

# 2016 Savaloja Grant Report

## Minnesota Ornithologists Union



### Preparation of a Natural Resource Management Plan for

### Hampton Woods

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## **Introduction**

The 400-acre Hampton Woods in central Dakota County is an oasis of biologically rich forested land in a predominately agricultural landscape. Historically, Hampton Woods served as a vital source of timber and firewood for the early settlers of Dakota County as they brought the surrounding prairie under cultivation. However, the forested area remained largely intact throughout the settlement period. The mesic oak forest of Hampton Woods was of such significant ecological quality that it was recommended for inclusion in the state Scientific and Natural Area Program in 1994. The evaluation at that time stated that the woods was recovering well from grazing and cutting, with a good diversity of native species in the ground layer and good representation of spring ephemerals. Several species of orchids are among the diverse wildflowers present.

This isolated forest, in an agriculture-dominated landscape, provides critical habitat for both migrants and breeding birds, many of which are neotropical migrants, in an area that is sorely lacking in high quality forest habitat. A 2013 breeding bird survey of the site revealed eight species designated by the MN Department of Natural Resources (DNR) as “species of greatest conservation need,” due to their declining populations. However, the site is threatened by non-native, invasive species - primarily buckthorn. If left unmanaged, this and other non-natives will take over, displacing native vegetation and the birds and other wildlife that depend on them. Numerous studies have shown that buckthorn is detrimental to native birds; buckthorn outcompetes native berry-producing shrubs, and buckthorn berries provide inferior nutrition compared to native berries. Moreover, nests built in buckthorn shrubs experience higher rates of predation.

FMR, in partnership with Dakota County and the Minnesota Department of Natural Resources, have worked to acquire and permanently protect and manage the forest at this site. In 2016, nearly half of the Hampton Woods was purchased and will soon be transferred to the DNR, who will designate it as a Wildlife Management Area. FMR will continue to partner with the DNR to conduct restoration and management activities once it is in state ownership. The property will be open to the public to enjoy.

FMR was awarded funding from the Minnesota Ornithological Union to help fund development of a Natural Resource Management Plan (NRMP) for the site. An NRMP is the first step toward conducting ecological restoration, which will protect and improve the habitat for the avian community. FMR has now acquired state funds to begin the habitat restoration and enhancement activities, but an NRMP is required in order to use the funds. Funding for the plan was also provided by: Hastings Environmental Protectors, Pheasants Forever, Southern Dakota County Sportsmen's Club, Turkey Federation, and Winter Wheat Foundation.

## **Objectives**

The objectives for this project were to assess the ecological condition of this woodland property and to survey the breeding bird population.

## **Methods**

### *Natural Resource Management Plan*

A natural resource management plan was completed for Hampton Woods in 2016, including a breeding bird survey. The management plan evaluated historical and existing site conditions, taking into account the site geology, soils, pre-European settlement vegetation, historical land uses, DNR records, and other data sources to gain a better understanding of the history of the site and the potential for future restoration. Field assessments were conducted throughout 2016, consisting of walk-through evaluations to record vegetative variation throughout the season. Quantitative vegetation surveys were also completed at three 10x10 m plots, using the standard releve method.

### *Breeding Bird Survey*

Two breeding bird surveys were completed on June 2, and June 22, 2016. The point-count method was used, consisting of 5 minute plus 3 minute surveys. All birds seen or heard within 50m were recorded for each time period. Separate records were also kept for birds detected beyond 50m. Conducting surveys in this way ensures that the data collected will be compatible with other studies that use a 5-minute period or an 8-minute period. For the purposes of our study, all birds recorded within 8 minutes, within or beyond 50m are included in the totals, as well as birds detected between points, if it was a new species. Points were located at least 250 m apart. Surveys were completed between dawn and 09:00. A total of 7 points were surveyed, with 5 points surveyed each date. For points surveyed more than once, the maximum number of the two surveys was used.

## **Results**

### *Natural Resource Management Plan*

The natural resource management plan revealed a site dominated by sandy loam soils, with fairly shallow depth to bedrock consisting of St Peter Sandstone. The topography was fairly level over most of the site, with a 60-ft high terrace on the southwest side. Terrace slopes were moderately sloped, with aspects mostly east to north. The plant community was mesic oak forest (specific DNR classification is MHs38c: Red Oak-Sugar Maple-Basswood-(Bitternut Hickory) Forest), with variations in composition due to varying slopes, aspects, and soils.

