

# **MIGRATION MONITORING AT CABOT HEAD**

**SPRING 2005**

*by*

Stéphane Menu  
586 René Lévesque, O. #201  
Québec, QC  
G1S 1S5  
stefmenu@hotmail.com

*prepared  
for*

**BRUCE PENINSULA BIRD OBSERVATORY**

August, 2005

## Table of Contents

Preface .....	3
Executive Summary .....	4
1.0 Methods .....	5
2.0 Season Summary .....	5
April.....	5
May.....	6
June.....	8
3.0 Unusual Records .....	9
4.0 Banding Data Analysis .....	9
4.1 Weather.....	14
4.2 Recaptures.....	14
4.3 Net Analysis.....	15
5.0 Coverage and Protocol.....	16
6.0 Personnel.....	17
7.0 Conclusion .....	18
Acknowledgements .....	18
Literature Cited.....	19
Appendix .....	20

Fig.1. Weekly capture rates at Cabot Head Research Station, springs 2002, 2003, 2004 and 2005.....	11
Fig.2. Weekly number of banded birds at Cabot Head Research Station, springs 2002, 2003, 2004 and 2005. ....	11
Fig.3. Weekly proportion of realized mist net hours at Cabot Head Research Station, springs 2002, 2003, 2004 and 2005.....	12
Fig.4. Daily number of banded birds at Cabot Head Research Station, spring 2005. ....	13
Fig.5: Capture rates per mist net for spring 2003, 2004 and 2005. A1-C15 are net codes referring to specific net locations. ....	16
Fig.6. Coverage (in mist net hour) at Cabot Head Research Station, fall 2004.....	17

Table 1. Total recaptures by species in relation with the year of banding. (Only one recapture per individual is included and within-season recaptures are excluded)....	15
Table 2. Volunteer effort, spring 2005.....	17

### Citation:

Menu, S. June 2005. Migration Monitoring at Cabot Head, Spring 2005. Unpublished report for Bruce Peninsula Bird Observatory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 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 congregatory and migratory bird species (Cheskey and Wilson, 2001). Ontario Parks and Bruce Peninsula Bird Observatory (BPBO) manage Cabot Head Research Station.

The Breeding Bird Survey (BBS) is the principle method for monitoring bird populations in the United States. 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 initiative, enacted to assess changes in populations during migration. There are 21 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. Bruce Peninsula Bird Observatory has demonstrated through data collection since 1998 that Cabot Head is a significant site for monitoring migrating landbirds. In recognition of its importance and established migration monitoring effort, BPBO became a member of the CMMN in fall 2003.

Bruce Peninsula Bird Observatory was incorporated as a non-profit organization in 2001 to initiate and direct ornithological assessments and monitoring at Cabot Head and 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, 2005, migration monitoring season at Cabot Head Research Station.

## **Executive Summary**

This document summarizes the results of migration monitoring at Cabot Head in spring, 2005. Due to variability in monitoring protocols between years, results from 2005 will be more relevant after subsequent spring coverage with the same protocol. However, the monitoring has followed the same protocol since 2002.

Spring fieldwork began on April 16<sup>th</sup> and ended on June 11<sup>th</sup> for a total of 56 consecutive days of coverage. In total, 1,235 birds of 72 species were banded and 59 birds of 18 species were recaptured. Recapture data indicates that stopover rates at Cabot Head are low. Analysis of capture rate per net location indicates a large degree of variation associated with habitat characteristics.

The defining characteristic of spring migration in 2005 was a late spring, with low temperatures (the second-coldest spring in record for southern Ontario). However, there were only 6 days (11% of the coverage period, with 5 out of the 6 occurring in April) without any banding due to bad weather. Banding totals for many species, especially warblers, were noticeably lower this spring than previous years. A total of 163 species of birds were detected in the standard count area over the course of the field season. The highest one-day species total was 72 recorded on May 8 and 12. This spring, 2 species were seen for the first time in the Cabot Head area (the Lesser Black-backed Gull and the Sage Thrasher).

The 2005 spring migration monitoring season was a success thanks to the efforts of our dedicated summer student, Lindsay Miller and the 11 volunteer field biologists who contributed their time to this project.

## **1.0 Methods**

The migration monitoring program at Cabot Head as any CMMN station follows a field protocol (established by Heagy et al, 2003, modified from Heagy 2002) as it is essential for the production of population indices that data collection be consistent over the long term. At Cabot Head Research Station, fifteen mist nets are operated for 6 hours commencing no later than 1 half hour before sunrise, weather permitting. Personnel also complete a census done for one hour along a fixed route, where all bird seen or heard is recorded. Supplemental surveys such as visible migration counts and bay watches are completed when circumstances permit.

## **2.0 Season Summary**

### **April**

Fieldwork for spring migration monitoring began at Cabot Head Research Station on April 16<sup>th</sup> with fourteen mist nets (the 15<sup>th</sup> mist net was added on the 22<sup>nd</sup> only because of snow on the ground at its location). Weather for start-up was cold and sometimes very windy. Furthermore, strong winds often were associated with rain, precluded banding. A total of only 138 birds for 19 species were banded with mist nets in April, a third of them were Ruby-crowned Kinglets (46) and an astonishing 13% were Brown Creepers. Golden-crowned Kinglets, usually an abundant bird in early spring, accounted for only 7% of the April total. The best day for banding was the 16<sup>th</sup>: with only 56 hours of mist nets, 31 birds were banded, 18 of them being Brown Creepers! Given the late spring, many early migrants were still moving through, leading to relatively high numbers observed: Slate-Coloured Junco, American Robins, Blackbirds. The best day for visible migration in April was also the 16<sup>th</sup> with 54 species observed: 120 Turkey Vultures (Estimated Totals), 60 Northern Flickers, 60 Brown Creepers and 80 American Robins. Despite the bad weather, good migration was noted on other days for species like Common Loon (70 on the 27<sup>th</sup>), Sharp-shinned Hawk (50 on the 18<sup>th</sup>), Flicker (high numbers throughout the month), and Blackbirds.

