



St. Andrews Bird Banding Station 2005 Fall Migration-Monitoring Report

The St. Andrews Bird Banding Station has successfully completed its fourth full fall migration-monitoring season, with the monetary support of the NB Wildlife Trust Fund. The funds were used as budgeted which was to support and train volunteers and write up the season's results. This year more was spent on travel than originally planned, as one of the volunteers was only able to stay for five weeks instead of the usual six.

Summary of 2005 Fall Migration

The 2005 fall migration-monitoring project started on August 24th and the Station's 14 mist nets were opened every day that weather permitted, until October 29th. The nets were taken down November 5th. Many days were lost to wind and rain this season as the effects of hurricanes (Katrina and Wilma) and tropical storms hit the area. The total of 49 banding days is the lowest for the project so far.

The same 14 net lanes, used in previous years, were used again in 2005. All the nets are located in low second-growth vegetation in and around semi-open old fields. The eight nets, which make up "HMA", are at the top of the "hill" surrounded by a forest of tall spruce trees, and the six nets of "HMB" are at the bottom of the "hill" in an alder thicket on the shore of the St. Croix Estuary.

The Canadian Migration Monitoring Network (CMMN) protocol, which has been followed in previous years, was used again in 2005. A Canadian Wildlife Service numbered band was put on each bird. All birds were aged, sexed, weighed, measured, fat scored and checked for signs of moult. The date, net number and time of capture were also recorded. A Banding Log sheet was filled out for every day that the nets were open. This Log summarizes the number of each species captured in each net area, the time the nets were opened and closed, the weather conditions at opening and closing time, and daily sightings. Each day we estimated how many birds of each species were in the banding area (daily estimated total, DET) and attempted to distinguish between those that may be migrants moving through (probable known stopovers, PKS).

A total of 1232 birds, representing 55 species were banded ([Table 1](#)). Eighteen individuals banded in previous years were recaptured, and 12 Ruby-throated Hummingbirds were caught and released. There were 117 retraps, birds that had been banded earlier in 2005. An adult Ruffed Grouse was also captured and released unbanded.

There were three days when over 50 birds were banded. Blackpoll Warblers made up the majority of the 51 birds banded September 18th as their migration numbers peaked. Black-capped Chickadees were on the move towards the end

of September. Of the 53 birds banded September 22nd, 31 were chickadees and on September 25th, 31 of the 50 were chickadees. The most lopsided day was September 29th when 35 of the 42 birds were American Goldfinch.

The highest diversity of species was seen September 2nd, when 20 species were captured as mixed flocks of warblers moved through. In 2004, these mixed flocks of warblers moved through at the end of September.

The most commonly banded species for 2005 was the Blackpoll Warbler, followed by the Black-capped Chickadee (Table 2). This is very different from the previous two years. Neither species appeared in top ten for 2004 and they only ranked 4th and 6th in 2003. The 144 was a record for that species and while we did not have the huge invasion of Black-capped Chickadee that we saw in 2001, the 135 banded this year was more than the three previous years combined.

Table 2: The ten most commonly banded fall species 2005 - 2003

2005	2004	2003
Blackpoll Warbler	White-throated Sparrow	American Goldfinch
Black-capped Chickadee	American Goldfinch	White-throated Sparrow
American Goldfinch	Black-thr Green Warbler	Song Sparrow
White-throated Sparrow	Song Sparrow	Black-capped Chickadee
Magnolia Warbler	Common Yellowthroat	Common Yellowthroat
Song Sparrow	Magnolia Warbler	Blackpoll Warbler
Common Yellowthroat	Golden-crowned Kinglet	Myrtle Warbler
Black-thr. Green Warbler	Ruby-crowned Kinglet	Magnolia Warbler
American Redstart	Nashville Warbler	Red-eyed Vireo
Golden-crowned Kinglet	Myrtle Warbler	Slate-coloured Junco

Highlights



the huge beak.

