

# Massachusetts Grassland Bird Conservation

- Intro to the problem
- What's known
- Your ideas



Eastern Meadowlark



Bobolink



Savannah Sparrow



Grasshopper Sparrow

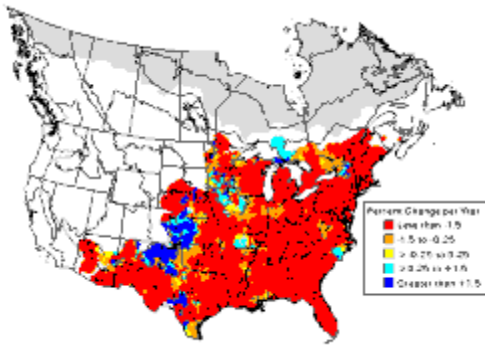


Upland Sandpiper

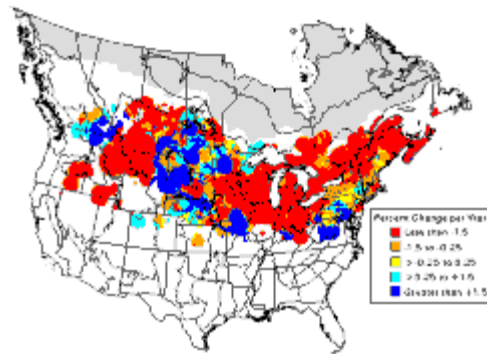


Vesper Sparrow

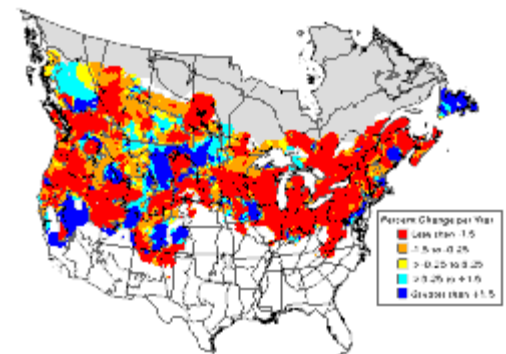




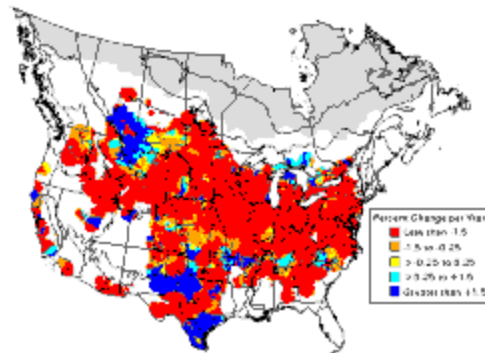
Eastern Meadowlark



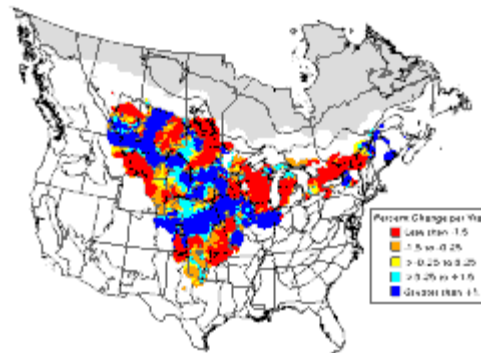
Bobolink



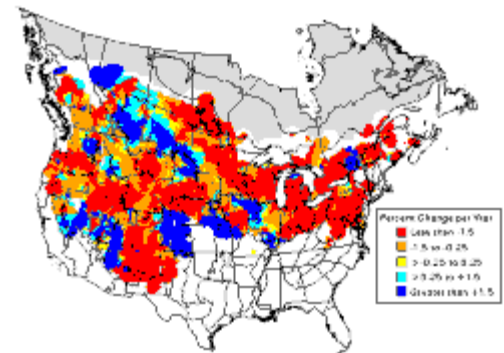
Savannah Sparrow



Grasshopper Sparrow

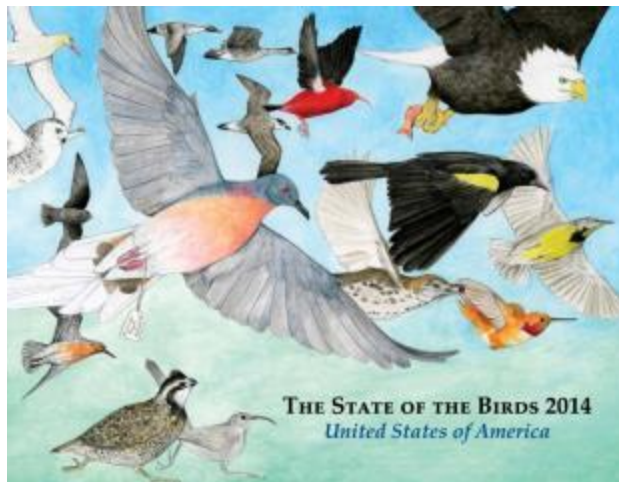


Upland Sandpiper



Vesper Sparrow

*North American Breeding Bird Survey (USGS)*

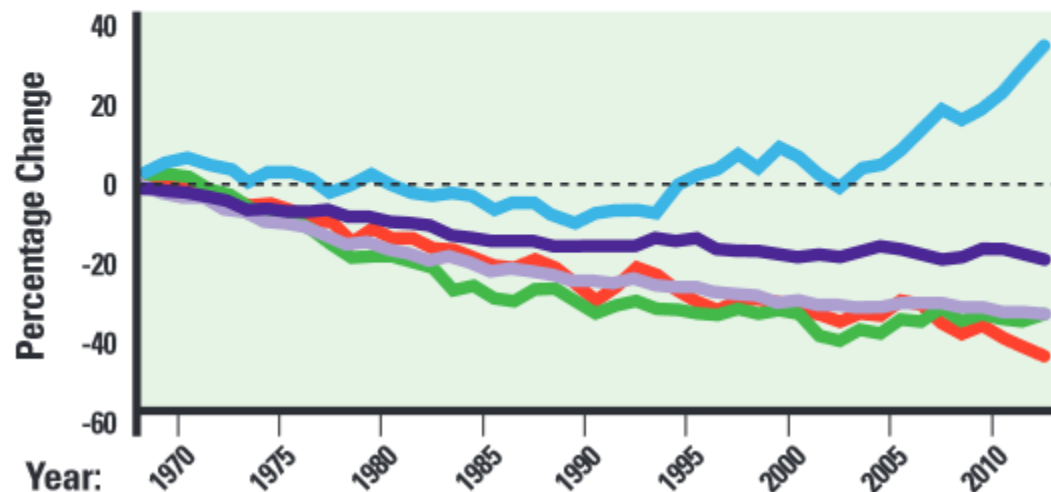


**“State of the Birds” Report Assesses the Health of the Nation’s Birds**  
*The Good News: Conservation Efforts Work When Applied*  
*The Bad News: Populations Are Down in Many Key Habitats*

