
	Chipping Sparrow	13	25	27	101	5	17
	Song Sparrow	33	15	9	34	4	17
	Lincoln's Sparrow	3	12	7	25	4	17
	Swamp Sparrow	11	6	3	13	3	17
	White-throated Sparrow	60	55	25	104	13	17
	E. White-crowned Sparrow	5	25	17	69	4	17
	Slate-coloured Junco	25	56	39	150	15	17
Cardinals	Rose-breasted Grosbeak	1	4	4	18	1	16

For 2019, record high captures in red, near record high in orange, record low in blue.
Av.: average; stdev: standard deviation; Max: Maximum; Min: Minimum; Nb.: Number

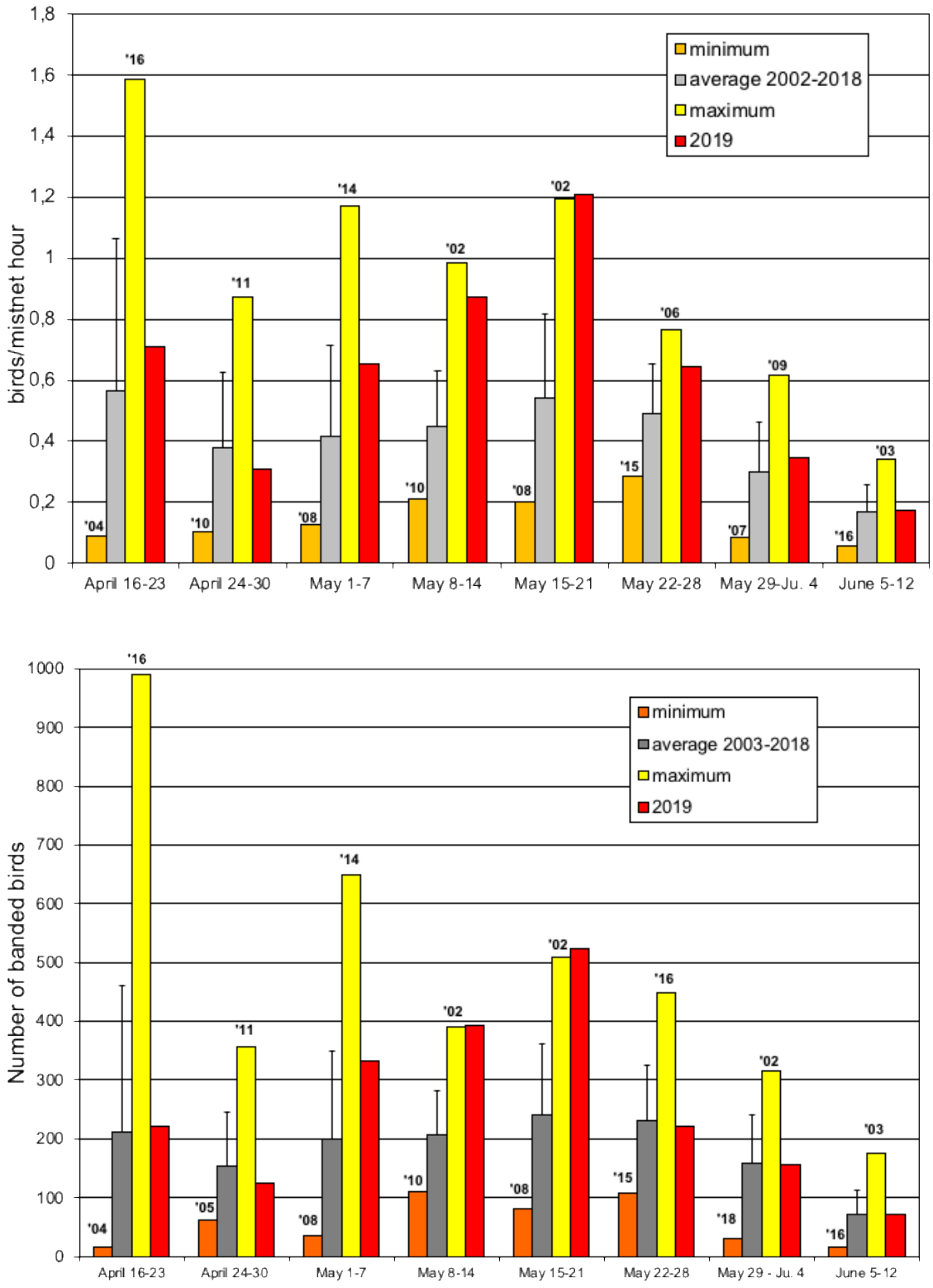

Figure 4. Weekly capture rates (top) and number of banded birds (bottom) at CHRS during the spring season (average 2003-2018, minimum and maximum (with corresponding year) and 2019). Error bars show Standard Deviation.

