

THE TABLELANDS AT UIHLEIN FARM

Grassland Bird Conservation and
Recommendations

Prepared for the Uihlein Foundation by the Paul
Smith's College
Adirondack Watershed Institute
2023



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Grassland Bird Conservation and Recommendations 2023 Report to the Uihlein Foundation

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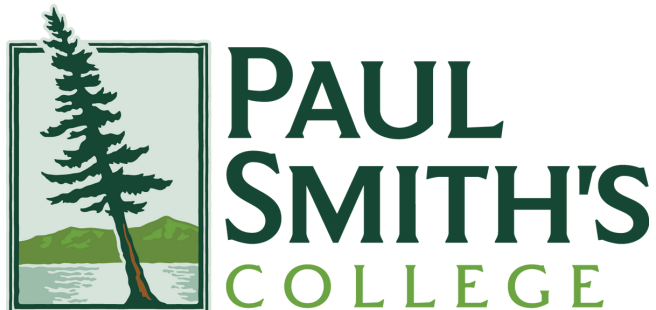
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Recommended Citation

Glennon, M., H. Howe, and R. Curran. 2023. The Tablelands at Uihlein Farm: Grassland Bird Conservation and Recommendations. Report to the Uihlein Foundation. Paul Smith's College Adirondack Watershed Institute. Report # 2023-2.

Acknowledgements

We appreciate the input of local and regional experts with whom we have continued to correspond with regard to questions about grassland and hay management, ecological restoration, fire as a management tool, and potential visions and future uses of Uihlein Farm. We are also indebted to Ellen Jones who visits this site as well as Heaven Hill and provides valuable bird observation data. We thank Northern New York Audubon for their support of this project over several years, and this year we appreciate financial support for the purchase of field equipment that enhanced our ability to document species at Uihlein Farm. As always, we thank Larry Master for permission to use his wonderful bird photos. We thank Jim McKenna for facilitating our time on the site and responding quickly to all of our questions and requests. We deeply appreciate the support of the Henry Uihlein II & Mildred A. Uihlein Foundation, the willingness of the Foundation to consider and undertake management actions that help conserve grassland birds, and the opportunity to again partner with you on this project.



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Introduction

Summer of 2023 marked the 5th year of collaboration between the Uihlein Foundation and the Paul Smith's College Adirondack Watershed Institute to examine how grassland and other bird species respond to management practices in hay fields on Heaven Hill and Uihlein Farm. The open characteristics of Uihlein Farm offer habitat for grassland birds, which are among the most imperiled on the continent, primarily as a result of long-term habitat loss and fragmentation combined with intensifying agricultural production on remaining farmlands. Last cultivated more than ten years prior, because of the habitat size (approximately 230 acres open field), the former potato fields provide an important opportunity for future grassland bird conservation as well as a variety of education and interpretation activities. Our efforts are focused primarily on grassland specialists including the bobolink (*Dolichonyx oryzivorus*) and savannah sparrow (*Passerculus sandwichensis*). These species depend on grassland habitat for successful breeding and are often found in human-maintained hay



meadows and pastures in the Northeast US in part due to the dearth of natural grassland habitat. Uihlein Farm is in the process of a strategic planning effort for this parcel, which is likely to include a component of habitat management and enhancement of the site for grassland birds. Our work in the past few years has aimed to document wildlife and ecological characteristics at Uihlein Farm to provide a basis for future restoration and management of those lands for grassland birds and other species. This report documents our activities at Uihlein Farm during the 2023 field season; activities at Heaven Hill are described in a companion report.



Methods and Findings

Informal Bird Survey via Survey123

As in previous season, we made visits to the site throughout the summer of 2023 from late May to August and conducted walking surveys during each visit and noted all species of birds we detected on site each time. We again made use of a Survey123 smartphone application and our BOBO SAVS survey, described in our 2021 report for Heaven Hill. This survey is programmed to allow for data collection at both locations and was shared with a small handful of additional potential observers, though the majority of observations were made by AWI staff.