**For release: September 9, 2014**

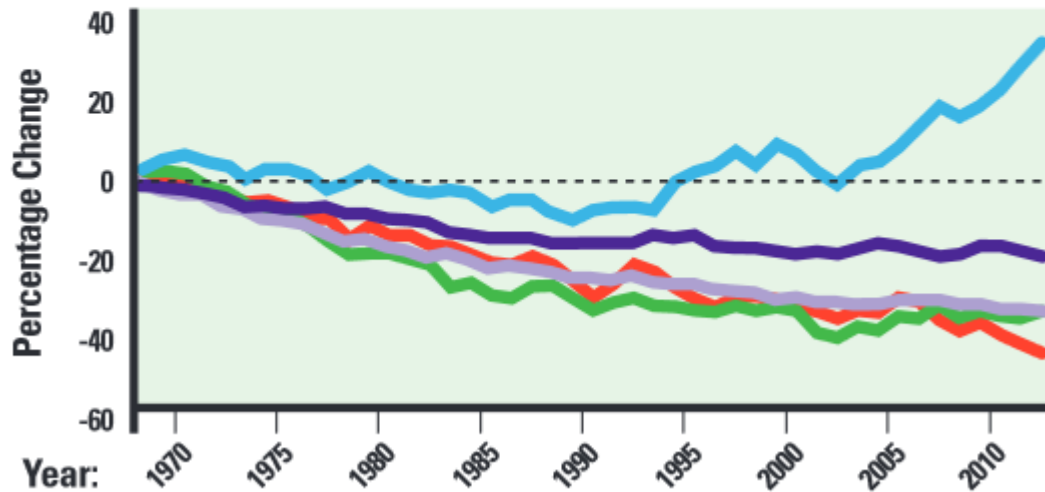
## BIRD POPULATION INDICATORS IN FIVE INLAND HABITATS

● Grasslands ● Aridlands ● Eastern Forests ● Western Forests ● Wetlands



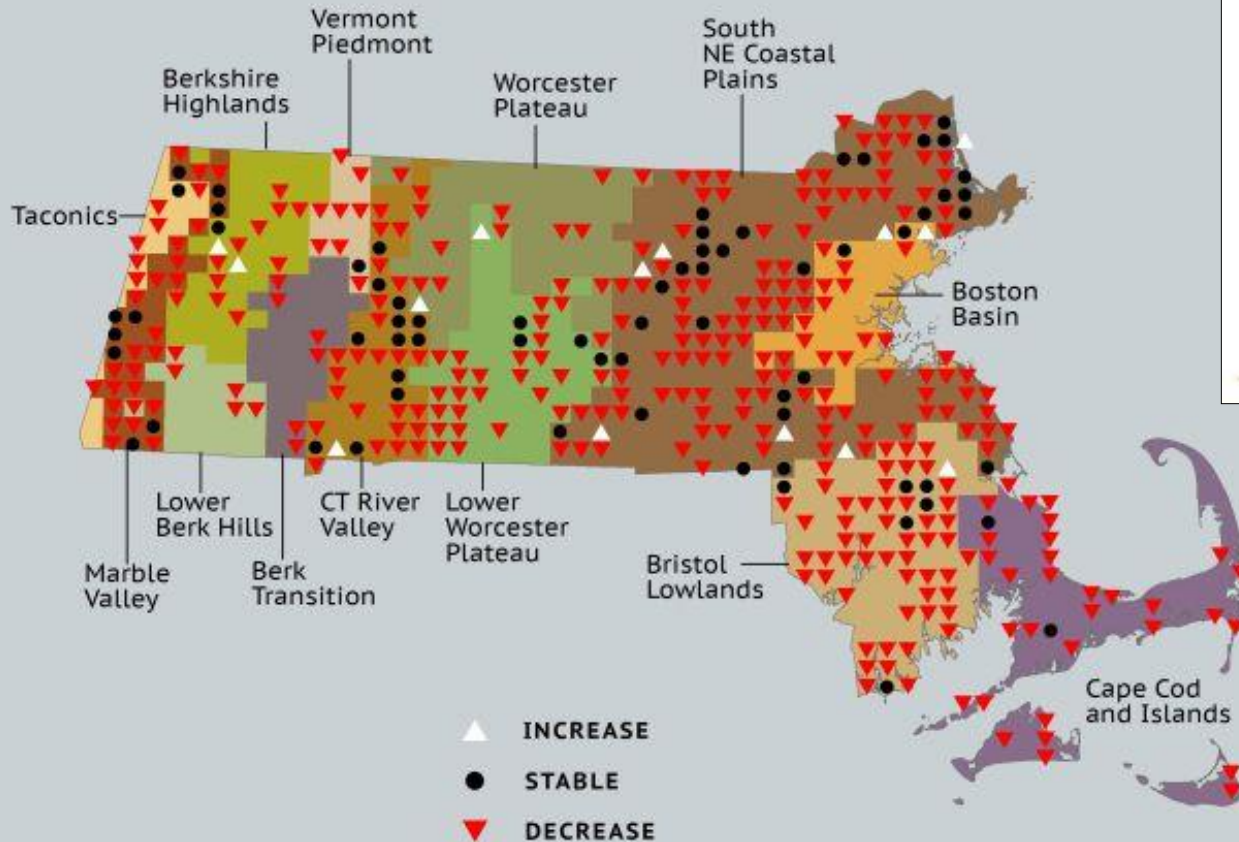
# BIRD POPULATION INDICATORS IN FIVE INLAND HABITATS

● Grasslands ● Aridlands ● Eastern Forests ● Western Forests ● Wetlands



“Populations have stabilized at low levels after decades of decline... reflecting significant investments made in grassland bird conservation. Reductions in Farm Bill conservation funding, however, threaten those investments. Eastern grassland birds (such as Eastern Meadowlark and Bobolink) have continued a steady and precipitous decline, associated with declines in pasturelands due to changing dairy farming practices and suburban sprawl.”

