BLUE JAY POPULATION OF A LONG ISLAND VILLAGE

BY HEATHCOTE M. H. KIMBALL AND JOHN T. NICHOLS

With the aging of the village of Garden City, Long Island, N. Y., and increase in size of its trees, it has presumably become more to the Blue Jay's liking. About ten years, perhaps longer ago, we first knew of the jay summering here, and almost or quite synchronously it began to winter here also. Although we believe it was previously a resident in woodland two or three miles south and four or five miles north of us, in Garden City it had been a not common transient spring and fall, only a few birds passing through the village, in spring most often with the "May" migrants.

From its first summer and winter appearance it has had the status of a permanent resident, gradually increasing in numbers, and more abruptly so in the fall of 1941 when there was a heavy acorn crop on Long Island on which these birds feasted, and since when it has been unusually plentiful in the New York City Region in general. It is now one of the commonest and most conspicuous birds of the village in every month of the year.

With these facts in mind we were of the opinion that most of our Blue Jays were probably permanent residents. And when the Kimballs began to catch and band them at their 86 Fourth Street station, it occurred to us that it might be possible to prove this, and to analyze the population otherwise. Banded Jays were seldom recaptured, but this difficulty was gotten around by using colored celluloid bands furnished by the Fish and Wildlife Service. Two jays have worn such red bands from November 1 and 15, 1942, to April 20 and April 29, 1945, respectively. On the other hand one wore a green band from May 29 to July 14, 1943, but had lost it when trapped as a return June 19, 1944.

The first obvious thing about the occurrence of color-banded individuals is that dates, or periods, when they are frequently observed, alternate with longer periods when they are not observed at all though other jays come to the station. As examples take the occurrence of a doubtless permanent resident individual, No. 38-320080, with a long station record, and of a summer resident individual, No. 40-211634, presented in tabular form. The alternation is not entirely irregular. There is a tendency for a bird to be present at corresponding dates of different years, as indicated by the letters A, B, etc., to the left. (Table I)

There is evidence that the jays come and go, to some extent at least, in more or less permanent groups. For instance, three birds (Nos. 38-320090-91-92), all banded on Dec. 5, 1943, were all observed again for the first time on Dec. 19, all three on Feb. 24, 1944, two of

them (38-320091 and 92) on Feb. 26 and 29, none of them between March 19 and April 3, these same two each on two dates from April 3 to 9, none between April 22 and May 2, all three in the week from May 2 to 8, none between May 8 and June 10, the same two as in late February and early April on June 10 and also June 13.

TABLE I

	observed	No. 38-320080	*not observed*
A.	5 of 14 days, Nov. 1, '42 to Nov. 14.		27 days, Nov. 15 to Dec. 11.
B.	3 of 14 days, Dec. 12 to 25.		28 days, Dec. 26 to Jan. 22, '43.
C.	5 of 21 days, Jan. 23 to Feb. 12.		21 days, Feb. 13 to March 5.
D.	1 day, March 6.		31 days, March 7 to April 6.
E.	1 day, April 7.		142 days, April 8 to August 27.
	1 day, August 28.		16 days, August 29 to Sept. 13.
F.	1 day, Sept. 14.		42 days, Sept. 15 to Oct. 26.
A.	1 day, Oct. 27.		52 days, Oct. 28 to Dec. 18.
B.	1 day, Dec. 19.		55 days, Dec. 20 to Feb. 12, '44.
C.	1 day, Feb. 13.		20 days, Feb. 14 to March 4.
D.	2 of 15 days, March 5 to 19.		62 days, March 20 to May 20.
	1 day, May 21.		34 days, May 22 to June 24.
	1 day, June 25.		79 days, June 26 to Sept. 12.
F.	2 days, Sept. 13 to 14.		29 days, Sept. 15 to Oct. 13.
A.	15 of 37 days, Oct. 14 to Nov. 19.		31 days, Nov. 20 to Dec. 20.
B.	4 of 25 days, Dec. 21 to Jan. 14, '45.		13 days, Jan. 15 to 27.
C.	2 of 8 days, Jan. 28 to Feb. 4.		18 days, Feb. 5 to 22.
D.	1 day, Feb. 23.		29 days, Feb. 24 to March 24.
E.	6 of 27 days, March 25 to April 20.		

	observed	No. 40-211634	*not observed*
	1 day, May 29, '43.		19 days, May 30 to June 17.
A.	1 day, June 18.		16 days, June 19 to July 4.
	2 of 11 days, July 5 to 15.		35 days, July 16 to August 19.
B.	7 of 16 days, August 20 to Sept. 4.		279 days, Sept. 5 to June 9, '44.
A.	3 of 10 days, June 10 to 19.		58 days, June 20 to August 16.
B.	9 of 31 days, August 17 to Sept. 16.		

