Species Status Assessment

Class: Birds
Family: Alaudidae
Scientific Name: *Eremophila alpestris*
Common Name: Horned Lark

Species synopsis:

Two races of horned lark occur in New York. The nominate *alpestris* is highly migratory, breeding in Ontario and Quebec, and on islands in the Gulf of St. Lawrence; it winters in large numbers in New York. The race *practicola* breeds in New York and is at least partially sedentary.

A bird of open agricultural lands, the horned lark breeds on unplowed fields early in the year, often raising and fledging young before those fields are planted in the spring. The North American distribution has shifted in response to habitat availability, with populations in the shortgrass prairies west of the Mississippi River expanding eastward and southward during the late 1800s as land was cleared for agriculture. Breeding was first confirmed in New York (Buffalo) in 1875 (Bull 1974).

Populations are now declining in the east—including in New York—with the loss of open agricultural lands for breeding. Declines were first documented in the Northeast in the 1940s. Breeding Bird Survey data for the eastern United States show a short-term decline of 0.9% per year from 1999 to 2009 and a long-term decline of 2.9% per year from 1966 to 2009. The second Breeding Bird Atlas in New York showed a 37% decline in occupancy from 1980-85 to 2000-05.

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 ___S3S4B_____ **Tracked by NYNHP?** __No__

Other Rank:

NY Natural Heritage Program Watch List
COSEWIC - Endangered
IUCN Red List Category: Least concern

Status Discussion:

The horned lark is a locally common breeder in agricultural areas of New York, absent at higher elevations. It is ranked as Vulnerable in New York, Massachusetts, New Jersey, and Quebec.

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 U.S._____
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: __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: __1974-79 to 2007-11_____
Listing Status: _____Not Listed_____ SGCN? __No___

NEW JERSEY **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: _____Threatened_____ SGCN? ___Yes____

ONTARIO **Not Present _____** **No data _____**

i. Abundance

__X__ declining ____increasing ____stable ____unknown

ii. Distribution:

__X__ declining ____increasing ____stable ____unknown

Time frame considered: ___1981-85 to 2001-05_____
Listing Status: _____Not Listed_____

PENNSYLVANIA **Not Present _____** **No data _____**

i. Abundance

____ declining __X__ increasing ____stable ____unknown

ii. Distribution:

____ declining __X__ increasing ____stable ____unknown

Time frame considered: ___1984-89 to 2004-08_____
Listing Status: _____Not Listed_____ SGCN? ___No____

QUEBEC **Not Present _____** **No data _____**

i. Abundance

__X__ **declining** **____increasing** **____stable** **____unknown**

ii. Distribution:

__X__ **declining** **____increasing** **____stable** **____unknown**

Time frame considered: ____1984-89 to 2012_____
Listing Status: _____Not Listed_____

VERMONT **Not Present _____** **No data _____**

i. Abundance

__X__ **declining** **____increasing** **____stable** **____unknown**

ii. Distribution:

__X__ **declining** **____increasing** **____stable** **____unknown**

Time frame considered: __1976-81 to 2003-07_____
Listing Status: _____Not Listed_____ SGCN? __No____

d. NEW YORK **No data _____**

i. Abundance

__X__ **declining** **____increasing** **____stable** **____unknown**

ii. Distribution:

__X__ **declining** **____increasing** **____stable** **____unknown**

Time frame considered: __1976-81 to 2003-07_____

Monitoring in New York.

New York's Landowner Incentive Program (LIP) monitors grassland birds at eight Grassland Focus Areas in the state. Horned lark is one of the focal species in point counts that are conducted annually. Surveys are conducted in June, however, and might not document the presence of this early breeder.

