

Forest Bird Habitat Assessment

Atlas Timber Tract owned by the Green Mountain Club

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Forest Bird Habitat Assessment

Property: Atlas Timber Tract

Towns: Jay and Richford, VT

Acres: 1,110

Assessment Date: June 10, 2016

Property Owner: Green Mt Club

Audubon Biologist: S. Hagenbuch

Introduction

The purpose of this report is to describe the role the Green Mountain Club's Atlas Timber Tract can play in regional bird conservation efforts as determined through a coarse filter, landscape-level habitat assessment. This assessment is focused on the breeding habitat conditions for the 40 birds of conservation concern considered "[responsibility species](#)" by Audubon Vermont's Forest Bird Initiative.

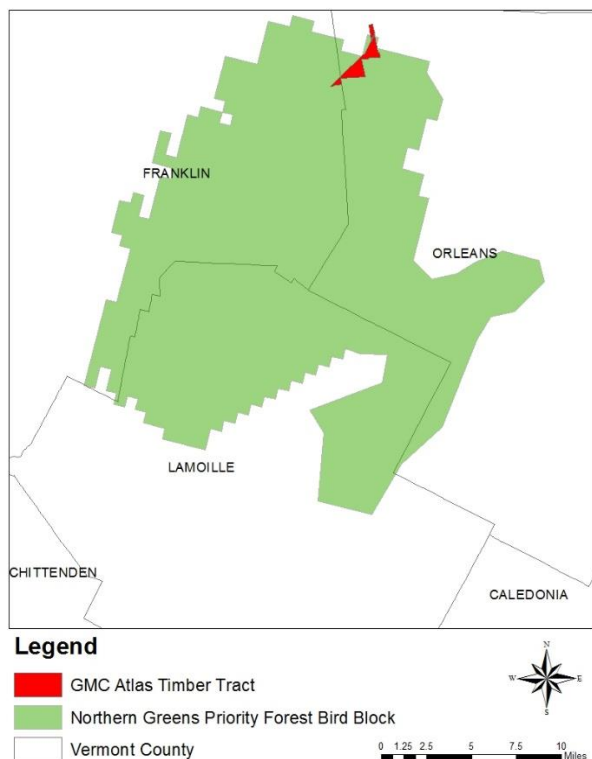


Figure 1

Regional Context

In 2012 the National Audubon Society identified a network of priority forest blocks for bird conservation throughout the U.S. portion of the Atlantic Flyway (Maine to Florida). These blocks represent the most intact forested areas that support the highest richness and abundance of birds of regional conservation responsibility. Large, intact forests are critical to the future of most forest birds. They provide interior forest habitat buffered from edge effects such as cowbird parasitism and some forms of nest predation. They allow various successional stages and types of forests to exist within the same landscape, thus meeting the habitat requirements of multiple species in breeding and post-fledging stages. They are relatively resistant to encroachment and habitat degradation by invasive species. They provide a large stage on which habitat shifts driven by climate change will play out.

The Atlas Timber Tract is at the northern edge of the 188,644 acre Northern Greens Priority Forest Bird Block (Figure 1). This Block is considered a Continental (B3) Important Bird Area.

The property is also part of a 33,772 acre matrix forest block as delineated by The Nature Conservancy. Collectively these regional attributes make the Atlas Timber Tract, and its surrounding landscape, an extremely valuable and important area for bird conservation.

Assessment Methodology

This report is based on a one-day field visit, review of the Draft Conservation Management Plan (2016), and orthophoto interpretation. In most cases the field assessment of current habitat conditions is based on random sample points and then extrapolated to other areas within the delineated forest stands. It is understood that this assessment methodology has its limitations.

