Species Status Assessment

Class: Birds
Family: Icteridae
Scientific Name: *Sturnella magna*
Common Name: Eastern meadowlark

Species synopsis:

The eastern meadowlark is not a lark (Family Alaudidae) but is related instead to New World blackbirds (Family Emberizidae). This is a bird of farmland and open country, occurring in this habitat across the eastern United States. Numbers have declined drastically since the 1960s throughout much of its North American range because of changes in land use and human encroachment.

In New York, the second Breeding Bird Atlas documented a 25% decline in occupancy from 1980-85 to 2000-05. Breeding Bird Survey data for New York show significant short-term (1999-2009) and long-term (1966-2009) declines. These declines correspond with the disappearance of suitable nesting habitat resulting from the succession of open lands to forest and suburban development (Smith 2008).

I. Status

a. Current Legal Protected Status

i. Federal __Not Listed_____ **Candidate:** __No__

ii. New York __SGCN_____

b. Natural Heritage Program Rank

i. Global ____G5_____

ii. New York ____S5B_____ **Tracked by NYNHP?** __No__

Other Rank:

Audubon's Top 20 Common Birds in Decline
Partners in Flight – Regional Concern in BCR 13 and 28

Status Discussion:

The eastern meadowlark is a widespread breeder in New York, sedentary and migratory. It is a common to locally abundant migrant, and is fairly common at some inland and coastal areas in winter. The meadowlark is ranked as Secure or Apparently Secure in New York and in surrounding states and provinces except in New Jersey, Massachusetts, and Quebec where it is ranked as Vulnerable.

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: ____1999-2009_____

b. Regional

i. Abundance

__X__ declining ____increasing ____stable ____unknown

ii. Distribution:

__X__ declining ____increasing ____stable ____unknown

Regional Unit Considered: Eastern BBS
Time frame considered: 1999-2009

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: Special Concern SGCN? Yes

MASSACHUSETTS **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: Not Listed 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: __1999-2009_____
Listing Status:_____Special Concern_____ SGCN? __Yes___

ONTARIO **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: _____Threatened_____

PENNSYLVANIA **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: _____Not Listed_____ SGCN? __Yes___

QUEBEC **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: _____Threatened_____

VERMONT **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: _____Not Listed_____ SGCN? __Yes____

d. New York **No data _____**

i. Abundance

__X__ declining ____increasing ____stable ____unknown

ii. Distribution:

__X__ declining ____increasing ____stable ____unknown

Time frame considered: ____1980-85 to 2000-05_____

Monitoring in New York.

New York's Landowner Incentive Program (LIP) monitors grassland birds at eight Grassland Focus Areas in the state. Eastern meadowlark 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 NY state 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 Eastern meadowlarks were not one of the target species in the 2006 surveys, data on Eastern meadowlarks was collected during both of these survey efforts.

Trends Discussion:

BBS data for New York show a significant decline of 5.0% per year from 2001-2011 and a significant decline of 5.5% per year from 1966-2011. BBS data for the eastern region show a significant 3.4% per year decline from 2001-2011 and a significant 3.7% annual decline from 1966-2011 (Sauer et al. 2012).

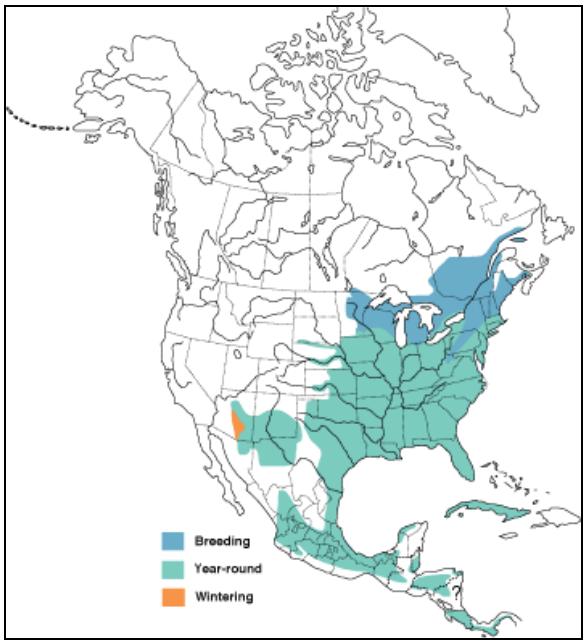

Figure 1. Range of the Eastern meadowlark in North America (Birds of North America Online 2013).

