

SUTTON, G. M. 1967. Oklahoma birds. University of Oklahoma Press, Norman.
Fort Hays Kansas State College, Hays, Kansas, 67601.

Received November, 1969.

BANDING THE TWO SONGFORMS OF TRAILL'S FLYCATCHER

By LEON J. GORSKI

INTRODUCTION

Due to their morphological similarity the flycatcher populations included under the name *Empidonax traillii* have long confused systematists. My field study over three years at Litchfield, Connecticut, indicates that the two songforms ("fitz-bew"'s and "fee-bee-o"'s) of Traill's Flycatcher do not interbreed when sympatric. The present report summarizes my banding program and provides new and more direct evidence for reproductive isolation between the songforms (see Stein, 1963, for citations of earlier studies on these songforms).

PROCEDURES

Habitat, behavior and natural history of Traill's Flycatchers were studied primarily on the grounds of the White Memorial Foundation in Litchfield, Connecticut. Enders and Magee (1965) reported populations of both songforms ("fitz-bew"'s and "fee-bee-o"'s) at the mouth of the Bantam River inlet at Bantam Lake in Litchfield. A second area containing numerous individuals of the two songforms surrounded Little Pond on the Bantam River about 4.8 kilometers north of its entrance into Bantam Lake. I chose this latter site for intensive study in view of the presence of larger populations as well as easier accessibility.

Adults were caught with either mist or hoop nets. Capture by mist net was facilitated by playing tape recordings of the advertising song of the songform at hand. Experience showed that the efficiency of capture increased.

Many Traill's were banded with standard metal bands and plastic color bands on opposite legs. For "fitz-bew"'s red leg bands were placed on the left leg of females and on the right leg for males. Yellow bands were used in the same way for captured "fee-bee-o"'s. The present study is a report on the banding program which greatly facilitated the interpretation of the behavioral observations and provided more accurate data on the natural history of the songforms.

RESULTS

Birds were sexed on the basis of the reactions to playing of the appropriate song. Males usually responded with song and frequently attacked the loudspeaker and nearby model. Females rarely showed the intensive aggressive behavior exhibited by territorial males and uttered only simple alarm notes such as "pit"s and "whit"s or "kitter"s. Further corroboration of sex was often achieved by continuing the playing of the specific song when one member of a territorial pair was in hand. If the male was held, his mate would continue typical female behavior, while the converse occurred when the female was captive. After banding each bird, whether male or female, an attempt was made to observe its natural activities to reduce the likelihood of possible error.

Both songforms arrived in mid-May at Litchfield when the foliage was well developed. In 1967 both forms were located on 20 May and in 1968 on 15 May. Although both arrived in the area at approximately the same time, their nesting periods were slightly different. As Stein (1958) suggested, the "fitz-bew"s generally began nesting activity a week earlier than the "fee-bee-o"s with fledglings of the former beginning about the end of June. In contrast, "fee-bee-o"s began nesting activity a week later, and the young leave the nest during the first week in July. The present study provides information on the banding program carried out on 78 banded adults, fledglings and nestlings of both songforms. The banding results, including returns at the Litchfield site, are particularly summarized in Table I.

TABLE 1. SUMMARY OF THE BANDING OF AGE GROUPS OF BOTH SONGFORMS AND THE RETURNS OBTAINED IN 1968

Year	Bandings		Returns			
	1967	1968	1967	1968		
Sex	♂	♀	♂	♀	♂	♀
Adults						
"fitz-bew"	11	10	9	0	4	8
"fee-bee-o"	3	9	6	0	3	1
Fledglings						
"fitz-bew"		0		0		
"fee-bee-o"		2		0		None
Nestlings						
"fitz-bew"		8		10		
"fee-bee-o"		3		7		None

RESULTS AND DISCUSSION

The 16 banded birds which returned to the Litchfield study site in 1968 gave adults, fledglings and nestlings of both song forms. The results, including returns at Litchfield, are presented in Table I.

The 16 banded birds which returned to the Litchfield study site in 1968 gave information on the fidelity of mate selection. In two cases, returning "fee-bee-o" females mated with males which gave a typical "fee-bee-o" song and one such female was mated to the sole returning banded male "fee-bee-o". All four of the returning "fitz-bew" females were mated with the same respective banded "fitz-bew" males as in the previous year. The remaining four banded male "fitz-bew"s were found to be mated to females which responded to the playing of the alarm note used exclusively by the "fitz-bew" songform. A female "fitz-bew" which was first banded in 1966 returned to the same territory in 1967 and 1968. As her mate was not banded in 1966, it was not known if the same male was paired with her in 1966 as in 1967 and 1968.

No returns were obtained for nestlings or fledglings of either songform.

The pairing history of color-banded members of both songforms thus revealed no instance of interbreeding between the songforms and thus supports this conclusion of Stein (1963) regarding the reproductive isolation of these populations.

ACKNOWLEDGMENTS

Financial support was provided by the Chapman Fund of the American Museum of Natural History, the Eastern Bird Banding Society, National Science Foundation Grant GB-4306X, the Society of Sigma Xi, The University of Connecticut Research Foundation, and the Wilson Ornithological Society. Helpful suggestions were given by G. A. Clark, Jr., A. H. Brush, and J. A. Slater. The White Memorial Foundation of Litchfield has generously allowed access to study areas.

LITERATURE CITED

- ENDERS, F., and A. MCGEE. 1965. Census report, Litchfield, Conn. *Aud. Field Notes*, **19**: 625-627.
- NOLAN, V. 1961. A method of netting birds at open nests in trees. *Auk*, **78**: 643-645.
- STEIN, R. C. 1958. The behavioral, ecological and morphological characteristics of two populations of the Alder Flycatcher *Empidonax traillii* (Audubon). *N. Y. State Mus. and Sci. Serv. Bull.*, **371**: 1-63.
- 1963. Isolating mechanisms between populations of Traill's Flycatchers. *Proc. Am. Philos. Soc.*, **107**: 21-50.

*Department of Biological Sciences, Central Connecticut
State College, New Britain, Conn. 06050.*

Received October, 1969.