## Eastern Meadowlark



*Mass Audubon Breeding Bird Atlas*

Of 348 sites where breeding Eastern Meadowlarks were confirmed in 1974-1979, 87% were no longer occupied during 2007-2011.



# Massachusetts Grassland Bird Conservation

## **A Complicated Picture**

Habitat Loss

Forest succession



<http://harvardforest.fas.harvard.edu/diorama-series/landscape-history-central-new-england>

# Massachusetts Grassland Bird Conservation

## A Complicated Picture

Habitat Loss

Forest succession

*Height of Forest Clearing & Agriculture  
(1830)*



*Farm Abandonment (1850)*





# Massachusetts Grassland Bird Conservation

## A Complicated Picture

Habitat Loss

Forest succession

Suburban sprawl, loss of farmland



# Massachusetts Grassland Bird Conservation

## A Complicated Picture

### Habitat Loss

Forest succession

Suburban sprawl, loss of farmland

Agricultural intensification

“In a 2001 survey, more than 70% of Vermont dairy farmers stated that they cut their fields earlier and more frequently than 30 years ago. In fact, about 50% cut their fields earlier and more frequently than just 10 years ago.” (NRCS Wildlife Insight No. 88)



**eHay Weekly** from **Hay & Forage**  
Grower

# Massachusetts Grassland Bird Conservation

## A Complicated Picture

### Habitat Loss

Forest succession

Suburban sprawl, loss of farmlands

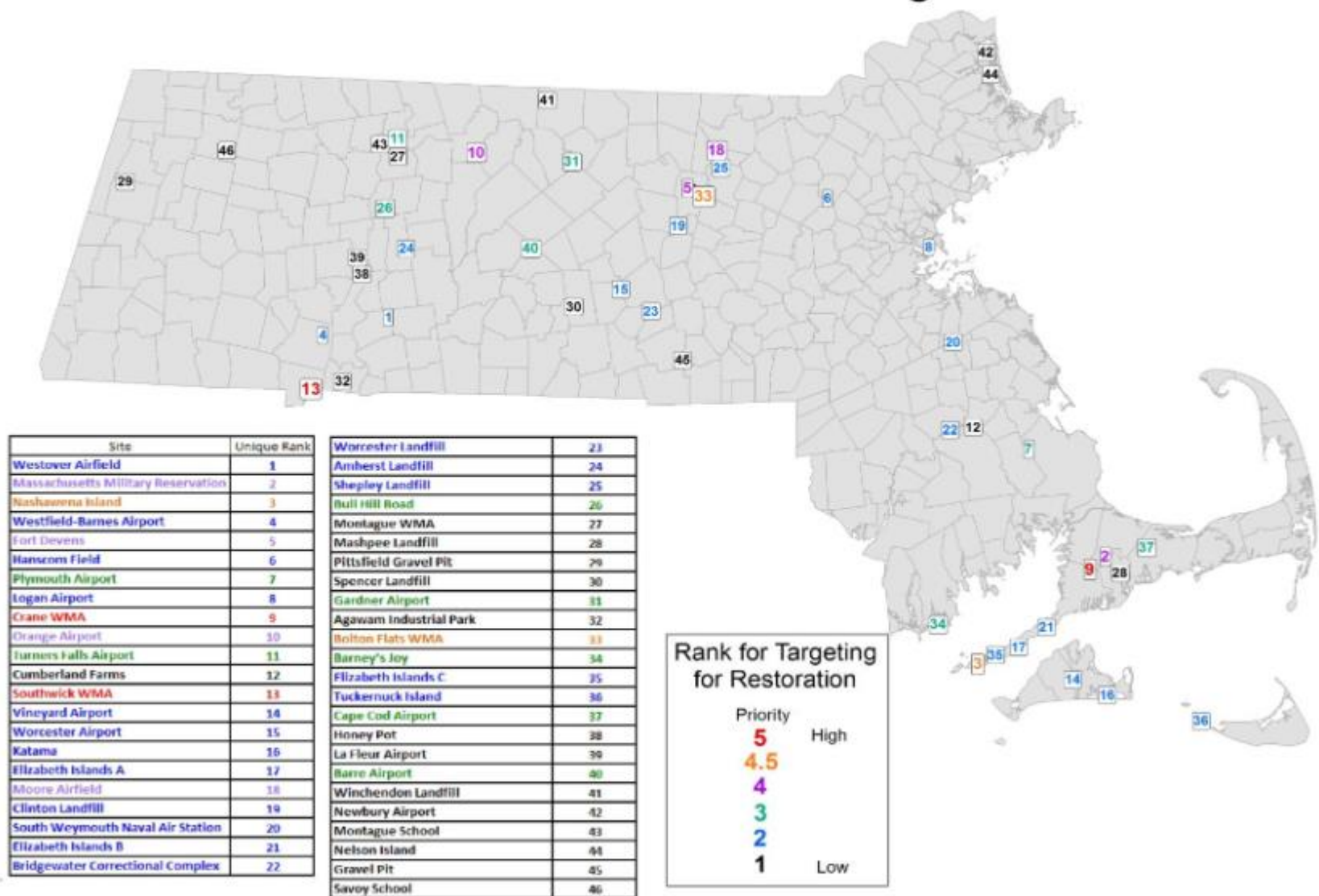
Agricultural intensification

**Focus on Patch  
Characteristics**

<b>Grassland Bird Species</b>	<b>Required minimum field size</b>	<b>Preferred vegetation height in fields</b>
Bobolink	5+ acres	dense grass taller than 3 feet
Eastern Meadowlark	15+ acres	dense grass and wildflowers taller than 3 feet
Savannah Sparrow	20+ acres	prefers sites with both short and tall vegetation
Grasshopper Sparrow	30+ acres	prefers sites with short, sparse grass
Upland Sandpiper	150+ acres	prefers sites with short, spare grass



