

The U.S. Fish and Wildlife Service (FWS) has trapped and removed brown-headed cowbirds (*Molothrus ater*) from Kirtland's warbler nesting areas in Michigan each year since 1972. Cowbirds have been removed to control of brown-headed cowbirds on Kirtland's Warbler Nesting Areas in Northern Michigan

In addition to cowbird trapping, FWS has provided daily guided tours for the public into Kirtland's warbler nesting areas, which have otherwise been closed to entry. In 1986, two tours daily were operated between May 15 and July 4 from Grayling, Michigan. The 1986 tours were used by 687 people from 34 states, Washington, D.C., Canada, England and Wales.

Thirty-one cowbird traps were operated from April 23 to July 2, 1986. Traps were located in six counties as follows: Crawford-10, Oshtemo-10, Genesee-5, Kalamazoo-5, Iosco-5, and Rock-6. A total of 4,104 cowbirds were captured in 1986. The average catch per trap was 132.4. Since 1972 53,304 cowbirds, an annual average of 3,374, have been removed from Kirtland's nesting areas.

Catch distribution and sex ratio are very similar to previous years. As indicated in Table 1 and Figure 1, the largest percentage of the catch, 26.3%, was made in the second week. By the end of the second week (Figure 2) half (49.6%) of the total cowbirds had been caught. By the end of the third week the catch was 86.5% complete. These percentages are nearly identical to those of 1985. Of 4,104 adult cowbirds, 2,328 (56.7%) were male and 1,781 (43.3%) were female. The sex ratio is 1.31 males per female. This ratio is significantly different than 1 to 1 (Chi-square = 72.8, P < .001, 1 d.f.).

The relationship between sex ratio and catch distribution is another phenomenon that is consistent year after year. As usual, females predominated in the first two weeks (Figure 1), after which males remained predominant. By the end of the third week, however, females had been caught, coincided with 40% of males. It is interesting to note that if this trapping program lasted only three or four weeks each year, the results consistently would have indicated a cowbird sex ratio favoring females.

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The U.S. Fish and Wildlife Service (FWS) has trapped and removed brown-headed cowbirds (Molothrus ater) from Kirtland's warbler (Dendroica kirtlandii) nesting areas in Michigan each year since 1972. Cowbirds have been removed to prevent their parasitism of warbler nests. Details of the operations have been provided in earlier annual reports and other published accounts. This report presents the results of the 1986 effort.

In addition to cowbird trapping, FWS has provided daily guided tours for the public into Kirtland's warbler nesting areas, which are otherwise posted and closed to entry. In 1986, two tours daily were operated between May 15 and July 4 from Grayling, Michigan. The 1986 tours were used by 627 people from 34 states, Washington, D.C., Canada, England and Wales.

Thirty-one cowbird traps were operated from April 22 to July 2, 1986. Traps were located in six counties as follows: Crawford-10, Oscoda-10, Ogemaw-5, Kalkaska-3, Iosco-2, and Roscommon-1. The two Iosco County traps were operated by the U.S. Forest Service. The traps captured 4,184 cowbirds, 11.7% fewer than the record 1985 catch. The average catch per trap was 135, 14.5% fewer than in 1985. Since 1972 53,604 cowbirds, an annual average of 3,574, have been removed from Kirtland's nesting areas.

Catch distribution and sex ratio are very similar to previous years. As indicated in Table 1 and Figure 1, the largest percentage of the catch, 26.3%, was made in the second week. By the end of the second week (Table 2 and Figure 2) half (49.6%) of the total cowbirds had been caught. By the end of the third week the catch was 62.5% complete. These percentages are nearly identical to those of 1985. Of 4,109 adult cowbirds, 2,328 (56.7%) were male and 1,781 (43.3%) were female. The sex ratio is 1.31 males per female. This ratio is significantly different than 1 to 1 (Chi-square = 72.8,  $P < .001$ , 1 d.f.).

The relationship between male and female catch distribution is another phenomenon that is consistent year after year. As usual, females predominated in the first two weeks (Figure 1), after which males remained predominant. By the end of the third week, 85% of females had been caught, compared with 48% of males. It is interesting to note that if this trapping program lasted only three or four weeks each year, the results consistently would have indicated a cowbird sex ratio favoring females.

