

THE FALL 2008 IRRUPTION OF PINE SISKINS IN SOUTHEASTERN NEW YORK

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Although the winter of 2008/09 may be remembered most for the large numbers of White-winged Crossbills that graced the Northeast, it was also a tremendous year for a lesser finch, the Pine Siskin (*Spinus pinus*). What seemed to be unprecedented numbers—at least compared to flights documented in New York State in the past—descended in swarms up and down the Northeast and Mid-Atlantic, beginning in mid-October in New York. A small, but critical, piece of the puzzle was unraveled at regional hawk watches, primarily in Connecticut, New York, and Pennsylvania in the East. Chestnut Ridge Hawk Watch, situated just southwest of Bedford, Westchester County, and approximately 12 miles from the coast of Long Island Sound, was my vantage point for the fall flight, where an impressive 14,000 Pine Siskins were tallied.

Pine Siskins engage in unpredictable irruptions, varying considerably in regional winter abundance from one year to the next (Dawson 1997). This pattern is evident in the Northeast and Mid-Atlantic, where the species' status is described in one way or another as extremely erratic (Veit and Petersen 1993; Levine 1998; McWilliams and Brauning 2000). Although by no means inflexible, the general rule of thumb is for biennial Pine Siskin irruptions (Dawson 1997). Alongside White-winged Crossbills, the fall 2008 flight of Pine Siskins in the East had considerable geographic breadth, reaching Missouri, Iowa, Arkansas, Louisiana, and Florida by November (Lehman and Brinkley 2009). Brinkley noted that, "east of the Great Lakes, Pine Siskins may have outdone every previous flight on record in terms of the geographic extent of the flight (2009)." Upwards of 400 were located in as far-flung places as North Carolina and Georgia, with Georgia CBCs compiling a state record 2326 birds (Blankenship 2009). In Florida, six siskins reached the southeastern outpost of mainland North America, appearing close to Flamingo, Everglades National Park in late February (Anderson and Bankert 2009). Unfortunately, aside from anecdotal information, little is known about migratory behavior in the Pine Siskin (Dawson 1997).

The onset of the 2008 siskin flight was very rapid. As the calendar approached mid-October, there was a surge of Pine Siskins throughout the region, from the New England states to at least Pennsylvania and New Jersey, with seemingly fewer birds reported south of there. The first siskins to arrive at Chestnut Ridge appeared on 11 October when at least 20 birds in three flocks passed. The siskin count increased considerably the next day, when 175 birds in seven flocks were conservatively recorded. These, along with 500+ reported that day from Blueberry Hill, Massachusetts, barely hinted at the flood of finches that would follow. Shortly after arriving at the hawk watch on 13 October, a

calling flock of approximately 60 birds flew directly overhead, the first sign of what would be a staggering passage of birds. Tait Johansson joined me up at the watch and together we counted/estimated the knots of flyby siskins, reaching a final tally of 2,524 birds. Altogether, 73 flocks were noted with an average flock size of 35, though flocks as large as 133, 90 (twice), 85, 80 (twice), and 75 birds were recorded. Siskins continued flying until shortly after 17:00 DST, with nearly a hundred birds in the following half hour. Lighthouse Point, Connecticut, managed an equally impressive 2,900 that day. Suddenly, the region was inundated with siskins.

Realizing the unique opportunity available to us, we made a deliberate effort to tally Pine Siskin figures at Chestnut Ridge throughout the remainder of the fall season (Fig. 1). A week after the 13 October deluge, 20-21 October brought back-to-back days of 1,261 and 1,389 birds. But for the rest of the month, the Pine Siskin movement slackened, losing momentum almost as quickly as it had been gained, until 1 November, when 1,272+ siskins in 56 flocks again teemed across the horizon. The flight continued at a good clip, with another 1,000+ day on 4 November (1,075+), until 12 November (434+ in 22 flocks), the last day of triple-digits for Pine Siskins at Chestnut Ridge. At this point, there seemed to be a regional changing of the guards, with American Goldfinches picking up precisely when Pine Siskin figures began to plunge. This was also detected at Lighthouse Point, except in more substantial numbers than at Chestnut Ridge. For Lighthouse Point, the first day over 200 American Goldfinches occurred 10 November (1,800), a day that also saw a stunning 5,900 Pine Siskins. The reversal was complete a few days later (16 November), when American Goldfinches (3,100) greatly outnumbered Pine Siskins (210). Mirroring the situation on the mainland, Long Island observers noted an almost identical temporal turnover from siskins to goldfinches (Mitra 2009).