High wind and rain heavily impeded monitoring effort in April as many net hours were lost: a reasonably complete banding effort (more than 84 mist net hours) was possible only 7 days out of 14. The low banding totals in April are partly a result of these

conditions.

Waterfowl migration through the Great Lakes region typically peaks in March and April. Waterbirds were still moving on the morning of April 30<sup>th</sup> when respectable observation total of Long Tailed Duck (250 Estimated Total) was tallied. Bufflehead, Common Goldeneye and Mergansers (both Common and Red-Breasted) were present in Wingfield Basin in good numbers until mid May (maximum Estimated Totals: 25 Buffleheads, 12 Goldeneyes and 20 Red-breasted and 15 Common).

## May

May started off with relatively good weather. However, the number of birds seen and caught remained very low for the first 5 days. Newly arrived species for the spring were started to trickle through the area. For example, the first Palm Warbler, usually an early migrant, was seen on the first of May, another indication of the late migration. However, the first real push of migration for May occurred only on and after the 6<sup>th</sup>. During 3 days, most of the birds were flying too high to get caught in the nets. Nonetheless, the numbers banded increased sharply from less than 15 to 35 and more. On the 8<sup>th</sup>, 72 species were detected, the highest number of the spring! The most common songbird species for this period were mostly Myrtle (with its highest ET of the spring on the 7<sup>th</sup>, 250), and Western Palm Warblers, Sparrows (Chipping, Song, White-throated and White-crowned), and Ruby-crowned Kinglets

With the number of migrants building up, expectations for a big day of banding were also rising. In the dawn of the 9<sup>th</sup>, while opening nets, we couldn't help but noticed a large numbers of birds on the grounds, mostly sparrows. We readied ourselves for a busy day. And indeed, to our delight and satisfaction, the banding day ended with a staggering 124 birds banded of 17 species! Surprisingly enough for this time of year, the most abundant birds were sparrows: 88 of the birds caught (71%), including 58 Eastern White-crowned Sparrows (3 to 4 times the average spring total). Although the ETs were not extremely high, 10 species of Warblers and birds of prey, and 6 of Sparrows were seen during this day. Compared to the previous days, the 9<sup>th</sup> was characterized by a strong south wind and high temperature (22°C at noon compared to around 10°C before). However, with almost the same weather conditions the following day, a mere 21 birds were caught.

With a shifting of wind to the West and then the North, the banding declined steadily. It even reached a low point on the 12<sup>th</sup> with only one bird, a Brown Thrasher, caught (in 72 mist net hours), when temperatures were close to the freezing point throughout the day and a strong wind from the North raked the sky free of clouds! This same Brown Thrasher was recaptured the following day: it had lost 3 grams in 24 hours (for a weight of 70 g), an anecdotal but telling tale of the harshness of spring 2005. The number of birds banded slowly increased again, but migration was still very slow for this period.

And then, another peak took us by surprise on the 18<sup>th</sup> of May: 114 birds of 26 species were caught! It was 6 hours of non-stop banding, with Warblers the overwhelming majority: 92 individuals (81% of the total) of 15 species caught, with Nashville (23 banded) and Magnolia (17 banded) the most abundant.

Around this time, the weather, although still relatively cool, improved so much to allow for an unheard of 100% of potential mist net hours realized! (The 15 nets could be open for the regular 6 hours of banding period. Only one day was lost in June.) This good weather also allowed the birds to migrate almost at their will: as a consequence, there were no major fall-outs of birds any more for the rest of the month, but instead a regular flow of birds (average of 31 banded birds per day). Diversity was also relatively high during this time, with an average of 60 species detected. In fact, the peak of landbird migration is typically between the second and the third week of May in an average year on the upper Bruce, when warblers and sparrows give way to the flycatchers and vireos of June.

Interesting recaptures of birds banded previously (59 individuals for 18 species in total; see Recaptures below) were occurring more frequently. During the last week of May (and continuing in June), the commonest bird banded was the American Redstart. Flycatchers were also coming through, the Least Flycatcher being the earliest (first seen the 9<sup>th</sup>, with a high of 15 Estimated Totals on May 19<sup>th</sup>), followed by the Yellow-bellied Flycatcher (first caught the 27<sup>th</sup> and highest ETs of 20 on the 2<sup>nd</sup> and the 7<sup>th</sup> of June). The last Flycatchers to move through are the Alder and Willow combined as the Traill's Flycatcher, as they can only be separated by voice. The first seen and caught were on the 27<sup>th</sup> of May, the highest ET of 10 was on the 8<sup>th</sup> of June.

Around early May appeared the first flocks of Blue Jays. No ground trap was set

this spring, so only 16 Blue Jays were banded, caught in mist nets. Estimated Totals of a few hundreds occurred on many days between the second week of May and the first of June, with a highest of 450 ETs on the 7<sup>th</sup> of June. Huge movements of this species occur on the Peninsula. However, the number and size of the flocks seemed to have been lower this spring compared to the previous one. Given its diurnal movement, this species was nonetheless among the most abundant visible migrants this spring.