Trends Discussion:

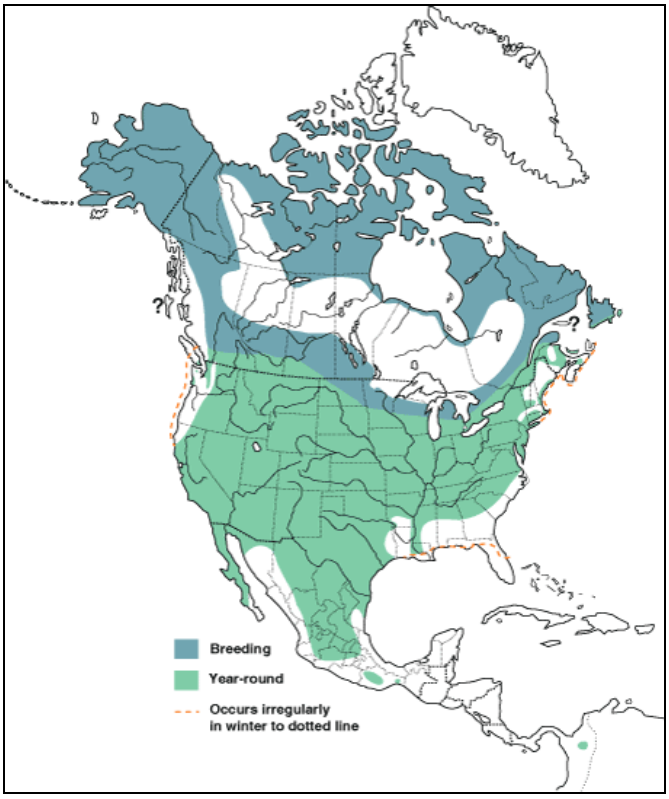

Figure 1. Range of the horned lark in North America (Birds of North America Online 2013).

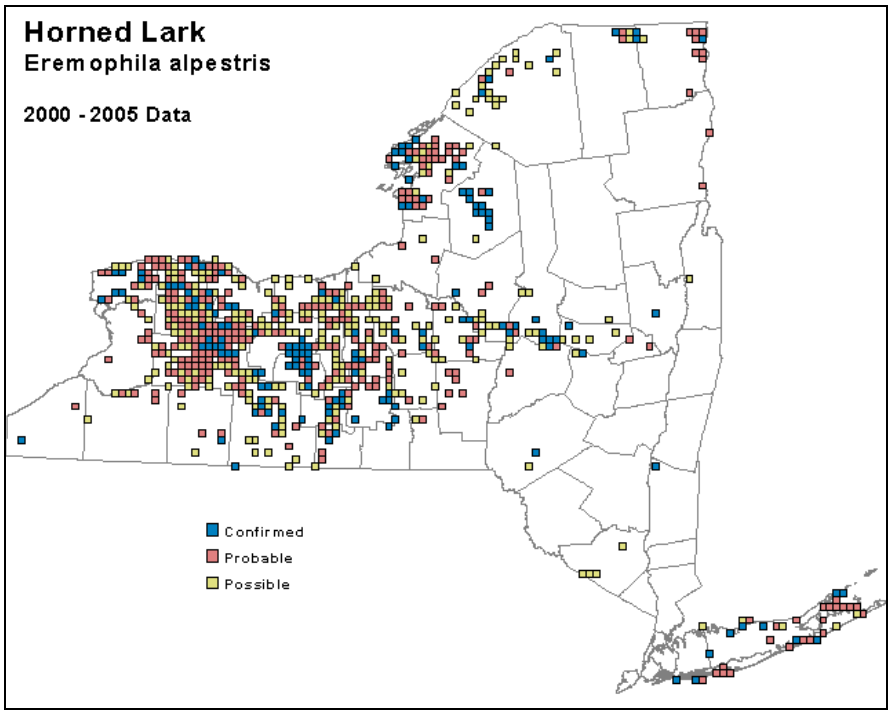

Figure 2. Horned lark occurrence in New York State during the second Breeding Bird Atlas (McGowan and Corwin 2008).

