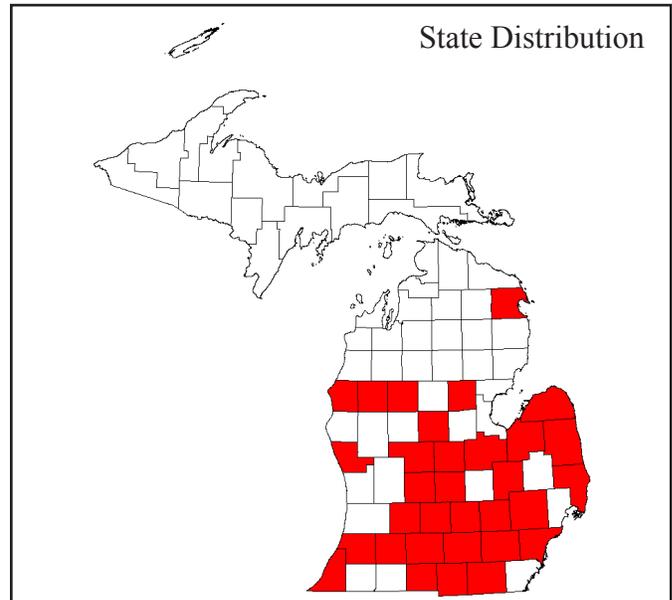




Photo by Daniel Behm



Best Survey Period



**Status:** State endangered

**Global and state rank:** G4/S2S3

**Family:** Emberizidae (New World sparrows, towhees, and Old World buntings)

**Total range:** Two subspecies are recognized, *Ammodramus henslowii henslowii*, the western form, and *A. h. susurrans*, the eastern form. The western form occupies the majority of the species' range, centered in the upper Midwest from eastern South Dakota, southern Minnesota, and eastern Kansas east to southern Ontario, western New York, western Pennsylvania, and central West Virginia. The eastern Henslow's sparrow breeds only locally along the Atlantic coast (Shaffer et al. 2003). Henslow's sparrows winter in the southern U.S. from coastal North Carolina through Florida and west into eastern Texas (Herkert et al. 2002).

**State distribution:** In Michigan, Henslow's sparrows were considered uncommon in the early part of the 1900s. The first documented record in Michigan was in 1881 (Brewer et al. 1991). As the clearing of forests intensified, Henslow's sparrow populations increased in the southern counties of Michigan. Northward expansion of the species continued until the mid-20<sup>th</sup> Century. Upper Peninsula observations were first

recorded in 1959 (Dodge 1961). Henslow's sparrows have been officially confirmed in 31 counties in Michigan (Gibson 2011; MNFI 2014), but likely occur locally in other counties throughout the southern half of the Lower Peninsula.

**Recognition:** The Henslow's sparrow is among the smallest (4.75-5.25 in; 12-13.3 cm.) sparrows. Males are generally 10-12% larger than females in length; otherwise, the sexes are alike. The large flat head, large gray bill and short tail are characteristic. The head, nape, and most of the central crown stripe are olive-colored. The wings are a dark chestnut color and the breast is finely streaked (Smith 1992). The **olive head and chestnut wings** are diagnostic. Juvenile birds are clay-colored above and streaked with black on the back and head (Roberts 1949). Due to its timid nature, Henslow's sparrows are more likely to be heard than seen. When flushed, birds will often run instead of fly. Even in flight, Henslow's sparrows fly low and rapidly over the grass in a drooping, zigzag fashion. The song, which is quiet and discreet, is often represented as *tsee-wick* (Roberts 1936). Males generally call just under or at the vegetation height, making them inconspicuous, even in song.

**Best survey time:** The best survey time for Henslow's sparrow in Michigan is from late April through mid-



September. Survey time for breeding birds is best between mid-May and late August.

