

Breeding Birds and Forest Management in Lawton Farm Recreation Area, Scituate Rhode Island



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1. Introduction

This report describes the results of a series of breeding bird point counts conducted at the Lawton Farm Recreation Area, Scituate, Rhode Island, on May 31 and June 21, 2012. The Lawton Farm is a 54.4 acre parcel owned by the Scituate Land Trust and the Town of Scituate. The property is mostly open fields, except for approximately 20 acres of forested wetlands and a small stand of upland hardwoods in the southwest corner. An important conservation objective for the property is to maintain grassland habitat for the Bobolink and Eastern Meadowlark. For more information on the property, see the Lawton Farm Management Plan (Tremblay 2009).

The point counts were carried out as part of an ongoing study of the University of Rhode Island and the Environmental Protection Agency of bird use of shrubland habitats generated through forest management practices.

2. Methods

We selected three sampling sites within Lawton Farm for point count surveys to include different types of shrubland in addition to forest and meadow habitats (Table 1 and Figure 1).

Table 1. Lawton Farm Sampling Sites 2012

Site 1	Unmanaged shrubland, meadow, forest
Site 2	Shrubland created by recent removal of invasive plants, meadow, forest
Site 3	Shrubland created by irregular mowing of field, meadow, forest

Site 1: The first sampling site was located in the central portion of the property on the edge of Field 1 (41.75792° N, 071.55652° W). To the north and west is a small patch of shrubland habitat. This site included a hedgerow of mature trees which was recently removed in order to connect Fields 1 and 2 in order to improve habitat for Bobolink and other grassland bird species. The eastern portion of the shrubland is dominated by 2 m high multiflora rose *Rosa multiflora* which transitions into a small herbaceous wetland to the west. To the north of the shrubland is a small area of forest dominated by red maple *Acer rubrum* and white ash *Fraxinus americana*. To the east and south of the sampling site is Field 1, which is mowed annually after August 1 to protect nesting birds. The hay bales are sold as construction hay.

Site 2: The second sampling site was located in the western portion of the property on the edge of Field 3 (41.75715° N, 071.55952° W) adjacent to a patch of shrubland which has recently been managed to remove invasive plants such as autumn olive *Elaeagnus umbellata*, and is currently dominated by 1 m tall saplings of black cherry *Prunus serotina* with some Oriental bittersweet *Celastrus orbiculatus*. The sampling site sampling also includes upland forest dominated by white ash and white oak *Quercus alba*. Field 3 which is generally mowed annually, but was not mowed last year. The hay from this field is poor quality and is left on the ground.

Site 3: The third sampling site was located in the northern boundary of the property on the edge of Field 4 (41.75745° N, 071.55952° W). Field 4 is generally mowed every three years, and has currently not been mowed for two years. Field 4 currently includes patchy regeneration of 1 m

tall saplings of black cherry, American ash, and white oak. The sampling site includes upland forest to the north dominated by white oak and American ash.

We surveyed the three sites by conducting ten minute point counts on two days: 31 May and 21 June, 2012. During each point count we waited five minutes, and then recorded all birds seen or heard during a ten minute period within 50 m and 100 m of the point count center, using a dependent-observer approach (Nichols et al. 2000, Forcey et al. 2006). The survey teams consisted of a primary observer (Rick McKinney) who noted bird species and abundance, and a secondary observer (Walter Berry, US EPA, Amy Fischer, Arkansas State University) who recorded data and noted any individuals missed by the primary observer. We also noted any birds seen within the reserve while walking to or between point count sites. All point counts were conducted between 0600 and 1000 hours. A vegetation analysis was conducted during the initial visit by Bill Buffum.