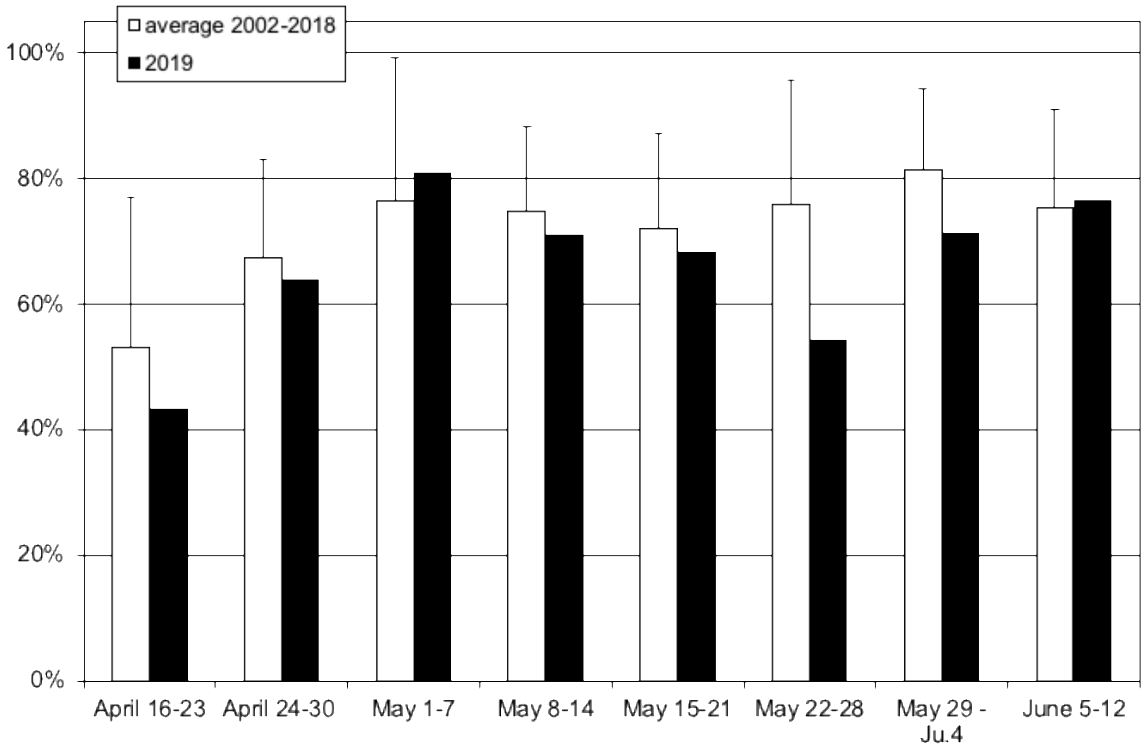

Figure 5. Weekly proportion of realized mist net hours at CHRS during the spring season (average 2002-20018 and 2019). Error bars show Standard Deviation.

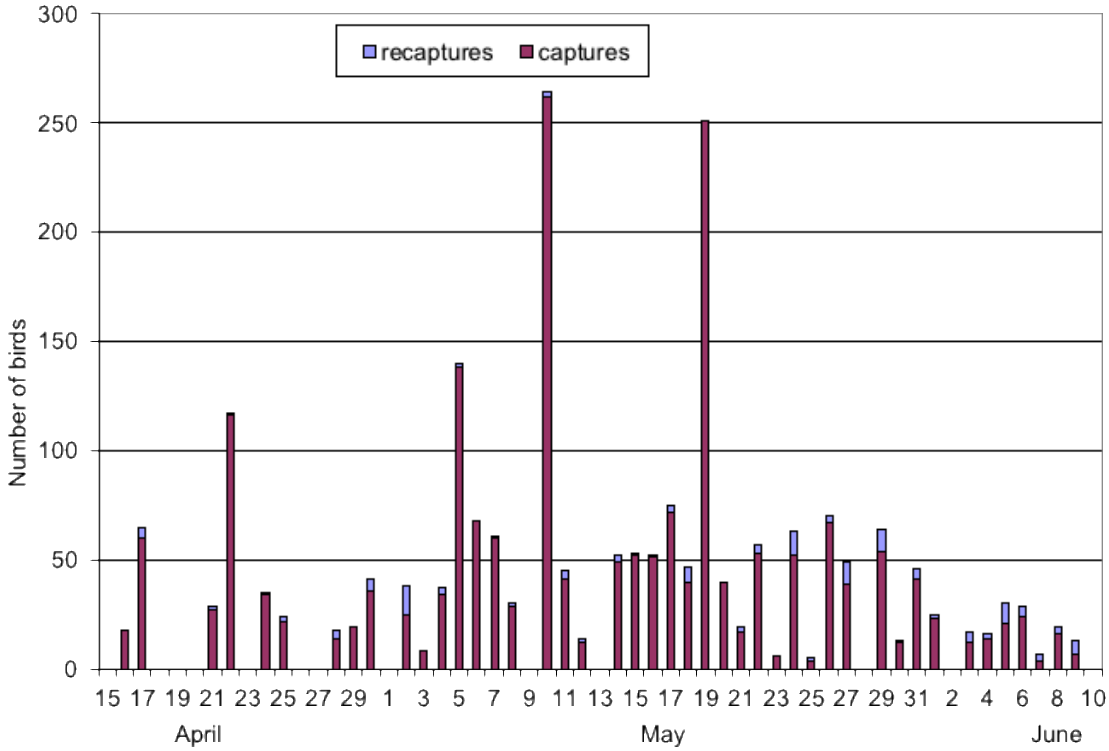

Figure 6. Daily number of captured and recaptured birds at CHRS, spring 2019.

New species banded at Cabot Head:

On May 29, two Eastern Bluebirds were captured at the same time and in the same net. The female got caught first, with the male sitting in a nearby perch and looking intently. It then flew and got also caught. Both birds were adults, with almost the same wing chord, but the female was almost 2g heavier than the male: it is likely that she had an egg inside. The female showed the start of a Brood Patch, while the male has a pronounced Cloacal Protuberance. Both are clear indication that the birds are breeding or, at least, attempting to. It was the first time ever that this species, so relatively common at Cabot Head, was banded.

Eastern Bluebird: female (left) and male (right)

A **brood patch** is a **patch** of featherless skin that is visible on the underside of birds during the nesting season. This **patch** of skin is well supplied with blood vessels at the surface making it possible for the birds to transfer heat to their eggs when incubating.
In male passerines, the accumulation of sperm in the sperm reserves causes the cloaca to become enlarged, forming the **cloacal protuberance**.

On June 6, a Second-Year Prairie Warbler was banded, the first ever at Cabot Head (see pic on the right). It was also the third detection of the species this spring, whereas there have been only three detections in the past 17 years (on May 10, 2007, and August 24 of that same year, with one bird each, and on May 13, 2016, with one male (singing) and a female).