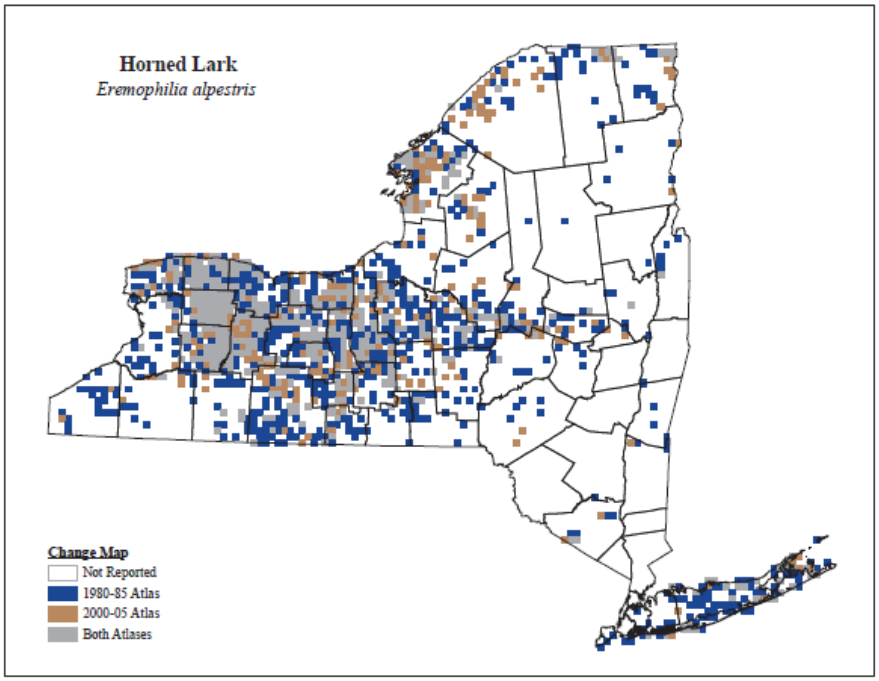

Figure 3. Change in horned lark occurrence in New York State between the first Breeding Bird Atlas and the second Breeding Bird Atlas (McGowan and Corwin 2008).

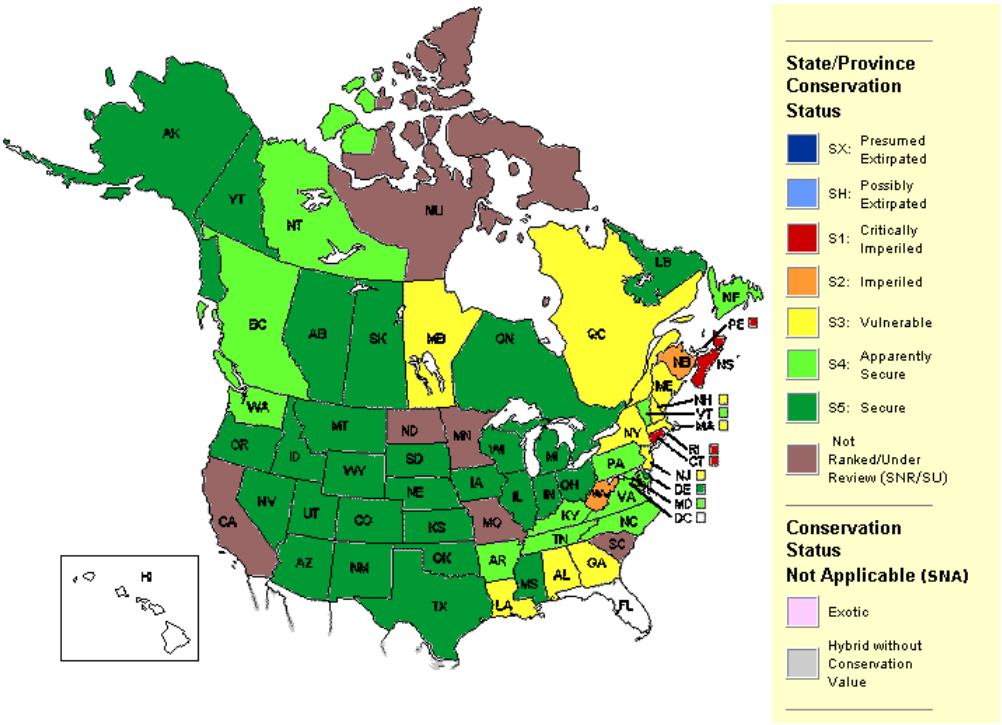

Figure 4. Conservation status of the horned lark in North America (NatureServe 2012).

