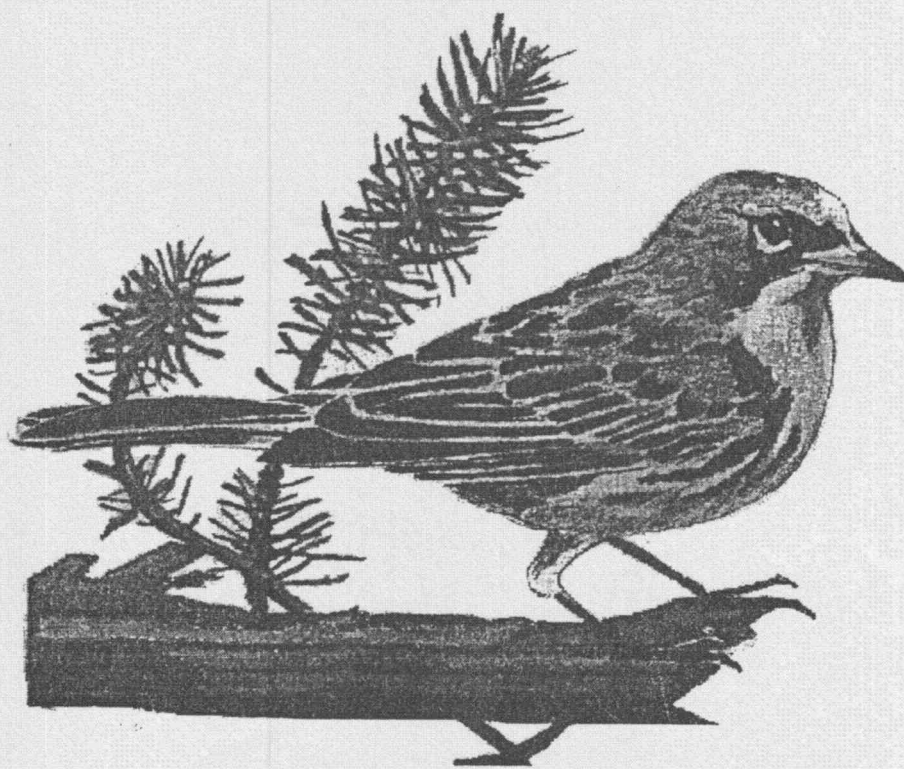


**SUMMARY of RECOVERY EFFORTS
KIRTLAND'S WARBLER 1996**



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The Kirtland's warbler, one of our nation's rarest songbirds, was one of the first species to be placed on the endangered species list in 1973. This highly specialized blue and yellow sparrow-sized bird nests nowhere in the world but northern Michigan. The warbler prefers stands of jack pine trees 6 to 20 years old, which are the natural result of forest fires. Modern forest fire suppression, necessary to protect human life and property, prevents natural regeneration. Intensive management of the forestlands in Michigan is necessary to provide sufficient breeding habitat for this bird. The U.S. Fish and Wildlife Service (Service), U.S. Forest Service (USFS), Michigan Department of Natural Resources (MDNR) and the Michigan Audubon Society have been cooperating since 1971 to ensure the future of the Kirtland's warbler. Department of the Interior recovery efforts include cowbird control, habitat management and an education and outreach program for the local communities situated in and around the Kirtland's warbler nesting area. This report will summarize the recovery efforts conducted by the four cooperating agencies during fiscal year 1996 (FY96). The East Lansing Field Office received \$94,300 in FY96 to carry out activities relating to the recovery of the Kirtland's warbler. The approximate cost of project efforts are given when available.

HABITAT MANAGEMENT

There are approximately 134,000 acres of jack pine stands designated for Kirtland's warbler nesting habitat on 24 management areas within state and federal lands. The management areas consist of 53,488 acres in the Huron-Manistee National Forests, 74,143 acres within the AuSable, Mackinac, and Pere Marquette State Forests, and 6,500 acres of Service land interspersed throughout the state forest areas. These areas are considered essential habitat and are being managed to provide a sustained, even flow of suitable nesting habitat. Management of warbler habitat consists of logging, burning, and planting designated tracts of land on a rotational basis to provide 36,000 to 40,000 acres of productive nesting habitat at all times.

The MDNR received \$86,000 in Endangered Species Act Section 6 funds in FY96 from the Service, a decrease from the \$117,000 received in 1995. Section 6 funds were used to help cover the cost of creating habitat for the Kirtland's warbler such as purchasing jack pine seedlings, maintaining tree planting equipment, and hiring short-term workers to work on tree planting crews. The MDNR's Division of Wildlife planted 1,620,000 trees on 1,270 acres of state forestlands designated as Kirtland's warbler management areas (KWMA). Contractors hand planted an additional 107,000 fill-in trees in management areas as well. In FY96, the USFS planted 1,354,716 jack pine trees on 1,244 acres. On Service lands managed by Seney National Wildlife Refuge, 96 acres were direct seeded in FY96.



