

AN UNPRECEDENTED SPRING INCURSION OF SOUTHEASTERN NORTH AMERICAN LANDBIRDS TO COASTAL NEW YORK

S. S. Mitra

Biology Department, College of Staten Island,
2800 Victory Blvd., Staten Island, NY 10314
mitra@mail.csi.cuny.edu

Patricia J. Lindsay

28 Mystic Circle, Bay Shore, NY 11706

Abstract—Spring 2005 brought an extraordinary influx of southern-breeding landbirds to New York City and Long Island. Unprecedented numbers of Yellow-throated, Prothonotary, and Swainson's warblers were observed from Staten Island to Montauk. Unusually large numbers of Worm-eating, Kentucky, and Hooded warblers, Summer Tanagers, and Blue Grosbeaks were also noted. No fewer than five Swainson's Warblers were reported, accompanied by varied levels of documentation, including Suffolk County's first in Paul Gillen's Cutchogue backyard on 12 May. This incursion was historically unique not only in terms of the total number of records, but also with respect to the number of species and the breadth of dates and localities involved. Analysis of data from throughout the Northeast yields qualified support for each of three scenarios proposed to explain spring incursions such as those observed during spring 2005.

New York City and Long Island (*Kingbird* Region 10) constitute an ecologically distinctive region within New York State, featuring many floral and faunal affinities with southeastern North America. The list of bird species whose geographic distributions within New York State show discontinuities at or near the limits of this region is impressive: Ruffed Grouse, Black Vulture, Barred Owl, Pileated Woodpecker, and Common Raven are but the most striking examples of species rare, absent, or extirpated from Region 10, but abundant and widespread immediately to the west and north; conversely, one could list dozens of species, especially those dependent on pelagic and maritime environments, that occur regularly in coastal New York, but which are very rare or absent upstate. Particularly interesting among the latter category is a list of landbirds not dependent on marine environments *per se*: Western Kingbird and Lark Sparrow en route from western breeding grounds, and southeastern-breeding species such as Yellow-throated, Prothonotary, and Kentucky warblers, Summer Tanager, and Blue Grosbeak. Although several of these species breed elsewhere in New York State, it is in Region 10's urban parks, at its coastal vagrant traps, and, increasingly, within its remaining pine and oak woodlands, that these species are most often found in the state.

It should also be noted that Region 10 is large and heterogeneous enough to feature striking variation from site to site in the expected status of many species.

For example, despite Long Island's southeastern North American affinities, it is nevertheless a relatively poor place within New York State to see Hooded Warbler, a classic Carolinian Zone species. Although routine at migrant traps in New York City and numerous at breeding stations in nearby mainland portions of southern New York State and southern New England, this species is generally a very scarce passage migrant and rare breeder on Long Island, east of the city parks. Conversely, although Blue Grosbeaks appear to have established a regular breeding presence in central-eastern Long Island, this bird is still a good find on the outer beaches and remains very rare anywhere else.

Viewed in the context of these expectations, the events of spring 2005 were not only unusual, but also very informative. In terms of sheer magnitude, species diversity, geographic breadth, and temporal duration, this season's incursion was unique. It inspired lively debates—in the field, on the internet, and in other forums—regarding its possible causes. In our judgment, the various explanations could be divided into three categories: active dispersal by pioneering individuals deliberately prospecting new breeding areas (articulated by Dick Veit in the Hudson-Delaware Region report, in press in *North American Birds*); passive 'overshooting' of normal migration destinations, as a consequence of unusually favorable weather for migration; and passive dispersal arising from the over-water displacement of long-distance migrants by a discrete weather event (Bagg 1955). Although these hypotheses are not necessarily mutually exclusive, each generates unique predictions that can be tested against the data collected this spring by observers throughout New York and the Northeast.

Underlying the active dispersal mechanism are demographic trends within populations of a particular species. If, for instance, populations of Prothonotary Warblers in southern New Jersey produced unusually many young in 2004, one might expect a surge in records around the periphery of these populations the following year, reflecting pioneers searching for unoccupied breeding sites. Because this model is intimately tied to the population dynamics of particular species, one would not generally predict that the populations of multiple, ecologically disparate species would experience precisely the same trends, in the same places, during the same season—although this might be possible under some circumstances. Other predictions of this model are that the extralimital occurrences produced in this fashion should be spread over a broad range of dates and concentrated at sites resembling breeding stations for the species in question.

The notion that general trends in the weather can produce striking and diverse effects on spring migration is almost an axiom. Whereas sustained periods of cold temperatures and northerly winds tend to retard spring arrivals, warm temperatures and southwesterly airflow are often accompanied by waves of migrants, including both locally breeding species and passage-migrants destined for breeding sites to the north. It seems natural to infer that, in addition to these two categories of migrants, species at or just beyond the northern limits of their geographic ranges in New York might also be especially numerous or conspicuous here during periods of exceptionally favorable weather. The most obvious prediction of this model is that the unusual records it seeks to explain ought to be accompanied by a simultaneous wave of more ordinary records of species expected in terms of date and location. Other predictions of this explanation are that extralimital records ought to be clustered around at most a few particular

dates, and that the localities of these records ought to be biased toward suitable breeding sites, in keeping with the analogy that this model makes between 'overshooting' species and locally breeding species that often arrive en masse under favorable weather circumstances.

