

Species Status Assessment

Class: Birds
Family: Emberizidae
Scientific Name: *Ammodramus savannarum*
Common Name: Grasshopper sparrow

Species synopsis:

Four subspecies of grasshopper sparrow occur in North America. This is a sparrow of open grasslands and prairies with habitats containing more shrubs utilized in the southwest (Vickery 1996).

As a grassland bird, the grasshopper sparrow is one of the most severely declining species in New York. Breeding Bird Atlas data shows a decline of 42% between the two Atlas periods, 1980-85 to 2000-05. BBS data show significant long-term and short term declines in the state and in the Eastern BBS region. Areas of concentration include the Finger Lakes region, the central portion of the Southern Tier, and Jefferson County. It is sparsely distributed across the Mohawk Valley and persists in the eastern Suffolk County barrens habitat on Long Island (Smith 2008).

I. Status

a. Current 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** S3 **Tracked by NYNHP?** No

Other Rank:

New York Natural Heritage Program Watch List
Partners in Flight: Species of Continental Importance

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: 1999-2009

Listing Status: _____ Endangered SGCN? Yes

MASSACHUSETTS **Not Present** _____ **No data** X

i. Abundance

___ declining ___ increasing ___ stable X unknown

ii. Distribution:

___ declining ___ increasing ___ stable X unknown

Time frame considered: Two breeding occurrences since 1980

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: _____

Listing Status: _____ Threatened SGCN? Yes

Trends Discussion:

As a grassland bird, populations have declined severely in the past 20 years. The second Breeding Bird Atlas documented a 42% decline in occupancy from 1980-85 to 2000-05. Breeding Bird Survey (BBS) data for New York show a significant short-term decline of 9.1% per year from 2001-2011, and a significant long-term decline of 8.3% per year from 1966-2011. The overall decline in New York for 2001 to 2011 is 62% (Sauer et al. 2012).

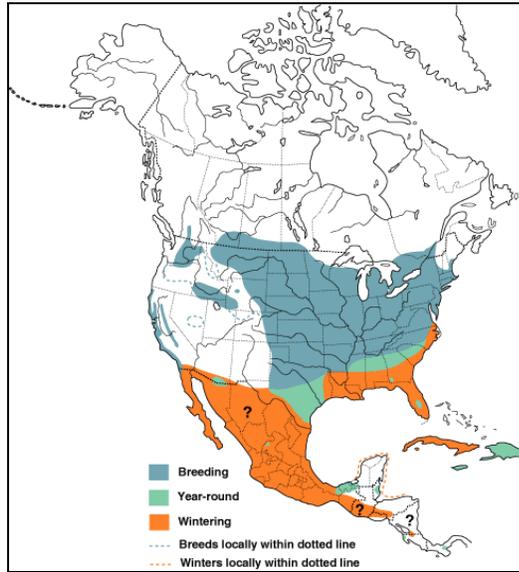


Figure 1. Range of the grasshopper sparrow in North America (Birds of North America Online 2013).

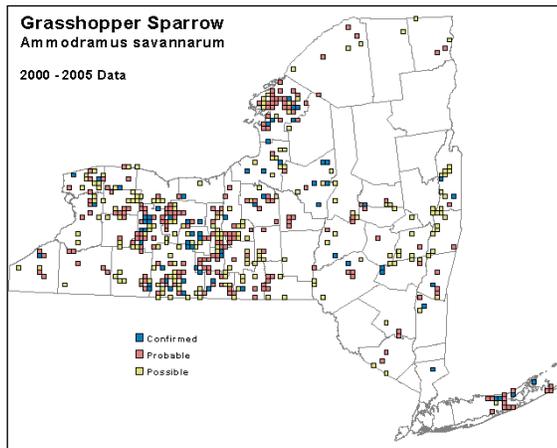


Figure 2. Grasshopper sparrow occurrence in New York State during the second Breeding Bird Atlas (McGowan and Corwin 2008).