**Habitat:** The Henslow's sparrow is an obligate grassland species, and historically selected tallgrass prairie, lowland prairie and marshes. Native habitats have declined due to conversion to row crops and other agriculture, drastically reducing Henslow's sparrow populations (Herkert et al. 2002). Presently, Henslow's sparrows utilize old fields, hay fields, medium density switch grass and brome fields, along with mixed cool and warm season grasslands (Gibson 2011). The most important factors in habitat selection include litter density and depth and standing dead vegetation (Zimmerman 1988), forb density and vegetation height (Herkert 1994) and habitat size (Smith 1997). Henslow's sparrows tend to prefer large areas with tall, dense grass with scattered forbs, a low percentage of woody vegetation, a well-developed litter layer and standing dead vegetation. Habitat in their winter range is generally restricted to the longleaf pine and bog habitats of the southern U.S (Bechtoldt and Stouffer 2005). The vast majority of this type of habitat has been lost due to fire suppression and habitat alteration, thus limiting the availability of suitable habitat for wintering Henslow's sparrows (Bechtoldt and Stouffer 2005).

**Biology:** Henslow's sparrows are short-distance migrants with both summer and winter ranges within the United States and Canada. Most begin their spring migration north in mid-March and arrive on the breeding grounds by late April; however, birds have been observed in Michigan in early April (eBird 2014). Male Henslow's sparrows are in song upon arriving at the breeding grounds (Graber 1968). The species breeds in loose colonies with territories selected by males soon after spring arrival. Individual territories are on average 0.8 acres (0.3 ha) in size and generally do not overlap (Robins 1971). The courtship period culminates in a monogamous pair. The female, almost exclusively, builds the nest. Nests are cup-shaped and are made of coarse grass, dead leaves and lined with finer grasses and sometimes hair. Material is gathered near the nest site. The nest building process is completed in four to five days (Graber 1968). Nests are always well concealed and placed near or on the ground located above the base of a dense clump of grass. They are usually attached to stems that arch over the nest creating a partial roof (Graber 1968). In Michigan's southern counties, egg laying starts in mid May (Wood 1951),

while in the northern part of the state egg laying takes place primarily in early June. Average clutch size for Henslow's sparrows is three to five eggs, which are incubated exclusively by the female (Smith 1992). The incubation period begins with the last egg laid and lasts approximately 11 days (Robins 1971). Young Henslow's sparrows remain in the nest for approximately nine days after hatching. The female makes most of the feeding trips during the nestling period, with the nestling diet consisting mainly of grasshopper and butterfly larvae (Robins 1971). Since Henslow's sparrows usually raise two broods during the breeding season, nesting can continue into late August (Hyde 1939). Renesting will occur should the nest be destroyed.

In Michigan, Henslow's sparrows begin southern migration by late September and are usually absent from the state by mid-October. Stragglers have been reported as late as October 24 in Jackson County and October 25 in Oakland County (Wood 1951, eBird 2014).

**Conservation/management:** Henslow's sparrow populations have been declining throughout their range, including drastic declines in the Midwest. Illinois estimates a 94% decline in Henslow's sparrow numbers in the last 40 years (Drilling 1985). The species has been on the National Audubon Society's "Blue List" since 1974 (Arbib 1979). The U.S. Fish and Wildlife Service has identified Henslow's sparrow as "a migratory nongame bird of conservation concern" in 15 regions throughout North America, including regions 12 and 23, which encompass Michigan (U.S. Fish and Wildlife Service 2008). Partners in Flight (Rich et al. 2004) placed the Henslow's sparrow on its "watch list" for having multiple causes for concern across its entire range. Michigan now lists the Henslow's sparrow as state endangered due to the markedly evident population decline in the state. Populations in Michigan have declined by an average of 12.6% annually (Sauer et al. 2014).

The major factor causing the Henslow's sparrow population decline is habitat loss (Hands et al. 1989). Changes in agricultural practices, especially in the Midwest, from hay production and grazing to specialized crop production, account for a significant portion of this loss in breeding habitat (Drilling 1985). However, other threats to Henslow's sparrows also contribute to population declines. Urbanization and fragmentation of suitable habitat into smaller and



disjunct parcels are affecting populations. Untimely or regular mowing drastically increases nest failure and chick mortality (Herkert 1994). Encroachment or succession by woody vegetation eventually renders suitable habitat unsuitable (Smith 1992). In areas near tree lines or with increased woody vegetation, parasitism rates by brown-headed cowbirds (*Molothrus ater*) increase. Brown-headed cowbirds are known to parasitize nests of many grassland birds, including Henslow's sparrow, and this can dramatically decrease productivity. Brown-headed cowbirds are also more likely to parasitize birds that occur in low densities (Patten et al. 2006). Grazed areas are particularly susceptible to parasitism, especially when those areas occur in a fragmented landscape (Patten et al. 2006). Given the nature of Henslow's sparrow habitat in Michigan, they are likely being parasitized, thus decreasing local population viability.

