

ESTABLISHMENT OF PRESERVES FOR THE KIRTLAND'S WARBLER IN THE STATE AND NATIONAL FORESTS OF MICHIGAN

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The recent establishment of areas in northern Lower Michigan by the Michigan Department of Conservation and the U.S. Forest Service to be managed for the benefit of the Kirtland's Warbler (*Dendroica kirtlandii*) is perhaps the first such step anywhere in the world for a single songbird species. Therefore, an account of this unique accomplishment may be helpful to others planning a similar move elsewhere.

The Kirtland's Warbler is a bird of exceptional interest. It is distinctive in appearance and voice. Although a member of a large and successful family, the North American wood warblers, the species is extremely rare (about 1,000 individuals). In the nesting season it inhabits such a narrow and transitory habitat niche that the slightest alteration in conditions holds instant threat to the existence of the bird. Indeed, the march of civilization has brought threatening changes.

First, the clearing of the original forests for agriculture probably made possible the advance of the Brown-headed Cowbird (*Molothrus ater*) from its ancestral home in the grasslands of the mid-continent to the Michigan nesting grounds of the Kirtland's Warbler during the latter part of the last century. This social parasite takes a toll from the warbler at every stage of the nesting process—through loss of eggs removed by the cowbird, through reduction of hatching success of warbler eggs in the presence of the larger cowbird eggs laid in the warbler nests, and through lowered survival of warbler nestlings in the presence of much larger cowbird nestlings. The Kirtland's Warbler seems to have developed no defense against this new enemy.

Second, better control of forest fires is steadily reducing large burns that in the past have produced extensive tracts of young jack pine (*Pinus banksiana*), which provided the nesting habitat of the Kirtland's Warbler.

Third, modern lumbering and tree-planting practices do not promise to reproduce a suitable habitat for the Kirtland's Warbler. Tracts are seldom cut clean and the ensuing growth is not all of one size; and the areas planted at one time are usually smaller in extent than those required by the warbler. Also there is uncertainty that repeated cutting and planting, without fire, will keep the ground cover between the trees at the low level required by the warbler.

The bird winters only in the Bahama Islands, but its problems of survival there are totally unknown.

The move to create a preserve for this bird began in 1955. In July and again in August of that year, I wrote Josselyn Van Tyne, Curator of Birds at the University of Michigan Museum of Zoology, who was the leading student of the Kirtland's Warbler, suggesting that certain State Forest lands be set aside as Kirtland's Warbler preserves. Among the arguments I advanced were the following: We should not leave the future of the Kirtland's Warbler to the chance occurrence of forest fires nor the shifting practices of forestry; if a disastrous change in habitat conditions occurred, it might not be recognized in time to set in motion the slow processes of repair; a management area would provide exceptional opportunities for experimentation with habitat; various public agencies would take more interest in this bird if they were actively participating in a program on its behalf; it would be desirable to provide an observation area so that

interested people could see the bird easily and so that more people could become aware of its esthetic value and survival problems (a view not shared by all my friends).

Van Tyne replied that men in the Game Division of the Michigan Department of Conservation had already mentioned to him the feasibility of controlled burning for this purpose, and he felt they would view favorably a further suggestion from him in this direction. But Van Tyne began to fail in health not long afterward (he died 30 January 1957), and I do not believe he was able to follow through with this approach.

MICHIGAN STATE FORESTS

Among the other friends with whom I discussed this idea was Fenn M. Holden, who spends his summers near Grayling, Michigan, in the Kirtland's Warbler region. In June 1956, he wrote that he had been at a dinner party with George A. Griffith of Grayling, member of the Michigan Conservation Commission, and that he had broached this idea to Griffith, who immediately expressed interest in presenting it at the July meeting of the Commission. At Holden's suggestion, I wrote Griffith, outlining the proposal in more detail.

I regarded this step merely as the planting of a seed. In fact, I had expressed the opinion to Van Tyne that an idea of this kind might require years for digestion and for mobilizing of favorable sentiment.

Therefore, I was astonished to receive a letter on 23 July 1956, from G. S. McIntire, Chief of the Forestry Division, stating that the proposal to create a preserve for the Kirtland's Warbler had been adopted unanimously by the Commission and that his Division had been given the responsibility for carrying it out. He asked for further suggestions.

At this time Donald W. Douglass, In Charge, Advisory and Technical Staff, Game Division, a friend of long standing with a deep interest in the Kirtland's Warbler, began serving unofficially as our guide among the various agencies of the Conservation Department. His counsel was invaluable in many ways. He urged that a bridge to the public be established and suggested that the Michigan Audubon Society appoint a committee to advise the Conservation Department on this project. President Edward M. Brigham of that society asked me to continue my efforts as chairman and named the following additional members: Andrew J. Berger, Verne Dockham, Fenn M. Holden, and Josselyn Van Tyne. In September 1957, after Van Tyne's death, Lawrence H. Walkinshaw and Douglas S. Middleton, long-time students of the bird, joined the Kirtland's Warbler Preserve Committee, and this group continues to serve at the present time.