Away from Chestnut Ridge, the second week of November produced peak siskin flights in Connecticut, New York, and Pennsylvania (Table 1). For example, Bake Oven Knob, Pennsylvania, recorded their best flight on 7 November (1,251) while farther down the line, Hawk Mountain, Pennsylvania, witnessed their best passage 11 November (1,435). Away from hawk watches, large numbers of siskins were at last present on Long Island and, to a lesser extent, New York City, beginning in November. A massive movement occurred along Long Island's barrier beaches on 10 November. In just 2.5 hours of early morning birding, Ken and Sue Feustel recorded a colossal 6,800 birds at Jones Beach (Ken Feustel, pers. comm.). Meanwhile, at nearby Robert Moses State Park, Shai Mitra and Pat Lindsay posted a remarkably similar 6,520 (Mitra 2009; Shai Mitra, pers. comm.). Presumably, there was substantial overlap between these two counts. From available records, these are the highest single-site fall counts for the state of New York, and may well be for this region at any time of the year. Two other Long Island counts broke quadruple digits this fall: Mitra and Lindsay's 1,692 on 1 November and Lindsay's 1,000 on 18 November (Mitra 2009; Shai Mitra, pers. comm.). In Central Park, Manhattan, conservative estimates of 200+ were the highest counts, on 11 and 16 November (Tom Fiore, pers. comm.).

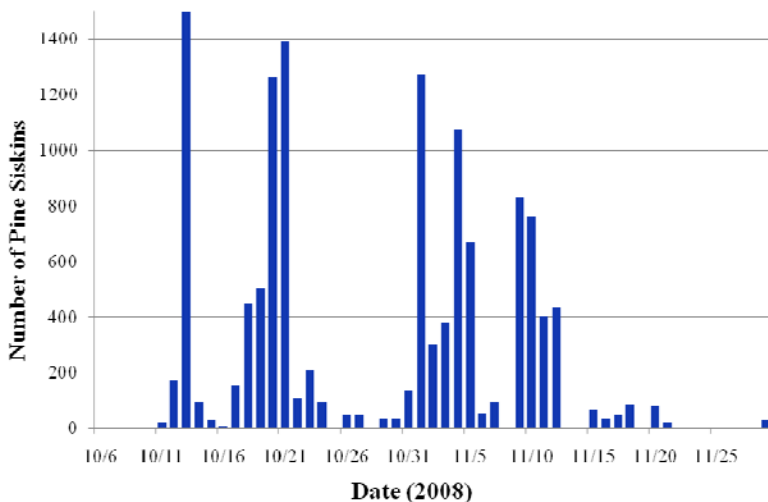


Figure 1. Daily counts of Pine Siskins migrating past Chestnut Ridge Hawk Watch, fall 2008. Counts were conducted daily from late Aug through 21 Nov, and on 29 Nov. The peak count (2,524 on 13 October), could not be fitted to this scale.

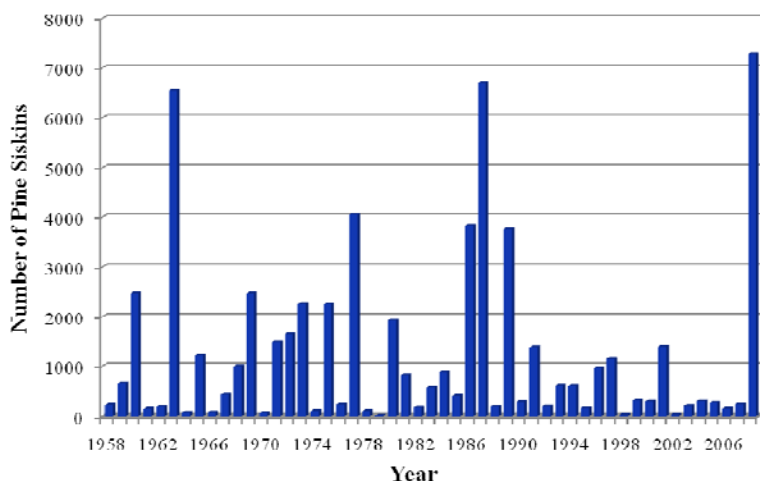


Figure 2. Statewide totals of Pine Siskin from New York State Christmas Bird Counts, 1958/59 to 2008/09. Years specify Dec for each CBC season (2008 = 2008/09).

