

# **ICE GLEN TREE HEALTH REPORT 2021**

**By Ken Gooch**  
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## **OVERVIEW**

Due to concerns about the health of hemlock and white ash trees on the 63-acre Ice Glen property in Stockbridge, Ken Gooch Arboriculture Service was contracted to conduct a tree survey to determine the current status of the trees. Hemlock trees above 10 inches DBH (diameter at breast height) within the Ice Glen area were identified, measured, and the health of each tree was determined by examining the foliage, and documented.

In addition, due to the current threat from an invasive insect, the emerald ash borer (EAB), significant white ash trees on the property were also identified, DBH measured, and current health was determined.

GPS locations for the trees measured were recorded. This documentation can be used to compare tree growth and changes in health when repeated measurements are taken over a period of time and is another method to track tree decline.

Ken Gooch is the retired director of the Massachusetts Department of Conservation and Recreation Forest Health Program and has been at the forefront of establishing strategies to monitor and mitigate the effects of long-term non-native insect and disease invasions in the forests.

## **DIAMETER AT BREAST HEIGHT**

Diameter at breast height or DBH is a standard method of expressing the diameter of the trunk of a standing tree. DBH is one of the most common dendrometric measurements. The measurement is taken at 4.5 feet above ground level on the trunk or bole of the tree. DBH measurements are generally used to determine tree growth over long periods of time but also can be used as a forest health tool. Healthy trees depending on location in most cases have diameter measurements that increase over time. Slower than normal DBH measurements can be an indication of declining tree health. Setting up baseline DBH measurements is one tool that will allow future tree health surveys the ability to determine whether trees are recovering from the current insect infestations. In addition, DBH can be used for estimating treatment costs as most pesticide applications for hemlock woolly adelgid (HWA), elongated hemlock scale (ELHS), and emerald ash borer (EAB) are based on a cost per inch of DBH.

## **HEALTH RATING**

There are many different methods used for determining tree health. The US Forest Service Forest Health Monitoring Program uses a tree health measurement called “Transparency” and is the main component to determine tree health. Foliage transparency is the amount of skylight visible through the live, normally foliated portion of the crown. Foliage transparency estimates the crown condition in relation to a typical tree for the site where it is found. Low transparency ratings (little visible skylight) indicate a full and generally healthy crown; high transparency ratings indicate a sparse crown. Transparency ratings of 30 percent or less are considered normal for most trees.

For overall tree health a simple good, fair, poor rating system was used. Following is an explanation for each rating:

Good condition (1) – Trees are healthy and have full crowns typical for the species. No serious bole or crown defects. Foliage transparency less than 30 percent. Minimal branch dieback.

Fair condition (2) – Trees have two or more threats to overall tree health which could include insect or disease infestations, large amounts of recent branch dieback or structural deficiencies.

Transparency ratings are in the 30-50 percent range which can indicate a serious tree health concern in the future.

Poor condition (3) – Indicates a threat to overall tree health is currently occurring and without intervention tree mortality is imminent. A poor condition measurement could include serious insect or disease infestations or major structural deficiencies. Transparency ratings of greater than 50 percent.

*(Note) – White ash trees during the survey were not foliated but many were determined to have a “good” tree health condition rating. This was based on the current visual condition of the trees which had minimal branch dieback and appeared to have healthy crowns.*

## **HEMLOCKS**

Hemlocks are a vital part of the New England forest landscape and are the third most prevalent tree species in Massachusetts. Hemlocks appear in pure stands and are or can be considered a riparian tree species. Environmentally, hemlocks provide erosion protection along stream banks. Hemlocks provide a habitat and a food source for birds and wildlife. In many urban areas, hemlocks are considered a major component for landscape plantings. Loss of this native tree species could be ecologically devastating to forested areas because of the benefits it provides. Three hundred and fifty-one (351) hemlocks were identified predominately along each side of the gorge. The trees were visually inspected for the presence of hemlock woolly adelgid (HWA), elongated hemlock scale (ELHS), and current health. Of the 351 hemlocks, most were in fair to poor condition. Only one hemlock was identified as in good condition, 35% are in fair condition and 64% are in poor condition.

## **HEMLOCK WOOLLY ADELGID**

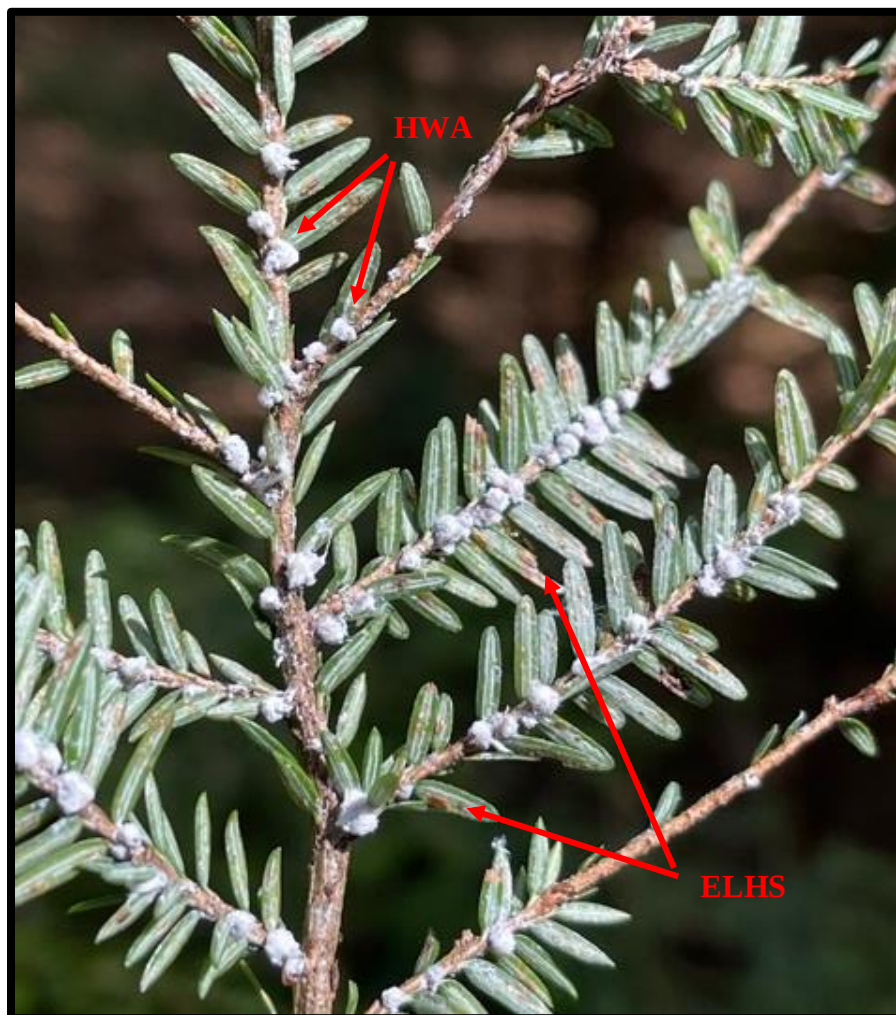
Hemlock woolly adelgid is an invasive non-native insect first discovered in the eastern United States in Richmond, VA in 1951. On its own it spreads slowly but its movement has been assisted across the eastern United States, primarily by birds and humans. The presence of HWA can be identified by the egg sacs which resemble small tufts of cotton that cling to the underside of hemlock branches. In our area it has two generations per year and each egg sac can have 100 to 300 eggs. In its native range (eastern Asia) HWA is not considered a major tree killing pest as it has coevolved with many natural enemies that keep it in check, not allowing it to become the tree killer it is in this country. In the United States the natural enemy of the HWA was not brought in thus allowing it to spread unchecked to many forested hemlock stands leading to thousands of acres of tree mortality. Up until now we have not experienced the hemlock tree mortality that's been seen to the south of Massachusetts in the southern New England, Mid-Atlantic, and southern states due to HWA. This is primarily due to our winter temperatures which normally have had periods of prolonged cold temperatures that have killed a high percentage of the insect. But recent weather conditions and possible global warming have led to higher

levels of HWA winter survival rates and more insect reproduction. Massachusetts for many years since the outbreak of HWA in the state was considered to be the leading edge of hemlock tree mortality in New England but that has changed and now forest health experts are predicting a more prolonged dieback of the species from this invasive insect with large amounts of decline and tree mortality expected in the future.

The US Forest Service with cooperation from HWA-affected states have a biological control program and the state of Massachusetts has been an active partner in releasing three (3) different bio-control insects on forested lands (public properties only) but unfortunately as of this date there has not been much success in getting those insects established. Because of the lack of bio-control insect establishment, many states' old growth and significant hemlock stands are starting to see an increase in symptoms of decline and tree mortality due to HWA and ELHS.

### **ELONGATED HEMLOCK SCALE**

Elongated hemlock scale is also a non-native insect that has been found on the Ice Glen hemlocks. This insect in combination with HWA can cause needle loss, branch and limb dieback, and eventual death of trees. Currently there are no bio-control programs active in Massachusetts for this insect threat. ELHS is very difficult to control in forested stands and there are limited pesticides that actually work against this insect pest.



## **TREATMENT FOR HWA AND ELHS**

In my past work experience as the Forest Health Program Director for the Massachusetts Department of Conservation and Recreation starting in April 2016, we were able to secure state funding to assess and chemically treat some of the more significant and pristine state-owned hemlock stands in order to protect this valuable resource. In Berkshire County this included forested acres in Bash Bish Falls, Tolland State Forest, Mohawk Trail State Forest, and Sanderson Brook Falls. We used a pesticide called Dinotefuron for the treatments which has the highest efficacy against both HWA and ELHS. Prior to these pesticide treatments we were starting to see significant decline and mortality. The pesticide treatments were quite expensive but it was realized that without intervention on our part, large stands of hemlocks would be lost which would not be ecologically sound. The US Forest Service and other eastern states are currently using the same methods of treatment to protect hemlocks.

## **WHITE ASH**

White ash, another significant tree in our forested landscape, is also under threat from an invasive insect, the emerald ash borer (EAB).

Thirty-three white ash trees were identified, measured and documented as part of this survey. 6% are in fair condition and 93% are still in good condition.

