Species Status Assessment

Common Name: Vesper sparrow **Date Updated:** March 2025

Scientific Name: *Pooecetes gramineus* **Updated By:** Abigail Valachovic

Class: Aves

Family: Emberizidae

Species Synopsis *(a short paragraph which describes species taxonomy, distribution, recent trends, and habitat in New York):*

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 legal protected Status

i. **Federal:** Not listed **Candidate:** No

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

b. Natural Heritage Program

i. **Global:** G5

ii. **New York:** S3B **Tracked by NYNHP?:** On watch list

Other Ranks:

Proposed NYS 2025 SGCN status: High Priority Species of Greatest Conservation Need
COSEWIC: Endangered
IUCN Red List: Least Concern (LC)
Northeast Regional SGCN: Watchlist [Defer to MAFWA/SEAFWA]

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

Region	Present?	Abundance	Distribution	Time Frame	Listing status	SGCN?
North America	Yes	Declining	Declining	BBS 1966-2022 trend for US		Yes
Northeastern US	Yes	Declining	Unknown	BBS 1966-2022 trend for US		(blank) Watchlist [Defer to MAFWA/SEAFWA]
New York	Yes	Declining	Declining	BBS 1966-2022 trend for US	SC	Yes
Connecticut	Yes	Declining	Declining	Unknown	E	Yes
Massachusetts	Yes	Declining	Declining	BBS 1966-2022 trend	T	Yes
New Jersey	Yes	Declining	Declining	BBS 1966-2022 trend	E	Yes
Pennsylvania	Yes	Declining	Unknown	BBS 1966-2022 trend	S2B,S3M	No
Vermont	Yes	Declining	Declining	BBS 1966-2022 not credible trend	E, S2B	Yes
Ontario	Yes	Declining	Declining	BBS 1966-2022 trend	E, S4B	No
Quebec	Yes	Declining	Declining	BBS 1966-2022 trend	E, S3B	No

Column options
Present?: Yes; No; Unknown; No data; (blank) or Choose an Item
Abundance and Distribution: Declining; Increasing; Stable; Unknown; Extirpated; N/A; (blank) or Choose an item
SGCN?: Yes; No; Unknown; (blank) or Choose an item

Monitoring in New York *(specify any monitoring activities or regular surveys that are conducted in New York):*

New York's Landowner Incentive Program (LIP) monitors grassland birds at eight Grassland Focus Areas in the state. Vesper sparrow is one of the focal species in point counts that are conducted annually. Grassland bird surveys are also conducted at some Wildlife Management Areas.
In addition, in 2005, Audubon NY conducted grassland bird surveys within the New York grassland bird focus areas to help identify target species for each focus area. As a follow up to these surveys, in 2006 NYSDEC did targeted surveys for species that were not well represented in the 2005 survey. Although vesper sparrows were not one of the target species in the 2006 surveys, data on vesper sparrows was collected during both of these survey efforts (H. Kennedy, pers. comm.).

Trends Discussion *(insert map of North American/regional distribution and status):*

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. Recently, BBS data for the United States showed a significant 1.53% decline from 1996-2019, and a 3.27% decline in New York.

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.

The species has been undergoing a moderate decline at an average rate of 0.9% per year between 1970 and 2017 (Partners in Flight 2019). Short-term trends suggest that the population declined by 10% over the past ten years (Pardieck et al. 2018).In New York, the cumulative change in estimated relative abundance from 2012 through 2022 of Vesper sparrows during breeding season has decreased by 38.5% with confidence intervals of –21.8% to –53.4%.