Even more than the warm-weather, 'overshoot' model just discussed, the displacement hypothesis is a passive process from the birds' point of view. First articulated by Aaron Bagg (1955) and restated by many successors, this model proposes that migrants en route from the tropics to Florida and the Gulf Coast are sometimes deflected to the east of their intended tracks by discrete weather events. Displaced over the open waters of the Atlantic Ocean, some might continue flying north until they make landfalls along the outer coasts of Long Island, Cape Cod, and Nova Scotia. Predictions of this model include unusually early dates for the species involved, the concentration of records on particular dates and at coastal vagrant traps, and a paucity of correlated arrivals by more expected migrant species.

To test the various predictions outlined above, we collected detailed data concerning records of eight southeastern-breeding Neotropical migrant landbirds in coastal New York State during spring 2005; we reviewed the historical occurrence of six of these species in Region 10; and we reviewed relevant spring 2005 migration data from elsewhere in New York State and the Northeast.

Records from Spring 2005 in Coastal New York State

This section presents a detailed accounting of spring 2005 records from Region 10 for several species of southeastern-breeding Neotropical migrant landbirds. Yellow-throated Warbler, Prothonotary Warbler, Swainson's Warbler, Kentucky Warbler, Summer Tanager, and Blue Grosbeak were selected for analysis because of their general similarities in terms of geographical distribution and migratory phenology, and because it was possible to enumerate virtually all records of them in Region 10 during spring 2005. Worm-eating Warbler and Hooded Warbler were also considered, although, as noted below, it proved difficult to collect all records of these species from the western portion of Region 10. Even so, a reasonably complete summary was compiled for Hooded Warbler, and a summary restricted to Nassau and Suffolk Counties was compiled for Worm-eating Warbler.

A great deal of attention was paid to determining the actual number of individuals of all species. At relatively small sites that were scrutinized daily by multiple experienced observers, we relied in part on the judgement of these observers, and also on the principle that long-staying individuals were unlikely to go completely undetected for many days at a time. At larger sites, where coverage was less thorough and the likelihood of attempted breeding greater (e.g., the areas around Flanders and Shelter Island/Northwest Woods), we were more conservative in attributing well-spaced reports to multiple birds. Ambiguous cases are noted in the tables below through the use of question marks, e.g., '2nd bird?'

Table 1. **Yellow-throated Warbler.** At least 16 individuals were observed during spring 2005 in coastal NYS, the dates ranging from 6 April to 30 May. Records from Central Park were believed to reflect at least four individuals, including birds identified as belonging to both the coastal plain (*dominica*) and interior (*albilora*) subspecies. The record from Pleasure Drive on 30 May involved a male singing persistently in plausible breeding habitat near Flanders (pers. obs).

Location	Date	Observers	Notes
Hempstead Lake SP, <i>Nassau</i>	6-9 Apr	SS, mob	
Central Park, <i>New York</i>	7-11 Apr	DG	2 birds 8 Apr
Wolfe's Pond Park, <i>Richmond</i>	9 Apr	EJ, ZJ	
Clove Lakes Park, <i>Richmond</i>	11 Apr	ES-C	
Prospect Park, <i>Kings</i>	11-12 Apr	PD	
Blue Heron Pond Park, <i>Richmond</i>	13-14 Apr	CH, SWo	
Central Park, <i>New York</i>	21 Apr-2 May	AGe	3rd bird
Sag Harbor, <i>Suffolk</i>	23 Apr	HM	
Alley Pond Park, <i>Queens</i>	24 Apr	KOL	
Upper E Side, <i>New York</i>	25 Apr	PJ	
Bald Hill, <i>Suffolk</i>	9 May	S&JB	
Mashomack Preserve, <i>Suffolk</i>	10 May	MSch	
Cedar Point Park, <i>Suffolk</i>	15 May	LBe, BN	
Central Park, <i>New York</i>	15-19 May	BM, mob	4th bird
Pleasure Drive, <i>Suffolk</i>	30 May	PL, SM	

Table 2. **Prothonotary Warbler.** At least 26, and probably more, individuals were observed during spring 2005 in coastal NYS, the dates ranging from 30 March into June. The latest record involved a male singing persistently in plausible breeding habitat near Flanders (T. Burke and H. McGuinness, pers. comm.).

Location	Date	Observers	Notes
Forest Park, <i>Queens</i>	30 Mar-17 Apr	K&RB, mob	2 birds 3-6 Apr
Hempstead Lake SP, <i>Nassau</i>	6-12 Apr	EM, mob	
Robert Moses SP, <i>Suffolk</i>	6-13 Apr	KF, mob	
Jamaica Bay WR, <i>Queens</i>	8 Apr		
Cunningham Park, <i>Queens</i>	9 Apr	AO	SY m
Wertheim NWR, <i>Suffolk</i>	9 Apr	NYSBirds	2 birds
Prospect Park, <i>Kings</i>	13-15 Apr	MZ	
Central Park, <i>New York</i>	14 Apr-1 May	mob	
Clove Lakes P, <i>Richmond</i>	21-25 Apr	MSh, mob	m
East Lake Drive, <i>Suffolk</i>	22 Apr	VB	
Blue Heron Pond P, <i>Rich.</i>	24 Apr	MSh, SWo, IG	
Central Park, <i>New York</i>	25 Apr	mob	
Alley Pond Park, <i>Queens</i>	25 Apr	fide JL	
Forest Park, <i>Queens</i>	26 Apr	mob	