The concern for Ice Glen is that EAB infestations are located throughout the Berkshires and have been found to be less than half a mile away. Many of the white ash in Ice Glen have been documented to be some of the oldest and largest ash trees in the state, some as tall as one hundred thirty-five (135) feet. Based on the current visual surveys performed there isn't any outright appearance of infestation but based on past experience with EAB it is more than likely in the ash trees there and could easily kill these significant trees within the next 2-3 years without intervention.

## **EMERALD ASH BORER**

As with other invasive, non-native insects and diseases, EAB did not come to this country with natural enemies that coevolved to keep populations in check. EAB reproduces quickly and can kill a healthy ash tree in 3 to 5 years. As with HWA, there are bio-control insects being released in this country, hoping over time to get them established in order to reduce the amount of EAB. This is a process that will take many years before a natural balance is established between the EAB and its natural insect predators. In the meantime, many thousands of ash trees will die from EAB infestations. In order to protect valuable ash trees now it may be necessary to apply a pesticide treatment. Emamectrin benzoate, a systemic pesticide, has the highest efficacy against EAB and is now widely used by arborists as a control method for EAB. Specialized equipment is used to inject the pesticide into the tree.

## **DINOTEFURAN**

In most cases the pesticide imidacloprid would be recommended as a treatment option against HWA. But because high levels of elongated hemlock scale exists on the foliage, Dinotefuran should be used as a treatment method as it basically is the only pesticide that works against ELHS.

Dinotefuran is a relatively new pesticide that is considered as a possible alternative to imidacloprid for the control the HWA and ELHS. The US EPA has designated dinotefuran as a Reduced Risk alternative.

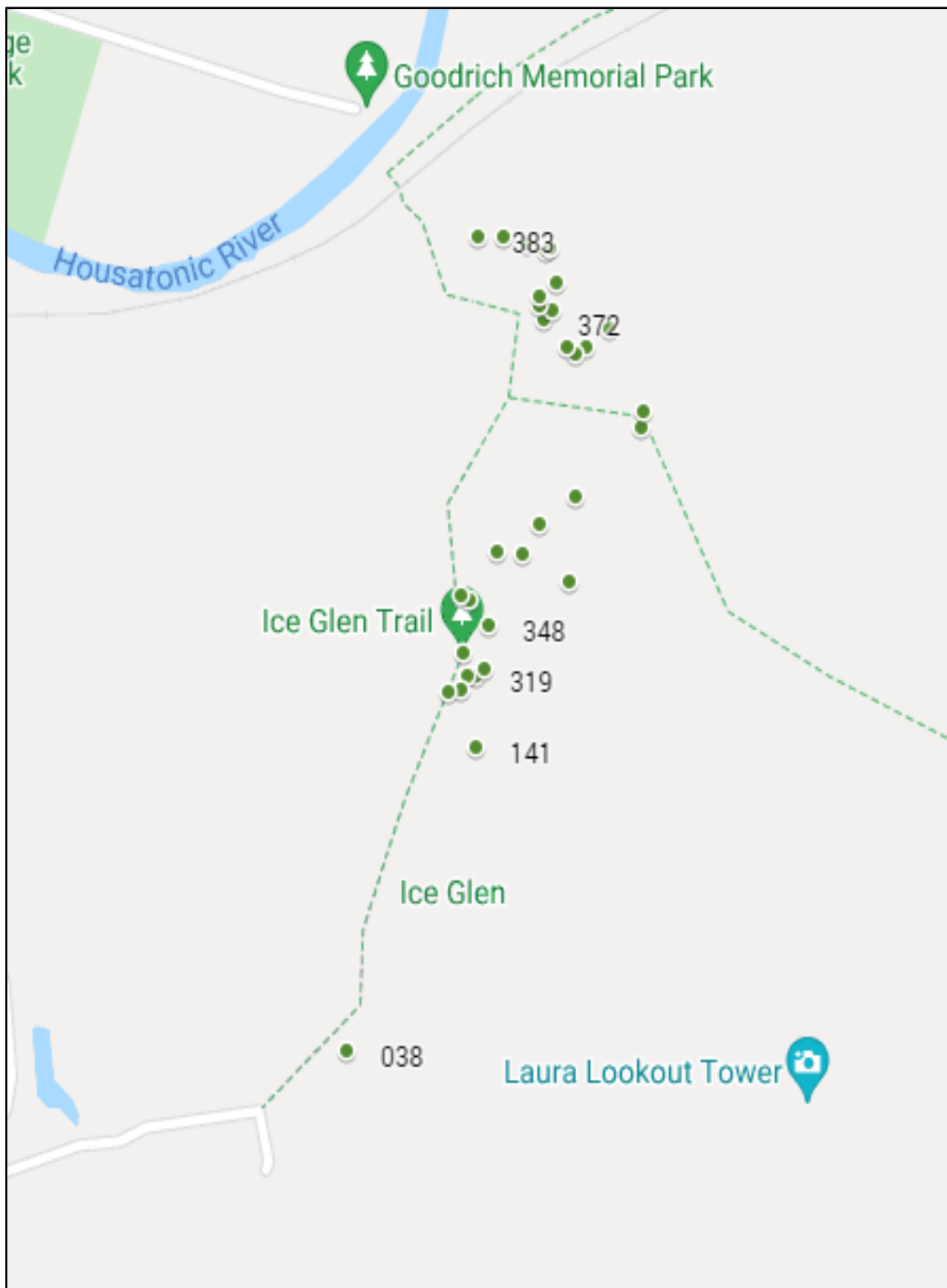
The focus of current risk assessments is to determine if the presumption of reduced risk appears to be applicable to both the human health risk assessment as well as the nontarget species included in the ecological risk assessment. The potential for risks to humans in the normal use of dinotefuran appear to be low. Based on a generally conservative and protective set of assumptions regarding both the toxicity of dinotefuran and potential exposures to dinotefuran, there is no basis for suggesting that adverse effects are likely. For members of the general public, the only exposure scenarios of concern would be longer-term consumption of contaminated vegetation (foliage) after either one or two broadcast foliar applications and foliar broadcast is not an application method that is likely to be used as it would not be a practical method of treatment. I would recommend basal bark applications of the pesticide Dinotefuran as the most efficacious, cost effective treatment option available to control HWA and ELHS on the Ice Glen hemlock trees.

## **OPINION**

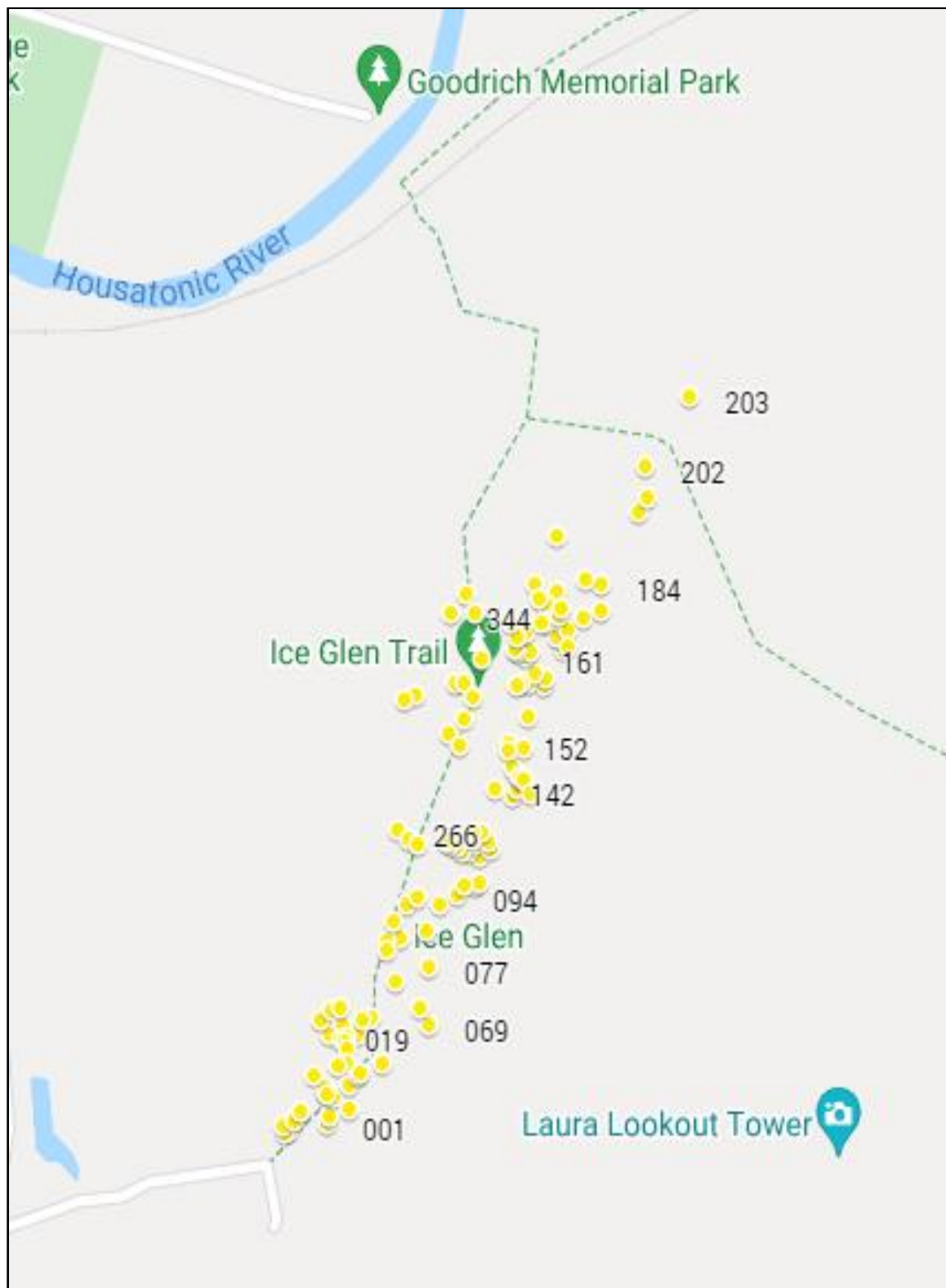
Based on current data and past professional experience, it is my opinion that the hemlocks in Ice Glen face a continued decline and possible demise if an immediate pesticide treatment option is not considered. As mentioned earlier in this report my past work experience was with the DCR Forest Health Program and we performed extensive HWA and ELHS mitigation on hemlock stands throughout the state. As is the case with Ice Glen many similar pristine properties were faced with the threat of invasive insects like HWA, ELHS or EAB and the DCR was faced with the decision, do we do nothing and let nature take its course or find some way to intervene, stop the spread of an invasive insect giving trees/forests a chance to survive while other methods of intervention were studied and implemented. In closing there are several things I believe the Town of Stockbridge might consider including public perception if nothing is done. Ice Glen is a unique forested area with very large old growth hemlocks and towering white ash trees that is a popular hiking area. A high percentage of the hemlock trees are in poor condition and without pesticide intervention this year may continue to decline. This could lead to a serious hazard tree situation in the near future causing a liability issue for the town as this is an open to the public recreation area.