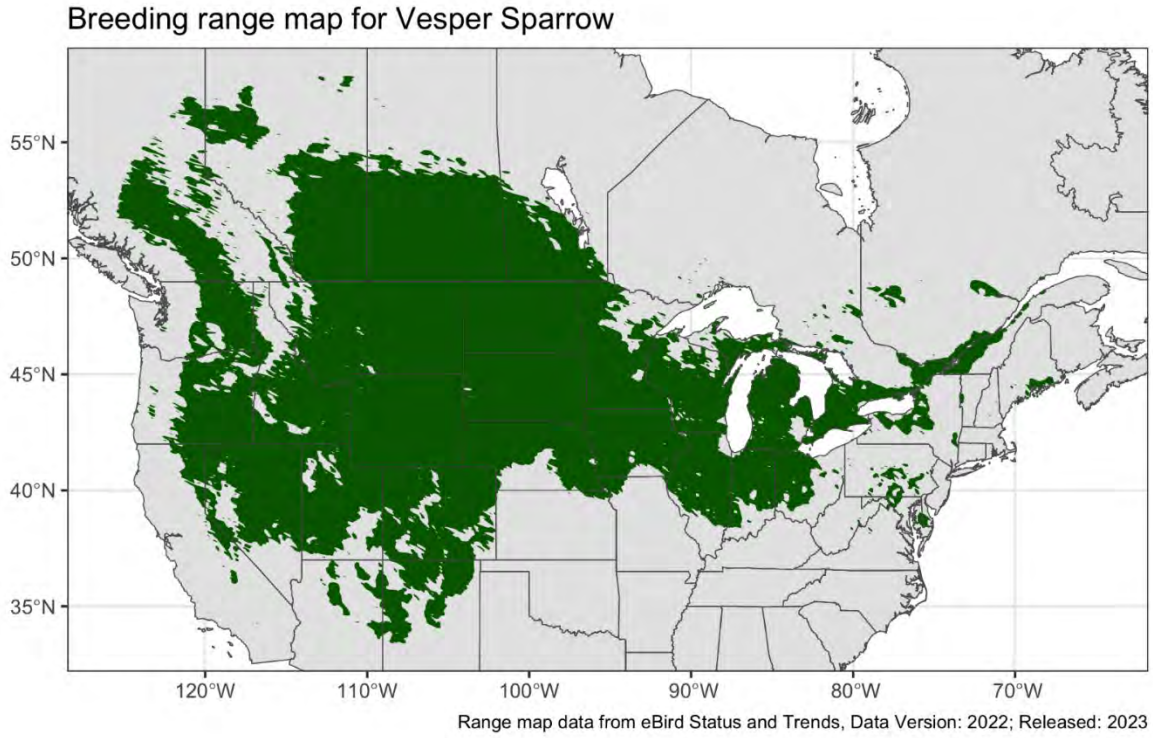

Figure 1: Breeding range for vesper sparrow. Data source is eBird.