III. New York Rarity, if known:

Historic	# of Animals	# of Locations	% of State
prior to 1970	_____	_____	_____
prior to 1980	_____	_____	_____
prior to 1990	_____	1,105 blocks	21%

Details of historic occurrence:

Bull (1974) stated that breeding occurred in virtually every county and described the historic movement of horned lark into New York: the first nest was found near Buffalo in 1875; a nest was confirmed the following year in Rochester and as far east as the Black River region near Lowville, Lewis County; by 1879 young birds were collected in Long Island City in Queens County; breeding was confirmed in Albany County in 1881 and in the Adirondacks (Jay, Essex County) by 1900.

The first Breeding Bird Atlas (1980-85) documented occupancy in 21% of the survey blocks statewide (Andrle and Carroll 1988).

Current	# of Animals	# of Locations	% of State
	_____	698 blocks	13%

Details of current occurrence:

The second Breeding Bird Atlas (2000-05) documented occupancy in 13% of survey blocks statewide, a decline of 37% in the past 20 years (McGowan and Corwin 2008).

New York's Contribution to Species North American Range:

Distribution (percent of NY where species occurs)		**Abundance** (within NY distribution)
X	0-5%	___ abundant
___	6-10%	___ common
___	11-25%	___ fairly common
___	26-50%	X uncommon
___	>50%	___ rare

NY's Contribution to North American range

_X_ 0-5%

___ 6-10%

___ 11-25%

___ 26-50%

___ >50%

Classification of New York Range

_____ Core

__X___ Peripheral

_____ Disjunct

Distance to core population: _____

III. Primary Habitat or Community Type:

1. Cultivated Crops

2. Urban and Recreational Grasses

3. Pasture/Hay

4. Native Barrens and Savanna

5. Maritime Dunes

6. Great Lakes Dune and Swale

Habitat or Community Type Trend in New York:

__X__ **Declining** ____**Stable** ____ **Increasing** ____**Unknown**

Time frame of decline/increase: _____Since 1950s_____

Habitat Specialist? __X__ **Yes** _____ **No**

Indicator Species? _____ **Yes** __X__ **No**

Habitat Discussion:

Horned larks prefer the least vegetated of open lands for nesting; sparse vegetation and exposed soil are characteristic of nesting areas. Pickwell (1931) described the horned lark habitat in New York to include old meadows, plowed fields, pastures, potato and cabbage fields, racetrack grounds, golf courses, sheep pastures, and sandy barrens. Bull (1974) included sand dunes with beach grass as a breeding habitat. Larks will continue to occupy active pastures and fields planted with corn, beans, and potatoes well into mid-summer (Smith 2008).

IV. New York Species Demographics and Life History

__X__ **Breeder in New York**

__X__ **Summer Resident**

__X__ **Winter Resident**

_____ **Anadromous**

_____ **Non-breeder in New York**

_____ **Summer Resident**

_____ **Winter Resident**

_____ **Catadromous**

_____ **Migratory only**

_____**Unknown**

Species Demographics and Life History Discussion:

The horned lark is thought to breed in its first year, as do most small passerines; adults breed yearly (Beason 1995). In most locations, at least two and possibly more successful clutches are produced per year (Beason 1970). No long-term studies of a color-marked populations exist, so data on lifetime success or between-year variation of individual reproductive success for this species is not available. The oldest banded horned lark was captured near Pueblo, CO, seven years after it was banded as an adult at the same location, making it at least eight years old (Klimkiewicz and Futcher 1989).

Major causes of mortality are predation and human activities, especially agricultural operations. Data is not available on dispersal of young from natal sites. Birds that successfully reproduced are known to have returned to the same or nearby territories the next year (Beason 1970).

V. 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 a decrease in hayfield area, earlier and more frequent hay-cropping, and a 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

Horned lark 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 horned lark.

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.

VI. References

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