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Composition of Roosting Flocks of Chimney Swifts at Kent, Ohio, 1944-1983

Ralph W. Dexter
Department of Biological Sciences
Kent State University
Kent, Ohio 44242

INTRODUCTION

I have trapped and banded Chimney Swifts (*Chaetura pelagica*) from the air shafts of four buildings on the campus of Kent State University since 1944. Various aspects of this study have been published to date, especially a summary of the work through 1968 including methods (Dexter 1969) and the breeding life history of the oldest Chimney Swift on record (Dexter 1979a). This is a special report on the composition of roosting flocks of 23 or more birds (returns, repeats, foreign recoveries, and previously unbanded birds) residing in a single air shaft for one night between 1944 and 1983. Trapping and observations were conducted on a regular basis from late April to early September, until the entire resident population was determined each year. The limit of flocks of 23 birds or more for analysis was arbitrarily chosen and all of that size are included. The total number of swifts banded 1944-83 was 2,813; a total of 2,781 might have returned in the time limit of this study. A total of 488 (17.5%) returned to the campus colony at least once, while 357 (88.8%) of the residents (402) returned at least once. Every year, both resident birds and migrants were trapped. A report on annual resident populations is in preparation, and a summary of returns of migrants has already been published (Dexter 1979b).

Of 81 air shafts available and suitable for use by Chimney Swifts on the campus, a total of 42 was used for nesting at one time or another, but only 12 were used for roosting by 23 or more birds during a single night. These roosting flocks were gatherings in the early spring before nesting began, or gatherings after nesting was completed.

Previously, data on capture of sizable flocks have been published by Coffey (1936; 1938), Peters (1937), Calhoun (1938), Green (1940), Calhoun and Dickinson (1942), Hitchcock (1945), James (1950), Bowman (1952), Dexter (1953; 1969), Dexter and Hight (1954), and Zammuto and Franks (1978).

SPRING FLOCKS

See Table 1 for full data. Fifteen flocks used nine air shafts (four more than once), and all but one shaft had been used

for nesting at some time (see Figs. 1 and 2). The number of returns ranged up to seven (mean 3.07), repeats up to two (mean 0.60), and previously unbanded birds ranged 23-297 (mean 60.75). The total number ranged 26-305 (mean 68.60). Twelve former nesting birds were returning to their nest sites (six with former mates). Four foreign recoveries were captured (Knoxville and Chattanooga, TN, and two from Hiram, OH).

LATE SUMMER FLOCK

See Table 2 for full data. From shaft U, the only one in Merrill Hall, a flock of 28 birds was trapped including one return (an early migrant?), six repeats, including the threesome which nested in shaft U, and 21 previously unbanded juveniles.

FALL FLOCKS

See Table 3 for full data. Seventeen flocks were trapped from eight air shafts (six of them used more than once), and all of them have been used for nesting at one time or another. Returns ranged up to 12 (mean 3.13), repeats ranged 7-34 (mean 13.41), and previously unbanded birds ranged 11-128 (mean 39.71). The total number ranged 23-163 (mean 56.06). Eleven flocks included the mates which had nested in that shaft, two flocks included the threesome, and one included the fivesome which nested there, while two included the male which had nested there. Three flocks contained mates which nested elsewhere in the colony (one with three pairs and one with seven pairs).

ANALYSIS OF SELECTED ROOSTING FLOCKS

Following is a detailed analysis of three selected flocks--a spring flock, the late summer flock, and a fall flock--each one the largest for its season.

1.20 May 1956; Air Shafts P1-P3. Total 305.

A. Returns (5)

21-128607. Banded 24 July 1954 from shaft M7 as juvenile raised there. Repeat 29 July from M7 with M7 threesome. Return 25 May 1955 from M7 with same threesome (nest with 1 egg). Repeat 18

September from S1 with 9 others (including a mate of S1). Return 20 May 1956.

21-128616. Banded 2 Oct. 1954 from shaft A5 as juvenile with mates of A5. Not captured in 1955. Return 20 May 1956.

21-128642. Male banded 8 August 1955 from shaft I3 as juvenile. Perished in trap 20 May 1956.

21-128648. Male banded 18 September 1955 from shaft S1 with 8 other birds. Perished in trap 20 May 1956.

42-188528. Male banded 3 July 1947 from shaft R2 with his mate (nest with 4 eggs). Return 24 June 1948 from R2 with new mate (nest with 5 eggs).

Repeat 14 Aug. from S1 with 8 other birds. Not captured 1949-55. Return 20 May 1956.