## June

The fair weather continued well into June, still allowing complete coverage (except for the 6<sup>th</sup>, when a windstorm kept the nets closed). The number of birds banded remained fairly high in the first days of June, but after the storm, it dropped rapidly to single-digit figures. During the first week of June around 60 species were detected, on average. American Redstart, not surprisingly, was again the most common species detected (ET of 75 on the 1<sup>st</sup>) and caught (10 on the 5<sup>th</sup>). While the first flock of Cedar Waxwings was seen on the 27<sup>th</sup> of May, the peak of their migration is rather at the end of May and early June. Indeed, daily flocks of this species were noted during this period, with the highest of 150 Estimated totals on the 31<sup>st</sup> of May. As well, large flocks of Canada Geese were almost a daily occurrence at this time (highest Et of 250 the 3<sup>rd</sup> of June). At this period, it is likely a molt migration: presumably failed breeders and non-breeders going North in a remote location to molt their flight feathers. Although a common migrant in early June, the Red eyed Vireo was never caught in good numbers (only 3 as the maximum banded in one day). Even on days with ETs of 20, no or only one or two vireos were caught, reflecting their high canopy feeding habits.

During the last week of banding, the birds detected were mostly singing, establishing territories and building nests. Remarkably, a female Whip-poor Will was caught and banded on the 10<sup>th</sup>, just at the break of dawn. These magnificent birds had been heard and seen around the station for a few days, singing on the ground in the driveway, very close to the first nets. On the last day of banding, the 3 banded birds were likely residents: Landbird migration had finally wound to a close. On this same day, a great raucous of gulls and crows helped to detect a Great Horned Owl perched on a tree near Wingfield Basin.

### **3.0 Unusual Records**

Two new species were added for the area this year: 2 adult Lesser Black-backed Gulls were seen twice in Wingfield Basin in April. On June 10, at the very end of the migration monitoring, a Sage Thrasher was observed for several minutes while it was catching insects around the banding lab. It was a long way from its summer haunts on the High Plains and the Rockies!

Otherwise, the season was not exceptional for unusual sightings this year. Blue-gray Gnatcatchers occur annually, although in small numbers: at least 2 different individuals (one male and one female) were seen regularly in April. Only one Golden Eagle was seen this spring, on April 18. A very rare black morph of the common Red-tailed Hawk was seen on April 27. Two Northern Mockingbirds were first seen on May 10 (one being captured and banded!). This species was observed again on May 14 and June 2. A Red-bellied Woodpecker was seen on May 9 and 17. On May 21, a Prairie and a Golden-winged Warblers were detected. A few days afterwards, a female Eastern Towhee was banded. A Great Egret was seen flying with 2 Great Blue Herons on May 26 over Wingfield Basin. Also over the Basin, 3 Black-bellied Plovers were flying fast on May 31. The pair of Bald Eagle seen last year seemed to have returned, with the second-year immature now a third-year bird. We will see in the following years if the pair gets established or not!

### **4.0 Banding Data Analysis**

Banding totals for spring, 2005 seem to represent a below average year for many species (see appendix). Many species, especially warblers, were banded at an all-time low, in comparisons with the previous springs. Only a few species (Thrushes, Ovenbird and Sparrows, for instance) were banded in higher than average numbers. Numerous variables could affect the capture rates: population dynamics, weather conditions during migration, vegetation changes at the site, food availability, etc. A minimum of 5 years with a constant effort is needed to determine the general pattern of migration in a given area.

Capture rates varied greatly on a monthly, and even weekly, basis (Fig.1). The

capture rate is determined by dividing the number of birds caught in a net, or a group of nets, by the number of hours for which the net or 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 can be lost when weather conditions (i.e. rain or strong wind) or the presence of a predator are posing a threat to the birds, forcing to close nets. In spring 2005, weekly capture rates were consistently lower than the previous 3 springs, except for 2 periods (Fig.1). Capture rates, very low at the beginning of the season, gradually increased to peak in the third week of May. They decreased slowly afterwards, showing the expected pattern of variation of the spring migration phenology.

However, numbers of caught birds in spring 2005 were not significantly lower than in springs 2003 and 2004 (Fig.2). Thus, the low capture rates of spring 2005 are more the result of a high number of mist net hours. Indeed, only 17% of the potential mist net hours (90 hours per day) were lost in spring 2005, compared to 33% to 40% for the other springs. After April, the number of mist net hours was consistently higher in spring 2005. Weekly variations in mist net hours are important but variable among years and they were less pronounced in spring 2005 (Fig. 3).