COWBIRD CONTROL

Brown-headed cowbirds, obligate nest parasites, were reducing warbler annual production to less than one young per pair prior to 1972. Each year since 1972, Service biologists have trapped and removed cowbirds from warbler nesting areas. Survival of the Kirtland's warbler is unlikely without cowbird control. Fifty-nine cowbird traps, including 6 new ones, were activated during the week of April 21, 1996. Of these, one trap was completely rebuilt due to vandalism during the non-operational season. The Service contracted for the construction of trap panels (\$943) that were assembled on-site by Service personnel. A total of 280 cowbirds (start-up decoys for the cowbird traps) were trapped during March and early April in Sandusky, Ohio by U.S. Department of Agriculture Animal Damage Control biologists. White millet was placed in each trap to attract cowbirds and to feed decoys (\$404). Miscellaneous supplies purchased (\$440) included tools, staples, tape, and nails.

Four temporary employees (three cowbird trappers and one supervisor/ tour guide) were hired for the trapping season of April 21 - July 2. The supervisor/tour guide started April 8 to assist permanent staff with pre-season activities (\$20,600). Travel expenses during the trapping season were \$2,130. Another \$58,886 was used to cover partial salaries of other permanent staff.

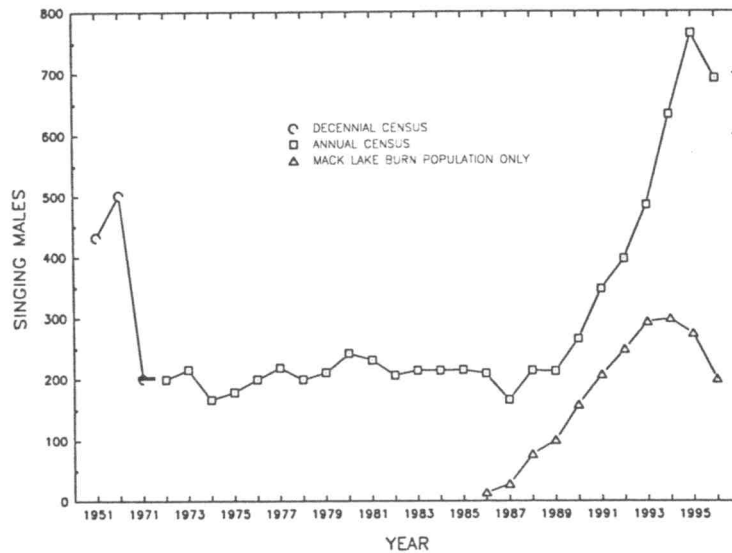
Four vehicles were used to carry out cowbird control activities in FY96. A total of 39,418 miles were accumulated on the four project vehicles throughout FY96. Of these, 37,174 miles were accumulated during the trapping season. To keep these vehicles in operating condition, funds were used for gas (\$3,276) and vehicle maintenance (\$996). Four cellular phones were used by the temporary employees for safety and security reasons (\$1,147).

A total of 3,201 cowbirds were captured in 1996 compared to 5,855 in 1995. The average annual cowbird catch for 25 years is 4,065. Since 1972, 101,628 cowbirds have been removed.

CENSUS

The annual Kirtland's warbler census was June 6 - 15th. Service, MDNR, and USFS biologists participated in the census along with volunteers from the Michigan Audubon Society and local communities. The participants counted 692 singing males in Michigan. There were 678 singing males recorded in the Lower Peninsula and 14 in the Upper Peninsula. This was a decrease of 9.5 % from last year's high of 765. The Mack Lake Burn habitat continues to provide the largest contribution of singing males (201) to the overall Kirtland's warbler population. The Mack Lake habitat will soon be too old, currently 17 years old, to provide Kirtland's Warbler nesting habitat. This year may be the first year in a general downward population trend as projections indicate a decline in nesting habitat acreage in the next 10 years.

Figure 1. Census of singing male Kirtland's warbler, 1951 -1996, with Mack Lake Burn census.



