

# The Jack-Pine Warbler

Published by the Michigan Audubon Society

VOL. 52

JUNE, 1974

NO. 2



RS Butsch

# The Jack-Pine Warbler

A QUARTERLY MAGAZINE OF ORNITHOLOGY  
AND NATURAL HISTORY

JUNE, 1974

No. 2

## C O N T E N T S

President's Page .....	Robert Bradburn	49
Feeding Behavior of Savannah Sparrows in Southeastern Michigan .....	Peter E. Potter	50
Aspects of Kirtland's Warbler Feeding Biology .....	Lawrence H. Walkinshaw and Warren R. Faust	64
On the Nesting of the Yellow Warbler .....	David J. Bruggers and Eldon D. Greij	76
Mapled Chickadee. Drawing by Sharon Rimek .....	Alice H. Kelley	80
Michigan Bird Survey, Winter 1973-1974 .....	E. Rae Hudspeth	81
Birding .....		88
Field Notes Evidence for "Floaters" in the American Redstart .....	Henry F. Howe	91
Case of Age-related Territory Usurpation in the American Redstart .....	Henry F. Howe	91
Reviews, edited by George J. Wallace .....		93

Cover — "Rose-breasted Grosbeak"  
by R. S. Butsch

*Jack-Pine Warbler* is an official publication of the Michigan Audubon Society published quarterly in March, June, September, and December, at 7000 Northridge, Kalamazoo, Michigan 49001. Second class mail privileges are authorized in Kalamazoo, Michigan. Subscription price is \$10.00.

Editor — Dr. William L. Thompson, Department of Biology,  
Wayne State University, Detroit, Michigan 48202.  
Personal Survey Compiler — Mrs. Neil T. Kelley, 3681 Forest Hill Drive,  
Farmington Hills, Michigan 48013.

Book Review Editor — Dr. George J. Wallace,  
Suite 1, Box 304, Grayling, Michigan 49738.

Articles and communications intended for publication or review should be sent to the Editor. Manuscripts should be typewritten, with writing on one side of the paper in double-spaced. Photographic prints, submitted for half-tone illustrations, should have good contrast and detail and should preferably be printed on 8 x 10-inch paper. Please send prints unmounted with accurate data attached.

The present issue of *The Jack-Pine Warbler* is printed by the Beimer Printing Company, Kalamazoo, Michigan.

## The President's Page

Recently the Michigan Audubon Society cooperated with the Kalamazoo Nature Center and the University of Michigan in hosting the annual meeting of the Wilson Ornithological Society at the University of Michigan Biological Station, Pellston, Michigan.

The meeting featured the presentation of scientific papers in the broad field of ornithology and field trips in the local area and the Upper Peninsula. An important but unscheduled aspect of the session was an informal exchange of information and the renewal of old friendships among the three groups — many of whom had been faculty members or students in prior years at the Station, or other universities across the nation.

The impact of the scientific value of the Michigan Audubon Society's publication *The Jack-Pine Warbler* was evidenced by being frequently cited as resource material for some of the papers presented. It is continually rewarding to find our general activities, research programs, and publications serving so many in so many ways. The meeting at Pellston illustrated this point and seemed to indicate that further cooperative ventures with other natural science groups would be mutually beneficial.



# Some Aspects Of Kirtland's Warbler Breeding Biology

Lawrence H. Walkinshaw and Warren R. Faust

Kirtland's Warbler (*Dendroica kirtlandii*) studies were made in three different regions of Crawford County, Michigan. In 1971 this county contained 101 of the 201 singing male Kirtland's Warblers in existence (Mayfield, 1972). During the 1973 survey by us, with aid from Doug Middleton, William Irvine, Doris Chapard, Jean Skellenger, Harold and Virginia Mayfield, we found 22 males at Pere Cheney (8 miles southeast of Grayling); 57 males at the Artillery Range (8-10 miles northeast of Grayling) and 30 males at the Lovells Management Area (3-4 miles north-northeast of Lovells). The Artillery Range, during recent years, has harbored during summer more Kirtland's Warblers than any known region. A fire on 19 August 1955, apparently caused by artillery, burned over 2,307 acres (Fenn Holden). During the 1961 Kirtland's Warbler census, Holden located four singing males here and found a nest with four eggs. Following this the number of birds increased rapidly so that during 1966, when first visited by Walkinshaw, there must have been around 100 singing males there. The trees at that time were shoulder high, about 4-5 feet.