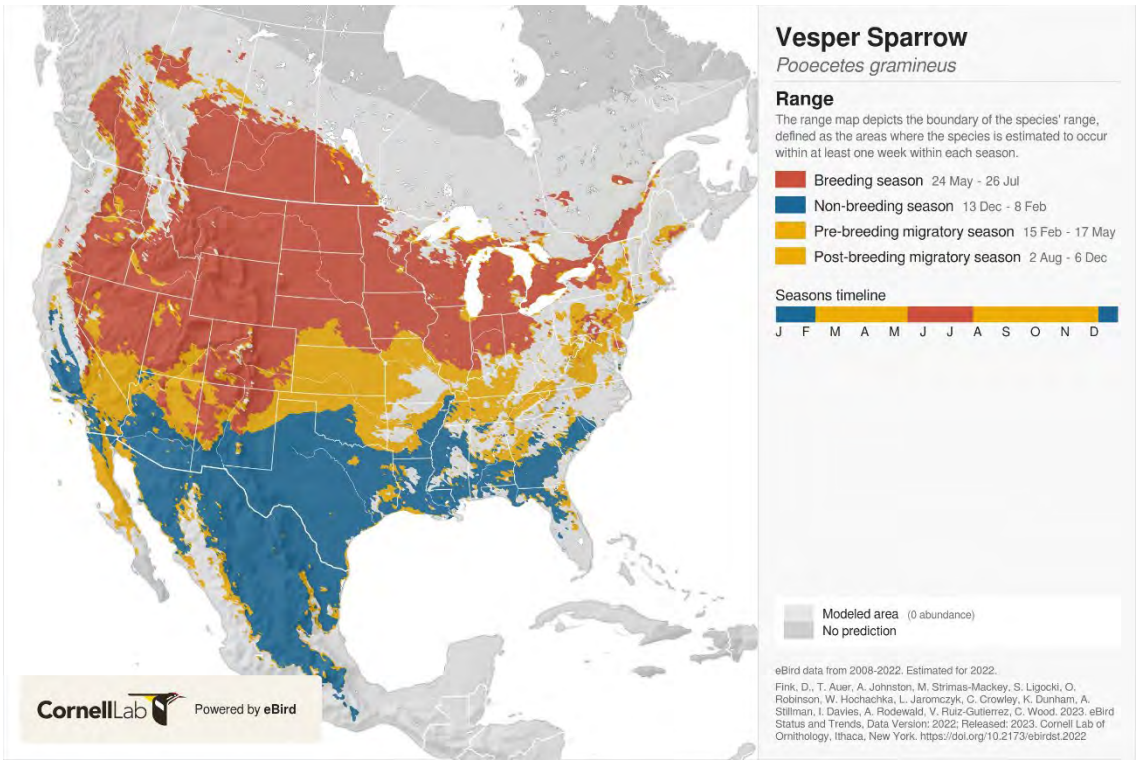

Figure 2. Vesper sparrow distribution in North America (eBird).

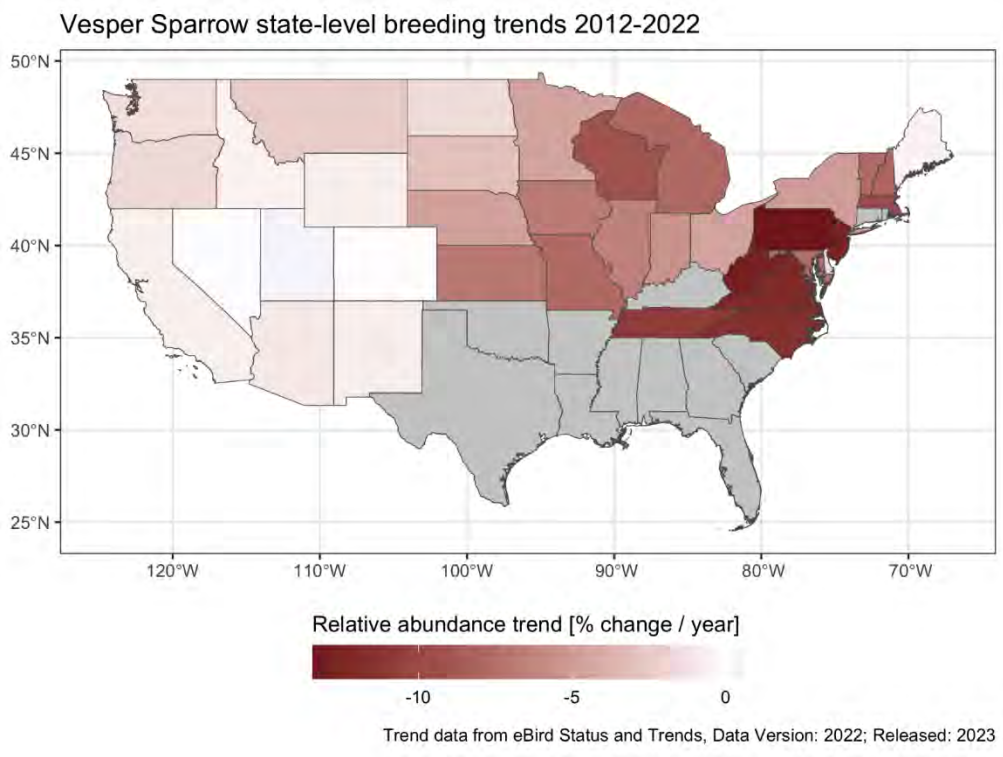

Figure 3: Trends, by state, for vesper sparrow. Data source is eBird.