The varying proportion of banded and unbanded jays has been determined from day to day and week to week by counts as they come to the feeding station. As the same individuals are counted repeatedly, these are not absolute but only relative numbers, from which the proportion averages out more or less correctly. There are marked changes up and down, the proportion of banded birds has varied to as high as 68 percent (in a count totalling 31, covering 9 days, Jan. 23-31, 1943), but is rarely over 40 percent, sometimes falls below 10 percent. As there is no noticeable seasonal fluctuation in proportions which would be referable to the presence of transients, this favors the hypothesis of different groups of birds coming and going.

Bearing in mind that negligible percentage of true transients ever return another year, 10 out of 15 individuals marked with color in 1942 and 1943 did so, and were hence resident birds (Permanent,

Summer, or Winter). The record of 7 of the 10 is significant. Three recorded both in June and January, and two others of comparable occurrence, both recorded in December, February and May, and one of them in June also, may be considered permanent residents. Two recorded from May to September and October only, may be considered summer residents. There are no records to suggest winter resident individuals.

For the five permanent resident jays we have records for 3 in January, 1, 1 and 6 dates; for 4 in February, 1, 4, 5 and 5 dates; for 4 in March, 1, 2, 2 and 4 dates; for 4 in April 2, 5, 5 and 6 dates; for all 5 in May, 1, 1, 1, 3 and 6 dates; for 4 in June, 1, 2, 3 and 5 dates; for none in July; for 1 in August, 1 date (Aug. 28); for all 5 in September, 1, 2, 3, 4 and 5 dates; for 3 in October, 4, 6, and 10 dates; for 3 in November, 5, 8 and 11 dates; for all 5 in December, 2, 2, 2, 3 and 6 dates.

For the two summer resident individuals we have records for both in May (May 29-31), 1 and 3 dates; for both in June, 4 and 6 dates; for both in July, 2 and 2 dates; for one in August (the other bird is known to have been without its color band the second August, and may have been the first), 10 dates, for both in September, 1 and 6 dates; for one in October, 6 dates (dead on the 6th of these); no dates for either from November to April, inclusive.

We have attempted a rough estimate of the number of jays which frequented the station, from the known number which had been banded there, and the proportion of banded birds observed. In a total count of 993 from Oct. 27, 1942, to Sept. 14, 1943, with an average of 6.4 which had been banded, 20 per cent were banded, and the estimated number of birds was 32. In a total count of 1010 from Sept. 15, 1943, to July 11, 1944, with an average of 14.8 which had been banded, 27 percent were banded and the estimated number was 55. In a total count of 767 from August 7, 1944, to March 18, 1945, with an average of 19.0 which had been banded, 30 percent were banded and the estimated number was 63. There are various factors outside the laws of chance, which these figures do not take account of, and which would mostly tend to make them low, 32 birds present during a given 12 months, with 16 new ones each succeeding 12 months, would be a minimum estimate.

Jays seem almost equally plentiful throughout the village, and with some knowledge of how far they ranged it would be possible to estimate their number per area. At another station, 116 Ninth St., about 0.6 mile north of northwest from the Fourth St. station, a count of 660 from Nov. 8, 1942, to May 30, 1945, gave only unbanded birds. On the other hand we have a record in past years of one jay banded at the Ninth St. station, recovered by Mrs. J. K. Henney at 111 Fifth St., about 0.4 mile to the south. The problem is probably complicated by different groups of birds ranging in particular directions, thus those from the Fourth St.

station seem to go off southerly, but in general we would estimate that a group is replaced by another every 0.5 mile, which would add up to at least 128 per square mile.

TABLE II

SIGNIFICANT BLUE JAYS

Presumably Permanent Residents

40–355898—Oct. 25 (1942), Nov. 15, 28, Dec. 12, 25—Mar. 28 (1943), Apl. 6, 23, May 9, 22, 23, 28, 29, 30—Oct. 23, Nov. 1, 4, 14, 24—Mar. 11 (1944), Apl. 9, 18—June 16, 21—Sept. 21, Oct. 14, 20, Nov. 1, 5, Jan. 14 (1945)—Apl. 29.

