A Survey of Bobolinks in East Leverett Meadow June 2014

BACKGROUND

East Leverett Meadow (ELM) is n 18-acre grass and forb meadow owned by the Rattlesnake Gutter Trust and located in Leverett, Massachusetts. I had previously described it as 30 acres, but GIS measurement revealed that the larger figure is for the whole conservation area including the forest and wetlands. Bobolinks (*Dolichonyx oryzivorous*) currently nest in ELM but this species has declined regionally since the early 1990's due in part to the loss of nesting habitat and early mowing for hay. For these reasons a goal of the Trust is to encourage successful bobolink nesting at ELM. Annual monitoring of the bobolink population helps to determine the success of management techniques. Recent management includes the 2010 plowing and re-seeding of the west portion of ELM in order to re-establish a vegetation community more favorable to bobolinks.

Annual surveys to assess bobolink activity in ELM have been conducted every year since 2000. Aaron Eilers conducted the 2000-2002 surveys and I conducted the surveys from 2003 to the present. The specific stated goals of these surveys are 1.) to identify the preferred habitat locations of bobolinks within ELM; 2.) to estimate the approximate number of bobolinks using ELM; and 3.) to compare data between years to determine whether the population is changing.

The ultimate purpose of the surveys is to plan a management regime that will have the greatest benefit to nesting bobolinks in ELM. Specifically the Trust is interested in knowing in which section of the meadow bobolink nests are located; how early ELM can be mowed or hayed without causing bobolink mortality, and whether the bobolink numbers each year are related to the mowing regime.

2014 METHODS

The survey took place on June 28. I used the same survey method as last year, but with just 7 survey points. This year I worked with an assistant, Devorah Levy, a knowledgeable birder. She was able to confirm my observations, and together, we could view more of the meadow simultaneously. Observation times at each point were not uniform and ranged between 5 and 8 minutes per point, depending on how much bird activity was going on.

The point surveys took place from 6:08 to 7:44 a.m. The temperature began at 57º F and rose to 70 º F at the last survey point. The sky was sunny and there was no wind. Rainfall has been moderate this year and the last few days have been dry.

I used binoculars to help spot birds. Observations were made from 7 points around the meadow. At each point two observation techniques were used. First I scanned with binoculars from one side of the meadow to the other, and could see bobolinks perched on the grass or flying. By scanning I could determine a minimum total number of male bobolinks because they would be visible simultaneously or in distinct parts of the meadow. The second observation technique was to observe where individual bobolinks were perched and map their locations by using compass bearings and estimating distances. I also mapped as many of the movements of individuals as possible.

I made no assumption that birds at one point were different individuals than those at another point. Instead from each point I made a separate count that I could compare against the others like snapshots from different angles and points in time.

RESULTS

This was the first year since the survey began that no bobolinks were observed at all. The map included shows the different quadrants of the meadow and the location of the observation points that were used.

Bobolinks observed from each point on June 28, 2014

	# males	# females
Point 1	0	0
Point 2	0	0
Point 3	0	0
Point 4	0	0
Point 5	0	0
Point 6	0	0
Point 7	0	0

Point 1: Hickory tree at south edge of meadow
8 minute observation
No bobolinks observed.

Point 2: Southwest corner of meadow
8 minute observation
No bobolinks observed.

Point 3: Middle of west edge of meadow
6 minute observation
No bobolinks observed.

Point 4: Between hickory tree and electric tower north of meadow
7 minute observation
No bobolinks observed.

Point 5: Electric tower at north side of meadow
6 minute observation
No bobolinks observed.

Point 6: Corner of East and North-Central quadrants
5 minute observation
No bobolinks observed.

Point 7: SE corner of South-Central quadrant
5 minute observation
No bobolinks observed.

Other observations: Red-winged blackbirds were using all parts of the meadow and seemed more abundant than in previous years. I did not make note of other bird species observations. There was no evidence of kestrels nesting in the kestrel box, despite a kestrel being observed at it on May 6.