## CONDITION OF ALL TREES SURVEYED

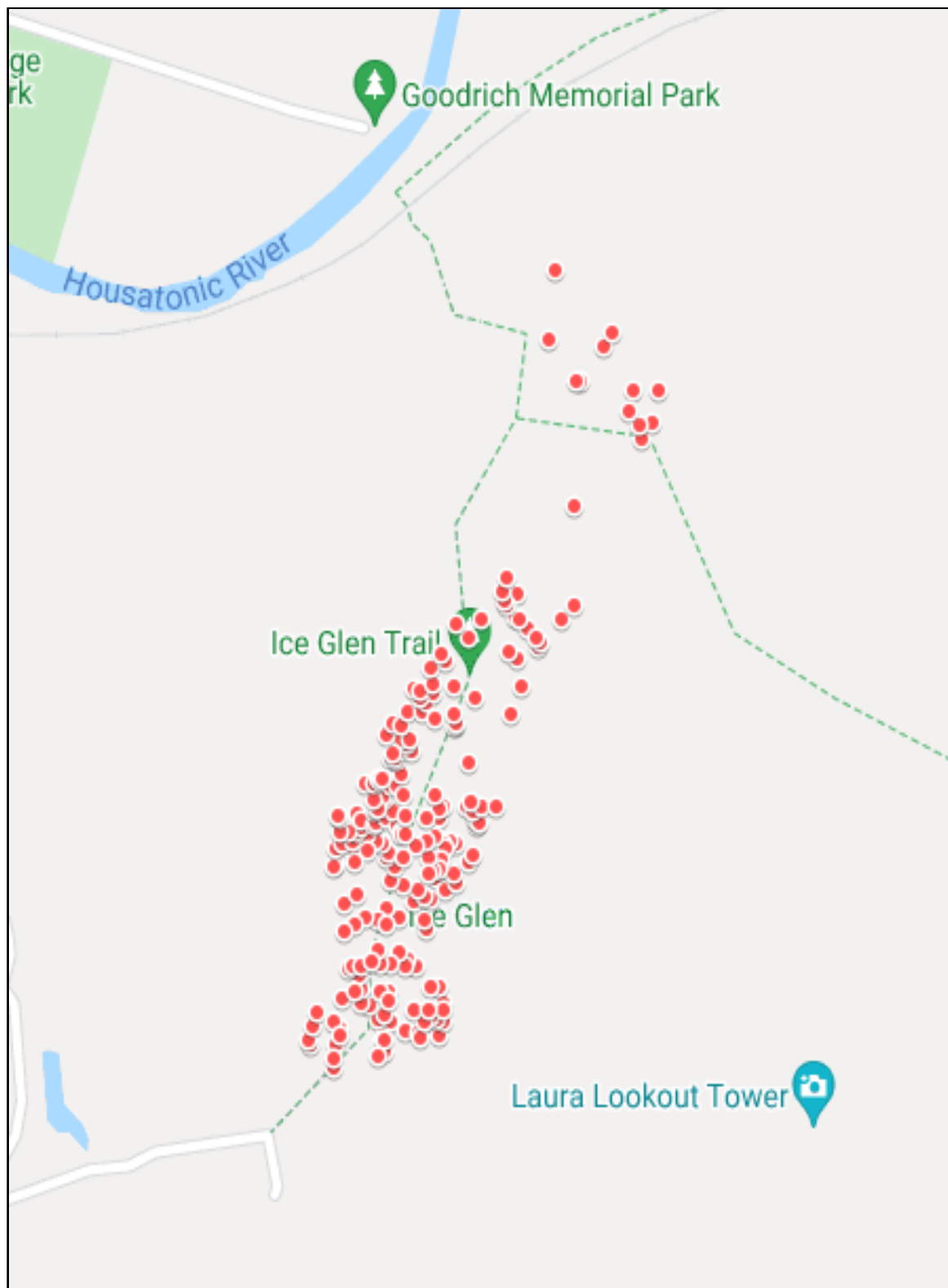
HEALTH: Good 8%



HEALTH: Fair 33%

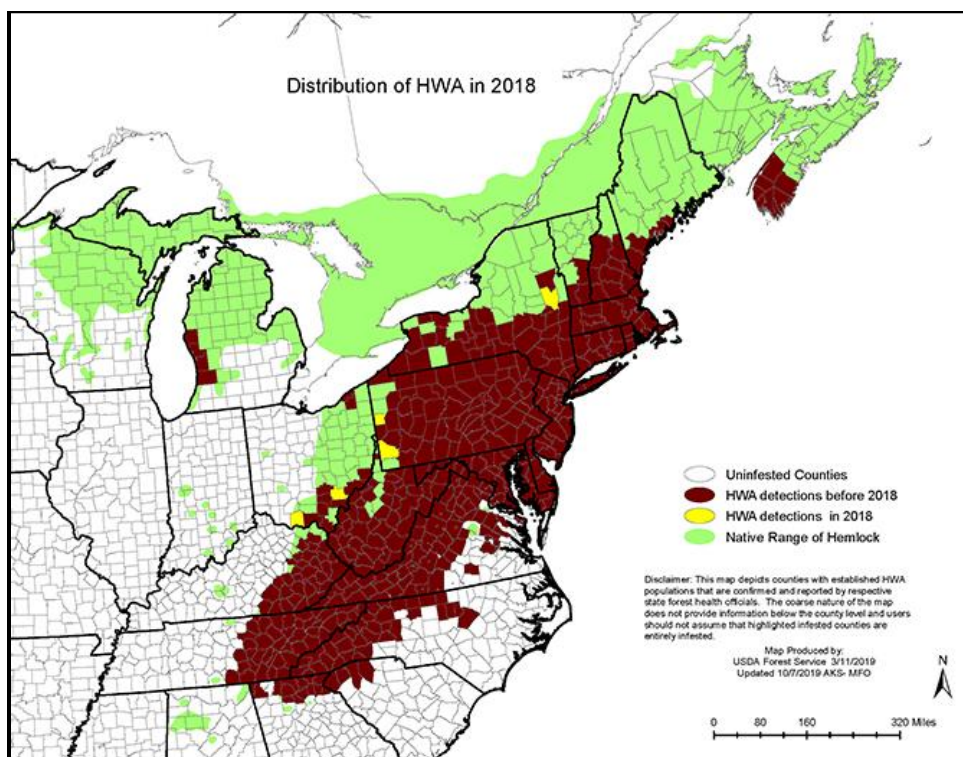
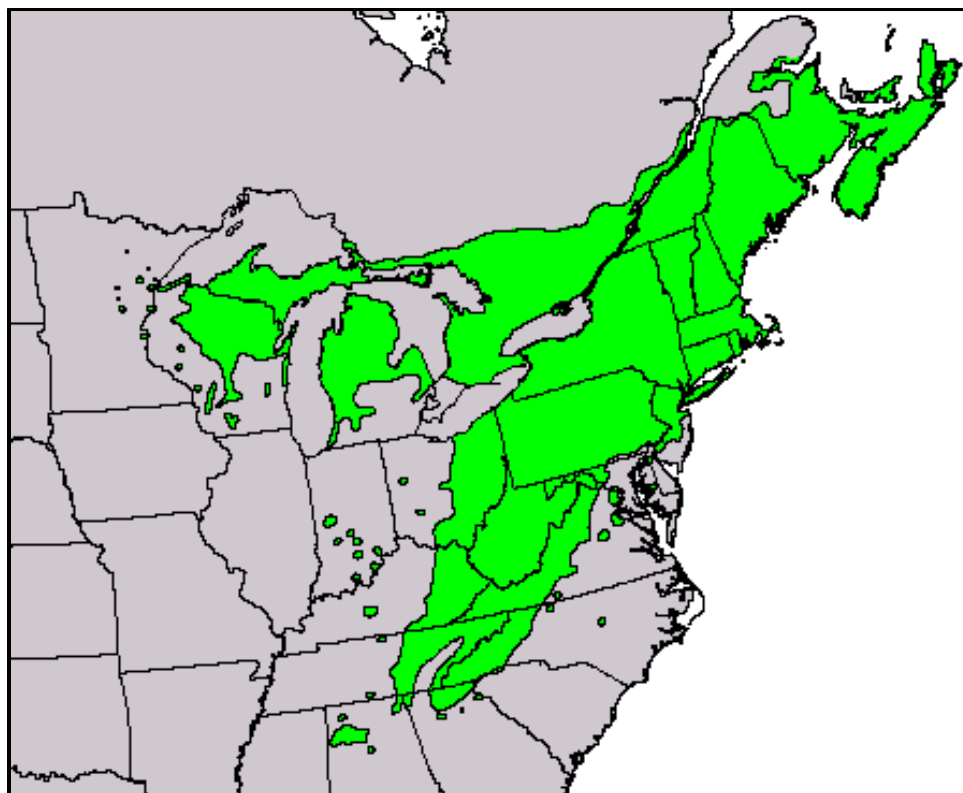


HEALTH: Poor 59%





## DISTRIBUTION OF CANADIAN HEMLOCK IN EASTERN US



# Pest Alert

United States  
Department of Agriculture  
Forest Service  
Northeastern Area  
State and Private Forestry  
NA-PR-09-05  
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## Hemlock Woolly Adelgid

Native to Asia, the hemlock woolly adelgid (*Adelges tsugae*) is a small, aphidlike insect that threatens the health and sustainability of eastern hemlock (*Tsuga canadensis*) and Carolina hemlock (*Tsuga caroliniana*) in the Eastern United States. Hemlock woolly adelgid was first reported in the Eastern United States in 1951 near Richmond, Virginia. By 2005, it was established in portions of 16 States from Maine to Georgia, where infestations covered about half of the range of hemlock. Areas of extensive tree mortality and decline are found throughout the infested region, but the impact has been most severe in some areas of Virginia, New Jersey, Pennsylvania, and Connecticut.