During 22 total visits to Uihlein Farm in 2023, we made 165 detections of 39 bird species, primarily passerines. Most bird detections were by ear, and therefore most were songbirds though birds that do not vocalize as regularly were also often detected on site. The most common species by numbers of detections were savannah sparrow and American crow, followed by tree swallow, blue jay, Eastern bluebird, and red-eyed vireo (Table 1). Savannah sparrow remains very widespread and abundant throughout all areas of Uihlein Farm. Bobolink, by contrast, remains generally absent from the site but was detected twice in 2023. Though these are most likely not breeding individuals, it is promising that the species appears to be making continued exploration of Uihlein Farm and perhaps indicative that additional birds will do so in the future.

Point Counts

A series of 8 point count locations were established throughout the open field

area at Uihlein Farm in 2022, spaced a minimum of 300m apart, and these were surveyed again on 2 separate occasions in 2023 (Figure 1). We believe these locations can serve as permanent sample sites for bird counts in subsequent seasons. We conducted 10-minute counts at all 8 locations on 9 June and again on 20 June. Point counts are a standard bird survey method in which all birds detected by sight or sound are recorded over a fixed period of time by one or more observers (Ralph et al. 1993). We tested and later abandoned this method at Heaven Hill because the size limitation of the field meant that the same birds were being detected at all points, but the fields at Uihlein Farm are large enough to accommodate this set of points and surveying them 2-3 times per season is a reasonable and achievable means of establishing long-term avian monitoring at the site. Point count detections are incorporated into Table 1, but as data accumulate in the future, these can be separately analyzed with occupancy analysis to detect trends (MacKenzie et al. 2006). As in the prior season, point counts yielded species that were not detected on informal surveys including the bobolinks, as well as common yellowthroat, purple finch, and vesper sparrow (Table 1). Vesper sparrow is another uncommon grassland specialist and of high interest. This detection was via Merlin, a songbird identification smartphone application now used widely in the birding community. We are not 100% certain of its accuracy but the species has also been detected on other visits to the site and we have increasing confidence that it is at least making visits there.

