COMPOSITION OF RUBY-THROATED HUMMINGBIRD POPULATIONS IN NORTHEAST OKLAHOMA

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This paper analyzes more than a decade of banding records of Ruby-throated Hummingbirds (*Archilochus colubris*) in northeast Oklahoma. During the 11 seasons from 1977 through 1987, a total of 2290 individuals have been trapped and/or netted in our rural backyard south of Jay, in Delaware County, Oklahoma. Here a wide variety of native tubular wildflowers and escaped species from abandoned housesites are scattered throughout the semi-open wooded hills and broad valleys of the Ozark Plateau. Natural food sources are augmented by feeders, garden flowers, trees and vines provided by increasing numbers of urban and rural home owners, enticing hummingbirds into countable proximity. Whether there has been a real or perceived increase in numbers, Ruby-throats currently rank among the more abundant breeding species in the region.

Attracted by the bowers of coral honeysuckle (*Lonicera* sp.) that festoon the fences around our spacious yard, these little birds have readily accepted the feeders used to bait our two traps, supplied with sugar water consisting of one part sugar to four of water, and boiled to discourage fermentation. Each wire mesh cylinder trap had a yawning drop door, operated manually several days each week throughout the hummingbird season. Mist-netting several mornings a week supplemented our captures and proved no more hazardous for hummingbirds than for other species.

Our earliest spring arrival, a male, was noted on 12 April (1981). Females usually followed several days to a week or more later. The first young birds began to appear in July, rapidly increasing our hummingbird population. There was no indication that these Oklahoma Ruby-throats reared more than one brood a year. Departure dates for the species usually occurred between mid- and late September, with the latest record on 25 October (1985).

During the early part of the season, when all the birds were in adult plumage, the sexes were easily distinguished. The male had a ruby throat; the female did not. The male in silhouette showed a forked tail, whereas the female's was rounded. With the arrival of the hordes of young-of-the-year after the first week in July, four categories had to be recognized. *Adult males* now appeared sparingly, as most had already departed southward by mid- to late July. *Immature males* resembled females, but at close range showed distinct streaks of tiny red dots on their white throats. Their crown feathers were usually edged with buff, creating a scaly appearance. Compared with adult females, their bills appeared definitely "stubby". *Immature females* could often be distinguished from *adult females* by their scaly crowns. The safest criterion, however, was bill length: in young females 17 to 18 mm, in adult females 19 mm. Although these differences may sound absurdly minute, they became more obvious with a few years' practice.

Table 1 shows the ages and sexes of the 2290 individuals banded in the Jay area. There have been consistently more males than females in the annual counts. The highest count, in 1987, included 388 new (unbanded) birds and 85 returns from previous years, a total of 473 individuals. During 1987, the sex-age

proportions of newly banded birds were true to form, i.e., 242 (62%) were males (114 adults, 128 young) and 146 (38%) females (82 adults, 64 young). I do not believe that these figures represent a capture bias. Both sexes have used the traps freely. In fact, there have been periods lasting several weeks when the only birds captured were already banded, suggesting a fairly complete catch of the yard's population.

Table 1. Age and sex of 2290 Ruby-throated Hummingbirds banded in northeast Oklahoma, 1977-87 (% of total).

	Males	Females	TOTAL
Adults	583 (25.5)	494 (21.6)	1077 (47.0)
Young	685 (29.9)	528 (23.0)	1213 (53.0)
TOTAL	1268 (55.4)	1022 (44.6)	2290 (100.0)

The return ratios of banded hummingbirds have followed a different pattern. The 334 return birds represent 19.6% of the total number banded, and include about the same percent of birds banded as adults as those banded as immatures (see Tables 1 and 2). Although more males than females were banded during the study, only 112 males (33.5%) were recaptured, as compared with 222 females (66.5%).

Table 2. Age and sex of 334 Ruby-throated Hummingbirds recaptured in northeast Oklahoma, 1977-87 (% of total).

