



**Forest Bird
Habitat Assessment
And
Management Recommendations**

Scrag Municipal Forest

Waitsfield, VT

**Prepared by
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Introduction

The purpose of this document is to 1) provide an assessment of forest bird habitat on the Scrag Municipal Forest in Waitsfield, VT and 2) offer management recommendations that will maintain or enhance habitat conditions for *responsibility forest bird species* as identified by Audubon Vermont's Forest Bird Initiative (FBI) program. A *responsibility species* is a bird species with a significant amount of its global breeding population found in the region. See Appendix 1 for a complete list of FBI responsibility species.

The ~568 acre (according to ArcView mapping software calculations) Scrag Municipal Forest property is located in the Atlantic Northern Forest Bird Conservation Region (BCR 14) as delineated by the North American Bird Conservation Initiative (NABCI). The Atlantic Northern Forest encompasses a geographic area stretching southwest to northeast from the Taconic Hills of eastern New York/western Massachusetts and the Adirondack Mountains (cut off from the remainder of the BCR by the Lake Champlain valley), through most of Vermont, New Hampshire and Maine, Quebec south of the St. Lawrence River including the Gaspé Peninsula, and all of the Maritime provinces of New Brunswick, Prince Edward Island, and Nova Scotia. (BCR14 Blueprint page 7.) (Figure 1). Predominant general forest types include spruce-fir, northern hardwood, and mixed deciduous-coniferous forests.



Figure 1 - BCR 14



Figure 2 - Battell Hot Block

Audubon Vermont has identified the landscape around the Scrag Municipal Forest as the Battell Forest Bird Hot Block. The Block is approximately 276,000 acres of contiguous forest land bounded roughly by the Winooski River on the north, Mt Horrid on the south, VT Route 100 in the east and VT Routes 116 and 7 on the west. This block is approximately 91% forested.

Landscape Context
A consideration of the property's surrounding landscape (an area approximately 10 times the acreage of the parcel in question) is an

important component of assessing current habitat conditions and making management recommendations. The Scrag Municipal Forest is located on the Northfield Mountain Range, between VT Rt. 100 and the town of Waitsfield to the west and VT Rt. 12 and the town of Northfield on the east. This heavily forested mountain range serves as an important north-south corridor between the moderately to sparsely developed and fragmented valleys to the east and west. Active forest management has been conducted primarily on the eastern slope of the range. This occasionally provides patches of early-successional hardwood forest habitat. Overall the forests of this range are mid-successional hardwoods.

Landowner Objectives

The Town of Waitsfield is in the process of gathering information to be used in the creation of a forest management plan for the parcel. This report serves to provide information on the site's current conditions and future possibilities from a forest bird habitat perspective.

Property Description

Primary forest type is northern hardwood with sugar maple, American beech, yellow birch, white ash, red spruce, and white birch represented. American beech, red spruce, and hobblebush are common in the understory. This is a common forest type in low-mid elevations of the region. Characteristic bird species of hardwood forest stands include Yellow-bellied Sapsucker, Wood Thrush, Veery, Black-throated Blue Warbler, American Redstart, Ovenbird, and Red-eyed Vireo. Additional habitat features are a high-elevation red spruce/balsam fir forest, beaver wetland, and an early-successional hardwood forest. The ice storm of 1998 impacted the higher elevations of the hardwood forest and the high-elevation spruce forest. A portion of the property is conserved through an easement held by the Vermont Land Trust.

Habitat units have been delineated for purposes of easy identification and as a basis for management recommendations. These units are based on a qualitative on-the-ground assessment, aerial photo interpretation, and information provided by consulting forester Leo Laferriere. They are 1) northern hardwood forest, 2) high-elevation forest, 3) beaver wetland, and 4) early-successional hardwood forest. Each habitat unit is referenced on the map at the end of the report.

The following pages provide an assessment of current habitat conditions and forest management recommendations that would enhance habitat for forest responsibility bird species on the property. The recommendations are designed to be discussed with the property's forester or land manager and implemented where practical and appropriate.