Unlike the pattern observed at coastal sites, the siskin flights at Chestnut Ridge were, as a rule, late-day phenomena. The most productive hour of 13 October's onslaught was from 16:00-17:00 DST (581). Likewise, of the 1,272 siskins totaled on 1 November, more than 1,000 came in the last two hours of the count. Again, of the 1,598+ siskins seen during the three day span 10-12 November, 1,162+ (72.7%) passed during the last 1.5 hours of effort, 14:00-

15:30 EST. Finch flights are typically something that I associate with early mornings so this seeming anomaly was particularly interesting. Flights in New York City, Long Island, and Lighthouse Point were all described as early morning events (Tom Fiore, pers. comm.; Ken Feustel, pers. comm.; Greg Hanisek, pers. comm.), with the flights continuing later into the morning on days with heavier passages (Greg Hanisek, pers. comm.). Early mornings have long been associated with Pine Siskin movements at Jones Beach, Long Island, where Elliot (1957) noted counts of quadruple digits tabulated before 9:30 EST. Because Chestnut Ridge was not typically staffed until 9:00 DST (followed by 9:00 EST after the time change 2 November), it is hard to know how the early mornings fared. And late afternoons weren't a hard and fast rule either. The hour 10:00-11:00 DST on 13 October featured 502 siskins, and 9:00-10:00 DST was the peak hour (354+) during 21 October's 1,389 bird blitz.

To determine the historical frequency of comparably large flights, I searched for single-day counts exceeding 1,000 individuals, using Bull (1964) and the fall Regional reports of *The Kingbird* (1950-2008). I found records of 16 such days during ten prior falls: 1946, 1951, 1952, 1965, 1969, 1971, 1975, 1977, 1980, and 1999 (Table 2). These data show that large fall incursions of Pine Siskins in New York are relatively infrequent, occurring in 11 of 63 years (17.5%), and they have occurred even less frequently in recent years. If the past 50 years are divided in half (1959-1983 and 1984-2008), siskin flights occurred in 24% of the former years, in contrast to only 8% of the last 25 years. Even so, the flight of fall 2008 exceeded all of the others in terms of magnitude (single-day maximum 6,800), frequency (seven single-day counts >1,000), and duration (counts of >1,000 were recorded 13 October-18 November, a 37 day period).

During a finch exodus, fall concentrations are most obvious along coastal or near coastal regions. Prior to 2008, only one fall contained a four-digit day away from Region 10 – Marine, a 1971 tally from Sodus Bay, Region 2 – Genesee. Chestnut Ridge falls within Region 9 – Hudson-Delaware, but its proximity to Long Island Sound draws coastal comparisons. Hands-down, however, the best sites for the state are on Long Island's barrier beaches, where Fire Island, Jones Beach, and Riis Park have long been recognized as sites to witness flocks of westbound finches. Elliot (1957) noted their "great abundance in November" with upwards of 1,000 birds counted by mid-morning, the best flights occurring on clear days with northwest winds. Prior to 10 November 2008, the most notable single-day migration occurred on 19 October 1969, when 5,080+ flew past Fire Island and 4,000+ were seen over Riis Park (Davis and Morgan 1970).

Table 1. Peak single-day and total counts of Pine Siskins from three hawkwatches in the northeastern USA, fall 2008.

Site	Peak Date	Peak Count	Total
Chestnut Ridge, NY	13 Oct	2,524	13,946
Lighthouse Pt, CT	10 Nov	5,900	25,391
Hawk Mt, PA	11 Nov	1,435	9,001

Table 2. Single-day fall Pine Siskin counts greater than 1,000 in NYS (1946-2008).

Year	Date	Number	Location	Source
1946	Nov 9	1,500	JBSP ^{1,2}	Bull 1964
1951	Nov 9	1,500	Riis Park	
1952	Oct 27	2,000	Orient	
	Nov 9	1,500	JBSP	
1965	Oct 24	1,000+	JBSP	Davis & Heath 1966
	Oct 25	1,000	Tiana Beach	
	Oct 27	1,000+	JBSP	
1969	Oct 19	5,080+	Fire Island ³	Davis & Morgan 1970
	Oct 19	4,000+	Riis Park	
	Oct 25	1,000+	Riis Park	
1971	Oct 10	1,000	Sodus Bay (Region 2)	O'Hara 1972
1975	Nov 23	2,500	RMSP ⁴	Lauro & Spencer 1976
1977	Oct 22	2,000	Riis Park	Lauro 1978
1980	Oct 13	1,400	JBSP / Fire Island	Spencer 1981
	Nov 2	1,000	Tobay	
1999	Oct 24	1,100	JBSP / RMSP	Mitra, pers. comm.
	Oct 27	2,000	Fire Island	
2008	Oct 13	2,524	Chestnut Ridge	Rutt, present paper
	Oct 20	1,261	Chestnut Ridge	
	Oct 21	1,389	Chestnut Ridge	
	Nov 1	1,272+	Chestnut Ridge	
	Nov 1	1,692	RMSP	Mitra 2009
	Nov 4	1,075+	Chestnut Ridge	Rutt, present paper
	Nov 10	6,520 ⁵	RMSP	Mitra 2009
	Nov 10	6,800 ⁵	JBSP	Feustel, pers. comm.
	Nov 18	1,000	RMSP	Mitra 2009