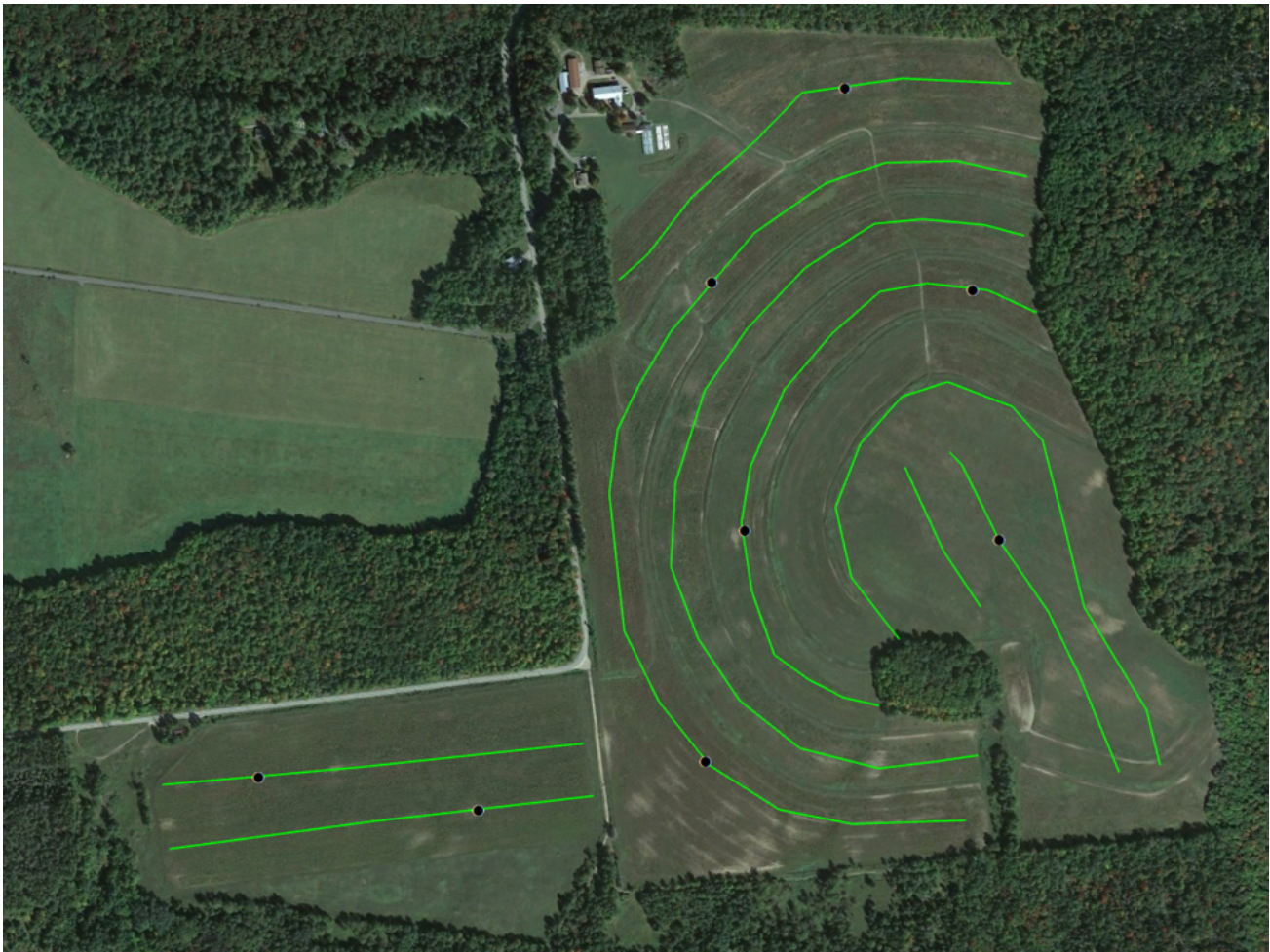


Figure 1. Locations of point counts (black dots) established at Uihlein Farm.

Automated Recording Units

Outside funding from Northern New York Audubon helped us to improve our equipment this summer and we took advantage of this to augment our point counts with automated recordings in an attempt to capture a broader sample of birds that may be using Uihlein Farm. Automated Recording Units (ARUs) are units that can be deployed in any habitat type and programmed to make recordings of the acoustic environment at pre-selected times of day/year. We used Cornell Lab of Ornithology Swift units and placed 2 of them on site, programmed to make 2 morning (530 and 630am)

recordings of 15 minutes duration. These units were rotated around Uihlein Farm for the duration of the period of high song activity and ran for 3 different 6-day sample periods in the open field, collecting data from 27 May - 1 June, 4 - 9 June, and 16 - 21 June. Subsequently, we conducted a 4th survey in the early successional forest habitat to the south of the open field from 29 June - 3 July. We reviewed all recordings and extracted information for all species detected. We made a total of 630 detections of 37 bird species on the recordings. The ARUs also detected noise from the road as well as vocalizations from non-avian taxa including crickets and frogs.

Table 1. Bird species detected at Uihlein Farm, 2020 - 2023. Data incorporate detections from point counts, automated recording units, trail cameras, incidental observations on site, and available eBird information. They should be considered detections rather than numbers of individuals and are not directly comparable from year to year.