During May 1967 another fire went through the north half of the region burning across sections 8 and 9 north of Bucks East and West Truck Trail, destroying a large tract of usable habitat. This second burn restored sufficiently so that during 1972 there was one singing male found there (Ronald Hoffman) and during 1973 we found eight males there.

Although Walkinshaw visited the Lovells Management Area several times, he did no work until 1972 when the two of us began working there; the same for the Pere Cheney Area. Faust made his first visit to the Artillery Range in 1971 when he began working on Kirtland's Warbler vocalizations. During 1972 and 1973 both of us made repeated trips to the region during the nesting season. Before 1970 Walkinshaw spent three and four weeks annually and since then five to six weeks studying the species during late May, June and July. Faust made regular visits, remaining up to a week at a time, and timing his visits when Walkinshaw was gone so that studies were almost continuous; in 1972 and 1973 coverage extended from late May through late July, 1972 and late August, 1973.

## REPRODUCTION FOLLOWING COWBIRD REMOVAL

Some of the results of Walkinshaw's earlier studies were published in *American Birds* (1972) when he showed that the future of Kirtland's Warbler was in doubt as long as Brown-headed Cowbirds parasitized them at the rate they had done for several years. Those 1966-1971 studies on the Artillery Range showed that 36 of 52 Kirtland's Warbler nests had 55 Cowbird eggs laid in them (69.23 percent parasitism) while neighboring bird species appeared almost immune. In these same 52 nests he found only 122 Kirtland's Warbler eggs and from them, even though he removed 36



Male Kirtland's Warbler at nest with young. Photographed by L. H. Walkinshaw.





Nest and egg of Kirtland's Warbler. Photographed by L. H. Walkinshaw.

- (13 pairs) (Cowbird eggs removed): 2,2,2,2,2,0,0,0,0,0 (1 pair?) KW young.
- (14 pairs) (Adult Cowbirds removed): 8 (2 broods), 5,5,5,5,4,4,4,4,3,3,2,0, KW young.
- (14 pairs) (Adult Cowbirds removed): 5,5,5,5,5,4,3,3,0,0,0,0,0,0,0 KW young.
- LOVELLS MANAGEMENT AREA (T23N, R1W, Section 5)
- (6 pairs) (Adult Cowbirds removed): 9,7 (both 2 broods), 5,3,3, possibly 3) KW young.
- (11 pairs) (Adult Cowbirds removed): 7,4 (probably 8) (both 2 broods), 5,5,4,2,1,0,0,0,0 KW young.
- PERE CHENEY AREA (T25N, R2W, Sections 6,7)
- (1 pair) (Adult Cowbirds removed): 5 KW young.
- (7 pairs) (Adult Cowbirds removed): 5,5,5,5,4,4,1 (probably more than 1 last brood) KW young.

Thus on the entire region, 1972-1973, after adult cowbirds were removed by the U. S. Fish and Wildlife Service, Division of Population Management, 53 pairs produced 179 Kirtland's Warbler young, an average 8 young per pair. Twenty-three additional pairs could have reared 2 broods but we had no evidence they did. During 1966-1971 52 even when cowbird eggs and young were removed, produced only possibly 51) Kirtland's Warbler young, an average of 0.81 young per