Main Habitat Types

Habitat Type	Estimated Acres	Percentage	Description and Notes
Mature Hardwood/Mixedwood/Spruce-Fir Forest	762	69%	Comprised of forest stands 1, 3 and 4, this forest provides a closed (>70% cover) canopy >30 ft. in height. May support nesting habitat for responsibility bird species such as ovenbird, black-throated blue warbler, blackburnian warbler, and wood thrush.
Mature Montane Spruce/Fir Forest	347	31%	Comprised of forest stand 2, this forest provides an intermediate (30-70% cover) and closed (>70% cover) canopy >30ft. in height. May support nesting habitat for responsibility bird species such as Bicknell's thrush, blackpoll warbler, and olive-sided flycatcher.

Habitat Descriptions and Assessment

1. Mature Hardwood/Mixedwood/Spruce-Fir Forest – 762 acres (Forest Stands #1, 3, and 4)

The primary conditions of this habitat type are a closed (>70% cover) forest canopy that is >30 feet in height and provides breeding season habitat for a suite of bird species that are classified as mature forest nesters. The quality of the habitat for individual bird species, as related to a bird's ability to successfully nest and raise young, is primarily influenced by the composition and structure of the forest vegetation and the food resources it provides. The current composition and structure of the forest has by and large been influenced by past harvesting, with the exception of some of the higher ridgeline of stand #3. Larger contiguous forested areas, which accurately describes this property, are also more likely to lead to greater habitat quality by decreasing edge effects such as general nest predators (skunks, house cats, etc.) and nest parasitism by brown-headed cowbirds.

Elevations range from approximately 1,800 – 2,800 ft. ASL. At these elevations the bird community is predominantly the same that would be found in similar forest types and condition at lower elevations in Vermont. The highest ridgeline in stand #3 however does start to provide habitat for high-elevation nesting bird species as evidenced by a *Blackpoll Warbler* that was encountered there during the field visit.



Figure 2

Composition

Northern hardwood tree species (sugar maple, American beech, yellow birch and associates) are dominant throughout the northern section of this habitat type (Figure 2). South of Rt. 105, particularly along the higher ridgeline of stand #3, softwood (balsam fir and red spruce) make up a higher percentage of the composition. With this diverse mix of tree species a greater diversity of bird species is supported than would be with only hardwoods or softwoods. *Ovenbird*, *Red-Eyed Vireo*, and *Black-throated Blue Warbler* are more closely associated with hardwoods while *Blackburnian Warbler*, *Black-throated Green Warbler*, and *Purple Finch* tend to more heavily utilize softwoods. The presence of yellow birch and paper birch are particularly valuable from a bird perspective. Yellow birch is selectively chosen by insect eating songbirds, including *Scarlet Tanager* as a foraging substrate. Paper birch is often selected by woodpeckers such as *Yellow-*

bellied Sapsucker for excavating nest cavities.

Habitat Structure

Habitat structure consists of understory vegetation (0-5 feet), midstory vegetation (6-30 feet), and overstory (>30 feet), standing snags and cavity trees, and coarse and fine woody material on the ground. Habitat structure within this mature forest is variable primarily as a function of past harvesting, stand age, natural disturbance regimes, soils, and topography.