Clove Lakes P, <i>Richmond</i>	30 Apr	HF	2 birds
Mount Loretto P, <i>Richmond</i>	1 May	JS	
Prospect Park, <i>Kings</i>	1 May	NYSBirds	
Conf. House P, <i>Richmond</i>	4 May	SWo	
Big Reed Pond, <i>Suffolk</i>	9 May	JGI	
Hempstead Lake SP, <i>Nassau</i>	10 May	JQ, mob	
Clove Lakes P, <i>Richmond</i>	11 May	ZJ, SWo	
Prospect Park, <i>Kings</i>	15 May	fide AxW	
Maple Swamp, <i>Suffolk</i>	29 May-5 Jun	TB, mob	

Table 3. **Worm-eating Warbler.** This summary is restricted to Nassau and Suffolk Counties only, as the number of records from the New York City parks is unmanageable. At Central Park alone, Deborah Allen concluded that ‘several’ were present on 1 May, 10+ on 10 May, and ‘many’ on 12 May. It seems likely that several dozen individuals passed through the park between 21 Apr and 14 May. Region-wide dates ranged from 21 April to 31 May, the two late dates again representing territorial birds near Flanders (pers. obs.) and at Sunken Meadow SP (K. Feustel).

Location	Date	Observers	Notes
Hempstead Lake SP, <i>Nassau</i>	1 May	mob	
Jones Beach WE, <i>Nassau</i>	3 May	PL, JQ	
Maple Swamp, <i>Suffolk</i>	6, 14, 30 May	AB, PL, SM, mob	m, terr
Massapequa Pres., <i>Nassau</i>	9 May	SBi	
Hunter’s Garden, <i>Suffolk</i>	9 May	S&JBe	
Bald Hill, <i>Suffolk</i>	13 May	AB	
Culloden Woods, <i>Suffolk</i>	? May	VB	2 birds
Mashomack Pres., <i>Suffolk</i>	13, 20 May	JGI, mob	
Sunken Meadow SP, <i>Suffolk</i>	14-31 May	KF	m, terr
Rocky Pt. Pres., <i>Suffolk</i>	20 May	JH	

Table 4. **Swainson’s Warbler.** Five individuals were reported during spring 2005 in coastal New York State, including the first record ever for Suffolk County. Dates ranged from 12 April to 27 May.

Location	Date	Observers	Notes
Forest Park, <i>Queens</i>	12-17 Apr	JL, mob!	rep to nysarc
Central Park, <i>New York</i>	6-8 May	JD, mob	
Hempstead Lake SP, <i>Nassau</i>	1 May	MB, AW, mob!	rep to nysarc
Cutchogue, <i>Suffolk</i>	12 May	PG!	rep to nysarc
Great Kills Park, <i>Richmond</i>	27 May	DE	rep to nysarc

Table 5. **Kentucky Warbler.** 12-13 individuals were recorded during spring 2005 in coastal NYS, the dates ranging from 22 Apr-18 May.

Location	Date	Observers	Notes
Clove Lakes Park, <i>Richmond</i>	22-30 Apr	EJ, mob	
Alley Pond Park, <i>Queens</i>	24 Apr	SA, KOL	
Jones Beach West End, <i>Nassau</i>	26 Apr		
Prospect Park, <i>Kings</i>	3, 5, 9 & 10 May	RE, RJ	2 birds?
Jamaica Bay WR, <i>Queens</i>	8 May	StS	m
Clove Lakes Park, <i>Richmond</i>	8 May	DE	
Central Park, <i>New York</i>	10 May	JG, mob	
Central Park, <i>New York</i>	10-14 May	JD, TF, mob	2nd bird
Hempstead Lake SP, <i>Nassau</i>	10 May	KF	
Hunter's Garden, <i>Suffolk</i>	10 May	AB	
Clove Lakes Park, <i>Richmond</i>	18 May	DE, CN	
Jamaica Bay WR, <i>Queens</i>	18 May	MB, SS, AW	

Table 6. **Hooded Warbler.** This list of 26+ birds from 7 Apr-30 May is likely a major underestimate; Central Park alone hosted multiple, but uncounted, birds of both sexes. At least 9 were found in Suffolk County, including several from Maple Swamp and Mashomack Preserve suggestive of attempted breeding.

