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REDUCING A LOCAL POPULATION OF STARLINGS WITH NEST-BOX TRAPS

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Many fruit-growing areas in the United States and Canada suffer considerable economic losses to local breeding and postbreeding Starling (*sturnus vulgaris)* populations. Wine grapes in California (DeHaven, 1974), cherries in Michigan (Stone, 1973), and blueberries in several states (Mott and Stone, 1973) are seriously damaged by Starlings. Since more than one method is often useful in protecting fruit crops, we conducted a study in 1974 to determine the number of breeding Starlings that could be captured with a given number of nest-box traps to evaluate the potential of using this control method to minimize damage in small fruit-growing areas. The idea for this study arose from Stewart's (1973) reported success in capturing large numbers of breeding Starlings in a nest-box trap at his residence in North Carolina.

PROCEDURES

We conducted this study between 25 February and 3 June 1974 on about 200 acres of the Federal Center, Lakewood, Colorado. Twenty nest-boxes of a design described by Kessel (1957), each with an external trap door similar to one described by Stewart (1971), were used to capture Starlings. The nest-box traps were attached about 15 feet above the ground to cottonwood trees along a creek or to utility poles adjacent to buildings or in open grassland habitat. Traps were at least 300 feet apart.

Traps were operated daily, except on weekends and during periods of inclement weather when we rendered them inoperative but open to allow bird use. When they were in operation, we checked traps two or three times each morning from sunrise to 1130 hours and once during late afternoon. Starlings were removed from the traps with aid of a screen device designed by Lockyer, et al. (1973) and sexed and aged as suggested by Kessel (1951). All captured birds were held in our aviary at the Federal Center and used in other experiments.

RESULTS AND DISCUSSION

A total of 294 Starlings were captured during 57 days of trapping. Of this total, 199 (67.7%) were males (112 adults and 87 subadults) and 95(32.3%) were females (90 adults and 5 subadults). During the trapping period, the highest number of birds captured in a single nest-box trap was 20 with an average of 14.7 birds taken per trap. The most captured in a single day was 18 with an average of 5.2 birds per trapping day. About 85% of the Starlings were captured in 13 of the 20 traps.

Stewart (1973) operated a single nest-box trap during a 124-day period and captured 56 Starlings, 39 males (69.6%) and 17 females (30.4%), on 51 different trapping days. Almost all of his birds were caught before noon. This 2.3:1 sex ratio and our 2.1:1 ratio generally agree with data reported by Bullough (1942, as cited by Kessel, 1957), Hicks (1934), and Odum and Pitelka (1939). They provided information that showed sex ratios of 1.8-2, 5:1 (64.3% to 71.1% males) for Starlings collected during studies in England, Ohio, and Illinois respectively.

Starlings in Colorado are reported to raise two broods totalling about seven young per season (DeHaven and Guarino, 1970). Based on these data, the 95 females captured would have produced 665 young. This theoretical reduction, when added to the 294 Starlings captured, implies an overall reduction of about 959 birds in the postbreeding population in our study area.

Because we had a number of unproductive traps, we feel that about the same number of Starlings could have been captured with fewer traps spaced farther apart. The use of a multicapture trap designed to hold or destroy numbers of Starlings, but with the entrance opening designed to prevent or reduce use by desirable bird species, would greatly increase the efficiency of trapping Starlings during the breeding and damage seasons in local areas such as small fruit orchards. This would reduce time and manpower needs and may increase capture rates.

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DISCUSSION

Question: Did you say that you caught 85% of all the Starlings there?

Answer: No. Eighty-five percent of the Starlings we captured were taken in 13 of 20 boxes. I didn't go so far as to determine what percent of the population we did capture.

There were a lot of other natural cavities for birds to nest in, and we feel that by the time the study was terminated in the first part of June the boxes were catching practically nothing. Most of the birds that were going to nest had picked a site somewhere else.

We did notice one curious thing. Over the weekends the traps were not in operation but open. We'd come back on Monday, set the traps, and get a peak in captures. This same thing happened after inclement weather. When the weather was bad, the birds would flock up more and cease their cavity seeking activities. When the weather would clear, we'd get a real boom in captures for a few days, and then it would level off again.