



## *The Connecticut Agricultural Experiment Station*

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March 21, 2016

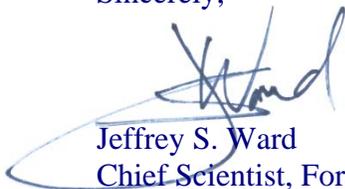
Mr. Bruce F. Lindsay  
Tree Ward-Town of Westport  
100 Myrtle Avenue  
Westport, CT 06880

Dear Mr. Lindsay:

As you requested in a phone conversation of February 24, 2016, I conducted a habitat survey of the Baron's South property on March 11, 2016. This survey was completed with the assistance of Ms. Amanda M. Massa who has over two years of experience in conducting habitat assessments. The following pages include a bullet list of our recommendations/suggestions, a more extensive write-up of methods and reasoning behind recommendations, and finally a technical summary of data that was collected on the site.

Please do not hesitate to call or email if you have any further questions.

Sincerely,



Jeffrey S. Ward  
Chief Scientist, Forestry and Horticulture

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# Baron's South Open Space Habitat Assessment Westport, CT

Completed by:

Jeffrey S. Ward, Ph.D.      Amanda M. Massa  
Chief Scientist              Research Assistant  
Department of Forestry and Horticulture  
The Connecticut Agricultural Experiment Station

## Recommendation/suggestions

- Recommend aggressive vegetation control measures to mitigate dense tangles of bittersweet that are choking trees and the few limited native shrubs.
- Recommend thinning dense forest stands to restore vigor of declining trees with small crowns.
- Thinning overstocked stands will provide an opportunity to establish native shrubs, provided they are protected from deer browse.
- Consider managing mowed areas to establish wildflower meadows with native shrubs, especially those that will benefit native pollinators.

## Forest Birds

Breeding bird surveys have shown that New England forests are globally important for bird populations. Connecticut's forests are home to some of the highest concentrations of bird species breeding in the conterminous United States. Although some of these bird species are still common in our area, many are experiencing long-term population declines and have been identified by Audubon Connecticut as *Priority Species* (<http://ct.audubon.org/conservation/priority-bird-species>). Ultimately, small actions by forest landowners, including the Town of Westport, can have a significant impact on maintaining high quality habitat for present and future bird populations.

## Data collection summary

A habitat assessment for this property was conducted on March 11, 2016 and with a total of 15 sample points on which data was collected. A dot-grid method was used to determine the approximate area of each forest cover type. Meadows and open areas were included within each cover type. The purpose of this assessment was to describe and assess the current forest bird habitat conditions on the property and to make suggestions for protecting and improving habitat for a variety of forest birds.

## Property summary

Located in Westport, Connecticut among woodlands and mixed terrain stands is the estate formerly owned by Austrian-born chemist and founder of Evyan Perfumes, Baron Walter Langer von Langendorff. This 21.25-acre property is bordered by an adjacent senior center, residential neighborhoods, and major roadways. This forested piece of land, including the five historic homes, is currently owned by the Town of Westport and is designated as open space. (Add area in each forest cover type) In general, the 19.8 acres of forest on this property is comprised of 3 stands: Mixed Hardwood and Conifer (6.8 acres), Conifer (9.0 acres), and Hardwood (4.0 acres). Please note all acreages are approximate and does not include grounds immediately adjacent to house.

If this woodland is properly cared for, it has the potential to provide habitat for a variety of bird and wildlife species. Several observed indicators of declining forest health on this property that could be addressed include the complete lack of native shrubs in the understory, the dense thickets of invasive species, the open and semi-open areas with very few herbaceous and wildflowers, and the overstocked stands.

Positively, nesting features like cavity trees, snags (standing dead trees), and brush piles/downed tree tops were found throughout the property. These features help to provide nesting sites protected from the weather, opportunities for perch sites and mating rituals, and foraging grounds for many bird species. Similarly, habitat features such as coarse woody material, leaf litter and soft mast found on the property offer valuable resources and potential food sources.

During the property assessment, several sampled points contained a dense or high (>70%) cover of invasive plant species (Figure 1). Non-native or invasive species may provide nesting opportunities, but because they lack insect larvae that provide the protein needed for nestlings and fledglings to develop, it is desirable to replace them with native species. In addition to not supporting as many insects as native plants, invasive species also limit the growth of native vegetation and tree species. The invasive plants found on this property include Asiatic bittersweet (*Celastrus orbiculatus*) and Japanese barberry (*Berberis thunbergii*). At a minimum, the dense tangles of Asiatic bittersweet should be managed by cutting off large vines that are growing into the mid- (5-30 ft tall) and upper canopy (>30 ft tall). As time progresses, the cut vines will decay and allow the affected tree to spring back and continue growing without the stress and weight of vines. More importantly, by reducing the invasive plant cover it is possible that the property will promote more native vegetation and offer resident and migratory birds an ideal nesting and habitat location.