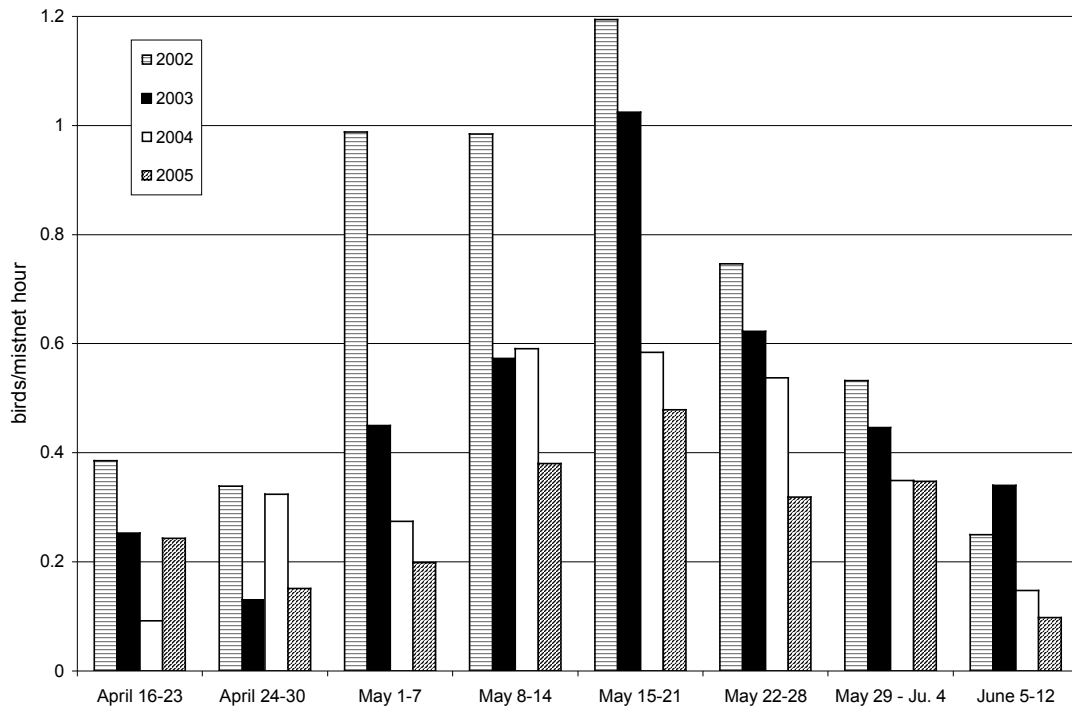


Fig.1. Weekly capture rates at Cabot Head Research Station, springs 2002, 2003, 2004 and 2005.

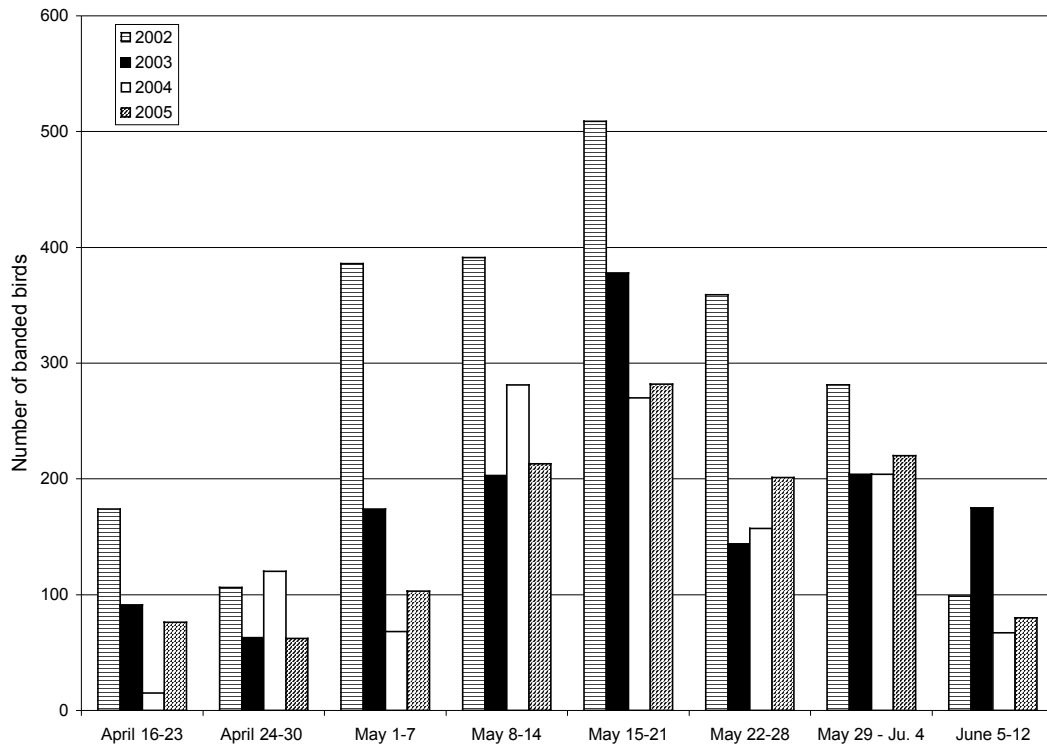


Fig.2. Weekly number of banded birds at Cabot Head Research Station, springs 2002, 2003, 2004 and 2005.