Contact Steve Hagenbuch, Audubon Vermont Conservation Biologist, at 802-434-5827 or shagenbuch@audubon.org for more information on the recommendations outlined in this report.

1. Northern Hardwood Forest – 437.3 acres

Area description:

This habitat unit covers the highest proportion (77%) of the property. It is found in two separate areas; the first, and largest, covers the western half of the parcel and the second is in the southeast corner. Dominant canopy tree species are sugar maple, yellow birch, white ash, and American beech, mostly in pole and sawtimber size classes. Understory vegetation and regeneration is locally abundant and primarily consists of American beech, red spruce, and hobblebush. A portion of this habitat unit was affected by the 1998 ice storm and as a result snags (standing dead trees) and coarse woody debris (down logs, branches, etc) are present in good quantities. A number of streams and seeps are in this area. A small portion of this habitat unit, on a narrow finger along the western boundary, has been mapped by the State of Vermont as a deer wintering area. There have been no timber harvests over the past 50 years.

Assessment of Current Conditions:

The current conditions of this habitat unit likely provide nesting habitat for a number of interior forest responsibility bird species. This is due in part to the well developed understory (regeneration) and abundance of snags and coarse woody debris. Timber harvesting has the potential to enhance the habitat conditions for a wide variety of bird species. If harvesting is identified as an objective for the property, the following is recommended.

Management Recommendations:

- ✓ The use of uneven-aged silvicultural methods, with single-tree and group selections up to 1/4 acre in size, enhances tree regeneration and shrub development, such as that preferred as breeding habitat by the black-throated blue warbler. These methods of tree harvesting will maintain the overall interior forest conditions that exist over this habitat unit. Interior forest is defined as habitat that occurs in unbroken forest at least 200-300 ft. from the habitat edge. Bird species such as scarlet tanager and wood thrush benefit from large areas of contiguous interior forest. Cutting cycle should be determined by Leo Laferriere. Additionally, larger canopy openings may provide a density of regeneration and shrub development to provide breeding habitat for some species of early-successional forest birds, but this form of silviculture will not create a true early-successional forest bird community.
- ✓ Regenerating forests, defined as forests that are one to ten years of age, are rapidly disappearing throughout Vermont and the rest of northern New England. Forests in this stage of development, often called early-successional forests, provide critical breeding habitat for bird species, including chestnut-sided warblers, mourning warblers, and white-throated sparrows. Recent research also indicates that early-successional forests are used by mature forest species, including scarlet tanager and wood thrush, as post-breeding habitat. There is currently a 30.3 acre patch of early-successional habitat on the property; however its functionality as such will be passed within the next 10 years (see #2 below). Larger group selection harvests of up to 2 acres will continue to provide these

habitat conditions in the future. It is recommended that in addition to the single tree and small group selection methods listed above, five to ten larger forest openings be made during the next harvest. This practice should be repeated on a 15-20 year cutting cycle to perpetually provide this habitat type on the property. Each opening should be up to 2 acres in size and be located ≥ 600 ft. apart to minimize negative effects to interior forest bird species. This would provide up to 20 acres (5% of this habitat units total acreage) of early-successional hardwood forest habitat at any one time. These openings should be circular or square in size to minimize the ratio of edge to interior habitat. Retain at least one patch of 5-10 mature trees per opening, with a preference toward mast producing species such as beech, oak, and cherry. Standing snags provide a good nucleus for these patches. Leo Laferriere should design the location of these harvests based upon access, tree health, marketability of trees, etc.