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 quite high in spring 2019. There was a total of 145 recaptures for 100 individuals of 18 species from April 17 to June 9. Among the recaptured birds this spring, 14 individuals of four species were banded in previous seasons at Cabot Head and the recaptured Sharp-shinned Hawk was banded elsewhere. In total, 71% of the recaptured birds were recaptured only once and another 18 birds were recaptured on two occasions. A total of 11 birds were recaptured on more than two occasions, with the most recaptured being an American Redstart recaptured six times. Species recaptured three times or more were American Redstart, Black-and-white Warbler, Orange-crowned Warbler, and Red-breasted Nuthatch.

Birds banded in previous years and recaptured in the spring (Table 3) are most likely local resident breeders. From a total of 14 birds of four species, there were only three American Redstarts and one Common Yellowthroat banded the previous fall, in 2018, meaning spring 2019 was the first between-season occasion of recapture for them. Of the other ten birds, all but two have a history of recapture at Cabot Head. The oldest known recaptured bird this spring is the Magnolia Warbler banded as a Second-Year in spring 2015, meaning it was hatched in the summer of 2014: this bird is thus almost 5-yr-old. The oldest known Magnolia Warbler in North America was 8 years and 11 months at time of recapture (https://www.pwrc.usgs.gov/BBL/longevity/Longevity_main.cfm; accessed August 13, 2019). Both the American Redstart and the Black-and-white Warbler banded in fall 2015 as After-Hatch-Year and recaptured this spring are also at least five years old. Because they were banded as adults, it is not possible to know their exact year of birth: it could be 2014 or prior, meaning that their estimated age is a minimum.

Table 3. History of recaptures by species and time of banding for birds banded prior to and recaptured in spring 2019. (All recaptures per individual are included, except within-season recaptures).

B_yr	Banding season	Species	age at banding	2015	2016	2017		2018		2019
				fall	spring	spring	fall	spring	fall	spring
2015	spring	Magnolia Warbler	SY	2	2					1
	fall	American Redstart	AHY			4	2			3
		Black-and-white Warbler	AHY		2	2			2	4
2016	spring	American Redstart	ASY			1				1
2017	spring	American Redstart	ASY				2			2
	fall	American Redstart	AHY							6
2018	spring	American Redstart	SY						1	1
		American Redstart	SY							3
		American Redstart	SY						1	1
		Magnolia Warbler	SY							1
	fall	American Redstart	HY							2
		American Redstart	HY							1
		American Redstart	HY							1
		Common Yellowthroat	HY							2

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

6. Personnel

Ten volunteers contributed 112 person-days to the spring migration monitoring season (Table 4). The volunteers this spring came mostly from Ontario and Quebec, although Caroline was from France and James (Scriber) Baley was our first volunteer from the Caribbean, the island of Montserrat. A special thanks to Danielle Bootsma - Ungar, who spent almost the whole season at Cabot Head, from April 20 to June 10.

Table 4. Volunteer effort, spring 2019.

52 Days	13 - 17 Days	2 - 8 Days	1 Day
	Monica Fromberger	Philip Mercier	Al Woodhouse
Danielle Bootsma-Ungar	Caroline Reis	Jessica Bao	Tyler Miller
	James Baley	Tanya Havelka	Ted Cheskey

7.0 Conclusion

For an eighteenth consecutive spring, bird migration monitoring at Cabot Head was done daily from April 15 to June 10, thanks notably to a dedicated team of volunteers. The continuing monitoring effort throughout the years continually adds details and refines the natural history of bird migration on the Bruce Peninsula.

Challenging weather conditions made monitoring, notably banding, more difficult but may have created some unprecedented movements through the area. Two massive fall-outs occurred in May, with record-shattering numbers of birds banded, especially for warblers. Migration is notoriously a very dynamic phenomenon, so being able to operate a long-term, daily monitoring during spring and fall is crucial to truly capture its intricacies. A striking example of the vagaries of migration is reflected in the four days of banding which captured close to 40% of the season total. Many warblers were seen and banded in high or record numbers this spring, a potential reflection of the harsh weather conditions, grounding many migrants and stalling migration.

This spring, there were a good number of unusual records, indicating a sustained observation effort. Among the most notable were two sightings of Red-throated Loons over Georgian Bay, previously seen in the springs of 2002, 2009, and 2012, with only one bird each. 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, the record number of Red-breasted Nuthatch captured this spring, after an impressive passage of adults in the fall, provides an indication of the flexibility and adaptability of (some) bird species in the face of 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. I would also like to commend the volunteers who helped make the field season efficient and enjoyable. It is an honour and a privilege to work again for BPBO.

Appendix I

Table 5. Season Total of species observed in spring 2019 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 day
Ducks, Geese & Swans	Canada Goose	1607	389	1	39	16 April	9 June
	Wood Duck	30	10	1	8	17 April	7 June
	Mallard	40	9	1	13	16 April	14 May
	Blue-winged Teal	1	1	1	1	6 May	5 May
	Ring-necked Duck	27	6	2	11	21 April	2 May
	White-winged Scoter	5	4	1	2	12 May	20 May
	Long-tailed Duck	15	7	1	5	17 April	5 May
	Bufflehead	172	23	1	31	15 April	27 May
	Common Goldeneye	25	7	1	10	18 April	3 May
	Hooded Merganser	8	2	1	7	18 April	14 May
	Common Merganser	264	20	1	49	15 April	10 June
	Red-breasted Merganser	87	19	1	17	16 April	8 June
Grouse & Turkeys	Ruffed Grouse	73	8	1	40	16 April	9 June
	Wild Turkey	7	5	1	3	15 April	29 April
Grebes	Horned Grebe	9	2	1	7	16 April	7 May
	Red-necked Grebe	1			1	20 May	
Pigeons and Doves	Rock Pigeon	1			1	6 May	
	Mourning Dove	18	7	1	7	18 April	8 June
Goatsuckers	Eastern Whip-poor-will	12	2	1	10	25 April	6 June
Swifts	Chimney Swift	2	1		2	19 May	22 May
Hummingbirds	Ruby-throated Hummingbird	44	5	1	16	17 May	10 June
Cranes	Sandhill Crane	125	13	1	36	17 April	9 June
Sandpipers & Phalaropes	Killdeer	10	1		10	17 April	9 June
	Greater Yellowlegs	8	2	1	7	25 April	22 May
	Lesser Yellowlegs	1			1	17 May	
	Spotted Sandpiper	28	3	1	21	14 May	8 June
	Semipalmated Plover	10	9	1	2	17 May	25 May
	Short-billed Dowitcher	2	2		1	21 May	
	Wilson's Snipe	22	4	1	15	22 April	8 June
	American Woodcock	3	1		3	22 April	29 May
Gulls & Terns	Ring-billed Gull	198	18	1	39	15 April	10 June
	Herring Gull	123	15	1	38	15 April	10 June