The plant community was diverse overall, but degraded at the north and east sides, due to dominance of common buckthorn. The buckthorn was mostly fairly dense ½ to 1-inch diameter stems, not yet fruit-producing. Widely scattered large buckthorn were about 4-inch diameter with occasional larger individuals. The ground layer in the buckthorn dominated areas was depauperate, but still included natives such as wild geranium, avens, and white snakeroot, as well as less common species such as shin-leaf and even showy orchis. It seems possible that the native herbaceous plants could resurge if the buckthorn is removed.

Many parts of the site were largely devoid of buckthorn. Even where logging had resulted in an open canopy the native trees and shrubs had revegetated. The best ground cover, both in terms of diversity and abundance, was found on the terrace. Coverage was mostly 100%. Though dominated by Virginia waterleaf, spring ephemerals and other species were common, including

Dutchman's breeches, cut-leaf toothwort, blue cohosh, rattlesnake fern, large-flowered bellwort and wild geranium. There was also a good abundance of yellow orchid and puttyroot orchid.

Besides buckthorn, primary threats to the site are garlic mustard and earthworms. The garlic mustard is low in abundance in scattered patches, but that is sure to increase rapidly unless it is managed. It is still at a very manageable state. If left unmanaged it will proliferate and can overtake the ground layer vegetation, especially in the more degraded areas that have sparse cover. Areas with dense native cover may persist, but where garlic mustard establishes the natives are not likely to establish.

Earthworms were rated at stage 5 invasion (IERAT scale) over much of the site, meaning no forest floor humus or fragmented leaves present, abundant mineral soil present, earthworm castings abundant (>50% of forest floor/mineral soil interface covered), and middens abundant (>9 in a 5-m radius). There tended to be lower earthworm abundance on the terrace. Studies have shown that earthworm abundance is correlated with low nest success of ground-nesting birds, such as ovenbirds, which are known to occur at the site in fairly good abundance. While controlling earthworms is not feasible, conducting more detailed surveys of the earthworms and monitoring the bird population may be helpful to assess population trends. Replanting into earthworm-infested areas is a potential means for re-establishing native ground layer species.

#### *Breeding Bird Survey*

A total of 36 species were recorded during the breeding bird survey for both 2013 and 2016. Most of the species we would expect to find in a forested habitat were present. Nocturnal species such as owls were naturally missing, and a few others that might have been expected but were not observed were veery, yellow-throated vireo, and eastern phoebe. Wild turkey was not recorded in the survey but signs of them were observed. Also not recorded in the survey was red-shouldered hawk, though they were detected in a previous site visit.

Of significance at this site was the presence of 8 species of greatest conservation need (blue-winged warbler, eastern wood pewee, least flycatcher, ovenbird, rose-breasted grosbeak, wood thrush, yellow-bellied sapsucker, and red-shouldered hawk). Although nothing is known about nest success, the presence of these species is a positive sign that the site provides important habitat for them. In both 2013 and 2016, one or two singing mourning warblers were detected. Although not an unusual species, they are uncommon in the Twin Cities during the breeding season. Also of interest was the high number of ovenbirds detected, especially in 2013. Many of those records were to the west of the 2016 survey area, but are another indication of the potential importance of this site. Recent studies by Mark Davis at Macalester College have indicated that nest predation of ovenbirds is very high at relatively small forested patches such as this one. Further studies to evaluate ovenbird nest success at this site would be valuable.

