THE TORONTO SPRING WARBLER MIGRATION COUNT – 2005

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This report will summarize the Toronto results from the 2005 Warbler Count. The Warbler Count has been held in Toronto since 1970 though 1985 and 1986 were missed. Twenty-one species of warblers and three other passerines - Swainson's Thrush, Scarlet Tanager and Rose-breasted Grosbeak - are counted. We ask that any individuals of other warbler species be recorded but because of their low numbers do not include them in the averaging. The study period is May 1 to June 5. Each year several study areas are covered in Toronto which allows for an averaging of results to increase the accuracy of the data. The length of the route through each study area should only be what can be covered in an hour on a day of heavy migration. This keeps the study areas to roughly equal size.

The short-term purpose of the Warbler Count is to provide a record of songbird migration each spring. The long-term goal is to study how the numbers of warblers counted are changing over time. The count will also provide baseline data on arrival dates and relative numbers for each warbler species passing through the Toronto area.

If you would like more information about the Warbler Count or are intersted in doing a warbler count in a specific area please contact Tom Flinn by mail at 26 Marigold Ave., Toronto, ON M4M 3B2 or by e-mail at sphoebe@idirect.com. There is no charge for participating in the Spring Warbler Count.

THE OBSERVERS AND THE STUDY AREAS

In 2005 there were seven study areas in Toronto. The study areas are mostly wooded areas (ravines, hillsides, parks, cemeteries) surrounded by built-up areas of the city. Their positions within heavily built-up residential and industrial areas discourages those species that would normally nest in this part of Ontario from setting up territories. Although this may result in lower counts than could be obtained in richer habitats away from the city it also reduces the problem of sorting out the resident birds from the migrants.

There were several changes in the lineup of observers for the 2005 Warbler Count. Mike Solomon used to count the Cedarvale area for several years up to and icluding 2003 and has now rejoined Bob Carsewell in covering Cedarvale. Steven Favier has joined Don Barnett in covering High Park. There were major changes in the observers for Mount Pleasant Cemetery and Moore Park Ravine. New observers for these areas are Attila Fust, Rob Miller and Kevin Seymour. Special thanks must be extended to Mary Schuster for her efforts in finding and coordinating these new observers. Mary also had Harry Kerr come out on some days. Harry had been involved with the Warbler Count for many years. Hugh Currie was back doing some counting in Wychwood Park. On the other hand, Ed Johns did not cover Pine Hills Cemetery in 2005 and the search for a replacement to cover Pine Hills or another area in Scarborough continues. Other observers not involved in the count in 2005 were Lynne Terris, Roger Powley and Neil and Shirley Macdougall. Their contributions will be missed and we wish them luck with all of their other projects. To all the observers I extend my heartfelt thanks. Without you there would be no warbler count.

Table 1 lists the study areas, the number of visits made to each of them in 2005, and the name of the person(s) responsible for each area. All the observers are competent, experienced birders capable of identifying all species by voice and in all plumages. The participants showed great dedication in getting up and out almost every morning for five weeks.

TABLE 1 - OBSERVERS AND STUDY AREAS

Study Areas	No. of Visits	Observers
Brookbanks Ravine	33	Naish McHugh, Jean Iron, Ron Pittaway, Carol Horner
Cedarvale Park/Ravine	21	Bob Carsewell, Mike Solomon
High Park North	36	Don Barnett, Steven Favier
Moore Park Ravine	19	M. Schuster, K. Seymour, H. Kerr, R. Miller
Mount Pleasant Cemetery	29	Attila Fust, Kevin Seymour
Unwin Avenue	36	Tom Flinn, Don Peuramaki
Wychwood Park	30	Herb Elliott, Jess MacKenzie, Hugh Currie
Total Visits in Toronto	204	

This year each of the sudy areas received an average of 29.1 visits during the course of the Warbler Count. This is very close to lasts year's average of 29.5 visits.

THE COUNT

In the next four sections we will look at the results of this year's warbler count in the following ways: first we will look at the overall number of warblers observed, following this we will look at the pattern of this year's migration and finally we will look at some numbers for individual species from this year's count and do a brief comparison with the individual species numbers from previous counts.