Group	Species	Season Total	Daily max.	Daily min.	Days with obs.	First day	Last day
Gulls & Terns	Caspian Tern	4	2	1	3	7 May	8 June
	Common Tern	6	2	1	5	10 May	10 June
Loons	Red-throated Loon	4	2	2	2	29 April	16 May
	Common Loon	626	200	1	44	15 April	10 June
Cormorants	Double-crested Cormorant	205	25	1	32	18 April	9 June
Herons & Bitterns	Great Blue Heron	10	2	1	8	18 April	8 June
	Green Heron	1			1	23 May	
Vultures	Turkey Vulture	364	31	1	41	15 April	9 June
Osprey	Osprey	4	1		6	18 April	30 May
Hawks, Kites & Eagles	Bald Eagle	96	6	1	52	15 April	10 June
	Northern Harrier	21	9	1	12	18 April	29 May
	Sharp-shinned Hawk	295	48	1	34	15 April	7 June
	Cooper's Hawk	1			1	18 April	
	Northern Goshawk	2	1		2	28 April	14 May
	Red-shouldered Hawk	27	4	1	15	16 April	8 June
	Broad-winged Hawk	132	55	1	15	18 April	9 June
	Red-tailed Hawk	47	8	1	16	16 April	8 June
	Rough-legged Hawk	2	1		3	18 April	21 April
Typical Owls	Barred Owl	1			1	16 May	
Kingfishers	Belted Kingfisher	35	2	1	30	16 April	4 June
Woodpeckers	Red-headed Woodpecker	2	1		2	21 May	10 June
	Red-bellied Woodpecker	5	1		5	21 May	9 June
	Yellow-bellied Sapsucker	13	3	1	9	16 April	26 May
	Downy Woodpecker	9	2	1	8	16 April	3 May
	Hairy Woodpecker	9	2	1	8	20 April	9 June
	Northern Flicker	423	53	1	35	15 April	8 June
	Pileated Woodpecker	28	3	1	24	16 April	8 June
Falcon	American Kestrel	30	5	1	18	15 April	18 May
	Merlin	34	2	1	24	15 April	6 June
	Peregrine Falcon	10	2	0	10	17 April	24 May
Tyrant Flycatchers	Olive-sided Flycatcher	2	1	1	2	31 May	6 June
	Eastern Wood-Pewee	16	3	1	11	19 May	9 June
	Yellow-bellied Flycatcher	21	5	1	12	20 May	7 June
	Traill's Flycatcher	8	4	1	4	30 May	8 June
	Willow Flycatcher	1			1	16 May	
	Least Flycatcher	18	4	1	11	6 May	28 May
	Eastern Phoebe	68	6	1	39	15 April	9 June
	Great Crested Flycatcher	6	2	1	5	11 May	9 June

Group	Species	Season Total	Daily max.	Daily min.	Days with obs.	First day	Last day
Tyrant Flycatchers	Eastern Kingbird	17	3	1	12	19 May	9 June
Vireos	Blue-headed Vireo	18	7	1	8	23 April	19 May
	Warbling Vireo	3	1	1	3	6 May	7 June
	Philadelphia Vireo	5	2	1	4	24 May	1 June
	Red-eyed Vireo	106	26	1	20	17 May	9 June
Crows & Jays	Blue Jay	3741	313	1	31	5 May	9 June
	American Crow	477	72	1	47	15 April	10 June
	Common Raven	141	9	1	43	16 April	10 June
Swallows	Tree Swallow	199	26	1	46	17 April	10 June
	N. Rough-winged Swallow	13	4	1	6	25 April	6 June
	Bank Swallow	2	1	1	2	16 May	22 May
	Barn Swallow	61	4	1	30	4 May	10 June
Chickadees	Black-capped Chickadee	2045	200	1	46	16 April	9 June
Nuthatches	Red-breasted Nuthatch	559	57	1	42	18 April	9 June
	White-breasted Nuthatch	9	3	1	7	16 April	22 May
Creepers	Brown Creeper	102	22	1	23	16 April	9 June
Wrens	House Wren	5	2	1	4	6 May	8 June
	Winter Wren	7	3	1	4	16 April	3 May
Kinglets	Golden-crowned Kinglet	678	98	1	31	15 April	25 May
	Ruby-crowned Kinglet	1477	300	1	35	16 April	27 May
Thrushes	Eastern Bluebird	193	47	1	33	17 April	9 June
	Veery	8	2	1	7	10 May	8 June
	Gray-cheeked Thrush	1			1	31 May	
	Swainson's Thrush	13	4	1	9	11 May	6 June
	Hermit Thrush	36	10	1	9	22 April	9 June
	Wood Thrush	4	2	1	3	23 May	9 June
	American Robin	236	46	1	36	16 April	9 June
Mockingbirds & Thrashers	Gray Catbird	5	1	1	5	15 May	21 May
	Brown Thrasher	43	3	1	29	21 April	9 June
Starlings	European Starling	191	28	1	21	17 April	29 May
Waxwings	Cedar Waxwing	279	64	3	12	23 May	9 June
Old World Sparrows	House Sparrow	1			1	8 May	
Pipits	American Pipit	11	8	1	3	14 May	17 May
Finches	Purple Finch	72	10	1	25	17 April	8 June
	Common Redpoll	14	10	2	3	17 April	29 April
	Pine Siskin	55	12	1	12	17 April	22 May
	American Goldfinch	318	37	2	30	4 May	8 June
	Evening Grosbeak	7	3	1	4	5 May	22 May

