

Markael Luterra  
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## **Breeding bird census of the Carleton College prairie restorations Summer 2005**

### **METHODS**

Eleven 100-meter-radius sites were selected to cover as much of the Carleton Arboretum prairie as possible (Fig. 1). Sampling consisted of listening and watching for a three-minute period and recording numbers of all species observed. Not counted were non-passerines, woodland species, wetland species (esp. *Agelaius phoeniceus*), and species nesting in nest boxes (*Tachycineta bicolor* and *Sialia sialis*). Sampling was conducted every Tuesday morning between 6 and 8 a.m. (later between 7 and 9 a.m.) from June 21 until August 23.

### **RESULTS**

Five grassland species and six edge/savanna species were detected with some regularity throughout the breeding season. These are listed in Table 1 along with preferred habitat, maximum one-day detection, theoretical maximum detection (sum of maximum one-day detection for all sites; assumes no movement), and frequency (number of sites with detections).

Species detections by site are shown in Figure 1. Maximum site detections for each species were used to create these graphs. Note the relative differences in abundance of prairie species and edge species at different distances from forest edges.

Table 1. Bird species detected in Carleton Arboretum prairie. Maximum one-day detection is a minimum estimate. Theoretical maximum detection is a higher estimate summing maximum daily counts for each site. Even this total may be an underestimate, as females of many species do not sing and therefore are not detected. Frequency is the number of sites (out of 11) at which a species was detected.

\*Preferred habitats taken from:

Sibley, David A. *The Sibley Guide to Birds*. Knopf, New York: 2000

Species	Preferred Habitat*	Maximum One-day Detection	Theoretical Maximum Detection	Frequency
Henslow's Sparrow <i>Ammodramus henslowii</i>	Patchy, weedy fields	3	4	2
Grasshopper Sparrow <i>Ammodramus savannarum</i>	Tall, dense grass	13	16	9
Clay-colored Sparrow <i>Spizella pallida</i>	Brushy areas away from trees	4	7	5
Sedge Wren <i>Cistothorus platensis</i>	Damp, tall-grass meadows	23	35	10
Dickcissel <i>Spiza americana</i>	Grassy, weedy fields & brush	4	5	3
Song Sparrow <i>Melospiza melodia</i>	Low, open, weedy/brushy areas	19	27	11
Common Yellowthroat <i>Geothlypis trichas</i>	Marshy/brushy areas near water	14	21	11
Indigo Bunting <i>Passerina cyanea</i>	Open areas near brush/trees	5	8	8
House Wren <i>Troglodytes aedon</i>	Hedgerows, brushy woods	4	4	3
Eastern Kingbird <i>Tyrannus tyrannus</i>	Open areas with scattered trees	5	5	4
American Goldfinch <i>Carduelis tristis</i>	Weedy areas, woods	9	20	11
<b>Totals</b>		103	152	