During examination of Baron's South, it became evident that many areas on this property have overstocked stands (Figure 2). This commonly refers to forest areas with over-dense tree cover, slowed growth, interlocking crowns, reduced understory, and a loss of crown vigor and even crown die-back. The effects of overstocking will eventually lead to an increase in tree mortality and potential for windthrow during severe weather. To reduce the effects of

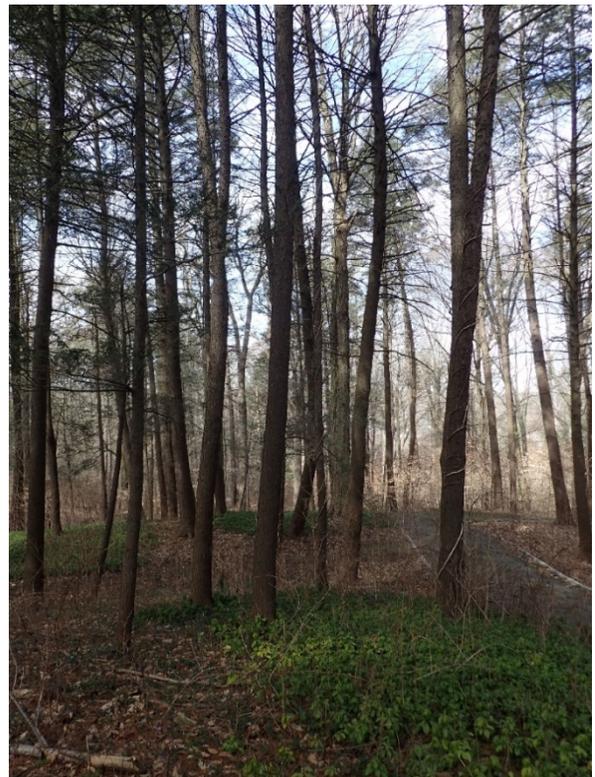
overstocked stands, it will be necessary to thin the spacing of residual trees. By thinning the overstocked stands and creating gaps in the upper canopy, there will be an increase in growing space for the trees as well as an increase in the amount of sunlight reaching the forest floor. This will have the additional benefit of stimulating regeneration and herbaceous species, currently lacking on the property.

Throughout the woodland as a whole, there is a lack of native shrubs in the forest understory (Figure 3). Native shrubs are relatively small woody plants that may bear fruit and serve as the host plant for insects that provide seasonal forage for birds. In addition, shrubs also provide a structural base for nests and cover from predators and weather. Some native shrubs commonly found in Connecticut's forests include witchhazel (*Hamamelis virginiana*), spicebush (*Lindera benzoin*), highbush blueberry (*Vaccinium corymbosum*), and beaked hazelnut (*Corylus cornuta*). While the lack of native shrubs is partly due to the dense crown cover in the upper canopy (>30 ft tall) which prevents sunlight from reaching the forest floor, it should be noted that this is also a result of extensive deer browse. In order to regenerate the forest floor with herbaceous plants and native shrubs, a suggestion would be to plant or seed desired plant species, and then also cage the native shrubs which will reduce the risk of deer browse in the forest understory (0-5 ft tall).

Across the property, there are several mowed areas that have large patches of grass and very few herbaceous plant species (Figure 4). While this may appear well-managed due to its tidy appearance from regular mowing and leaf blowing, it does not serve any valuable ecological purpose. Because these open and semi-open areas do not have wildflowers and generally lack herbaceous plants, there are minimal opportunities for birds to forage and nest. By promoting wildflower meadows and increasing the cover of native herbaceous plants in the open areas, this property has the potential to provide a more suitable habitat for many low nesting bird species, such as the Chestnut-sided Warbler (*Setophaga pensylvanica*) that makes its nest in low dense shrubs, commonly found in overgrown fields and forest edge habitats. A suggestion for the open and semi-open areas is to establish wildflower meadows by planting or seed spraying desired plants in the spring after frost has past and by reducing the mowing down to once a year, preferably in late fall. Once the area begins to flourish with native herbaceous vegetation, this property will not only have gained an additional aesthetic value but it will also provide a valuable ecological resource for many bird species.