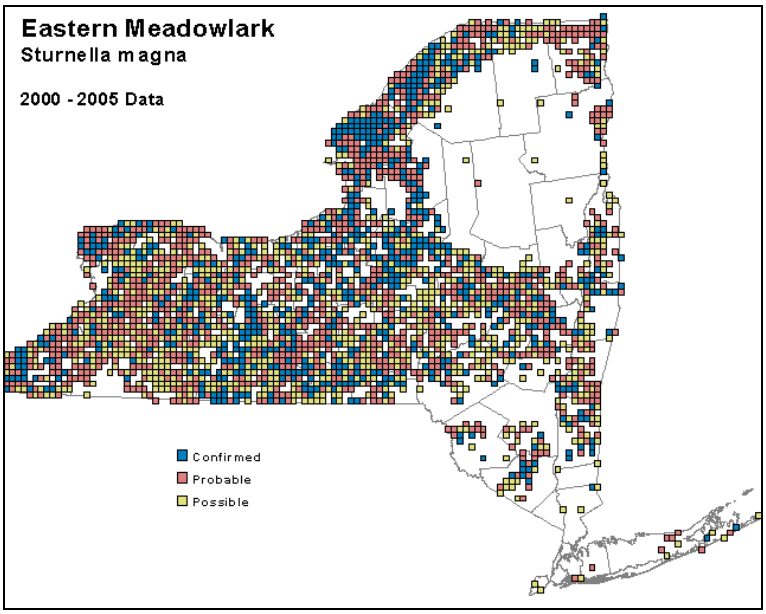

Figure 2. Eastern meadowlark occurrence in New York State during the second Breeding Bird Atlas (McGowan and Corwin 2008).

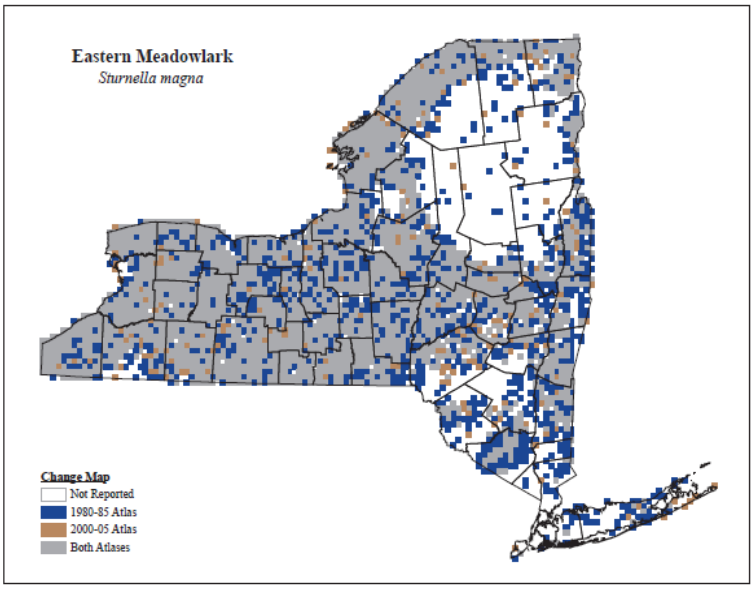

Figure 3. Change in eastern meadowlark occurrence in New York State between the first Breeding Bird Atlas and the second Breeding Bird Atlas (McGowan and Corwin 2008).

