

## Species Status Assessment

**Class:** Birds  
**Family:** Emberizidae  
**Scientific Name:** *Pooecetes gramineus*  
**Common Name:** Vesper sparrow

### Species synopsis:

Though classified as a grassland bird, vesper sparrow is more appropriately called an “open land” bird, as it is more closely associated with agricultural fields than hayfields or grassy meadows (Wiens 1969, Smith 2008). In New York, this sparrow is near the eastern edge of its North American distribution, which extends in a wide band to the west coast and northward into Canada. Wintering occurs in the southern United States southward to Central America.

Population declines for vesper sparrow that parallel losses of agricultural lands have been noted since the mid-1900s across the distribution and in the eastern region. Eastern declines appear to be associated with loss of open habitats to reforestation and urbanization, as well as changes in agricultural practices, including removal of hedgerows and more frequent mowing and haying (Santner 1992, Graham and Cotter 1996). In New York, Breeding Bird Survey data and Breeding Bird Atlas data have documented declining trends in abundance and occupancy since the mid-1960s.

### I. Status

#### a. Current and Legal Protected Status

i. **Federal**      Not Listed      **Candidate?** No

ii. **New York**      Special Concern; SGCN

#### b. Natural Heritage Program Rank

i. **Global**      G5

ii. **New York**      S3B      **Tracked by NYNHP?** No

**Other Rank:**

New York Natural Heritage Program - Watch List

**Status Discussion:**

Vesper sparrow is a widespread breeder in agricultural areas of New York. It is a common to very common migrant, though much less numerous on the coast. In winter it is rare to uncommon on Long Island, and very rare inland.

Vesper sparrow is ranked as Vulnerable in New York, Vermont, and Quebec. It is ranked as Critically Imperiled in Massachusetts, Connecticut, and New Jersey, and as Apparently Secure in Pennsylvania and Ontario.

**II. Abundance and Distribution Trends**

**a. North America**

**i. Abundance**

  X   declining    \_\_\_increasing       \_\_\_stable       \_\_\_unknown

**ii. Distribution:**

  X   declining    \_\_\_increasing       \_\_\_stable       \_\_\_unknown

**Time frame considered:**   1966-2010  

**b. Regional**

**i. Abundance**

  X   declining    \_\_\_increasing       \_\_\_stable       \_\_\_unknown

**ii. Distribution:**

  X   declining    \_\_\_increasing       \_\_\_stable       \_\_\_unknown

**Regional Unit Considered:**   Eastern BBS  

**Time Frame Considered:**   1966-2010

**c. Adjacent States and Provinces**

**CONNECTICUT**                      **Not Present** \_\_\_\_\_                      **No data** \_\_\_\_\_

**i. Abundance**

  X   declining    \_\_\_ increasing                      \_\_\_ stable                      \_\_\_ unknown

**ii. Distribution:**

  X   declining    \_\_\_ increasing                      \_\_\_ stable                      \_\_\_ unknown

Time frame considered:   Not Specified  

Listing Status: \_\_\_\_\_   Endangered                        SGCN?   Yes  

**MASSACHUSETTS**                      **Not Present** \_\_\_\_\_                      **No data** \_\_\_\_\_

**i. Abundance**

  X   declining    \_\_\_ increasing                      \_\_\_ stable                      \_\_\_ unknown

**ii. Distribution:**

  X   declining    \_\_\_ increasing                      \_\_\_ stable                      \_\_\_ unknown

Time frame considered:   1975-79 to 2007-11  

Listing Status: \_\_\_\_\_   Threatened                        SGCN?   Yes  

**NEW JERSEY**                      **Not Present** \_\_\_\_\_                      **No data** \_\_\_\_\_

**i. Abundance**

  X   declining    \_\_\_ increasing                      \_\_\_ stable                      \_\_\_ unknown

**ii. Distribution:**

  X   declining    \_\_\_ increasing                      \_\_\_ stable                      \_\_\_ unknown

Time frame considered:   1966-2010  

Listing Status:   Endangered (breeding); Threatened (non-breeding)                        SGCN?   Yes