**Figure 1. Dense Oriental Bittersweet climbing a Norway Spruce of Point 11**



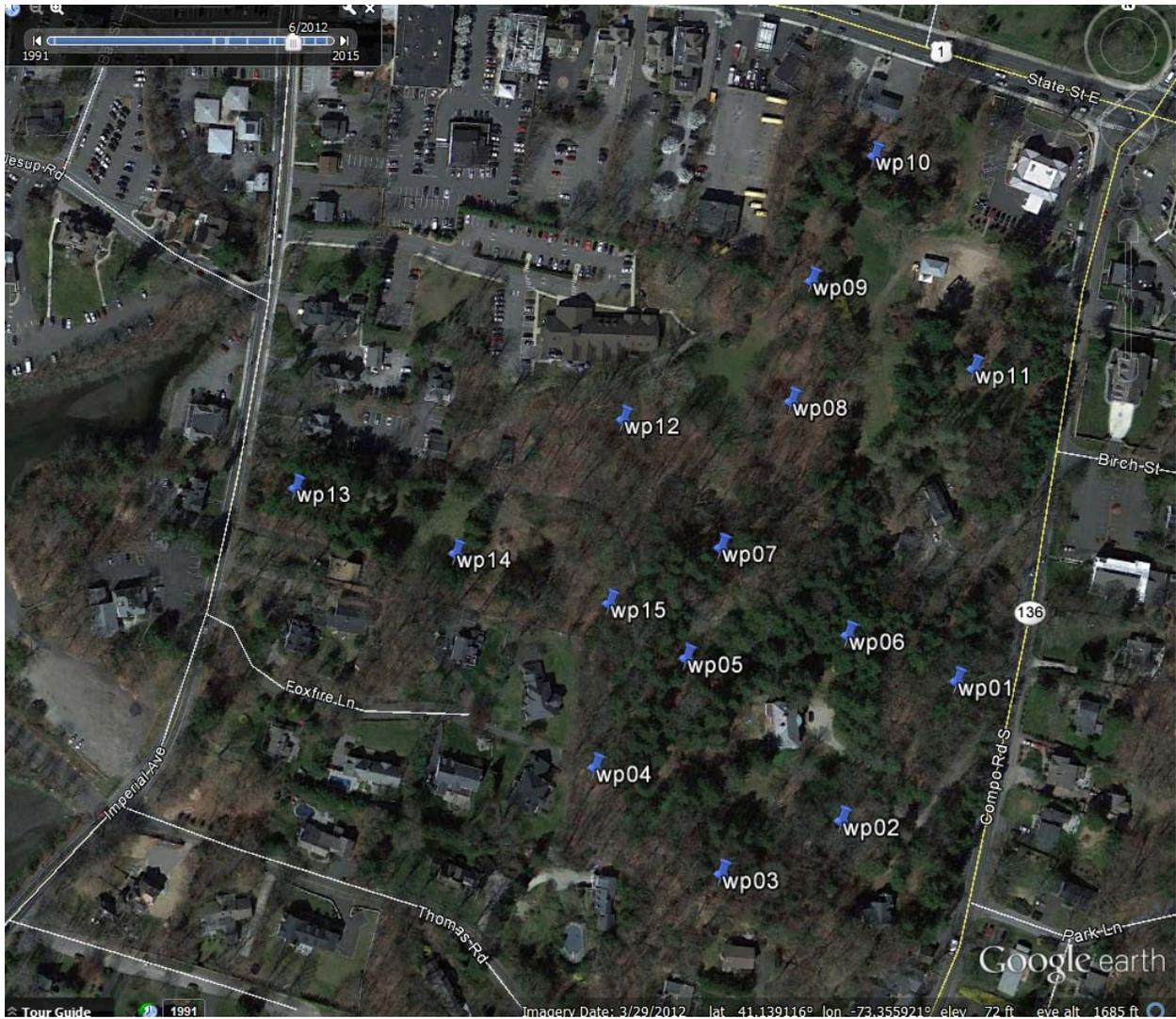
**Figure 2. Overstocked conifer stand of Point 6**



**Figure 3. Absence of native shrubs and herbaceous plants observed in the understory of Point 1.**



**Figure 4. Semi-open area of Point 14 that is lacking wildflowers and herbaceous plants.**



**Location of sample points for Baron's South habitat assessment.**

# Westport, Barons

**19.8 acres of assessed forest land**  
**15 sample points across property**

## Quantitative habitat descriptions

The following pages provide a quantitative assessment of habitat features found on your property. The assessments were completed using a series of systematically located points across all of the forested area on your property, but do not include open fields and wetlands without trees (e.g., marshes).

At each point, we evaluated a range of habitat features on a 1/20 acre plot using the criteria shown below. These values were pooled to capture the range of conditions found across the entire property (pages B2-B8).

Forested portions of properties are often composed of distinct stands (also referred to as "areas" in this report) with relatively uniform vegetation composition, age class, size class, density, and site quality so as to be considered relatively homogenous. For example, the vegetation and structural attributes in conifer stands usually differ greatly from adjacent hardwood stands. Each stand may provide unique opportunities for providing habitat for a distinct suite of priority forest birds. Final pages include summaries at the stand level.