Location	Date	Observers	Notes
Riverside Park, <i>New York</i>	7 Apr	BV	
Blue Heron Pond P, <i>Richmond</i>	9 & 22 Apr	MSh, CC	2 birds?
Central Park, <i>New York</i>	18 Apr-27 May	mob	mult m & f
Prospect Park, <i>Kings</i>	20 Apr	ME	
Blue Heron Pond P, <i>Richmond</i>	30 Apr-4 May	RJ, SSi	
Jamaica Bay WR, <i>Queens</i>	3 May		
Conf. House Park, <i>Richmond</i>	4 May	RJ, SSi	
Forest Park, <i>Queens</i>	4 May	AO	
Hunter's Garden, <i>Suffolk</i>	4 May	CSt	
Alley Pond Park, <i>Queens</i>	5 May	DK	
Maple Swamp, <i>Suffolk</i>	6 May	AB	
Clove Lakes Park, <i>Richmond</i>	8-9 & 18-19 May	AOB et al.	2 birds?
Bald Hill, <i>Suffolk</i>	9 May	S&JBe	
Conf. House Park, <i>Richmond</i>	9-10 May	AOB, JLeP, SWo	
Graniteville Swamp, <i>Rich.</i>	10 May	fide SWo	
Massapequa Pres., <i>Nassau</i>	10 May	DB m	
Barcelona Neck, <i>Suffolk</i>	10 May	BB	
Maple Swamp, <i>Suffolk</i>	12 & 30 May	AB, PL, SM	2+ birds terr
Mashomack Pres., <i>Suffolk</i>	12-27 May	TD, mob	
High Rock Park, <i>Richmond</i>	14 May	HF	
Hither Woods, <i>Suffolk</i>	15-16 May	PS	
Clove Lakes Park, <i>Richmond</i>	19-20 May	MSh, AOB	
Owl's Head Park, <i>Kings</i>	23 May	AOB	

Table 7. **Summer Tanager.** At least 26, and possibly 29 or more, were recorded in coastal NYS, the dates ranging from 7 Apr-31 May.

Location	Date	Observers	Notes
Hempstead Lake SP, <i>Nassau</i>	7-10 Apr	JG, mob	m
Clove Lakes Park, <i>Richmond</i>	20-22 Apr	EJ	f
Prospect Park, <i>Kings</i>	23 Apr	RJ	
Napeague, <i>Suffolk</i>	26 Apr	RKo	
Central Park, <i>New York</i>	2-31 May	mob	3+ birds
Forest Park, <i>Queens</i>	3-4 May	KH	SY m
Prospect Park, <i>Kings</i>	5 May	PD	
Huntington, <i>Suffolk</i>	6 May	DS	m
Conf. House Park, <i>Richmond</i>	7 May	MSh, SWo	pair
Hunter's Garden, <i>Suffolk</i>	10 May	RA	
Jones Beach SP, <i>Nassau</i>	10 May	DK	
Clove Lakes Park, <i>Richmond</i>	11 May	IG	
Orient, <i>Suffolk</i>	11 May	RO	
Bald Hill, <i>Suffolk</i>	11 May	AB	m, f
Montauk, <i>Suffolk</i>	12 May	VB	
Forest Park, <i>Queens</i>	14 May	DK	SY m
Riverside Park, <i>New York</i>	17 May	DA, RSi	SY m
Northwest Woods, <i>Suffolk</i>	18 May	J&MT	m
Clove Lakes Park, <i>Richmond</i>	19 May	AP	f
Northwest Woods, <i>Suffolk</i>	20 May	J&MT	f
Maple Swamp, <i>Suffolk</i>	21-31 May	ESz, mob	2+ birds
Prospect Park, <i>Kings</i>	22 May	AxW	
Forest Park, <i>Queens</i>	23-24, 29 May	DK et al.	2 birds?

Table 8. **Blue Grosbeak.** At least 13 birds were recorded in coastal NYS, including at least 2 on Staten Island, the dates ranging from 23 Apr through the end of May. Territorial birds were recorded in central-eastern LI.

Location	Date	Observers	Notes
Great Kills Park, <i>Richmond</i>	23-30 Apr & 9 May	JFI, SWo	
Jones Beach SP, <i>Nassau</i>	24 Apr		
Jones Beach West End, <i>Nassau</i>	26 Apr-3 May	BB, mob	3 birds
Napeague, <i>Suffolk</i>	2-4 May	LB	
Shoreham, <i>Suffolk</i>	3-4 May	PhL	
Robert Moses SP, <i>Suffolk</i>	12 May	PL, SM	2 f
Fort Tilden, <i>Queens</i>	13 May	SBI SY	m
Clove Lakes Park, <i>Richmond</i>	19 May	AOB, MSh	f
Rte. 51 Bikepath, <i>Suffolk</i>	21 May thru Jul	TB, GB, mob	2 m, terr

Historical Overview

In summarizing historical records of the various focal species, we reviewed the following sources: Region 10 spring reports in *Kingbird*, Levine (1998), Bull (1974 & 1976), Bull (1964), Cruickshank (1942), Griscom (1923), Eaton (1910 & 1914), Dutcher (1888), and Giraud (1844). The earliest of these document an avifauna very different from the one we know today, in which Yellow-throated, Prothonotary, and Swainson's warblers, Summer Tanager, and Blue Grosbeak ranged from "accidental" to unknown. Griscom (1923), Cruickshank (1942), and Bull (1964, 1974, & 1976) provided exhaustive, critical reviews of the changing statuses of these species (and also of Kentucky Warbler, the local history of which differed in interesting ways from the others), and as a consequence, we restricted our review of *Kingbird* spring reports to the period 1975-present.