Hemlock decline and mortality typically occur within 4 to 10 years of infestation in the insect's northern range, but can occur in as little as 3 to 6 years in its southern range. Other hemlock stressors, including drought, poor site conditions, and insect and disease pests such as elongate hemlock scale (*Fiorinia externa*), hemlock looper (*Lambdina fiskeana fiskeana*), spruce spider mite (*Oligonychus ununguis*), hemlock borer (*Melanophila fulvoguttata*), root rot disease (*Armillaria mellea*), and needle rust (*Melampsora laricina*), accelerate the rate and extent of hemlock mortality.

### Hosts

The hemlock woolly adelgid develops and reproduces on all species of hemlock, but only eastern and Carolina hemlock are vulnerable when attacked. The range of eastern hemlock stretches from Nova Scotia to northern Alabama and west to northeastern Minnesota and eastern Kentucky. Carolina hemlock occurs on dry mountain slopes in the southern Appalachians of western Virginia, North and South Carolina, Georgia, and Tennessee. Eastern hemlock is also commonly planted as a tree, shrub, or hedge in ornamental landscapes. At least 274 cultivars of eastern hemlock are known to exist.

### Description

The hemlock woolly adelgid is tiny, less than 1/16-inch (1.5-mm) long, and varies from dark reddish-brown to purplish-black in color. As it matures, it produces a covering of wool-like wax filaments to protect itself and its eggs from natural enemies and prevent them from



Figure 1.—Hemlock woolly adelgid ovisacs.

drying out. This "wool" (ovisac) is most conspicuous when the adelgid is mature and laying eggs. Ovisacs can be readily observed from late fall to early summer on the underside of the outermost branch tips of hemlock trees (figure 1).

### Life History

The hemlock woolly adelgid is parthenogenetic (all individuals are female with asexual reproduction) and has six stages of development: the egg, four nymphal instars, and the adult. The adelgid completes two generations a year on hemlock. The winter generation, the *sisters*, develops from early summer to midspring of the following year (June–March). The spring generation, the *progenies*, develops from spring to early summer (March–June). The generations overlap in mid to late spring.

The hemlock woolly adelgid is unusual in that it enters a period of dormancy during the hot summer months. The nymphs during this time period have a tiny halo of woolly wax surrounding their bodies (figure 2). The adelgids begin to feed once cooler temperatures prevail, usually in October, and continue throughout the winter months.

The ovisacs of the winter generation contain up to 300 eggs, while the spring generation ovisacs contain between 20 and 75 eggs. When hatched, the first instar nymphs, called *crawlers*, search for suitable feeding sites on the twigs at the base of hemlock needles. Once settled, the nymphs begin feeding on the young





Figure 2.—Hemlock woolly adelgid nymphs in dormancy.

twig tissue and remain at that location throughout the remainder of their development. Unlike closely related insects that feed on nutrients in sap, the hemlock woolly adelgid feeds on stored starches. These starch reserves are critical to the tree's growth and long-term survival.

Dispersal and movement of hemlock woolly adelgid occur primarily during the first instar crawler stage as a result of wind and by birds, deer, and other forest-dwelling mammals that come in contact with the sticky ovisacs and crawlers. Isolated infestations and long-distance movement of hemlock woolly adelgid, though, most often occur as the result of people transporting infested nursery stock.

### Control

Cultural, regulatory, chemical, and biological controls can reduce the hemlock woolly adelgid's rate of spread and protect individual trees. Actions such as moving bird feeders away from hemlocks and removing isolated infested trees from a woodlot can help prevent further infestations. State quarantines help prevent the movement of infested materials into noninfested areas.

Chemical control options, such as foliar sprays using horticultural oils and insecticidal soaps, are effective when trees can be saturated to ensure that the insecticide comes in contact with the adelgid. Several systemic insecticides have also proven effective on large trees when applied to the soil around the base of the tree or injected directly into the stem (figure 3). Chemical control is limited to individual tree treatments in readily accessible, nonenvironmentally sensitive areas; it is not feasible in forests, particularly when large numbers of trees are infested. Chemical treatments offer a short-term solution, and applications may need to be repeated in subsequent years.



Figure 3.—Chemical treatment using the soil injection method.



Figure 4.—Predators introduced for control in the Eastern United States, left to right (origin): *Sasajiscymnus tsugae* (Japan), *Scymnus anemodulus* (China), and *Loricobius nigrinus* (Western North America).

The best option for managing hemlock woolly adelgid in forests is biological control. Although there are natural enemies native to Eastern North America that feed on hemlock woolly adelgid, they are not effective at reducing populations enough to prevent tree mortality. Therefore, biological control opportunities using natural enemies (predators and pathogens) from the adelgid's native environment are currently being investigated. Several predators known to feed exclusively on adelgids have been imported from China, Japan, and Western North America and are slowly becoming established throughout the infested region (figure 4). It will likely take a complex of natural enemies to maintain hemlock woolly adelgid populations below damaging levels. Efforts to locate, evaluate, and establish other natural enemies continue.



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# Pest Alert

United States  
Department of Agriculture  
Forest Service  
State and Private Forestry  
Northeastern Area

NA-PFS-02-04  
January 2004

## Emerald Ash Borer



An exotic beetle from Asia was discovered in July 2002 feeding on ash (*Fraxinus* spp.) trees in southeastern Michigan. It was identified as *Agrilus planipennis* Fairmaire (Coleoptera: Buprestidae). Larvae feed in the cambium between the bark and wood, producing galleries that eventually girdle and kill branches and entire trees. Evidence suggests that *A. planipennis* has been established in Michigan for at least six to ten years. More than 3000 square miles in southeast Michigan are infested and more than 5 million ash trees are dead or dying from this pest. This exotic pest is also established in Windsor, Ontario, Canada. In 2003, newly established populations were detected in other areas of southern Michigan and several locations in Ohio. Infested ash nursery trees were also found in Maryland and Virginia.

### Identification

Adult beetles are generally larger and a brighter green than the native North American species of *Agrilus* (Fig. 1). Adults are slender, elongate and 7.5 to 13.5 mm long. Males are smaller than females and have fine hairs on the ventral side of the thorax, which the females lack. Color varies but adults are usually bronze or golden green overall, with darker, metallic, emerald green wing covers. The top of the abdomen under the wings is metallic purplish red and can be seen when the wings are spread. The prothorax, the segment behind the head to which the first pair of legs is attached, is slightly wider than the head but the same width as the base of the wing covers.

Larvae reach a length of 26 to 32 mm, are white to cream-colored and dorso-ventrally flattened (Fig. 2). The brown head is mostly retracted into the prothorax and only the mouth-parts are visible externally. The 10-segmented abdomen has a pair of brown, pincer-like appendages on the last segment.

### Biology

The emerald ash borer generally has a one-year life cycle in southern Michigan but could require two years to complete a generation in colder regions. In 2003, adult emergence began in early June, peaked in late June and early July, and continued into late July. Beetles usually live for about 3 weeks and are present into mid-August. Adult beetles are active during the day, particularly when conditions are warm and sunny. Most beetles remain in protected locations in bark crevices or on foliage during rain, heavy cloud cover, high winds, or temperatures above 32°C (90°F). Beetles feed on ash foliage, usually in small, irregularly-shaped patches along the margins of leaves.

Females can mate multiple times and egg laying begins a few days after the initial mating. Females can lay at least 60 to 90 eggs during their lifetime. Eggs are deposited individually in bark crevices on the trunk or branches. Eggs hatch in 7 to 10 days.

After hatching, first instar larvae chew through the bark and into the cambial region. Larvae feed on phloem and the outer sapwood for several weeks. The S-shaped feeding gallery winds back and forth, becoming progressively wider as the larva grows (Fig. 3). Galleries are packed with fine, sawdust-like frass. Individual galleries often extend over an area that is 20 to 30 cm in length, though the length of the affected area can range from 10 to 50 cm or longer.

Feeding is completed in autumn and pre-pupal larvae overwinter in shallow chambers excavated in the outer sapwood or in the bark on thick-barked trees. Pupation begins in late April or May. Newly eclosed adults often remain in the pupal chamber for 1 to 2 weeks before emerging head-first through a D-shaped exit hole that is 3–4 mm in diameter (Fig. 4).



Figure 1. Adult emerald ash borer.



Figure 2. Second, third, and fourth stage larvae.



Figure 3. Galleries excavated by larvae.





Figure 4. D-shaped exit holes where adult beetles emerged.



Figure 5. Jagged holes left by woodpeckers.



Figure 6. Much of the canopy is dead on a heavily infested ash tree.

## Distribution and Hosts

The emerald ash borer is native to Asia and is known to occur in China, Korea, Japan, Mongolia, the Russian Far East and Taiwan. A Chinese report indicates high populations of the borer occur primarily in *Fraxinus chinensis* and *F. rhynchophylla* forests. Other reported hosts in Asia include *F. mandshurica* var. *japonica*, *Ulmus davidiana* var. *japonica*, *Juglans mandshurica* var. *sieboldiana* and *Platanus rhodolia*. In North America, this borer has only attacked ash trees. Green ash (*F. pennsylvanica*), white ash (*F. americana*) and black ash (*F. nigra*), as well as several horticultural varieties of ash have been killed.

## Symptoms

It is difficult to detect emerald ash borer in newly infested trees. Jagged holes excavated by woodpeckers feeding on pre-pupal larvae may be the first sign that a tree has become infested (Fig. 5). When a tree has been infested for at least one year, the D-shaped exit holes left by emerging adults will be present on the branches and the trunk (Fig. 4). Bark may split vertically above larval feeding galleries. When the bark is removed from infested trees, the distinct, frass-filled larval tunnels that etch the outer sapwood and phloem are readily visible on the trunk and branches (Fig. 3). An elliptical area of discolored sapwood, usually a result of secondary infection by fungal pathogens, sometimes surrounds larval feeding galleries.