Threats are also present on the wintering grounds. Henslow's sparrow winters in fire-dependent ecosystems. Historically, fire occurred every 1-3 years in longleaf pine habitat (Frost 1998). The suppression of natural fire regimes along with habitat alteration in the southern U.S. has drastically decreased the amount of longleaf pine and bog habitat available; so much so, that only 2% of historic longleaf pine habitat remains (Tucker and Robinson 2003; Noss et al. 1995).

There are several management options which aid in promoting and preserving grassland habitat. This also promotes increased habitat quality for many breeding grassland birds, including the Henslow's sparrow. Three of the most frequently recommended management tools are burning, mowing and grazing. Periodic burning is necessary to maintain the open quality of grassland habitats. **However, prescribed burns in Henslow's sparrow habitat should be scheduled in late fall, after most grassland birds have migrated south** (Herkert et al. 1993). **Burning should also be limited to a portion of the grassland in one season.** Henslow's sparrows are known to avoid breeding in areas recently burned (< 3 months; Walk and Warner 2000). Providing unburned areas in a given site will maintain areas of appropriate litter cover, standing dead vegetation and vegetation density (Herkert et al. 2003). Post-burn breeding numbers in quality habitat during the second growing season and beyond are consistent with pre-burn breeding densities (Winter 1998). Mowing is an effective means of removing woody

vegetation, and can also provide additional litter cover. Evidence suggests that Henslow's sparrows will nest in hayfields mowed every year (Illinois Natural History Survey 1983), as long as the mowing is done after the breeding season concludes. **It is vital for grassland birds that mowing not take place during the breeding season.** Untimely mowing can cause high rates of nest failure and chick mortality. Grazing is occasionally used as a substitute for mowing. However, grazing pressure must be closely monitored to ensure adequately tall and dense vegetation. Ideally, a single grassland patch managed for Henslow's sparrow should be at least 75 acres (30 ha) in size. Otherwise, a complex of small units located near each other should be provided to allow for colonization (Mazur 1996). In any management scenario, removal of encroaching woody vegetation is necessary to prevent succession to forest (Drilling 1985). Restricting the application of pesticides within Henslow's sparrow habitat will protect the prey base for both young and adult birds. Finally, incentive programs for landowners involving grassland restoration or maintenance would be beneficial to the continued success of Henslow's sparrows in Michigan (Brewer et al. 1991). In recent years, the Michigan Department of Natural Resources Wildlife Division has initiated several projects for landowners who wish to provide quality habitat for grassland birds (MDNR 2014). Privately owned grasslands make up 85% of all grasslands nationwide, so landowner participation in bird conservation is vital to the success of all grassland bird species (State of the Birds 2013).

**Research needs:** Documentation of Henslow's sparrow occurrences, on all existing public and private managed areas, is a high priority. Land managers should be trained to identify the species and recognize suitable Henslow's sparrow habitat. Annual monitoring of all populations in Michigan occurring in protected areas should be initiated. Identification and characterization of habitats in Michigan will assist in monitoring projects. Additional study is required to determine site and mate fidelity, annual mortality, and reproductive success rates. Studies involving effects of frequency and timing of burns, mowing, and grazing on existing populations are also necessary. Finally, documentation of effects of habitat size and fragmentation on Michigan's Henslow's sparrow populations must also be considered (Smith 1992).



**Related abstracts:** Dry-mesic prairie, dry sand prairie, mesic prairie, mesic sand prairie, grasshopper sparrow, dickcissel, short-eared owl, northern harrier.

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