



Wheeler Nature Park Property Bird Habitat Management Recommendations



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Background Information

The following pages provide a habitat assessment and bird-friendly management recommendations for Wheeler Nature Park in South Burlington, Vermont. The assessment is part of Audubon Vermont's Champlain Valley Bird Initiative, which works with landowners to promote effective avian habitat management in the Champlain Valley. These recommendations are based on habitat requirements of priority bird species that have been identified by the Vermont State Wildlife Action Plan (VSWAP) and the North American Bird Conservation Initiative (NABCI), and are the focus of regional conservation efforts (see Appendix 1). Although this report is concerned primarily with habitat management for birds, numerous non-avian species will also benefit from its recommendations.

Wheeler Nature Park is located in Lower Great Lakes/St. Lawrence Plain Bird Conservation Region (BCR 13) as delineated by NABCI. The Lower Great Lakes/St. Lawrence Plain encompasses a narrow, low-lying plain stretching from the Champlain Valley west to Northeastern Ohio and surrounds the St. Lawrence River, and lakes Erie, Ontario and Champlain (Figure 1).

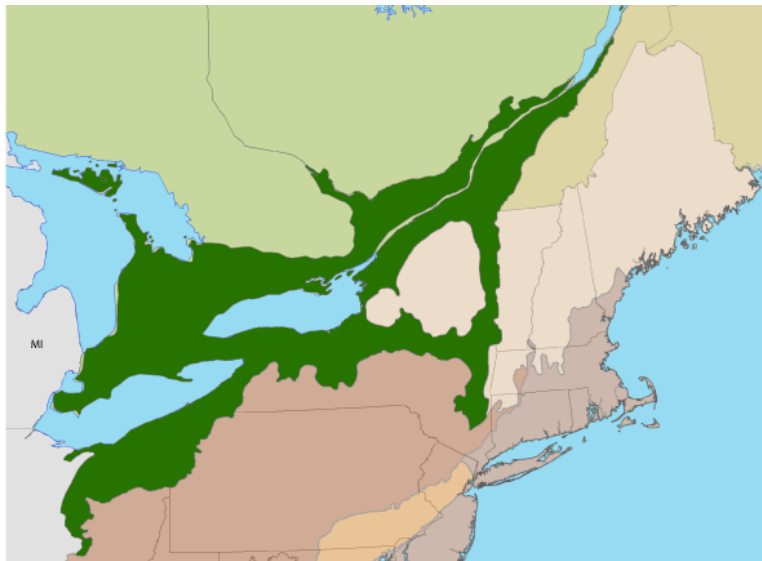


Figure 1. The Lower Great Lakes/St. Lawrence Plain (BCR 13) shown in green.

This BCR is comprised of extensive wetland ecosystems, accompanied by a mosaic of forests, agricultural fields and early-successional habitat (abandoned fields reverting to shrubland or young forests). The Champlain Valley of Vermont and New York has been identified as a Focus Area within BCR 13 because its mixed habitat types and open water are home to a number of BCR13's priority bird species.

Wheeler Nature Park comprises approximately 104 acres of open field, young forest/shrubland, wetland, and mature forest. The young forest/shrubland areas cover approximately 18 acres,

and the open fields cover approximately 8 acres. The early successional (ESH) habitat areas at Wheeler Park are in two main categories: open fields and shrublands. Recommendations have been separated into these groupings, and the shrublands have been further divided based on their habitat management needs.

Current management activities include annual cutting of the open fields and areas between shrub thickets, as well as some invasive shrub species management.

The habitat types on Wheeler Nature Park are common in the Lake Champlain Basin and support bird species characteristic of early successional habitat types, mixed forests, and wetlands. Priority Bird Species (as identified by VWAP, NABCI and Audubon Vermont; Appendix 1) that are particularly well suited to these habitat types include American Woodcock, Eastern Towhee, Blue- and Golden-winged Warbler, and Brown Thrasher.

This assessment is not intended to conflict with any agreements the Town of South Burlington may have with town departments, local farmers, or existing habitat management plans and conservation easements. Audubon Vermont recognizes that these relationships and strategies may take precedence over some of the following recommendations.

Recommendations

Guidelines for Open Field Management:

Assessment of Current Habitat Conditions:

The open fields are currently dominated by grasses and forbs, including goldenrod, aster, and milkweed. These fields are too small to support grassland birds such as Bobolink, and therefore we recommend that they are managed to support pollinators in the late summer and fall, and cavity-nesting birds such as American Kestrel, Eastern Bluebird and Tree Swallow.