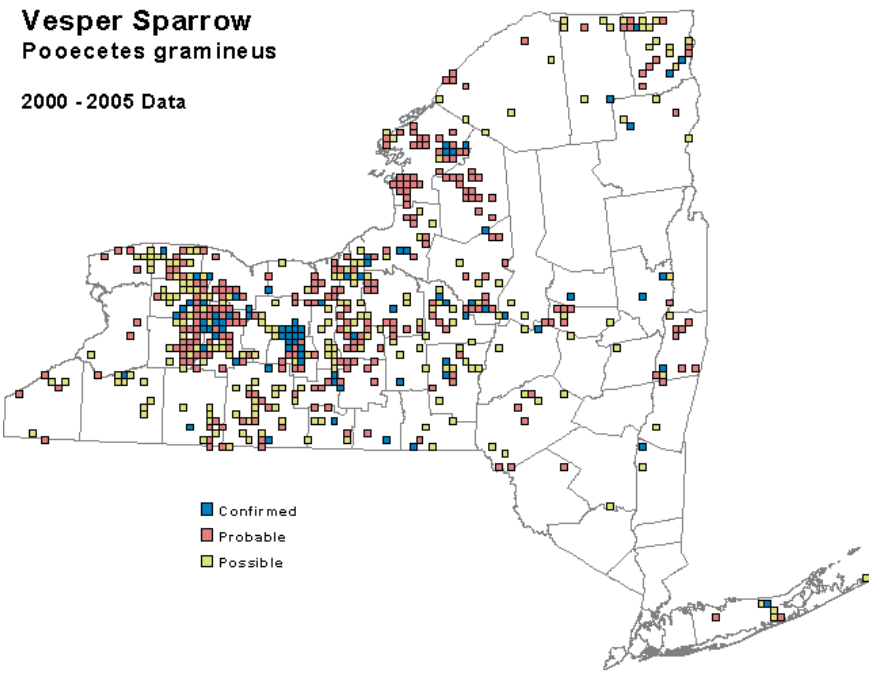

Figure 4. Vesper sparrow occurrence in New York State during the second Breeding Bird Atlas (McGowan and Corwin 2008).

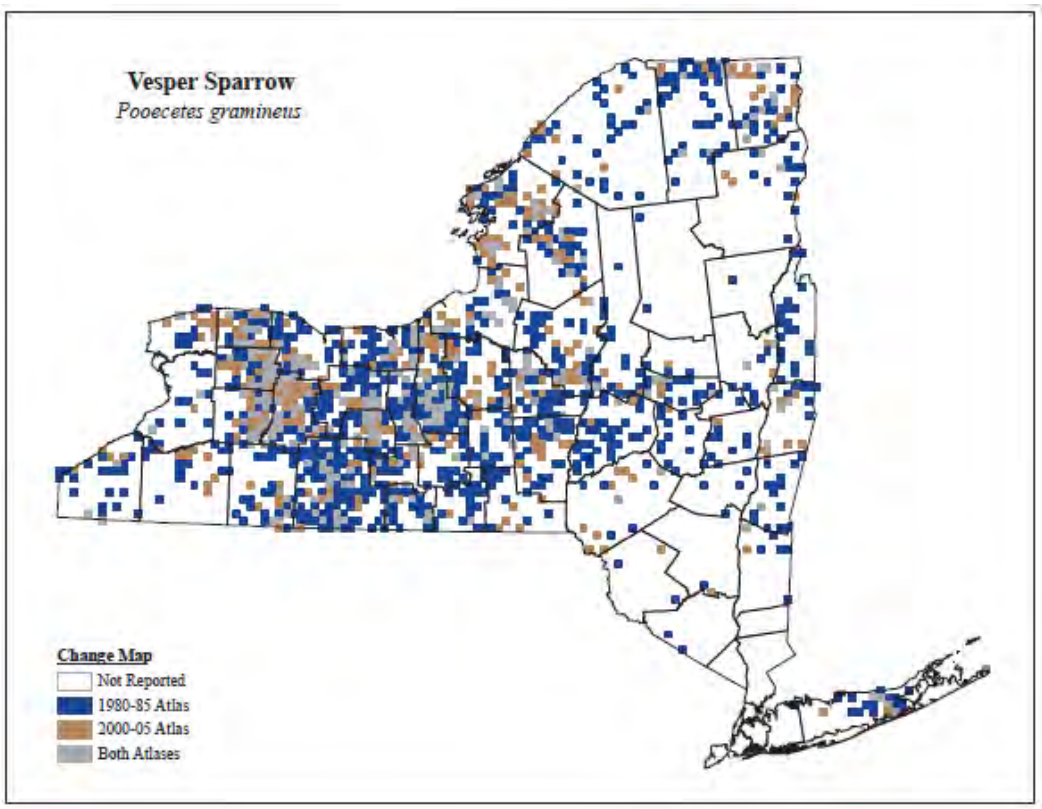

Figure 5. Change in vesper sparrow occurrence in New York State between the first Breeding Bird Atlas and the second Breeding Bird Atlas (McGowan and Corwin 2008).