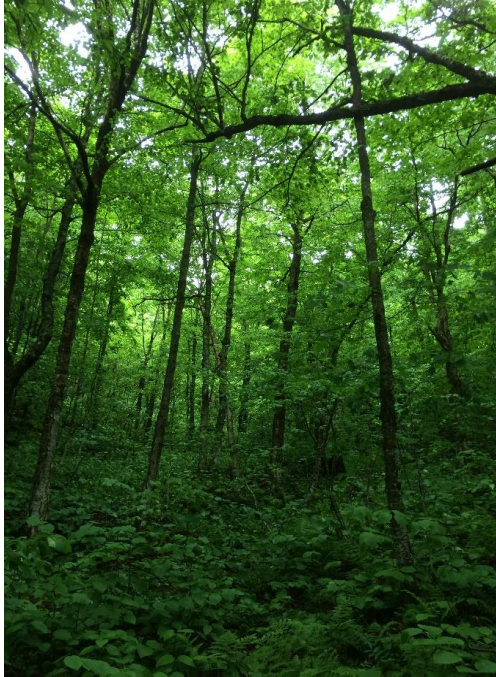


Figure 3

Although forest structure is variable throughout this habitat type, overall it is sufficient to meet the nesting habitat needs of a diversity of bird species. The midstory layer is well developed (>50% cover), providing nesting and foraging structure for bird species such as *American Redstart*, *Wood Thrush*, and *Black-throated Green Warbler*. The understory is generally less developed but exhibits pockets of higher density vegetation. This is particularly true in canopy gaps created from past timber harvesting and/or natural disturbance events. In many locations the understory is heavily comprised of hobblebush. Although not a desirable plant species from a timber management perspective, it has high habitat value for birds such as *Black-throated Blue Warbler* and *Hermit Thrush* (Figure 3). Larger diameter (>12 inch) snags and cavity trees are abundant throughout the forest making nesting and foraging opportunities for birds such as *Yellow-bellied Sapsucker* and *Northern Flicker* bountiful (Figure 4). Coarse (>10 inch) and fine (<4 inch) woody material on the ground exists but overall at relatively

low levels. Bird species that utilize these features, such as *White-throated Sparrow* and *Winter Wren*, are likely to nest here but not at populations levels that may be achieved if these attributes were more developed.

Overall Assessment

The current overall assessment of this area's habitat quality to associated bird species is **high**. The majority of the elements of habitat structure at the stand level are sufficiently developed plus the large acreage of this habitat type on a landscape level and long-term opportunity to enhance and/or maintain overall habitat conditions through appropriate management is extremely valuable.



Figure 4

Management Recommendations and Considerations

Although no commercial timber harvesting is likely to occur during the next 10 year planning cycle, the following are provided for when the next active management does occur:

- A structurally diverse forest is the key to providing high-quality habitat for birds that nest in mature forest. When planning for timber harvests consider implementing one of these options from *Silviculture with Birds in Mind: Options for Integrating Timber and Songbird Habitat Management in Northern Hardwood Stands in Vermont* (attached):

1A – Crop Tree Release with Canopy Gap Formation

1B – Variable Retention (Density) Thinning

2A – Expanding Gap Group Shelterwood

2B – Single Tree and Small Group Selection (groups <1 acre preferable to larger openings)

3B – Mixed Intermediate Treatments

These silvicultural options can help maintain/enhance desirable forest bird habitat conditions for mature forest nesting bird species. They will also assist in developing a higher-quality timber resource for the future.

The most appropriate option and timing of implementation is dependent upon pre-existing stand conditions primarily as they relate to developmental stage/size class and acceptable and unacceptable growing stock levels. This information should come from a detailed forest inventory under the direction of Harris Roen.

- Retain existing large-diameter snags during harvest and consider marking additional trees to be girdled or retained to grow into large-diameter cavity trees that eventually will naturally become snags. Paper birch is a good candidate for recruitment. A minimum of 6 cavity and/or snag trees > 10" DBH per acre is recommended.
- Mark some low-value trees 10"+ DBH to be cut and left on site to increase the amount of coarse woody material in the area (e.g. mark 2-4 cut-and-leave trees per acre).
- Minimize use of whole tree harvesting in order to achieve inputs of fine woody material on the ground. To the extent possible leave the tops and do not lop them.
- When possible and silviculturally appropriate minimize harvesting during the breeding season (May – mid-July). Winter (frozen ground) harvesting is preferable as it will not result in direct impacts to nesting birds.
- Non-commercial species can provide excellent habitat structure. Hobblebush is particularly valuable for understory nesting bird species. Consider protecting dense patches from damage during harvest.