Integrating the data gleaned from these varied sources is complicated by a number of difficulties, the most important of which involve differences in geographic coverage among the various books cited, a reduction in the geographic scope of Region 10 (to exclude coastal Westchester County) in 1987 (*Kingbird* 37:9-10); and variation from year to year in the degree of precision with which records of the various species were enumerated in the *Kingbird* reports. As far as was possible, we corrected for these variations in assembling a summary of records for the six species named above. For instance, it was generally possible to identify and exclude records from New Jersey and Orange County cited in some of our sources. Conversely, we found it much easier to identify, and to include in our summaries, post-1987 records from coastal Westchester County (now part of Region 9, but formerly part of Region 10) than to identify and exclude pre-1987 records of this kind. In our attempt to be as accurate as possible in presenting the sometimes imprecise records, we relate the Regional Editors' original comments in Table 9 where appropriate. In the text overview, the numbers in parentheses represent our best interpretation of the actual numbers of birds implied by those comments.

Our historical review demonstrates two features above all others concerning the status of these scarce species in our region: (a) a net increase in records over the past century and a half; and (b) extreme variability from year to year in the numbers of records of the various species. The latter incursive character is easily seen in records of each of these species, but curiously, there has been little co-occurrence of the various species in most flight years.

As noted above, Yellow-throated, Prothonotary, and Swainson's warblers, Summer Tanager, and Blue Grosbeak were at best extremely rare in coastal New York through the time of Griscom's (1923) review. Kentucky Warbler differed from the others in that it was formerly a locally common breeder along the lower Hudson River Valley through ca. 1923 (including the Riverdale area through at least 1878), but by the middle 20th Century it was rare even in the Hudson Valley, and its status in what is now Region 10 was not much different from those of Prothonotary Warbler or Summer Tanager.

Cruickshank's *Birds Around New York City* (1942) describes a marked change in the status of several species, e.g., an increase in the numbers of Prothonotary Warblers reported and annual occurrence (one or two per spring) of Summer Tanager since 1926. Bull, in his *Birds of the New York Area* (1964), noted a further

increase since 1942 in four of the focal species, regarding these now as “rare but regular” spring migrants: Yellow-throated Warbler, with two to four per spring being reported as of 1951; Prothonotary Warbler, showing a “slight increase” with one to two birds being reported each spring; Summer Tanager, with one to three birds each spring and cited as more frequently reported in recent years; and Blue Grosbeak, with two to four reports per year 1948-1956. Also during this period, the state’s first Swainson’s Warbler was recorded in 1950.

Bull’s *Birds of New York State* (1974 & 1976) documented additional spring incursions for several species and finally described an increase in occurrence for Kentucky Warbler—now considered rare but regular, with a few reported each spring. The period 1973-2004 featured new maxima for all six species (see Table 9), and by 1998, Blue Grosbeak and Summer Tanager, no longer described as rare, were now called “uncommon” spring migrants (Levine 1998). Significantly, this period also featured breeding by Prothonotary (Wheat 1979) and Kentucky (Levine 1998) warblers, Summer Tanager (Schiff and Wollin 1990; J. Clinton *in litt.*, record currently under review by NYSARC), and Blue Grosbeak (Siebenheller and Siebenheller 1982; Birol 1999) in Region 10, and by Yellow-throated Warbler in nearby Region 9 (Levine 1998; almost annual reports in *Kingbird* thereafter). Although any of these species is still a great find by any standard, it would now be considered surprising if any of them, with the notable exception of Swainson’s Warbler, went unreported during a spring season

As noted above, the generally upward trends in the occurrence of these species has not been steady and regular. Instead, conspicuous flight years can be discerned for most species, although generally not in the same calendar years for multiple species. For instance, the largest flight of Prothonotary Warblers to New York prior to 2005 was observed in the spring of 1973 when 18 were recorded, and other big years included 2003 (15), 1985 (10), 1984 (10), 1983 (12), 1979 (11), 1970 (9), 1954 (7), and 1944 (6). With the exception of 1984, major flights of Yellow-throated Warblers prior to 2005 were recorded in a different set of years: 2004 (9), 1984 (10), 1977 (10), 1976 (7), 1959 (7), and 1956 (8). Swainson’s Warbler occupies a unique category, given the relatively low number of records and associated low annual maximum (two) prior to 2005. This species also appears to show a greater tendency to occur during the flight years of other species: two in 1977, two in 1973, and singles in 2004, 1981, and 1979 were all recorded in years in which other of these southern species exhibited major flights. However the majority of Swainson’s Warblers were recorded in otherwise non-notable years, e.g., singles in 2000, 1996, 1990, 1987, 1982, 1975, 1963, and 1950.

Numbers of Kentucky Warblers, Summer Tanagers and Blue Grosbeaks have also varied greatly from year to year. Notable totals of Kentucky Warblers prior to 2005 were tallied in 1997 (12), 1981 (10), 1980 (15+), 1976 (9-11) and 1947 (6). Major spring flights of Summer Tanagers prior to 2005 were recorded in 2004 (14), 2001 (‘several dozen’ reports, number of individuals unclear), 1992 (12+), 1986 (11), 1984 (10), 1983 (30+), 1980 (10), 1979 (24), 1976 (14), 1959 (5), and 1955 (5). The largest pre-2005 flights of Blue Grosbeak occurred in 2003 (9+), 1999 (14+), 1995 (9), 1993 (15+), 1984 (12+), 1983 (11+), 1979 (8+), and 1961 (7). Although some of the totals from earlier years are not particularly large by today’s standards, they nevertheless stood in equally marked contrast to non-flight years during those periods. Note again the absence of any clear pattern of

synchrony among the flights of the various species. Although 2004 and 1984 stand out as generally good years for multiple species, neither of these years featured really exceptional totals for multiple species, as did 2005.

