

MIGRATION OF THE BLUE JAY IN THE SOUTHEASTERN UNITED STATES

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Although many field workers are aware of the migration of the Blue Jay (*Cyanocitta cristata*) in the extreme Southeastern States, few published sources take cognizance of the fact. The AOU *Check-list* (1957) made no mention of migration for the species as a whole, but stated (p. 369) that the subspecies *bromia*, which breeds as far southeast as northeastern Tennessee and south-central Virginia, "is migratory in part in winter to southern Louisiana . . . central Alabama . . . and northeastern Georgia." No reference was made to migratory behavior in the other races, and they may well be sedentary. In discussing the full species, Imhof (1962: 372) stated that "many individual birds move southward for the winter" and supported the statement with a map showing 10 banding and recovery localities. Other state bird books in the Southeast (North Carolina, South Carolina, Georgia, Florida) ignore the subject of Blue Jay migration.

In the fall of 1943 I began compiling monthly summaries of field counts for all species, and it soon became apparent that Blue Jays were much more numerous in late September and October than in other months. Frequently small groups were seen flying from tree to tree, often in a southward direction, but the numbers were seldom impressive and similar behavior could be seen at other times of the year. Since that time, however, I have compiled such field data in 8 areas in the Southeast and found that the frequency (birds-per-hour) of this species is higher in October than in any other month (Table I). The only exceptional month was September at Oxford, Mississippi, but in that area the insignificantly small sample of 1½ hours afield was skewed toward the end of the month, at which time larger numbers of Blue Jays would be expected. Parenthetically, it should be added that the precise figures shown in this table must not be taken at face value, as the significance of the various sets of data varies greatly. In general, they range from the least significant (top) to the most significant (bottom). Most important, though, is the extreme improbability

TABLE I: MONTHLY FLUCTUATIONS OF BLUE JAY ABUNDANCE IN EIGHT AREAS OF THE SOUTHEASTERN UNITED STATES

AREA	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.	OCT.	NOV.	DEC.	YEARS INCL.
Southwestern Virginia	1.4	1.1	1.4	2.5	1.3	2.3	0.5	1.8	2.7	3.9	1.2	2.3	1944-46
Tenn. River Valley (Ala.)	<u>1.5</u>	<u>0.8</u>	2.9	3.7	2.2	3.9	3.2	2.6	3.5	7.0	<u>1.1</u>	<u>1.7</u>	1940-59 ^a
Oxford, Mississippi	2.6	3.8	3.3	4.3	2.7	4.4	---	---	21.3 ^b	5.6	2.5	3.4	1943-44
Alabama Coast	4.6	3.0	3.6	3.3	3.4	3.5	4.7	3.5	6.5	6.8	3.6	3.4	1938-72 ^a
Laurel Hill, Fla.	5.9	5.8	6.9	4.4	4.8	4.5	5.7	5.2	6.2	9.1	5.2	6.5	1959-72
Jackson Co., Fla.	3.6	4.8	5.4	4.5	4.5	4.6	5.2	5.3	7.3	8.0	3.8	4.1	1959-71
Leon Co., Fla.	4.6	5.7	5.2	4.4	4.6	6.4	6.1	5.9	7.9	8.4	4.6	4.1	1946-72
St. Marks, Fla.	1.4	2.4	2.0	1.8	1.7	2.2	2.3	2.3	3.8	4.5	2.0	1.3	1946-72

The monthly values represent the number of birds recorded per hour afield, rounded off to the nearest tenth.

^a In intermittent years.

^b Represented by only 1½ hours afield near end of month.

that all areas would show the highest frequencies in October (or late September) due to chance alone.

Over the same period of years field notes pertaining to visible migrations of Blue Jays were made as circumstances permitted. Such observations increased from northern to southern localities, but the increase may also be a factor of time afield, as my first 3 years were spent much farther north than the remaining 26. My only entry for fall in the early years was on October 3, 1943, at Abbeville, Mississippi, "flock of 9 flying SW", but Imhof (pers. comm.), recorded his highest part-day count of 65 at Birmingham, Alabama, on October 7, 1946, and added "incl. 55 flying E."

Near the latitude of the Gulf of Mexico, occasional evidence of migrating Blue Jays became more impressive. During a multi-party fall bird count on the Alabama coast, October 6, 1956, about 390 Blue Jays were recorded. Newman (1957: 33) stated, "The consensus is that these birds were migrating, but they were already so close to the Gulf that it is difficult to explain where they were headed." As is usually the case with such large numbers, not all were moving in the same direction. On another fall count, in Wakulla and Franklin Counties, Florida, October 21, 1961, I was surprised to see a loose flock of about 75 jays arriving across the harbor on Alligator Point shortly after sunrise. The event was so unusual that it presented a temporary problem of identification. My total for that day was about 150 Blue Jays, but at that time the resident population on Alligator Point was very small; the total for the entire count was 530.

