

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

### 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.

1986

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.

U.S. Department of the Interior  
Fish and Wildlife Service  
Wildlife Assistance Office  
East Lansing, Michigan

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 1.01 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.

Michael E. DeCapita

January 27, 1987

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.

The 75 juvenile cowbirds caught is the highest number since 1976. This is a 525% increase over 1985 and an even greater increase over 1984 and 1983 when none were caught. No certain significance can be attached to the juvenile catch now, but an increasing trend could be reason for concern.

The blue jay catch declined from 924 in 1985 to 574 in 1986. Although the catch declined 38%, the distribution (Figure 3) was typical. The blue jay peak catch followed the cowbird peak by one week, also consistent with most prior years. This years low blue jay catch continues a trend started in 1984 when trap bait was switched from grey sunflower seeds to white millet.

The cowbird catch of individual traps (Table 3) varied from 43 cowbirds in trap 76 to 232 at trap 79. High and low catches seem to be consistent in certain areas from year to year. The cowbird catch has been consistently low at trap 76 (Meridian Road) and trap 75 (Briggs Road) in southwest Oscoda county. Others have been consistently high, such as traps 33 in the Military area, 62 at Mack Lake, 69 at Rayburn Burn and 79 at North Down, which caught the most cowbirds this year. Casual observation indicates that traps in grassy openings, such as No. 33 and 85, near a paved highway, such as 69 and 79, and new traps, such as 85, 86, 87 and 88, seem to do well. Poor traps often are in more heavily forested areas.

Table 4 lists the species and numbers of birds banded in 1986. The number of species dropped from 1985 (17 vs. 21). No new species were encountered this year.

Kirtland's warbler use of the Mack Lake Burn began in 1986. The large size of this area will mean a significant increase in cowbird control work. About 10-12 new traps will be built there in 1987.

T A B L E 1

COWBIRDS—WEEKLY TOTALS

COWBIRDS—CUMULATIVE TOTAL BY WEEKS, 1986

| WEEK | MALE | FEMALE | JUV | TOTAL | %TOTAL |
|------|------|--------|-----|-------|--------|
| 1    | 394  | 581    | 0   | 975   | 23.3   |
| 2    | 429  | 673    | 0   | 1102  | 26.3   |
| 3    | 286  | 253    | 0   | 539   | 12.9   |
| 4    | 205  | 61     | 0   | 266   | 6.7    |
| 5    | 117  | 37     | 0   | 154   | 3.7    |
| 6    | 134  | 15     | 0   | 149   | 3.6    |
| 7    | 115  | 18     | 0   | 133   | 3.2    |
| 8    | 182  | 17     | 0   | 199   | 4.4    |
| 9    | 193  | 23     | 1   | 217   | 5.2    |
| 10   | 184  | 48     | 14  | 246   | 5.9    |
| 11   | 89   | 55     | 60  | 204   | 4.9    |
| 11   | 2429 | 2781   | 75  | 5185  | 100.0  |

TABLE 2

COWBIRDS-CUMULATIVE TOTAL BY WEEKS, 1986

| WEEK  | MALE | FEMALE | JUV | TOTAL | %TOTAL |
|-------|------|--------|-----|-------|--------|
| 1     | 394  | 581    | 0   | 975   | 23.3   |
| 2     | 823  | 1254   | 0   | 2077  | 49.6   |
| 3     | 1109 | 1507   | 0   | 2616  | 62.5   |
| 4     | 1314 | 1568   | 0   | 2882  | 68.9   |
| 5     | 1431 | 1605   | 0   | 3036  | 72.6   |
| 6     | 1565 | 1620   | 0   | 3185  | 76.1   |
| 7     | 1680 | 1638   | 0   | 3318  | 79.3   |
| 8     | 1862 | 1655   | 0   | 3517  | 84.1   |
| 9     | 2055 | 1678   | 1   | 3734  | 89.2   |
| 10    | 2239 | 2726   | 15  | 3980  | 95.1   |
| 11    | 2328 | 2781   | 75  | 4184  | 100.0  |
| TOTAL | 2328 | 2781   | 75  | 4184  |        |

BH - Bald Hill  
 BR - Briggs Road  
 DA - Damon  
 FL - Fletcher  
 GR - Galion Road  
 HP - Hippie Burn