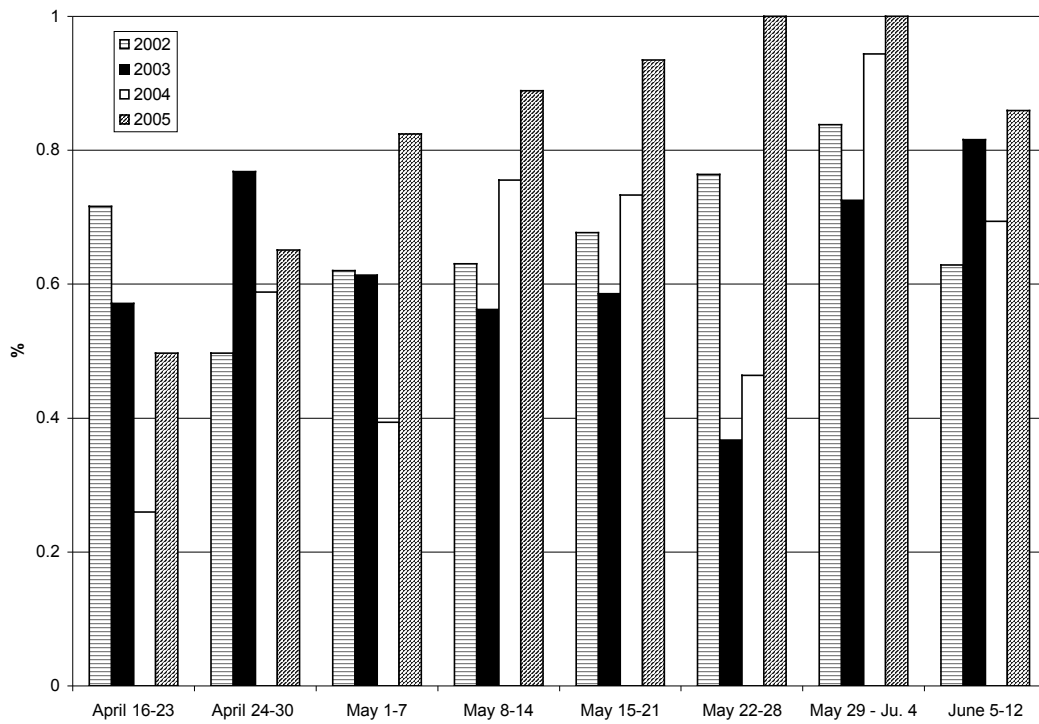


Fig.3. Weekly proportion of realized mist net hours at Cabot Head Research Station, springs 2002, 2003, 2004 and 2005.

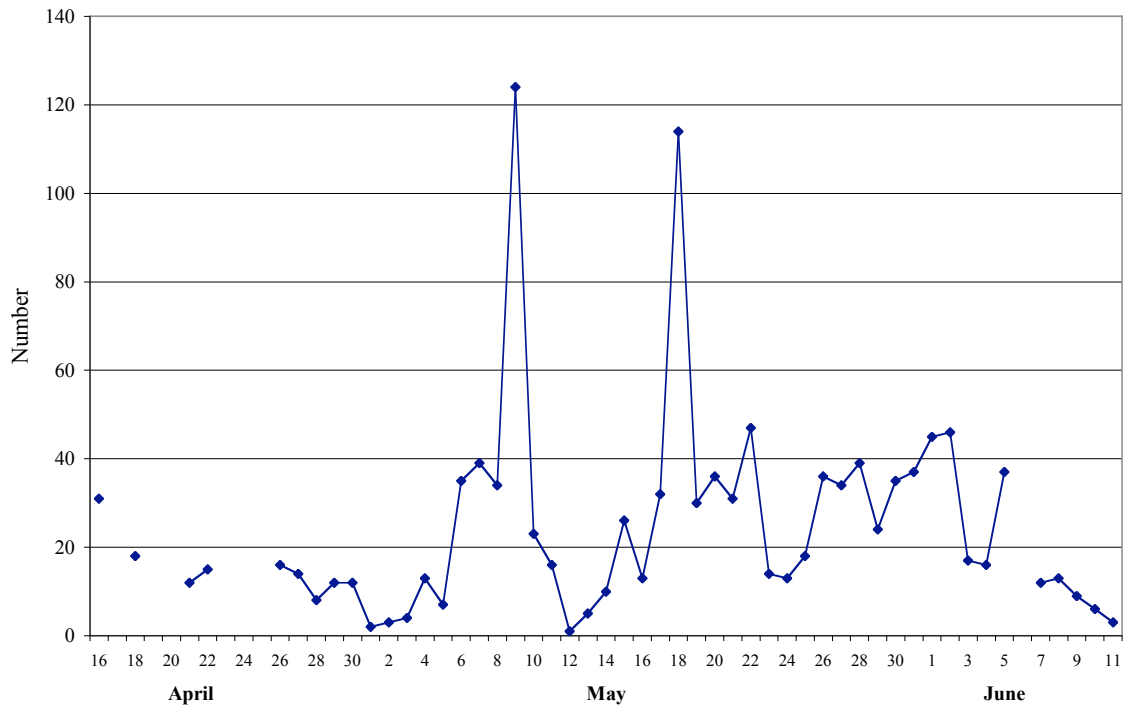


Fig.4. Daily number of banded birds at Cabot Head Research Station, spring 2005.

## **4.1 Weather**

As mentioned earlier, the spring was noticeably cold, but relatively dry. There were only 8 days with recorded precipitation, half of them in April with heavy rain. Periods of high wind also occurred, especially in early May. Weather for June was warm and seasonal. Exceptional this spring were the periods of calm weather: From May 13 to June 11, mist net hours were lost only for 2 days because of showers or strong wind.

The expected effect of the cold spring would be a late migration of several species, such as sparrows and warblers. Arrival times and peak of various warblers were indeed later than the other springs.

Weather has undoubtedly a major effect in migration. From the opening to May 18, despite a few good days, it was frequently cold, overcast and windy, with the usual late snowstorm (hitting on the 24<sup>th</sup> of April, this year). As a consequence, migration was almost blocked most of the time. When the conditions then turned good, the birds moved en masse, as the 2 highest days for banding attest. Afterwards, although still relatively cool, the weather improved greatly: no major fall-outs of birds occurred; instead, it was more a regular flow of birds (Fig.4).

## **4.2 Recaptures**

The rate of recapture at Cabot Head was low in spring, 2005. A total of 105 recaptures for 59 individuals of 18 species were recaptured from April 21 to the last day of banding, June 11. Of 91 White-throated Sparrows and 116 Magnolia Warblers banded this spring, only 2 of each species were recaptured. Moreover, most of the recaptured birds (40 out of 59 individuals) were recaptured only once. It demonstrates that birds are not heavily using this site as a stopover location for rest and refueling which suggests that the majority of landbird species encountered at Cabot Head are passage migrants. According to guidelines and recommendations established by the Canadian Migration Monitoring Network, this is ideal for compiling meaningful population trends (Hussell and Ralph, 1996). The highest rates of recapture are found here for locally breeding species such as the American Redstart.