38–320080—Nov. 1 (1942), 5, 6, 8, 14, Dec. 12, 20, 25—Jan. 23 (1943), 24, 31, Feb. 6, 12, Mar. 6—Apl. 7—Aug. 28, Sept. 14—Oct. 27—Dec. 19—Feb. 13 (1944), Mar. 5, 19—May 21—June 25—Sept. 13, 14, Oct. 14, 15, 17, 19, 20, 21, 22, 26, 28, Nov. 1, 3, 4, 5, 12, 19, Dec. 21, 31, Jan. 6 (1945), 14, 28, Feb. 4, 23, Mar. 25, Apl. 2, 6, 8, 15, 20.

38–320090—Dec. 5 (1943), 19—Feb. 24 (1944)—May 2, 3, 6—Sept. 14, 21.

38–320091—Dec. 5 (1943), 19—Feb. 24 (1944), 26, 29—Apl. 4, 9, May 4—June 10, 11, 13, 15, 17—Sept. 12, 14, 21, 24, 29, Oct. 2, 14, 15, 17, 19, 22, Nov. 1, 4, 5, 12, 19—Feb. 23 (1945), Mar. 24, Apl. 1, 2, 15.

38–320092—Dec. 5 (1943), 19, 26, Jan. 2 (1944)—Feb. 21, 24, 26, 29, Mar. 5, 19, Apl. 3, 7, 22, May 8—June 10, 13, 19—Sept. 1, 10, 14, 17—? Feb. 23 (1945).

Presumably Summer Residents

38–320085—May 29 (1943), 30, 31, June 13, 15, 16, 18, 28, July 5, 14—June 19 (1944, color band lost)—Sept. 29 (color band replaced), Oct. 2, 14, 17, 20, 22, 29 (picked up dead).

40–211634—May 29 (1943), June 18, July 5, 15—Aug. 20, 22, 27, 28, 29, Sept. 2, 4—June 10 (1944), 11, 19—Aug. 17, 19, 20, 26, 28, Sept. 9, 11, 14, 16.

The tendency for resident Blue Jays to move about makes it particularly difficult to get an idea of the number of true transients by any means. There are presumably some such at our locality, but what evidence there is points to the number being relatively small. It also makes it difficult to be sure of fluctuations in the general jay population. As the Blue Jay occurs scattered through the general woodland all over Long Island its numbers seem small but could absorb a good many village birds without noticeable change. Temporary concentrations at an acorn crop, more permanent ones in a village, may be just

that, and what look like through migrations, sometimes may be only drifts, as of ducks or gulls along the beach. Perhaps there is every gradation between drifting and distance migrating individuals, or the same individual may even shift from one to the other of these classes, this last an unjustifiable hypothesis, however, lacking evidence to support it.

Garden City, Long Island, N. Y.

PELICAN TRAVELS

By C. Russell Mason

Of all the birds found along the south coastal areas of the United States, the Brown Pelican is probably best known to the layman. The bird's size and grotesque appearance, his skimming of the waves along the shore where he is conspicuous to strollers and bathers, his tameness around fishing boats and piers, serve to make him well known.

In the Western Hemisphere the Brown Pelican is characteristically a bird of the semitropical and tropical seacoasts of North, Central and South America, and the West Indies, though stray individuals infrequently penetrate inland to fresh-water lakes.

The Eastern Brown Pelican *(Pelecanus occidentalis carolinensis)* breeds on the South Atlantic and Gulf coasts of the United States from South Carolina to Texas, and along the coasts of Central and South America to northern Brazil. The Western Brown Pelican *(P. o. californicus)*, a larger subspecies, breeds from Santa Barbara, California, to the Galapagos and, from banding and sight records, apparently wanders from British Columbia to Mexico. The West Indian form *(occidentalis)* is reported by Barbour to have its principal breeding ground in Cuba, near Cardenas.

On the east coast of North America there are but three breeding colonies of the Brown Pelican, one at Cape Romain, South Carolina, with 559 nests counted in 1944; a smaller one at Egg Bank, St. Helena, Beaufort County, South Carolina; and an extensive one, usually numbering 2,000 or more pairs, on one or more small islands in Mosquito Lagoon, Merritt Island, east of Titusville, Florida.

On the Gulf Coast of Florida there are several small breeding colonies from Cedar Keys and Tarpon Springs to the Florida Keys, usually containing from one hundred to five hundred pairs of birds. Colonies of similar size or larger are found along the Gulf coast from Mississippi to Texas. In Louisiana in June, 1933, a colony on the North Islands in the Chandeleur Island group contained 2,300 nests, while