TABLE 2  
SUCCESS OF KIRTLAND'S WARBLER PAIRS  
CRAWFORD COUNTY, MICHIGAN

YEAR	AREA	NUMBER SUCCESS-				EGGS LAID	EGGS HATCHED	YOUNG KW EGGS FLEDGED	PER SET	PER NEST	KW YOUNG
		NESTS	FUL	NESTS	NESTS						
1966-1971	AR	52	19	122	56	42	2.35	0.81			
1972	AR	22	14	94	66	55	4.27	2.50			
1973	AR	14	8	66	50	35	4.71	2.50			
1972	L	9	7 (1)	36	35	27 (3)	4.00	3.00			
1973	L	13	8 (1)	53	35	28 (4)	4.08	2.16			
1972	PC	1	1	5	5	5	5.00	5.00			
1973	PC	7	7	31	30	29	4.43	4.14			
ALL 1972-1973		66	45 (2)	285	221	179 (7)	4.32	2.71			

AR = Artillery Range; L = Lovells Management Area; PC = Pere Cheney Area.  
KW = Kirtland's Warbler.

Numbers in parentheses are unknowns which could have succeeded. These same eggs and young were added into the two columns ahead of this one.

1966-1971, Cowbird eggs and young were removed where possible most of these years but no adult Cowbirds were taken.

1972-1973, adult Cowbirds were removed in a program involving the U. S. Fish and Wildlife Service, Michigan Department of Natural Resources, U. S. Forest Service, Michigan Audubon Society, and Pontiac Audubon Society.

pair. It is easy to see the terrific toll cowbirds must have made on Kirtland's Warbler young production, for all other factors remained the same.

A comparison of average production per nest between all areas in 1972-1973 and the Artillery Range in 1966-1971 is shown in Table 2. Note that the number of eggs per set has increased from 2.35 to 4.31 after adult cowbird removal; however, the number of young fledged per nest has increased from 0.81 to 2.75. The fact that production of fledglings has increased far more than egg production indicates that the presence of cowbird adults and young is highly detrimental throughout the incubation and nesting stages. Female cowbirds may remove eggs even after incubation is advanced and have also been known to remove nestlings when depositing an egg; there is also the possibility that the presence of female cowbirds may cause concern leading to desertion of the nest or otherwise interferes with the breeding behavior of the Kirtland's Warbler. The results indicate that removal of the adult cowbirds is far more beneficial to the Kirtland's Warbler than removal of cowbird eggs and young (as was done from 1967-1971).

#### NESTLING RETURNS

Since Walkinshaw banded a number of nestlings prior to 1972 and 88 during 1972 we were able to obtain the following records of known-aged birds. Following is a list of nesting Kirtland's Warblers banded by Walkinshaw, all but the 1947 ones (which were in Oscoda County) banded in Crawford County: 1938, 10; 1940, 5; 1944, 4; 1947, 2; 1948, 2; 1966, 2; 1967, 2; 1969, 4; 1970, 2; 1971, 10; 1972, 51 and 1973, 32 (1966-1973 on the Ar-





## DOUBLE BROODS

during 1972 and 1973 we located several pairs of Kirtland's Warblers to rear two broods. Since second nests are often much harder to find, this number could have been much greater.

**FIRST PAIR.** Male 81-58936 (banded 20 June 1972, Lovells) and his mate 81-24179 (banded 22 June 1970 at the Artillery Range, as an adult, as SSW from her 1972 nest sites). In 1970, with her mate, 70-94978, reared 2 young but she was not found during 1971 (LHW). Their nest was in the Lovells Management Area:

**FIRST 1972 nest** found 17 June 1972 (5 young) with 3-day old young were banded, 81-58929-33. One young returned to nest one-half mile north in 1973, proving at least one survived. These young fledged 1972.

**SECOND 1972 nest** found 24 July 1972 178 feet NE of their first 1972 nest contained 4 young 5-6 days old which were banded and fledged 1972.

**FIRST 1973 nest.** Male 81-58936 and female 61-14179 were found again at W, nesting 472 feet SW of their first 1972 nest site. Four young were banded and fledged 25 June 1973. Later the male was noted feeding young out of the nest (WRF).