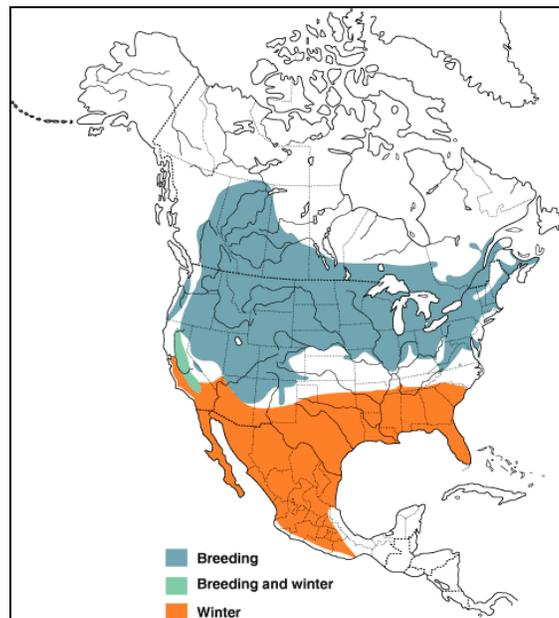


### Trends Discussion:

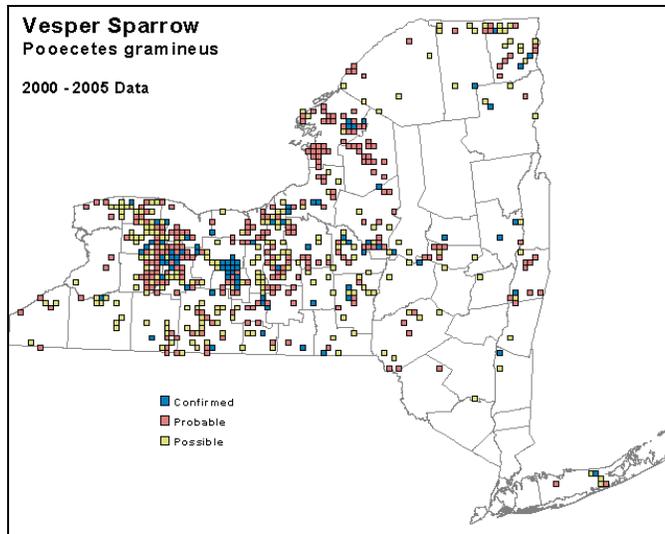
Vesper sparrow was not common in the Northeast before European settlement, but increased in abundance as agricultural lands became available.

As a bird of open landscapes, the vesper sparrow has experienced significant declines in the past several decades as habitat has diminished due to changes in agriculture and loss of agricultural lands. The Breeding Bird Survey documents this species well. Most trends show significant long-term and short-term declines. The trend for North America is -1.1% per year for 1966-2010 and -0.2% per year for 2000-2010. In the Eastern BBS routes, the trend is also declining: 2.6% per year for 1966-2010 and 1.7% per year for 2000-2010.

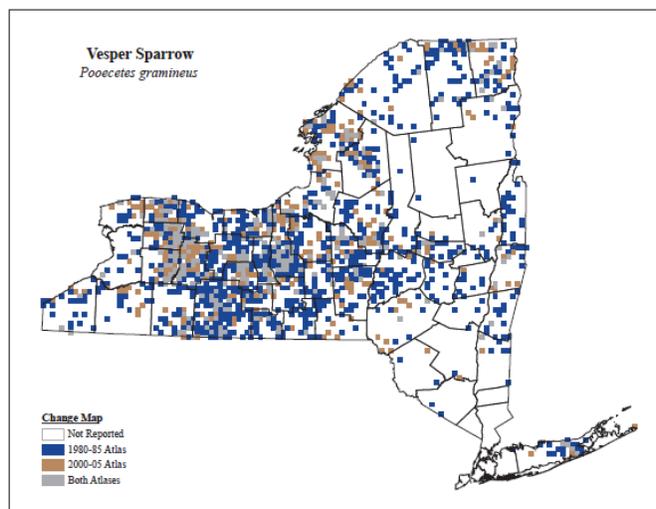
In New York, the second Breeding Bird Atlas documented a 49% decline in the number of occupied survey blocks from 1980-85 to 2000-05. The number of survey blocks with confirmed breeding records dropped by 53%. Losses were scattered throughout the state. McGowan (2008) noted that some consolidation and expansion of the range suggested by the 2000-05 distribution map in the western Great Lakes Plain and Appalachian Plateau might be a result of differences in coverage. Breeding Bird Survey data for New York show a significant long-term declining trend of 5.9% per year for 1966-2010. The short term trend (2000-2010) is also declining, at 0.1% per year, though it is not significant due to low relative abundance.