Two other high totals for Blue Jays on fall counts in this St. Marks-Panacea area were 900 on October 9, 1965, and 650 on October 15, 1966. My personal total on the former day was about 500. On both of those days sizeable flocks milled around near the coast. The story was repeated on a trip to St. Joseph Peninsula (Gulf Co., Fla.) on October 7, 1966, when about 65 birds were said to be "migrating (back and forth)". Again, as I was canoeing on the lower St. Marks River (Wakulla Co.), where trees are few and small and Blue Jays seldom seen, 25 were estimated "migrating E" on September 30, 1966, and other observers mentioned having seen Blue Jays in migration on Alligator Point that day.

From two other parts of the state observers reported migrating jays in 1972. John Edscorn wrote from Lakeland (pers. comm.), "On 10/21 I saw a migrating flock of 15 high over my home headed SW." Mrs. Virginia Markgraf (pers. comm.) on October 6 saw 78 "in Jacksonville in the space of five minutes, flying south in small groups.

The flock seen arriving on Alligator Point shortly after sunrise was also surprising as to time of day, as I had always considered the Blue Jay a late riser. It seems almost certain that its migration is strictly diurnal. In my many years of nocturnal field work I have never heard a Blue Jay note, and Stoddard and Norris (1967) did not list the species among the birds recovered at the WCTV tower north of Tallahassee.

This same flock was also somewhat exceptional in crossing a body of water (Alligator Harbor), although the distance was just less than one mile. On other occasions there is abundant evidence that the Blue Jay avoids flights across any considerable expanse of water. Those I saw

on the Alabama coast on October 6, 1956, were moving eastward at Bear Point, but invariably turned back as they saw the mouth of Perdido Bay. I have seen this behavior repeated at the western and northeastern tips of Alligator Point and on St. Joseph Peninsula. Being of rather weak flight, they are not always successful in turning back. On Alligator Point, October 21, 1972, a flock of about 20 flew westward toward the tip, aided by a strong east wind. As they approached the tip, all attempted to turn back, but some were carried out over the water and continued toward St. Teresa, about 2 miles to the west.

The reluctance of this species to cross large bodies of water doubtless accounts for its long-standing absence (or virtual absence?) on the barrier islands of Franklin County, Florida. After many trips to Dog Island, my first hint of one there came on October 19, 1963, when a Mockingbird (*Minus polyglottos*) "gave several perfect imitations of a Blue Jay", but Mockingbirds also migrate, so the note may have been learned on the mainland. However, a Blue Jay was positively recorded there on November 1, 1969, and the species was rather numerous there in the winter of 1972-73, some remaining until at least March 25. According to a Mr. Millender, of Eastpoint, there has long been a resident population of jays on St. George Island, and I found 3 there on June 16, 1972 (Ogden, 1972: 851). However, it appears that there was no certain record at any time of the year until October 28, 1966. It may be more than coincidental that the causeway to the island had been completed shortly before that time, as the distance from the mainland is about 3 miles. The possibility should also be considered that the species then gained access to Dog Island from St. George, thus cutting the length of the overwater flight to only 2 miles. It has occurred on St. George Island in some years since 1966, but perhaps not in all. My early trips to St. Vincent Island also yielded no Blue Jays, but most were made during the warmer parts of the year. By 1972 the St. Vincent National Wildlife Refuge carried the species on its official bird list, and Wilson Baker, Bobby Crawford, and I counted 63 there on December 14, 1972. It seems most likely that jays have long visited St. Vincent Island, as the distance across Indian Pass is about ½-mile.

Some years ago it occurred to me that these invasions of Blue Jays should contain, or consist of, birds from the northern population, *C. c. bromia*, but the 4 specimens randomly collected in fall and winter prior to 1972 proved to be *cristata*. Because of the absence of resident birds on the islands (except as noted above), 2 specimens were collected there. Both of these proved to be *C. c. bromia*—a new subspecies for Florida (St. Geo. Is., Dec. 2, 1972; Dog Is., Dec. 16, 1972).

John Edscorn (pers. comm.) called my attention to a behavioral difference in these invaders from the North. In late October, 1972, they "literally stripped an oak in our yard of *most branch tips*. In getting the tightly attached acorns they would tussle and twist until the twigs broke; in time the yard below was *solidly covered with their prunings!* We've never seen this before here. I feel certain that these were not our local birds . . ." Baker, Crawford, and I noticed similar litter under the Live Oaks (*Quercus virginiana*) on St. Vincent Island (see above) and speculated at the time as to its cause.

