



## Natural Heritage & Endangered Species Program

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Massachusetts Division of Fisheries & Wildlife

## Vesper Sparrow *Pooecetes gramineus*

State Status: Threatened

Federal Status: None

**DESCRIPTION:** To the beginning birder, most sparrows appear indistinguishable at first glance, and close attention to details is essential for identification. The overall plumage pattern of the Vesper Sparrow is typical of many sparrow species with the head, back, tail, and wings covered by streaks of black, white, and a variety of browns. The upper chest has a series of evenly-spaced, brown streaks that in some individuals may appear to form a v-shaped spot in the center of the chest. The under-tail and belly are usually cream-colored with no streaking. The Vesper Sparrow looks somewhat like a grayish Song Sparrow (*Melospiza melodia*), but with a thin, white eye-ring. The most distinguishing feature of the Vesper Sparrow is its white outer tail feathers (somewhat like those of the Dark-eyed Junco), which are particularly noticeable in flight and unique among grassland sparrows of Massachusetts. Another distinguishing feature is rufous- or chestnut-colored lesser wing coverts (shoulders), but they are seldom visible except, perhaps, in individuals with worn plumage. Vesper Sparrows are larger than other New England grassland sparrows, with a length of 6.25 inches (15.9 cm) and a wing span of 10 inches (25.4 cm). The song of the Vesper Sparrow is quite beautiful, similar in pattern to that of the Song Sparrow, but sweeter and more plaintive. The song typically begins with paired whistles followed by clear, musical trills that accelerate and descend in tone, described as *too too tee tee chidididididid swiswi-swiswitteew*. Generally, the first two introductory whistles are lower than the second two. In some cases, only a single higher whistle follows the first pair.

**SIMILAR SPECIES:** No other sparrow that is a regular breeder in Massachusetts has white outer tail feathers. However, there are several species that may co-occur with Vesper Sparrow and otherwise resemble it in appearance. The Savannah Sparrow (*Passerculus sandwichensis*) has a similar plumage pattern but is



Vesper Sparrow, showing rufous-colored shoulders and white outer tail feathers. Photo by, and courtesy of, Jim Stasz, from the USGS Patuxent Migratory Bird Research Center, at <http://www.mbr-pwrc.usgs.gov/id/framlst/i5400id.html>

**A Species of Greatest Conservation Need in the Massachusetts State Wildlife Action Plan**

## Massachusetts Division of Fisheries & Wildlife

1 Rabbit Hill Rd., Westborough, MA; tel: 508-389-6300; fax: 508-389-7890; [www.mass.gov/dfw](http://www.mass.gov/dfw)

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smaller (5.5 inches (13.3 cm) in length, 6.75-inch (16.5 cm) wing span), has a shorter tail, has yellow-tinged lores (patches of feathers between the beak and the eye), and lacks a white eye-ring and rufous coverts. Song Sparrows are generally more streaked on the chest (often forming a central breast-spot), and streaks extend down to the sides of the belly. The juvenile Grasshopper Sparrow (*Ammodramus savannarum*) also has a streaked upper chest, but is much smaller (length 5 inches (19.7 cm)), has a much shorter tail, and lacks rufous coverts. Henslow's Sparrow (*Ammodramus henslowii*) does have evenly spaced streaks on the breast, a white eye-ring, and rufous on coverts and tertials (short feathers of the upper wing), but the rufous patch covers more of the shoulder, the head is generally olive-green in color, and total length is smaller (5 inches (12.7 cm)).

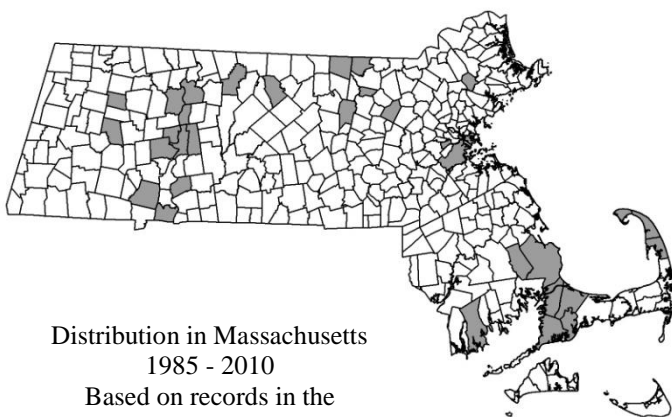
**HABITAT IN MASSACHUSETTS:** The Vesper Sparrow is considered more of a habitat generalist than some of our other grassland sparrows because their territories often include taller woody vegetation interspersed within the grassland, rather than being completely open. Habitats of Vesper Sparrows are typically dry, well-drained sites with a mixture of short grass, bare ground, and shrubs, trees, or other high structures from which males can sing, including telephone lines and poles. However, Vesper Sparrows are not considered forest species as they are not typically affiliated with dense shrublands or post-logging forest regeneration. Habitats in Massachusetts consist of airfields, heavily disturbed heathlands and barrens (e.g., as at military grounds), active and abandoned hayfields

