

1980 KW PROGRESS REPORT

Presentations: Two presentations were made on Kirtland's Warbler at professional meetings in 1980. A poster presentation was displayed at the 98th Meeting of the American Ornithological Union in Ft. Collins, and a similar poster and complementary talk was delivered at the 42nd Midwest Wildlife Society Meeting in St. Paul. Copies of the abstracts and poster text are enclosed. Most graphs referenced in that text were discussed at last year's meeting, and the other two are included in the present report. The first graph shows the concentration of KW's into about 5-6 breeding areas in 1971, 1975 and 1979. The second illustrates the population trends of individual stands or burns with age from annual census data for the past 10 years.

Management Policy: An overview of management options for regenerating Kirtland's Warbler habitat is attached. Much of the discussion is concerned with differences between burned and unburned stands which may be critical to warbler breeding habitat. A summary chart presents management prescriptions for 2 harvest options, 2 post-harvest treatments, and 3 methods of regeneration. This overview was developed as a result of numerous conversations with people associated with the recovery effort.

1980 Field Work: The 1980 vegetation measurements were oriented toward an examination of unburned, occupied stands at Lovells North and McKinley, as well as the unburned half of Mack Lake Sec. 2, which has received no significant use by KW's. Vegetation work was also conducted in Mack Lake Sec. 3 which is representative of managed habitat now being developed. The results from McKinley indicate tree coverage values above the critical thresholds for occupancy (in contrast to areas used in '76, '78, '79) and

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we would predict that some areas used in 1980 should receive future moderate use for 4-6 years.

1981 Scheduled Work: We have scheduled vegetation work at the Military area, Lovells South, one or more new burns (wildfire), and more detailed work at McKinley. If time permits, additional surveys will be made.

1980 AOU ANNUAL MEETING POSTER PRESENTATION

Current Status of the Kirtland's Warbler. JOHN R. PROBST, North Central Forest Experiment Station, U.S. Forest Service, St. Paul, Minn. 55108.

Two major factors have been identified in a 60 percent decline in Kirtland's Warblers from 502 males in 1961 to about 200 in 1971 through the present. The first problem has been nest parasitism by the Brown-headed Cowbird, and the second factor has been a decline in suitable breeding habitat. The cowbird control program has had outstanding success, but the outlook for breeding habitat is bleak. Typically, Kirtland's Warblers occupy dense jack pine stands of wildfire origin that are about 6 to 15 feet in height. Plantations are also used (including a few red pine stands), but logged, unburned jack pine stands with natural regeneration lack sufficient tree density to have appreciable use by the warbler. Due to a shortage of wildfire-produced stands and a lack of necessary lead time to implement State and Federal management programs, quantity of suitable habitat has remained roughly constant since 1971, and should decline to about one-half to one-third of the present area in the next decade. An analysis of the annual census data since 1971 shows that most of the annual decreases from discrete breeding areas occurred in the older areas declining in suitability, and almost all the increases were in younger habitat. Therefore, the recent static population can be viewed as the result of a rough balance between incipient and declining habitat.

Previous explanations of Kirtland's Warbler habitat suitability have centered about the bird's nesting biology. Since it is unlikely that a ground nesting bird should be limited by nest sites, more emphasis should be placed on the habitat factors important to the warbler's foraging ecology. Habitat suitability can be explained by an ordination of tree height versus tree percent cover. The threshold for initial occupancy may be related to minimal foliage volume necessary for foraging, and the decline of habitat could be related to a lack of live lower branches for fledgling cover and for the foraging of female Kirtland's Warblers.

CURRENT STATUS OF THE KIRTLAND'S WARBLER

TWO MAJOR FACTORS HAVE BEEN IDENTIFIED IN A 60 PERCENT DECLINE IN KIRTLAND'S WARBLERS FROM 502 MALES IN 1961 TO ABOUT 200 IN 1971 THROUGH 1979. THE FIRST PROBLEM HAS BEEN NEST PARASITISM BY THE BROWN-HEADED COWBIRD, AND THE SECOND FACTOR HAS BEEN A DECLINE IN SUITABLE BREEDING HABITAT. THE COWBIRD CONTROL PROGRAM HAS HAD OUTSTANDING SUCCESS, SO PEOPLE INVOLVED WITH THE RECOVERY EFFORT HAVE BEEN PUZZLED BY A FLUCTUATING POPULATION WITH NO STEADY INCREASE. I BELIEVE THAT THIS PATTERN CAN BE UNDERSTOOD THROUGH COMPARISONS WITH MORE COMMON BIRD SPECIES, THAT CAN ALSO SHOW STRONG ANNUAL POPULATION VARIATION AND FAILURE TO SATURATE ALL AVAILABLE SPACE WITHIN A HOMOGENEOUS STAND. IN ADDITION, KIRTLAND'S WARBLERS MAY HAVE A SHORTAGE OF BREEDING HABITAT. TYPICALLY, THE SPECIES OCCUPIES DENSE JACK PINE STANDS OF WILDFIRE ORIGIN THAT ARE ABOUT 6-15 FT IN HEIGHT. POPULATIONS IN BURN AREAS GENERALLY BUILD FOR 4-5 YEARS, LEVEL OFF FOR A SIMILAR TIME