Group	Species	Season Total	Daily max.	Daily min.	Days with obs.	First day	Last day
Longspurs	Lapland Longspur	1			1	17 May	
New World Warblers	Tennessee Warbler	6	2	1	4	10 May	6 June
	Orange-crowned Warbler	82	25	1	14	10 May	26 May
	Nashville Warbler	681	300	1	29	5 May	8 June
	Northern Parula	86	13	0	16	6 May	6 June
	Yellow Warbler	109	22	0	20	5 May	8 June
	Chestnut-sided Warbler	71	12	0	19	10 May	6 June
	Magnolia Warbler	413	300	1	25	10 May	7 June
	Cape May Warbler	62	17	1	14	6 May	26 May
	Black-throated Blue Warbler	87	21	0	24	6 May	9 June
	Myrtle Warbler	1072	200	1	37	18 April	8 June
	Black-throat. Green Warbler	305	50	1	31	5 May	9 June
	Blackburnian Warbler	137	50	1	22	5 May	6 June
	Pine Warbler	30	10	1	12	18 April	2 June
	Prairie Warbler	2	1	1	2	23 May	6 June
	Western Palm Warbler	1811	521	1	26	24 April	2 June
	Bay-breasted Warbler	57	50	1	6	15 May	26 May
	Blackpoll Warbler	4	2	1	3	24 May	1 June
	Black-and-white Warbler	166	16	1	31	4 May	9 June
	American Redstart	568	49	1	30	10 May	9 June
	Ovenbird	63	8	1	28	5 May	9 June
	Northern Waterthrush	2	1	1	2	5 May	15 May
	Mourning Warbler	1			1	31 May	
	Common Yellowthroat	116	12	1	22	14 May	8 June
	Wilson's Warbler	10	3	1	6	17 May	29 May
	Canada Warbler	24	4	1	11	23 May	8 June
New World Sparrows	Eastern Towhee	3	1	1	3	22 April	19 May
	American Tree Sparrow	13	5	1	4	21 April	4 May
	Chipping Sparrow	151	26	1	33	24 April	9 June
	Clay-colored Sparrow	2	1	1	2	15 May	28 May
	Field Sparrow	3	1	1	3	18 April	23 May
	Vesper Sparrow	2	1	1	2	6 May	22 May
	Savannah Sparrow	13	8	1	5	18 April	15 May
	Fox Sparrow	2	1	1	2	5 May	14 May
	Song Sparrow	115	33	1	39	15 April	9 June
	Lincoln's Sparrow	4	2	1	3	14 May	27 May
	Swamp Sparrow	12	5	1	4	22 April	15 May

Group	Species	Season Total	Daily max.	Daily min.	Days with obs.	First day	Last day
New World Sparrows	White-throated Sparrow	196	86	1	19	20 April	6 June
	White-crowned Sparrow	28	12	1	9	6 May	30 May
	Dark-eyed Junco	101	17	1	22	15 April	29 May
Cardinals & allies	Scarlet Tanager	11	5	1	6	6 May	28 May
	Rose-breasted Grosbeak	19	3	1	10	11 May	8 June
	Indigo Bunting	1			1	7 June	
New World Blackbirds	Bobolink	1			1	14 May	
	Red-winged Blackbird	335	36	1	38	16 April	9 June
	Eastern Meadowlark	12	5	1	5	17 April	28 April
	Rusty Blackbird	81	51	1	16	18 April	31 May
	Common Grackle	1672	333	1	43	16 April	9 June
	Brown-headed Cowbird	42	10	1	9	17 April	17 May
	Baltimore Oriole	12	3	1	9	15 May	30 May

Appendix II

An edited version of the blog published during the spring 2019 monitoring season.

It's cold! It's wet! It's windy! It's April at Cabot Head! April 21

[…] This year, we were lucky enough to be able to drive as far as the gate, leaving only a short 20-min walk to the station. Snow was deep only in a few spots, though most of the ground around the station was still covered and Wingfield Basin was frozen over more than 75% of its area.

I came up on Friday, April 12th, buoyed by a warm South wind, which brought ideas of spring, like a Green Darner (a migratory dragonfly) and one Tree Swallow! Harbingers of spring as they may be, the first official day of monitoring, April 15th, dawned under a chilly, furious North wind! It did not feel spring-like at all and the tally of bird species (seen or heard) on that first day was a meagre 27, with barely any songbirds, and certainly no Swallows. However, the hardy Eastern Phoebe was present, seemingly unfazed by the last gasps of winter.

The following two days were nice enough to open nets and start catching birds. They were the usual suspects, with Golden-crowned Kinglets once again being the most numerous. April 17th was especially good, with a total of 60 birds banded of seven species. Besides the aforementioned kinglets, we caught a good number of Brown Creepers, several Black-capped Chickadees, Song Sparrows and a handful of Juncos. There was also a substantial movement of Blackbirds (or Icterids), including the First-of-the-Year (FOY) Eastern Meadowlarks and Brown-headed

Cowbirds. On that day, there were many other FOY, notably Killdeer, Sandhill Crane, Peregrine Falcon, and Eastern Bluebird.
On April 18th, the notoriously unstable weather of early spring was back with a vengeance, or, at least, a strong South wind, pushing many migrants but also bringing rain with it. […] We observed an impressive passage of Canada Geese, with several hundred flying by, many, many, Blackbirds and American Robins as well as a good number of Northern Flickers. Songbirds were relatively sparse but the treat was of course the first warblers of the season: two male Pine Warbler showing off they bright plumage at eye level in nearby bushes, while Yellow-rumped Warblers were detected through their flight calls.
The South wind was also pushing many raptors up the Peninsula, which was acting like a giant funnel. In total, 12 species of birds of prey were detected: the list typical of the species that are regularly detected at Cabot Head. Missing were Golden Eagle and Northern Goshawk. All the four Buteo species were observed, with FOY Broad-winged Hawk; an Osprey flew by, barely hovering over Wingfield Basin in search of fish; an adult Peregrine Falcon was also counted.