Table 2 sets out the combined observations for 2005 for the seven study areas covered in Toronto for each of the 24 species studied. The totals for each day and each species are given. In addition the average number of warblers per visit per day (the gross daily total divided by the number of visits that day) is shown and I call that figure Daily Warblers per Visit. The phrase warblers per visit is used so frequently in this report that hereafter I will use the acronym WPV in its place. This average is much more meaningful than the simple total of the birds observed. It eliminates problems that result from a different number of observers going out on a given day and thus allows for direct comparisons of daily results. Further, by using warblers per visit we can compare days from different weeks, months or even years. Also calculated is a Yearly WPV figure for each individual species which is shown in Table 4. For any given species this is obtained by dividing the total number of observations of that species over the five weeks of the study by the total number of visits from Table 1 above. Following the Yearly WPV figures for an individual species over a number of years allows us to see how the reported numbers of that species are changing over time.

YEARLY WARBLERS PER VISIT

The single most important number to characterize the year's migration as a whole is the average warblers per visit for the year (hereafter Yearly WPV). This figure is obtained by dividing the total number of warblers seen during the five weeks (2147) by the total number of visits (204). Thus the Yearly WPV for 2005 is 10.5. Now we can compare 2005 with the other years of the Warbler Count (see Table 3 below).

As we can see from Table 3 the Yearly WPV figure for 2005 at 10.5 is above the Yearly WPV figure for 2004 and continues an upward trend that began in 2002. When we look at the Yearly BPV figures for the 33 years for which we have data we see that the 2005 figure falls roughly in the middle of the range of figures that has been obtained.

The 2005 result can be further placed in context by looking at it within the framework of a pattern we have already identified. In the 2001 Spring Warbler Migration in Ontario report we used Yearly WPV figures to divide the entire study into four periods. We used the figure of 10 warblers per visit as the cutoff point for defining the four periods. This cutoff point remains reasonable given that when we combine all figures from 1970 to 2005 we obtain an average Yearly WPV of 10.4 from 91,372 warblers recorded in 8,825 visits. Using this cutoff point resulted in us having two high periods (1970-1980 and 1990-1997) where the Yearly WPV figures are above 10 and two low periods (1981-1989 and 1998-2001) where the Yearly WPV figures are below 10. There are some years where the Yearly WPV figure does not follow the criteria for the period they are in but in no period are there two consecutive years where the Yearly WPV figure does not meet the criteria of that period. Yearly WPV figures remained below 10 in 2002-2004 continuing the low period begun in 1998.

Last year I boldy predicted that the 2005 Yearly WPV figure would be below 10 fitting in with the low period which has prevailed since 1998. I must admit that I am not unhappy that that prediction did not come true. The next few years will be very interesting as we will find out whether the increasing trend that began in 2002 continues and we see the movement into the next high period or Yearly WPV figures again drop below 10 indicating we are still in the low period that began in 1998.