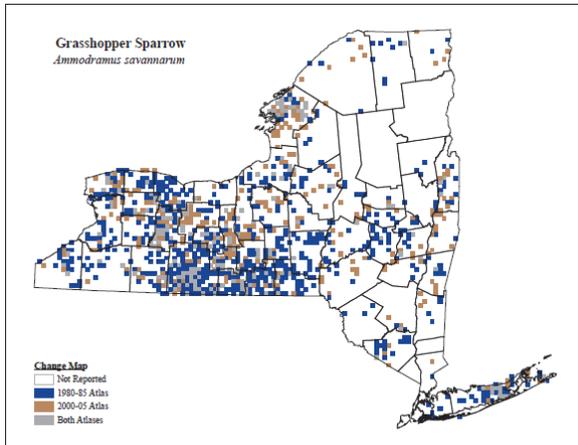


Figure 3. Change in grasshopper sparrow occurrence in New York State between the first Breeding Bird Atlas and the second Breeding Bird Atlas (McGowan and Corwin 2008).

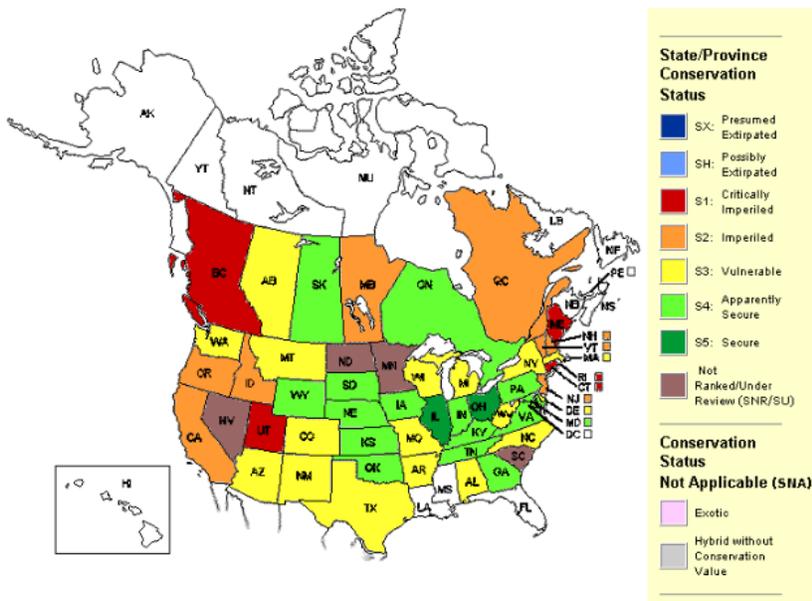


Figure 4. Conservation status of the grasshopper sparrow in North America (NatureServe 2012).

III. New York Rarity, if known:

Historic (select one)	<u># of Animals</u>	<u># of Locations</u>	<u>% of State</u>
prior to 1970	_____	_____	_____
prior to 1980	_____	_____	_____
prior to 1990	_____	<u>822 blocks</u>	<u>15%</u>

Details of historic occurrence:

The first Breeding Bird Atlas (1980-85) documented occupancy in 15% of the survey blocks statewide (Andrle and Carroll 1988).

Current	<u># of Animals</u>	<u># of Locations</u>	<u>% of State</u>
	_____	<u>477 blocks</u>	<u>9%</u>

Details of current occurrence:

The second Breeding Bird Atlas (2000-05) documented occupancy in 9% of the survey blocks statewide, a decline of 42% in the last 20 years (McGowan and Corwin 2008).

New York's Contribution to Species North American Range:

Distribution (percent of NY where species occurs)

- ___ 0-5%
- X 6-10%
- ___ 11-25%
- ___ 26-50%
- ___ >50%

Abundance (within NY distribution)

- ___ abundant
- ___ common
- ___ fairly common
- ___ uncommon
- X rare

NY's Contribution to North American range

- X 0-5%
- ___ 6-10%
- ___ 11-25%

26-50%

>50%

Classification of New York Range

Core

Peripheral

Disjunct

Distance to core population:

IV. Primary Habitat or Community Type:

1. Pasture/Hay
2. Old Field Managed Grasslands
3. Native Barrens and Savanna
4. Pine Barrens
5. Urban and Recreational Grasses

Habitat or Community Type Trend in New York:

Declining Stable Increasing Unknown

Time frame of decline/increase: Since 1970s

Habitat Specialist? Yes No

Indicator Species? Yes No

Habitat Discussion:

The grasshopper sparrow is a bird of open grasslands and prairies. This sparrow is reported to use open grasslands with patches of bare ground, avoiding areas with extensive shrub cover (Vickery

1996), but this is not always the case in New York (Smith 2008). In western New York, grasshopper sparrows are more likely to persist in grasslands larger than 8 ha (Balent and Norment 2003).

