

Most frequently banded species over eight year period at Pennington, N. J.

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From 1966–1973, I operated a banding station at Pennington, New Jersey, banding 9,908 birds of 93 species. One to six nets and four to six traps were used throughout each year. Banding operations, weather permitting, were conducted daily except when I was in the field, elsewhere. In general, on Mondays through Fridays, banding was restricted to early morning and late afternoons except during vacation periods and weekends when operations were carried on throughout the day. No attempt was made to keep track of daily hours of operation.

Four-cell Potter traps, placed on the ground and on elevated pole-platforms, were baited with a mixture of whole grains used for chicken feed enriched with sun flower seeds. The type of food and pattern of availability in the feeder-traps did not vary through the years. The trap doors were locked in the open position when I was not on hand for captures. Residents and returning migrants as well as new arrivals acted as if the traps were feeders.

Three net lanes were operated whenever conditions allowed. A small stream divided our property into two areas: a lawn area underneath tall, mature deciduous trees with ornamental evergreen shrubs, and an uncultivated area on the other side of the stream adjacent to a large tract of farm land usually planted with corn. No attempt was made to be selective in capturing species and every bird captured was banded, weighed, measured, etc.

In an attempt to analyze yearly fluctuation in numbers of individuals banded by year, I devised a Frequency Index (FI) which is simply the resultant percentage of the number banded of each species divided by the total number of individuals banded for each year or month; i.e. for the Blue Jay (*Cyanocitta cristata*) in 1966, the FI 12.5 (Table 1) reflects not only the total number banded but its relative percentage to all other species banded in 1966. Table 1 (below) of FI for the 12 most frequently banded species allows a comparison of annual variations in frequency for each of these species at Pennington. Undoubtedly, the high annual indices of seed eating species are directly related to the plentiful supply of grain in the traps which was easily available to the birds as they became accustomed to moving freely in and out

**TABLE 1. FREQUENCY INDEX (FI) BY YEAR
(12 most frequently banded species)**

Species		'66	'67	'68	'69	'70	'71	'72	'73	(N)	Av. F.I.
Dark-eyed Junco (<i>Junco hyemalis</i>)	(N)	7.7 (32)	15.7 (149)	12.1 (152)	14.0 (226)	12.1 (248)	11.9 (165)	10.6 (118)	13.4 (152)	(1,242)	12.19
Blue Jay (<i>Cyanocitta cristata</i>)	(N)	12.5 (52)	16.7 (159)	9.0 (120)	9.6 (155)	9.4 (192)	20.1 (279)	6.4 (71)	12.5 (142)	(1,170)	12.03
Tree Sparrow (<i>Spizella arborea</i>)	(N)	4.0 (19)	15.2 (144)	20.2 (254)	13.5 (218)	10.9 (222)	10.6 (147)	4.1 (46)	1.9 (21)	(1,071)	10.05
Common Grackle (<i>Quiscalus quiscula</i>)	(N)	13.2 (55)	6.6 (63)	6.4 (80)	10.4 (167)	6.9 (141)	9.1 (127)	7.9 (88)	11.8 (134)	(855)	9.04
Mourning Dove (<i>Zenaidura macroura</i>)	(N)	2.4 (10)	3.1 (29)	4.0 (50)	9.1 (147)	10.2 (209)	7.6 (106)	8.1 (90)	7.1 (81)	(722)	6.45
White-throated Sparrow (<i>Zonotrichia albicollis</i>)	(N)	5.3 (22)	5.5 (52)	6.1 (76)	3.2 (52)	5.2 (107)	7.5 (104)	9.7 (108)	8.5 (97)	(618)	6.38
Starling (<i>Sturnus vulgaris</i>)	(N)	5.5 (23)	7.6 (72)	3.7 (46)	4.5 (73)	5.6 (115)	4.3 (59)	6.6 (73)	7.1 (81)	(542)	5.61
Song Sparrow (<i>Melospiza melodia</i>)	(N)	4.1 (17)	2.5 (24)	6.2 (78)	4.5 (72)	7.1 (144)	5.9 (82)	6.0 (67)	6.3 (72)	(556)	5.33
House Sparrow (<i>Passer domesticus</i>)	(N)	8.4 (35)	5.1 (48)	5.7 (71)	3.2 (51)	3.1 (64)	2.3 (32)	2.8 (31)	1.1 (12)	(344)	3.96
American Goldfinch (<i>Carduelis tristis</i>)	(N)	0.7 (3)	0.7 (7)	3.3 (42)	5.1 (82)	6.6 (134)	4.5 (62)	4.9 (55)	4.0 (45)	(430)	3.73
American Robin (<i>Turdus migratorius</i>)	(N)	8.9 (37)	5.5 (52)	2.1 (27)	1.0 (16)	2.1 (43)	0.5 (7)	2.8 (31)	2.2 (25)	(238)	3.14
Gray Catbird (<i>Dumatella carolinensis</i>)	(N)	4.3 (18)	0.7 (7)	2.0 (25)	1.1 (17)	1.1 (23)	0.2 (3)	1.2 (13)	1.4 (17)	(123)	1.50

of the traps when the doors were locked in the open position. However, the variability through the year in numbers of individuals banded by species reflects the density of population present to be captured at the times when nets were unfurled and traps set. The declining

number of House Sparrows (*Passer domesticus*) through the period reflects, accurately I believe, a declining population in our residential area. Fewer were seen at the traps, and fewer were netted and trapped as the years progressed.

