

Forest Assessment **19 and 21 Main Street, Durham, New Hampshire**

Abstract

An assessment of the 1.7± acre wooded area that occupies the southern section of a residential property in Durham, New Hampshire was conducted on January 2, 2020. The purpose of this investigation was to characterize the forest area, including its composition, structure, age, and condition, and its value to the surrounding environment. This analysis provides a baseline of present forest conditions for consideration in the proposed construction of a parking lot on the property.

Subject Property

19 & 21 Main Street Durham, New Hampshire. The subject parcels lie behind this address.
Tax Map 5, Lots 1-15 and 1-16.

Acreages

Combined parcel area: 2.2± acres
Total woodland area: 1.7± acres
Proposed parking area: 1.0± acres

Forest Description

Site

The woodland area is characterized as primarily hardwood with a couple of softwood inclusions, including small groups of white pine and Norway spruce.

The property is in an in-town location, surrounded by residences and apartment complexes, a shopping center, main roads, and driveways. Roughly 70% of the area's perimeter directly abuts houses, backyards, and parking lots. A 1± acre forested pocket extends westerly, while the southwestern corner of the property partially connects to 2± acre forest patch.

Composition and Structure

Relatively young forest (50 to 75± years old), bordered on two sides by older trees (90 to 150± years old), characterizes this forest patch. White ash 8 to 18± inches in diameter, with a maximum height of 75± feet, is the primary species (60+%) of the property interior's overstory. A group of 10 planted Norway spruce, a non-native species, were noted near the existing parking area. These trees range from 10 to 16 inches in diameter and up to a 60± foot height. Sugar maple saplings (<1" to 2", up to 25± foot height) and young polewood (2" to 4", 30 to 45± feet) dominate the forest understory and mid-story. White ash saplings are also found. Saplings and polewood are younger than the overstory trees.



15 large trees, 20 to 36± inches in diameter and ranging 70 to 90± feet in height, stand along sections of the property's perimeter (particularly the west and south borders). These include sugar maple (6 trees), red oak (5 trees), white ash (2 trees), and white pine (3 trees).

The chart below summarizes the relative abundance of tree species found in the subject area.

| ABUNDANT | COMMON | LESS COMMON | SCARCE |
|-----------|-------------|---------------|-----------|
| White ash | Sugar maple | White pine | Butternut |
| | Red maple | Black cherry | |
| | Red oak | American elm | |
| | | Norway spruce | |

The tree density of the forest area is approximately 115 square feet of basal area per acre. There are approximately 170 trees per acre (overstory and upper mid-story), while the average diameter of the trees (mean stand diameter) is about 11 inches (DBH).

Forest Condition

Over the next 5 years or so, most, if not all, of the property's white ash are likely to succumb to the Emerald Ash Borer, an exotic insect now present in the area. Since ash constitutes nearly 2/3rds of the stand's overstory, the result will be a substantial density of standing dead trees, a condition that persists for 5 to 10 years after mortality. The sugar maple mid-story and understory is then positioned to gain dominant canopy position. The property interior's other main canopy trees are generally in good condition.

The 15 large perimeter trees are mostly healthy, except for the largest sugar maples, some of which have lost major branches, contain substantial trunk decay, or exhibit crown dieback. Two large diameter white ash, though presently healthy, will likely soon be lost to EAB. A pocket of 8 white pines in the property's southwest corner are situated in a low-lying area; these shallow-rooted trees are susceptible to blowdown.

Of note is the presence of two butternuts (9 and 13 inches in diameter, respectively) which are situated just inside the eastern property line near an abutter's shed. This species is increasingly rare due to a ubiquitous disease. The trees appear to be healthy.

The property has a burgeoning infestation of exotic, invasive plants, including burningbush, multiflora rose, European barberry, honeysuckle, and Oriental bittersweet. These plants will overtake the forest patch over time unless intensive management is applied.

Forest Values

Due to its relatively small size and the highly developed surrounding environment, the subject forest area has limited wildlife value, particularly as breeding and nesting/denning habitat for birds and mammals, especially imperiled species. Noise and human activity, obstructed travel corridors, limited cover, and predation from domestic pets are some of the factors curtailing habitat suitability. That said, some animals, mainly those adapted to urban environments such as gray squirrel, utilize the forest patch (foraging, roosting, travel, and possible nesting).



The pocket of green space provides abutting properties with background scenery and privacy. The northern section of the forest patch is visible from Main Street, providing a backdrop of greenery, albeit with obstructed views. The retention of some of the large perimeter trees will help mitigate the effects of clearing the property interior.

The forest floor allows the absorption of precipitation, filtration, and unimpeded flow of ground water. These factors will undoubtedly be considered in the site plans for the proposed parking lot.

Appendices

| Common Name | Scientific Name | Common Name | Scientific Name |
|-------------|---------------------------|---------------|------------------------|
| White ash | <i>Fraxinus americana</i> | Black cherry | <i>Prunus serotina</i> |
| Sugar maple | <i>Acer saccharum</i> | American elm | <i>Ulmus americana</i> |
| Red maple | <i>Acer rubrum</i> | Norway spruce | <i>Picea abies</i> |
| Red oak | <i>Quercus rubra</i> | Butternut | <i>Juglans cinerea</i> |
| White pine | <i>Pinus strobus</i> | | |

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