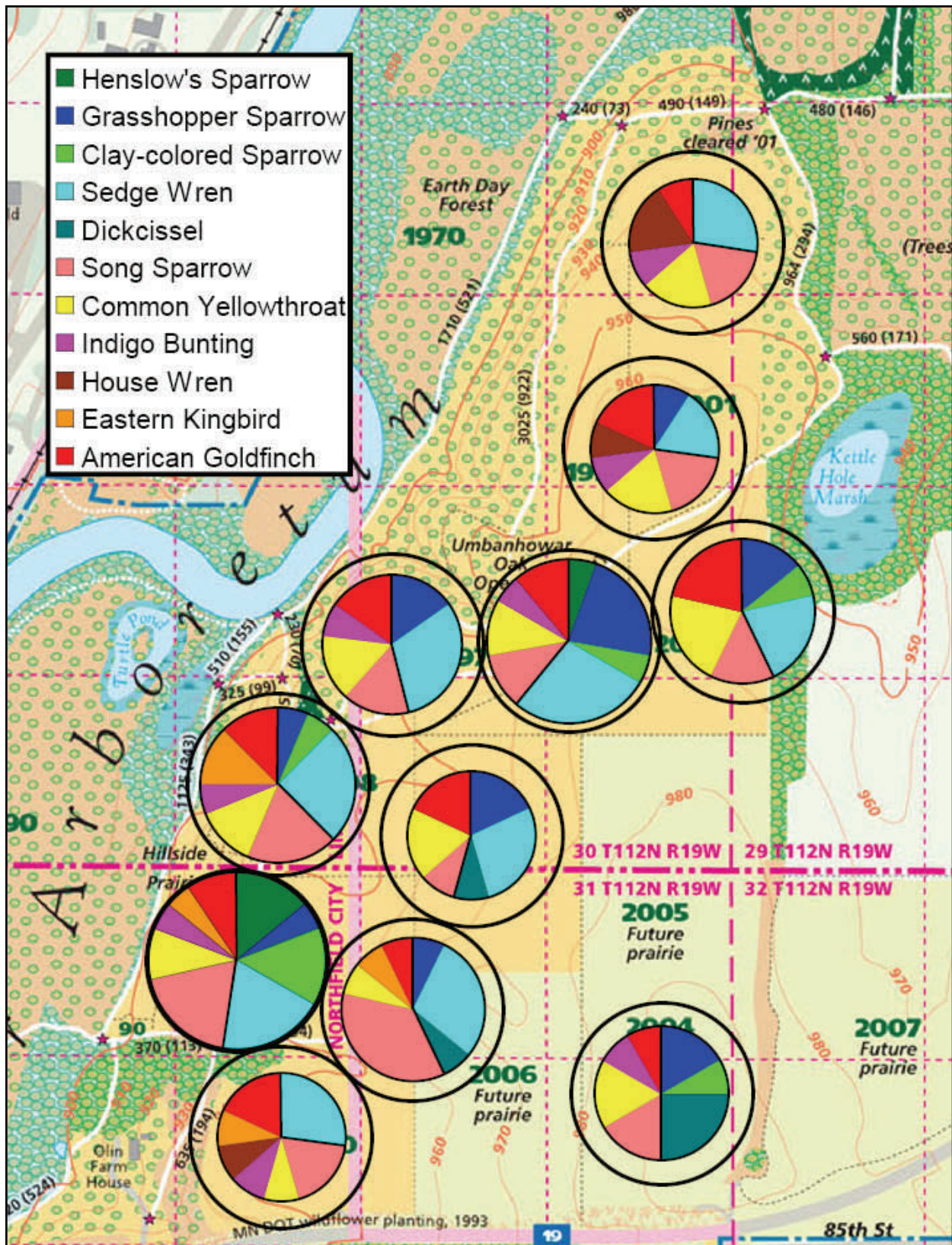


Figure 1. Count sites and bird detections by site. Solid lines divide prairie species from edge species. Pie sizes are proportional to total counts (i.e. one bird occupies the same area in every pie). The largest pie represents 21 birds; the smallest represents 11 birds.

## **Species Accounts**

### **Henslow's Sparrow (*Ammodramus henslowii*)**

This rare sparrow was first detected in early June by Gene Bauer singing at three locations. These locations were confirmed by Mark McKone and later by Mark Luterra, but two of these birds stopped singing around June 20. Only one bird was heard singing in the 2002 prairie on the first survey (6/21). This bird continued to sing until the end of June, after which no Henslow's sparrows were detected for several weeks. A single singing Henslow's was detected July 18-19 in the 2002 restoration, but this bird was never detected again. A single agitated adult was detected on the August 2 survey on Hillside Prairie. The following week (8/10), three probable juvenile Henslow's sparrows were detected in the same location, and an adult was located farther down the hill (but was not recorded during a survey period). Assuming that the juvenile identification was correct, it is likely that the Arb supported seven *A. henslowii* for some duration of time (two singing males, one pair, three juveniles). It is also possible that one or both of the singing males in the 2002 had a mate and reared young, but this cannot be confirmed by observation.