TABLE 2
WARBLER COUNT - TORONTO TOTALS 2005

SPRING WARBLER COUNT 2005
Seven Toronto Plots Combined

	May																												June					Totals
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	1	2	3	4	5	
Bl.-&-Wh.						2	4	5	1	1	10	4		4	9	4	6	12	8	1						3		1		1							**76**
Tenness.											1				2		3	6	3	3	7	4	1	1		1	4	1	2		1						**40**
Nashville						6	4	8	8	8	12	6	2	15	8	14	15	14	3	8	2	2			1	1	2										**139**
Yellow					2	1	7	12	9	14	15	11	12	16	17	10	8	7	11	7	8	6	2	1		2	2	1	1	1	1	1	1				**186**
Magnolia										2	3	1		7	10	2	3	13	17	14	8	7	4	3	3	21	8	8	7	6	5	4	1	2			**159**
Cape May							1			1					1			3	2		1	1															**10**
BT Blue						1	4	1	1	10	12	4	1	15	8	8	7	24	8	12	1	3	1	2	2	6	1	2	1		1				1			**137**
Yel.-rump	2	5	2	3	11	31	19	24	8	20	31	15	4	38	18	27	32	21	2	6	6	3	1	1			1										**331**
BT Green					1	3	3	3	1	4	15	2		23	9	7	12	26	3	3	2	5	3	2		2	6	7	1		3		1	1	1			**149**
Blackburn.							1	1		2	6	1	1	8	10	14	14	24	5	5	5	3	3	4	5	3	3										**118**
Chestnut								2		5	8	2	1	25	14	19	16	22	19	8	7	6	1	3	2	6	2	10	4	4	3	2		2		1	**194**
Bay-breast										1		1		4	3	1	2	17	8	2	2		3		2		1										**47**
Blackpoll											1						1	1	1	1	2	2	2	1	6	7	4	5	4	4	2	2			1		**47**
Palm	1				2	9	6	4	2		3	4	2	4	2	4	4	6		2																	**55**
Ovenbird						1	3	2	2	8	3			10	10	7	5	11	4	7	5	1	2	2		9	2	4			3				2		**103**
N. Water		1					1		1	1				1		1	3	2			2			1										1			**15**
Mourning																		1						1		3	1		1	1	1		1				**10**
C. Yellwthrt						2	1			1	3		2	4	5	2	4	3	4	4	4	5	6	2	2	7	9	7	3	3	6	4	4	2	2	3	**104**
Wilson's							1			1					2			1	1						1	4	6	2	4	1	2	4		1	1		**32**
Canada											1	1		1	1						1		2	1	1		5	3		3	1	2					**23**
A. Redst.										1	7	4	2	12	10	1	2	20	17	6	8	6	1	8	2	16	13	13	4	7	4	5		1	2		**172**
Daily Total	**3**	**6**	**2**	**3**	**16**	**56**	**55**	**62**	**33**	**80**	**131**	**56**	**27**	**187**	**139**	**121**	**137**	**234**	**116**	**89**	**71**	**54**	**32**	**33**	**27**	**91**	**70**	**64**	**32**	**31**	**33**	**24**	**8**	**10**	**10**	**4**	**2147**
# of Visits	5	5	6	5	6	6	7	6	6	7	7	5	5	6	6	6	6	5	5	6	6	5	4	5	5	6	5	7	4	6	6	5	6	7	5	6	**204**
Warb / Visit	**1**	**1**	**0**	**1**	**3**	**9**	**8**	**10**	**6**	**11**	**19**	**11**	**5**	**31**	**23**	**20**	**23**	**47**	**23**	**15**	**12**	**11**	**8**	**7**	**5**	**15**	**14**	**9**	**8**	**5**	**6**	**5**	**1**	**1**	**2**	**1**	**10.5**
Rounded to the closest whole number																																					
Swain Thr.										3	2		2	7	4	3	1	14	8	5	3	2	3	2	7	6	7	12	9	3	1	2					**106**
Scar Tan.										6	9	1		5	9		4	14	3	3	1			1	2	1	3	6	2	1		1					**72**
Rose-br Gr.					1	1	3	1		19	9	4	3	13	19	11	6	20	7	2	8	5	2	2	1	3	4	4	3				1	1			**153**