Figure 1 Lawton Farm, Scituate Rhode Island - 2012 Sampling Sites



3. Results / Discussion

We observed twenty-nine bird species across the three sites during the two survey events (Table 2). Most abundant were Red-winged Blackbirds *Agelaius phoeniceus*, Tree Swallows *Tachycineta bicolor*, and American Robins *Turdus migratorius*. American Robins are an abundant species in Rhode Island and throughout the northeast US. Previous studies have demonstrated their use of forested and shrubland habitats for breeding (Ehrlich et al. 1988); these habitats are plentiful within Lawton Farm. Red-winged Blackbirds (breeding habitat: wetland and open field) and Tree Swallows (breeding habitat: open fields with woodland edge) are also common in the northeast and are probably breeding in or adjacent to the large maintained meadow or early-successional habitats adjacent to woodlands within Lawton Farm. These three species and Tufted Titmice *Baeolophus bicolor* were observed at all three survey sites. In addition to the 29 species listed in Table 1, we observed a Carolina Wren *Thryothorus ludovicianus* while walking between the parking area and site 1, resulting in a total of 30 species observed within Lawton Farm.

The number of species recorded in 2012 was less than number recorded in 2011 (Camillieri 2011). However, it is not possible to compare the results of the two studies due to different sampling methodologies: the 2011 study included more sampling locations and twice as many point counts. We were hoping to re-sample the 2011 sampling locations, but the location of the sampling sites was not available. Nevertheless, it was interesting to note that 20 species were observed in both years.

Notable among the species observed in 2012 were several Bobolinks *Dilichonyx oryzivorus* (seen and heard) and a Magnolia Warbler *Dendroica magnolia* singing male. Bobolinks have been documented at Lawton Farm in substantial numbers in past years in or near the large meadow, where they were presumably nesting or utilizing the area for foraging or cover (Martin 1971). It should be noted that Bobolinks were seen and heard at Site 1 during our survey, which only included a relatively small portion of the large meadow and we did not report any birds outside of the point count radius. Previous surveys and observations in years past probably included the entire meadow and hence reported higher abundances. Therefore our abundances should not be interpreted as a decline in Bobolink numbers; by design we didn't count all of the Bobolinks present within Lawton Farm. The meadow habitat in its present maintained state appears ideal for Bobolink nesting: a study in upstate New York reported the increased occurrence of ideal vegetative diversity for nesting hay fields as time since last plowing and reseeding increased, therefore we can assume that the meadow habitat has developed similar plant diversity (Bollinger and Gavin 1992).

The Magnolia Warbler heard at Site 2 may have been a late migrant. Spring migration of this species appeared to be delayed this year with the first reported observation in Rhode Island on May 11 (Raithel 2012). Magnolia Warblers have been historically documented as an extremely rare nesting species in Rhode Island (Enser 1992); however, the area in which this bird was heard doesn't contain optimal nesting habitat for the species (dense hemlock or young conifer stands) and therefore it is unlikely the bird was nesting (Dunn and Hall 2010).

Table 2. Abundance of bird species observed within 100 m of the point count center during 10 minute counts at three sites within Lawton Farm Recreation Area, Scituate, Rhode Island, May 31 and June 21, 2012. Abundance reported is the sum of those observed during both point counts.

Common name	Scientific name	All Sites	Site 1	Site 2	Site 3
Ring-necked pheasant	<i>Phasianus colchicus</i>	1	0	0	1
Red-bellied woodpecker	<i>Melanerpes carolinus</i>	1	1	0	0
Hairy woodpecker	<i>Picoides villosus</i>	1	0	1	0
Eastern wood-pewee	<i>Contopus virens</i>	2	0	1	1
Willow flycatcher	<i>Empidonax traillii</i>	1	1	0	0
Great crested flycatcher	<i>Myiarchus crinitus</i>	1	0	0	1
Red-eyed vireo	<i>Vireo olivaceus</i>	2	0	1	1
Blue jay	<i>Cyanocitta cristata</i>	2	0	2	0
American crow	<i>Corvus brachyrhynchos</i>	1	0	0	1
Tree swallow	<i>Tachycineta bicolor</i>	8	5	2	1
Tufted titmouse	<i>Baeolophus bicolor</i>	6	2	3	1
Black-capped chickadee	<i>Poecile atricapilla</i>	1	0	0	1
American robin	<i>Turdus migratorius</i>	8	3	3	2
Gray catbird	<i>Dumetella carolinensis</i>	3	2	1	0
Cedar waxwing	<i>Bombycilla cedorum</i>	4	3	1	0
Blue-winged warbler	<i>Vermivora pinus</i>	1	1	0	0
Yellow warbler	<i>Dendroica petechia</i>	2	2	0	0
Magnolia warbler	<i>Dendroica magnolia</i>	2	0	2	0
Common yellowthroat	<i>Geothlypis trichas</i>	2	2	0	0
Scarlet tanager	<i>Piranga olivacea</i>	1	0	1	0
Eastern towhee	<i>Pipilo erythrophthalmus</i>	5	0	2	3
Northern cardinal	<i>Cardinalis cardinalis</i>	1	0	0	1
Song sparrow	<i>Melospiza melodia</i>	6	3	0	3
Red-winged blackbird	<i>Agelaius phoeniceus</i>	21	12	4	5
Baltimore oriole	<i>Icterus galbula</i>	1	0	0	1
Bobolink	<i>Dilichonyx oryzivorus</i>	3	3	0	0
House finch	<i>Carpodacus mexicanus</i>	1	0	0	1
American goldfinch	<i>Carduelis tristis</i>	1	0	0	1
Total Abundance		90	40	26	25