B. Repeats (2)

20-188672. Female banded 20 July 1952 from shaft G4 as juvenile with mates of G4 and 9 other birds. Return 20 May 1953 from H1 with an other unmated bird. Repeat 4 June from H1 with mate (nest ½ made). Repeat 20 Aug. from E1 with 17 other birds. Return 13 May 1954 from H1 with former mate in H1, a foreign recovery (52-88053) banded by Gordon Hight at Rome, Ga., and 16 unbanded birds. Repeat 15 June from H1 with mate (nest with 4 eggs). Trapped and released 19 Sept. at Rome, Ga., by Gordon Hight with foreign recovery (52-88053) which was at Kent earlier, another Kent bird banded when -53 was captured in Kent, and 7,374 other birds (see Dexter and Hight 1954). Return 11 June 1955 from H1 with former mate (nest with 4 eggs). Repeat 6 Aug. from G4 with mate and mates of G4 and 7 other birds. Return 13 May 1956 from P3 with mate 42-188523, second oldest in colony (see Dexter 1968). Repeat 20 May 1956.

21-128639. Male banded 6 Aug. 1955 from shaft G4 with the mates of G4 and their 3 juveniles, the mates of H1, the female mate of M7, and 2 others. Return 17 May 1956 from G4 with pair which became mates in G4. Perished in trap 20 May 1956.

C. Foreign Recovery (1)

53-128163. Banded 10 Sept. 1953 by Lincoln Pettit at Hiram, Ohio.

D. Previously Unbanded (175) 175 banded and released. 122 perished in trap--squeezed to death in funnel of trap; the only catastrophe suffered in 40 years of trapping Chimney Swifts.

II. 22 July 1966; Air Shaft U. Total 28.

A. Return (1)

28-141769. Banded 22 Sept. 1965 from air shaft

G4, taken with 10 banded birds and 32 other unbanded birds (see 28-141768 and -82 below). Return 22 July 1966.

B. Repeats (6)

The U mates (24-167601 and 24-167731) and their seasonal visitor 28-141795 (see Dexter 1969 for details of these mates nesting together for 9 consecutive years). Repeat 22 July 1966.

28-141768. Banded 22 Sept. 1965 from air shaft G4, taken with 10 banded birds and 32 other unbanded birds. 2 Oct. 1965 from S1 with 3 others, including the female mate of S1. Return 31 May 1966 from A1 with an unbanded bird. Repeat 23 June 1966 from S1 with 2 other birds. Repeat 22 July.

28-141782. Banded 22 Sept. 1965 from air shaft G4, taken with 10 banded birds and 32 other unbanded birds. Return 23 June 1966 from S1 with 28-141768, a repeat from A1 (see above), and 25-137546, a repeat from S1. Repeat 29 June from S1 with -46 again, but no sign of nesting. Repeat 22 July.

28-141791. Female banded 31 May 1966 from air shaft A1 taken with 28-141768 as a return (see above). Repeat 22 July.

C. Previously Unbanded (21)
21 banded.

III. 18 Sept. 1976; Air Shaft E1. Total 163.

A. Returns (12)

12 returns, all of them for the first time since banded in 1966, 1969, 1971 (3), 1972, and 1975 (6). All migrants.

B. Repeats (23)

The mates from A1, A5, B2, C3, D1, E1 (host birds), I1, and K2; the male mate from E4, J1, and N9; a temporary visitor (in C3, A5, S1, and N9); a non-nesting resident; and 2 juvenile repeats.

C. Previously Unbanded (12)
128 banded.

CONCLUSION

A total of only 12 of the 81 available and suitable air shafts on the Kent State University campus were used between 1944-83 for roosting by groups of 23 or more Chimney Swifts, and they were always air shafts at the end of a block. Of the 12 that were used, nine of them were used more than once; one of them for six times, and two used four times. The composition of flocks has been variable and random from site to site and from time to time.

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COMPOSITION OF ROOSTING FLOCKS OF CHIMNEY SWIFTS AT KENT, OHIO, 1944-1983

Table 1. Spring Flocks (Migrants and Pre-nesting Residents).