Recommendations for open fields

- 1) Cutting Regime & Other Management
 - a. Delay cut (after October 1, and the later the better) so as to provide food resources for birds and pollinators.
 - b. Avoid invasion of invasive plants such as reed canary grass, wild parsnip and spotted knapweed where possible.
 - c. If possible, maintain an uncut buffer of shrubby vegetation along the field edges. Transitioning from field to forest with a “soft” buffer of early successional shrub species can be a productive area for many bird species.
- 2) Nest Boxes
 - a. Follow guidelines for Eastern Bluebird Nest Boxes to erect boxes for bluebirds and swallows: <http://www.nabluebirdsociety.org/nestbox-plans/>
 - b. Follow guidelines for American Kestrel to erect boxe(s): <https://nestwatch.org/learn/all-about-birdhouses/birds/american-kestrel/>

- 3) Habitat components to achieve for Open Field habitat unit
 - a. 50-75% grasses, with the remainder forbs such as goldenrod, asters and milkweed
 - b. Minimal (<10%) reed canary grass, where possible
 - c. No wild parsnip where feasible

Guidelines for Shrubland Management:

Assessment of Current Habitat Conditions:

Much of the shrubland habitat in Wheeler Park appears to support priority bird species, but there is the need to create more structure in some areas and set back succession in others so as to optimize the habitat. We have broken down the shrubland areas into smaller habitat units so as to specify some of the habitat improvement needs for each (see Map). General guidelines have been listed first, and each unit has a list of specific recommendations below. For the bulk of these recommendations, mechanical equipment such as a bull hog or grinder will be required for the initial treatment; brush hogging and some possible herbicide treatments will be necessary for any follow-up and maintenance work.

General Guidelines for Shrubland Bird Management, focusing on Golden-winged Warblers (Golden-winged Warbler Working Group 2013):

- 1) General Goals for each Habitat Unit
 - a. Interspersed clumps of shrubs and saplings and small areas of grasses and forbs
 - b. Widely spaced trees (>9" diameter) standing alone or in small patches
 - c. Adjacent mature forest
- 2) Habitat Components to Achieve for each Habitat Unit
 - a. 30-70% shrubs and saplings, 3-8 feet high, unevenly distributed as clumps
 - b. Shrub and sapling clumps interspersed with small herbaceous openings, mainly of native forbs and grasses
 - c. Infrequent and widely spaced overstory trees throughout the patch, with 10-30% canopy cover and at least 50% deciduous overstory trees.

Habitat Unit 1: Open Shrubland: 4.3 acres

- Brush hog existing openings in the open field and along the edges every 3-5 years to maintain this habitat
- Target some invasive species for removal
- Brush hog around small dogwoods and other native shrubs such as nannyberry (flagging would be necessary) to allow them to grow and expand
- Allow some native saplings to grow so as to create perching and singing trees

Habitat Unit 2: Mature Shrubland: 4.1 acres

- Remove invasive plants (primarily honeysuckle and buckthorn) to create openings

- Grind tall (more than 8-10 ft) dogwood thickets to allow for regrowth and height diversity
- Retain existing trees such as elm, oak, and ash
- Maintain openings with brush hog in subsequent years (cut every 3-5 years)

Habitat Unit 3: Young Forest: 4.8 acres

- Use heavy mechanical grinding to create forb openings, as there is little-no existing forb component
- Invasive plant removal (primarily buckthorn and honeysuckle) would create some necessary openings
- Tall (more than 8-10 ft) dogwood thickets should be ground down to allow for regrowth and height diversity
- Remove small deciduous trees and softwoods such as red cedar and white pine while leaving some large deciduous trees in small patches
- Maintain openings with brush hog in subsequent years (cut every 3-5 years)

Invasive Plant Species

As with many properties within the Champlain Valley, especially those currently in agriculture and with past agricultural activity, invasive plant species present a unique challenge. Invasive species, such as wild parsnip, reed canary grass, buckthorn, and honeysuckle provide suboptimal habitat for many bird species, and are all present on the Wheeler Park property. Specifically, wild parsnip and reed canary grass pose a threat to grassland birds, and will make a field inhospitable to grassland species if not controlled. In addition, wild parsnip is toxic to humans and other domestic animals and therefore is worthwhile to control.

Although removal of invasive species would be optimal, the logistics of accomplishing this task are extremely difficult. This is due in part to the extensive distribution of the plants on the property as well as the presence of seed sources on adjacent properties. Even if the invasive plants were to be eradicated, a long-term effort would be needed to prevent re-establishment of these species. As a result a much more intensive work plan, separate from this document, would need to be created if invasive plant removal is to be undertaken. In general, however, we recommend that invasive species are removed from areas where they are manageable, accessible, near non-infested areas, or near unique natural communities.

