

WINTER SITE FIDELITY OF SOME NORTHERN FINCHES (FRINGILLIDAE)

BY ROBERT P. YUNICK

A recent study by Thurber and Villeda (1980), and the many studies referred to therein dealing with winter site fidelity of some migrant species, prompted me to review my records on the banding of several irruptive northern finches to determine the extent to which they returned to their winter banding site. These results were compared to those from a winter study on Evening Grosbeaks (*Coccothraustes vespertinus*) in Utah by Balph and Lindahl (1978). I based my review on 17,215 birds banded over an 18-year period at Schenectady, New York. For comparative purposes, I examined also the records of another 5327 birds banded in 11 years near Corinth, New York.

METHODS

The monthly banding totals for four species of northern finches captured at my home station in Schenectady for the winters of 1963-1964 through 1980-1981 are given in Table 1. These four species, Pine Siskin (*Carduelis pinus*), Evening Grosbeak, Common Redpoll (*Carduelis flammea*), and Purple Finch (*Carpodacus purpureus*) were trapped and mist-netted at feeders in a 15 × 23-m suburban yard.

Separation of wintering individuals from spring migrants could not be done precisely, but was based on fluctuations in numbers of birds present, and a review of departures indicated by recapture data. It resulted in the following:

Pine Siskin—Wintering—1 November to 10 April	= 1803
Migrant—11 April through May	= 2007
Evening Grosbeak—Wintering—1 November to 10 April	= 704
Migrant—11 April through May	= 1933
Common Redpoll—Wintering—1 January to 20 March	= 3073
Migrant—21 March through April	= 4873
Purple Finch—Wintering—1 November to 15 April	= 1999
Migrant—16 April through May	= 823

Some recapture data on these bandings are given in Table 2. Two kinds of recaptures were considered: repeats and returns. A repeat is defined as the recapture of one of the banded birds within the same "winter" season; and a return is the recapture in a "winter" season following one or more intervening breeding seasons.

For comparative purposes, similar data on two different age groups of Purple Finches on their breeding or natal ground, and a wintering population of Black-capped Chickadees (*Parus atricapillus*) at Jenny Lake, near Corinth, Saratoga Co., New York are given in Table 3. I gathered these data during the period April through September for each of the

TABLE 1. Monthly bandings of 17,215 northern finches at Schenectady, New York during the period 1963-1964 to 1980-1981.

Species	Month										Total
	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May		
Pine Siskin			387	296	495	227	232	876	1297		3810
Evening Grosbeak			11	8	143	275	198	415	1587		2637
Common Redpoll					11	1119	3212	3604			7946
Purple Finch	3	23	9	1	220	370	798	1143	255		2822

years from 1970 through 1980 for the Purple Finch; and during the period November through April for each of the years from 1970 through 1981 for the Black-capped Chickadee.

RESULTS AND DISCUSSION

At Schenectady, neither the wintering nor the spring migrant Pine Siskins, Evening Grosbeaks, and Common Redpolls showed any apparent tendency to return to their point of banding. A very small percentage of Purple Finches returned. Closer examination of these returns revealed that all of these birds appeared to be spring returnees which were part of a small local breeding population, and were therefore not returning to a wintering area, but rather to a breeding territory.

In examining the occurrence of these species at Schenectady, several characteristics deserve note. These species did not appear regularly. They were irruptive. The Pine Siskin, Evening Grosbeak, and Common Redpoll appeared in greater numbers generally with biennial regularity. The Purple Finch was considerably more erratic. Irruptions in the winters of 1964-1965, 1974-1975, and 1976-1977 accounted for 85.5% of the bandings noted in Tables 1 and 2.

Pine Siskin and Common Redpoll individuals were frequently re-trapped during years of abundance. Both exhibited high repeat rates

TABLE 2. Recapture information for four species of northern finches at Schenectady, New York through 1981-1982.

Species	No. banded	No. (%) of birds caught as repeats	No. (%) of return captures	No. of recaptures per repeating bird within season
Pine Siskin	3810	1285 (33.7)	0 (.0)	1.83
Evening Grosbeak	2637	59 (2.2)	0 (.0)	1.03
Common Redpoll	7946	2699 (34.0)	0 (.0)	3.07
Purple Finch	2822	393 (13.9)	13 (.46)	1.20

TABLE 3. Recapture information on summering Purple Finches and wintering Black-capped Chickadees at Jenny Lake, New York.

Species	No. captured	No. (%) of birds caught as		No. of recaptures per repeating bird within season
		repeats	returns	
Purple Finch (HY) ^a	2169	971 (44.8)	184 (9.9) ^c	1.89
Purple Finch (AHY) ^b	2089 banded 787 returns	702 (24.8)	418 (23.6) ^c	1.29
Black-capped Chickadee	1069 banded 310 returns	860 (62.4)	213 (28.4) ^c	2.34

^a HY = hatching-year birds.

^b AHY = after-hatching-year birds.

^c Based on the banding of 1855 HY Purple Finches and 1770 AHY Purple Finches through September 1979, and on 749 Black-capped Chickadees banded through the winter of 1979–1980.

of 33.7 and 34.0%, respectively, during the combined winter and spring seasons. In winter, 44.8% of the siskins were recaptured, while 23.8% were recaptured in spring. Among redpolls the recapture rates were 45.3 and 26.8%, respectively. Each repeating redpoll was captured an average of 3.07 times, and each siskin 1.83 times. Both species were very tame and some remained at the feeders for moderately long periods, thus showing attachment to an area during the season of banding. Among the redpoll records, one bird was captured 61 times over a 37-day period, and another was caught 7 times in one day.