While the main conservation objective of Lawton farm is maintaining grassland habitat for Bobolink and Eastern Meadowlark, the property also provides valuable habitat for shrubland birds. Maintaining shrubland habitat in Rhode Island is important because the extent of shrubland habitat in Rhode Island will continue to decrease without more active forest management (Buffum et al. 2011). Eleven of the bird species recorded on the property were included in a recent list prepared by Scholssberg and King (2007) of 30 shrubland birds in Southern New England that would benefit from the creation of new shrubland habitat (Table 3).

Table 3. Shrubland bird species by habitat type observed during 10 minute counts at three sites within Lawton Farm Recreation Area, Scituate, Rhode Island, May 31 and June 21, 2012.

	Habitat in Lawton Farm		
	Shrubland	Meadow	Forest
American Goldfinch	x		
Blue-winged Warbler	x		
Cedar Waxwing	x		
Common Yellowthroat		x	
Eastern Towhee	x		x
Gray Catbird	x		
Magnolia Warbler			x
Northern Cardinal			x
Song Sparrow	x		x
Willow Flycatcher	x		
Yellow Warbler	x		

Note: Shrubland birds are defined by Scholssberg and King (2007) as species that would benefit from the creation of new shrubland habitat in New England.

Sites 2 and 3 had similar abundances of birds, but Site 1 was utilized by considerably more birds during the surveys. This may be in part attributed to the presence of a small wetland within the point count radius: previous studies have demonstrated enhanced bird use of wetland habitats, particularly in areas that are dominated by other habitat types (McKinney and Paton 2009).

Of the 29 species recorded during the surveys, 10 species were observed at two of the three sites, and 19 species were only observed at one site. This suggests that Lawton Farm provides a number of unique habitats utilized by a variety of bird species, and thus contributes to maintaining regional bird diversity. From a conservation point of view this is extremely valuable, as this area along with nearby conserved and protected land is helping to maintain and enhance local and regional biodiversity.

4. Conclusions

Our impression is that the Scituate Conservation Commission is doing an excellent job of providing high quality habitat for a range of bird species. The recent initiative to remove hedgerows to improve grassland habitat for Bobolink and other grassland species should have a positive impact, although our study could not document this. However, we could document the positive impact of other recent activities. We observed that several shrubland bird species were utilizing new habitat created by (1) removing invasive species and (2) delaying the mowing of Field 4, which has allowed the development of old field conditions with some shrubby growth.

We recommend that the Conservation Commission continue activities to enhance shrubland habitat as well as grassland habitat. This could include more forest management activities in the southwest portion of the property bordering field 3. For example, clearing a wider strip of upland forest bordering the field and allowing it to develop into shrubland habitat would be beneficial for a number of species. The Nature Conservancy has recently used this approach adjacent to a large meadow in the Carter Preserve in Charlestown, RI with very positive results. Another option to enhance shrubland habitat would be introducing a rotational mowing system in Field 4 so that part of the field always contains 2-3 year old shrubby growth.

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