Comparison of bobolink numbers and distribution in East Leverett Meadow 2000-2012

	Northwest	Southwest	North-Central	Mid-Central	South-Central	East	Max. observed simultaneously
2014, June 28	No	No	No	No	No	No	0
2013, June 26	No	No	Yes	Slightly	No	No	1 M 1 F
2012, June 11	Yes	Yes	Yes	Yes	Yes	No	4-5 M 1 F
2011, June 10	Yes	Yes	Yes	Yes	Yes	Yes	4 - 6 M 2 F
2010, June 15	Yes	Yes	Yes, south half	Yes	Yes, briefly	No	3 – 7 M 5 F
2009, June 20	No	Yes	No	No	No	No	1 M 2 F
2008, July 11	Briefly, S section	Yes	No	No	No	No	1 M 2 F 4 fledglings
2007, June 10	Only S edge	Yes-heavily used	No	Slightly	No^	No	5 M 3 F
2006, June 11	Yes	Yes	Slightly, along S edge	Yes	Slightly, along N edge	No	2 – 3 M 1 F
2005, June 12	Yes	Yes	Slightly	Yes	Once, at edge of Kusmeski CR	No	2 - 4 M 2 F
2004, June 14	Yes	Yes	No	Yes	Yes	No	4 – 7 M 2 F
2003, June 24	Yes	Yes	No	Yes	Slightly, along N edge	No	5- 8 M 2 F
2002 (Eilers)	Data not clear about locations or numbers						
2001 (Eilers)	Yes	Yes	Slightly	Yes	Yes	Slightly	
2000 (Eilers)	Most activity in western half of meadow						

^ Mary Alice Wilson saw bobolink activity here on July 7

DISCUSSION

Lack of bobolinks:

This was the first year since this survey was begun in 2000 that no bobolinks at all were present. However, last year only 1 male and 1 female were seen (an observation that was confirmed by separate observations by Mary Alice Wilson). This year's lack of bobolinks at ELM does not seem to be a regional phenomenon, because also on June 28, numerous bobolinks were seen at a field at Arcadia Wildlife Sanctuary in Northampton and at the New England Small Farm Institute in Belchertown. It is likely that this low number is instead related to local conditions at ELM.

Timing of nesting:

Like last year, this year's survey was deliberately planned for the last week of June, to coincide with the period when young should be fledged and therefore more visible, along with their parents. But I saw no young or adult bobolinks. If anything, nesting might be expected to be later than usual this year because of a very cool early spring that delayed many crops by about a month. In that case, I would expect to see bobolinks still nesting by June 28, but with young not yet fledged.

Vegetative Structure of the Meadow:

Changing vegetative structure is likely to be the reason for declining bobolink use of ELM. The western 1/3 of the meadow has a lot of goldenrod, as well as noticeably more bindweed than in previous years. Thatch depth was about 3 inches. The high proportion of goldenrod, as well as the thick thatch layer, are likely to be factors that would discourage bobolinks from nesting. Recommendations to improve the vegetative structure were made in a report by me to the ELM Management Committee on May 6 this year. The main goals are to reduce the amount of goldenrod and thatch, and to increase the proportion of native warm season grasses.

For one trial year it would be worthwhile to do replicate surveys on consecutive or near-consecutive days, as well at different points through the breeding season to get a sense of how reliable a one-day survey is. It would also be worthwhile to coordinate compile annual bobolink survey results from various sites in Western Massachusetts.

This information would help with interpretation of possible causes for fluctuating bobolink numbers and distribution within the meadow at different stages of the breeding season and to more confidently determine if changes in the bobolink population at ELM are site specific.

If a multiple-date survey is not possible, then a single survey date should be chosen during either the last week of May or the last week of June in an attempt to avoid the incubation period when females are less visible.

Competition with Other bird species

Red-winged blackbirds were strongly present throughout the meadow this year, especially the western half. My qualitative assessment is that there are more red-winged blackbirds than in previous years. The aggressive behavior of red-winged blackbirds at ELM in previous years raises the question of whether red-winged blackbirds could be a contributing factor to the decline of bobolink numbers here.