Serpentine tunnels excavated by feeding larvae interrupt the transport of nutrients and water within the tree during the summer. Foliage wilts and the tree canopy becomes increasingly thin and sparse as branches die. Many trees appear to lose about 30% to 50% of the canopy after 2 years of infestation and trees often die after 3-4 years of infestation (Fig. 6). Epicormic shoots may arise on the trunk of the tree, often at the margin of live and dead tissue. Dense root sprouting sometimes occurs after trees die.

Emerald ash borer has killed trees of various size and condition in Michigan. Larvae have developed in trees and branches ranging from 2.5 cm (1 inch) to 140 cm (55 inches) in diameter. Stress likely contributes to the vulnerability and rapid decline of infested ash trees. However, emerald ash borer has killed apparently vigorous trees in woodlots and urban trees under regular irrigation and fertilization regimes.

## Bibliography

- Yu, Chengming. 1992. *Agrilus marcopoli* Oberberger. In Xiao, G., ed. Forest insects of China, 2d ed. Beijing, China: China Forestry Publishing House; 400-401. Translation by Houping Liu, USDA Forest Service.
- Jendek, E. 2002. *Agrilus planipennis* fact sheet. PDF file provided by Eduardo Jendek, Institute of Zoology, Slovak Academy of Sciences, Bratislava, Slovak Republic.

## Resources

Visit the following websites for information on emerald ash borer biology, identification, management, quarantines and related topics:

1. Michigan Multi-Agency Emerald Ash Borer Web Site: <http://www.emeraldashborer.info>
2. USDA Forest Service: <http://www.fs.fed.us/nps/eah/>
3. Michigan Department of Agriculture: <http://www.michigan.gov> (keyword: emerald ash borer)

Contact your State Department of Agriculture, State Forester, or County Extension Office for more information.

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Newtown Square, PA

## PEST ALERT



State of New Hampshire  
Department of Resources and Economic Development  
**Division of Forests and Lands**  
**Forest Protection Bureau–Forest Health Section**

**ELONGATE HEMLOCK SCALE**  
*Fiornia externa*

Elongate hemlock scale (EHS) is an exotic scale insect that prefers to feed on hemlock, spruce and fir. Cedar, Pine and Yew have also been found infested, but usually only if adjacent to preferred hosts. This insect was introduced to New York in 1908 from Japan and has since spread north to Maine and south to North Carolina. Left untreated EHS can kill trees within 10 years. EHS can also be found on trees infested with Hemlock Woolly Adelgid (HWA). EHS populations build slowly on healthy trees but more quickly on trees that are stressed by HWA, drought, or other factors.

**Description:** This insect can be recognized by the presence of dry crusty yellowish-brown (female) or white (male) elongated scales and a white woolly substance similar to HWA. EHS attaches to the needles while HWA attaches at the base of the needles on the stem.



Elongate Hemlock Scale



Hemlock Woolly Adelgid

**Life Cycle:** EHS completes two generations a year in southern states but typically only one in the northeast. Adult females are soft-bodied, legless and wingless and lay roughly 20 eggs under a scale cover. Hatched crawlers settle on the lower surface of young hemlock needles to feed. First and second-stage nymphs secrete a cover as they grow and molt. Second-stage females molt into an adult feeding stage while second-stage males molt into a non-feeding prepupa and spin a cocoon before pupating into an adult. Adult males have legs and wings but do not feed and die soon after mating.

**Cultural Control:** Because birds, squirrels and deer are important dispersal agents, any effort to discourage these animals from visiting host trees—such as removing bird feeders in the spring and summer—will reduce the risk of those trees becoming infested. Care should also be taken when moving any host material from infested areas onto uninfested property.

Maintaining good growing conditions can play an important role in the survival of infested trees. During periods of drought, important ornamental trees should be watered to ensure that they receive 1 inch of water per week (including rainfall) over the area beneath the dripline of the crown. Apply water slowly to allow uptake by the tree. Pruning and reducing crowding of target trees may encourage new shoot growth and help support vigor. Although fertilizer may improve the growth and vigor of uninfested trees, the added nitrogen also enhances scale survival and reproduction—***do not fertilize host trees in or near scale infested areas.***

**Chemical Control:** Chemical control is an important part of managing the health of EHS infested ornamentals. It is important to understand that periodic treatments will be necessary over the life of the infested tree to maintain its health and value as an ornamental. The initial decision of whether to use chemicals should weigh the value of the trees relative to the anticipated cost of long term treatments. Consider identifying individual trees or groups of trees that have special value or significance on the property and concentrating control efforts on those trees. Several pesticides are registered for control of EHS. Some are available for homeowner use, while others are available for commercial use only by a licensed pesticide applicator. Horticultural oils can be sprayed on the foliage but penetrating the scale and attaining complete coverage can be difficult. Oils may also kill natural predators leading to heavier populations of scale and other damaging insects such as spider mites. Systemic insecticides with the active ingredient dinotefuran can be effective when applied as a spray on the stem. Systemic insecticides with the active ingredient imidacloprid can also be applied as a soil drench or soil injection but may be less effective.

***Caution: For your own protection and that of the environment, apply pesticides only in strict accordance with laws, labels and precautions. Special care should be taken near water when using these pesticides.***

More information on Forest Pests in NH: <http://nhdffl.org/forest-health/>

**ICE GLEN TREE SURVEY DATA 2021**

| <b>TREE #</b> | <b>LATITUDE</b> | <b>LONGITUDE</b> | <b>SPECIES</b> | <b>DBH</b> | <b>HEALTH</b> |
|---------------|-----------------|------------------|----------------|------------|---------------|
| 001           | 42.271741       | -73.30788        | Hemlock        | 31.1       | 2             |
| 002           | 42.271691       | -73.30824        | Hemlock        | 20.9       | 2             |
| 003           | 42.271687       | -73.308294       | Hemlock        | 21.4       | 2             |
| 004           | 42.271734       | -73.308319       | Hemlock        | 22.8       | 2             |
| 005           | 42.271775       | -73.308178       | Hemlock        | 17.9       | 2             |
| 006           | 42.271758       | -73.308202       | Hemlock        | 24.7       | 2             |
| 007           | 42.27182        | -73.308151       | Hemlock        | 15.8       | 2             |
| 008           | 42.271796       | -73.307872       | Hemlock        | 21.9       | 2             |
| 009           | 42.271922       | -73.307821       | Hemlock        | 22.0       | 2             |
| 010           | 42.271948       | -73.307902       | Hemlock        | 32.2       | 2             |
| 011           | 42.271929       | -73.307808       | Hemlock        | 15.8       | 3             |
| 012           | 42.271985       | -73.307908       | Hemlock        | 20.5       | 2             |
| 013           | 42.271929       | -73.307893       | Hemlock        | 14.2       | 2             |
| 014           | 42.27206        | -73.308022       | Hemlock        | 20.1       | 2             |
| 015           | 42.272089       | -73.30803        | Hemlock        | 16.4       | 3             |
| 016           | 42.272119       | -73.308052       | Hemlock        | 19.5       | 3             |
| 017           | 42.272228       | -73.308023       | Hemlock        | 18.0       | 3             |
| 018           | 42.272308       | -73.30797        | Hemlock        | 17.0       | 3             |
| 019           | 42.272337       | -73.307852       | Hemlock        | 25.1       | 2             |
| 020           | 42.272422       | -73.307944       | Hemlock        | 21.2       | 2             |
| 021           | 42.272492       | -73.307835       | Hemlock        | 31.1       | 2             |
| 022           | 42.272394       | -73.307744       | Hemlock        | 19.2       | 2             |
| 023           | 42.272408       | -73.307714       | Hemlock        | 17.2       | 3             |
| 024           | 42.272508       | -73.307761       | Hemlock        | 19.2       | 2             |
| 025           | 42.27233        | -73.307577       | Hemlock        | 18.9       | 2             |
| 026           | 42.272307       | -73.307759       | Hemlock        | 17.1       | 2             |
| 027           | 42.272309       | -73.30769        | Hemlock        | 18.0       | 2             |
| 028           | 42.27228        | -73.307709       | Hemlock        | 15.1       | 2             |
| 029           | 42.272236       | -73.30768        | Hemlock        | 18.4       | 2             |
| 030           | 42.272211       | -73.307743       | Hemlock        | 22.1       | 3             |
| 031           | 42.272257       | -73.307806       | Hemlock        | 18.8       | 3             |
| 032           | 42.27209        | -73.307776       | Hemlock        | 17.8       | 3             |
| 033           | 42.272164       | -73.307729       | Hemlock        | 14.4       | 3             |
| 034           | 42.272141       | -73.307681       | Hemlock        | 22.4       | 2             |
| 035           | 42.272121       | -73.307783       | Hemlock        | 28.2       | 2             |
| 036           | 42.271992       | -73.307793       | Hemlock        | 26.4       | 3             |
| 037           | 42.271836       | -73.307675       | Hemlock        | 30.1       | 2             |
| 038           | 42.271882       | -73.307592       | Hemlock        | 42.5       | 1             |