TABLE 3 - YEARLY WPV - 1970 TO 2005

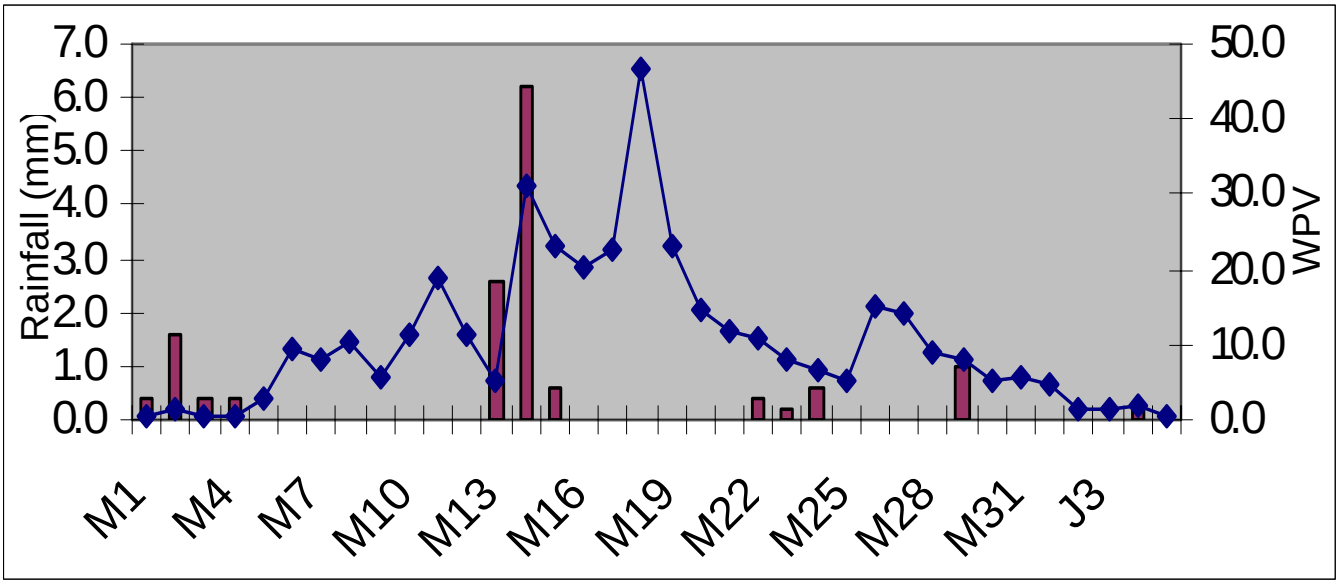
Year	Visits	Warblers	Yearly WPV	Year	Visits	Warblers	Yearly WPV
1970	117	1413	12.1	1988	198	1537	7.7
1971	99	1248	12.6	1989	149	1013	6.8
1972	249	2622	10.5	1990	221	2587	11.7
1973	269	3071	11.4	1991	263	2805	10.7
1974	303	3174	10.5	1992	294	2676	9.1
1975	301	2921	9.7	1993	349	5641	16.2
1976	243	4466	18.4	1994	299	4017	13.4
1977	271	3007	11.1	1995	369	5170	14.0
1978	242	2321	9.6	1996	360	4518	12.6
1979	201	2826	14.1	1997	467	5247	11.2
1980	203	2340	11.5	1998	439	2867	6.5
1981	237	1436	6.1	1999	411	3837	9.3
1982	216	1721	8.0	2000	364	4606	12.7
1983	150	1051	7.0	2001	329	1725	5.2
1984	108	864	8.0	2002	277	1736	6.3
1985	No Count Taken			2003	200	1568	7.8
1986	No Count Taken			2004	236	1881	8.0
1987	187	1313	7.0	2005	204	2147	10.5

THE MIGRATION PATTERN

Graph 1 shows the pattern of migration for the 21 species of study warblers as a group by displaying the Daily WPV figures. Keeping in mind the 2005 Yearly BPV figure of 10.5 makes peaks in Daily WPV quite obvious. The bars on the graph represent rainfall amounts.

Those of you who have followed the Warbler Count results for a number of years will recognize that this year's pattern of migration looks quite similar to what I call the 'usual' pattern of migration. The 'usual' pattern for Toronto runs something as follows: there is a mini-peak in the first week of May mainly made up of Yellow- rumped and Palm Warblers with smaller numbers of other species, the first major peak of the year comes in the second

GRAPH 1 - DAILY WPV AND RAINFALL IN 2005



week of May when species diversity goes up and we are likely to see the peak numbers for species like Nashville and Black-throated Green Warblers, the highest peak of the year comes in the third week of the year with the greatest species diversity and a final peak in the fourth week of May includes the peak numbers for later migrants like American Redstart and Magnolia, Wilson's and Canada warblers. Of course there is yearly variation but one near constant is that the highest peak for the year falls in the third week of May.

When we look at Graph 1 we see that there was no mini-peak in the first week of May and that, indeed, there was almost a complete absence of warblers during the period May 01-04. Temperatures during this period were unseasonably cold with north winds and there was very little migration. The last two weeks of April were also cool and many people commented to me that there were few Yellow-rumped Warblers around before the start of our count period. Peaks during the first week of May are almost always dominated by Yellow-rumped Warbler.

In 2005 the first peak of warbler migration did not occur until the second week of May and happened on May 11 with a Daily WPV figure of 18.7. Species diversity was good with 16 species of warbler recorded as well as all three of Swainson's Thrush, Scarlet Tanager and Rose-breasted Grosbeak. While no species recorded their peak number for the year on May 11 there were good numbers of Black-&-White, Nashville, Yellow, Black-throated Blue, Yellow-rumped and Black-throated Green Warblers. There was also a decent early push of Chestnut-sided Warblers and American Redstarts. Finally, May 11 produced our first records for 2005 for Tennessee, Blackpoll and Canada Warblers.

The second-largest peak of the year also occured during the second week of May and came on May 14 with a Daily WPV figure of 31.2. Species diversity was good with 16 species of warbler recorded as well as all three of Swainson's Thrush, Scarlet Tanager and Rose-breasted Grosbeak. Individual species that achieved their peak number for the year on that date were Nashville (tie with May 17), Yellow-rumped and Chestnut-sided Warblers.