This overview of the historical occurrence of these six species underscores the unique character of spring 2005. Most striking is the unprecedented co-occurrence of major flights by all six of the focal species, along with large numbers of Hooded and Worm-eating warblers. New maxima were recorded for three of the six focal species, and near-maxima for the other three. In terms of number of species, volume of records, range of dates, and breadth of localities, the flights of spring 2005 constituted a truly unique event, witnessed and recorded by hundreds of New York area birders.

Table 9. Historical summary (1975-2005) of records of Yellow-throated, Prothonotary, Swainson's and Kentucky warblers, Summer Tanagers, and Blue Grosbeaks from New York City and Long Island (*Kingbird* Region 10).

Year	YTWA	PROW	SWWA	KEWA	SUTA	BLGR
1975		3-4	1	4	3	3
1976	7	6		9-11	14	6
1977	10	5	2	8	3	3
1978	2-3	4		3	6	4
1979	3	perhaps 11	1	8	24	8+
1980	3	3		15+	10	2
1981	5	5	1	about 10	6	3
1982	2	at least 7	1	3	at least 7	5
1983	6	about 12		sev; 3 e	at least 30	at least 11
1984	8-10	perhaps 10		6-7	approx 10	12+
1985	2-3	about 10		5	about 7	1
1986	1			6	11	
1987	3	5	1	3	6	3
1988			No Data			
1989	2	several		a few	a number	2
1990	1	4	1	1	unc/wdsp	1
1991					sev west	5
1992	1	6		sev; 1 e	at least 12	1
1993	5	6		4	9	at least 15
1994	7	6		at least 2	9	3
1995	4	8		recs e, w	4	at least 9
1996	4	6	1	8+	1	3
1997	4	6		up to 12	1	6
1998	1	at least 3			1	at least 5
1999	1	2		several	scattered	14+
2000	5	5	1	5	wdsp/incr	5
2001	4	4		4	sev dozen	2
2002	3	8		5	3	6
2003	at least 5	15		6	8	9
2004	9	6	1	at least 8	14	at least 5
2005	16	26+	5	12-13	26+	13

Explanation of abbreviations adapted from original sources: e = east of NYC parks; incr = increasing; recs = records; unc = uncommon; us = usual; w = west, e.g., NYC parks; wdsp = widespread.

Additional Data from Spring 2005

This section summarizes three additional kinds of data from spring 2005: records of the focal, southeastern-breeding species from elsewhere in New York State; a cluster of extremely early arrivals ca. 29 March, involving various species of Neotropical migrant landbirds, at coastal sites from New Jersey to Rhode Island; and the simultaneous arrival of many species of medium- and long-distance migrants at sites throughout New York State 6-8 April.

Yellow-throated Warblers were recorded at Chautauqua on 15 May (Region 1) and at Chenango Valley SP (two) on 20 April (Region 4). Away from known breeding stations in western New York, Prothonotary Warblers were recorded at Marshlands Conservancy on 23 April and 3 May (Region 9). Kentucky Warblers were found at Tift Nature Preserve on 11 May, Allegany SP on 15 May, and Wilson-Tuscarora SP on 21 May (Region 1); at Vestal on 13 May (Region 4); and at Blue Mountain



Figure 1.
Yellow-throated Warbler,
Central Park, Manhattan. 10 April 2005.
© Lloyd Spitalnik.

Reservoir on 14 May (Region 9). A Blue Grosbeak was considered very rare at Athens on 8 May (Region 8). Although widespread as a breeder in New York State, records of Worm-eating Warblers were bold-faced in Regions 1 and 5 this spring.

On 29 March and immediately thereafter, the following exceptional arrivals were recorded in coastal areas from New Jersey to southern New England: Eastern Kingbird on Aquidneck Island, RI on 1 April; Red-eyed Vireo at Higbee Beach, NJ on 29 March; Northern Rough-winged and Cliff swallows at Bergen County, NJ on 29 March; Barn Swallow at Pt. Judith, RI on 29 March; Northern Parula at Easthampton on 30 March; Prothonotary Warblers at Block Island, RI on 29 March, Forest Park on 30 March, and Aquidneck Island, RI on 31 March; and Indigo Buntings on Block Island, RI and elsewhere on 29 March.

Many species of medium- and long-distance migrants, including many examples of the southern-breeding species detailed above, arrived at sites throughout New York State during the period 6-8 April. Unlike the pulse at the end of March, the large and diverse flight of 6-8 April was not confined to the coast. The following is a summary of records documenting this heavy, diverse, and widespread wave (see Regional Reports elsewhere in this issue for more details).

Region 10: Common Nighthawk on Staten Island on 8 April, Whip-poor-will at Central Park on 6 April, Blue-headed Vireo at Central Park on 7 April, Blue-gray Gnatcatchers at Willowbrook Park and Central Park on 7 April, Brown Thrasher at Robert Moses SP on 6 April, Northern Parula at Central Park on 7 April, Myrtle Warbler at Central Park (where they do not winter) on 6 April, a

major push of Pine Warblers and Chipping Sparrows throughout southeastern New York 6-7 April, and Northern Waterthrush at Clove Lakes Park on 6 April.