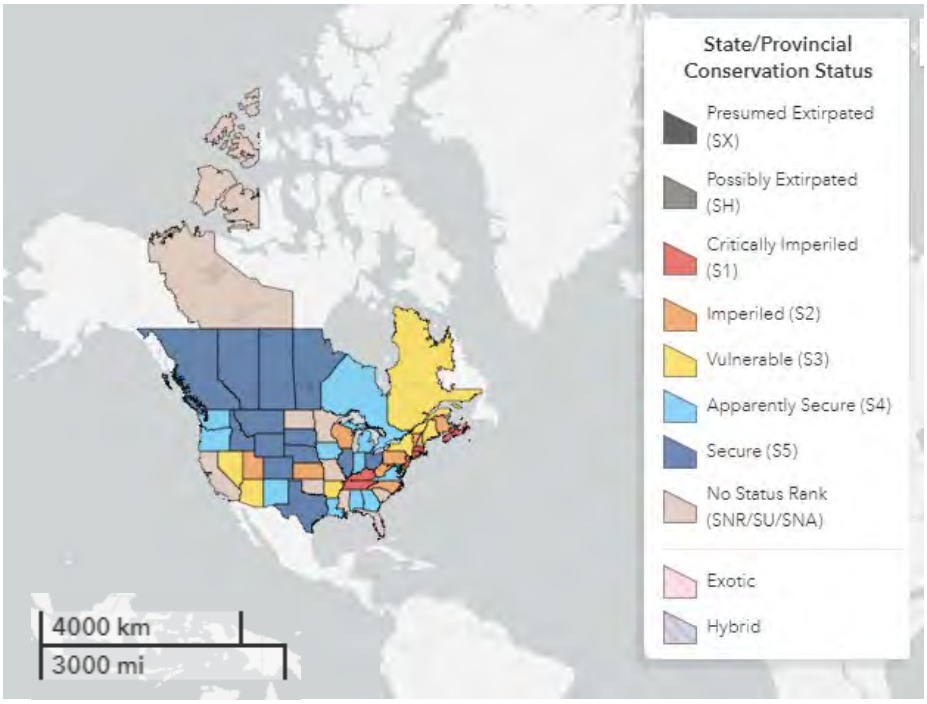

Figure 6. Conservation status of the vesper sparrow in North America (NatureServe 2023).