When we look at the third week of May we find that every day was over the Yearly WPV figure of 10.5 with Daily WPV figures ranging from a low of 11.8 on May 21 to a high of 46.8 on May 18. In 2005 the third week of May was certainly the best time to see large numbers of migrant warblers. May 18 was the highest peak of the year and species diversity was very good with 20 of our 21 count species of warbler being recorded as well as all three of Swainson's Thrush, Scarlet Tanager and Rose-breasted Grosbeak. Individual species that achieved their peak number for the year on that date were Black-&-White, Black-throated Blue Black-throated Green, Blackburnian and Bay-breasted Warblers, Ovenbird, American Redstart, Swainson's Thrush, Scarlet Tanager and Rose-breasted Grosbeak.

The final peak of this year's migration occurred during the fourth week of May on May 26 & 27 when daily WPV figures were 15.2 and 14.0 respectively. Species diversity was still good with 18 species of warbler reported over the two days as well as all three of Swainson's Thrush, Scarlet Tanager and Rose-breasted Grosbeak. Individual species that achieved their peak number for the year at this time were Magnolia, Blackpoll, Mourning, Wilson's and Canada Warblers as well as Common Yellowthroat. After this warbler numbers declined to very low values by June 02.

Each year we take a cursory look at how rainfall has effected the pattern of migration. During the count period in 2005 there really was very little rainfall. There were only two days out of 36 where Environment Canada recorded more than 2 mm of rainfall and by no means is 2 mm a significant amount. On May 13 there was 2.6 mm of rain but the Daily WPV for that day was 5.4 or roughly half of the Yearly WPV figure. On May 14 there was 6.2 mm of rain and we have already identified this day as having the second-highest peak for the year. There was so little rainfall during the count that it really is difficult to decide whether it had any significant bearing on the pattern of migration in 2005. While May 14 was a peak day and its Daily WPV was probably enhanced by the rainfall on that day, I think that the lack of rainfall during the count period was more significant in terms of the pattern of migration obtained for 2005.

To continue in this vein, it seems that the absence of any significant weather events allowed this year's pattern of migration to unfold in a way that mirrors what conventional wisdom would suggest is the 'usual' pattern of migration. In 2004 the pattern of migration was dominated by the double peaks of May 09-11 and May 23-24 both of which were very strongly weather related. We have already commented on the lack of rainfall during the count period this year. To quantify it, in 2005 there was a total of only 14.6 mm of rainfall during the count period compared with 106.0 mm in 2004 and 171.6 mm in 2003. Besides the lack of rainfall in 2005 there was also a lack of any densely foggy mornings which can often lead to good Daily WPV values nor were there any strong pushes of southerly air across the region which can lead to large numbers of migrants moving into broad areas of southern Ontario.

A LOOK AT INDIVIDUAL SPECIES

We have learned over the course of this study that for any given species there can be a large variation in numbers recorded from one year to the next and that this variation does not necessarily indicate any trend in the longer term. That said, it is still interesting to compare the current year's results with those of immediately previous years.

The following are lists of the five most commonly seen warbler species for the year (in descending order of abundance):

2001 - American Redstart, Magnolia, Chestnut-sided, Yellow-rumped and Nashville. (53.0%)
2002 - Yellow-rumped, Magnolia, American Redstart, Chestnut-sided and Yellow. (51.4%)
2003 - Yellow-rumped, Magnolia, Chestnut-sided, American Redstart and Nashville. (51.3%)
2004 - Yellow-rumped, Magnolia, American Redstart, Chestnut-sided and Yellow. (51.9%)
2005 - Yellow-rumped, Chestnut-sided, Yellow, American Redstart and Magnolia. (48.5%)

It will be noticed that the 2002 and 2004 lists are the same even though the Yearly WPV value for those two years is quite different (see Table 3). The percentage in parentheses at the end of each list shows what percentage of the total yearly number of warblers is made up of the combined totals of the five most commonly seen species for that year. Note that the figure of 48.5% for 2005 is the lowest in the last five years and that Magnolia Warbler has dropped from its usual residence in second place all the way down to fifth place on the 2005 list.