1. The Station's first Pileated Woodpecker. This was an impressive bird not only in size, but also in lung capacity. It was a surprise to catch as the mist nets are designed for small birds and large ones usually bounce out. It was a two-person job to band the bird, as one has to be respectful of

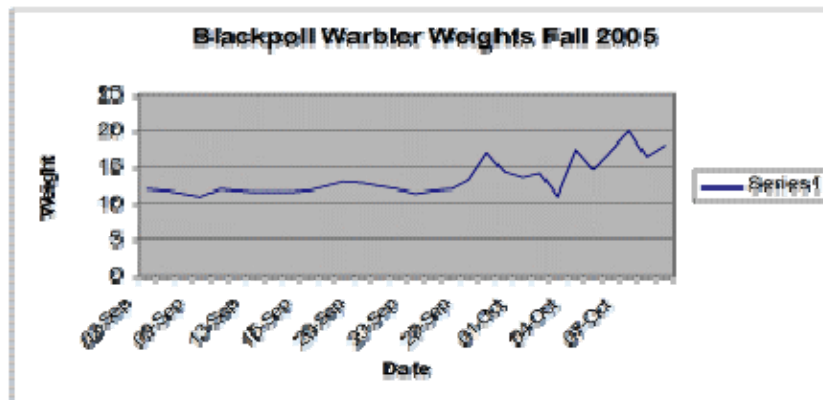
2. The Station's first Connecticut Warbler. This species is very rare in New Brunswick and a rare bird report complete with photos has been submitted to the NB Bird Records Committee.

3. The Station's second Scarlet Tanager - a green hatch-year male.

4. The Station's second Gray-cheeked Thrush.

5. A total of 144 Blackpoll Warblers. This is twice as many as the previous best year (64 in 2003) and more than the last seven years combined. Blackpolls started appearing the first week in September, with numbers peaking around the 16th - 18th. They moved through steadily until the middle of October, the last ones were released on October 11th. Blackpolls have an interesting migration strategy, as they fly non-stop from the southeastern Canada out over the Atlantic to their wintering ground in South America. In order to accomplish this feat, they need to "fatten up". A lean Blackpoll, with a fat score of 1 or 0, usually weighs around 11 - 13 grams. As they prepare to migrate, they literally double their weight and increase the fat to "butterball" proportions and a fat score of 4 or 5. This fat is the fuel for the over water flight. Graph 1 illustrates the progressive weight change throughout the fall months and it looks like one group left at the beginning of October and another group left the middle of the October.

Graph 1 - Weight changes in Blackpoll Warblers through the 2005 fall banding season.



Recaptures

Small birds live short fast-paced lives and most do not make it through their first year. Those that survive often return to familiar places and through recapture records we can piece together their life histories. Table 3 outlines the recapture events in the life of 1930-66772, a male Myrtle Warbler. The following interpretation is open to discussion.

Table 3: Recapture record of Myrtle Warbler 1930-66772

	Year	Age	Date - Location	Date - Location	Date - Location
Originally Banded	1998	HY	1 Sept - HMa8	-	-
Not Seen	1999	-	-	-	-
Recaptured	2000	2 yrs	6 May - HMa5	20 May - HMa5	3 June - HMa9
Recaptured	2001	3 yrs	13 May - HMa4	-	-
Recaptured	2002	4 yrs	15 May - HMa8	-	-
Recaptured	2003	5 yrs	30 May - HMa2	-	-
Recaptured	2004	6 yrs	15 May - HMa5	9 July - HMa6	-
Recaptured	2005	7 yrs	21 May -	-	-

			HMa6		
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The bird hatched and fledged sometime in the summer of 1998. On its first migration south it was caught in net HMa8, banded and became 1930-66772. Returning north for the second time (2000) the bird was recaptured very close to the net in which he was originally caught. The dates suggest that the bird may have been looking for a breeding territory close to the HMA net area. For the next three years 1930-66772 was only seen as he passed through to a territory outside the net area. It appears he followed the same route each year and the difference in timing may be weather related. In 2004 he followed his usual route north, but wandering south early may be due to a failed nesting season. In 2005 he was back north on schedule moving through area HMA to a destination farther north. This is just one interpretation of the data, but shows what results we can infer from banding and recapture data.