# Massachusetts Grassland Bird Conservation



*An Action Plan for the Conservation of State-Listed Obligate Grassland Birds in Massachusetts*

# Massachusetts Grassland Bird Conservation

## A Complicated Picture

### Habitat Loss

- Forest succession

- Suburban sprawl, loss of farmlands

- Agricultural intensification

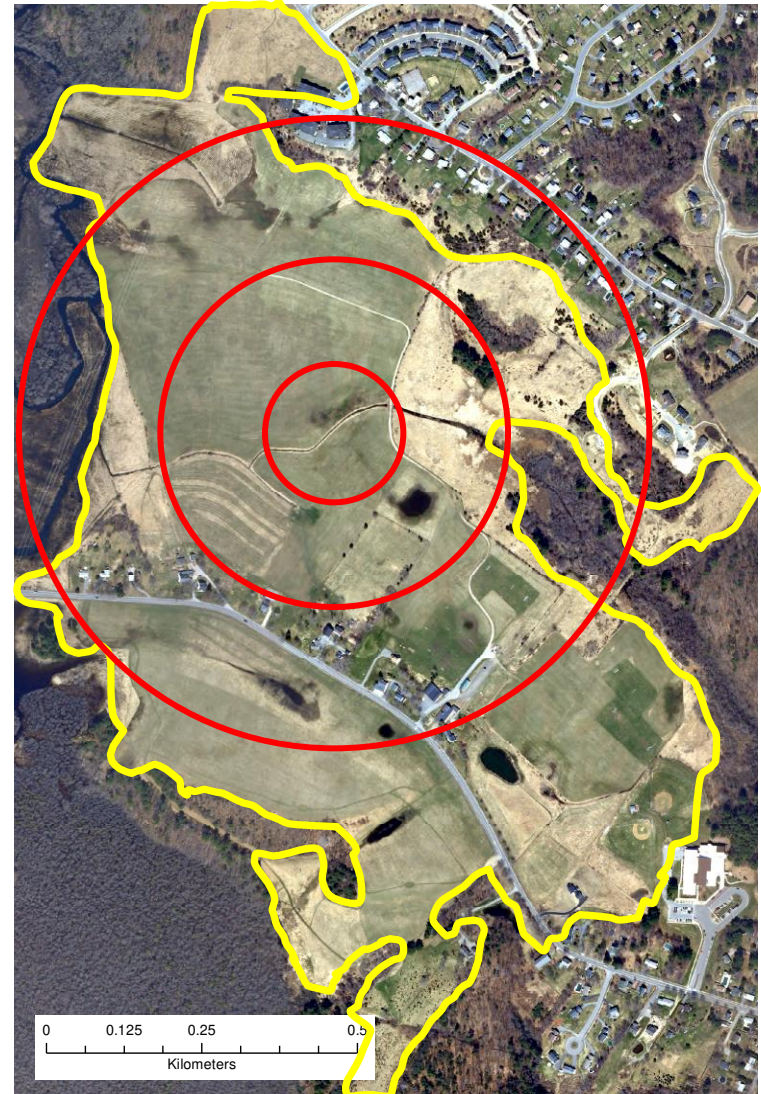
### Decline in Habitat Quality

- Fragmentation

- Invasive species

**Focus on  
Landscape  
Characteristics**

Shift from Area Sensitivity  
Paradigm (manage for 'large  
enough' patches) to  
Landscape Paradigm  
(maintain bird-friendly  
habitats around each focal  
patch)