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### Category criteria for 1/20 acre plots (26.33 ft or 8.03 m radius)

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#### Vegetation cover, canopy closure, soft mast

Absent - covered <5% of plot  
Low - covered 5-30% of plot  
Medium - covered 30-70% of plot  
High - covered >70% of plot

#### Canopy height

Short - trees <20 ft tall  
Medium - trees 20-60 ft tall  
Tall - trees >60 ft tall

#### Nesting and wetland features

Absent - not found within plot  
Inside - observed within plot  
Outside - observed outside of plot

#### Habitat features

Absent - not found within plot  
Low - few leaves / one or two pieces of coarse woody debris  
Medium - average leaf litter/several pieces of coarse woody debris  
High - thick leaf litter / many pieces of coarse woody debris

# Westport, Barons

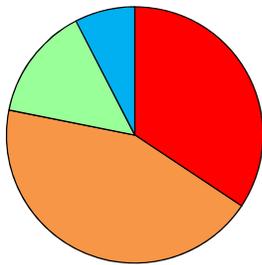
## Property summary (19.8 acres, 15 sample points)

### Groundlayer vegetation cover (0-5 feet tall)

	Absent	Low	Medium	High
<b>Native herbaceous</b>	34%	44%	14%	8%
<b>Native shrubs</b>	100%	0%	0%	0%
<b>Non-native species</b>	6%	41%	34%	19%
	Hardwood	Mixed	Conifer	
<b>Species mix</b>	76%	18%	6%	



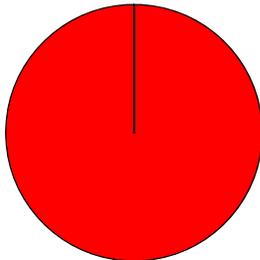
#### Native herbaceous



- Absent
- Low
- Medium
- High

**Native herbaceous** plants are ideal for foraging and provide cover for species such as the Veery. Typical examples include: asters, mayflowers, goldenrods, skunk cabbage, sarsaparilla, and jewelweed. These plants should be encouraged as they serve as a food source for invertebrates that are consumed by some birds, as well as providing sources of nectar, seeds, and fruit.

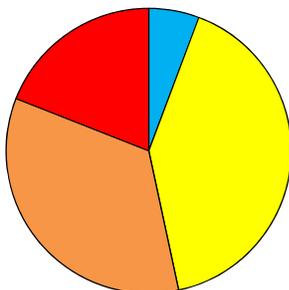
#### Native shrubs < 5 ft tall



- Absent
- Low
- Medium
- High

**Native shrubs** are relatively small woody plants that may bear fruit or host insects that provide seasonal forage for birds. Shrubs also provide a structural base for nests and cover from predators and weather for birds such as the Veery and Black-Throated Blue Warbler. Some examples of native shrubs are beaked hazelnut, brambles, mapleleaf viburnum, mountain-laurel, and witch-hazel.

#### Non-native species < 5 ft tall



- Absent
- Low
- Medium
- High

**Non-native plant species** may provide nesting opportunities, but because they decrease the overall diversity and quality of native habitat, it is desirable to replace them with native species. In addition, they do not support as many insect as native plants. Common examples of non-natives are: Japanese barberry, Oriental bittersweet, multiflora rose, Japanese stiltgrass, and winged euonymus.

# Westport, Barons

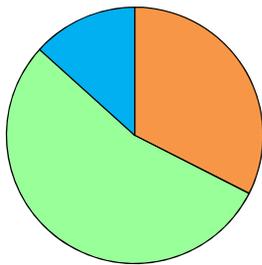
## Property summary (19.8 acres, 15 sample points)

### Midcanopy vegetation (5-30 feet tall)

	<b>Absent</b>	<b>Low</b>	<b>Medium</b>	<b>High</b>
<b>Midcanopy cover</b>	0%	32%	54%	13%
	<b>Hardwood</b>	<b>Mixed</b>	<b>Conifer</b>	
<b>Species mix</b>	25%	68%	8%	



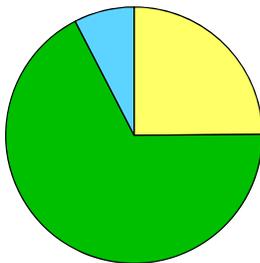
Midcanopy cover



- Absent
- Low
- Medium
- High

**Midcanopy cover** consists of all tree and shrub foliage within the 5-30 ft zone above the forest floor. High midcanopy cover (foliage density) provides cover, nesting, and foraging for species such as the Red-Eyed Vireo and Wood Thrush. Typical midcanopy species include: red maple, hemlock, birch, witch-hazel, and spicebush, and shadbush.