	Males	Females	TOTAL
Adults	48 (14.4)	130 (38.9)	178 (53.3)
Young	64 (19.2)	92 (27.5)	156 (46.7)
TOTAL	112 (33.6)	222 (66.4)	334 (100.0)

Analysis of these 334 Ruby-throat returns provides insights into the longevity of these tiniest of birds. As expected, the majority return from one to three years after the year of banding. A four-year-old is exceptional. Of the 1268 males banded in 11 years, two were at least five and one bird lived to age four. Females definitely outlived males. Of the 1022 banded females, 26 attained the age of four or more years, as follows: 6 four-year-olds, 14 five-year-olds, 3 six-year-olds, 2 seven-year-olds and 1 nine-year-old. These hardy hummers comprise only .011 percent of the 11-year total. The oldest, a lone female banded as an adult (No. 20239), survived for at least nine years, representing less than one percent of the 110 birds banded during her first season, and an infinitesimal proportion of all Ruby-throats banded to date.

Difficult to ascertain is the extent of range inhabited by the hordes that visit our feeders. For several years we maintained substations from .3 to 6 miles from the home station. These were manned during 68 sessions for a total of

175 hours, and 92 hummers were banded there. There were only four interchanges, including an adult female, an immature female, and two adult males. Three of these birds represented 100% of the catch at the nearest substation. The fourth was captured on our deck in late April, and recaptured during mid-July about 1½ miles away.

During early June of 1983, our summer intern, Dale Gawlik, located three active nests in the nearby open woods by following female birds from our yard during the nest-building stage. Spaced approximately .2 mile apart, they formed a loose triangle about .3 mile east of the home station. A single female nestling, banded on 15 July, fledged the following morning, her stubby tail and short bill barely half grown. Assuredly, No. 29589 was not yet ready to fly to the feeders, but three weeks later, on 4 August, she buzzed into the trap on our deck.

Female No. 29588, a regular summer resident of our study area for three years, was last recorded on 14 August, 1985. On 16 September of that same year, she was found dead in Midland in southwest Texas. Thus she established not only a time schedule, but a migratory course considerably west of her place of origin. (Baumgartner, A. M., 1986, Bull. Oklahoma Ornithol. Soc. 19:21-23).

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GENERAL NOTES

Black-shouldered Kite in Greer County, Oklahoma. At 1030 on 17 September 1988, Tom McKay and I noticed a gray, medium-sized raptor perched in a dead mesquite tree (*Prosopis juliflora*) about 100 yards off, and not far from Deer Creek in northwestern Greer County, Oklahoma. It was feeding on a lizard, but even through my spotting scope, I could not tell which species. This bird closely resembled a Mississippi Kite (*Ictinia mississippiensis*) in size and shape, but its underparts and tail were essentially white, and at each shoulder was a distinct black patch. For about 10 minutes, we studied it carefully. Presently, it soared out from the mesquite and resumed hunting, frequently hovering not very high up. We agreed that this graceful, strikingly colored bird was an adult Black-shouldered Kite (*Elanus caeruleus*), a species I had never seen during 25 years of field work as a game ranger in southwest Oklahoma.

At the time of our observation, skies were cloudy, but the light was still good. A 10-15 mph south wind was blowing and the temperature (°F) registered in the 60s. According to the National Weather Service in Oklahoma City, heavy rains had been unleashed on the area earlier in the day by the remnants of Hurricane Gilbert as it swept into Oklahoma from the southwest.

This sighting took place on the Sandy Sanders State Wildlife Management Area, an extensive tract of wild, eroded mixedgrass brushland and gypsum hills bordering the Elm Fork of Red River. Mesquites, Pinchot junipers (*Juniperus pinchoti*) and hackberries (*Celtis* sp.) are common upland species, whereas cottonwoods (*Populus deltoides*) and black willows (*Salix nigra*) dominate the lower reaches. Principal grasses include buffalograss (*Buchloë dactyloides*), little bluestem (*Schizachyrium scoparium*) and needlegrass (*Aristida* spp.).

There are only a handful of Oklahoma records for *Elanus caeruleus*, and