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COWBIRD TRAPPING AND THE KIRTLAND'S WARBLER

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The 1971 census of the Kirtland's Warbler taken on the warblers nesting grounds in North Central Michigan revealed that the population of this species had dropped to an all-time low of 201 singing males, as compared to 502 in 1961, a drop of some 60 percent in ten years. Breeding birds, furthermore, once found nesting in as many as nine counties during one nesting season returned to nest in only five counties in 1972, at which time the census indicated that the warbler population was remaining temporarily stable at approximately 200 singing males. Since the sex ratio of this species is thought to be 50-50, these data indicate that the total population of the Kirtland's Warbler in the spring of 1972 was in the neighborhood of 400 individuals.

The precipitous decline in the warbler population occurred despite the efforts of the U.S. Forest Service and the Michigan Department of Natural Resources to increase or at least stabilize the Kirtland's Warbler population by manipulating, through control-burning and cutting, the jack pine habitat in which the warbler nests exclusively.

In October of 1971 a meeting of concerned groups and individuals was held at the Natural Sciences Museum on the University of Michigan campus. The purpose of this meeting, which was jointly sponsored by the U.S. Forest Service and the Michigan Department of Natural Resources, was to review the decline in the Kirtland's Warbler population and to formulate a plan of action. Brief papers on the warbler were presented, and, an *ad hoc* committee eventually named the Kirtland's Warbler Advisory Committee was formed. Bill Shake, Assistant State Supervisor, Branch of Population Management, was asked to be our representative on this committee. During the meeting, Dr. Nicholas Cuthbert, Central Michigan University, and Mr. Bruce Radabaugh, Pontiac Audubon Society, presented data indicating that Brown-headed Cowbird parasitism of the Kirtland's Warbler nests may be a prime factor in the warbler population decline. Their data indicated that up to 83 percent of the warbler nests may be parasitized by Cowbirds annually. A limited Cowbird control program which had been conducted on two Kirtland's Warbler nesting areas since 1965 reduced parasitism on the two areas to an annual average of 21 percent.

The Advisory Committee decided that a Kirtland's Warbler recovery program would be undertaken, consisting of three phases: (1) Cowbird control to reduce parasitism; (2) habitat manipulation; and (3) land acquisition to protect existing habitat. Since the Branch of Population Management has had considerable experience in decoy trapping and other bird control practices, we were asked to manage the Cowbird removal program. A cooperative agreement was effected whereby the Michigan Department of Natural Resources would pre-fabricate the Cowbird decoy traps at one of its work camps, the Audubon Society would provide the sunflower seed for bait, and the U.S. Forest Service and the Bureau would operate the trap line on a daily basis from May 1 to July 15, at which time Kirtland's Warbler nesting has, essentially terminated.

In early 1972, Advisory Committee representatives met to determine the proposed location of fifteen decoy traps, and the Cowbird removal program was under way.

Erection of the traps was accomplished by personnel of the Bureau of Sport Fisheries and Wildlife and the U.S. Forest Service. Upon completion, the traps were baited with sunflower seeds and fresh water, and then stocked with several Cowbird decoys.

Large numbers of Brown-headed Cowbirds in the area soon found the traps. When it became necessary to reduce the number of Cowbirds in each trap the operator drove the birds into a small collecting cage, whereupon they were removed and disposed of. Non-target species, such as Bluejays, Red-winged Blackbirds, and a variety of other songbirds which had entered the trap were released immediately.

By July 15, 1972, over 2,200 Cowbirds (1,600 males and 600 females) had been removed from the seven major Kirtland's Warbler nesting areas. Dr. Larry Walkinshaw, a leading investigator of the Kirtland's Warbler for several years, discovered that on three of these areas Cowbird parasitism of Kirtland's Warbler nests dropped from the 1966-1971 average of 65 percent to 6 percent (2 of 31 nests). It is also significant to note that the average clutch size on Dr. Walkinshaw's three study areas increased from the 1966-1971 average of 2.34 eggs per set to 4.22 eggs per set. The average number of young fledged increased proportionately from the 1966-1971 average of .81 young per set to 2.84 young per set.

Concurrent with the Cowbird control project, the U.S. Forest Service, in 1972, control-burned, roll-chopped, and planted jack pines on 500 acres of Forest Service land dedicated to provide Kirtland's Warbler nesting habitat. A five-year forest rotation schedule for management of 2,600 acres of Forest Service land was also established.

The spring of 1973 saw the addition of three decoy traps and the relocation of four traps which had shown a low rate of capture during 1972. Because of the possibility of Bluejay predation on Kirtland's Warbler eggs and the nuisance created by the Bluejays repeatedly entering decoy traps, the jays, instead of being immediately released, were placed in a holding cage. When this cage became full, the jays were transported well away from the Kirtland's Warbler area, where they were banded and released. Non-target species, other than Bluejays, captured in the nesting area traps, were banded and released on site.

By the end of the 1973 Kirtland's Warbler recovery project, 3,345 Cowbirds (2,006 males, 1,214 females, and 125 juveniles) had been removed from the nesting areas. Dr. Walkinshaw's nest survey indicated that Cowbird parasitism had been completely eliminated in his study area. None of the 33 nests under investigation contained a single Cowbird egg. Furthermore, the average number of eggs per set and young fledged per nest on the study area remained near the 1972 levels (4.42 and 2.79, respectively), well up from the 1966-1971 average.

These figures are impressive, but they would be meaningless if the 1973 spring census of singing males revealed anything but an increase in the warbler

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population. In July, 1973 the census figures were compiled and our hopes were partially realized. The number of singing males had, in fact, increased from the 1972 figure of 200 to 216, or an increase of 8 percent over the 1972 population.

Furthermore, it is the opinion of Mr. Mayfield and others that some yearling males may not have established territories and, therefore, were not counted by the census takers. It may not be until next year that we can determine the true effect of the Cowbird control program. We are encouraged by the population increase, and are making plans for next year's project.