III. New York Rarity *(provide map, numbers, and percent of state occupied)*

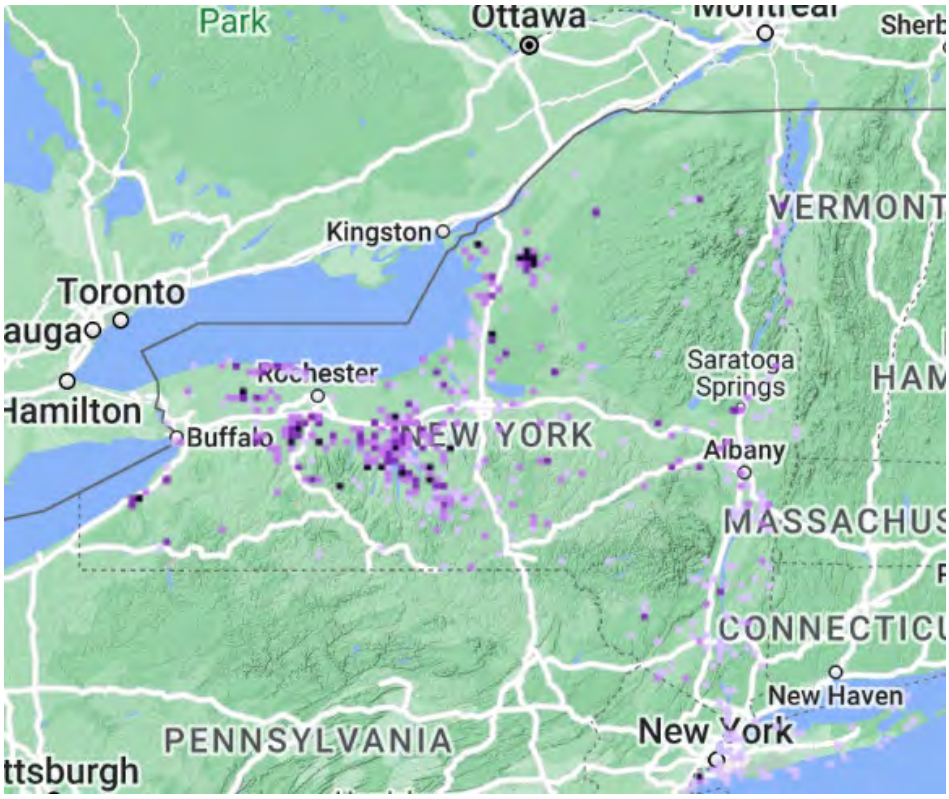

Figure 7. Breeding Bird Atlas 3 records of vesper sparrow in New York (BBA-eBird).

Details of historic and current 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, 20.9% of the survey blocks statewide (Andrle and Carroll 1988). The second BBA (2000-05) documented occupancy in 564 blocks, 10.6% of the survey blocks statewide, and a decline of -49% (McGowan and Corwin 2008). Breeding continued the Erie-Ontario Plain and Central Appalachians with scattered records in Clinton County, the Mohawk Valley, and Long Island.

The third BBA, which is currently underway, utilizes a different number and layout of survey blocks across New York, making direct comparison with the first two Atlases difficult. There were 5,333 blocks in the first and second BBAs and 5,710 blocks in the current BBA, of which 1,815 are considered priority blocks. To date, vesper sparrow has been documented in 285 priority blocks, 7.9% of all priority blocks statewide during the third BBA (NY BBA III Overview, 2024).

New York is in the northeastern part of the extensive breeding range of the Vesper Sparrow.

New York's Contribution to Species North American Range:

Percent of North American Range in NY	Classification of NY Range	Distance to core population, if not in NY
1-25%	Peripheral	

Column options
Percent of North American Range in NY: 100% (endemic); 76-99%; 51-75%; 26-50%; 1-25%; 0%; Choose an item
Classification of NY Range: Core; Peripheral; Disjunct; (blank) or Choose an item

IV. Primary Habitat or Community Type *(from NY crosswalk of NE Aquatic, Marine, or Terrestrial Habitat Classification Systems):*

NatureServe broad habitat types: Shrubland/chaparral, Grassland/herbaceous, Cropland/hedgerow, Savanna, Desert

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

Habitat or Community Type Trend in New York

Habitat Specialist?	Indicator Species?	Habitat/ Community Trend	Time frame of Decline/Increase
Yes	Yes	Declining	Since early 1900s

Column options
Habitat Specialist and Indicator Species: Yes; No; Unknown; (blank) or Choose an item
Habitat/Community Trend: Declining; Stable; Increasing; Unknown; (blank) or Choose an item

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 tend 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).

Prefers pastures and farm fields (fallow and active) with short grass, and open pine-oak barrens. Nests are usually on the ground in grass or under bushes, but also in fields under cultivated crops, especially strawberry and potato plants.

Habitats include plains, prairies, dry shrublands, savannas, weedy pastures, fields, sagebrush, arid scrub, and woodland clearings (AOU 1983). In Iowa, breeding territories were along fencerows between agricultural fields (Rodenhouse and Best 1994). Nests are on the ground, often in a small depression near a clump of grass (Harrison 1978).

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. Species Demographic, and Life History:

Breeder in NY?	Non-breeder in NY?	Migratory Only?	Summer Resident?	Winter Resident?	Anadromous/ Catadromous?
Yes	Yes	No	Yes	No	(blank)

Column options
First 5 fields: Yes; No; Unknown; (blank) or Choose an item
Anadromous/Catadromous: Anadromous; Catadromous; (blank) or Choose an item

Species Demographics and Life History Discussion *(include information about species life span, reproductive longevity, reproductive capacity, age to maturity, and ability to disperse and colonize):*

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.