At seven years old 1930-66772 does not hold the record for the Station's oldest Myrtle Warbler, that place is held by 1930-66910 at eight years 5 months. Table 4 shows the longevity records that were added to the Stations database in 2005.

Table 4: New Station longevity records from birds recaptured in the fall 2005

Species	Minimum AgeYr - months	Band Number	Original Banding Date	Age When Banded	Date of Last Capture
Purple Finch	5 - 09	2181-51070	13-May-01	AHY*	30-Sept-05
Golden-crowned Kinglet	3 - 10	2260-88674	4-Sept-03	AHY*	5-Oct-05

*AHY = After-hatch year

To estimate the age of a bird, for banding purposes, all birds have a birthday January 1st. This helps simplify the calculations as we don't know exactly when an individual bird hatched. Using the Purple Finch as an example: the time of year and plumage characteristics would tell the bander that the bird was not born the year it was captured (2001), but we would not have been able to determine the exact year it was hatched; therefore, it was aged as an AHY (after-hatch-year). The earliest that it could have hatched in order to have the plumage observed would be 2000 and as we last saw it in September 2005 we calculate a minimum age of 5 years. September is the ninth month, so we calculate that the bird is a minimum of five years and nine months old.

The same procedure is followed for Golden-crowned Kinglet 2260-88674. The shape of the tail feathers and the ossification pattern of the skull would have let

us age the bird as an adult in September 2003. The earliest it could have hatched would be 2002 giving it an age of 3 years and October is the 10th month; therefore, a minimum age of 3 years 10 months for this 6 gram bird.

The species recaptured during the fall 2005 season are summarized in Table 5, according to the year in which they were banded and the age when originally banded. Most of the birds recaptured in the fall were probably migrants as they were also banded in the fall and not seen at any other time of year.

Table 5: Birds recaptured during the Fall Migration-Monitoring Project 2005

Species	Year when originally banded				Total	Age when originally banded			
	2004	2003	2002	2001		HY	SY	AHY	ASY
Downy Woodpecker	1	-	-	-	1	-	-	-	1
Alder Flycatcher	1	-	-	-	1	-	-	1	-
Purple Finch	-	-	1	1	2	-	-	2	-
American Goldfinch	-	-	1	1	2	-	2	-	-
White-throated Sparrow	4	-	-	-	4	3	1	-	-
Song Sparrow	-	1	-	-	1	-	-	1	-
Magnolia Warbler	1	-	1	-	2	-	-	1	1
Black-capped Chickadee	4	2	1	1	8	6	-	2	-
Total	11	3	4	3	21	9	3	7	2

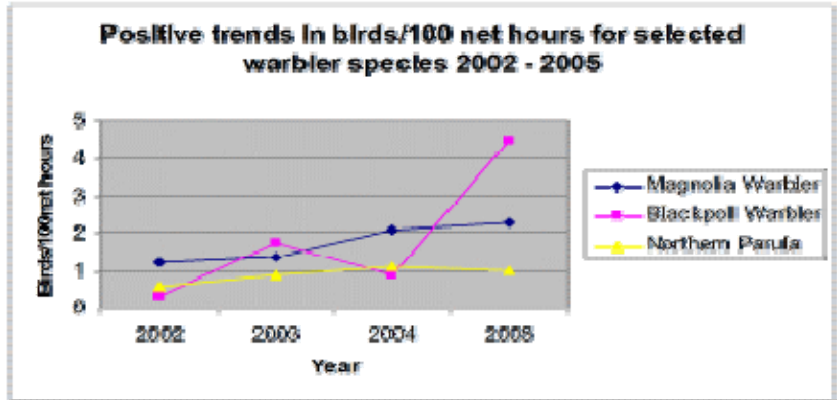
Trends

The Canadian Migration Monitoring Network uses five years as a minimum standard in order to measure trends and take out yearly fluctuations in birds caught per 100 net hours of effort. The St. Andrews Bird Banding Station now has four years of data when the nets were open for at least five hours a day (weather permitting). Some trends are starting to emerge, but one year (high or low) can make a difference in a positive or negative trend.