Target Responsibility Bird Species

- American Redstart
- Blackburnian Warbler#
- Black-throated Blue Warbler*#
- Black-throated Green Warbler#
- Blue-headed Vireo
- Canada Warbler*#
- Eastern Wood-Pewee
- Louisiana Waterthrush
- Magnolia Warbler#
- Northern Flicker
- Northern Parula
- Ovenbird#
- Purple Finch#
- Ruffed Grouse*
- Scarlet Tanager
- Veery*
- White-throated Sparrow
- Wood Thrush*
- Yellow-bellied Sapsucker

*=VT Species of Greatest Conservation Need

#= Species observed during field visit

Additional Bird Species Observed

- Dark-eyed Junco
- Red-eyed Vireo
- Red-breasted Nuthatch
- Yellow-rumped Warbler
- Black-and-white Warbler
- Chestnut-sided Warbler
- Cedar Waxwing (flock)
- Hermit Thrush
- Ruby-crowned Kinglet

2. Mature Montane Spruce/Fir Forest – 347 acres (Forest Stand #2)



Figure 5

The primary conditions of this habitat type are an intermediate (30-70% cover) and closed (>70% cover) forest canopy that is >30 feet in height and provides breeding season habitat for a unique suite of bird species that are classified as high-elevation mature forest nesters. The quality of the habitat for individual bird species, as related to a bird's ability to successfully nest and raise young, is primarily influenced by the composition and structure of the forest vegetation and the food resources it provides. The current composition and structure of the forest has by and large been influenced by overstory decline and mortality as well as natural disturbance events such as ice and snow loading and wind. Larger contiguous forested areas, which accurately describes this property, are also more likely to lead to greater habitat quality by decreasing edge effects such as general nest predators (skunks, house cats, etc.) and nest parasitism by brown-headed cowbirds.

Elevations range from approximately 2,800 – 3,400 ft. ASL. At these elevations the bird community is primarily comprised of different suite of species than those found at the lower elevations. Among these is *Bicknell's Thrush*, a species for which >90% of its global breeding population is found in the Atlantic Northern Forest (Bird Conservation Region 14). This habitat type, and the bird species associated with it, are among those most threatened by a changing climate.

Composition

The vegetative composition of this habitat type is naturally less diverse than the forest found at lower elevations. Balsam fir and red spruce are dominant overstory trees with white birch and yellow birch among the few hardwoods that are capable of competing in the environmental conditions afforded at elevation.

Habitat Structure

Habitat structure consists of understory vegetation (0-5 feet), midstory vegetation (6-30 feet), and overstory (>30 feet), standing snags and cavity trees, and coarse and fine woody material on the ground. Habitat structure within this mature forest is generally well developed primarily as functions of natural mortality, stand age, natural disturbance regimes, soils, and topography.

Areas of dense spruce/fir regeneration provide the necessary structure to be utilized as nesting and foraging cover for *Bicknell's Thrush*, *Blackpoll Warbler*, and *Magnolia Warbler*. Larger diameter (>12 inch) snags and cavity trees are found throughout the forest although there are few bird species at this elevation that are to be found nesting in them. The insects that may live in them however can be a valuable food source. Coarse (>10 inch) and fine (<4 inch) woody material on the ground exists at sufficient levels. Correspondingly *White-throated Sparrow* and *Dark-Eyed Junco* should find plentiful nesting and foraging opportunities here.

Overall Assessment

The current overall assessment of this area's habitat quality to forest responsibility bird species is **high**. This is a unique habitat type in Vermont with occurrences limited to the highest elevations. The large acreage and ownership should provide a valuable refugia for associated bird species for many years to come.

Management Recommendations and Considerations

No active management is recommended within this habitat type. Natural disturbance regimes will continue to shape the forest and should provide the necessary habitat components.

Target Responsibility Bird Species

- Bicknell's Thrush*
- Blackpoll Warbler*
- Magnolia Warbler
- Olive-sided Flycatcher*
- White-throated Sparrow

*=VT Species of Greatest Conservation Need