Invasive pests and pathogens can kill public trees, resulting in losses of critical ecosystem services, like carbon sequestration, runoff mitigation, and air pollution removal. For each invasive threat, the annual benefits provided by all potential host trees are summed into a total potential loss. In addition to the loss of benefits, the cost of replacing dead trees is estimated as the total structural cost. Together, these values can be used to weigh the potential benefit losses and costs that a municipality may incur if the invasive pest or pathogen is not contained.

**Legend**

- Gross Carbon Sequestration ($/yr)
- Avoided Runoff ($/yr)
- Air pollution removal ($/yr)

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**MUNICIPALITY**

**WATERTOWN**

**COUNTY**

**MIDDLESEX**

**STATE**

**MASSACHUSETTS**

**POPULATION**

31,915

**INVENTORY YEAR**

2016

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**EMERALD ASH BORER**

Total number of host trees¹: 63
Total annual value²: $432
Total structural value³: $135,456

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**ASIAN LONGHORNED BEETLE**

Total number of host trees¹: 2,303
Total annual value²: $27,748
Total structural value³: $6,620,180

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**BROWNTAIL MOTH**

Total number of host trees¹: 2,858
Total annual value²: $24,893
Total structural value³: $6,204,227

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**GYPSY MOTH**

Total number of host trees¹: 2,826
Total annual value²: $26,194
Total structural value³: $6,634,616

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¹Total number of host trees includes any species or genus designated as a favored or occasional host of the pest or pathogen.
²Total annual value is the sum of the annual valuations of gross carbon sequestration, avoided runoff, and pollution removal.
³Total structural value is the estimated local cost of having to replace similar trees and can be interpreted as the value at risk of being lost.

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Town of Watertown, Massachusetts (2020) Watertown, Massachusetts Street Tree Inventory. Available online at: https://www.uvm.edu/femc/data/archive/project/watertown_massachusetts_street_tree_inventory

Valuations were generated with i-Tree Eco (Version 6.1.30) Estimate generated on: 2/21/2020
OVERVIEW OF TREE INVENTORY

The percent population, percent leaf area, and importance value for the 10 most abundant tree species in the inventory:

- **Percent population** is the proportion of trees of this species relative to the entire inventory.
- **Leaf area** is a measure of a tree’s canopy cover; it is displayed here per species relative to the leaf area for all of the trees in the inventory.
- **Importance value** is a measure of how dominant a species is in the urban landscape and is calculated as the sum of the percent population and percent leaf area.

Diameter size classes (in inches) for the 10 most abundant genera in the inventory.

The proportion of inventoried trees displayed by genus. For clarity, only the 10 most common genera recorded in the inventory are displayed.

For more information visit [www.uvm.edu/femc/cooperative/projects/urban_pest_risk](http://www.uvm.edu/femc/cooperative/projects/urban_pest_risk)