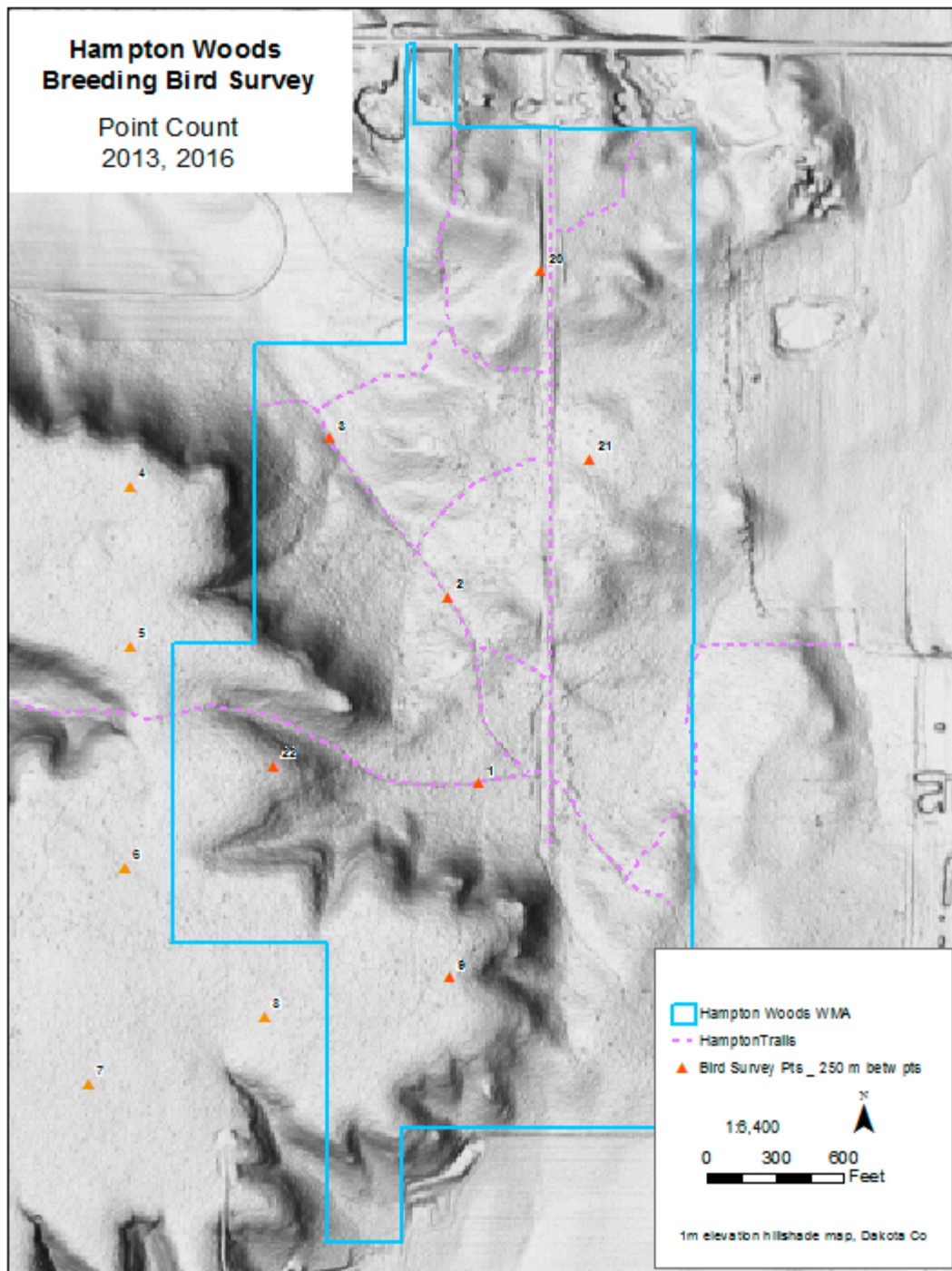
The most abundant species in 2016 were black-capped chickadee, red-eyed vireo, blue jay, and great-crested flycatcher. Ovenbird, house wren, cardinal and blue-gray gnatcatcher were also abundant in 2013. Species such as brown-headed cowbird and indigo bunting were detected along the forested edges and openings. Mourning warblers are also common in early successional forests following logging or fire. It is hoped that cowbirds will decline as the canopy closes and they will be pushed more to the edges.

**Conclusion**

It seems clear that Hampton Woods is an important natural area in the Twin Cities, retaining a good plant community composition and structure as well as a very good bird community. There are several ecological threats, primarily invasive species, which threaten the plant community as well as the wildlife. In 2017 FMR will work with the DNR to begin management of the property. We will monitor the vegetation and wildlife and hope to see the diversity retained and improved over time.

We would like to extend our most sincere appreciation to the Minnesota Ornithologists Union for the funding provided, which helped us to accomplish the critical first step of evaluating the site and preparing a management plan.