Table 4 shows Yearly WPV values for each of our 24 count species. The 2005 and 2004 Yearly WPV figures are shown as well as three longer term numbers, namely the average Yearly WPV for the periods 2001-2005, 1996-2005 and 1970-2005. The column called Standing merely gives a visual representation of whether the 2005 Yearly WPV figure is higher, lower or the same as the other figures. It will also be noted that by looking at the three longer term figures the reader will quickly be able to get some information on trends in Yearly WPV figures for any of the 24 species.

TABLE 4 - YEARLY WPV FOR INDIVIDUAL SPECIES

Species	2005 WPV	2004 WPV	2001 to 2005	1996 to 2005	1970 to 2005	Standing	Species	2005 WPV	2004 WPV	2001 to 2005	1996 to 2005	1970 to 2005	Standing
Bl.-&-Wh.	0.37	0.28	0.28	0.39	0.50	+ + - -	Blackpoll	0.23	0.16	0.17	0.25	0.25	+ + - -
Tennes.	0.20	0.23	0.20	0.34	0.65	- = - -	Palm	0.27	0.33	0.20	0.16	0.12	- + + +
Nashville	0.68	0.42	0.45	0.63	0.68	+ + + =	Ovenbird	0.50	0.33	0.32	0.46	0.55	+ + + -
Yellow	0.91	0.50	0.50	0.59	0.55	+ + + +	N Watr Thr	0.07	0.04	0.04	0.07	0.09	+ + = -
Magnol.	0.78	0.86	0.75	0.87	0.89	- + - -	Mourning	0.05	0.07	0.04	0.05	0.07	- + = -
Cape May	0.05	0.04	0.03	0.07	0.16	+ + - -	Yelthroat	0.51	0.39	0.33	0.36	0.34	+ + + +
Bl-thr Blue	0.67	0.35	0.45	0.57	0.57	+ + + +	Wilson's	0.16	0.21	0.18	0.18	0.16	- - - =
Yel-rump.	1.62	1.60	1.08	1.62	1.30	+ + = +	Canada	0.11	0.14	0.09	0.14	0.26	- + - -
Bl-thr Gr	0.73	0.49	0.41	0.43	0.60	+ + + +	A Redst	0.84	0.60	0.68	0.86	0.94	+ + - -
Blackburn	0.58	0.21	0.24	0.26	0.43	+ + + +	Swainsons	0.52	0.42	0.45	0.70	0.90	+ + - -
Chestside	0.95	0.59	0.67	0.60	0.80	+ + + +	Scarlet	0.35	0.15	0.15	0.17	0.25	+ + + +
Baybreas	0.23	0.12	0.19	0.26	0.45	+ + - -	RBG	0.75	0.64	0.54	0.62	0.93	+ + + -

Whenever we have a large increase or decrease in the overall Yearly WPV figure (that for the 21 species of warbler as a group as given in Table 3 above) we can use the Yearly WPV values for individual species to see which are most responsible for driving that increase or decrease. In southern Ontario the first species that must be considered is the Yellow-rumped Warbler because as the most abundant of our migrant warblers it is the one species that can effect the largest changes in the overall Yearly WPV figure. When we look at Table 4 we see that the Yearly WPV figure for Yellow-rumped Warbler for 2005 is up but by less than 2% over the 2004 figure. Thus we see that Yellow-rumped Warbler cannot be primarily responsible the the roughly 20% increase in the overall Yearly WPV figures for 2005 over 2004. When we look at the other four of our five most common warbler species we see that Magnolia Warbler actually has a lower Yearly WPV figure for 2005 than for 2004. However, the Yearly WPV figures for Chestnut-sided Warbler, Yellow Warbler and American Redstart are all up substantially in 2005 versus 2004. This still does not completely explain the large increase in the overall Yearly WPV figure for 2005 over 2004. We can see from Table 4 that 15 of the 21 warbler count species obtained better numbers in 2005 than in 2004. We also saw above that the percentage of all warblers counted that comes from the five most common species is actually lower in 2005 than 2004. These two facts mean that the increase in overall numbers is the result of increases in a wide variety of species and is not limited to changes in the numbers for the five most common species.

We will break this down further by looking at all of the 24 species we count. First, let us look at the six warbler species whose 2005 Yearly WPV figures were lower than those for 2004:

Magnolia Warbler - the 2005 figure is above the average Yearly WPV figure for 2001-2005 but below the two longer term averages for 1996-2005 and 1970-2005.

