
**Assessing the use of Tamarack Tree Cricket
(*Oecanthus laricis* T.J. Walker), a rare species, as an
Indicator of Biological Integrity**



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Introduction

Surveys for the tamarack tree cricket (*Oecanthus laricis*), a species of special concern in Michigan, were conducted to help assess whether its presence could be used as an indicator of biological integrity in southern Michigan. Because of its perceived rarity, having previously been recorded from only eight locations worldwide, our efforts also aimed at trying to better assess the tamarack tree cricket's habitat requirements, range, and conservation status. The tamarack tree cricket has been collected on tamarack from six sites in southeastern MI and from eastern hemlock (*Tsuga canadensis*) at two sites in northeastern Ohio. Because the species is thought to deposit its eggs only in the wood of tamarack, it may be completely dependent on the tree during a portion of its life cycle. Prior to our surveys the species was thought to be restricted to the upper portions of small, open grown tamaracks (Cantrall 1943). Adult tamarack tree cricket's can be found on tamaracks during August and September.

Methods

Tamarack tree cricket surveys were conducted at a total of 54 sites in 22 counties and included the six conifer swamp sites where our vegetation sampling occurred in 1999 (Table 1). Surveys were conducted from mid August to mid September during 1999 and 2000. A variety of natural communities were surveyed including tamarack-dominated, rich conifer swamp and poor conifer swamp, as well as bog and prairie fen. Survey methods included sweeping and beating the tamarack trees with sweep nets and collecting several specimens from each site where they occurred. Specimens were then keyed to species and later verified by Dr. Roger Bland of Central Michigan University.

Results

The tamarack tree cricket was recorded from 32 sites in 16 counties including all sites where detailed vegetation sampling was conducted except for Waterloo (Tables 1 and Figure 1). The results of our surveys have extended the known range of the species in Michigan from southeast MI to south central and southwestern lower MI. The species was found to occur in a variety of natural communities including both tamarack-dominated rich conifer swamps and poor conifer swamps, as well as in prairie fen, and bog. It occurred in both small, highly disturbed sites as well as large, intact wetland complexes.

Discussion

The tamarack tree cricket is probably not a reliable indicator of high quality conditions for conifer swamp in southern Michigan. Though the species appears to be restricted to tamarack, it was found in a wide variety of natural communities and conditions, occurring in both large, intact natural communities as well as small, isolated patches of tamarack adjacent to roads and drainage ditches. Further sampling may show higher tamarack tree cricket population densities in high quality conifer swamps and the long-term viability of the species may depend on these sites.

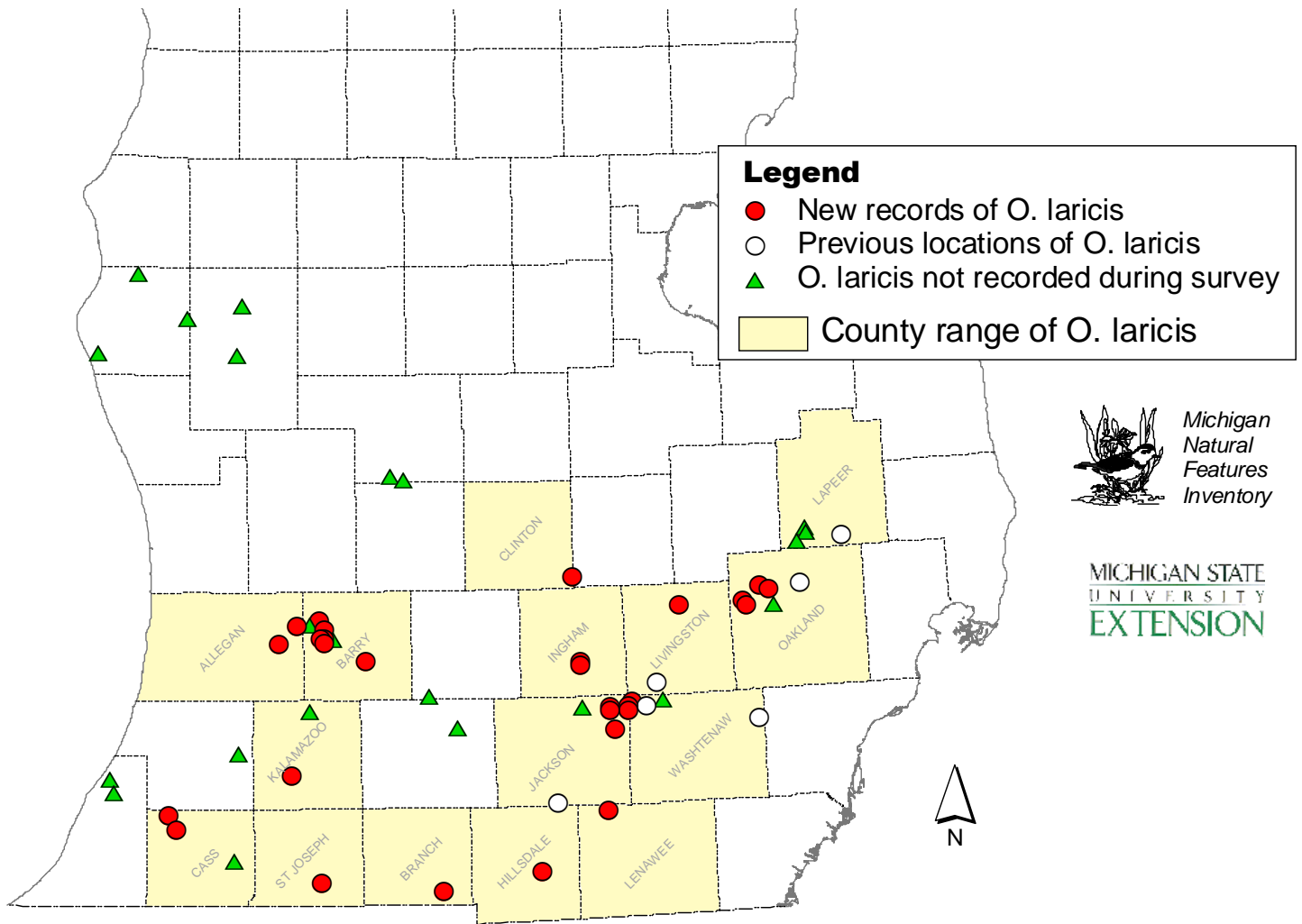
It is possible that with more survey work the known range of the species may continue to expand to include mid MI as well as northern Indiana.

