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POSSIBLE PREVENTION OF EUROPEAN STARLING NESTING BY SOUTHEASTERN AMERICAN KESTRELS AT A POWER SUBSTATION IN SOUTHERN GEORGIA

I have studied the use of pipes at a power substation in southern Georgia by cavity-nesting birds since 1988. The study site is the main transformer substation for the city of Statesboro, Bulloch County, located south of town adjacent to farm and athletic fields (32°24.8′N, 81°47.8′W). The physical arrangement of the hollow, horizontal pipes (approximately 0.7 m dia) at the substation where they form junctures with vertical supporting pipes 15 m high provide 16 potential nest sites for cavity-nesting birds.

From 1988–93, European Starlings (*Sturnus vulgaris*) nested in all 16 sites producing multiple broods and represented the largest single breeding site for starlings in the county. In 1994, a pair of Southeastern American Kestrels (*Falco sparverius paulus*) nested in one of the pipes for the first time and the remaining 15 sites were occupied by starlings. The kestrels failed to hatch any eggs and abandoned the nest about 40 d after I estimated it was initiated. Kestrels did not attempt to renest at the power substation that summer nor use a nest box within 200 m of the substation. However, starlings continued with normal nesting activities for the remainder of the summer.

All 16 nest sites were again used by starlings in 1995. I did not observe a male kestrel that summer but a female remained near the substation until mid-May. A pair of kestrels returned in 1996 nesting in the same pipe and successfully fledging a male and female offspring. Although an exact count of starling nests was not made, there appeared to be fewer starling nests at the substation that summer and no starlings were nesting by the time the kestrel young fledged and were being fed by the parents in adjacent trees. It was during that period that I observed the adult kestrels flying into the pipes previously used by the starlings at the substation. While I did not see the kestrels actually preying on the starlings, I speculated from these behaviors that the adult kestrels had been taking adult and young starlings to feed their young.

A pair of kestrels has fledged young each of the three subsequent summers (1997–99) but starlings have not nested in the remaining 15 nest sites since, in spite of the fact that starlings have been just as abundant in nest boxes and nearby fields as in previous summers. There have been no other apparent factors, such as food decreases, depredation or significant changes in land use that might have accounted for the disappearance of starlings from the substation.

Bechard and Bechard (1996, Competition for nest boxes by American Kestrels and European Starlings, Pages 155–164 *in* D. Bird, D. Varland and J Negro [Eds.], Raptors in human landscapes: adaptations to built and cultivated environments, Academic Press, London, U.K.) previously reported that American Kestrels have successfully dissuaded starlings from potential nest sites in Idaho, and Balgooyen (1976, Behavior and ecology of the American Kestrel (*Falco sparverius* L.) in the Sierra Nevada of California, Univ. Calif. Publ. Zool. 103:1–83.) suggested that kestrels outcompeted starlings for nest cavities in his study. My data suggest that kestrels not only outcompete starlings for available nest sites, but they may deter starlings from nesting in available nearby nest sites. Although as many as 40% of 400 kestrel nest boxes in this area are typically occupied by starlings, it still remains uncertain how this activity affects kestrel use of the boxes (Wilmers, T.J. 1987, Competition between starlings and kestrels for nest boxes: a review, Raptor Res. Report No. 6:156–159). It seems that boxes could and would be occupied by kestrels if they chose to nest where starlings had begun nesting. Kestrels have nested in boxes with starling nesting materials on many occasions, but I have never observed a kestrel enter an occupied starling nest box during the 7-yr study.

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