# Massachusetts Grassland Bird Conservation

## A Complicated Picture

### Habitat Loss

Forest succession

Suburban sprawl, loss of farmland

Agricultural intensification

### Decline in Habitat Quality

Fragmentation

Invasive species

### Full Life Cycle Conservation

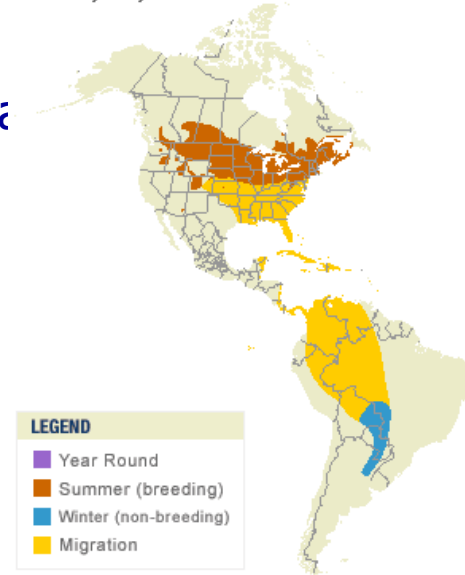
Breeding

Fall Migration

Winter

Spring Migration

Bobolink  
*Dolichonyx oryzivorus*

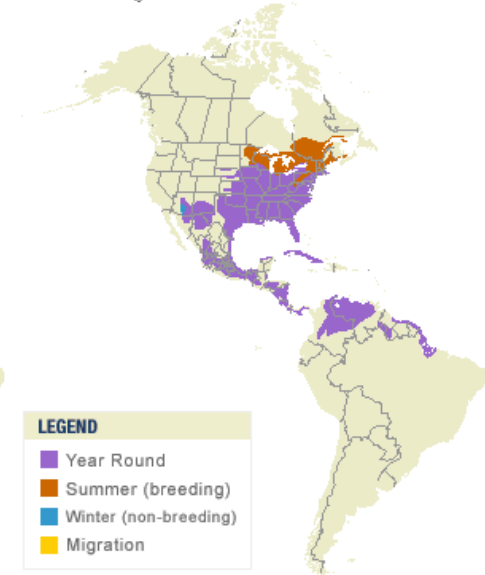


#### LEGEND

- Year Round
- Summer (breeding)
- Winter (non-breeding)
- Migration

Map by Cornell Lab of Ornithology  
Range data by NatureServe

Eastern Meadowlark  
*Sturnella magna*



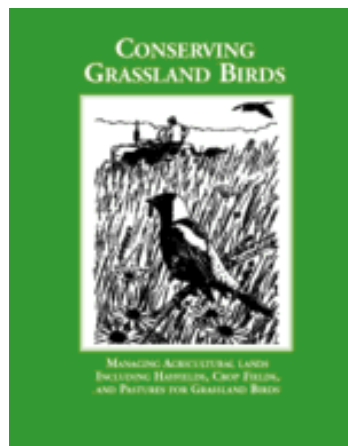
#### LEGEND

- Year Round
- Summer (breeding)
- Winter (non-breeding)
- Migration

Map by Cornell Lab of Ornithology  
Range data by NatureServe







The AOU 1987-1990  
© The American Ornithologists' Union, 2013  
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## EVALUATING THE ROLES OF VISUAL OPENNESS AND EDGE EFFECTS ON NEST-SITE SELECTION AND REPRODUCTIVE SUCCESS IN GRASSLAND BIRDS

ALEXANDER C. KEYEL,<sup>1,2</sup> ALLAN M. STRONG,<sup>2</sup> NOAH G. PERLUT,<sup>3</sup> AND J. MICHAEL REED<sup>1</sup>

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<sup>2</sup>Biology School of Environmental and Natural Resources, University of Vermont, 247 Allen Center, Burlington, Vermont 05405, USA; and

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Wildlife Society Bulletin 39(2):574-579, 2014; DOI: 10.1002/wlb.415

### In My Opinion

## Grassland Birds and Dairy Farms in the Northeastern United States

NOAH G. PERLUT,<sup>1</sup> Department of Environmental Studies, University of New England, 11 Hills Beach Road, Biddeford, ME 04005, USA

**ABSTRACT** Although grassland birds are declining throughout their North American range, and these declines are associated with agricultural land conversion or intensification, no broad-scale market-based conservation plan has been enacted. This gap is especially apparent in the northeastern United States, where remnant grassland habitat is predominantly on privately owned agricultural lands. However, in this region, dairy cow-based agriculture has also declined significantly. I explored the relationship between grassland-bird declines and dairy cow-based agriculture from 1966 to 2007. The declining number of dairy farms and increasing human population best explained variation in population trends for 4 of 6 grassland-bird species. Bird population trends were not explained by the total amount of corn acres, transfer of pasture-grazing farms, or the average farm size. I suggest a long-term conservation method using "buy local" campaigns where the local community supports a spatially linked network of cow-based farms, in part because these farms support grass.

**KEY WORD**  
United States,

## Delay hay cuttings to allow birds to successfully fledge young

Earlier and more frequent cuttings of hay in the Northeast can be devastating to grassland songbirds.

A University of Vermont study comparing nesting success of grassland birds for various management levels, nature on working hayfields found that the majority of grassland habitat was cut during the breeding season, and this early cut haying caused almost all foraging sparrows and bobolinks nests to fail.

"But the birds resist, and we found late-hayed fields to be high quality reserves for late-nesting birds like bobolinks that were not displaced from fields that were cut earlier," says researcher Noah Perlut.

Grassland bird populations in the Northeast have dropped dramatically—some species by as much as 90 percent—over the past 50 years. The

to support viable populations in the long term, but grass fields and fields cut later in the nesting season might enable populations to maintain themselves over time.

### Timing is everything

For foraging sparrows, the earliest observed fledging date was June 5, and the latest was August 18 (although fledging can occur as late as August 23 in other management-type fields). For bobolinks, the earliest fledging date observed was June 11, and the latest was July 26.

Although the timing of cutting is critical to the nesting success of grassland birds, many farmers have limited flexibility in their ability to delay cutting because of reduced forage quality.

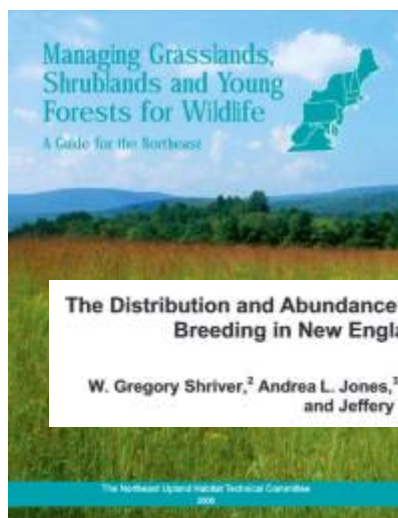
Delayed second cuts

There may be opportunities for farmers to cut hay only in the second half of May and delay their second



Photo by Noah Perlut and Allan Strong, University of Vermont  
foraging sparrow (left), (right) foraging sparrow

Noah G. Perlut, Allan M. Strong, Therese M. Donovan, and Neil J. Buckley 2008. GRASSLAND SONGBIRD SURVIVAL AND RECRUITMENT IN AGRICULTURAL LANDSCAPES: IMPLICATIONS FOR SOURCE-SINK DEMOGRAPHY. Ecology 89:1941-1952. <http://dx.doi.org/10.1890/07-0900.1>



## Journal of Wildlife Management

Published by: The Wildlife Society

» previous article » next article »

Journal of Wildlife Management 75(3):715-720, 2011  
doi: <http://dx.doi.org/10.1002/jwmg.81>