Common Name	AOU**	2020	2021	2022	2023
Alder flycatcher	ALFL	0	0	0	1
American crow	AMCR	8	16	15	18
American goldfinch	AMGO	3	6	6	5
American kestrel	AMKE	3	0	2	3
American robin	AMRO	1	6	8	8
Barn swallow	BASW	0	0	1	1
Belted kingfisher	BEKI	0	0	1	0
Black-and-white warbler	BAWW	1	0	0	0
Blackburnian warbler	BLWA	0	0	1	0
Black-capped chickadee	BCCH	2	6	8	8
Black-throated blue warbler *	BTBW	1	0	1	1
Black-throated green warbler	BTNW	2	0	1	0
Blue jay	BLJA	7	8	10	12
Blue-headed vireo	BHVI	6	5	8	7
Bobolink *	BOBO	5	2	1	2
Canada goose	CAGO	3	0	0	0
Canada jay *	CAJA	0	0	0	1
Cedar waxwing	CEWA	4	5	6	3
Chestnut-sided warbler	CSWA	6	3	9	3
Chipping sparrow	CHSP	1	6	2	5
Common raven	CORA	0	0	1	0
Common yellowthroat	COYE	1	1	1	0
Dark-eyed junco	DEJU	1	0	0	0
Eastern bluebird	EABL	6	3	6	11
Eastern kingbird	EAKI	1	0	1	0
Eastern meadowlark *	EAME	0	0	1	0
Eastern phoebe	EAPH	2	0	1	2
Field sparrow	FISP	0	0	1	0
Golden-crowned kinglet	GCKI	0	0	0	1
Great blue heron	GBHE	0	0	1	3
Hairy woodpecker	HAWO	0	0	1	1
Hermit thrush	HETH	6	2	10	7

Table 1. continued

Common Name	AOU**	2020	2021	2022	2023
Horned lark	HOLA	0	0	0	1
House wren	HOWR	0	0	0	1
Indigo bunting	INBU	5	8	10	6
Least flycatcher	LEFL	1	0	1	0
Merlin	MERL	0	0	0	2
Mourning warbler	MOWA	2	0	0	1
Nashville warbler	NAWA	1	1	1	1
Northern flicker	NOFL	4	0	7	6
Northern harrier *	NOHA	6	2	4	1
Northern parula	NOPA	2	0	1	1
Osprey	OSPR	0	0	0	1
Ovenbird	OVEN	4	9	11	9
Purple finch	PUFI	0	0	1	0
Red-breasted nuthatch	RBNU	2	2	2	1
Red-eyed vireo	REVI	7	9	10	11
Ruby-crowned kinglet	RCKI	0	0	0	1
Ruby-throated hummingbird	RTHU	0	0	0	1
Savannah sparrow	SAVS	9	16	17	19
Short-eared owl *,***	SEOW	0	0	1	0
Song sparrow	SOSP	9	9	12	9
Tree swallow	TRSW	1	0	7	12
Turkey vulture	TUVU	1	0	1	2
Vesper sparrow *,***	VESP	0	0	1	2
White-throated sparrow	WTSP	0	0	0	1
Wild turkey	WITU	3	4	7	1
Winter wren	WIWR	0	0	0	1
Yellow warbler	YEWA	0	0	0	1
Yellow-bellied sapsucker	YBSA	0	0	1	1
Yellow-rumped warbler	YRWA	2	0	3	1

* Considered Species of Greatest Conservation Need in New York State by NYS Department of Environmental Conservation. ** American Ornithological Union 4 letter codes. *** Not confirmed.

Three species were new to our records at Uihlein Farm and detected on the Swift units but not in our point counts or incidental observations. These were alder flycatcher, golden-crowned kinglet, and Canada jay (Table 1). Golden-crowned kinglet and Canada jay are both conifer associated species and were detected in the 4th ARU survey which took place in the shrub/forest mosaic area to the south of the potato field. This area was targeted for survey because of its early successional nature and structural contrast to the open fields. Canada jay is of particular interest because it is a boreal species, widespread to the north in the Canadian boreal but limited in its New York distribution and one of several species at high risk from warming temperatures (Glennon et al. 2019a,b). The Canada jay was detected on both ARU surveys and on trail camera survey of this area.