Region 9: Snowy Egret arrival at Edith Read Wildlife Sanctuary on 6 April, Spotted Sandpiper at Bashakill on 7 Apr, Louisiana Waterthrush arrival on 6 April, two Vesper Sparrows at Sullivan Co. Landfill on 6 April,

Region 8: two Soras at Saratoga SP on 7 April, Pine Warbler arrival at Florida on 6 April, Chipping Sparrow arrival at Taghkanic on 6 April, Vesper Sparrow arrival at Fort Edward on 8 April, and Savannah Sparrow arrival at Fort Edward on 8 April.

Region 7: Regionally-early arrival of many waterfowl noted 6-7 April, Hermit Thrush at Long Lake on 7 April, Yellow Palm Warbler record-early at Elizabethtown on 8 Apr, Vesper Sparrow arrival 6 April, and Swamp Sparrow arrival at two sites 7 April.

Region 6: Yellow Palm Warbler arrival (11 singing males) at Massawepie Mire on 9 April.

Region 4: Greater Yellowlegs at Chenango on 8 April, Ruby-crowned Kinglet arrival at Lisle on 9 April, Eastern Towhee arrival at Nuthatch Hollow on 6 April, Chipping Sparrow arrival at Binghamton on 6 April, Field Sparrow arrival at Vestal on 6 April, Savannah Sparrow arrival at Edwards Hill Rd. on 9 April, and Swamp Sparrow arrival at Boland Pond on 6 April.

Region 1: Swamp Sparrow arrival on 7 April.

Discussion

As described in the Introduction, the three most popular explanations for this season's incursion were active dispersal by pioneering individuals from expanding populations; passive 'overshooting' of normal migration destinations in conjunction with favorable weather; and over-water displacement of long-distance migrants by a discrete weather event. As can be seen in the summary tables above, the incursion unfolded in such numbers and over such a broad range of dates that active dispersal was almost certainly a major factor for at least some of the species involved. This is the most reasonable interpretation for lists of records extending through late May and beyond, including territorial individuals in plausible breeding habitat. On the other hand, the very variety of species involved raises serious obstacles to the notion that all of them, simultaneously, could have been undergoing similar demographic expansions.

The earliest Prothonotary Warblers in 2005 arrived in the Northeast around 29 March, at exclusively coastal sites, together with a peculiar suite of seasonally atypical Neotropical migrant species. Many of these records were from three to five weeks early, and some of them represent really exceptional dates. It is difficult to imagine the mechanisms of purely active dispersal that could impel representatives of this ecologically and geographically disparate set of species on such a striking course of simultaneous seasonal vagrancy. Nor is it plausible to attribute these records to an exceptionally early onset of favorable conditions for northbound migration. Under the latter scenario, one would expect the earliest arrivals to appear at likely breeding sites, rather than at coastal vagrant traps, and one would also predict the correlated early arrival of various medium-distance

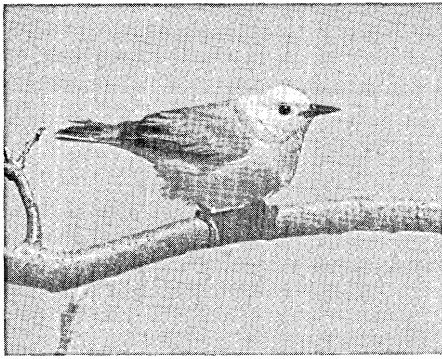


Figure 2.
Prothonotary Warbler, Central Park,
Manhattan. 18 April 2005.
© Lloyd Spitalnik.

migrants such as Ruby-crowned Kinglet, Blue-gray Gnatcatcher, Brown Thrasher, and Yellow Palm Warbler. These species are actually expected to arrive locally in early April under favorable circumstances, but they did not appear this year until well after the end-March pulse. Instead, the one thing shared by this year's early-arriving Neotropical migrant species, but not by the medium-distance migrants that arrived later, is long-distance, over-water migration in late March, from tropical wintering areas to the southeastern United States. Thus, we suggest that the most parsimonious explanation for the exceptional series

of late March records is Bagg's (1955) displacement hypothesis: birds en route from the tropics to Florida and the Gulf Coast are sometimes deflected to the east by storms and continue flying north to landfalls in our region.

Much more consistent with the favorable weather/overshoot hypothesis was the second pulse of Prothonotary Warblers, and the initial pushes of Yellow-throated and Hooded warblers and Summer Tanagers, that occurred around 6-8 April. In contrast to the late March events, these records were accompanied by a staggering list of arrivals by medium- and long-distance migrants, some very early in their own right. Furthermore, this group of arrivals was observed in many kinds of breeding habitats at sites over a very large geographic area (most of New York State)—patterns strongly indicative of generally favorable conditions for migration around these dates.