TABLE 2. FREQUENCY INDEX (FI) BY MONTH OF THREE OVER-WINTERING SPECIES

Species		Nov.	Dec.	Jan.	Feb.	Mar.	(N)	Av. F.I.
Dark-eyed Junco (<i>Junco hyemalis</i>)	(N)	61.03 (354)	53.38 (292)	26.70 (98)	25.00 (107)	36.36 (160)	(1011)	42.80
Tree Sparrow (<i>Spizella arborea</i>)	(N)	5.69 (33)	27.24 (149)	65.12 (239)	70.09 (300)	59.09 (260)	(981)	41.53
White-throated Sparrow (<i>Zonotrichia albicollis</i>)	(N)	33.28 (193)	19.38 (106)	8.18 (30)	4.91 (21)	4.55 (20)	(370)	15.67

Table 2 gives the FI indices by month (November-March) over the seven year period for three overwintering finches. Birds arriving in October and departing in April are not included. Although the numbers banded undoubtedly include migrants, it is believed that the

data are reflective of the overwintering population. Both the Dark-eyed Junco (*Junco hyemalis*) and Tree Sparrow (*Spizella arborea*) indices indicate that these two were the most plentiful species at my banding station throughout the winter months.

Table 3. FREQUENCY INDEX (FI) BY MONTH OF NINE BREEDING SPECIES

Species		May	June	July	Aug.	(N)	Ave. F.I.
Blue Jay (<i>Cyanocitta cristata</i>)	(N)	51.87 (556)	19.04 (127)	24.77 (106)	16.53 (40)	(829)	34.41
Common Grackle (<i>Quiscalus quiscula</i>)	(N)	21.74 (233)	24.29 (162)	32.94 (141)	18.60 (45)	(581)	24.12
Mourning Dove (<i>Zenaidura macroura</i>)	(N)	12.31 (132)	15.74 (105)	11.92 (51)	16.12 (39)	(327)	13.57
House Sparrow (<i>Passer domesticus</i>)	(N)	2.80 (30)	19.04 (127)	9.11 (39)	9.09 (22)	(218)	9.05
American Robin (<i>Turdus migratorius</i>)	(N)	3.82 (41)	12.44 (83)	6.54 (28)	7.85 (19)	(171)	7.10
Gray Catbird (<i>Dumatella carolinensis</i>)	(N)	3.73 (40)	1.80 (12)	4.67 (20)	9.50 (23)	(95)	3.94
Song Sparrow (<i>Melospiza melodia</i>)	(N)	0.93 (10)	0.75 (5)	5.37 (23)	21.49 (52)	(90)	3.74
Starling (<i>Sturnus vulgaris</i>)	(N)	1.59 (17)	5.10 (34)	3.74 (16)	0.00 (0)	(67)	2.78
American Goldfinch (<i>Carduelis tristis</i>)	(N)	1.21 (13)	1.80 (12)	0.94 (4)	0.82 (2)	(31)	1.29

Table 3 gives the FI indices by month (May-August) for the seven year period for the nine species known to breed in the Pennington area. The Blue Jay, which was the second most frequent species by year (Table 1), was present in greatest numbers, F1 34.41, during the summer period. It is believed that the large number of Blue Jays were due to movement of family groups after the nesting season during the summer. At other times, the increase reflects the influx of large groups of migrating jays. And I believe this explanation to similarly account for the high indices (Table 1 and 3) of the Common Grackle (*Quiscalus quiscula*) and Mourning Dove (*Zenaidura macroura*). Large numbers of doves appeared and were banded immediately following snow storms as in-

dividuals sought food and cover under evergreen bushes adjacent to the feeders. The indices for the Song Sparrow (*Melospiza melodia*) and Starling (*Sturnus vulgaris*) were unexpectedly low.

In spite of the variable introduced by my not being present every day with always the same number of traps and nets in operation, I believe that the annual fluctuation in numbers of individuals banded and the relative frequency indices are an accurate representation of the numbers of individuals occurring at my station during the periods under study. Whether or not the use of FI indices by other banders would be useful and provide an interesting comparison remains to be seen.