|     |           |            |         |      |   |
|-----|-----------|------------|---------|------|---|
| 039 | 42.271999 | -73.307675 | Hemlock | 34.1 | 2 |
| 040 | 42.272057 | -73.307576 | Hemlock | 31.0 | 2 |
| 041 | 42.272071 | -73.307568 | Hemlock | 33.1 | 2 |
| 042 | 42.272066 | -73.307328 | Hemlock | 17.9 | 3 |
| 043 | 42.272099 | -73.307323 | Hemlock | 18.8 | 3 |
| 044 | 42.272043 | -73.307275 | Hemlock | 14.9 | 3 |
| 045 | 42.272147 | -73.307341 | Hemlock | 24.8 | 2 |
| 046 | 42.272263 | -73.307315 | Hemlock | 20.5 | 3 |
| 047 | 42.272209 | -73.307293 | Hemlock | 20.6 | 3 |
| 048 | 42.272286 | -73.307233 | Hemlock | 14.5 | 3 |
| 049 | 42.272249 | -73.307211 | Hemlock | 16.0 | 3 |
| 050 | 42.272265 | -73.307337 | Hemlock | 10.0 | 3 |
| 051 | 42.428448 | -72.941593 | Hemlock | 14.6 | 3 |
| 052 | 42.272126 | -73.307299 | Hemlock | 20.6 | 3 |
| 053 | 42.272131 | -73.307287 | Hemlock | 20.6 | 3 |
| 054 | 42.27202  | -73.307357 | Hemlock | 16.4 | 3 |
| 055 | 42.272299 | -73.307284 | Hemlock | 16.4 | 3 |
| 056 | 42.272194 | -73.307059 | Hemlock | 24.8 | 3 |
| 057 | 42.272237 | -73.306892 | Hemlock | 31.4 | 3 |
| 058 | 42.272178 | -73.306949 | Hemlock | 22.6 | 3 |
| 059 | 42.272164 | -73.30672  | Hemlock | 25.5 | 3 |
| 060 | 42.272255 | -73.30669  | Hemlock | 19.4 | 3 |
| 061 | 42.272272 | -73.306741 | Hemlock | 28.2 | 3 |
| 062 | 42.272141 | -73.306918 | Hemlock | 23.0 | 3 |
| 063 | 42.272286 | -73.306815 | Hemlock | 21.3 | 3 |
| 064 | 42.272376 | -73.30668  | Hemlock | 20.9 | 3 |
| 065 | 42.272334 | -73.306685 | Hemlock | 16.7 | 3 |
| 066 | 42.272252 | -73.306879 | Hemlock | 36.5 | 3 |
| 067 | 42.272498 | -73.30672  | Hemlock | 25.5 | 3 |
| 068 | 42.272486 | -73.306812 | Hemlock | 26.5 | 3 |
| 069 | 42.272401 | -73.306889 | Hemlock | 29.1 | 2 |
| 070 | 42.272338 | -73.306975 | Hemlock | 15.6 | 3 |
| 071 | 42.272329 | -73.306827 | Hemlock | 22.2 | 3 |
| 072 | 42.272459 | -73.307231 | Hemlock | 40.2 | 3 |
| 073 | 42.272506 | -73.306972 | Hemlock | 21.6 | 2 |
| 074 | 42.272638 | -73.306959 | Hemlock | 34.2 | 3 |
| 075 | 42.272673 | -73.307038 | Hemlock | 19.7 | 3 |
| 076 | 42.272635 | -73.307073 | Hemlock | 27.5 | 3 |
| 077 | 42.272781 | -73.306904 | Hemlock | 29.9 | 2 |
| 078 | 42.272724 | -73.307131 | Hemlock | 16.6 | 3 |

|     |           |            |         |      |   |
|-----|-----------|------------|---------|------|---|
| 079 | 42.272681 | -73.307221 | Hemlock | 22.3 | 2 |
| 080 | 42.272966 | -73.307134 | Hemlock | 29.0 | 3 |
| 081 | 42.273036 | -73.307268 | Hemlock | 28.3 | 3 |
| 082 | 42.272965 | -73.30718  | Hemlock | 32.3 | 2 |
| 083 | 42.272944 | -73.307304 | Hemlock | 20.9 | 2 |
| 084 | 42.273074 | -73.30698  | Hemlock | 30.6 | 3 |
| 085 | 42.27289  | -73.30686  | Hemlock | 23.7 | 3 |
| 086 | 42.272952 | -73.306868 | Hemlock | 18.5 | 3 |
| 087 | 42.273014 | -73.306921 | Hemlock | 23.1 | 2 |
| 088 | 42.27309  | -73.306818 | Hemlock | 16.8 | 3 |
| 089 | 42.273112 | -73.306879 | Hemlock | 15.8 | 3 |
| 090 | 42.27319  | -73.306782 | Hemlock | 20.2 | 2 |
| 091 | 42.273229 | -73.306748 | Hemlock | 21.4 | 3 |
| 092 | 42.273154 | -73.306667 | Hemlock | 20.8 | 3 |
| 093 | 42.273295 | -73.306704 | Hemlock | 15.7 | 3 |
| 094 | 42.273249 | -73.306614 | Hemlock | 21.0 | 2 |
| 095 | 42.273209 | -73.306555 | Hemlock | 27.4 | 3 |
| 096 | 42.273274 | -73.306565 | Hemlock | 23.7 | 3 |
| 097 | 42.273318 | -73.306444 | Hemlock | 24.4 | 2 |
| 098 | 42.273333 | -73.306401 | Hemlock | 22.8 | 2 |
| 099 | 42.273344 | -73.306428 | Hemlock | 16.2 | 3 |
| 100 | 42.2734   | -73.306388 | Hemlock | 18.0 | 3 |
| 101 | 42.273501 | -73.306399 | Hemlock | 24.1 | 2 |
| 102 | 42.273537 | -73.306505 | Hemlock | 19.6 | 2 |
| 103 | 42.273585 | -73.306436 | Hemlock | 21.6 | 2 |
| 104 | 42.273557 | -73.306293 | Hemlock | 19.5 | 2 |
| 105 | 42.273597 | -73.306316 | Hemlock | 24.3 | 2 |
| 106 | 42.273594 | -73.306333 | Hemlock | 14.2 | 3 |
| 107 | 42.273655 | -73.306357 | Hemlock | 12.6 | 3 |
| 108 | 42.273672 | -73.306375 | Hemlock | 16.4 | 2 |
| 109 | 42.273637 | -73.306333 | Hemlock | 15.9 | 3 |
| 110 | 42.273625 | -73.306321 | Hemlock | 15.0 | 3 |
| 111 | 42.273474 | -73.306549 | Hemlock | 21.0 | 3 |
| 112 | 42.273542 | -73.306582 | Hemlock | 23.4 | 2 |
| 113 | 42.273623 | -73.306464 | Hemlock | 22.3 | 2 |
| 114 | 42.273668 | -73.306467 | Hemlock | 21.5 | 2 |
| 115 | 42.273573 | -73.306608 | Hemlock | 20.0 | 2 |
| 116 | 42.273498 | -73.306614 | Hemlock | 19.5 | 3 |
| 117 | 42.273467 | -73.306673 | Hemlock | 16.7 | 3 |
| 118 | 42.273436 | -73.30667  | Hemlock | 25.6 | 3 |

|     |           |            |         |      |   |
|-----|-----------|------------|---------|------|---|
| 119 | 42.27336  | -73.306695 | Hemlock | 20.3 | 3 |
| 120 | 42.273319 | -73.30655  | Hemlock | 16.9 | 2 |
| 121 | 42.273294 | -73.306731 | Hemlock | 17.6 | 3 |
| 122 | 42.273285 | -73.306779 | Hemlock | 13.0 | 3 |
| 123 | 42.273385 | -73.306829 | Hemlock | 17.6 | 3 |
| 124 | 42.273164 | -73.306936 | Hemlock | 21.6 | 3 |
| 125 | 42.273276 | -73.306839 | Hemlock | 25.5 | 3 |
| 126 | 42.273182 | -73.307119 | Hemlock | 35.1 | 2 |
| 127 | 42.27323  | -73.307004 | Hemlock | 18.2 | 2 |
| 128 | 42.273184 | -73.307087 | Hemlock | 21.0 | 3 |
| 129 | 42.27365  | -73.306724 | Hemlock | 19.3 | 3 |
| 130 | 42.273721 | -73.30669  | Hemlock | 21.0 | 3 |
| 131 | 42.273711 | -73.306719 | Hemlock | 25.6 | 3 |
| 132 | 42.27359  | -73.306672 | Hemlock | 20.5 | 2 |
| 133 | 42.273609 | -73.306735 | Hemlock | 23.5 | 2 |
| 134 | 42.273521 | -73.306768 | Hemlock | 14.6 | 3 |
| 135 | 42.273489 | -73.306864 | Hemlock | 16.2 | 3 |
| 136 | 42.273723 | -73.306456 | Hemlock | 15.5 | 3 |
| 137 | 42.273693 | -73.306372 | Hemlock | 14.5 | 3 |
| 138 | 42.27373  | -73.30629  | Hemlock | 20.9 | 3 |
| 139 | 42.273721 | -73.306149 | Hemlock | 18.2 | 3 |
| 140 | 42.273753 | -73.3064   | Hemlock | 19.1 | 3 |
| 141 | 42.273979 | -73.306283 | Ash     | 27.7 | 1 |
| 142 | 42.273954 | -73.306253 | Hemlock | 34.1 | 2 |
| 143 | 42.273903 | -73.306089 | Hemlock | 19.7 | 2 |
| 144 | 42.273953 | -73.306038 | Hemlock | 20.6 | 2 |
| 145 | 42.274048 | -73.306041 | Hemlock | 23.2 | 2 |
| 146 | 42.274091 | -73.306077 | Hemlock | 16.5 | 2 |
| 147 | 42.274002 | -73.305971 | Hemlock | 34.9 | 2 |
| 148 | 42.274033 | -73.306013 | Hemlock | 21.6 | 2 |
| 149 | 42.274014 | -73.30598  | Hemlock | 17.2 | 2 |
| 150 | 42.273914 | -73.305911 | Hemlock | 30.8 | 2 |
| 151 | 42.274221 | -73.305967 | Hemlock | 15.1 | 2 |
| 152 | 42.27425  | -73.306123 | Hemlock | 15.2 | 2 |
| 153 | 42.274212 | -73.306129 | Hemlock | 24.2 | 2 |
| 154 | 42.27436  | -73.306004 | Hemlock | 16.9 | 3 |
| 155 | 42.274424 | -73.305941 | Hemlock | 27.4 | 2 |
| 156 | 42.274557 | -73.305888 | Hemlock | 27.0 | 3 |
| 157 | 42.274627 | -73.305782 | Hemlock | 17.3 | 2 |
| 158 | 42.274651 | -73.305926 | Hemlock | 20.7 | 2 |