Canada Warbler - the numbers duplicate the pattern shown by Magnolia Warbler.

Mourning Warbler - very similar to the Magnolia Warbler pattern but the 2005 number matches the 1996-2005 average.

Palm Warbler - the number for 2005 actually ties 2003 as the second highest Yearly WPV value for this species during the entire history of the count.

Tennessee Warbler - the 2005 number ties the 2001-2005 average but is substantially below the longer averages for 1996-2005 and 1970-2005.

Wilson's Warbler - the 2005 number is below the averages for 2001-2005 and 1996-2005 but above that for 1970-2005.

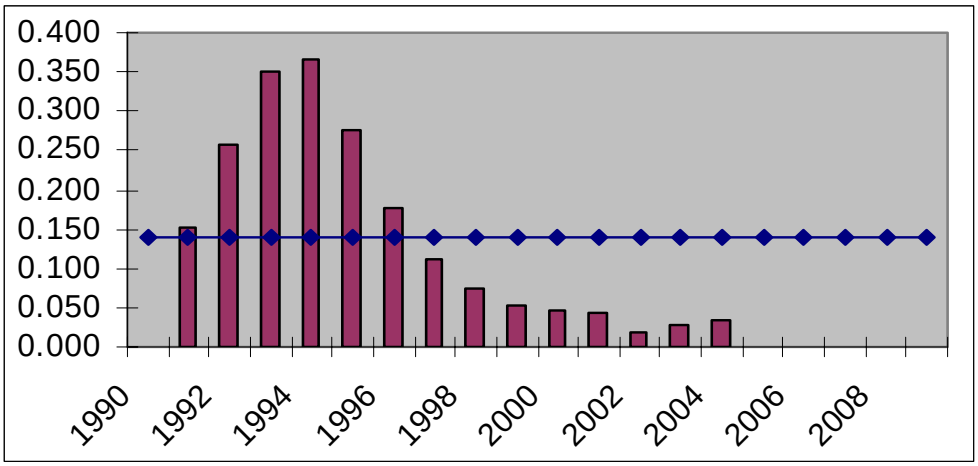
We see from this that only Tennessee and Wilson's Warblers had really bad years.

Now let us look at the species for which for 2005 Yearly WPV figure is higher than that for 2004. Instead of using only numbers from Table 4 (which the reader can decipher for themselves) I compared the 2005 Yearly WPV figures with the unpublished ones that show every year for each species. From these I will list the year each species last obtained numbers higher than their 2005 figure:
2003 - Black-&-white Warbler.
2002 - Swainson's Thrush.
2001 - Bay-breasted Warbler.
2000 - Nashville, Cape May, Black-throated Blue, Yellow-rumped and Blackpoll Warblers, Ovenbird, Northern Waterthrush, American Redstart and Rose-breasted Grosbeak.
1995 - Black-throated Green, Blackburnian and Chestnut-sided Warblers.
1993 - Scarlet Tanager.
1984 - Yellow Warbler. 2005 was the second highest in the history of the count.
1970 - Common Yellowthroat. 2005 was the second highest in the history of the count.
When we recall that 2000 was the last year with an overall Yearly WPV figure higher than 10.0 it should come as no surprise that the above breakdown shows very many individual species having their best year since 2000.

THE CAPE MAY WARBLER SINCE 1990

In 1999 as a result of the paucity of sightings we began to examine the Cape May Warbler records going back to 1990. While the Cape May warbler was never found in abundant numbers on the Warbler Count in the mid-1990's we saw the start of a precipitous decline in terms of WPV for this species. Graph 2 below shows our results since 1990 using a rolling three year average to generate the WPV figures. The horizontal line represents a Yearly WPV figure of 0.141 which is the average from 1990-2005. One can also look at Table 4 above to see some other average Yearly WPV figures for the Cape May Warbler. The results of the most recent years are listed below:
2001 - Yearly WPV figure of 0.006 from 2 Cape Mays recorded in 329 total visits.
2002 - Yearly WPV figure of 0.036 from 10 Cape Mays recorded in 277 total visits.
2003 - Yearly WPV figure of 0.010 from 2 Cape Mays recorded in 200 total visits.
2004 - Yearly WPV figure of 0.038 from 9 Cape Mays recorded in 236 total visits.
2005 - Yearly WPV figure of 0.049 from 10 Cape Mays recorded in 204 total visits.
While the results of all five years are very low, those from 2001 and 2003 are extremely low. Recent results are certainly still low enough for us to continue special monitoring but we remain hopeful that numbers will recover in coming years. It will be recalled from our look at individual species above that 2005 results for Bay-breasted Warbler were encouraging while those for Tennessee Warbler were quite low. As the other two species in the trio of spruce budworm specialists it is likely that we will not see any large recovery in numbers for Cape May Warbler until the numbers for these other two species also begin to rise.