And then, the rain came! It poured almost continually for more than 36 hours, completely stopping the migration. Despite a dire forecast, the rain had ceased by the morning of the 20th, but the wind was still too strong to open nets. Census and observations revealed the obvious: birds were waiting for more favourable weather to get going. Conditions were finally better on April 21st, when moderate movements of Flickers, Blackbirds, and Robins were noted. A singing Brown Thrasher was loudly advertising its arrival in the Pine Barrens.
[...]

What's the weather like? April 29

Bird migration is a highly dynamic natural system heavily influenced by the weather, at the local, regional, and continental scale. Birds do not migrate when it's raining. They also tend to avoid headwind conditions. In short, weather conditions that are unfavorable for flying long distances.

[…] After a few days of bad weather, conditions improved and, on Monday, April 22nd, there was a big push of many migrants, resulting in a season-record of 116 birds banded. Kinglets of both species were again the kings of the day, but there were also many Brown Creepers, Song Sparrows, and Hermit Thrushes. We also banded one Brown Thrasher! Diversity was not extremely high but numbers certainly were.

Birds were most likely taking advantage of a window of good weather: the following day, a strong South wind was blowing, preventing net opening, and also, pushing rain-laden clouds. Soon, intense rain was falling once again in this wet spring, closing down any chance of migration. Before the skies opened, though, there was a good passage of Blackbirds (Common Grackles, Red-winged Blackbirds, and a few Brown-headed Cowbirds), American Robins, and Northern Flickers, as well as Sharp-shinned Hawks.
Thankfully, drier weather returned in mid-week and normal migration resumed. Numbers and diversity of birds were still relatively low, possibly hampered by the cold. Very few warblers, for example, have been seen: even hardy and early species like Pine and Yellow-rumped Warblers have been, so far, detected only in small numbers. But, on April 24th, the FOY Palm Warbler was seen.

In the last moment of night, on April 25th, the resounding voice of the Eastern Whip-poor-will was heard across Wingfield Basin. I had trouble believing my ears, as it is an extremely early date to have this moth-eater return to Cabot Head: the earliest previous date was May 3, 2018.

The following day, rain was falling again. During a break in the afternoon, a Northern Mockingbird was seen briefly. It is also a very early date for this occasional visitor to Cabot Head. May 10th, in 2005 and 2014, was the previous earliest date. What is better than rain? Snow, of course! Cabot Head was white again for a short time in the morning of the 27th, shivering under a strong and cold North wind.

Despite the return of a more clement weather, there was not many birds around, either in the nets or in the sky. It is even possible that some birds retreated South in a reverse migration, to find food and better weather, in a process not quite well understood.
[…]

A note on long-distance migrants. May 3

[…] In the Western Hemisphere, they are the species wintering in Central or South America, or in the West Indies, and include many forest jewels like Orioles, Tanagers, and, yes, Warblers.
[…], the first long-distance migrant was an adult Broad-winged Hawk detected on April 18th. This species winters in forests and along forest edges from southern Mexico to Brazil and Bolivia, a long way from its summer home!

Broad-winged Hawks are known to form large flocks, called « kettles », during migration, exploiting thermals to ride the air effortlessly. Here, at Cabot Head, we only see significant numbers when the South wind pushes them up the shoreline, as the hawks will not attempt to cross Georgian Bay (no thermals over water). This spring, the biggest numbers so far have been on April 30th, when a total of 55 Broad-winged Hawks were counted.

The other long-distance migrant is the Greater Yellowlegs, with the first one heard at Cabot Head on April 25th.Its spring migration is earlier than most other shorebirds but its wintering range extends along the Atlantic coast as far north as New York. Its call is very loud and echoes from far and this is how we primarily detect this gracile denizen of marsh and mudflat.
[…]

Watch out: it's a fall-out!! (of the bird kind) May 12

After a long wait, the weather finally improved on May 4 for a few days, and the birds, they were a-coming! […] From May 4 to 8, there were daily new arrivals, and we were busy banding; with a total of 329 birds during this period.

The long-distance migrants started to finally arrive! It began with the FOY Black-and-white Warbler and Barn Swallow on May 4. But the trickle became a gush the following day […]: five new species of warblers were detected during the monitoring period: Nashville, Black-throated Green and Blackburnian Warblers, Ovenbird, and Northern Waterthrush. And one male Yellow

Warbler was seen in the afternoon too. […] On May 5, we banded the then season record high of 138 birds of 18 species.

[…] On May 6, the FOY joy was: a male Scarlet Tanager, briefly flying by in front of us; a Vesper Sparrow hiding in a bush at the tip; a Warbling Vireo, quickly spotted by a visitor from McGill Bird Observatory; a Least Flycatcher, heard - once - and observed very briefly; and Cape May Warbler. In the afternoon, after the monitoring period had ended […] we observed the beautiful Northern Parula (several individuals) and one male Black-throated Blue Warbler. It made for a respectable 11 species of warblers detected that day!

Diversity was not as high for the following two days, and the numbers captured were in free fall as well, especially on May 8, when an East wind picked up; a harbinger of bad weather. After an amazing streak of five days of good weather, sun and blue sky […], the rain came back with a vengeance! It poured all day on May 9, stopping all migration in its tracks […].