|     |           |            |         |      |   |
|-----|-----------|------------|---------|------|---|
| 159 | 42.274686 | -73.305759 | Hemlock | 21.3 | 2 |
| 160 | 42.274707 | -73.305871 | Hemlock | 25.1 | 2 |
| 161 | 42.274824 | -73.305942 | Hemlock | 23.5 | 2 |
| 162 | 42.27485  | -73.305915 | Hemlock | 31.0 | 2 |
| 163 | 42.274751 | -73.305927 | Hemlock | 18.7 | 3 |
| 164 | 42.274656 | -73.305992 | Hemlock | 27.2 | 2 |
| 165 | 42.27463  | -73.306043 | Hemlock | 17.4 | 2 |
| 166 | 42.274796 | -73.306015 | Hemlock | 19.1 | 3 |
| 167 | 42.274852 | -73.306048 | Hemlock | 31.6 | 2 |
| 168 | 42.274869 | -73.306061 | Hemlock | 24.4 | 2 |
| 169 | 42.27496  | -73.306006 | Hemlock | 29.4 | 2 |
| 170 | 42.27498  | -73.305954 | Hemlock | 26.3 | 2 |
| 171 | 42.274825 | -73.305725 | Hemlock | 21.6 | 3 |
| 172 | 42.274857 | -73.305702 | Hemlock | 22.0 | 3 |
| 173 | 42.27487  | -73.305598 | Hemlock | 29.1 | 2 |
| 174 | 42.274956 | -73.305631 | Hemlock | 19.1 | 2 |
| 175 | 42.274959 | -73.305659 | Hemlock | 24.2 | 2 |
| 176 | 42.275064 | -73.305621 | Hemlock | 26.3 | 2 |
| 177 | 42.275005 | -73.30554  | Hemlock | 28.4 | 2 |
| 178 | 42.274888 | -73.305541 | Hemlock | 22.0 | 2 |
| 179 | 42.27501  | -73.305484 | Hemlock | 20.6 | 3 |
| 180 | 42.275072 | -73.305394 | Hemlock | 25.8 | 2 |
| 181 | 42.275113 | -73.305352 | Hemlock | 17.9 | 3 |
| 182 | 42.275124 | -73.305218 | Hemlock | 25.3 | 2 |
| 183 | 42.27513  | -73.305325 | Ash     | 27.8 | 1 |
| 184 | 42.275305 | -73.305223 | Hemlock | 16.0 | 2 |
| 185 | 42.275336 | -73.305379 | Hemlock | 32.7 | 2 |
| 186 | 42.275528 | -73.305621 | Ash     | 33.1 | 1 |
| 187 | 42.2753   | -73.305863 | Hemlock | 23.2 | 2 |
| 188 | 42.275312 | -73.305802 | Ash     | 24.4 | 1 |
| 189 | 42.275246 | -73.305658 | Hemlock | 16.2 | 2 |
| 190 | 42.275175 | -73.305751 | Hemlock | 23.1 | 2 |
| 191 | 42.275201 | -73.305824 | Hemlock | 21.1 | 2 |
| 192 | 42.275192 | -73.305934 | Hemlock | 17.1 | 3 |
| 193 | 42.27504  | -73.305755 | Hemlock | 26.5 | 2 |
| 194 | 42.2751   | -73.305622 | Hemlock | 25.8 | 2 |
| 195 | 42.275142 | -73.305613 | Hemlock | 25.1 | 2 |
| 196 | 42.275042 | -73.305811 | Hemlock | 19.9 | 2 |
| 197 | 42.275027 | -73.305947 | Hemlock | 24.1 | 3 |
| 198 | 42.274959 | -73.305817 | Hemlock | 20.6 | 3 |



|     |           |            |         |      |   |
|-----|-----------|------------|---------|------|---|
| 199 | 42.274883 | -73.305748 | Hemlock | 19.8 | 3 |
| 200 | 42.275012 | -73.3059   | Hemlock | 29.9 | 3 |
| 201 | 42.274954 | -73.306048 | Hemlock | 38.2 | 2 |
| 202 | 42.276078 | -73.304785 | Hemlock | 43.5 | 2 |
| 203 | 42.276541 | -73.304367 | Hemlock | 26.7 | 2 |
| 204 | 42.276584 | -73.304502 | Hemlock | 17.8 | 3 |
| 205 | 42.276579 | -73.304758 | Hemlock | 21.2 | 3 |
| 206 | 42.276752 | -73.305168 | Ash     | 46.7 | 1 |
| 207 | 42.428449 | -72.941568 | Hemlock | 12.6 | 3 |
| 208 | 42.428449 | -72.941568 | Hemlock | 28.2 | 3 |
| 209 | 42.272641 | -73.307216 | Hemlock | 17.4 | 3 |
| 210 | 42.272447 | -73.307457 | Hemlock | 23.3 | 2 |
| 211 | 42.272368 | -73.307429 | Hemlock | 19.5 | 3 |
| 212 | 42.272423 | -73.307532 | Hemlock | 17.7 | 2 |
| 213 | 42.272375 | -73.307526 | Hemlock | 14.5 | 3 |
| 214 | 42.272467 | -73.307523 | Hemlock | 17.0 | 3 |
| 215 | 42.272562 | -73.307543 | Hemlock | 19.3 | 3 |
| 216 | 42.27261  | -73.307646 | Hemlock | 19.1 | 3 |
| 217 | 42.272639 | -73.307615 | Hemlock | 14.1 | 3 |
| 218 | 42.272631 | -73.307529 | Hemlock | 26.2 | 3 |
| 219 | 42.272463 | -73.307577 | Hemlock | 15.5 | 3 |
| 220 | 42.272465 | -73.30732  | Hemlock | 16.1 | 3 |
| 221 | 42.2724   | -73.307231 | Hemlock | 25.0 | 3 |
| 222 | 42.272642 | -73.307325 | Hemlock | 25.1 | 3 |
| 223 | 42.272739 | -73.307356 | Hemlock | 16.0 | 3 |
| 224 | 42.272662 | -73.307412 | Hemlock | 26.3 | 3 |
| 225 | 42.272893 | -73.307306 | Hemlock | 38.1 | 2 |
| 226 | 42.272953 | -73.307342 | Hemlock | 26.2 | 3 |
| 227 | 42.272916 | -73.307255 | Hemlock | 39.2 | 3 |
| 228 | 42.272968 | -73.307478 | Hemlock | 21.8 | 3 |
| 229 | 42.272911 | -73.307591 | Hemlock | 22.7 | 3 |
| 230 | 42.272871 | -73.307691 | Hemlock | 25.9 | 3 |
| 231 | 42.27306  | -73.307693 | Hemlock | 17.6 | 3 |
| 232 | 42.273122 | -73.307556 | Hemlock | 13.0 | 3 |
| 233 | 42.273084 | -73.307244 | Hemlock | 30.6 | 2 |
| 234 | 42.273221 | -73.307228 | Hemlock | 25.2 | 3 |
| 235 | 42.273318 | -73.307169 | Hemlock | 17.3 | 3 |
| 236 | 42.273372 | -73.307253 | Hemlock | 25.1 | 3 |
| 237 | 42.273411 | -73.307243 | Hemlock | 17.9 | 3 |
| 238 | 42.27348  | -73.307313 | Hemlock | 21.9 | 3 |

|     |           |            |         |      |   |
|-----|-----------|------------|---------|------|---|
| 239 | 42.273487 | -73.307363 | Hemlock | 18.9 | 3 |
| 240 | 42.273533 | -73.307449 | Hemlock | 18.2 | 3 |
| 241 | 42.27345  | -73.307579 | Hemlock | 18.5 | 3 |
| 242 | 42.273395 | -73.307584 | Hemlock | 24.0 | 3 |
| 243 | 42.273434 | -73.307454 | Hemlock | 19.4 | 3 |
| 244 | 42.273346 | -73.307588 | Hemlock | 19.1 | 3 |
| 245 | 42.273331 | -73.307783 | Hemlock | 16.2 | 3 |
| 246 | 42.273309 | -73.307788 | Hemlock | 16.5 | 3 |
| 247 | 42.273441 | -73.307771 | Hemlock | 18.3 | 3 |
| 248 | 42.273479 | -73.307711 | Hemlock | 21.2 | 3 |
| 249 | 42.273574 | -73.30764  | Hemlock | 15.7 | 3 |
| 250 | 42.273483 | -73.307603 | Hemlock | 16.6 | 3 |
| 251 | 42.273556 | -73.307571 | Hemlock | 21.9 | 3 |
| 252 | 42.27358  | -73.307523 | Hemlock | 19.5 | 3 |
| 253 | 42.273656 | -73.307527 | Hemlock | 14.8 | 3 |
| 254 | 42.273685 | -73.307562 | Hemlock | 19.0 | 3 |
| 255 | 42.273625 | -73.30771  | Hemlock | 22.0 | 3 |
| 256 | 42.273553 | -73.307654 | Hemlock | 22.2 | 3 |
| 257 | 42.273555 | -73.307741 | Hemlock | 22.6 | 3 |
| 258 | 42.273655 | -73.307741 | Hemlock | 22.6 | 3 |
| 259 | 42.27366  | -73.307745 | Hemlock | 18.3 | 3 |
| 260 | 42.273636 | -73.307521 | Hemlock | 14.9 | 3 |
| 261 | 42.273597 | -73.307382 | Hemlock | 22.4 | 3 |
| 262 | 42.27362  | -73.307362 | Hemlock | 18.8 | 3 |
| 263 | 42.273643 | -73.307267 | Hemlock | 23.9 | 3 |
| 264 | 42.273702 | -73.3074   | Hemlock | 15.0 | 3 |
| 265 | 42.273711 | -73.307373 | Hemlock | 15.6 | 3 |
| 266 | 42.273687 | -73.307205 | Hemlock | 26.8 | 2 |
| 267 | 42.273598 | -73.307154 | Hemlock | 20.6 | 3 |
| 268 | 42.273567 | -73.3071   | Hemlock | 20.6 | 3 |
| 269 | 42.273561 | -73.307121 | Hemlock | 24.7 | 3 |
| 270 | 42.273544 | -73.307118 | Hemlock | 23.8 | 3 |
| 271 | 42.273453 | -73.306952 | Hemlock | 19.0 | 3 |
| 272 | 42.273384 | -73.30708  | Hemlock | 17.0 | 3 |
| 273 | 42.273545 | -73.307064 | Hemlock | 14.1 | 3 |
| 274 | 42.273622 | -73.307094 | Hemlock | 24.1 | 2 |
| 275 | 42.273696 | -73.3072   | Hemlock | 23.5 | 3 |
| 276 | 42.273775 | -73.307279 | Hemlock | 32.3 | 3 |
| 277 | 42.273792 | -73.307303 | Hemlock | 21.6 | 3 |
| 278 | 42.273717 | -73.307349 | Hemlock | 24.3 | 3 |