- ✓ If summer harvesting is required, it should be scheduled before the arrival of migrant bird species (generally the third week of May if soil conditions permit) or after the second week of July, which will allow breeding birds to fledge a first brood. If summer harvesting is not required, harvesting during frozen ground conditions is preferred as it will have no impact on the breeding bird community.
- ✓ Yellow birch is of particular importance to insectivorous birds. The 10 most common foliage-gleaning bird species, including blackburnian warbler, black-throated green warbler, and scarlet tanager, prefer yellow birch for foraging. Retain as many individual trees as possible.
- ✓ Standing snags and downed trees are of significant value to many species of wildlife. Dead or dying standing trees provide roosting, perching, foraging, and nesting sites for roughly 40 species of birds. Retain a minimum of six snags per acre, with one exceeding 18 in. DBH and three exceeding 16" DBH. Priority should be given to hardwood snags as they remain intact longer.
- ✓ Maintain forested buffers along seeps and streams. Some bird species, such as the Louisiana waterthrush forage and nest only along streams. Buffers greater than 200 ft. in width have the greatest value, although buffers as narrow as 50 ft. will provide baseline habitat needs for songbirds. **Note:** Consult *Vermont's Acceptable Management Practices* for further guidance on maintaining streamside buffers.
- ✓ Forest access roads can serve as pathways for increased predation and nest parasitism. Minimize the width, number, and extent of access and skid roads built for a harvest. Wider roads can dry out leaf litter on forest floor and reduce moist habitat for invertebrates eaten by ground nesting birds. Whenever possible maintain forest canopy closure of > 70 percent over access roads.
- ✓ Maintain tree species composition diversity by retaining softwood inclusions in hardwood stands. These inclusions provide habitat features different from those in the surrounding stand.
- ✓ Fruit producing trees and shrubs such as dogwood, serviceberry, and cherry provide an important food source for birds, particularly during fall migration. Where they exist, retain as many representatives of these soft-mast producing species as possible.

Target Responsibility Bird Species

In mature and second growth n. hardwood forest

- Black-throated Blue Warbler
- Wood Thrush
- Veery
- Eastern Wood-Pewee
- Yellow-bellied Sapsucker
- American Redstart
- Nashville Warbler
- Ovenbird
- Scarlet Tanager

In recommended early-successional hardwood patches

- Chestnut-sided Warbler
- White-throated Sparrow
- Mourning Warbler
- Ruffed Grouse

2. Early-Successional Hardwoods – 30.3 acres

Area description:

This habitat unit is located along the southeast border of the property. It is the result of a ~2001 harvest to salvage 1998 ice storm damaged timber. Vegetation consists of saplings of American beech, sugar maple, and aspen and raspberry and blackberry.

Assessment of Current Conditions:

The current structural conditions of this habitat unit likely provide nesting habitat for early-successional responsibility bird species. These conditions are temporal and the species that nest in them are habitat specialists. This means that birds that require this type of habitat for nesting will only find it suitable for approximately 10-12 years after the regenerating disturbance, in this case a clearcut, occurred. The structure and species composition, notably aspen, is also conducive to ruffed grouse. Again, the quality of this habitat for grouse diminishes as the stand develops although it will remain suitable for a longer period of time for grouse than it does for songbirds.

Management Recommendations:

- ✓ Maintaining the entirety of this unit as early-successional habitat in the 0-12 year age class is not recommended. While this habitat type is decreasing across the northeast, the opportunity to maintain examples of it on the property exists through the management outlined in the N. Hardwood Forest section above.
- ✓ The opportunity exists to manage this habitat unit for ruffed grouse, which will also benefit American woodcock and yellow-bellied sapsucker. The objectives are to create the proper arrangement of young aspen stands and herbaceous

openings. The recommended approach for meeting these objectives (adapted from VT Dept. of Fish and Wildlife, 1995) is to divide the unit into 6-10 stands, each 3-5 acres in size. Every 10 years, clearcut one-quarter of the stands in a checkerboard pattern. Stands with the oldest aspen trees should be treated first. Within each stand:

- Prune fruit-producing trees and release them by cutting adjacent trees that are crowding them.
 - If they exist, retain small patches of softwood trees (one-quarter to one-half acre in size) for winter cover.
 - Maintain several large logs as drumming sites after the stand has been treated.
 - Provide openings with herbaceous vegetation [small, non-woody plants] on 10 percent of the area (3 acres of the 30-acre habitat unit). Create openings by seeding log landings and woods roads. Maintain in an herbaceous condition by periodic mowing.
 - Maintain sources of fall foods such as or beech as long as they do not total more than 25 percent of the area.
 - Clear cut the remainder of each stand being treated during the winter season. This will enhance the sprouting of aspen the following growing season.
- ✓ The Ruffed Grouse Society (www.ruffedgrousesociety.org) is a resource for further information and assistance on management for this species.

Target Responsibility Bird Species:

- Ruffed Grouse
- American Woodcock
- Yellow-bellied Sapsucker
- Chestnut-sided Warbler
- White-throated Sparrow
- Nashville Warbler
- Mourning Warbler

3. High-Elevation Forest – 93.3 acres

Area description:

This habitat unit lies along the spine of the Northfield Range. All of the area within the unit is above 2,500 ft. in elevation. Dominant tree species are red spruce, balsam fir, and white birch. The 1998 ice storm affected this habitat unit.

Assessment of Current Conditions:

This habitat unit was not visited during the assessment. Nonetheless, based on its description obtained from Leo Laferriere, it is likely that the forest supports blackpoll warbler and possibly magnolia warbler.

Management Recommendations:

- ✓ Active management is not required for bird habitat purposes. Additionally, due to the location of this unit above 2,500 ft., an Act 250 permit would be required in order to harvest timber.
- ✓ The high elevations of Vermont are subject to frequent natural disturbance, such as blowdowns and snow and ice damage, as was seen here in 1998. As a result, regenerative disturbance occurs on a regular basis. This creates a mosaic of regenerating, mid-successional, and mature forest patches.

Target Responsibility Bird Species:

- Blackpoll Warbler
- Magnolia Warbler

4. Beaver Wetland – 7.9 acres

Area Description:

This habitat unit is found on the west side of the ridgeline, at the base of a steep slope that rises to the high-elevation forest. It consists of an open water pond surrounded predominately by saplings and pole-sized red spruce, balsam fir, and white pine. Saplings of red maple also occur here to a limited extent. Beaver cycle in and out of habitats such as this based primarily upon food availability. At this time the beavers do not have an active presence here. This habitat unit is included in the Vermont Significant Wetlands Inventory indicating its status as a Class 1 or 2 wetland.

Assessment of Current Conditions:

The current conditions of this habitat unit likely provide breeding habitat for bird species of regenerating and pole-sized conifer forests. This is due to the abundance and density of softwood in places. The lesser abundant hardwood regeneration accounts for its possible suitability as chestnut-sided warbler and white-throated sparrow breeding habitat.

Management Recommendations:

- ✓ This high-elevation beaver wetland is a sensitive natural system. For this reason it is recommended that this habitat unit be managed as an ecological reserve where natural processes, including beaver, are permitted to proceed without human disturbance.
- ✓ During any harvests in the surrounding hardwood forest it is recommended to maintain a forested buffer around the wetland to protect water and soil resources. Buffers greater than 200 ft. in width have the greatest value, although buffers as narrow as 50 ft. may be sufficient.

Target Responsibility Bird Species:

- Magnolia Warbler
- Black-throated Green Warbler
- Blackburnian Warbler
- Purple Finch
- Chestnut-sided Warbler
- White-throated Sparrow

Bird Monitoring

Understanding the response of bird communities to forest management is a critical aspect of conservation efforts. It is important for us to understand how our management activities impact bird populations over time, so that we can adapt practices accordingly. One method to collect this information is through a bird monitoring program. By periodically recording the bird species present at a given time and place on the property in question, we can see if and how the composition of the bird community is changing in response to management activity.

For assistance on getting started with monitoring on this property, please contact Audubon Vermont at 802-434-3068 or bbutler@audubon.org.