RESEARCH

This was the second year of the Kirtland's warbler banding project, funded by the Michigan National Guard and U.S. Geological Service Biological Resources Division (BRD). Lead by BRD the project is designed to provide improved life table data for a population simulation model. The model will be used by managers to simulate births, survival, deaths, and movements of the population with an output of the projected future population trend. In addition, the banding will allow biologists to continue to monitor the movements and distribution of individual birds and their use of habitat. A total of 265 Kirtland's Warblers were banded in 1996. Two adult male warblers were recaptured that were at least eight years old. Capture and banding of two juveniles in the Upper Peninsula this year provided proof of Kirtland's Warbler breeding. Service biologists invested approximately 264 work hours assisting BRD researchers with this project (\$5,300).

Professor Barnes' graduate students Walker and Kashian, from the University of Michigan's School of Natural Resources and the Environment, continued their studies: The Landscape Ecology of the Mack Lake Basin and the Occurrence of the Kirtland's Warbler (Walker) and A comparison of Landforms Over a Broad Range of Kirtland's Warbler Habitat (Kashian). Their studies are focused on the relationship between landforms and Kirtland's warbler nesting habitat. Information on the history of occupancy patterns, soil, climate, and vegetation are being analyzed to allow managers to evaluate current and future habitat management practices.

Graduate student Fussman from Ohio State University continued a study on the foraging behavior of the warbler "Foraging Ecology of the Kirtland's Warbler in Relation to Habitat Selection". This study has several implications for management of the Kirtland's Warbler. The study may suggest that vegetation other than jack pine is important in foraging and should be left in the habitat. The study also will evaluate if the prey base is similar between wildfire regenerated and plantation habitats.

PUBLIC AWARENESS

Tours

In 1996, guided tours to Kirtland's warbler habitat were conducted by the Service twice daily from May 15 - July 4. The Service hired one temporary Biological Technician to give these public tours. Through a cooperative agreement with the Service, Michigan Audubon Society provided a grant of \$1,500 to help cover the salary of the tour guide. The Service contracted with D.J. Case and Associates to update the audio tape slide show that tour participants view (\$1,450). The Holiday Inn in Grayling again provided a meeting place for the tours. The 1996 Service tours were used by 606 people from 38 states, 2 Canadian provinces, Sweden, and England. Tour attendance decreased 16.3 % from 1995. The USFS tour was taken by 662 people in 1996 compared to 593 in 1995 (Fig. 2).

For the third year, the Service and MDNR produced a tour information flyer (\$319) that was distributed to tourist highway information centers and local chamber of commerces and businesses. The Holiday Inn contributed \$200 towards the production of these flyers.

Kirtland's warbler festival

The Third Annual Kirtland's Warbler Festival was held on May 18 - 19, 1996 at the Kirtland Community College. The festival expanded this year to include activities in four counties: Roscommon, Crawford, Ogemaw, and Oscoda. Many individuals and groups were involved in this year's festival such as the local chamber of commerce, community organizations, schools, and local, state and federal agencies.

Environmental education was a large component of this year's



Figure 2. Approximately 1,268 people, representing 4 foreign countries and 42 states, attended the Kirtland's warbler tours provided by the U.S. Fish and Wildlife Service and the U.S. Forest Service in 1996.

festival. Presentation topics included: black bears, bats, wolves, snakes, gardening, flyfishing, camping, and of course the Kirtland's warbler. Nature walks were provided dealing with bogs, wetlands, and birds. Other activities included: juried wildlife art show, Kirtland's Warbler maze, nature crafts fair, youth art show, quilt block show, and poetry reading. Catherine McClung, Michael Delp, Keith Taylor, Judith Kerman, and the Inside-Out Music and Dance Company were the featured artists at the 1996 festival. Approximately 1,300 people attended the events at the Kirtland's Warbler Festival this year.

Auto Tour

The Jack Pine Wildlife Viewing Auto Tour is a 48 mile long habitat-forestry learning experience designed to generate support for, and an understanding of, jack pine management. This auto tour not only takes you through areas inhabited by the endangered Kirtland's warbler, but through a variety of habitats providing opportunities to see many kinds of wildlife including bald eagles, white-tailed deer, bluebirds and beavers. The tour has thirteen specific interpretive stops along the route with several stops offering scenic overlooks of the Au Sable River.



A new site was added in 1996, the AuSable Scenic Vista, which offers a view of the Alcona pond and AuSable River. The Service provided a \$2,500 challenge grant in FY96 which will be used to construct interpretive signs, observation platforms, and help develop a new Mack Lake interpretive site.

PLANS FOR 1997

In 1997, habitat management efforts will continue as they have in the past. Plans include seeding 98 acres and selling timber on 60 acres of Service land; planting 630 acres, and selling timber on 944 acres of USFS lands; and planting 1,368 acres on MDNR lands. Cowbird control and Kirtland's warbler tours are planned for 1997. Spring and summer banding activities will continue. One recovery team meeting was held in February, 1997 and one is planned for July, 1997.