I met with officials of the Department of Conservation in Lansing in October, and soon thereafter the committee set to work to choose the most promising sites. Dockham, conservation officer at Mio near the center of the Kirtland's Warbler region, was assigned by the Department to conduct reconnaissance. But, as he retired from the Department at the end of 1956, John Byelich and Lawrence Ryel of the Game Division lent their assistance. Finally, in June 1957, these men, with Holden, went over the most promising areas again and made their recommendations to the committee. All of the other members, including Walkinshaw and Middleton, who were to be appointed to the committee in September, were able to visit the chosen areas in the course of field work during the summer.

The committee submitted a formal report to McIntire on 25 July 1957, suggesting three areas in separate counties and forest districts: (1) Crawford County near Lovells (Sec. 5, 6, 7, 8, T28N, R1W); (2) Oscoda County near Red Oak (Sec. 11, 12, 13, 14,

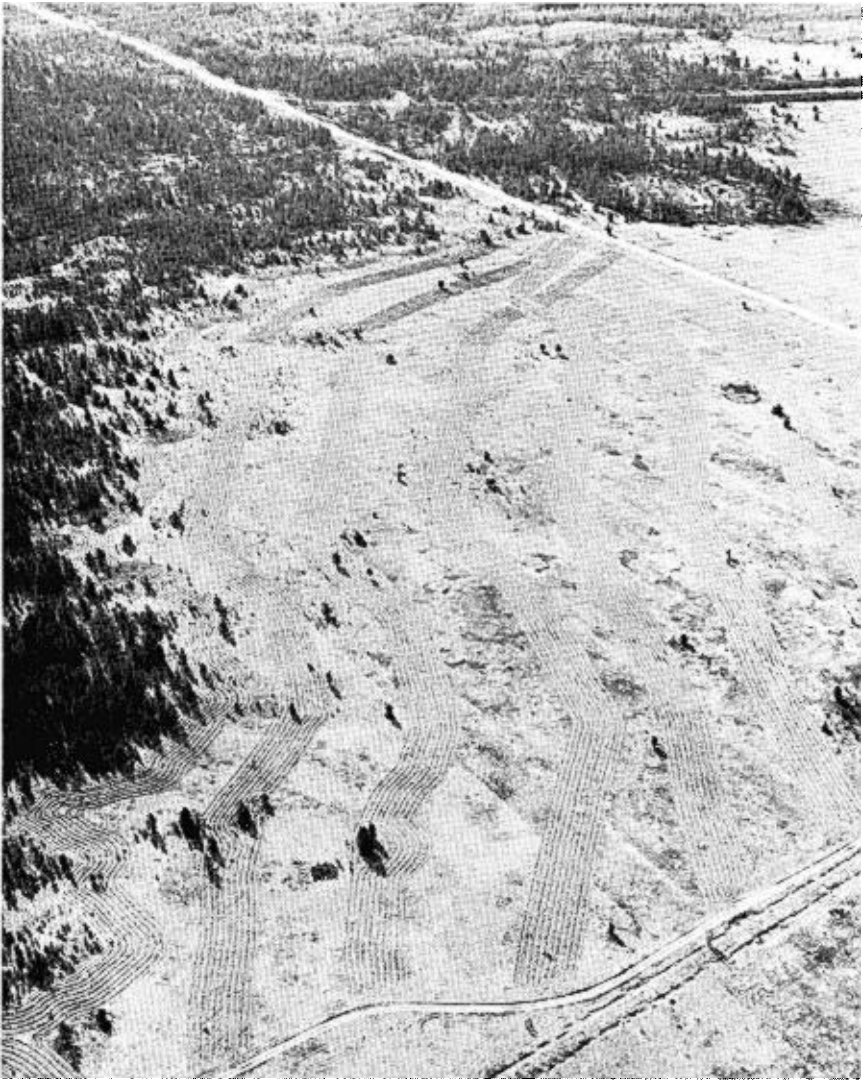


FIG. 1. Pine plantings at the Kirtland's Warbler area on State Forest lands in Crawford County, Michigan, spring 1958. Rows of seedlings are 6 feet apart and each strip consists of ten rows, with open grasslands between strips. Michigan Conservation Department Photograph.

T27N, R1E); (3) Ogemaw County near the Ogemaw Game Refuge (Sec. 21, 22, 27, 28, T24N, R1E).