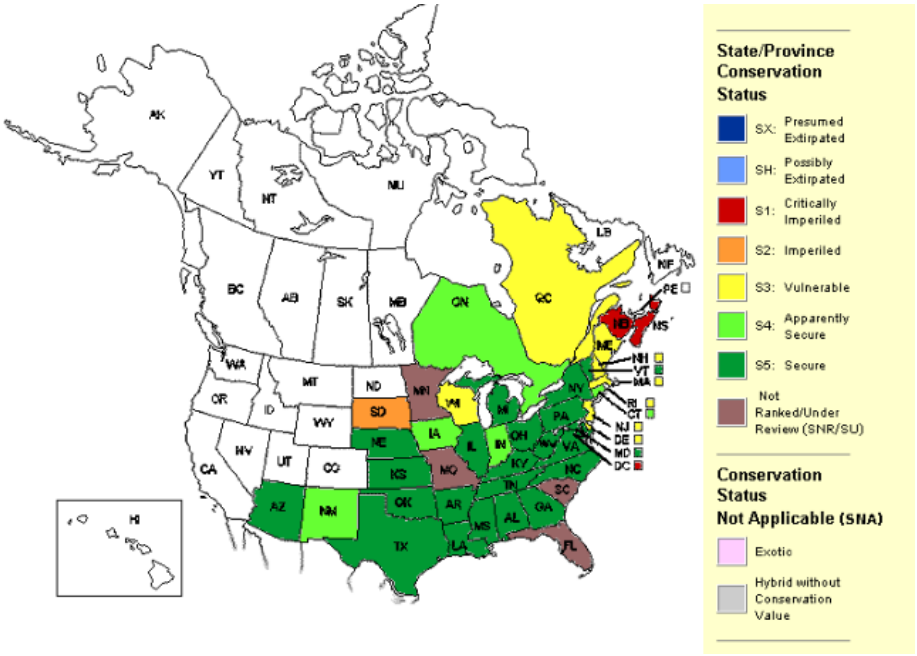

Figure 4. Conservation status of the eastern meadowlark in North America (NatureServe 2012).

III. New York Rarity, if known:

Historic	# of Animals	# of Locations	% of State
prior to 1970	_____	_____	_____
prior to 1980	_____	_____	_____
prior to 1990	_____	3,506 blocks	66%

Details of historic occurrence:

The first Breeding Bird Atlas (1980-85) documented occupancy in 66% of the survey blocks statewide, with an obvious absence in the Adirondack Mountains (Andrle and Carroll 1988).

Current	# of Animals	# of Locations	% of State
	_____	2,635 blocks	49%

Details of current occurrence:

The second Breeding Bird Atlas (2000-05) documented occupancy in 49% of the survey blocks statewide, a decline of 25% (McGowan and Corwin 2008).

New York's Contribution to Species North American Range:

Distribution (percent of NY where species occurs)

___ 0-5%

___ 6-10%

___ 11-25%

_X_ 26-50%

___ >50%

Abundance (within NY distribution)

___ abundant

___ common

___ fairly common

_X_ uncommon

___ rare

NY's Contribution to North American range

___ 0-5%

_X_ 6-10%

___ 11-25%

___ 26-50%

___ >50%

Classification of New York Range

_X_ 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. Cultivated Crops

5. Urban and Recreational Grasses

6. Estuarine, Brackish Intertidal, Tidal Wetland, High Salt Marsh

Habitat or Community Type Trend in New York:

_X_ Declining **____Stable** **____ Increasing** **____Unknown**

Time frame of decline/increase: _____Since 1960s_____

Habitat Specialist? **_____ Yes** **___X___ No**

Indicator Species? **_____ Yes** **___X___ No**

Habitat Discussion:

This is a species of agricultural and somewhat developed landscapes including hay meadows and grassy pastures, as well as the grassy areas of airports and golf courses. It is absent from higher elevations and developed areas in the state.