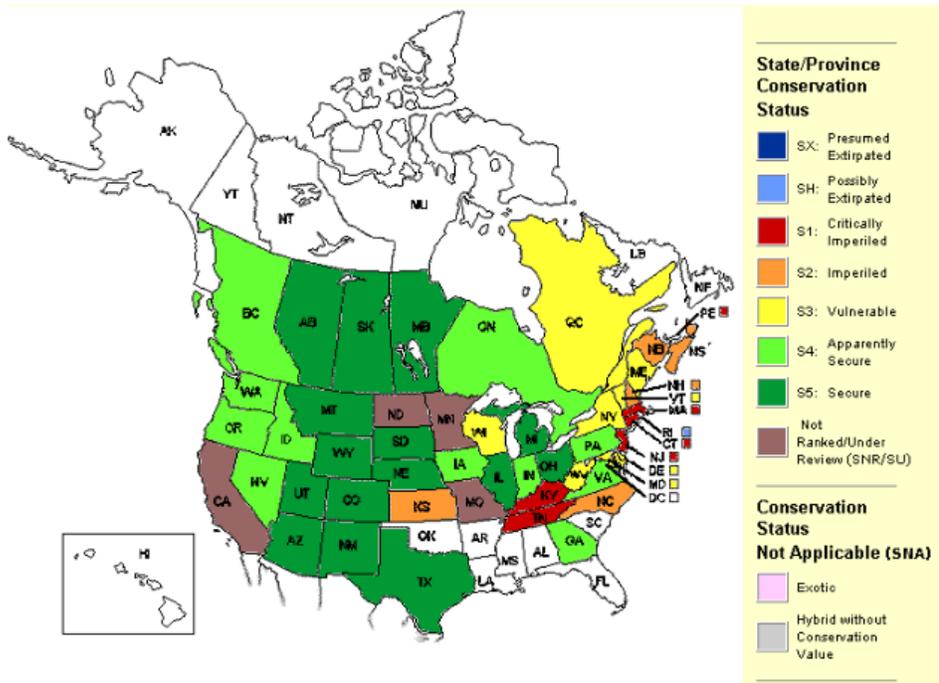
**Figure 1.** Range of the vesper sparrow in North America (Birds of North America Online 2013).



**Figure 2.** Vesper sparrow occurrence in New York State during the second Breeding Bird Atlas (McGowan and Corwin 2008).



**Figure 3.** Change in vesper sparrow occurrence in New York State between the first Breeding Bird Atlas and the second Breeding Bird Atlas (McGowan and Corwin 2008).



**Figure 4.** Conservation status of the vesper sparrow in North America (NatureServe 2012).

**III. New York Rarity, if known:**

<b>Historic</b>	<b><u># of Animals</u></b>	<b><u># of Locations</u></b>	<b><u>% of State</u></b>
<b>prior to 1970</b>	_____	_____	_____
<b>prior to 1980</b>	_____	_____	_____
<b>prior to 1990</b>	_____	_____	<u>21%</u>

**Details of historic occurrence:**

Vesper sparrow was likely most abundant during the early 1900s in areas where sheep farming was common (see Smith 2008). Bull (1974) noted its presence across the state except for Long Island, but also noted its decline. The first Breeding Bird Atlas (1980-85) documented occupancy in 1,116 survey blocks statewide.

<b>Current</b>	<b><u># of Animals</u></b>	<b><u># of Locations</u></b>	<b><u>% of State</u></b>
	_____	_____	<u>11%</u>

**Details of current occurrence:**

The second Breeding Bird Atlas (2000-05) documented occupancy in 564 survey blocks statewide, a decline of -49%. Breeding continued on the Erie-Ontario Plain and Central Appalachians with scattered records in Clinton County, the Mohawk Valley, and Long Island.