**SECOND 1973 nest.** Same pair found at a second 1973 nest 22 July 1973 (5 young). Three young fledged 27 July (LHW). This nest was 180 feet north of their first 1973 nest.

**SECOND PAIR.** Male 81-58854 was banded 27 July 1972; and his mate, 80-57193, banded 27 June 1971. Her mate in 1971 was 80-57192. They fledged the day they were banded, 27 June 1971, 2 Kirtland's Warblers and 1 Cowbird. During 1972 her 1971 mate occupied the nest territory SE of hers, Artillery Range.

**FIRST 1972 nest.** Five young fledged 25 June 1972 (a daughter from brood nested about one mile away during 1973, proving the young were hers). This nest was about 510 feet NW of the 1971 nest of female 81-58936.

**SECOND 1972 nest.** This second Artillery Range nest of 1972 was 84 feet away with 4 eggs, from which 3 young fledged 31 July 1972. The same pair nested on this territory again during 1973 and had a fourth 5 young on 29 June 1973, but a predator took them. This nest was 100 feet from the 1972 nests.

**THIRD PAIR.** Male 820-89214 banded 23 June 1973, Lovells Management Area; Female 81-58935 banded 300 feet from where she nested in 1972; he and her mate reared 5 young in 1972, but her mate of that year, 81-58936, did not return in 1973.

**FIRST 1973 Nest.** Nest found on Lovells Management Area. It contained 5 eggs and 4 young fledged from it July 1973 (LHW). They were banded and the male was noted feeding them after they had fledged. **SECOND 1973 Nest.** Nest found with 4 young 30 July 1973 (WRF). The young were in the nest for several succeeding days but WRF could find no adults or fledglings on 5 August 1973.

**FOURTH PAIR.** Although not definite, it is very likely that this pair

reared two broods during 1972. Three young fledged from a nest on their territory, 25 June 1972 (one nested nearby during 1973), but the parents were not banded until another nest was found on their Lovells territory, 250 feet from the first. From their nest 4 young fledged 28 July 1972. The male occupied the same territory in 1973 where both of these nests were found in 1972, but he had a new mate. He was 81-59000; his old mate, 81-53999. His 1973 mate was not banded.

Berger and Radabaugh (1968) discussed the incidence of double-broodedness in Kirtland's Warbler and indicated that 28 June (possibly 30 June) was the latest date of fledging of young which had subsequently been followed by an attempted second brood. Radabaugh (1972) indicated, assuming a 28 June cutoff date, that of 17 double brood possibilities he had found 7 pairs (41%) attempting a second brood.

In our two years of study on the Lovells region (an area that is easily worked and was studied through July, 1972 and August, 1973) we have found 4 cases of double-broodedness out of 7 pairs which fledged young early enough (1 July in the latest instance) to attempt a second brood. One pair raised two broods in both 1972 and 1973, producing 16 young within a two year period.

## LITERATURE CITED

- Berger, A. J., and Radabaugh, B. E. 1968. Returns of Kirtland's Warblers to the breeding grounds. *Bird-Banding*, 39:161-186.  
 Mayfield, H. F. 1972. Third decennial census of Kirtland's Warbler. *Auk*, 89:263-268.  
 Radabaugh, B. E. 1972. Double-broodedness in the Kirtland's Warbler. *Bird-Banding*, 43:55.  
 Radabaugh, B. E., Radabaugh, F. E., and Radabaugh, C. A. 1966. Returns of Kirtland's Warblers banded as nestlings. *Wilson Bull.*, 78:322.  
 Walkinshaw, L. H. 1972. Kirtland's Warbler — endangered. *American Birds*, 26:3-9.  
 — 1145 Scenic Drive, Muskegon, Michigan 49445  
 and 1951 McIntyre Drive, Ann Arbor, Michigan 48105.