|     |           |            |         |       |   |
|-----|-----------|------------|---------|-------|---|
| 279 | 42.273773 | -73.307398 | Hemlock | 24.9  | 3 |
| 280 | 42.273883 | -73.307468 | Hemlock | 27.0  | 3 |
| 281 | 42.273892 | -73.30738  | Hemlock | 23.9  | 3 |
| 282 | 42.273912 | -73.307346 | Hemlock | 27.1  | 3 |
| 283 | 42.273901 | -73.307323 | Hemlock | 30.9  | 3 |
| 284 | 42.273871 | -73.307215 | Hemlock | 32.1  | 3 |
| 285 | 42.273867 | -73.307156 | Hemlock | 15.5  | 3 |
| 286 | 42.273807 | -73.307083 | Hemlock | 13.0  | 3 |
| 287 | 42.273958 | -73.307116 | Hemlock | 23.2  | 3 |
| 288 | 42.274054 | -73.307151 | Hemlock | 25.5  | 3 |
| 289 | 42.274069 | -73.30722  | Hemlock | 19.2  | 3 |
| 290 | 42.273913 | -73.30731  | Hemlock | 20.2  | 3 |
| 291 | 42.274059 | -73.307171 | Hemlock | 25.7  | 3 |
| 292 | 42.274117 | -73.307134 | Hemlock | 29.3  | 3 |
| 293 | 42.274107 | -73.306996 | Hemlock | 33.4  | 3 |
| 294 | 42.274155 | -73.307052 | Hemlock | 17.1  | 3 |
| 295 | 42.27419  | -73.307113 | Hemlock | 23.5  | 3 |
| 296 | 42.2741   | -73.307197 | Hemlock | 26.2  | 3 |
| 297 | 42.274214 | -73.30727  | Hemlock | 28.7  | 3 |
| 298 | 42.274307 | -73.307196 | Hemlock | 23.5  | 3 |
| 299 | 42.274195 | -73.307028 | Hemlock | 19.7  | 3 |
| 300 | 42.274286 | -73.307109 | Hemlock | 16.0  | 3 |
| 301 | 42.274387 | -73.30705  | Hemlock | 19.2  | 3 |
| 302 | 42.274374 | -73.306899 | Hemlock | 18.5  | 3 |
| 303 | 42.274443 | -73.306853 | Hemlock | 22.2  | 3 |
| 304 | 42.274509 | -73.306797 | Hemlock | 16.2  | 3 |
| 305 | 42.274473 | -73.306915 | Hemlock | 20.3  | 3 |
| 306 | 42.274541 | -73.306973 | Hemlock | 18.4  | 3 |
| 307 | 42.274521 | -73.306924 | Hemlock | 15.1  | 3 |
| 308 | 42.27457  | -73.307023 | Hemlock | 24.3  | 2 |
| 309 | 42.274538 | -73.30714  | Hemlock | 22.5  | 2 |
| 310 | 42.274574 | -73.30678  | Hemlock | 21.5  | 3 |
| 311 | 42.27468  | -73.306813 | Hemlock | 19.2  | 3 |
| 312 | 42.274727 | -73.306668 | Hemlock | 30.8  | 3 |
| 313 | 42.274779 | -73.306709 | Hemlock | 19.4  | 3 |
| 314 | 42.274643 | -73.30663  | Hemlock | 25.5  | 2 |
| 315 | 42.274653 | -73.306555 | Hemlock | 15.4  | 2 |
| 316 | 42.274559 | -73.306477 | Hemlock | 18.0  | 2 |
| 317 | 42.274559 | -73.306572 | Hemlock | 16.0  | 3 |
| 318 | 42.274478 | -73.306352 | Hemlock | 215.0 | 3 |

|     |           |            |         |      |   |
|-----|-----------|------------|---------|------|---|
| 319 | 42.274481 | -73.306273 | Ash     | 18.6 | 1 |
| 320 | 42.274479 | -73.306355 | Ash     | 13.6 | 1 |
| 321 | 42.274374 | -73.30642  | Ash     | 18.4 | 1 |
| 322 | 42.274364 | -73.306549 | Ash     | 35.0 | 1 |
| 323 | 42.274413 | -73.306556 | Hemlock | 23.7 | 2 |
| 324 | 42.274333 | -73.306764 | Hemlock | 21.2 | 3 |
| 325 | 42.274319 | -73.306711 | Hemlock | 31.3 | 2 |
| 326 | 42.274237 | -73.306599 | Hemlock | 25.3 | 2 |
| 327 | 42.274277 | -73.306548 | Hemlock | 15.5 | 3 |
| 328 | 42.274279 | -73.306566 | Hemlock | 14.5 | 3 |
| 329 | 42.274293 | -73.306564 | Hemlock | 17.2 | 3 |
| 330 | 42.274357 | -73.306572 | Hemlock | 17.2 | 3 |
| 331 | 42.274031 | -73.306417 | Hemlock | 28.7 | 3 |
| 332 | 42.273808 | -73.306762 | Hemlock | 24.2 | 3 |
| 333 | 42.273645 | -73.306854 | Hemlock | 22.0 | 3 |
| 334 | 42.273587 | -73.307006 | Hemlock | 31.0 | 2 |
| 335 | 42.273665 | -73.307062 | Hemlock | 21.5 | 3 |
| 336 | 42.274524 | -73.306199 | Ash     | 33.5 | 1 |
| 337 | 42.274627 | -73.306406 | Ash     | 36.2 | 1 |
| 338 | 42.274801 | -73.306377 | Hemlock | 33.9 | 2 |
| 339 | 42.274887 | -73.306425 | Hemlock | 20.0 | 3 |
| 340 | 42.274991 | -73.30633  | Ash     | 42.1 | 1 |
| 341 | 42.275021 | -73.306304 | Hemlock | 17.7 | 3 |
| 342 | 42.275028 | -73.306418 | Ash     | 34.2 | 1 |
| 343 | 42.274986 | -73.306559 | Hemlock | 27.3 | 3 |
| 344 | 42.275111 | -73.30668  | Hemlock | 30.2 | 2 |
| 345 | 42.275237 | -73.306539 | Hemlock | 37.4 | 2 |
| 346 | 42.275112 | -73.306446 | Hemlock | 32.0 | 2 |
| 347 | 42.275049 | -73.306106 | Hemlock | 34.2 | 2 |
| 348 | 42.274818 | -73.306149 | Ash     | 33.0 | 1 |
| 349 | 42.275103 | -73.30604  | Hemlock | 18.4 | 3 |
| 350 | 42.275148 | -73.306055 | Hemlock | 28.5 | 3 |
| 351 | 42.275213 | -73.306079 | Hemlock | 20.0 | 3 |
| 352 | 42.275304 | -73.306035 | Hemlock | 18.0 | 3 |
| 353 | 42.275336 | -73.306053 | Ash     | 25.6 | 1 |
| 354 | 42.275618 | -73.305648 | Ash     | 31.2 | 2 |
| 355 | 42.275719 | -73.305273 | Ash     | 25.6 | 1 |
| 356 | 42.275786 | -73.30536  | Hemlock | 15.6 | 3 |
| 357 | 42.275772 | -73.304867 | Hemlock | 32.9 | 2 |
| 358 | 42.27587  | -73.304767 | Ash     | 22.2 | 2 |

|     |           |            |         |      |   |
|-----|-----------|------------|---------|------|---|
| 359 | 42.276195 | -73.304595 | Ash     | 32.1 | 1 |
| 360 | 42.276257 | -73.304663 | Hemlock | 13.5 | 3 |
| 361 | 42.276306 | -73.30458  | Ash     | 20.9 | 1 |
| 362 | 42.27637  | -73.304561 | Hemlock | 16.6 | 3 |
| 363 | 42.276342 | -73.304677 | Hemlock | 28.7 | 3 |
| 364 | 42.276451 | -73.304796 | Hemlock | 14.9 | 3 |
| 365 | 42.276696 | -73.305265 | Ash     | 25.3 | 1 |
| 366 | 42.276651 | -73.305284 | Hemlock | 21.2 | 3 |
| 367 | 42.276747 | -73.305345 | Ash     | 32.1 | 1 |
| 368 | 42.276652 | -73.305335 | Hemlock | 20.2 | 3 |
| 369 | 42.27689  | -73.305046 | Hemlock | 15.4 | 3 |
| 370 | 42.276978 | -73.304976 | Hemlock | 20.0 | 3 |
| 371 | 42.276872 | -73.304927 | Ash     | 44.0 | 1 |
| 372 | 42.276941 | -73.305584 | Ash     | 21.4 | 1 |
| 373 | 42.276934 | -73.305615 | Hemlock | 17.5 | 3 |
| 374 | 42.276999 | -73.305506 | Ash     | 28.5 | 1 |
| 375 | 42.277027 | -73.305623 | Ash     | 20.5 | 1 |
| 376 | 42.277096 | -73.305636 | Ash     | 21.4 | 1 |
| 377 | 42.277197 | -73.305452 | Ash     | 31.3 | 1 |
| 378 | 42.277419 | -73.305561 | Ash     | 32.5 | 1 |
| 379 | 42.27741  | -73.305538 | Hemlock | 25.1 | 3 |
| 380 | 42.27743  | -73.305524 | Ash     | 27.4 | 1 |
| 381 | 42.277464 | -73.305762 | Ash     | 27.0 | 1 |
| 382 | 42.277511 | -73.30599  | Ash     | 28.0 | 1 |
| 383 | 42.277502 | -73.30625  | Ash     | 33.1 | 1 |

Avg DBH: 23.1      Avg Health: 2.51