

COMMENTARY

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WHAT CONSTITUTES A NATAL SITE FOR TREE SWALLOWS?

QUÉ CONSTITUYE EL SITIO NATAL PARA *TACHYGINETA BICOLOR*

Butler (J. Field Ornithol. 59:395-402, 1988) states that we (Cohen, J. Colo.-Wyo. Acad. Sci. 13:62, 1981; Houston and Houston, N. Am. Bird Bander 12:103-108, 1987) have shown that "most surviving nestling Tree Swallows (*Tachycineta bicolor*) return to their natal site the following year." We feel that Butler has misinterpreted our data. We offer correction and clarification.

The abstract by Cohen (*op cit*) actually reports data only on year-to-year breeding-site tenacity of adults. Consequently it does not bear on this question. Cohen's study population does not, in fact, show a strong tendency for yearlings to return to their natal nest-cavity or even to within 3 km of that cavity (unpubl. data). His nest-box study consists of sub-populations in eight study-areas of 0.5 to 5 km dimensions, geographically separated by distances of 3-7 km. From 1976 through 1987 he captured 611 breeding yearlings banded as nestlings; of those only 138 (23%) were nesting in their natal study-area and only one of these in its natal nest-cavity; 473 (77%) were nesting in one of the other study-areas; the numbers and percentages for males and females in that sample are similar. Another 15 yearlings were found nesting elsewhere in north-central Colorado, within 30 km of their natal nest-cavity, by other investigators.

Of 8028 Tree Swallow nestlings banded by Houston and Houston near Saskatoon, only 66 were recaptured in any subsequent year. Of these, 7.6% were recaptured as adult females on their own nests within 1.6 km of the box in which they had been raised; 27.3% were between 1.6 and 8 km; 27.3% between 8 and 16 km; 24.6% between 16 and 32 km, and 13.7% were over 32 km from their natal box. Only one nestling returned to nest in its natal nest-cavity, while another occupied a box directly across the road from its natal nest-box. These 66 swallows, however, represent only the minority that were recaptured and must grossly underestimate the dispersal beyond the zigzag 121.6-km-long trail. Recaptures near Saskatoon have a 15:1 preponderance of swallows banded as adults over those banded as nestlings. Half of this difference can be explained by the fact that adult males are not retrapped near Saskatoon, and another part by probable increased mortality in the first months after fledging.

Four other random encounters might support speculation that perhaps only about 20% of surviving Houston-banded swallows return to nest within boxes on the trail: three swallows banded as nestlings on the trail returned to nest in boxes erected by other people at distances of 30, 50, and 333 km, and another swallow, banded as a nestling by Lorne Scott near Vibank 253 km to the southeast, nested in a box on the trail near Saskatoon.

Dispersal appears to be greater on the flat prairie-parkland area of Saskatchewan at an elevation of 470 to 520 m above sea level than in the Colorado valleys at 2500 to 2750 m, separated by montane ridges. In neither locality do most yearling Tree Swallows return to nest at their natal site.

In fairness to Butler, who has in other respects produced an important study, our disagreement may be largely semantic. We suspect that the disagreement stems from a difference

in use of the word 'site,' a word that appears to have no standard definition in behavioral ecology. To us, a 'nest site' is an exact, very restricted location that includes the nest itself and the surrounding space. For a Golden Eagle this might encompass an alternate nest 1 or 2 km distant, but for a swallow it might include only a few meters around the actual nest. To us, a 'nest site' is often much smaller and certainly never larger than the nesting territory.

We strongly recommend that the word 'site' be used only in its restricted and unambiguous sense and that the distance be defined in each study. We regret the inexact use of the term in Butler's paper, which may lead others to misconstrue our results.

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