Midcanopy type



- Hardwood
- Mixed
- Conifer

**Midcanopy type** is defined as the predominant type of trees and large shrubs found in the midstory (5-30 ft zone). Three types are recognized: hardwood (deciduous), conifer (evergreen), or mixed (hardwood and conifer). Seed or fruit producing species provide a seasonal food source and seeds for regeneration. Conifers provide important thermal cover during the winter months and cover from predators year-round.

# Westport, Barons

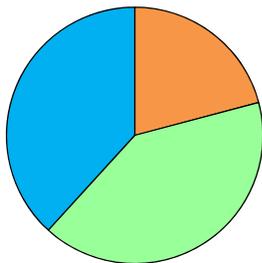
## Property summary (19.8 acres, 15 sample points)

### Upper canopy vegetation (>30 feet tall)

	<b>Absent</b>	<b>Low</b>	<b>Medium</b>	<b>High</b>
<b>Upper canopy cover</b>	0%	21%	41%	38%
	<b>Short</b>	<b>Medium</b>	<b>Tall</b>	
<b>Canopy height</b>	0%	8%	92%	
	<b>Hardwood</b>	<b>Mixed</b>	<b>Conifer</b>	
<b>Species mix</b>	34%	44%	23%	



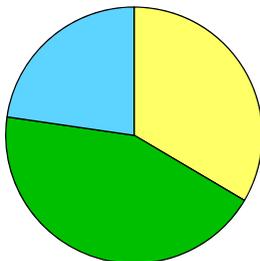
#### Upper canopy cover



- Absent
- Low
- Medium
- High

**Upper canopy cover** is an estimate of horizontal area covered by tree crowns, i.e., the shade cast by trees at high noon. Low cover allows abundant sunlight to reach the forest floor and often has dense herbaceous and shrub layers. Medium cover provides conditions for the maintenance of a midstory. Stands with high cover usually have sparse midstories with few, if any, herbaceous plants and tree seedlings.

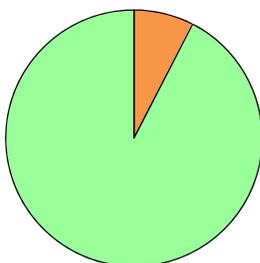
#### Canopy type



- Hardwood
- Mixed
- Conifer

**Canopy type** is defined as the predominant type of trees that are taller than 30 ft. To encourage diversity of food resources, and in turn a diversity of bird species, trees that produce soft mast should be maintained as a valuable food resource. Maintaining yellow birch is crucial for birds with an insectivorous diet. Conifers should be encouraged in hardwood stands and vice versa.

#### Canopy height



- Short
- Medium
- Tall

**Canopy height** influences nesting site potential in all forest stages. Increasing vertical stratification (any different heights) tends to increase diversity of bird species. Shorter tree heights favor species such as the Chestnut-Sided and Worm-Eating Warblers, while species such as the Scarlet Tanager and Pileated Woodpecker prefer taller woods with taller trees.

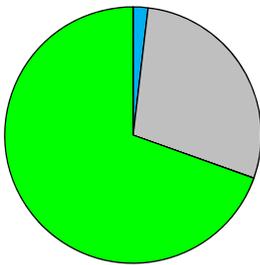
# Westport, Barons

## Property summary (19.8 acres, 15 sample points)

### Forest composition - basal area (feet<sup>2</sup>/acre)

	<u>Hard mast</u>		<u>Dry seeds</u>		Soft	Conifer	Total
	Oak	Beech	Maple	Other			
Pole (5-11" diameter)	0	0	1	12	0	28	40
Saw (>11" diameter)	21	3	14	17	0	35	90
<b>Total</b>	<b>21</b>	<b>3</b>	<b>15</b>	<b>28</b>	<b>0</b>	<b>63</b>	<b>130</b>

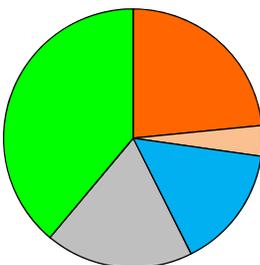
Poletimber



- Oak
- Beech
- Maple
- Other
- Soft
- Conifer

**Poletimber** is a term used to describe trees four to ten inches in diameter. They often fill the gaps when larger trees die - thus forming the upper canopy trees of future forests. Retaining higher proportions of hard and soft mast trees, while limiting dry seed trees, will promote a healthy, diverse mix of species.

Sawtimber



- Oak
- Beech
- Maple
- Other
- Soft
- Conifer

**Sawtimber** trees are 11 inches in diameter or greater. They are often the largest and most mature trees in the forest and have the greatest seed/fruit production. By varying the amount of sawtimber present in a woodland through active forest management, landowners can aid in providing diverse habitats for many priority bird species.