May 10 dawned under an overcast sky, fog patches, and a strong West wind; conditions I typically do not think as being conducive for migration. And, indeed, for the first half of the morning, there were a few birds around, with some catches, but nothing major. Suddenly, it all changed: birds were everywhere, falling down from the sky and filling the nets more quickly than we could extract them. Why this massive fall-out happened, I am not sure, but it was massive! A "fall-out" is the result of severe weather preventing birds from continuing their migratory flight and causing them to drop down on the ground to rest, take shelter, and feed. Such events can impact large numbers of birds of many species at the same time, notably after crossing large bodies of water, like the Gulf of Mexico, or it might be more subtle and not as easily detected, affecting only a few species. It is possible that the fog and West wind that day at Cabot Head compelled birds to drop down to the ground. The result, for us, was a mad rush to get the dozens of birds quickly and safely out of the nets and to band them as efficiently and gently as possible. After many hours of non-stop extracting and banding, we finally closed all the nets and tallied our efforts.

We banded 261 birds of 20 species on that day; the highest one-day total for the season and the second-highest one-day total ever. And almost all of the captures were in the second half, that is, in about three hours of banding! A few specific one-day records were also pulverized: 36 Nashville Warblers were banded, while the previous record was 33 birds on May 13, 2002; 49 Yellow-rumped Warblers got banded, slightly more than the 45 of May 21, 2002; an astounding 16 Cape May Warblers were banded, compared to the previous high of 5 birds on May 24, 2005; finally, an unbelievable 98 Palm Warblers were banded, smashing the previous record of 30 birds on May 14, 2002. That total of Palm Warbler is actually higher than the total of the whole season for all previous Springs, except two!! In one day, we thus banded more Palm Warblers than we usually band over the course of a typical entire spring season.

It was an exhilarating, but also exhausting, day! These days really exemplify the true magnitude of bird migration: we are very often only seeing the tiniest tip of the iceberg […] when we observe birds during migration.

[…] (The first) American Redstart was […] banded: the first arrival of this species has almost always been between May 8 and 10 and, this year, it again followed the « tradition ». We also heard the first Rose-breasted Grosbeak of the season.

The warbler tally for May 10 was 14 species, with an additional one, Chestnut-sided Warbler seen in the afternoon. It was certainly an exciting day!

There were still quite a few birds the following day, with 41 banded and a good diversity. But no new species. On that Sunday, May 12, overcast skies and cold weather have returned, with more rain in the forecast. […]

A spring of many storms! May 19

[…] (T)he spring of 2019 is cold, wet, and, to put it mildly, unstable! No fair weather for us and the birds this year! It makes it hard for everyone, especially birds who still need to push North, all the while finding food and shelter along the way. They need all the food they can get, in order to put on fat, which will quickly be used as the main fuel for their strenuous journey.

The cold dampens insect populations: no good news for all the insectivores, which include pretty much all the warblers. The rain makes it impossible to fly long distances and makes everything simply much harder. The many storms and unstable weather mean that birds need to bide their time, while putting on fat as much as possible, waiting for small windows of good weather to keep on truckin'.

All these conditions amplify the boom and bust cycle of bird migration. The last we spoke more rain was coming and it did. It was another full day of pouring rain on May 13 when nets stayed furled. The weather slightly improved the rest of the week, but conditions were frequently cold, windy, and overcast, with the occasional rain […]. Nonetheless, migration was relatively steady from May 14 to 18, with new arrivals and a good number of captures every day. New arrivals […] (were:) American Pipit and Common Yellowthroat on May 14; Gray Catbird, Bay-breasted Warbler, and Baltimore Oriole on the 15th; Ruby-throated Humminbird - finally - on the 16th, although there are not many flowers for them around Cabot Head.

On Friday, May 17, it was cold and foggy at dawn, with a strong West wind blowing. It cleared completely during the morning and we had a good day of observing, with FOY Red-eyed Vireo, and banding, with 71 birds of 18 species, mostly warblers. […]
The strong wind in early morning of that fateful day of May 19th kept us in bed a little longer. But when we got up, it was to realize that birds were simply… everywhere! They were on the grounds, they were in the trees, they were in the air, and in HUGE numbers! When you see three male Blackburnian Warblers foraging on the ground in close quarters, when you see four (4!!) adult male Scarlet Tanagers sitting in the same tree, with a fifth in the next tree, when you see waves of birds flying overhead, you know that you're in for a special treat.

So, I decided to open just a handful of nets and see how it goes. Coming back from opening only five nets (out of our 15), we could see them filling up quickly. So quickly, in fact, that I decided not to wait the usual 30 minutes to start the net round: we went to the nets right away, and right away, they were full of birds. The first net, A1, had 15 birds in it, after less than 10 minutes being open. It was the same (17 birds!) with the second net, A2, which is right next to the first one. There were already so many birds, that, while extracting birds from A2, I made another quick decision, to close all the nets! We did close A2 then, but A1 was already packed with birds again. So, we moved on to the next nets, and it was the same story. Luckily, we managed to close the third net, A4, rapidly. And then, it was a race against time, as it took almost four hours to close the remaining three nets.

While my talented volunteers, Danielle and Scriber, were extracting as fast as they could, I was busily banding as fast as I could. Luck had it that we had a visiting group that day, and their leader, Graham, kindly offered to scribe (that is, write down the banding data) for me. After a crash course, he was up to the task and saved us a lot of time. I put other persons in the group to run at the nets and bring back and forth bags, empty one way, with birds, the other.