## Grassland Birds and Rotational Grazing in the Northeast: Breeding Ecology, Survival and Management Opportunities

Noah G. Perlut,<sup>1,2</sup> and Allan M. Strong<sup>3</sup>

# Massachusetts Grassland Bird Conservation



Strategies





# Mass Audubon Grassland Bird Program



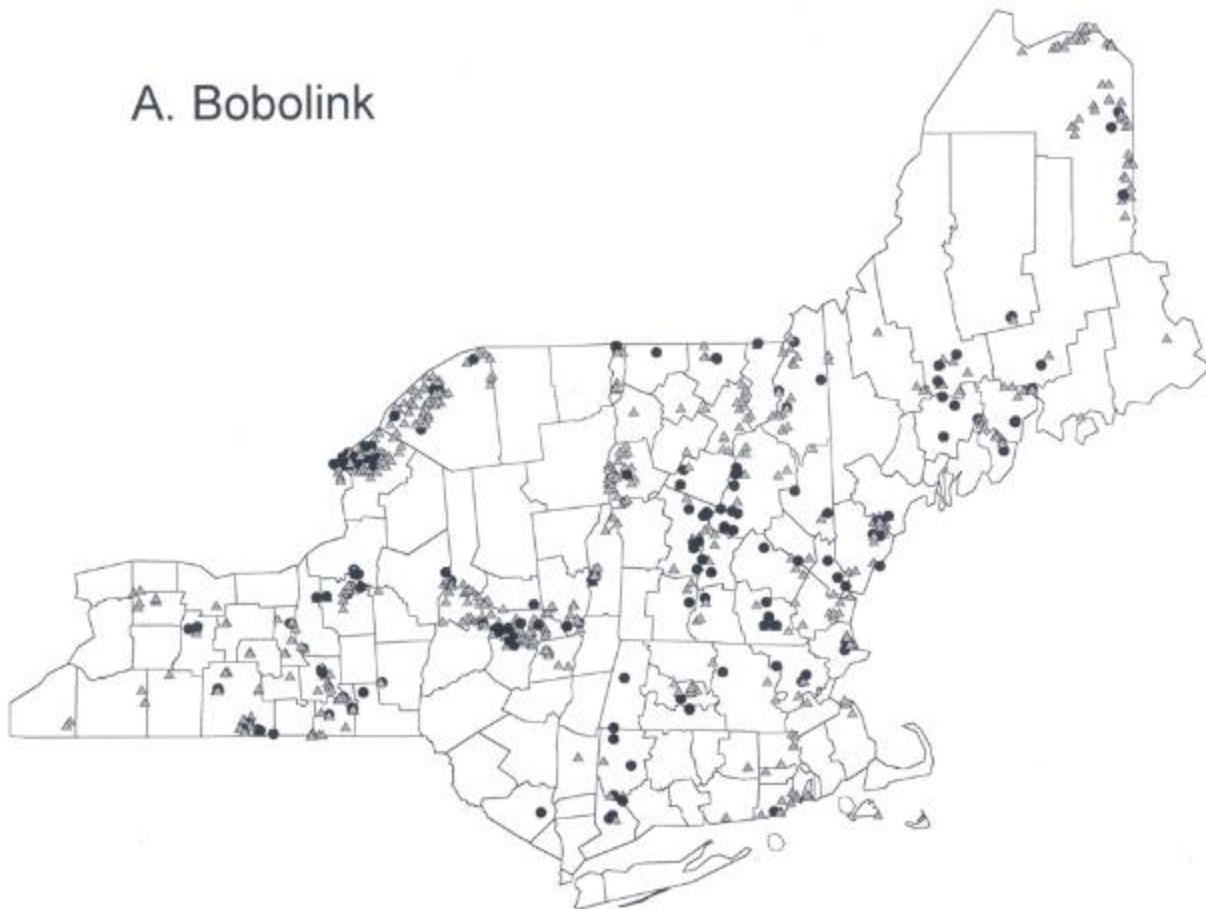
Ideas? Questions?  
Useful Contacts?

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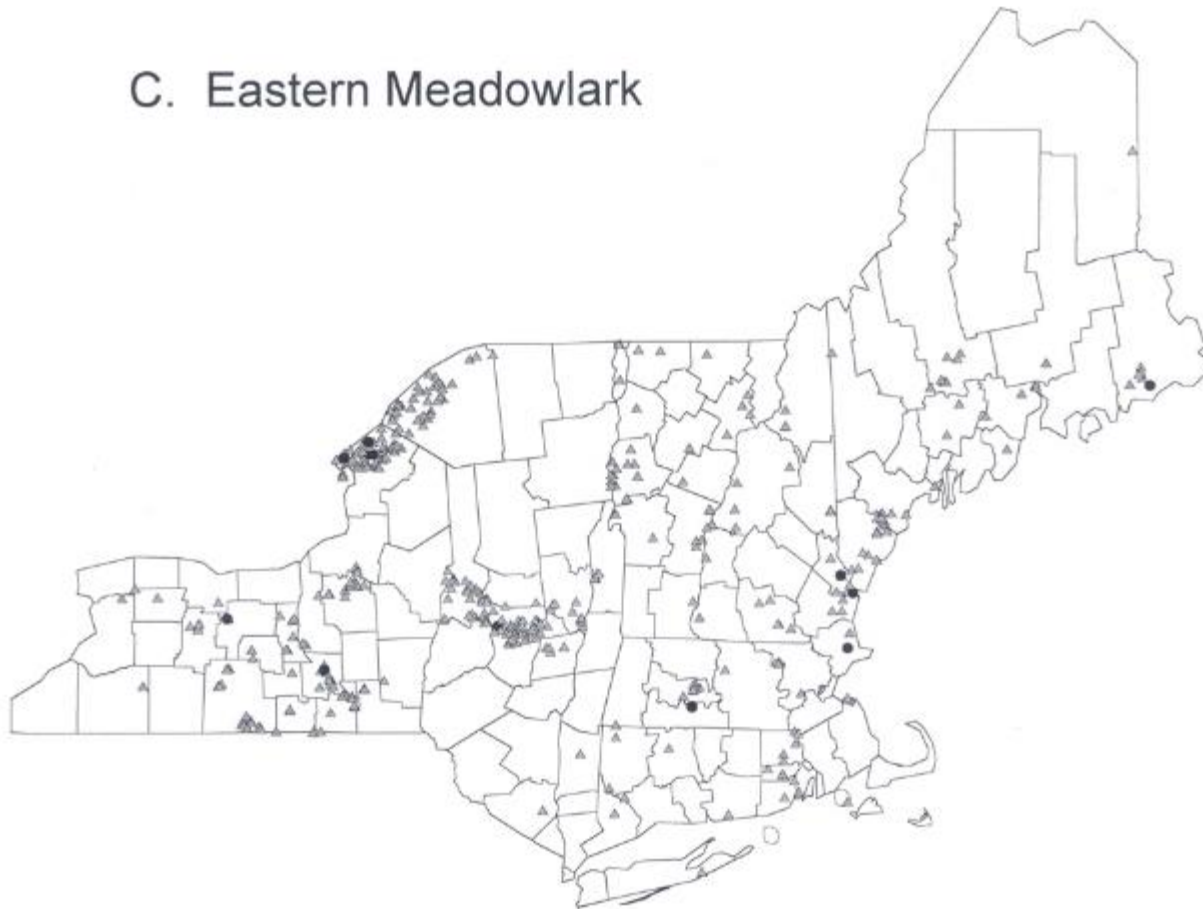
Species maps indicating occurrence and relative abundance among 1,140 sites sampled in the  
(white triangles = 1-10 individuals detected, black circles = >10 individuals detected) of A) Bobolink,