### **Grasshopper Sparrow (*Ammodramus savannarum*)**

This species was detected across most of the Carleton prairie, but never near woodland edges. Detections fell off steadily from a peak in late June and reached zero on August 10, after which not a single bird was detected, even outside of survey periods (Fig. 2). It would appear that this species is close to maximum density in its preferred open-prairie habitat, as birds could be heard from most sites. This species was notably absent from areas burned this year, suggesting that it prefers dense thatch for nesting cover.

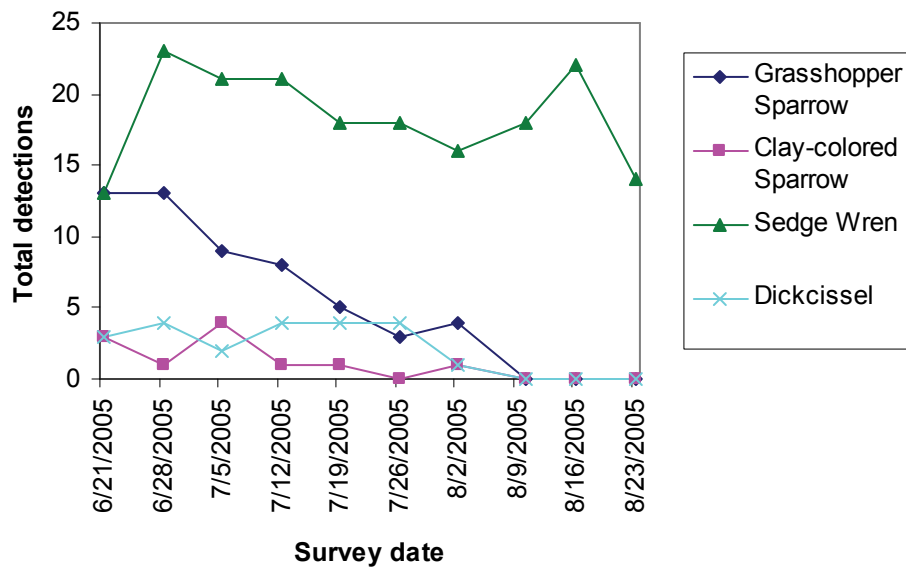


Figure 2. Daily detections of prairie bird species. Henslow's Sparrow not shown due to few detections.

### **Sedge Wren (*Cistothorus platensis*)**

By far the most common bird on the Carleton prairie, this species was detected at every site except the 2004 restoration, an area of very tall, dense weeds. This species was detected closer to woodland edges than other prairie species and even at low densities on sites burned this year. It appears that this species is very close to its maximum breeding density on appropriate habitat. Detections of this species remained relatively constant through late summer, with a second peak in late August likely due to juvenile birds (Fig. 2). Most birds of this species stopped singing around the beginning of August, but distinctive and frequent chip notes allowed for continued detections.

### **Clay-colored Sparrow (*Spizella pallida*)**

This species was never detected in large numbers, although numerous birds were heard singing in late May and early June before the start of the survey. It seems that this species does not sing often in midsummer, although open prairie may also not be ideal habitat for this bird.

### Dickcissel (*Spiza americana*)

Detection of this species was a bit of a surprise, as it had not previously been recorded as breeding in the Arboretum. A total of four singing males were observed, with three birds in the tall, dense, *Conyza canadensis*-dominated 2004 restoration and one bird in the 2000 restoration or adjacent roadsides. Females were observed on several occasions, and a probable juvenile (with short tail feathers) was observed in the 2004 restoration outside the survey period. A total population size of 10 or more (including juveniles) seems reasonable.

### Song Sparrow (*Melospiza melodia*)

This species was nearly ubiquitous, singing from trees on the edges of prairie or from the treeline near the Marc von Trapp memorial. A few birds were regularly observed away from trees, in the 2004 restoration and near the cattle gate in the 1996 restoration. Detections, primarily by song, remained constant through early August before dropping off (Fig. 3).