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:

The age at first breeding of grasshopper sparrows is generally the first spring after hatching. Individuals are presumed to breed annually thereafter. Nesting success, defined as producing at least one fledgling per nest, varies considerably throughout the species' range. Throughout most of the range, grasshopper sparrows can produce two successful broods per year, but first-time breeders generally produce only one (Wiens 1969). Return rates of males to same breeding site vary greatly, apparently being much lower in the Midwest and prairie regions than in the East.

VI. Threats:

Land-use changes are a significant threat to grassland bird populations on regional and continental scales. From 1940 to 1986 in 18 northeastern states, the area in hay fields declined from 12.6 to 7.1 million ha. During the same period, hay fields planted to alfalfa and alfalfa mixtures, a vegetation

type not typically used by many species of grassland birds, increased from 20% to 60% (Bollinger and Gavin 1992).

Since the mid-1940s, the eastward expansion of grassland birds has reversed in northeastern U.S. and southern Ontario as agricultural lands have been abandoned, reverting to deciduous forest (Robbins et al. 1986, Hussell 1987). Sibley (1988) noted that declines had resulted from the replacement of grain crops by corn and alfalfa, despite the use of corn fields for breeding noted by other authors.

Declines in some areas have been attributed to decrease in hayfield area, earlier and more frequent hay-cropping, and shift from timothy and clover to alfalfa; earlier, agricultural practices that converted wooded land to open land resulted in an increase in range (Bollinger et al. 1990, Bollinger and Gavin 1992). In New York, primary disturbance to nesting is hay-cropping; 100% of nests with eggs and young nestlings affected by mowing were abandoned or destroyed, but proportion of young lost declined with age of nestlings (Bollinger et al. 1990). A threat to the grasslands in New York is a failure to address the viability of dairy farming, especially smaller family farms (NYSDEC 2005). Fire-dependent pine barren type communities also support grassland species. Fire suppression can make them less suitable.

A study led by a Canadian toxicologist identified acutely toxic pesticides as the most likely leading cause of the widespread decline in grassland bird numbers in the United States. The 23-year assessment, which looked at five other causes of grassland bird decline besides lethal pesticide risk, including change in cropped pasture such as hay or alfalfa production, farming intensity or the proportion of agricultural land that is actively cropped, herbicide use, overall insecticide use, and change in permanent pasture and rangeland, concluded that lethal pesticides were nearly four times more likely to be associated with population declines than the next most likely contributor, changes in cropped pasture (Mineau and Whiteside 2013).

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

No Unknown

Yes

Grasshopper sparrow is protected under the Migratory Bird Treaty Act of 1918.

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.

Conservation Actions	
Action Category	Action
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 grasshopper 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.

VII. Certainty of Information (0 = no data, 0.5 = uncertain, 1 = certain)

A. Trend Information

	North America	Regional	New York
Abundance	<u>1</u>	<u>1</u>	<u>1</u>
Occurrence	<u>1</u>	<u>1</u>	<u>1</u>
Distribution	<u>1</u>	<u>1</u>	<u>1</u>

B. Current Rarity

# of Animals	<u>0.5</u>
# of Occurrences	<u>0.5</u>
% of State	<u>1</u>
% of NA Range	<u>1</u>

C. Habitat/Community Type

Classification 1

Trends 1

D. Species Demographics and Life History

Demographics 1

Life History 1

E. Threats 1. 1 2. 1 3. 1 4. _____ 5. _____
6. _____ 7. _____ 8. _____ 9. _____ 10. _____

F. Overall _____

Certainty of Information Discussion:

This is a well understood grassland species. Decline and threats are well documented.

VIII. References

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IX. Experts Consulted

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