Contrary to other springs, only a slight majority of recaptures came from birds banded during the season (30 i.e. 51%). This is significant as it indicates of a high return

rate for previously banded birds. They involved mostly local breeding birds, such as American Redstarts (17 in total, from spring 2001 to fall 2004), Red-eyed Vireos (2 from fall 2003 recaptured the same day), and even a Black-throated Green Warbler banded in fall 2003 was recaptured. In all, 28 birds of 9 species previously banded at Cabot Head were recaptured and an impressive 71% of them were banded before fall 2004 (Table 1). One banded bird of “foreign” origin was also recaptured: a Hermit Thrush banded in northwest Ohio on April 23, 2002!

Table 1. Total recaptures by species in relation with the year of banding. (Only one recapture per individual is included and within-season recaptures are excluded)

Species	2001	2002	2003		2004		Foreign	Total
	S	S	S	F	S	F		
Hairy Woodpecker				1		1		2
Red-eyed Vireo				2				2
Black-capped Chickadee						2		2
Hermit Thrush							1	1
American Robin			1					1
Black-throated Green Warbler				1				1
Myrtle Warbler						1		1
American Redstart	2	1	1	2	7	4		17
Ovenbird					1			1
Chipping Sparrow					1			1
<b>Total Recaptures</b>	2	1	2	6	9	8	1	29
<b>Species Total</b>	1	1	3	4	3	4	1	10

S: spring; F: fall.

### 4.3 Net Analysis

Mist net locations at Cabot Head have been permanently set in place and any changes to this array will have to be carefully considered with respect to protocol and existing data sets. The standard net array in spring, 2005 is the same that in the previous two springs and is located primarily in forest edge assemblages although 2 nets are operating in relatively open, shrub habitat (A1-2). There was a significant amount of variation in capture rates for each net (Fig. 5): Like in every spring, the most productive nets were in the block A. The least productive nets were more scattered this spring (A5, B6, C11, 13 & 14). The five nets with the highest capture rate (A1, 2 & 3, B9 and C15) accounted for 58% of the total capture, slightly less than the previous springs 2003 and 2004 (62 and 64%, respectively).

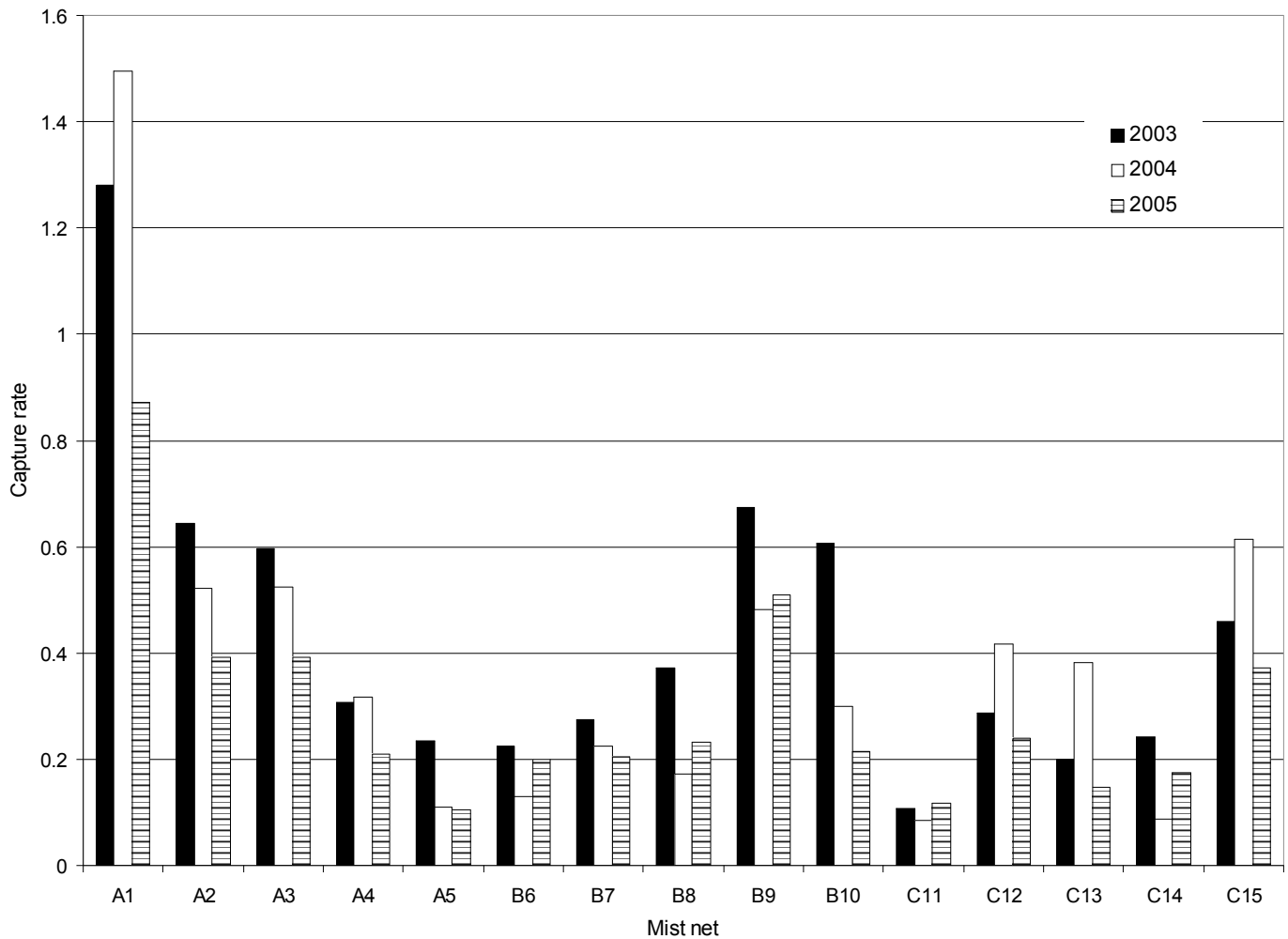


Fig.5: Capture rates per mist net for spring 2003, 2004 and 2005. A1-C15 are net codes referring to specific net locations.