MA - Mack Lake  
 MC - McKinley  
 ME - Meridian  
 MI - Military  
 MU - Muskrat Lake  
 ND - North Dawn River

RB - Rayburn  
 SC - Silver Creek  
 SH - St. Helen  
 SB - Sharon Burn

T A B L E 3

NUMBER OF BIRDS CAPTURED AT INDIVIDUAL TRAPS IN 1986

| TRAP<br>NUMBER | C O W B I R D S |        |          |       | BLUE<br>JAY | OTHER<br>SPECIES |
|----------------|-----------------|--------|----------|-------|-------------|------------------|
|                | MALE            | FEMALE | JUVENILE | TOTAL |             |                  |
| 16 MU          | 52              | 52     | 1        | 105   | 15          | 3                |
| 18 MU          | 84              | 63     | 1        | 148   | 7           | 5                |
| 22 FL          | 76              | 39     | 1        | 116   | 42          | 3                |
| 33 MI          | 120             | 94     | 3        | 217   | 26          | 52               |
| 35 DA          | 32              | 31     | 4        | 67    | 12          | 3                |
| 39 LV          | 92              | 54     | 6        | 152   | 30          | 23               |
| 42 DA          | 50              | 41     | 3        | 94    | 28          | 15               |
| 47 MC          | 75              | 72     | 1        | 148   | 22          | 5                |
| 52 MA          | 60              | 57     | 2        | 119   | 8           | 5                |
| 54 MI          | 55              | 56     | 0        | 111   | 21          | 25               |
| 62 MA          | 104             | 62     | 0        | 166   | 13          | 14               |
| 63 DA          | 77              | 52     | 3        | 132   | 32          | 16               |
| 67 FL          | 91              | 56     | 3        | 150   | 33          | 20               |
| 68 MC          | 46              | 70     | 2        | 118   | 17          | 2                |
| 69 RB          | 117             | 65     | 7        | 189   | 40          | 14               |
| 71 MI          | 39              | 44     | 0        | 83    | 17          | 111              |
| 72 BH          | 50              | 48     | 1        | 99    | 11          | 23               |
| 73 BH          | 75              | 79     | 2        | 156   | 19          | 13               |
| 75 BR          | 38              | 13     | 5        | 56    | 6           | 1                |
| 76 ME          | 33              | 10     | 0        | 43    | 32          | 8                |
| 77 SH          | 60              | 40     | 2        | 102   | 11          | 21               |
| 78 DA          | 42              | 32     | 2        | 76    | 17          | 11               |
| 79 ND          | 125             | 104    | 3        | 232   | 5           | 9                |
| 80 SB          | 121             | 51     | 1        | 173   | 21          | 7                |
| 81 BH          | 92              | 93     | 4        | 189   | 24          | 8                |
| 82 HP          | 90              | 70     | 6        | 166   | 14          | 15               |
| 84 BH          | 59              | 21     | 2        | 82    | 11          | 28               |
| 85 MC          | 127             | 87     | 1        | 215   | 6           | 4                |
| 86 MA          | 77              | 72     | 9        | 158   | 26          | 12               |
| 87 SC          | 75              | 79     | 0        | 154   | 2           | 9                |
| 88 GR          | 94              | 74     | 0        | 168   | 6           | 6                |
| TOTAL          | 2328            | 1781   | 75       | 4184  | 574         | 491              |

BH - Bald Hill  
 BR - Briggs Road  
 DA - Damon  
 FL - Fletcher  
 GR - Galion Road  
 HP - Hippie Burn

MA - Mack Lake  
 MC - McKinley  
 ME - Meridian  
 MI - Military  
 MU - Muskrat Lake  
 ND - North Down River

RB - Rayburn  
 SC - Silver Creek  
 SH - St. Helen  
 SB - Sharon Burn

T A B L E 4

Species and Numbers of Birds Banded during Cowbird Control  
in 1986

|                          |     |
|--------------------------|-----|
| Blue Jay                 | 465 |
| Red-winged Blackbird     | 191 |
| Common Grackle           | 93  |
| Cedar Waxwing            | 12  |
| Rose-breasted Grosbeak   | 6   |
| Eastern Kingbird         | 5   |
| Common Flicker           | 5   |
| Northern Oriole          | 3   |
| Eastern Bluebird         | 2   |
| Red-headed Woodpecker    | 2   |
| Sharp-shinned Hawk       | 2   |
| American Kestrel         | 1   |
| American Robin           | 1   |
| Brewer's Blackbird       | 1   |
| Brown Thrasher           | 1   |
| Great Crested Flycatcher | 1   |
| Mourning Dove            | 1   |
| TOTAL 17 Species         | 792 |