and cropfields, abandoned gravel pits, sandplain grasslands, coastal moors, and even a capped landfill. There is some evidence to suggest that Vesper Sparrows prefer habitat patches covering at least 50 acres.

**BEHAVIOR/LIFE-HISTORY:** There are few published specific arrival and nesting dates in Massachusetts, but most Vesper Sparrows likely arrive in April and breed during May–August. The nest is constructed on the ground by the female, often in a slight depression and at the base of vegetation (e.g., grass, forbs, shrubs). The nest is usually well-concealed but may occasionally be in the open. Outer materials consist of coarse and fine grasses, forbs, moss, rootlets, and bark; the inner cup is lined with finer grasses, hair, down feathers, or even pine needles.

Vesper Sparrows are capable of producing up to 3 broods/year in some parts of the species' range, but 1–2 broods are probably typical in Massachusetts. Clutch size is usually 3-5 eggs, with second clutches likely to have fewer eggs than first clutches. Nests are sometimes parasitized by Brown-headed Cowbirds (*Molothrus ater*). The eggs are variable in color and pattern, with a base color of white to greenish- or brownish-white, and speckles, spots, or blotches of brown, lavender, or purplish-gray. The eggs are incubated for 11–14 days, mainly by the female. The young leave the nest at 9–13 days of age but are not then capable of sustained flight. They remain dependent on their parents for another 3 weeks and are fed a diet primarily of insects (e.g., grasshoppers, caterpillars). Adults consume both insects and seeds.

**RANGE:** The Vesper Sparrow is a Nearctic (North American) breeder; the northern extent of its range is Nova Scotia west to interior British Columbia, and the southern extent of the range is western Virginia to southern Illinois, northern New Mexico, and southern California. However, most breeding populations occur in the western half of the range. Vesper Sparrows overwinter throughout the lower U.S. and northern Mexico. In Massachusetts, Vesper Sparrows have been observed in Barnstable, Bristol, Essex, Franklin, Hampden, Hampshire, Middlesex, Plymouth, Suffolk and Worcester Counties. Most observations are from the Connecticut River Valley region and Barnstable County.



Distribution in Massachusetts  
1985 - 2010  
Based on records in the  
Natural Heritage Database

**POPULATION STATUS:** Vesper Sparrow is state-listed as Threatened in Massachusetts. Data from the

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North American Breeding Bird Survey (BBS) during the period 1966–2006 suggest that populations have been declining at an annual rate of 0.9% rangewide and 3.1% in the East, with greater rates of decline during the first 15 years of the survey period. There are no reliable trend estimates for populations in Massachusetts specifically, but abundance is likely returning to pre-settlement levels. Widespread use of fire, combined with agricultural development and abandonment, once temporarily increased the amount of available habitat for Vesper Sparrows in New England. However, declining farm abandonment leaving fewer unmanaged open fields, continuing fire suppression, and increasing forest succession, have led to loss of suitable breeding habitat in this region. Few natural processes in Massachusetts create and maintain habitat for the Vesper Sparrows which now rely almost exclusively on anthropogenic disturbances for breeding habitat in Massachusetts, except perhaps at the coastal moors of the Cape.

**MANAGEMENT RECOMMENDATIONS:** Although habitat availability for Vesper Sparrow was likely inflated following human settlement, and a decline in habitat availability in this region to more ecologically “normal” levels during the past 50 years may be contributing to population declines of the species in Massachusetts, populations of Vesper Sparrow nonetheless face anthropogenic threats that warrant special protections and/or management actions. However, since most populations seem to rely on anthropogenic sources of habitat, development of cost-effective management strategies is challenging. One of the biggest threats to breeding populations of Vesper Sparrow is mowing during the breeding season, which can result in destruction of nests and young. Since the breeding season may continue through August, delaying the mowing of fields until September or later is an ideal practice, especially in habitats such as airfields where mowing is not critical to production of a commodity. When delaying the mowing of fields until September is not a realistic option, waiting until at least July is recommended to allow enough time for successful production of at least one brood of young.

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