The Forestry Division decided to take steps the following spring in the Crawford

and Ogemaw areas, where there were open grasslands available for planting adjacent to stands of jack pine among which Kirtland's Warblers were nesting. Attention to the Oscoda area was to be deferred because many of the pines there were approaching harvestable size. Under the direction of Glenn M. Schaap, plantings were made in the Crawford area (Fig. 1, eastern part of Sec. 5) and Ogemaw area (central and northern parts of Sec. 27) in April and May 1958. In all, 267,400 jack pines, 2,000 red pines (*Pinus resinosa*), and 1,950 white spruces (*Picea glauca*) were planted. Trees were placed 4 feet apart in rows 6 feet apart, 10 rows planted and 15 rows skipped (to provide openings, which are just as important to the warbler's habitat as trees of the right size), and rows curved to follow the edge of any nearby stand of larger trees. Deep furrowing was avoided to minimize the disturbance of ground cover. The intention is to maintain tracts in three age groups seven years apart, by burning and replanting of those tracts where the trees have become 21 years old.

Resolutions were adopted by the American Ornithologists' Union meeting at Cape May, New Jersey, in September 1957, and again at Washington, D.C., in October 1961, commending the Michigan Conservation Department for setting aside areas in the "State Forests to be managed permanently for the benefit of the Kirtland's Warbler."

HURON NATIONAL FOREST

The Huron National Forest lies in the very heart of the Kirtland's Warbler nesting range. Forest Service officials in Lower Michigan, over a period of years, had considered informally what steps might be taken to help the bird, and this interest was encouraged by the modern trend toward "multiple use" of public lands—that is, recreational and other uses in addition to the traditional objectives of growing trees. The Kirtland's Warbler was one of the topics for discussion at a meeting of representatives of the U.S. Forest Service and Michigan Department of Conservation in late August 1957. This meeting was attended by Byelich, who had been active in the establishment of preserves for this bird on State Forest lands.

These plans began to take definite form in 1960, and L. A. Pommerening, Forest Supervisor of the Lower Michigan National Forests, sent me a tentative draft of a management plan for the Kirtland's Warbler in January 1961. In the following month I met in Cadillac with the staff members of the Lower Michigan National Forests, Robert E. Radtke (Wildlife), Horace O. Nixon (Lands), and Wayne B. Worthington (Recreation), who jointly prepared the Management Plan as finally approved. Also present at this meeting were representatives of the regional staff in Milwaukee.

Formal submission of the plan was delayed in order to incorporate some of the findings of the census of Kirtland's Warblers in June 1961. Radtke participated in that part of the census covering the site proposed for the management area.

In the fall of 1961, to demonstrate public support, the Michigan Audubon Society, the Detroit Audubon Society, the Pontiac Audubon Society, and the Michigan Natural Areas Council signed Cooperative Agreements with the Lower Michigan National Forest, and made grants of \$100 each, with the intention of continuing their assistance in the future. In October 1961, the American Ornithologists' Union meeting in Washington, D.C., transmitted a resolution to the Chief of the National Forest Service requesting that agency "to set aside and manage a preserve for the benefit of this endangered species."

The Management Plan was approved 19 July 1962. The area includes 4,010 acres in the Huron National Forest southeast of Mio in Oscoda County, just north and east of Mack Lake (Sec. 1, 2, 3, 11, 12, 13, T25N, R3E, and Sec. 7, 18, T25N, R4E).

This area will be treated in 12 management blocks of about 320 acres each. Cutting

and controlled burning will be used to create the desired conditions. Ultimately, one block will consist of pines 5 years old; the next, 10 years old; and so on up to 60 years, at which time the oldest block will be harvested. Then if regeneration is not accomplished by controlled burning, it will be replanted. Thus, at least two blocks (the 10- and 15-year blocks, for example), amounting to about 640 acres, will be at optimum size for the Kirtland's Warblers at all times.

In none of these plans is there any specific provision for the control of the cowbird. However, such control is not ruled out, and might be conducted fruitfully as a part of a research project by some student of the cowbird. The cowbirds occur here in moderate numbers and are conspicuous in this terrain; so it would seem possible to remove nearly all of them from a study area in the nesting season. But the best methods of doing so and the rate of replenishment from the surrounding country would be worthy subjects of study.

RIVER ROAD, R.F.D., WATERVILLE, OHIO, 8 FEBRUARY 1963

NEW LIFE MEMBER



Charles Ellsworth Huntington, of South Harpswell, Maine, is Assistant Professor of Biology at Bowdoin College and Director of Bowdoin Scientific Station. Dr. Huntington, a new Life Member of the Wilson Ornithological Society, received his B.A. and Ph.D. degrees from Yale University and is interested in population dynamics of sea birds. Since 1955 he has been studying a population of Leach's Petrel.

His published papers on the Purple Grackle and Herring Gull have appeared in *Systematic Zoology* and *Acta XI Congress for International Ornithology*. Dr. Huntington, an active member of the WOS since 1950, is President of NEBBA and Vice President of the Maine Audubon Society. Also, he is a member of the AOU, BOU, British Trust for Ornithology, Cooper Ornithological Society, EBBA, Sigma Xi, AAAS, Society for the Study of Evolution, and Society of Systematic Zoology.