V. New York Species Demographics and Life History

__X__ Breeder in New York

__X__ Summer Resident

_____ Winter Resident

_____ Anadromous

_____ Non-breeder in New York

_____ Summer Resident

_____ Winter Resident

_____ Catadromous

_____ Migratory only

_____Unknown

Species Demographics and Life History Discussion:

Both male and female eastern meadowlarks breed during the first year following their natal year. Females may have several clutches per year because of nesting failures, but not more than two successful broods per year. It is difficult to determine life span and survivorship in wild populations because of low incidence of return to natal area. The maximum recorded life span in the wild is at least 5 years.

Griffin (1959) reported deaths from eating grain poisoned for rodent or insect control, exposure to deep snow and ice storms (Krutzsch 1950), and mowing in hay fields (*in* Lanyon 1995). Adults are taken by various hawk species. Eggs and nestlings are often deserted because of human activity (irrigation, mowing), frequently trampled by livestock, or eaten by foxes, domestic cats and dogs, coyotes, snakes, skunks, raccoons, and other small mammals (Lanyon 1957, Bent 1958, Vickery et al. 1992).

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**

__X__ Yes

The eastern meadowlark 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.

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. References

Andrle, R.F. and J.R. Carroll, eds. 1988. The Atlas of breeding birds in New York State. Cornell University Press, Ithaca, NY.

Bent, A. C. 1958. Life histories of North American blackbirds, orioles, tanagers, and allies. Dover, New York.

Griffin, D. N. 1959. The poisoning of meadowlarks with insecticides. Wilson Bull. 71:193.

Krutzsch, P. H. 1950. Mortality in meadowlarks as a result of severe winter weather. Wilson Bull. 62:40.

Lanyon, W. E. 1957. The comparative biology of the meadowlarks (*Sturnella*) in Wisconsin. Publ. Nuttall Ornithol. Club no. 1, Cambridge, MA.

Lanyon, Wesley E. 1995. Eastern Meadowlark (*Sturnella magna*), The Birds of North America Online (A. Poole, Ed.). Ithaca: Cornell Lab of Ornithology. <http://bna.birds.cornell.edu/bna/species/160>.

McGowan, K.J. and K. Corwin, eds. 2008. The second Atlas of breeding birds in New York State. Cornell University Press, Ithaca, NY.

Mineau, P. and M. Whiteside. 2013. Pesticide acute toxicity is a better correlate of U.S. grassland bird declines than agricultural intensification. PloS ONE 8: 1-8.

Morgan, M. R. and M. F. Burger. 2008. A plan for conserving grassland birds in New York: Final report to the New York State Department of Environmental Conservation under contract #C005137. Audubon New York, Ithaca, NY. <http://ny.audubon.org/PDFs/ConservationPlan-GrasslandBirds-NY.pdf>. Accessed 6 June 2013.

NatureServe. 2012. NatureServe Explorer: An online encyclopedia of life [web application]. Version 7.1. NatureServe, Arlington, Virginia. <http://www.natureserve.org/explorer>. Accessed XXX June 2013.

New York State Department of Environmental Conservation (NYSDEC). 2005. New York State Comprehensive Wildlife Conservation Strategy. <http://www.dec.ny.gov/index.html>. Accessed 6 June 2013.

New York State Department of Environmental Conservation (NYSDEC). 2013. Best management practices for grassland birds. < http://www.dec.ny.gov/pubs/86582.html>. Accessed 6 June 2013.

Sauer, J. R., J. E. Hines, J. E. Fallon, K. L. Pardieck, D. J. Ziolkowski, Jr., and W. A. Link. 2012. The North American Breeding Bird Survey, Results and Analysis 1966 - 2011. Version 07.03.2013 USGS Patuxent Wildlife Research Center, Laurel, MD.

Smith, C.R. 2008. Eastern meadowlark, Sturnella magna. Pages 592-93 in The second Atlas of breeding birds in New York State (K.J. McGowan and K. Corwin, eds.). Cornell University Press, Ithaca, NY.

Vickery, P. D., M. L. Hunter, Jr., and J. V. Wells. 1992. Evidence of incidental nest predation and its effects on nests of threatened grassland birds. Oikos 63:281-288.

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