It was a fall-out of a kind I have never experienced before at Cabot Head. Because banding was so busy, even with just a few nets, we did not get to experience it fully: inside the banding lab or concentrated at the nets, it was not possible to simply relax and enjoy the sheer magnitude of birds around us. But, numbers, despite their dryness, still can tell a powerful story. So, we ended up banding 251 birds of 28 species (including 19 of warblers), with only five nets open from 30 minutes to 4 hours. The total of mistnet-hour (numbers of nets times number of hours) was a meagre 11, as compared to a potential of 90 mistnet-hours (when all 15 nets are open for the whole of 6 hours). Imagine for a second that all nets were open for the six hours and that they caught the same amount of birds as experienced, it is a mind-numbing 2,000 birds that we could have caught! Humanely not possible to process with the crew…

There were a few one-day records shattered again that day. We caught seven Bay-breasted Warblers, a tie with May 22, 2007. It is not a very common species banded at Cabot Head, with record totals of seven in 2010, eight in 2008, and 11 in 2002. A total of ten Blackburnian Warblers were banded, most of them bright adult males. It is more in that one day than we usually band in a whole spring. The previous one-day high is seven in May 29, 2002, with the highest season total of 11 in 2010 and 13 in 2002. All the other Springs, there are nine or less Blackburnian Warblers banded. During the previous fall-out day this season, we had 16 Cape May Warblers. On May 20, it was « only » 11, still more in one day than in a whole season, since the highest count for a spring is nine in 2002. The beautiful Northern Parula kept coming out of the bags, with eight birds banded. The previous one-day high is five birds on May 17, 2003. Only one to four birds are usually banded in a WHOLE spring season, with the exception of nine birds in 2003. And, finally, the highest totals for this amazingly incredible day go to MAWA and NAWA: 52 Magnolia Warblers were banded, compared to the previous high of 29 on May 17, 2002; and 48 Nashville Warblers were banded, compared to 26 on the previous 2019 fall-out day and 33 on May 13, 2002.
[…]

Rare visitors at Cabot Head! May 24

[…] On the afternoon of May 21, I took advantage of fair and sunny weather (a seemingly rare treat in itself this spring) to go for a little paddle in my kayak. As I rounded the tip at the entrance of the channel, a Spotted Sandpiper made it clear that it was not happy to be disturbed, calling loudly, becoming agitated, and, finally, flying away. Its' behaviour attracted my attention to two other shorebirds, which seemed not to be as perturbed by my presence. Getting as close as I could without harassing them, I could see that they were Short-billed Dowitchers! They were still there on my return back to the station a while later, and I was able to snap a quick picture from my boat. Shortly after, the whole crew went down the tip and enjoyed the birds from a respectful distance through a spotting scope (through which I took more pictures; the quality of the images was not amazing but it is a good documentation of their visit).

This species is indeed a rare visitor at Cabot Head (like most shorebirds): it has been detected only on three occasions in the previous 17 years: one bird on August 23, 2002, one bird on August 17, 2005, and an amazing flock of 18 birds on May 21, 2008.
A few days later in the week, on May 23, under strong wind and showers that were on and off throughout the morning, there was a lot of bird activity. […] Among the many, many warblers (a total of 20 species were detected that day), there was one female Prairie Warbler, almost plain looking in her neat little dress of yellow and green. The constant bobbing of her tail, the small black streaks on the flanks, and the green half moon under the eye (black in a male), were telltale signs of her identity. This species, like the Dowitcher, has been detected only on three previous occasions: on May 10, 2007, and August 24 of that same year, with one bird each, and on May 13, 2016, with one male (singing) and a female. It is a rare bird at the provincial level too, occurring at the northern end of its breeding range. The Ontario Breeding Bird Atlas (2001-2005) estimates the Ontario population at around 320 pairs, quite low for a songbird indeed.
On May 24, after the monitoring period, we were enjoying some warmth on the porch, when I heard a very unique song: sure enough, it was a male Praire Warbler, singing its little heart out in the low shrubs close to the station. This bird has more obvious markings: the chestnut stripes on its back, the heavy black eyeliner and half-moon under the eye on a yellow face, the black streaking on the flanks of the yellow underparts. A beauty that everyone got to see up close and personal.

Other notable sightings of the week were a Red-headed Woodpecker on May 21, a Green Heron on May 23, and a few FOY: Canada Warbler on May 23, Blackpoll Warbler and Alder Flycatcher both on May 24.

These last two species are a clear sign that migration is entering its last stage, with the late migrants starting to appear. **[...]**

Happy, happy, happy! May 29

On May 29th, 2019, history was made at the Cabot Head Research Station when we banded our first ever Eastern Bluebirds! Yes, bluebirds, plural. We captured one adult male and one adult female in the same net at the same time. **[...]**

Both birds were adults, with almost the same wing chord, but the female was almost 2g heavier than the male: it is likely that she had an egg inside. The female showed the start of a Brood Patch, while the male has a pronounced Cloacal Protuberance (see Notes below). Both are clear indication that the birds are breeding or, at least, attempting to. Given the behaviour of the male around the net where the female was caught, we can also reasonably think that they are a pair.

After quickly taking a few pictures of this historical and memorable event, we safely released them, wishing them good luck in their breeding endeavour.

A **brood patch** is a **patch** of featherless skin that is visible on the underside of birds during the nesting season. This **patch** of skin is well supplied with blood vessels at the surface making it possible for the birds to transfer heat to their eggs when incubating.
In male passerines, the accumulation of sperm in the sperm reserves causes the cloaca to become enlarged, forming the **cloacal protuberance**.

End of season. June 10

Fittingly, on this last day of the spring migration monitoring, June 10th, it is pouring rain! It has been a wet spring for sure: there were 16 days (including today) with precipitation in the 57 days of monitoring, or 28% of the period!

[...] Despite some days with no banding, the banding total of 2044 birds of 65 species is the third highest of the 18 spring seasons.

June 6th was another historic day for Cabot Head, maybe not as worthy of celebrations that a long-ago June 6th (of 75 years ago precisely). Nonetheless, it was on that day that we passed the 2,000 banded birds mark, which has happened only in two previous Springs, in 2002 and 2016. We also banded a new species for Cabot Head, never before banded, although (rarely) seen previously: a Second-Year female Prairie Warbler! **[...]**