### A. Bobolink



species maps indicating occurrence and relative abundance among 1,140 sites sampled in the  
(white triangles = 1-10 individuals detected, black circles = >10 individuals detected) of A) Bobolink,

### C. Eastern Meadowlark

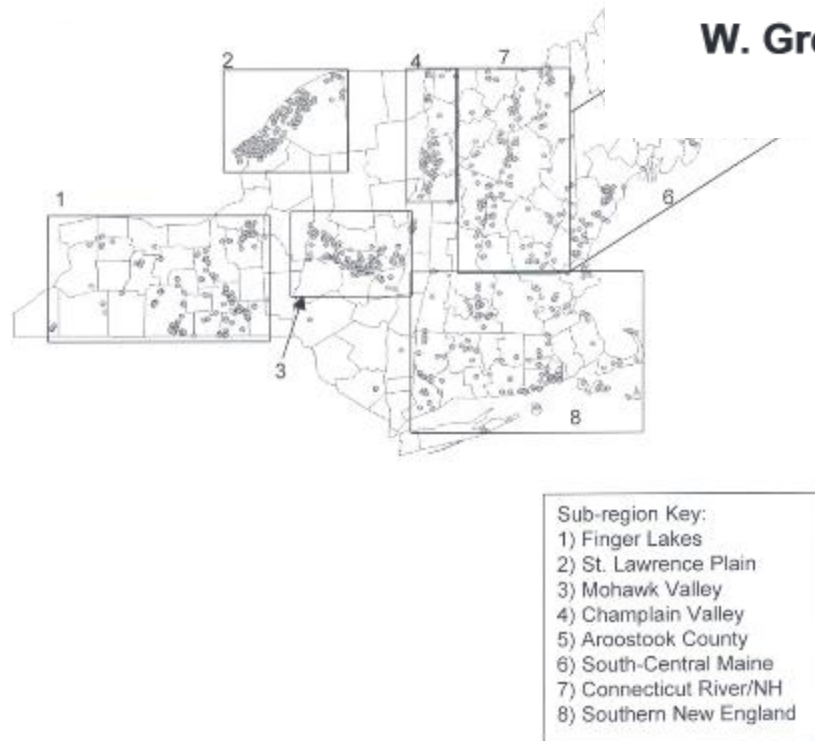




# The Distribution and Abundance of Obligate Grassland Birds Breeding in New England and New York

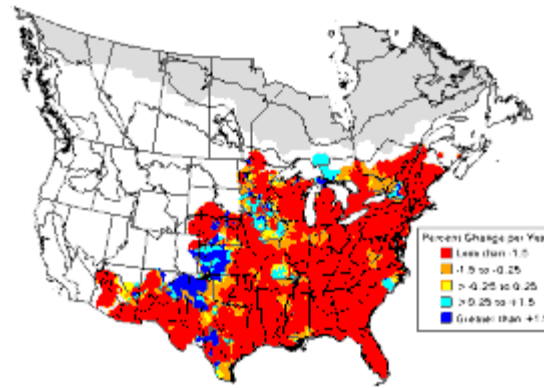
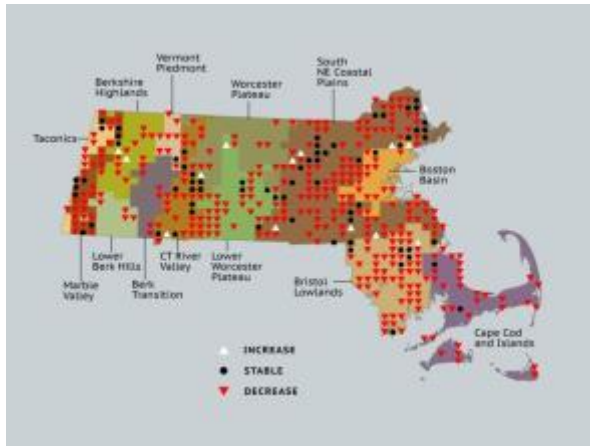
W. Gregory Shriver,<sup>2</sup> Andrea L. Jones,<sup>3</sup> Peter D. Vickrey,<sup>4</sup>  
and Jeffery Wells<sup>6</sup>

USDA Forest Service Gen. Tech. Rep.



**Figure 1**— Locations of 1,140 sites surveyed for grassland birds in the northeastern United States, 1997-2000 and identification of eight sub-regions.