**Hard mast** - species that produce nuts such as oaks, hickories, and beech.

**Soft mast** - species that produce fruits such as cherries, shadbush, sassafras, and blueberries.

**Dry seeds** - species that produce small, dry seeds such as maples, birches, aspens.

**Conifers** - evergreen species that produce dry seeds and also provide thermal cover such as pines, hemlocks, and cedars.

# Westport, Barons

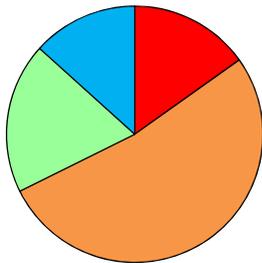
## Property summary (19.8 acres, 15 sample points)

### Habitat features

	Absent	Low	Medium	High
Coarse woody material	15%	53%	19%	13%
Leaf litter	7%	68%	19%	7%
Soft mast	20%	34%	40%	6%



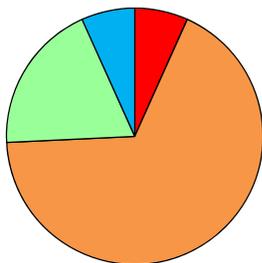
#### Coarse woody material



- Absent
- Low
- Medium
- High

**Coarse woody material (CWM)** is comprised of downed trees and branches with diameters of 4 inches or greater. CWM may function as a perch site for singing birds, a substrate for wood-rotting fungi, and a habitat for insects and other invertebrates that provide a protein-rich diet for birds during the breeding season and when feeding their chicks.

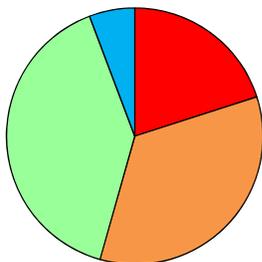
#### Leaf litter



- Absent
- Low
- Medium
- High

**Leaf litter** is the distribution, amount, and depth of deciduous leaves and needles that cover the ground. Leaf litter is an important habitat for insects and invertebrates. It is also important for ground nesters like the Ovenbird which makes its nest from leaves and downed materials. Equally important, litter leaf reduces the risk of soil erosion during periods of heavy rainfall.

#### Soft mast



- Absent
- Low
- Medium
- High

**Soft mast** is an estimate of potential fruit production that includes berries and drupes. Soft mast trees produce a valuable food resource for not only small birds, but for many mammalian species. Examples of soft mast producing species include trees (blackgum, sassafras, cherry, dogwood), shrubs (blueberry, viburnums, spicebush, raspberries, blackberries), and vines (grape, Virginia creeper).

# Westport, Barons

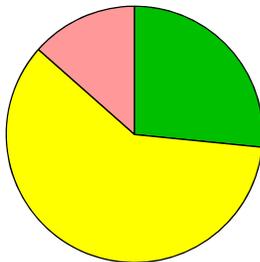
## Property summary (19.8 acres, 15 sample points)

### Nesting features

	Inside	Outside	Absent
Brush piles or tops	27%	60%	13%
Cavities	46%	39%	15%
Snags	26%	56%	18%



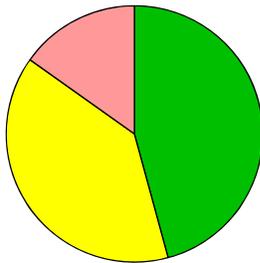
#### Brush piles or tops



- Inside
- Outside
- Absent

**Brush piles or tops** are either a large pile of woody material or a large section of a broken-off tree top with intact branches and twigs. It provides understory structure for nesting as well as habitat for insects and other small prey that provide food for birds.

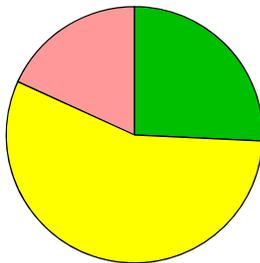
#### Cavities



- Inside
- Outside
- Absent

**Cavities** and larger hollows in tree trunks or branches provide good locations for nests because they provide some protection from weather and predators. Owls, Pileated Woodpeckers, and Nuthatches are among several species that utilize cavity trees.

#### Snags



- Inside
- Outside
- Absent

**Snags** refer to a standing dead tree, often missing a top, and most of the smaller branches. Snags provide opportunities for excavating nests, perch sites, and possible mating rituals. The insect larvae in the decaying wood of snags provide an excellent food source for woodpeckers.