The origin of the Blue Jays on the Florida Keys must be considered uncertain at this time. Writing of *C. c. semplei*, Howell (1932) described its range as "south to Key West", later adding, "They are reported to be fairly common on Key Largo and on Key West." As he made no reference to migration, one might infer that Blue Jays were nesting permanent residents there, but there appeared to be no records in the breeding season until an isolated instance in 1972. On several occasions, however, the species has visited the Keys in winter, as it has on the Gulf islands mentioned above. It seems unlikely, though possible, that these represented the race *semplei*. However, the same statement does not apply to Blue Jays in Key West in the *summer* of 1972. Paul Sykes (pers. comm.) saw 5 on August 16 and stated that one "was a relatively young bird judging from development of the crest and base of the bill." Even if this statement does not confirm nesting there, the presence of the species in August may be without precedent.

My field notes also contain a few references to the spring migration, but never to such striking movements as in fall. Near Laurel Hill, Florida, Frank L. Chapman counted 41 on March 20, 1966, with the comment "migrating (some flying N high overhead)." This was the highest count either he or I made in 74 trips to that study area at various times of the year. A count of 31 on the Luna Plantation (10 mi. N of Tallahassee), during a short trip on March 22, 1967, equalled my highest count there; "many flying E" was the entry then. It may be significant that the other count of 31 there was almost on the same date—March 21, 1961. At Lake Jackson, near Tallahassee, 18 birds near the end of Rollins' Point on April 19, 1961, behaved like migrants. In a small area in central Wakulla County, Florida, I estimated about 50 jays on April 14, 1966, but found none there one month later. North of Florida I find a single reference to a spring movement: regarding 20 seen near Elizabethton, Tennessee, on May 5, 1946, the account read "some migrating." However, it should be mentioned here that Blue Jays left the Vanderbilt University campus (Nashville, Tenn.) every fall and reappeared in spring (George Mayfield, Sr., pers. comm.), as they did during my residence there in 1940-41. The monthly compilations in the Tennessee River Valley nearby (Table I) indicate that many jays leave there for the winter, as the values for November-February are much lower than those for any other months. Howell (1928: 195-196) also suspected migration in Blue Jays seen near Muscle Shoals, Alabama, on April 23-24, 1914, not far from where some of my quantitative field were taken.

The fact that values in other areas represented in Table I do not show an increase in spring may in some cases reflect a migration *out* of those areas. Also the apparent or real numbers are affected by such aspects of life history as the increased frequency of calling, the activity associated with nest-building and feeding young, the females' incubating, and natural attrition during the winter. Another possibility is that the spring migration may be more attenuated than that in fall. It would be difficult to determine how long it might go on, but on the coast of Martin County, Florida, I was surprised to see "several moving N along the coast" on June 9, 1966. Although I am not convinced that they were migrating on so late a date, their actions were such that I would have thought so had the occurrence been several weeks earlier.

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FIELD NOTES

A Great Cormorant in West Florida

On October 29, 1972, I observed an immature Great Cormorant (*Phalacrocorax carbo*) on an old dock in Pensacola Bay. It had a pale yellow face, white throat, dark breast, and clear white belly and abdomen to the under tail coverts. It was also observed during the day with 7X binoculars and 30X telescope by my wife, Lucy, and Mr. and Mrs. E. E. Furnans under excellent lighting conditions. I estimated its total length at about 40 inches. Double-crested Cormorants (*Phalacrocorax auritus*) in the vicinity were available for comparison. We had just returned from a trip to Maine, where we had seen this species for the first time. My wife took recognizable photographs of it. To the best of my knowledge this is the westernmost record of the bird in Florida. It reappeared at this location briefly on the morning of October 31. An immature Great Cormorant seen on the Alabama coast by Thomas A. Imhof in early November may have been the same individual.—Robert Duncan, 614 Fairpoint Drive, Gulf Breeze, Florida 32561.

A Mockingbird and Blue Jay Seeking Shelter from Rain

No articles or notes were found in the literature on the behavior of avian forms during various intensities of precipitation. Dawson has recorded the incidence of House Sparrows (*Passer domesticus*) killed by a rain storm (Dawson, D.G. 1967. Roosting Sparrow (*Passer domesticus*) killed by a Rainstorm, Hawke's Bay, New Zealand, *Notornis*, 14: 208-210). Hickman attributed the death of a Great Blue Heron (*Ardea herodias*) to heavy ground fog and rain (Hickman, G. L. 1972. Dead Great Blue Heron found at 11,000 foot Utah Elevation. *Great Basin Naturalist*, 32(2):112).