## 5.0 Coverage and Protocol

Notably, only 17% of mist netting coverage (in hours) were lost due to weather, as good weather was a constant after mid-May (Fig.6). Due to the density of habitat at Cabot Head, at least a portion of the nets can usually be operated on windy days. Nevertheless, a strong south wind has the potential of affecting all nets, especially early in season when the leaves are not yet out. While some monitoring was completed on each day of the season, full coverage (90 mist net hours and census) was possible for an incredible 32 days (out of 56, i.e. 57%), due to the exceptional weather. Species coverage

at Cabot Head is consistent with coverage elsewhere in the Great Lakes region of the CMMN (Badzinski and Francis, 2000).

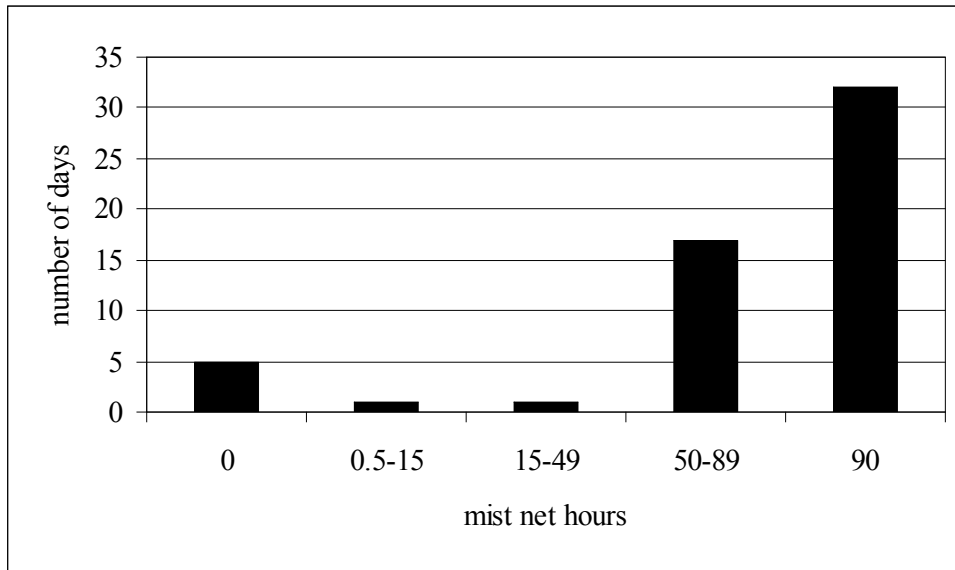


Fig.6. Coverage (in mist net hour) at Cabot Head Research Station, fall 2004.

## 6.0 Personnel

11 volunteers and 2 board members contributed 112 person days to the spring migration monitoring season (Table 2). Many thanks are due to all of them, as they were very dedicated and skilled. Special thanks are also due to Ted Cheskey for assuring the station operation for one day. As a summer student, Lindsay Miller was a great asset for the station during her stay from May 24 to June 15.

Table 2. Volunteer effort, spring 2005.

14+ Days	4-8 Days	1-3 Days
Gilles Burelle	Dave Brewer	Mary-Anne Cain
Alexandra Dufresne	Larry Roszell	Ted Cheskey
Réjean Gaudreault	Jennifer Prior	Deb Diebel
Christine Marquilly	Al Woodhouse	Lyn Elliot
Sarah Richer		Bakiss Lambert

## **7.0 Conclusion**

On the 4<sup>th</sup> spring with monitoring following a similar protocol, a clearer picture of the bird migration at Cabot Head is starting to emerge. Despite a low number of banded birds, the results for spring 2005 appear to be relatively similar than the last 2 previous springs. In fact, it seems that the spring 2002 (with over 2,300 banded birds) may have been out of the ordinary in terms of number of birds caught. The continuing monitoring confirms the need of long-term data to better understand the migration and population dynamics and the importance of the Cabot Head Research Station.

Spring, 2005, was a success as coverage was complete and the data collected was of high quality. Cabot Head is an excellent location for this program as bird concentrations are significant, the facilities are ideal and there is a growing skilled and enthusiastic base of volunteer support. Migration monitoring at Cabot Head Research Station will be ongoing for a period of at least 5 years and will contribute to the efforts of the Canadian Migration Monitoring Network 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 Parks, Ontario Trillium Foundation and O.L.L Fish and Wildlife Fund for their generous financial assistance.

The author wishes to thank all the members of the Bruce Peninsula Bird Observatory, as well as Norah Toth of Ontario Parks for their support during the field season. A special thank is due to Ron Baker as he helped me in so many and various ways and to Ted Cheskey (especially for taking charge of the station one day). I would also like to commend the 11 volunteers and Lindsay, the summer student who helped make the field season efficient and enjoyable.

## Literature Cited

Badzinski, D.S. and C.M. Francis. 2000. *An evaluation of species coverage by the Canadian Migration Monitoring Network*. Unpublished report by Bird Studies Canada.

Cheskey, E.D. and W.G. Wilson. 2001. *Cabot Head Important Bird Area Conservation Plan*. Can. Nature Fed., Bird Studies Canada., Fed. Of Ont. Naturalists. 32 pp.

Derbyshire, D. G. July, 2002. Migration Monitoring at Cabot Head, Spring 2002. Unpublished report for Bruce Peninsula Bird Observatory

Heagy, A., E.D. Cheskey, and D. G. Derbyshire. March 2003. *Migration Monitoring at Cabot Head Research Station, Cabot Head, Ontario: Recommended Protocol for Monitoring Small Landbirds*.