Trail Cameras

Building on our initial 2022 efforts to document raptors on site, we again set up pairs of trail cameras on either side of the established nest boxes where we had previously observed evidence of raptor feeding. We rotated these and ran them for 3 separate survey periods in the open fields including 31 July – 10 August, 14 – 21 August, and 22 August – 29 September. As with the Swift units, we then also sampled the forested zone to the south of the potato field with a pair of cameras from 29 September – 10 November to document wildlife use of this area. In this zone, they were placed to capture occurrences of mammals rather than raptors. Trail cameras captured a total of 3,873 images of birds and non-human mammals, 90% of which were

images of kestrels using the tops of the nest boxes for perching, preening, and consuming food items. Other birds detected include American crow, blue jay, Canada jay, Eastern bluebird, Northern harrier, savannah sparrow, and yellow-rumped warbler. The second most common detection was white-tailed deer. No other non-human mammals were detected. We did, however, capture images of hunters on a total of 18 images from the forested zone to the south of the potato field which may be of interest to the Foundation if hunting is not permitted on these lands.

We did not capture images or evidence of short-eared owl on the site in 2023, but the cameras did nevertheless document extensive use by as many as 3 kestrels as well as merlin and Northern harrier (Figure 2). Kestrels eat primarily insects and other invertebrates as well as small rodents but will also take songbirds. We have observed them being mobbed by the tree swallows near the nest boxes during the breeding season. Our cameras were deployed after nest box use had subsided and prey items are easily discernable in these photos. Most are invertebrates and the occasional vole; we have observed no instances of kestrel preying on birds in the field. Kestrels themselves are in decline and suffering from a variety of impacts ranging from habitat loss to pesticide use. Although they may represent a minor predation threat to the bluebirds and swallows using the nest boxes, the benefit of the open field habitat at Uihlein Farm to this species is very high. Timelapses from two of the camera trapping sessions are viewable [here](#) and [here](#).



Figure 2. American kestrel images captured by trail camera at Uihlein Farm, 2023.

Next Boxes

A total of 16 nest boxes were installed at Uihlein Farm in 2021 in the area of highest elevation in the open field. They were utilized immediately upon installation as perches and in 2022 served as nesting substrate, primarily for tree swallow (*Tachycineta bicolor*). These boxes were monitored again in 2023 and we found that 5 of 16 boxes were used, all of them successfully fledging young this season. Four of the 5 were tree swallow and the remaining box was used by Eastern bluebird. Seven boxes were unused, and the remaining 4 were found to have partial nests that were never completed. We documented no nest losses at Uihlein Farm this season and expect bluebird and tree swallow to continue to use them for rearing young. They are also, as described, used heavily by American kestrel at this site for platforms on which to perch and consume food items.

Grassland Test Plots

Based on recommendations from grassland ecologists, we previously recommended testing whether grass species commonly associated with native prairie grassland in New York State could be grown on the disturbed soils of the Uihlein Farm in the approximate 200-acre area which is now open and was used for potato culture. While we planned large grass test plots for early summer 2022, these were not able to be completed, but promising results from smaller plots located near the greenhouse suggested the utility of expanding our experimental approach. We considered the following species, all of which were available from Ernst Bros Seed Co. and are commonly used in site remediation plantings as a

valued wildlife plant cover: (1) *Schizachyrium scoparium*, Fort Indiantown Gap-PA Ecotype (Little Bluestem, Fort Indiantown Gap-PA Ecotype), (2) *Andropogon gerardii*, Albany Pine Bush-NY Ecotype (Big Bluestem, Albany Pine Bush-NY Ecotype), and (3) *Sorghastrum nutans*, 'Southlow'-MI Ecotype (Indiangrass, 'Southlow'-MI Ecotype). These species are also known to grow locally, but are not common, and were not known to occur on Uihlein Farm. Soil tests were undertaken in three areas of the potato fields (described in 2021 report). Based on the pH site requirements for the target species in the test plots, location 3 was chosen for the planting (Figure 3).



Figure 3. Location of 2021 soil tests and grass seed test plots (#3 and Site B).