# Westport, Barons

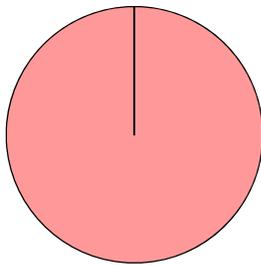
## Property summary (19.8 acres, 15 sample points)

### Wetland features

	Inside	Outside	Absent
Rocky stream	0%	0%	100%
Wetland	6%	0%	94%



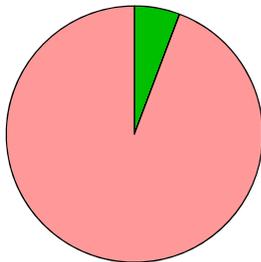
#### Rocky stream



- Inside
- Outside
- Absent

**Rocky streams** or streams with gravel bottoms within a forest provide an important water source for many wildlife species and potential nesting areas for bird species such as the Louisiana waterthrush. Tip-up mounds and root plates from fallen trees in close proximity to streams improve the quality of these areas for many species.

#### Wetland



- Inside
- Outside
- Absent

**Wetlands** are defined as areas with water saturated soils. Forested and shrubby wetlands provide structure and frequently contain coarse and fine woody debris. They tend to have shorter trees with low canopy heights and dense shrubs and herbaceous plant communities. Wetlands add to the complexity of the landscape and diversity of the forest stands.

## Westport, Barons (Stand-1, 7 acres, Mixedwood)



### Groundlayer vegetation cover (0-5 feet tall)

	Absent	Low	Medium	High
Native herbaceous	17%	83%	0%	0%
Native shrubs	100%	0%	0%	0%
Non-native species	17%	33%	17%	33%
	Hardwood	Mixed	Conifer	
Species mix	50%	33%	17%	



### Midcanopy vegetation (5-30 feet tall)

	Absent	Low	Medium	High
Midcanopy cover	0%	33%	50%	17%
	Hardwood	Mixed	Conifer	
Species mix	33%	67%	0%	



### Upper canopy vegetation (>30 feet tall)

	Absent	Low	Medium	High
Upper canopy cover	0%	17%	33%	50%
	Short	Medium	Tall	
Canopy height	0%	0%	100%	
	Hardwood	Mixed	Conifer	
Species mix	17%	83%	0%	



### Forest composition - basal area (feet<sup>2</sup>/acre)

	<u>Hard mast</u>		<u>Dry seeds</u>		Soft	Conifer	Total
	Oak	Beech	Maple	Other			
Pole (5-11" diameter)	0	0	0	5	0	15	20
Saw (>11" diameter)	33	2	13	10	0	25	83
<b>Total</b>	<b>33</b>	<b>2</b>	<b>13</b>	<b>15</b>	<b>0</b>	<b>40</b>	<b>103</b>

## Westport, Barons (Stand-1, 7 acres, Mixedwood)

### Habitat features

	Absent	Low	Medium	High
Coarse woody material	0%	50%	33%	17%
Leaf litter	0%	67%	33%	0%
Soft mast	17%	17%	50%	17%



### Nesting features

	Inside	Outside	Absent
Brush piles or tops	33%	67%	0%
Cavities	50%	50%	0%
Snags	33%	33%	33%



### Wetland features

	Inside	Outside	Absent
Rocky stream	0%	0%	100%
Wetland	17%	0%	83%



### Category criteria for 1/20 acre plots (26.33 ft or 8.03 m radius)

#### Vegetation cover, canopy closure, soft mast

Absent - covered <5% of plot  
 Low - covered 5-30% of plot  
 Medium - covered 30-70% of plot  
 High - covered >70% of plot

#### Canopy height

Short - trees <20 ft tall  
 Medium - trees 20-60 ft tall  
 Tall - trees >60 ft tall

#### Nesting and wetland features

Absent - not found within plot  
 Inside - observed within plot  
 Outside - observed outside of plot

#### Habitat features

Absent - not found within plot  
 Low - few leaves / one or two pieces of coarse woody debris  
 Medium - average leaf litter/several pieces of coarse woody debris  
 High - thick leaf litter / many pieces of coarse woody debris

## Westport, Barons (Stand-2, 9 acres, Conifer)



### Groundlayer vegetation cover (0-5 feet tall)

	Absent	Low	Medium	High
Native herbaceous	33%	33%	17%	17%
Native shrubs	100%	0%	0%	0%
Non-native species	0%	50%	33%	17%
	Hardwood	Mixed	Conifer	
Species mix	100%	0%	0%	



### Midcanopy vegetation (5-30 feet tall)

	Absent	Low	Medium	High
Midcanopy cover	0%	17%	67%	17%
	Hardwood	Mixed	Conifer	
Species mix	0%	83%	17%	



### Upper canopy vegetation (>30 feet tall)

	Absent	Low	Medium	High
Upper canopy cover	0%	33%	50%	17%
	Short	Medium	Tall	
Canopy height	0%	17%	83%	
	Hardwood	Mixed	Conifer	
Species mix	17%	33%	50%	