In conclusion, we suggest that all three of the models discussed here can be supported by observations collected during spring 2005. Furthermore, we note that these models are not mutually exclusive, and that their combined influence was likely responsible for the unique character of this spring's events. It seems obvious that the processes of active and passive dispersal might interact, and we draw attention to the need for refined and explicit hypotheses capable of resolving these questions more clearly. Does active dispersal simply place more individual birds along trajectories where various weather-related processes might influence their destinations? Or do actively dispersing individuals deliberately take advantage of even unusual weather events to achieve novel destinations? Even if these questions must remain unanswered at present, we conclude that careful analysis of the dates, species composition, and geographic scope of migration events can provide clues regarding the relative importance of the various underlying processes, and that even the most remarkable incursions, such as the ones we witnessed this year, ought to be viewed not as mere accidents, but as potential windows into the biology of the species involved.



Figure 3.
Summer Tanager, Central Park,
Manhattan. April 2004.
© Lloyd Spitalnik.

Acknowledgments

We wish to thank John Askildsen, Hugh McGuinness, Chris Raitel, Dick Veit, and Angus Wilson for stimulating discussions concerning the pattern and process of spring migration. Deborah Allen, Jean Loscalzo, Hugh McGuinness, Michael Shanley, Lloyd Spitalnik, and Seth Wollney provided information regarding many specific records. Likewise we acknowledge the efforts of the hundreds of observers throughout New York State in amassing many thousands of informative records, and the work of their Regional Editors in vetting this large body of data.

Literature Cited

- Andrle, R. F. and J. R. Carroll, eds. 1988. *The Atlas of Breeding Birds in New York State*. Cornell University Press, Ithaca, New York.
- Bagg, A. 1955. Airborne from gulf to gulf. *Bulletin of the Massachusetts Audubon Society* 39: 106-110, 159-168.
- Birol, O. 1999. The first documented breeding of Blue Grosbeak on Long Island and second in New York State. *Kingbird* 49: 186-189.
- Bull, J. 1964. *Birds of the New York Area*. Harper & Row, New York.
- Bull, J. 1974. *Birds of New York State*. Doubleday/Natural History Press, Garden City, New York. [Reprinted by Cornell University Press, Ithaca, New York, 1985.]
- Bull, J. 1976. Supplement to *Birds of New York State*. Special publication of the Federation of New York State Bird Clubs. Wilkins Printers, Cortland, New York.

- Cruickshank, A. D. 1942. Birds Around New York City. American Museum of Natural History, Handbook Series, No. 13. American Museum Press, New York.
- DeBenedictis, P. A. 1987. Editorial: Regional Boundaries and Migration Dates. *Kingbird* 37:9-24.
- Dutcher, W. 1888. Bird notes from Long Island, N. Y. *Auk* 5: 169-183.
- Eaton, E. H. 1910. Birds of New York State, Part 1. State University of New York, Albany.
- Eaton, E. H. 1914. Birds of New York State, Part 2. State University of New York, Albany.
- Giraud, J. P. 1844. The Birds of Long Island. Wiley and Putnam, New York.
- Griscom, L. 1923. Birds of the New York City Region. American Museum of Natural History, Handbook Series, No. 9. American Museum Press, New York.
- Levine, E., ed. 1998. Bull's Birds of New York State. Cornell University Press, Ithaca, New York.
- Schiff, S. and A. Wollin. 1990. Region 10—Marine. *Kingbird* 40: 276-277.
- Siebenheller, N. and B. Siebenheller. 1982. Blue Grosbeak nesting in New York State: a first record. *Kingbird* 32: 234-238.
- Wheat, M. C. 1979. Prothonotary Warbler breeding on Long Island. *Kingbird* 29: 190.

Contributors

Robert Adamo, Deborah Allen, Seth Ausubel, Linda Badkin, Andrew Baldelli, Matt Bayer, Leslie Beebe (LBe), Dana Bennis, Gail Benson, Susan & Jim Benson, Shawn Billerman (SBi), Shane Blodgett (SBI), Bob Bobrow, Kelly & Richard Bossong, Thomas W. Burke, Vicki Bustamante, Caroline Cutroneo, Tom Damiani, Jim Demes, Peter Dorosh, Dave Eib, Ron Ellard, Mary Eyster, Ken Feustel, Tom Fiore, Howard Fischer, John Flynn (JFI), Gerta & John Fritz, Dennis Geisel, Andy Gershon (AGe), Paul Gillen, Joe Giunta, John Gluth (JGI), Isaac Grant, Cliff Hagen, Ken Harris, Joel Horman, Phil Jeffrey, Rob Jett, Ed Johnson, Zach Johnson, Dave Klauber, Richard Koeppel (RKO), John LePore (JLeP), Phil Liano (PhL), Patricia Lindsay, Jean Loscalzo, Hugh McGuinness, Brian McPhillips, Eric Miller, Shai Mitra, Kevin Nolan, Bruce Nussbaum, Chris Nuzzi, Arlene O'Brien (AOB), Kevin O'Leary, Ruth Oliva, Al Ott, Anne Percell, Joan Quinlan, Eric Salzman, Patrick Santinello, Jarrod Santora, Starr Saphir (StS), Mike Scheibel (MSch), Sy Schiff, Eva Scripps-Callahan, Michael Shanley (MSh), Sean Sime (SSi), Richard Simon (RSi), Lloyd Spitalnik, Carl Starace (CSt), Dan Stoebel, John & Miles Todaro, Bill Valent, Alex Wilson (AxW), Al Wollin, Seth Wollney (SWo), Michael Zablocky.