Heagy, A.. April 2002. *Migration Monitoring at Cabot Head Research Station, Cabot Head, Ontario: Recommended Protocol for Monitoring Small Landbirds*.

Heagy, Audrey. January 2000. *Landbird Migration Monitoring at Cabot Head, Ontario, 2001*. Unpublished report by Bruce Peninsula Bird Observatory.

Hussell, D.J.T. and C.J. Ralph. *Recommended Methods for Monitoring Bird Populations by Counting and Capture of Migrants*. Report of Intensive Sites Technical Committee of the US/Canada Migration Monitoring Council.

Menu, S. June, 2003. Migration Monitoring at Cabot Head, Spring 2003. Unpublished report for Bruce Peninsula Bird Observatory

Menu, S. June, 2004. Migration Monitoring at Cabot Head, Spring 2004. Unpublished report for Bruce Peninsula Bird Observatory

## Appendix

Species	2005	2004	2003	2002	Av.	Species	2005	2004	2003	2002	Av.
Sharp shinned Hawk	10	10	20	29	17.3	Magnolia Warbler	116	109	144	184	138
Hairy Woodpecker	1			1		Cape May Warbler	2		1	9	4
<b>Yellow-bellied Sapsucker</b>	2		1		1.5	Black-thr. Blue Warbler	19	21	64	36	35
Pileated Woodpecker	1		1			Yellow-rumped Warbler	28	49	68	244	97.3
<b>Yellow-shafted Flicker</b>	8		1	1	3.33	Black-thr. Green Warbler	15	25	27	38	26.3
WHIP-POOR-WILL	1					Blackburnian Warbler	5	2	4	13	6
Eastern Wood-Pewee	2	1	8		3.67	Pine Warbler	1	2	1	4	2
<b>Yellow-bellied Flycatcher</b>	22	17	22	15	19	Western Palm Warbler	38	55	61	216	92.5
<b>Trail's Flycatcher</b>	18	11	13	14	14	Bay-breasted Warbler	3	1	1	11	4
<i>Least Flycatcher</i>	20	22	17	9	17	Blackpoll Warbler	1	1	4	4	2.5
<i>Eastern Phoebe</i>	4	3	2	5	3.5	Black-and-White Warbler	42	45	72	78	59.3
Blue-headed Vireo	1			6		American Redstart	152	223	171	204	188
Philadelphia Vireo	1		2	2	1.67	<b>Ovenbird</b>	40	26	27	37	32.5
Red-eyed Vireo	10	14	13	10	11.8	<b>Northern Waterthrush</b>	7	2	3	2	3.5
Blue Jay	16	88	21	13	34.5	Mourning Warbler	9	11	12	14	11.5
Barn Swallow	2			1		Common Yellowthroat	49	45	60	56	52.5
Black-capped Chickadee	6	14	6	342	92	Wilson's Warbler	16	20	25	32	23.3
Red-breasted Nuthatch	2	2	1	17	5.5	Canada Warbler	13	22	24	19	19.5
<i>Brown Creeper</i>	20	9	30	6	16.3	American Tree Sparrow	2	2	3	5	3
House Wren	2			2		Chipping Sparrow	20	17	14	47	24.5
Winter Wren	1	3	2	2	2	Clay-colored Sparrow	1			2	
Golden-crowned Kinglet	33	36	77	6	38	Field Sparrow	1			1	
Ruby-crowned Kinglet	81	74	145	79	94.8	Savannah Sparrow	1	1	3	1	1.5
Veery	6	21	4	1	8	Fox Sparrow	1		2	2	1.67
<i>Gray-cheeked Thrush</i>	4	5	3	1	3.25	Song Sparrow	8	9	19	12	12
<b>Swainson's Thrush</b>	27	21	12	13	18.3	<b>Lincoln's Sparrow</b>	25	11	10	17	15.8
<b>Hermit Thrush</b>	16	6	14	8	11	<b>Swamp Sparrow</b>	6	6	4	3	4.75
<b>Wood Thrush</b>	2	1	1	1	1.25	<b>White-throated Sparrow</b>	91	26	25	71	53.3
American Robin	6	5	15	8	8.5	<b>E. White-cr. Sparrow</b>	69	14	19	17	29.8
<b>Gray Catbird</b>	17	11	16	11	13.8	Dark-eyed Junco	19	20	25	69	33.3
<b>Brown Thrasher</b>	8	6	7	3	6	Eastern Towhee	1	2			
Cedar Waxwing	3		4			Northern Cardinal	1		1	1	1
Orange-crowned Warbler	8	8	5	29	12.5	Rose-breasted Grosbeak	2	3	4	1	2.5
Nashville Warbler	49	18	61	227	88.8	<i>Indigo Bunting</i>	4	5	1	3	3.25
Northern Parula	1		9	3	4.33	American Goldfinch	1	1	4	41	11.8
Yellow Warbler	4	8	16	22	12.5	<b>Total</b>	1236	1210	1479	2431	1589
Chestnut-sided Warbler	12	14	20	26	18	<b>Species Total</b>	72	62	69	74	69.3

Av.: Average (only for species captured at least during 3 seasons)

**Bold:** Record high established in spring 2005 (period 2002-2005)

*Italic:* Above average (period 2002-2005)

SMALL CAPS: Indicated first spring banding record for CHRS (period 2002-2005)

Data: for 2002: Derebyshire, 2002; for 2003: Menu, 2003 for 2004: Menu, 2004

E. White-cr. Sparrow: Eastern White-crowned Sparrow