¹JBSP—Jones Beach SP, Nassau; ²This is the only count >1,000 prior to the *Kingbird* era, 1950 to present; ³described as a conservative estimate, with the actual figure probably well over 7,000; ⁴RMSP—Robert Moses SP, Suffolk; ⁵Many of the birds passing these two sites were likely the same.

Table 3. Top ten statewide CBC totals for Pine Siskin in New York, 1958/59-2008/09.

Year	Number of Birds	Birds / Party-Hour
1975/76	2256	0.58
1973/74	2270	0.41
1969/70	2474	0.71
1960/61	2475	1.47
1989/90	3764	1.04
1986/87	3825	0.47
1977/78	4052	0.67
1963/64	6551	2.31
1987/88	6695	1.95
2008/09	7295	1.41

As it turned out, the hawkwatches at Chestnut Ridge and Lighthouse Point, Connecticut, played a leading role in quantifying the fall 2008 invasion, documenting more Pine Siskins than any other single sites. Although the flights of 2008 were the largest on record in New York, several seasons during the last 50 years have produced notably high counts in nearby states. In Cape May, New Jersey, between 4,000 and 5,000 siskins were registered on 29 October and 10 November 1973, the largest figures on record for that state (Walsh *et al.* 1999). John Granton quantified finch movements at Lighthouse Point in the late 1980s, and recorded seasonal totals of 2,932 in 1986 and 10,081 in 1987 (Greg Hanisek, pers. comm.). Farther afield, the highest single-site count for Massachusetts involved 1,000 at Provincetown on 23 October 1977 (Veit and Petersen 1993). Similarly the aforementioned thousands that passed Fire Island and Riis Park 19 October 1969 (Davis and Morgan 1970) suggest that that season probably rivaled fall 2008 in New York. Following each of the very large fall flights just mentioned (1969, 1973, 1977, 1986, 1987, and 2008), thousands of Pine Siskins were recorded on New York's Christmas Bird Counts (CBCs; Fig. 2), and the statewide CBC totals for each of these six winters are among New York's top ten ever (Table 3).

However, fall flights don't always correlate with statewide winter concentrations of siskins. According to Walsh *et al.*, "it is just as likely that migrants will move farther south, leaving New Jersey with only modest winter numbers (1999)." In New York, for instance, the best example is 1999. That year, along the southern shore of Long Island, Mitra and Lindsay totaled 3100 birds on two days between 24 and 27 October (Shai Mitra, pers. comm.). That winter yielded a mere 318 Pine Siskins throughout all of New York. All other flight years—as outlined in Table 3—had at least moderate, if not excellent, winter showings. Recent New York CBC data also suggest that major Pine Siskin flights have become less frequent than in the past. Whereas statewide totals of >2,000 birds occurred three times apiece during the three decades, 1960-1990, only three winter totals exceeded 1,000 since 1989/90, and none exceeded 2,000—until the winter of 2008/09.

Perhaps like never before, in 2008 the hawk watches were able to do more than simply sound the alarm of a major finch flight. Whereas CBCs might tell more about the birds' final destinations, hawk watches offer an opportunity to shed light on the actual movement of irruptive finch flights. Consider Hawk Ridge, Minnesota, where phenomenal figures such as 3691 White-winged Crossbills, 20,139 Common Redpolls, and 8,051 Pine Siskins were tallied during fall 2008 (Karl Bardon, pers. comm.). As with raptors, the concentrated nature of finch flights—along shorelines and ridges—allows for more precise quantification of a flight than counts of dispersed birds on their wintering grounds. If the consistent, daily effort characteristic of hawk watches were applied at a few more strategic sites, much additional useful information could be gathered.

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