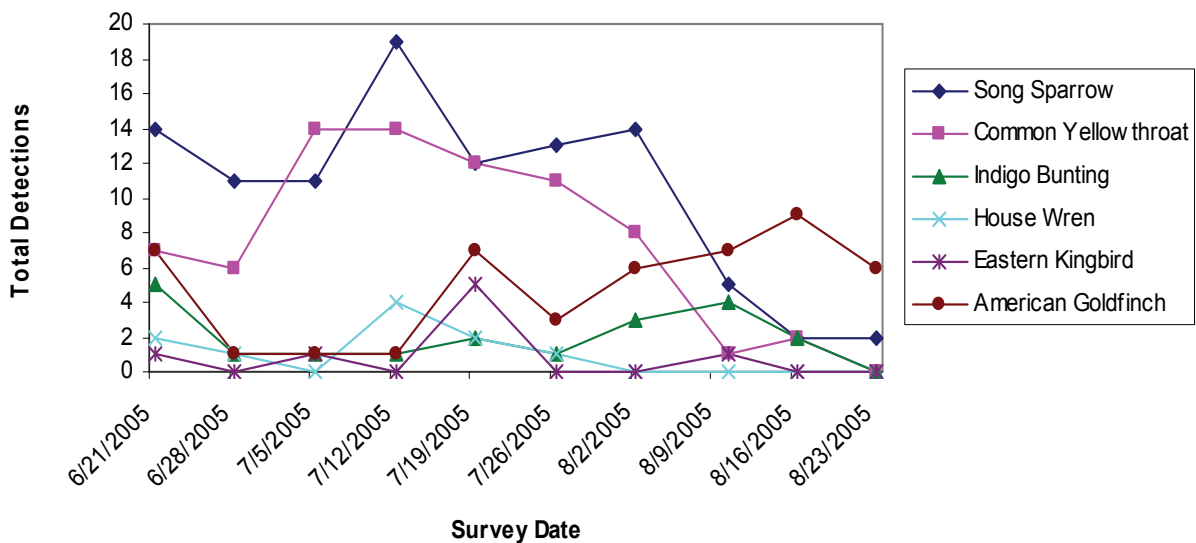


Figure 3. Daily detections of edge/savanna bird species

### **Common Yellowthroat (*Geothlypis trichas*)**

This species was found primarily along prairie drainages containing tall weeds and along woodland edges. A single bird was also present in the 1995 restoration. Detection of this species peaked in early July before gradually decreasing to zero in early August (Fig. 3).

### **Indigo Bunting (*Passerina cyanea*)**

This species was always detected as single singing males in treetops along prairie edges. The two-peaked detection pattern can perhaps be explained by decreased singing during breeding and nest-tending (Fig. 3).

### **House Wren (*Troglodytes aedon*)**

This species was only detected singing at a few sites along woodland edges, with peak numbers in mid July (Fig. 3)

### **Eastern Kingbird (*Tyrannus tyrannus*)**

Numbers of this species are almost certainly underestimated, as it is generally quiet when not in flight. All birds of this species were detected along the west woodland border ranging out to the Marc von Trapp memorial, with no detections near Kettle Hole Marsh or the abandoned dump site.

### **American Goldfinch (*Carduelis tristis*)**

Numbers of this species may actually be overestimated, as nearly all records are fly-overs. The same bird could therefore have been counted at multiple sites. This bird was frequently observed in trees or in flight, only occasionally in the prairie. The mid-August detection peak is consistent with the late breeding season of this species (Fig. 3).

### **Other Observations of Interest**

- A singing male bobolink (*Dolichonyx orizyvorus*) was observed in the 1996 restoration on June 13. A pair of bobolinks was observed in the 2004 restoration on August 2, though it seems unlikely (based on a lack of previous observations) that this pair bred in the Arboretum
- An aggressive ruby-throated hummingbird (*Archilochus colubris*) had a territory near the Marc von Trapp memorial. This bird was observed on several occasions, in one instance chasing a song sparrow until the larger bird was forced to take cover. This species was also observed feeding on *Baptisia alba* flowers in the 1995 restoration in June.
- Two cedar waxwings (*Bombycilla cedrorum*) were observed near the von Trapp memorial on July 12.
- A pair of pileated woodpeckers (*Dryocopus pileatus*) was observed in the large oak on the 2001 savanna on August 16.