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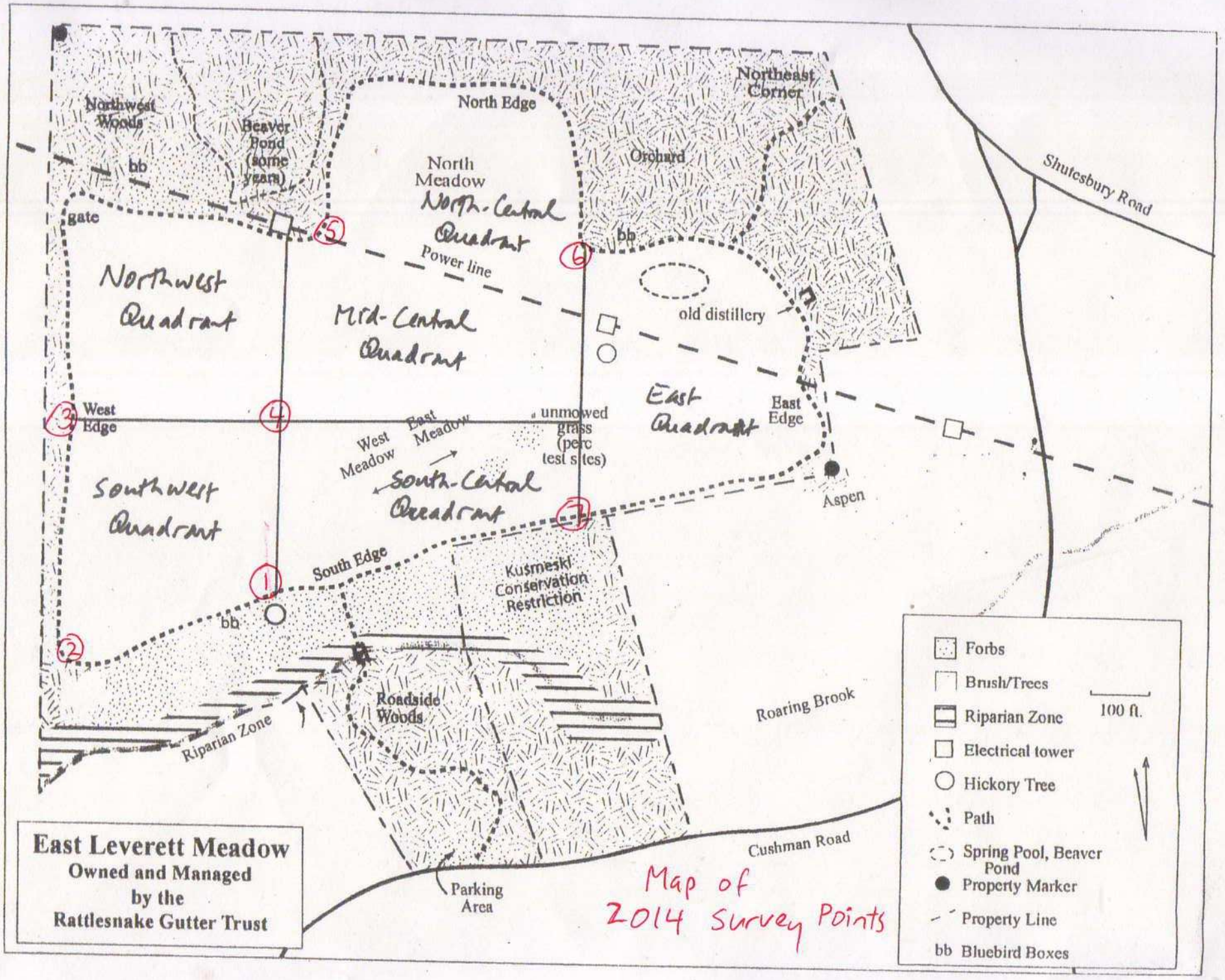
Reference:

Conserving Grassland Birds: Managing Small Grasslands Including Conservation Lands, corporate headquarters, Recreation fields, and Small Landfills for Grassland Birds by Andrea L. Jones and Peter D. Vickery. No Publication Date Given. Published by the Grassland Conservation Program, Center for Biological Conservation, Massachusetts Audubon Society. Lincoln, MA, in collaboration with Silvio O. Conte National Fish and Wildlife Refuge and the USFWS North American Waterfowl Management Program.


Northwest Woods
Beaver Pond (some years)
North Edge
Northeast Corner
North Meadow
North-Central Quadrant
Orchard
Shutesbury Road
bb
gate
Power line
Northwest Quadrant
Mid-Central Quadrant
old distillery
East Quadrant
East Edge
West Edge
West Meadow
East Meadow
unmowed grass (perc test sites)
South-Central Quadrant
Southwest Quadrant
Aspen
South Edge
Kusmeski Conservation Restriction
Roadside Woods
Riparian Zone
Roaring Brook
Cushman Road
Parking Area
1
2
3
4
5
6
7
East Leverett Meadow
Owned and Managed by the Rattlesnake Gutter Trust
Map of 2014 Survey Points
Forbs
Brush/Trees
Riparian Zone
Electrical tower
Hickory Tree
Path
Spring Pool, Beaver Pond
Property Marker
Property Line
bb Bluebird Boxes
100 ft.