## Breeding Bird Survey at Hampton Woods. 2013, 2016



Light orange points were outside the 2016 protected property and were only surveyed in 2013. Most of the dark orange points were surveyed point were surveyed in 2013 and 2016.

## Bird Species Recorded at Hampton Woods

Species of Greatest Conservation Need (Minnesota Department of Natural Resources) in red.

### 8 min Point Counts

### Maximum of 2 breeding bird surveys

Scientific name	Common name	2013	2016
		No. birds	No. birds
1 <i>Accipiter cooperii</i>	Cooper's hawk	1	2
2 <i>Archilochus colubris</i>	Ruby-throated Hummingbird	0	1
3 <i>Sphyrapicus varius</i>	<b>Yellow-bellied Sapsucker</b>	<b>1</b>	<b>2</b>
4 <i>Picoides pubescens</i>	Downy Woodpecker	2	3
5 <i>Picoides villosus</i>	Hairy woodpecker	2	1
6 <i>Colaptes auratus</i>	Northern Flicker	3	0
7 <i>Dryocopus pileatus</i>	Pileated Woodpecker	0	1
8 <i>Melanerpes carolinus</i>	Red-bellied woodpecker	4	1
9 <i>Contopus virens</i>	<b>Eastern wood pewee</b>	<b>9</b>	<b>4</b>
10 <i>Empidonax minimus</i>	<b>Least Flycatcher</b>	<b>0</b>	<b>1</b>
11 <i>Myiarchus crinitus</i>	Great-crested Flycatcher	11	5
12 <i>Cyanocitta cristata</i>	Blue Jay	6	6
13 <i>Corvus brachyrhynchos</i>	American Crow	2	1
14 <i>Parus atricapillus</i>	Black-capped Chickadee	5	7
15 <i>Sitta carolinensis</i>	White-breasted Nuthatch	2	3
16 <i>Troglodytes aedon</i>	House Wren	7	2
17 <i>Dumetella carolinensis</i>	Gray Catbird	0	1
18 <i>Turdus migratorius</i>	American Robin	0	2
19 <i>Hylocichla mustelina</i>	<b>Wood thrush</b>	<b>1</b>	<b>1</b>
20 <i>Poliophtila caerulea</i>	Blue-gray Gnatcatcher	5	1
21 <i>Bombycilla cedrorum</i>	Cedar Waxwing	0	2
22 <i>Vireo solitarius</i>	Blue-headed vireo	1	0
23 <i>Vireo gilvus</i>	Warbling vireo	1	0
24 <i>Vireo olivaceus</i>	Red-eyed vireo	8	7
25 <i>Vermivora pinus</i>	<b>Blue-winged warbler</b>	<b>1</b>	<b>2</b>
26 <i>Setophaga ruticilla</i>	American Redstart	1	0
27 <i>Seiurus aurocapillus</i>	<b>Ovenbird</b>	<b>9</b>	<b>2</b>
28 <i>Oporonis philadelphia</i>	Mourning Warbler	1	1
29 <i>Spizella arborea</i>	Tree Swallow	0	1
30 <i>Passerina cyanea</i>	Indigo Bunting	4	1
31 <i>Cardinalis cardinalis</i>	Northern cardinal	6	2
32 <i>Pheucticus ludovicianus</i>	<b>Rose-breasted Grosbeak</b>	<b>3</b>	<b>2</b>
33 <i>Icterus galbula</i>	Baltimore oriole	4	2
34 <i>Quiscalus quiscula</i>	Common grackle	0	2
35 <i>Molothrus ater</i>	Brown-headed Cowbird	2	2
36 <i>Piranga olivacea</i>	Scarlet tanager	1	2
	No birds	103	73
	No. spp	28	32
	No. SGCNs	6	7

Other species: **Red-shouldered hawk** recorded during site visits in spring 2013.

Budget:

Expenditures		Income	
item	Amount	source	amount
staff expenses	\$10,177.50	Pheasants Forever	\$2,500
		Southern Dakota County Sportsmen's club	\$2,500
Travel expenses	\$86.40	Turkey Federation	\$2,500
		Minnesota Ornithologists' Union	\$2,000
		Winter Wheat Foundation	\$264
		Hastings Environmental Protectors	\$500
Total expenses	\$10,263.90	Total income	\$10,263.90