Date	Shaft	# Returns	# Repeats	# Unbanded	Total #	Notes
20 May 45	C3	5	0	83	88	Included 1944 mates of C3.
13 May 46	B1	7	0	53	61	1 Foreign Recovery (-Pub. Knoxville, TN)
19 May 47	H1	1	1	40	42	Including H1 female mate of 1946
12 May 51	B1	0	2	62	64	Repeats all from B1
2 May 52	E1	2	0	35	37	Including E1 female mate of 1951
6 May 56	E6	2	0	35	37	1 Recovery 25 May 56 from Hiram, OH. -Pub.
20 May 56	P1-P3	5	2	175 banded 122 Perished	305	1 Foreign Recovery, Hiram, OH. -Pub.
12 May 58	B1	2	0	61	63	1 Foreign Recovery -Pub. Chattanooga, TN
10 May 75	A5	7	0	85	92	Including A5 mates of 1974
13 May 75	E1	3	0	23	26	Including E1 mates of 1974
7 May 77	B1	1	0	57	58	Including B2 female (mate) of 1976
7 May 77	D3	4	0	45	49	D3 never used for nesting
12 May 77	C3	1	2	26	29	Including C3 female (mate) of 1976
7 May 79	C3	5	0	40	45	Including C3 female mate of 1978
10 May 80	A5	1	2	30	33	Including A5 female mate of 1979 and continued nesting here
TOTALS: 15	A5-2; B1-4; C3-3; D3-1; E1-2; E6-1; H1-1; P1-P3-1.	Range 0-7 Mean - 3.07	Range 0-2 Mean - 0.60	Range 23-97 Mean - 60.75	Range 26-305 Mean - 68.60	4 Foreign recoveries

Table 2. Late Summer Flock (Resident Birds and Juveniles).

Date	Shaft	# Returns	# Repeats	# Unbanded	Total #	Notes
22 July 66	U	1	6	21	28	Including U 3-some. Nesting completed.

Table 3. Fall Flocks (Migrants and Post-nesting Residents).

Date	Shaft	# Returns	# Repeats	# Unbanded	Total #	Notes
25 Sept. 44	U	--	10	34	44	None with mate
27 Sept. 48	P3	0	21	12	33	
11 Aug. 51	U	3	16	24	43	Mates of U & G4 included and 3 other breeders
6 Aug. 52	V	5	11	22	38	Mates of V included
2 Aug. 53	E1	2	8	14	24	Pub. Cleve. Bird Cal. 49(3):10-11. 1953.
30 Aug. 58	H1	2	7	17	26	Including H1 mates
17 Aug. 59	S1	3	34	106	143	Included S1 mates
22 Sept. 65	G4	2	8	33	43	Included G4 mates
18 Sept. 66	E1	0	9 (2)	17	26(28)	E1 mates did not leave shaft
28 Sept. 68	A5	0	17	11	28	Including A5 mates
23 Sept. 70	V	5	11	44	60	Including V mates
26 Aug. 71	A5	1	7	15	23	Including A5 male
26 Sept. 71	H1	0	9	18	27	Including H1 mates
19 Sept. 72	E1	3	12	44	59	Including E1 male and mates from J1, K7, M1
20 Sept. 74	S1	6	11	40	57	Including S1 5-some
19 Sept. 75	S1	6	12	96	114	Including S1 3-some
18 Sept. 76	E1	12	23	128	163	Including E1 mates and mates from A1, A5, B2, C3, D1, I1, K2

TOTALS: 17 A5-2; Range 0-12 Range 7-34 Range 11-128 Range 23-163
 E1-4; Mean - 3.13 Mean - 13.41 Mean - 39.71 Mean - 56.06
 G4-1;
 H1-2;
 P3-1;
 S1-3;
 U-2;
 V-2.

Figure 1.

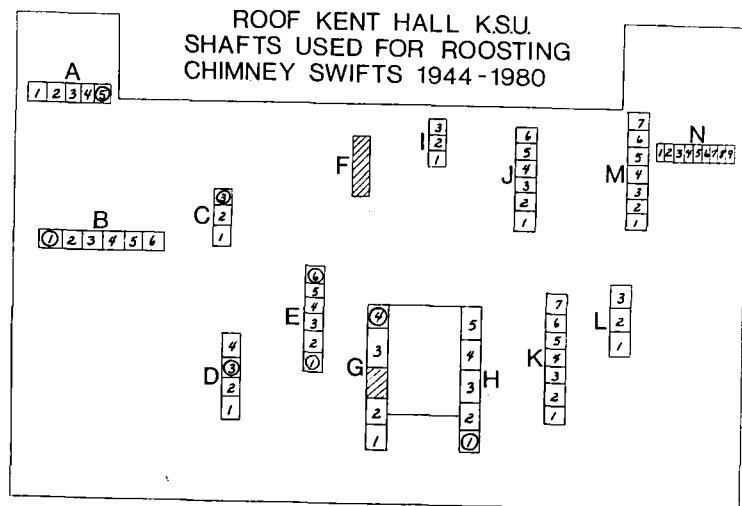


Figure 2.