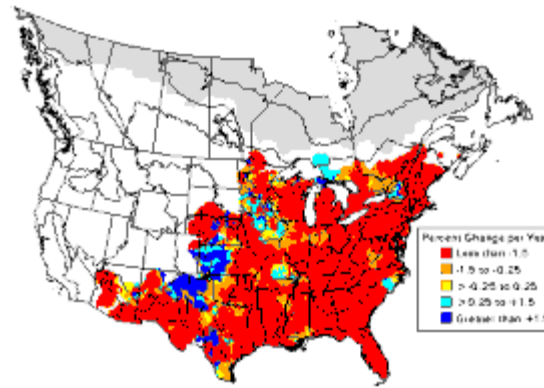
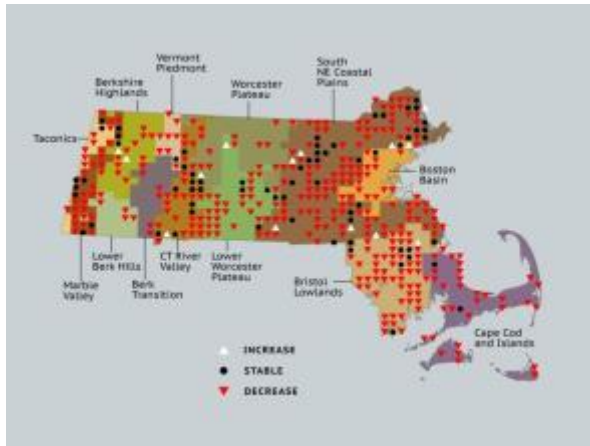
# Mass Audubon Grassland Bird Program



## The problem?

- Changes in farming practices mean that hay fields are cut earlier and more often. Cuts during June or July destroy nests with eggs and nestlings, and sometimes kill adults. And, because the southward fall migration begins in late July or early August, there is not enough time for successful renesting after initial failures.

# Mass Audubon Grassland Bird Program



Of 348 sites where breeding Eastern Meadowlarks were confirmed in 1974-1979, 87% were no longer occupied during 2007-2011.

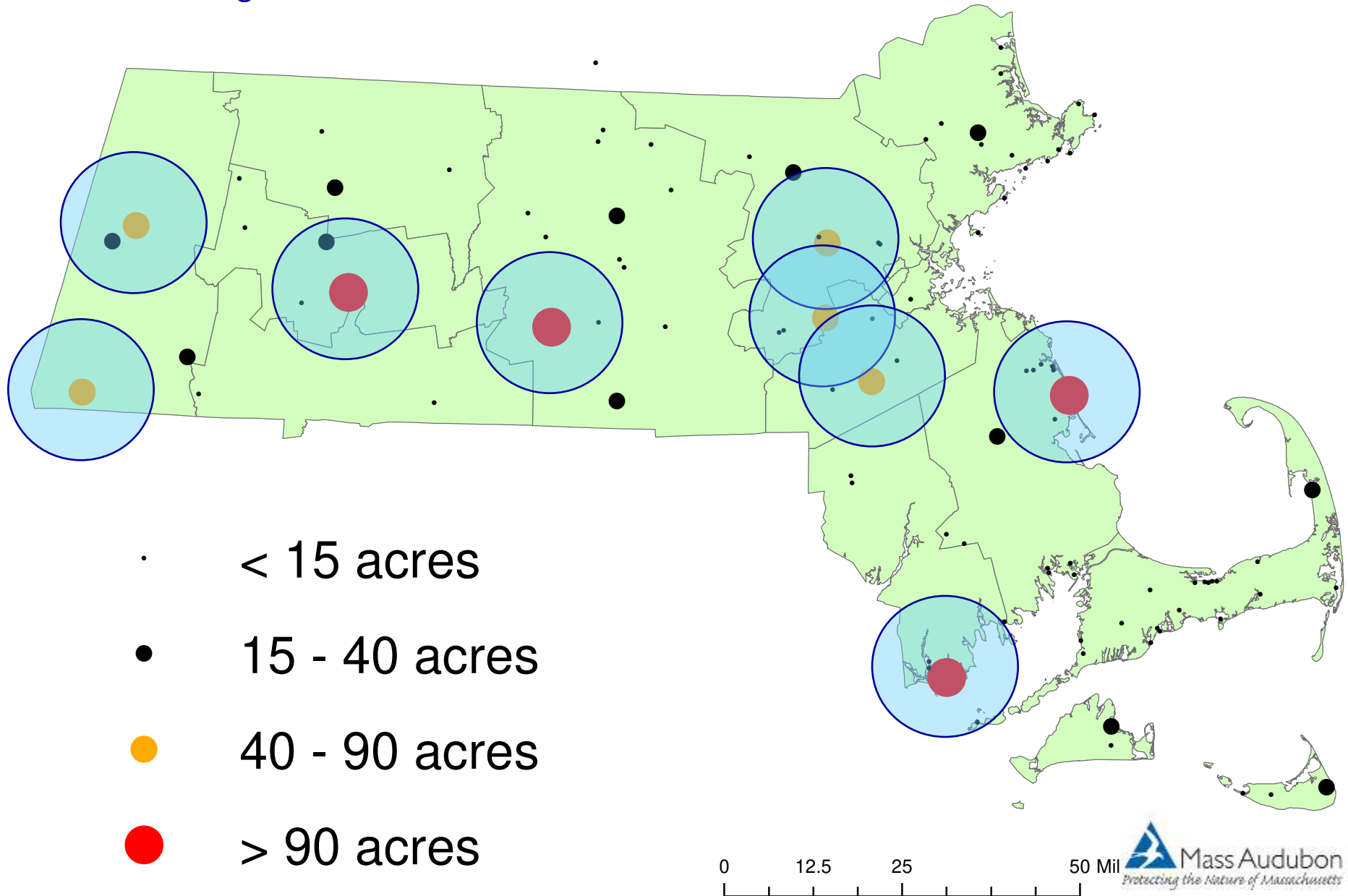
## The solution?

- Model best management practices on grasslands where conservation, not economic return, is the primary focus. Begin these efforts on Mass Audubon sanctuaries and properties managed by regional land trusts, federal and state wildlife agencies, and civil jurisdictions.
- Promote changes to agricultural practices that will give farmers a good financial return and allow nesting birds to successfully breed.

# Mass Audubon sanctuaries

Potential for grassland bird conservation efforts

- Use our sanctuaries as examples to influence neighboring landowners





# Massachusetts Grassland Bird Conservation





# Massachusetts Grassland Bird Conservation

1952



# Massachusetts Grassland Bird Conservation

1946





# Massachusetts Grassland Bird Conservation

1960





# Massachusetts Grassland Bird Conservation

1936



# Massachusetts Grassland Bird Conservation

1941





# Massachusetts Grassland Bird Conservation

1952



# Massachusetts Grassland Bird Conservation

