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Some Observations on the Homing Instinct of the Mourning Dove

GLENN JONES¹

Abstract. During 5 years, 1964 thru 1968, of bait-trapping and banding of mourning doves, *Zenaidura macroura*, in the Ruthven area of Iowa, significant data have been compiled on the homing instinct and longevity of this bird. During this 5-year period 1,546 doves were banded. Recaptures of doves banded in previous years included 15 in 1966 and reached a high of 55 birds in 1968. Doves banded as close as the Ingham-High Game Unit, only 20 miles northeast, were not recaptured at Ruthven during the last 3 years of the study. Four birds banded in 1964 have been retaken each year. These four birds were banded as adults in 1964, therefore reaching an age of at least 5 years. Several birds were recaptured year after year following initial capture. This study indicates an instinct for the mourning dove to return to the area where hatched. Also, some doves in some areas may be longer-lived than generally thought.

Bait-trapping and banding of mourning doves has been a regular activity of all Game Management Units of the Iowa Conservation Commission since 1964. This is being done in cooperation with the U. S. Fish and Wildlife Service to gain more data on migration patterns, population estimates and mortality rates of this species.

The Ruthven Unit has two conditions favorable to dove trapping with a minimum of effort—a spruce tree windbreak which provides favorable nesting sites for doves, and an open gravel pit one-fourth mile away which attracts doves.

TECHNIQUES

The basic rigid funnel-type traps described by Reeves, Geis, and Kniffin (1968) were used. These are made of 1- by 2-inch mesh, 14-gauge weld-wire. Traps are 36 inches long by 24 inches wide and 10 to 12 inches high. A wire funnel is placed in each side of the trap at opposite ends; that is, the funnels are not opposite each other.

A maximum of ten traps was used—3 in a bare area behind the spruce-Russian olive windbreak, 6 at the gravel pit, and 1 in bare sand near the Smith's Slough cabins.

Traps were visited three times each day—about 1-1½ hours after sunrise, again between noon and 1:00 PM and the third time about one-half hour before sunset. Trapping was conducted each year from about the middle of June to the first week in September.

Baits used were wheat, a mixture of wheat and common millet, and grain sorghum. A handful of salt was also added to the bait. McClure (1943) stated that captive doves liked salt. Mimeo-

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graphed pamphlets from the U. S. Fish and Wildlife Service on trapping and banding of doves also stressed the importance of salt as part of the bait.

Traps were set in bare earth areas. Two tracts of gravel at the gravel pit were kept bare of vegetation by plowing twice during the season. The area behind the windbreak was kept bare with a spring-tooth harrow. When evidence of predation was experienced, the trap involved was removed for a day or two. If trap success decreased, the traps were closed for a day or two but baiting was continued to again attract doves.

RESULTS

In the 5 years, 1964-1968, 1,546 doves have been banded at the Ruthven Game Unit in Clay County. With the exception of 1965, the number banded has been increased each year.

Recaptured banded birds were not recorded in 1965—the second year of banding. However, in 1966 all recaptured birds were checked for band numbers, and it was then noticed that birds banded 1 and 2 years before were being recaptured. Accurate records on recaptured doves have been kept for 3 years (Table 1). The number of recaptures of birds banded in previous years has been increasing each year. The reason for this is not clear. Although techniques used have remained very much the same, trapping efficiency seemingly increased for both first time captures and recaptures.

No doves banded at other stations have been recaptured at the Ruthven Unit during the last 3 years of the study (not recorded first 2 years). About 100 doves have been banded each year for the last 3 years in the Wallingford area at the Ingham-High Unit, located 20 miles northeast. In 1966, 49 doves were banded near Manson, 60 miles to the south. None of these doves have been taken in traps in the Ruthven area.

Homing Instinct. It is of particular interest that some birds return each year. One bird banded in 1964 has been recaptured twice—once in 1967 and again in 1968. Of birds banded in 1965, one individual has been recaptured during each of the succeeding 3 years, 1966, 1967, and 1968. A second bird from the 1965 banding operations has been recaptured twice—once in 1967 and again in 1968. Of the 16 birds which were banded in 1966 and recaptured in 1968, three have been recaptured both in 1967 and 1968.

McClure (1943) stated that during 3 years of banding nestling doves, 1938 to 1940, no banded birds were noted to return to Lewis, Cass County, Iowa. It is not known on what he based this observation since no further statements on live-trapping were made.

Table 1

Three Years of Recapture Data of Doves Banded in Previous Years at the Ruthven Game Unit.

Year of Recapture	Year Banded	Number of Birds Banded that Year	Number of Recaptures	Per cent of Banded Birds Recaptured
1966	1964	254	4	1.6%
	1965	115	11	9.6%
Total:			15	
1967	1964	254	4	1.6%
	1965	115	4	3.0%
	1966	352	20	5.7%
Total:			28	
1968	1964	254	4*	1.6%
	1965	115	2**	1.7%
	1966	352	16***	4.5%
	1967	421	33	7.8%
			55	

* One of these also recaptured in 1967.

** One of these recaptured in 1966 and again in 1967. The second was also recaptured in 1967.

*** Three of these were also recaptured in 1967.

The present study suggests that some doves have an instinct to return to the area where they were hatched.

Longevity. All of the recaptured doves which were banded in 1964 and 1965 were banded as adults. This means that the four recaptured birds from 1964 were at least 5 years old and the two recaptured from 1965 were at least 4 years old.

Table 2

Rate of Recapture of Doves, 1, 2, 3, and 4 Years after Banding.
(Expressed as per cent of birds banded that year)

Year of Recapture	One Year after Banding	Two Years after Banding	Three Years after Banding	Four Years after Banding
1966	9.6%	1.6%	—	—
1967	5.7%	3.0%	1.6%	—
1968	7.8%	4.8%	1.7%	1.6%

Table 2 gives the number of doves recaptured on a percentage basis after being banded 1, 2, 3, and 4 years. As can be seen, the percentage of birds recaptured after 1 year was nearly 10% in 1966, dropped to less than 6% in 1967, and rose again to nearly 8% in 1968. This figure is the percentage of the number of birds banded in that particular year (Table 1). For instance, in 1966 the number of birds recaptured which had been banded 1 year was 11. This is 9.6% of the 115 birds which were banded in 1965.

The percentage of birds recaptured 2 years after banding has increased steadily each year during the 3-year period. The percentage of birds recaptured 3 years after banding has held about steady. The percentage of birds recaptured of those banded in 1964 has been the same each year—with four birds out of the 254 banded that year being retaken each year following.

Nearly 2% of the birds banded in 1964 were recaptured in 1968 and thus were at least 5 years old. These records indicate the dove may be a longer-lived bird than generally thought, at least in some areas.

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