**New York’s Contribution to Species North American Range:**

<b>% of NA Range in New York</b>	<b>Classification of New York Range</b>
<u> X </u> 0-5%	___ Core
___ 6-10%	<u> X </u> Peripheral
___ 11-25%	___ Disjunct
___ 26-50%	<b>Distance to core population:</b>
___ >50%	_____

**IV. Primary Habitat or Community Type:**

1. Cultivated Crops
2. Pasture/Hay
3. Native Barrens and Savanna

**Habitat or Community Type Trend in New York:**

Declining       Stable       Increasing       Unknown

Time frame of decline/increase: Since early 1900s

Habitat Specialist?       Yes       No

Indicator Species?       Yes       No

**Habitat Discussion:**

The vesper sparrow is an open-land bird that requires large expanses of relatively short grasses and ample areas of bare ground (Wiens 1969, Smith 2008). Nicholson (1985) noted that in New York, sheep grazing created optimal habitat for vesper sparrow in the early 1900s because sheep crop the grasses closely and have a tendency to overgraze (see Smith 2008). This sparrow's affinity for agricultural areas is likely a result for its requirement for bare ground; in New York it has been found in potato fields, cornfields, and over-grazed pastures (Smith 2008).

Vesper sparrows respond quickly to changes in habitat, colonizing new areas swiftly when habitat becomes suitable and abandoning old fields rapidly as they change into forest.

## V. New York Species Demographics and Life History

- Breeder in New York**
  - Summer Resident**
  - Winter Resident**
  - Anadromous**
- Non-breeder in New York**
  - Summer Resident**
  - Winter Resident**
  - Catadromous**
- Migratory only**
- Unknown**

### Species Demographics and Life History Discussion:

Vesper sparrows breed during the first summer after hatching. One or two broods are raised each season. The longevity record for a banded vesper sparrow is 7 years, 1 month (Klimkiewicz 1997). No estimate of survivorship is available. A combined reported return rate of about 50% demonstrates site fidelity in this species (Best and Rodenhouse 1984).

Farming practices are a major cause of nest loss in agriculture areas (Rodenhouse and Best 1983, Frawley and Best 1991, Stallman and Best 1996). Eggs and nestlings are subject to predation by raccoons, skunks and foxes.

### VI. Threats:

Conversion of sparse grasslands to developed areas and (much less frequently) to row crops is the major threat to vesper sparrows. Frequent haying may destroy nests or kill fledglings.

From Jones and Cornely (2002): Changes in farming practices have been implicated in declines of this species rangewide (Rising 1987); intensive farming that uses chemicals and large-scale tillage contribute to declines (Adams et al. 1994, Graham and Cotter 1996). A trend toward earlier harvest (e.g., June) of first hay crop, and more frequent cutting, destroys nests (Santner 1992, Smith 1996).

Greatly reduced nest success in corn and soybean fields (Perritt and Best 1989) although production in row crops is enhanced by no-tillage, reducing the number of nests destroyed (Rodenhouse and Best 1983). However, breeding success in cultivated and no-tillage row-crop fields and croplands is generally not sufficient to maintain populations (Rodenhouse and Best 1983, Perritt and Best 1989, Stallman and Best 1996).

Based on frequency of occurrence, behavior and timing of pesticide applications, vesper sparrows could be vulnerable to pesticide use; declines in their eastern populations have been attributed to pesticides (Robbins 1996). In risk assessment of vesper sparrow activity patterns and breeding phenology, this species was thought to have a medium level of risk of exposure over 2–5 mo (Boutin et al. 1999).

**Are there regulatory mechanisms that protect the species or its habitat in New York?**

No       Unknown

Yes

Vesper sparrow is protected by the Migratory Bird Treaty Act. It is listed as a Species of Special Concern in New York, though that status provides no legal protection.

**Describe knowledge of management/conservation actions that are needed for recovery/conservation, or to eliminate, minimize, or compensate for the identified threats:**

The NYSDEC's Best Management Practices (BMPs) for grassland birds should be used to guide habitat management on grassland habitat or habitat to be converted into grassland. The management goal of these BMPs is to maintain the open, grassy conditions necessary for successful breeding by grassland birds and to avoid disturbance to nesting birds. Techniques may include seeding, mowing, and removal of trees and shrubs including invasive species. Typically, land should be managed for a minimum of 5 years to begin showing benefits for grassland birds. These BMPs form the basis for specific 5-year Site Management Plans for landowners selected to receive technical and financial assistance through LIP (NYSDEC 2013).