Figure 1  
 Weekly Distribution by Age and Sex of Brown-headed Cowbird  
 Catch on Kirtland's Warbler Nesting Areas in 1986

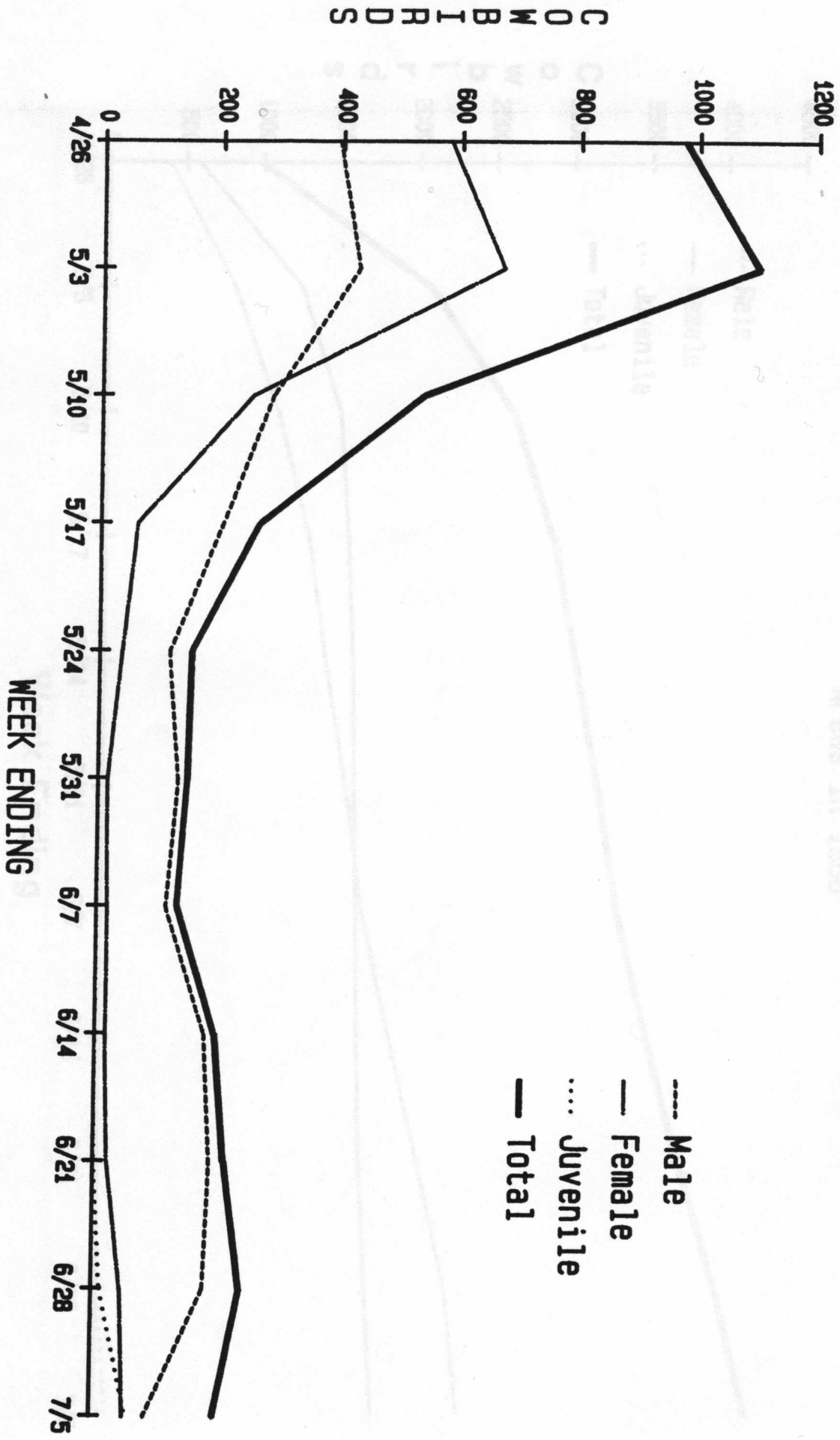
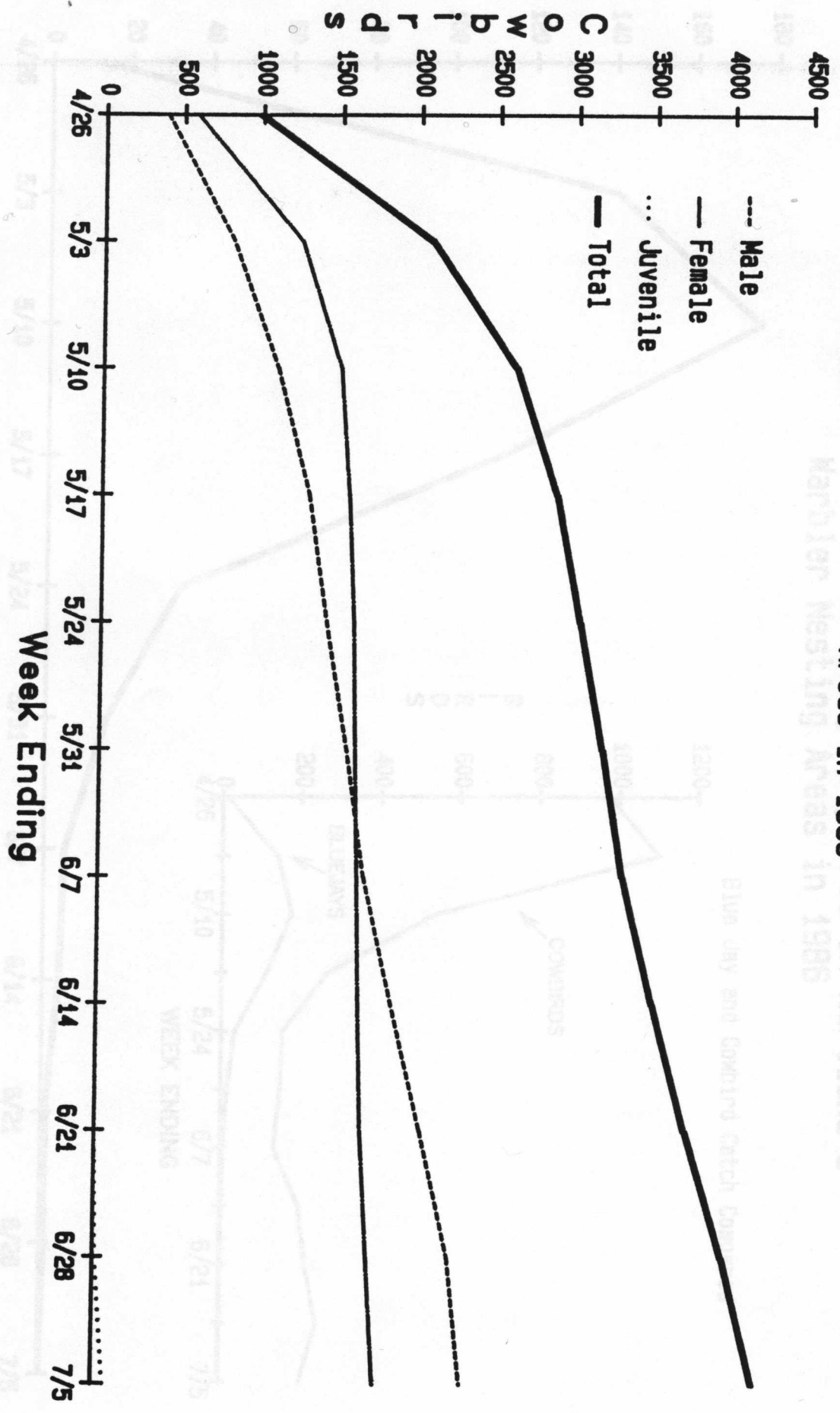




Figure 2  
 Cumulative Weekly Distribution by Age and Sex of Brown-headed Cowbirds Captured on Kirtland's Warbler Nesting Areas in 1986



**Figure 3**  
**Weekly Numbers of Blue Jays Captured on Kirtland's**  
**Warbler Nesting Areas in 1986**