GRAPH 2 - CAPE MAY WARBLER ROLLING THREE YEAR AVERAGE WPV 1990-2004



OTHER WARBLERS

Several species of warbler are not included in our analysis because too few are observed in any given year. However, the numbers and species of these other warblers are not only interesting but also provide another subjective

measure of the overall state of the year's migration. Those reported are set out in Table 5. For the names of the observers please refer to Table 1.

TABLE 5 - OTHER WARBLERS

Species	Number	Date(s)	Study Plot
Blue-Winged Warbler	1	May 10	Unwin Avenue
	1	May 11	Cedarvale
Connecticut Warbler	1	May 28	Unwin Avenue
Northern Parula	1	May 11, 13	Unwin Avenue
	1	May 14	Moore Park Ravine
	1	May 14-16	High Park
	1	May 15	Brookbank Ravine
	1	May 15-18	Unwin Avenue
	1	May 18	Brookbank Ravine
	1	May 18	High Park
	1	May 18	Moore Park Ravine
	1	May 22	Moore Park Ravine
	1	May 24	Brookbank Ravine
	1	May 31	Unwin Avenue
Orange-Crowned Warbler	1	May 09, 14	Unwin Avenue
	1	May 15	High Park
	1	May 16	Unwin Avenue
	1	May 17	Wychwood Park
Pine Warbler	1	May 05-06	Unwin Avenue
	1	May 06	High Park
	1	May 19	High Park
	1	May 28-29, 31	High Park
	1	June 04-05	High Park

When we compare Table 5 to the list of other warblers for 2004 two things are obvious. First is the increase in the number of sightings of Northern Parula. The second is the lack of diversity recorded. In 2004 there were 9 species listed in Table 5 and in 2005 there are only 5 species. In terms of warbler diversity, there were no species recorded in 2005 that were not observed in 2004. The four species recorded in 2004 but not in 2005 were Cerulean Warbler, Golden-winged Warbler, Louisiana Waterthrush and Yellow-breasted Chat. The most common of our other warblers is again Northern Parula. In 2005 there were 17 sightings of Northern Parula which compares with 5 in 2004, 32 in 2003, 8 in 2002, 5 in 2001and 29 in 2000. Besides Northern Parula, Orange-crowned and Pine warblers have been recorded in every year from 2000 to 2005. It is interesting to note that Pine Warbler observations in 2005 that extended very late into the count period.

SUMMARY

The 2005 Warbler Count achieved a Yearly WPV figure of 10.5 which is the highest Yearly WPV figure obtained since 2000. This was accomplished by having eight of our count species obtaining their highest individual Yearly WPV figures since 2000 and for an additional five species we had to go even further back in time to find higher numbers. Thus the high overall Yearly WPV figure for 2005 is the result of increased numbers for a broad range of warbler species and not just the most common ones. When compared with the average WPV figure for 1970-2005 which is 10.4 we find that the 2005 Yearly WPV figure may be indicating that we are entering another high period in terms of the warblers that we count. The next few years will either confirm the beginning of a new high period or we may see that the 2005 numbers are a bit of an aberration and we return to Yearly WPV figures more in line with the period 2001-2004. The pattern of this year's migration was very much what one would say was the 'usual' pattern of migration for our area with the highest numbers of warblers recorded during the third week of May (May 15-21). This can be mainly attributed to the lack of any significant weather events occuring during the count period. The Cape May Warbler remains of special concern with 2005 continuing the trend of very low results obtained since 2000. Finally, 2005 was a good year for observations in Toronto for some of the more uncommon species of warbler even though fewer species were recorded than in 2004.

Many thanks to the observers listed in Table 1 who graciously supplied their time and expertise to count the birds in their study areas. Due to some observers wanting to decrease their participation in the warbler count there is an continued need for new observers to join our ranks for the coming years. Any assistance you can provide would be most appreciated. The weather data in this report was obtained from the Environment Canada website.