The publication, *A Plan for Conserving Grassland Birds in New York* (Morgan and Burger 2008), identifies focus areas for coordinating grassland bird conservation efforts. Because grassland birds are sensitive to landscape-level factors and funding for conservation activities is limited, the best opportunity for achieving success is to concentrate efforts within regions of the state that support key residual populations of grassland birds. Suitable landcover classification datasets are needed to incorporate habitat availability into the delineation process.

Because the vast majority of remaining grassland habitat is privately owned, private lands incentive programs and educational programs should be a major component of the conservation effort.

Protection of existing habitat for threatened and endangered species through enforcement of regulations pertaining to the taking of habitat is also a critical component of the conservation effort for these species (Morgan and Burger 2008).

Morgan and Burger (2008) recommend that further research is needed:

1. Methods and data for modeling distributions and abundance of grassland landcover across the landscape.
2. Impacts of management on productivity of grassland birds, to amplify existing information on grassland bird abundances associated with management.
3. Potential benefits of native grass species as grassland habitat in contrast with demonstrated benefit of non-native cool season grasses.

Conservation actions following IUCN taxonomy are categorized in the table below.

<b>Conservation Actions</b>	
<b>Action Category</b>	<b>Action</b>
Land/Water Protection	Site/Area Protection
Land/Water Protection	Resource/Habitat Protection
Land/Water Management	Site/Area Management
Land/Water Management	Invasive/Problematic Species Control
Land/Water Management	Habitat and Natural Process Restoration
Education and Awareness	Training
Education and Awareness	Awareness & Communications
Law and Policy	Policies and Regulations

The Comprehensive Wildlife Conservation Strategy (NYSDEC 2005) includes recommendations for the following actions for grassland birds, which includes vesper sparrow.

**Easement acquisition:**

- Identify ownership of grasslands in core focus areas, and focus Landowner Incentive Program (LIP) funding for use in conserving the most important privately-owned grasslands in the state, and distribute \$400,000 per year from LIP to conserve priority grasslands.

**Habitat management:**

\_\_\_ Develop habitat management guidelines and action plans for priority focus grassland bird species.

**Habitat research:**

\_\_\_ Evaluate the effects of specific farming and management practices, such as: timing of mowing, intensity of grazing, frequency of mowing, mowing versus haying versus prescribed fire, and width of buffer strips on productivity of grassland birds.

**Other acquisition:**

\_\_\_ Incorporate priority grassland focus areas into the NYS Open Space Plan.

**Other action:**

\_\_\_ Work with public land managers, including NRCS, USFWS, DEC and others, to better direct funding and other resources to the highest priority areas and projects for grassland habitat management. The ability to focus funding sources in core priority grasslands will be key. If the funding sources from National Resource Conservation Service (NRCS) cannot be adequately focused in priority areas, then this will cripple the ability to conserve the most critical grassland areas and will result in continued declines in grassland birds even within these focus areas.

\_\_\_ Develop an outreach program to educate the public and land managers on the need for, and wildlife benefits, of grasslands. Also provide technical guidance on what and how to benefit grassland species. Outreach to private landowners will be a key first step to educate the public about the importance of their lands to grassland birds. So much of this habitat exists on private lands that their cooperation will be the ultimate deciding factor on whether species declines can be halted. Their cooperation at the level needed for meaningful change will probably hinge on some form of subsidies.

**Population monitoring:**

\_\_\_ Develop and implement supplemental monitoring programs for grassland bird species that are not adequately sampled by BBS to determine precise population trends and evaluate effectiveness of conservation efforts. Use long term trend data to determine effectiveness of grassland conservation efforts.

\_\_\_ Complete inventory of potential grassland habitat for species present, distribution, and relative abundance of priority species.

**Statewide management plan:**

\_\_\_ Complete a comprehensive Grassland Bird Conservation Plan that coordinates research, management, and conservation efforts to more effectively conserve NY's grassland birds. Identify priority species and delineate priority focus areas for conservation and management.

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