In Iowa, average territory size was 2.34 ha (Rodenhouse and Best 1994).

VI. Threats *(from NY 2015 SWAP or newly described):*

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 month (Boutin et al. 1999).

Threat Level 1	Threat Level 2	Threat Level 3	Spatial Extent	Severity	Immediacy	Trend	Certainty
1. Residential and Commercial	1.1 Housing & Urban Areas	-	(blank)	(blank)	(blank)	(blank)	(blank)
2. Agriculture & Aquaculture	2.1 Annual & Perennial Non-Timber Crops	2.1.1 Annual cropping systems (field crops)	(blank)	(blank)	(blank)	(blank)	(blank)
3. Energy Production & Mining	3.3 Renewable Energy	3.3.4 Solar farms	(blank)	(blank)	(blank)	(blank)	(blank)
4. Transportation & Service Corridors	4.4 Flight Paths	-	(blank)	(blank)	(blank)	(blank)	(blank)
9. Pollution	9.3 Agricultural & Forestry Effluents	-	(blank)	(blank)	(blank)	(blank)	(blank)
7. Natural System Modifications	7.3 Other Ecosystem Modifications	-	(blank)	(blank)	(blank)	(blank)	(blank)
8. Invasive & Other Problematic Species	8.1 Invasive Non-Native Plants & Animals	-	(blank)	(blank)	(blank)	(blank)	(blank)
11. Climate Change	11.3 Changes in Temperature Regimes	11.3.1 Heat waves	(blank)	(blank)	(blank)	(blank)	(blank)

Table 2. Threats for Vesper sparrow.

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

Yes: ✓ **No:** _____ **Unknown:** _____

If yes, describe mechanism and whether adequate to protect species/habitat:

Vesper sparrow is protected by the Migratory Bird Treaty Act of 1918 (16 U.S.C. 703-712) and is protected as a native species under the NYS Environmental Conservation Law. It also receives additional protections as a species listed as Special Concern in New York State, 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 Strategy for Grassland Bird Conservation Best Management Practices (BMPs) for 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 2022-2027).

Some general recommendations:

- Target management for grassland bird species known to be in the vicinity and consider the needs of both breeding and wintering grassland bird species.
- Consider the surrounding landscape when making management decisions.
- Conduct baseline grassland bird surveys on newly acquired fields or fields targeted for management changes to determine which species are present.
- Increase field size by hedgerow removal, removing trees, etc. to benefit species that require large, open fields.
- Control invasive plant species (glossy buckthorn, pale and black swallowwort, Canada thistle, Phragmites, etc.) to improve habitat quality.
- When developing grassland planting or habitat restoration projects, consider a variety of factors including the targeted grassland bird species, pollinators, seed mix (warm versus cool season grasses, forbs, wildflower mixes, grass height and density), timing of planting, existing site conditions, and vegetation removal techniques (including herbicide and intensive disking).
- Utilize mowing, haying, burning, and grazing for maintaining grassland habitat, after evaluating the appropriateness of these methods relative to site conditions and management objectives. In particular, burning cool season grasses is not advisable in most situations in New York.

Conservation actions are categorized in the table below.

Action Category	Action	Description
B.3 Outreach	B.3.1.3 Targeted Communication	Educate agricultural/private landowners on grassland management

Action Category	Action	Description
B.4 Law Enforcement and Prosecution	B.4.2 Prosecution and conviction	Enforce policies, guidelines, and regulations for migratory birds
A.1 Direct Habitat Management	A.1.1 Manage plants	Mechanical, biological, and chemical management (ie invasive grassland species)
C.6 Design and Plan Conservation	C.6.2 Conserve specific land or seascapes	Land acquisition and/or easement
C.6 Design and Plan Conservation	C.6.5 Conservation Planning	Develop a conservation, management, or restoration plan for protected private lands or private landowner
A.1 Direct Habitat Management	A.1.1.2.1 Planting	Cool and warm season grass restoration/planting
C.8 Research and Monitoring	C.8.1 Basic research and status monitoring	Monitoring threats (ie renewable energy) and population demographics in the field

Table 2. Recommended conservation actions for vesper sparrow

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