### Forest composition - basal area (feet<sup>2</sup>/acre)

	<u>Hard mast</u>		<u>Dry seeds</u>		Soft	Conifer	Total
	Oak	Beech	Maple	Other			
Pole (5-11" diameter)	0	0	2	15	0	35	52
Saw (>11" diameter)	2	3	8	20	0	40	73
<b>Total</b>	<b>2</b>	<b>3</b>	<b>10</b>	<b>35</b>	<b>0</b>	<b>75</b>	<b>125</b>

## Westport, Barons (Stand-2, 9 acres, Conifer)

### Habitat features

	Absent	Low	Medium	High
Coarse woody material	33%	33%	17%	17%
Leaf litter	0%	83%	17%	0%
Soft mast	17%	33%	50%	0%



### Nesting features

	Inside	Outside	Absent
Brush piles or tops	33%	67%	0%
Cavities	33%	33%	33%
Snags	17%	83%	0%



### Wetland features

	Inside	Outside	Absent
Rocky stream	0%	0%	100%
Wetland	0%	0%	100%



### Category criteria for 1/20 acre plots (26.33 ft or 8.03 m radius)

#### Vegetation cover, canopy closure, soft mast

Absent - covered <5% of plot  
 Low - covered 5-30% of plot  
 Medium - covered 30-70% of plot  
 High - covered >70% of plot

#### Canopy height

Short - trees <20 ft tall  
 Medium - trees 20-60 ft tall  
 Tall - trees >60 ft tall

#### Nesting and wetland features

Absent - not found within plot  
 Inside - observed within plot  
 Outside - observed outside of plot

#### Habitat features

Absent - not found within plot  
 Low - few leaves / one or two pieces of coarse woody debris  
 Medium - average leaf litter/several pieces of coarse woody debris  
 High - thick leaf litter / many pieces of coarse woody debris

## Westport, Barons (Stand-3, 4 acres, Hardwood)



### Groundlayer vegetation cover (0-5 feet tall)

	Absent	Low	Medium	High
Native herbaceous	67%	0%	33%	0%
Native shrubs	100%	0%	0%	0%
Non-native species	0%	33%	67%	0%
	Hardwood	Mixed	Conifer	
Species mix	67%	33%	0%	



### Midcanopy vegetation (5-30 feet tall)

	Absent	Low	Medium	High
Midcanopy cover	0%	67%	33%	0%
	Hardwood	Mixed	Conifer	
Species mix	67%	33%	0%	



### Upper canopy vegetation (>30 feet tall)

	Absent	Low	Medium	High
Upper canopy cover	0%	0%	33%	67%
	Short	Medium	Tall	
Canopy height	0%	0%	100%	
	Hardwood	Mixed	Conifer	
Species mix	100%	0%	0%	



### Forest composition - basal area (feet<sup>2</sup>/acre)

	<u>Hard mast</u>		<u>Dry seeds</u>		Soft	Conifer	Total
	Oak	Beech	Maple	Other			
Pole (5-11" diameter)	0	0	0	15	0	35	50
Saw (>11" diameter)	43	7	27	20	0	40	137
<b>Total</b>	<b>43</b>	<b>7</b>	<b>27</b>	<b>35</b>	<b>0</b>	<b>75</b>	<b>187</b>

## Westport, Barons (Stand-3, 4 acres, Hardwood)

### Habitat features

	Absent	Low	Medium	High
Coarse woody material	0%	100%	0%	0%
Leaf litter	33%	33%	0%	33%
Soft mast	33%	67%	0%	0%



### Nesting features

	Inside	Outside	Absent
Brush piles or tops	0%	33%	67%
Cavities	67%	33%	0%
Snags	33%	33%	33%



### Wetland features

	Inside	Outside	Absent
Rocky stream	0%	0%	100%
Wetland	0%	0%	100%



### Category criteria for 1/20 acre plots (26.33 ft or 8.03 m radius)

#### Vegetation cover, canopy closure, soft mast

Absent - covered <5% of plot  
 Low - covered 5-30% of plot  
 Medium - covered 30-70% of plot  
 High - covered >70% of plot

#### Canopy height

Short - trees <20 ft tall  
 Medium - trees 20-60 ft tall  
 Tall - trees >60 ft tall

#### Nesting and wetland features

Absent - not found within plot  
 Inside - observed within plot  
 Outside - observed outside of plot

#### Habitat features

Absent - not found within plot  
 Low - few leaves / one or two pieces of coarse woody debris  
 Medium - average leaf litter/several pieces of coarse woody debris  
 High - thick leaf litter / many pieces of coarse woody debris