

Wilson Bull., 114(3), 2002, pp. 415–416

Re-evaluating the Bay-breasted Warbler Breeding Range: Nine Years of Presence in Lower Michigan

Kevin Ellison,^{1,4,5} Paul W. Sykes, Jr.,² and Carol I. Bocetti³

ABSTRACT.—The breeding range of the Bay-breasted Warbler (*Dendroica castanea*) is thought to include only the northernmost portions of six northeastern and northcentral states in the United States. During a 10-year banding study of Kirtland's Warblers (*Dendroica kirtlandii*) in northern Lower Michigan, we caught 44 Bay-breasted Warblers outside of their reported migration dates during 9 of the 10 years. Two birds captured in 1997 were in breeding condition; one possessed a cloacal protuberance and the other a full brood patch. We also captured two hatching year birds with fleshy rictal flanges in 1997. We suggest that these records indicate a long term presence of Bay-breasted Warblers on breeding grounds considerably farther south than previously recorded. Received 6 November 2001, accepted 15 August 2002.

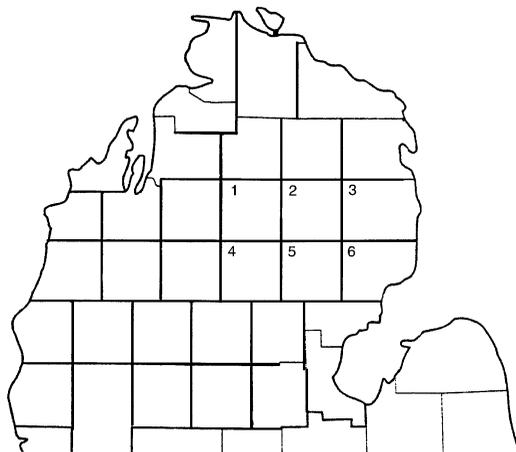


FIG. 1. Bay-breasted Warblers were captured prior to migration in northern Lower Michigan, 1986–1997 (excluding 1993–1994). Number of captures per county were (1) 8 adults and 2 hatching year birds in Crawford County; (2) 17 adults, including 1 with a cloacal protuberance, in Oscoda County; (3) 7 adults, including 1 with a brood patch, in Alcona County; (4) 1 adult in Roscommon County; (5) 3 adults in Ogemaw County; and (6) 6 adults in Iosco County.

The breeding range of the Bay-breasted Warbler (*Dendroica castanea*) is restricted to coniferous forests of northeastern and north-central North America (Sealy 1979). Breeding has been documented within the Upper Peninsula of Michigan and areas of five other northern states, which constitute the portion of the warblers' breeding range within the United States (Brewer et al. 1991, Williams 1996, Dunn and Garrett 1997). This species exhibits extensive vagrancy in response to caterpillar outbreaks outside its typical habitat and range (Sealy 1979, Patten and Burger 1998). However, vagrant Bay-breasted Warblers rarely have been recorded during the breeding season (see Sealy 1979). Here we report data from 10 years of mist netting to document

Bay-breasted Warbler presence outside of its normal migration dates in the Lower Peninsula of Michigan.

During a 10-year banding project in jack-pine (*Pinus banksiana*) forests of northern Lower Michigan (Fig. 1), we captured 226 Bay-breasted Warblers between 16 May and 22 September, 1986–1997 (excluding 1993–1994). The long term banding project was designed to measure seasonal productivity, movements, and dispersal of the endangered Kirtland's Warbler (*D. kirtlandii*), so we conducted mist netting outside the Kirtland's Warbler nesting season. However, we captured 44 Bay-breasted Warblers before 5 August, which is prior to the passage of migrants (hatching year Bay-breasted Warblers, which migrate before adults, pass through the region during late August; Dunn and Garrett 1997).

¹ Dept. of Biology, Univ. of California, Riverside, CA 92521, USA.

² USGS Patuxent Wildlife Research Center, Warnell School of Forest Resources, Univ. of Georgia, Athens, GA 30602-2152, USA.

³ USGS Patuxent Wildlife Research Center, 10 Oakridge Ln., Hickory, PA 15340, USA.

⁴ Current address: Dept. of Zoology, Univ. of Manitoba, Winnipeg, MB R3T 2N2, Canada.

⁵ Corresponding author; E-mail: kellis6@hotmail.com

Fall migration dates ranged between 16 August and 30 September, 1979–1995, in south-eastern Michigan (J. A. Creaves unpubl. data cited in Williams 1996), southeastern Minnesota (Winker et al. 1992), and southern Maine (Morris et al. 1994). Moreover, two Bay-breasted Warblers captured in 1997 at different locations were in breeding condition. One male with a full cloacal protuberance (*sensu* Pyle et al. 1997) and one female with a full brood patch were caught 18 July and 5 August, respectively. Also, we captured two hatching year Bay-breasted Warblers on 23 July 1997; each was in prebasic I plumage (Williams 1996) with fleshy rectal flanges. This direct evidence of breeding, and the 44 captures through 5 August, supports our conclusion that Bay-breasted Warblers regularly breed on the Lower Peninsula of Michigan. By the 5 August criterion, we suggest Bay-breasted Warblers breed as far south as Iosco, Ogemaw, and Roscommon counties (Fig. 1). Thus, breeding likely occurred in these counties during 9 of the 10 years represented by our capture data. Such breeding may have occurred in the past and gone undetected due to this warbler's high-pitched song (Dunn and Garrett 1997). Furthermore, the potential for detection has been limited by restricted public access to northern Lower Michigan conifer stands since the early 1970s to protect breeding Kirtland's Warblers.

ACKNOWLEDGMENTS

We thank C. Kepler and numerous Kirtland's Warbler field crews for data collection, and B. Fancher, S.

B. Ibarguén, M. A. Patten, S. G. Sealy, and M. K. Stapleton for helpful comments and assistance with the manuscript.

LITERATURE CITED

- BREWER, R. A., G. A. MCPEEK, AND R. J. ADAMS, JR. 1991. The atlas of breeding birds of Michigan. Michigan State Univ. Press, East Lansing.
- DUNN, J. L. AND K. L. GARRETT. 1997. A field guide to the warblers of North America. Houghton Mifflin, Boston, Massachusetts.
- MORRIS, S. R., M. E. RICHMOND, AND D. W. HOLMES. 1994. Patterns of stopover by warblers during spring and fall migration on Appledore Island, Maine. *Wilson Bull.* 106:703–718.
- PATTEN, M. A. AND J. C. BURGER. 1998. Spruce budworm outbreaks and the incidence of vagrancy in eastern North American wood-warblers. *Can. J. Zool.* 76:433–439.
- PYLE, P., S. N. G. HOWELL, D. F. DESANTE, R. P. YUNICK, AND M. GUSTAFSON. 1997. Identification guide to North American birds. Part I. Columbidae to Ploceidae. Slate Creek Press, Bolinas, California.
- SEALY, S. G. 1979. Extra-limital nesting of Bay-breasted Warblers: response to forest tent caterpillars? *Auk* 96:600–603.
- WILLIAMS, J. M. 1996. Bay-breasted Warbler (*Dendroica castanea*). No. 206 in *The Birds of North America* (A. Poole and F. Gill, Eds.). Academy of Natural Sciences, Philadelphia, Pennsylvania, and the American Ornithologists' Union, Washington, D.C.
- WINKER, K., D. W. WARNER, AND A. R. WEISBROD. 1992. Migration of woodland birds at a fragmented inland stopover site. *Wilson Bull.* 104:580–598.