The following compares the numbers of birds per 100 net hours of effort and only includes species with at least 10 individuals banded in two of the four years (Table 1).

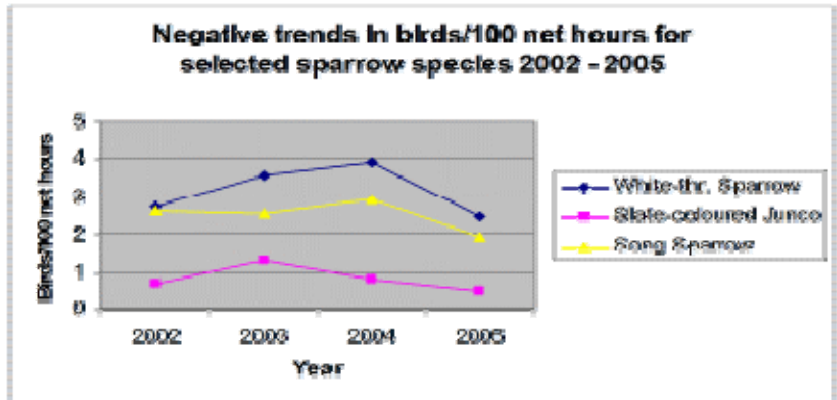
A. Species that show a general *positive* trend from 2002 to 2005:

American Blue-headed Black-&White Northern Parula	Goldfinch Vireo Warbler	Magnolia Blackpoll Black-throated Warbler Northern Waterthrush	warbler Warbler Green Swainson's American Robin	American Black-capped Swainson's American Robin	Redstart Chickadee Thrush
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B. Species that show a general *negative* trend from 2002 to 2005:

Alder White-throated Slate-coloured Song Swamp Sparrow	Flycatcher Sparrow Junco Sparrow	Red-eyed Yellow Myrtle Ovenbird Common Yellowthroat	Vireo Warbler Warbler	Gray Golden-crowned Ruby-crowned Hermit Thrush	Catbird Kinglet Kinglet
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C. Species that *do not* show a marked change from 2002 to 2005:

Nashville
Brown Creeper

Warbler

The trends shown on page 8 will become more "accurate" as the database grows. For now it seems that the short distance migrants that winter in the lower United States are showing more declines than the long-distance migrants that winter in the tropics and sub-tropics.

Sharing Data

The raw data from the 2005 banding season has been entered into the BandManager computer program and is ready to be submitted to the Canadian Wildlife Service. A summary of the fall banding project has been sent to Bird Studies Canada as part of the Canadian Migration Monitoring Network and will also appear in the Atlantic Flyway Review - Northeast Region article of North American Bird Bander.

Public Education

The St. Andrews Bird Banding Station is closely tied to the HMSC Public Education Department and all students on campus are invited to come and see the birds. Students from Bell, South Carleton and Saint John High Schools, as well as Ashbury College, the University of New Brunswick and the University of Western Ontario took advantage of the offer. We also had some visitors from off-campus. Banding demonstrations are an important part of the Station's mandate. Apart from learning what information banding/tagging project collect, it is important for people to know how they can contribute if they find a banded bird.

Acknowledgements

Thank you to volunteers Joanna Hubbard and Peter Doherty for their enthusiasm, hard work and dedication to the individual birds as well as the banding protocol.

Thank you to the NEW BRUNSWICK WILDLIFE COUNCIL for providing major financial support for the daily operation of the Station.

Thank you to the HUNTSMAN MARINE SCIENCE CENTRE for all the in-kind support which allowed the Station to successfully complete its fourth fall migration-monitoring banding season.