Based on recommendations from James Girard, an experienced grass horticulturalist in the area from a turf management company, three types of planting treatments were proposed to test efficacies of the methods. These methods were all feasible and aimed at generating results leading to successful establishment of the target grassland species. Treatments were as follows:

1. Stake 3 areas of 50' x 100'
2. Mow all 3 test areas to height of 3"
3. On test area 1, verti-seed Ernst Lake Placid grass mix at .45 lbs/1000 ft²
4. On test area 2, core aerate in 2 directions and verti-seed at .45 lbs/1000 ft²
5. On test area 3, spray Speed Zone selective weed control 7 days prior to seeding and before mowing; verti-seed at .45 lbs/1000 ft²

The Ernst Seed Company Lake Placid grass mix consists of the following components: (1) 25% Little Bluestem (*Schizachyrium scoparium*, Fort Indiantown Gap-Pa Ecotype), (2) 63% Indian grass, NY4 (*Sorghastrum nutans*, NY 4 Ecotype), (3) 17% Big Bluestem Niagara (*Andropogon gerardii*, Niagara). Site preparation was initiated in May 2023, and the Speed Zone® herbicide was applied to the uppermost test plot area (most southerly 50' by 100' plot) on 17 May. Seeding took place on 7 June in the area of soil test 3. In addition, a second set of 3 plots (noted as "Site B" in Figure 3) was undertaken in an area near the greenhouse that was chosen because it had a sparse cover of any vegetation.

Casual observations in early September of 2023 suggest that there has been some establishment of grass vegetation in the test plots near soil test area 3. It is too early to determine what species of grass are now established on the plots, however. The Site B plots appear to have failed in establishing grasses. In following growing seasons, more intensive observations should be undertaken to determine the success of the plantings. It may be too early to determine species of the established grasses in 2024 because of the slow development of fruits necessary for identification of these perennial species and the marginal site conditions, but subsequent observation will provide information on which to base future management planning related to establishment of native grasses.



Conclusions

Summer 2023 fieldwork resulted in documentation of the broader bird community present at Uihlein Farm and further cemented our belief that this site has great potential for a variety of grassland species. Though we have not documented bobolink breeding on the site, we believe that they continue to make explorations of the fields and will eventually make nesting attempts there. We are also encouraged by detections of species such as vesper sparrow and horned lark, additional grassland specialists and indicators of the value of the parcel. Our camera work revealed that as many as 3 kestrels are using Uihlein Farm, with one pair sighted regularly and making use of the nest boxes as feeding platforms. Though we did not detect the elusive short-eared owl that we sought last season, we continue to believe that Uihlein Farm also provides suitable habitat for this species, and nearby sightings suggest it may be most likely to appear in the fall or winter months.

Additionally, test plots have helped to establish the initial information needed to determine the feasibility and management methods that may be required to establish beneficial grass species associated with native prairie at this site.

We have made several recommendations in prior reports suggesting activities for consideration with regard to long-term ecological monitoring, bird-specific habitat management and interpretation, recommended grass species, experiential restoration and climate refugia, fire as a management tool, potential model sites, Uihlein Farm as a demonstration site, collaboration, grants and other considerations. These remain long-term and broad and we urge their continued consideration as Uihlein Farm continues with strategic planning for the site. We appreciate the opportunity to work with the Foundation on this unique and beautiful property and welcome future discussions regarding wildlife and habitat management.



Literature Cited

Cornell Lab of Ornithology. 2023. Short-eared owl: life history. All About Birds: https://www.allaboutbirds.org/guide/Short-eared_Owl/lifehistory#conservation

MacKenzie, D.I., J.D. Nichols, J.A. Royle, K.H. Pollock, L.L. Bailey, and J.E. Hines. 2006. Occupancy modeling and estimation: inferring patterns and dynamics of species occurrence. Burlington, MA: Elsevier.

New York State Department of Environmental Conservation. 2023. List of Endangered, Threatened, and Special Concern Fish and Wildlife Species of New York State. <https://www.dec.ny.gov/animals/7494.html>

Ralph, J.C., G.R. Geupel, P. Pyle, T.E. Martin, and D.F. DeSante. 1993. Handbook of field methods for monitoring landbirds. General Technical Report PSW-GTR-144. Albany, CA: Pacific Southwest Research Station, U.S. Department of Agriculture Forest Service, 41pp.