Only 13.9% of the Purple Finches repeated and among them the average number of recaptures was only 1.20 per repeat. The grosbeaks behaved quite differently. Only 2.2% were recaptured as repeats, and among them there were only 1.03 recaptures per repeat. Thus there was a wide range of feeder affinity among these species during the season of banding.

In attempting to explain the lack of site fidelity at Schenectady in years following banding, one is tempted to propose the biennial occurrence of these birds as a possible reason. Kennard (1976, 1977) demonstrated a biennial rhythm in the winter distribution of the Common Redpoll and Purple Finch; and Bock and Lephien (1976) described nearly similar results for the four northern finches dealt with here. However, this reason alone is not a satisfactory explanation. The Black-capped Chickadee is also a biennially irruptive species (Bagg 1969), and data in Table 3 show that at Jenny Lake 28.4% of the winter bandings returned in subsequent winters. A closer examination of these return records shows a pattern of alternate year return coinciding with years of irruption. Chickadees banded in invasion years returned the following year (a non-invasion year) to the extent of 3–4%, but increased to

20% a year later (the next invasion year). Like the Common Redpoll and Pine Siskin, banded Black-capped Chickadees were easily recaptured. Each repeating bird averaged 2.34 recaptures, illustrating that a biennially irruptive species can be faithful to a wintering site.

While Purple Finches showed no wintering site fidelity at Schenectady, summer data at Jenny Lake (Table 3) showed that adults returned to their breeding grounds with approximately the same degree of fidelity (23.6%) as did wintering chickadees to this site. Purple Finches banded as immatures (unpneumatized skulls) returned to a considerably lesser degree (9.9%). Other data (Yunick 1981) suggest that the Pine Siskin may not be very faithful to its breeding site.

Balph and Lindahl (1978) determined the rate of return of 108 color-banded Evening Grosbeaks in Utah and found that 15 (14%) of the birds returned during the winter and spring of the year following banding. Eight of these returns were seen for periods of 3 to 5 months in the January–May study period. These results differed considerably from the 1–2% return rate cited by Balph and Lindahl (1978) for the eastern United States. When one views their higher return rate in light of Bock and Lepthien's (1976) finding that western individuals did not fit their irruption model as well as eastern individuals, one wonders whether these two studies complement one another in indicating a lesser degree of irrupting tendency among the western race.

An examination at Schenectady of winter retraps and recoveries of birds banded in previous winters also supports the conclusion that these four species are not faithful to wintering at Schenectady. Among 57 recoveries and retraps of Evening Grosbeaks at Schenectady, 14 were winter recoveries of birds that had been banded or recaptured in winter elsewhere in New York (3 individuals), Maine (2), Connecticut, Ontario, Pennsylvania, Ohio, Texas, North Carolina, Virginia, and Maryland. These recoveries spanned periods of 1 to 6 years after banding. Of 14 Purple Finch recoveries and retraps at Schenectady, 6 were birds recorded in winter in Tennessee (2), Oklahoma, Louisiana, Georgia, and Virginia showing an extremely wide winter range. These recoveries occurred 1 to 3 years after the birds had been banded.

Among 6 retraps and recoveries of Common Redpolls at Schenectady there were 2 birds banded in winter in Minnesota 2 and 4 years earlier. All of the 48 recoveries and retraps of Pine Siskins involved transient birds, or recaptures within the same season, thus offering no comparison of places of winter recapture of birds banded in winter. Nevertheless, there was a far-ranging character to some of them, suggesting the same pattern of behavior as noted above. One such case worth citing involved a bird banded at Schenectady in May (presumably a northward migrant from a wintering site to the south) which was recovered the following January in Nova Scotia (presumably on winter range).

SUMMARY

A review of the recaptures of 17,215 Pine Siskins, Evening Grosbeaks, Common Redpolls, and Purple Finches banded over an 18-year period

at Schenectady, New York gives no indication that these species return to the same wintering site in subsequent years. To the contrary, band recoveries suggest far-ranging geographical distribution of these birds from winter to winter.

LITERATURE CITED

- BAGG, A. M. 1969. A summary of the fall migration season, 1968 with special attention to the movements of Black-capped Chickadees. *Audubon Field Notes* 23:8-12.
- BALPH, M. H., AND A. M. LINDAHL. 1978. Winter philopatry of Evening Grosbeaks in northern Utah. *North Am. Bird Bander* 3:149-151.
- BOCK, C. E., AND L. W. LEPHTHEN. 1976. Synchronous eruptions of boreal seed-eating birds. *Am. Nat.* 110:559-571.
- KENNARD, J. H. 1976. A biennial rhythm in the winter distribution of the Common Redpoll. *Bird-Banding* 47:231-237.
- . 1977. Biennial rhythm in Purple Finch migration. *Bird-Banding* 48:155-157.
- THURBER, W. A., AND A. VILLEDA. 1980. Wintering site fidelity of migrant passerines in El Salvador, Central America. *North Am. Bird Bander* 5:131-135.
- YUNICK, R. P. 1981. Some observations on the breeding status of the Pine Siskin. *The Kingbird* 31:219-225.
- 1527 Myron Street, Schenectady, New York 12309.* Received 26 Aug. 1981; accepted 6 Feb. 1983.

NOTES AND NEWS

EBBA and WBBA Research Grants.—The Eastern Bird Banding Association and the Western Bird Banding Association each offer a grant of \$250 in aid of research using bird-banding techniques or bird-banding data. An applicant should submit a resumé of his or her banding or ornithological background, a project plan, and a budget to the joint selection committee chairman: Robert C. Leberman, Powdermill Nature Reserve, Star Route South, Rector, PA 15677. No formal application forms are available; the amount requested should not exceed \$250. Deadline for receipt of applications is 15 March 1984.