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Table 1. Tamarack tree cricket survey sites and results. * indicates a previously known sites, four of which were not re-surveyed. ** indicates 1999, rich conifer swamp vegetation sampling site.

Survey Site	County	Township	Range	Section	Tree Cricket Occurrence
Ebersole Center Fen	Allegan	03N	11W	11	yes
Otis Lake Bog	Barry	03N	09W	30	no
Barry State Game Area (S. of Hall Lake)	Barry	03N	10W	27	yes
Shaw Lake Fen	Barry	03N	10W	03	yes
Turner Creek Fen	Barry	03N	10W	14	yes
Yankee Springs Deep Lake Fen	Barry	03N	10W	26	yes
Yankee Springs Fen (southeast)	Barry	03N	10W	35	yes
Barry State Game Area (Bowen Mills Rd. West)	Barry	03N	10W	08	no
Sarett Nature Center	Berrien	03S	18W	34	no
Blue Creek	Berrien	04S	18W	14	no
Quimby Road Fen (Catey Tract)	Branch	08S	06W	01	yes
Quimby Road Fen (Woodward Tract)	Branch	08S	06W	01	yes
Van Sickle/Walker tracts	Calhoun	02S	05W	03	no
Cook Lake/Rudy Road Complex-Hassle Tract	Cass	05S	15W	30	yes
Priest Lake Fen	Cass	05S	16W	11	yes
T.K. Lawless County Park	Cass	06S	13W	32	no
Rose Lake SGA-Clark Road	Clinton	05N	01W	24	yes
Kuzera Site	Eaton	01N	06W	34	no
Lost Nation State Game Area Fen	Hillsdale	07S	02W	15	yes
Dansville SGA-Hewes Lake Tamarack Swamp	Ingham	02N	01E	32	yes
Dansville SGA-Meridian Road Tamarack Swamp	Ingham	02N	01E	29	yes
Waterloo **	Jackson	01S	01E	17	no
Harr **	Jackson	01S	02E	24	yes
Huttenlocker **	Jackson	01S	02E	17	yes
Leeke Lake **	Jackson	01S	02E	13	yes
Portage **	Jackson	01S	02E	20	yes
Glenn Road/Mt. Hope Road Tamarack Savanna	Jackson	02S	02E	09	yes
Liberty Fen *	Jackson	04S	01W	32	pre-1998 record, not re-surveyed
Springbrook Fen (North of C-Avenue)	Kalamazoo	01S	10W	18	no
Gordneck SGA-Little Sugarloaf Lake	Kalamazoo	03N	11W	31	yes
Bishop Bog/Schrier Park	Kalamazoo	03S	11W	28	yes
Metamora-Hadley State Recreation Area N	Lapeer	06N	09E	12	no
Metamora-Hadley State Recreation Area SW	Lapeer	06N	09E	13	no
Ortonville State Recreation Area	Lapeer	06N	09E	27	no
Seven Ponds Nature Center *	Lapeer	06N	11E	20	yes, reconfirmed 1989 record
Onsted State Game Area	Lenawee	05S	02E	07	yes
George Reserve *	Livingston	01N	04E	19	pre-1998 record, not re-surveyed
Oak Grove State Game Area	Livingston	04N	05E	30	yes
Flat River SGA-Clear Lake	Montcalm	09N	07W	35	no
Flat River SGA-Miller Road	Montcalm	09N	07W	29	no
Alley Lake Bog	Newaygo	13N	13W	11	no
Richmond Lake Bog	Newaygo	15N	13W	13	no
Proud Lake State Recreation Area	Oakland	02N	08W	20	yes
Milford *	Oakland	02S	07E	02	pre-1998 record, not re-surveyed
Buckhorn Lake South	Oakland	04N	07E	34	yes
Buckhorn Lake Road Tamarack Savanna	Oakland	04N	07E	28	yes
Dilley Road Tamarack Savanna	Oakland	04N	08E	16	yes
Long Lake Tamarack Savanna	Oakland	04N	08E	07	yes
Indian Springs	Oakland	04N	08E	34	no
Independence Oaks County Park *	Oakland	04N	09E	10	pre-1998 record, not re-surveyed
Arthur Bog	Oceana	13N	18W	10	no
Fairchild Lake	Oceana	15N	15W	36	no
Jefferson Bog	Oceana	16N	16W	07	no
Thompson Lake-Frohriep Tract	St. Joseph	07S	10W	28	yes
Lime Lake	Van Buren	02S	13W	33	no
Snyder Lake Fen *	Washtenaw	01S	03E	15	yes, reconfirmed 1995 record
M-52 **	Washtenaw	01S	03E	07	yes
Hankard Road Fen	Washtenaw	01S	04E	08	no



Known Distribution of *Oecanthus laricis* in Michigan