Some general guidelines for invasive plant removal are listed below:

- *Wild parsnip*: manage the invasion of wild parsnip by keeping mower blades at a height of 8 inches or more, and cut areas where parsnip is found before the plants go to seed (usually first or second week of July). A second cut may be needed if the plant reflowers. If wild parsnip invasion is minimal, it may be possible to remove individual plants by slicing the taproot and removing the top portion by hand (gloves are required to avoid the blister producing sap). A sharpened spade can be placed near the plant and

angled so the blade slices the root a couple of inches below ground. The severed root stub can be pulled up by the stem. The root fragment left behind will die later since it lacks mass and crown buds to re-sprout.

- *Buckthorn and honeysuckle*: manage further invasion of these species when brush hogging early successional areas. Annual brush hogging or manual removal of these shrubs can help the establishment of native shrubs such as dogwoods, serviceberry, and blackberries. Maintaining native shrubs along forest edges can also help prevent invasive species from establishing themselves in the forest understory.

Habitat Incentive Programs

The Town of South Burlington is eligible for funding through the US Fish and Wildlife Service (USFWS) Partners Program. More information on the work this program funds can be found at: <https://www.fws.gov/lcfwro/habitat/partners.html> . Audubon Vermont is collaborating with the Town and USFWS to pursue this option. There is no formal application for funding; the USFWS assesses projects on a case-by-case basis as funds become available. Landowners are required to enter into a 10-year landowner agreement with the USFWS; this agreement describes all habitat improvement work to be completed and identifies the responsibilities of the project partners and the landowner.

Summary and Next Steps

Wheeler Nature Park has the potential to provide habitat for a number of priority species identified by Audubon's Champlain Valley Bird Initiative. Many of its current management techniques are likely supporting priority bird species such as American Woodcock, Eastern Towhee, Rose Breasted Grosbeak, and Chestnut-sided Warbler. Future management work can enhance and increase the potential for these habitats to support additional species long-term, and have a positive impact on the populations of these birds in Vermont.

Audubon Vermont recommends prioritizing areas for management according to need, ease of access, and potential benefit vs. cost. In general, removing and controlling the invasive plants and adjusting mowing regimes to allow for small shrubs to establish themselves in the open shrubland areas should be the highest priorities.

References

Grassland Bird Management Guide, NRCS:

<https://directives.sc.egov.usda.gov/OpenNonWebContent.aspx?content=27175.wba>

Shrubland Bird Management Guide, NRCS:

<https://efotg.sc.egov.usda.gov/references/public/VT/VT647.pdf>

Invasive Plant Control Guide, NRCS:

https://efotg.sc.egov.usda.gov/references/public/VT/315_InvPlantControlGenInfo.pdf

Vermont Breeding Bird Atlas: <http://val.vtecostudies.org/projects/vermont-breeding-bird-atlas/>



Audubon VERMONT

Champlain Valley Priority Bird List

Wetlands

Pied-billed Grebe ^{1,2}
American Bittern ^{1,2}
Least Bittern ^{1,2}
Wood Duck ²
Common Goldeneye ²
American Black Duck ^{1,2}
Sora ¹
Blue-winged Teal ¹
Bald Eagle ¹
Osprey ¹
Black Tern ¹

Agricultural Grasslands

American Kestrel ¹
Northern Harrier ^{1,2}
Short-eared Owl ^{1,2}
Upland Sandpiper ^{1,2}
Sedge Wren ¹
Vesper Sparrow ¹
Grasshopper Sparrow ^{1,2}
Bobolink ^{1,2}
Eastern Meadowlark ^{1,2}

Islands

Great Blue Heron ¹
Black-crowned Night Heron ^{1,2}
Common Tern ^{1,2}

Shrub/Early Successional

American Woodcock ^{1,2}
Brown Thrasher ^{1,2}
Eastern Towhee ¹
Willow Flycatcher ²
Golden-winged Warbler ^{1,2}
Blue-winged Warbler ^{1,2}
Field sparrow ^{1,2}
Baltimore Oriole ²

Deciduous/Mixed Forest

Scarlet Tanager ¹
Black-billed Cuckoo ^{1,2}
Whip-poor-will ¹
Veery ¹
Wood Thrush ^{1,2}
Canada Warbler ^{1,2}
Ruffed Grouse ¹
Peregrine Falcon ¹
Chestnut-sided Warbler ¹
Black-throated Blue Warbler ^{1,2}
Cerulean Warbler ^{1,2}
Northern Flicker ²
Rose-breasted Grosbeak ²

¹ Vermont's Species of Greatest Conservation Concern from the Vermont Wildlife Action Plan

² Bird Conservation Region 13 (Lower Great Lakes/St. Lawrence Plain) Priority Bird Species from the North American Bird Conservation Initiative