

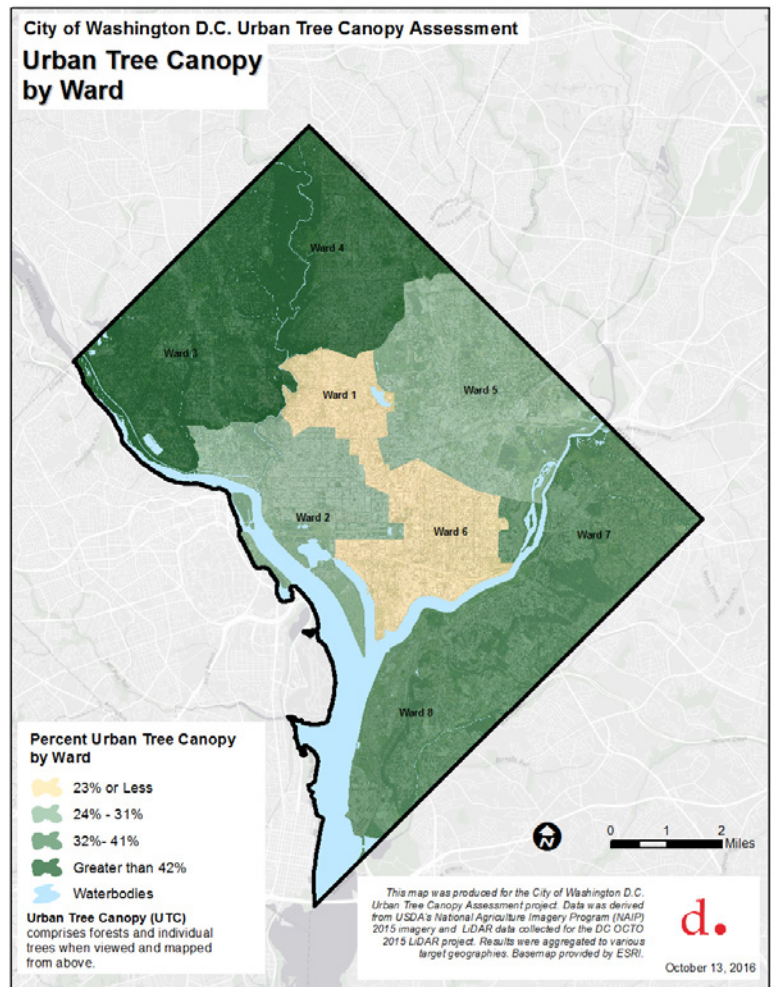


# 2016 Forest Health DISTRICT OF COLUMBIA *highlights*

## Forest Resource Summary

The District of Columbia occupies a land area of 39,072 acres. The urban forest in Washington, DC, consists of forested areas located on private, Federal, and State land. These areas are managed by private landowners, Federal agencies, and the District of Columbia. Three District agencies manage lands that contain forested areas: Department of Energy and the Environment, Department of General Services, and Department of Transportation. The Urban Forestry Administration (UFA) of the District Department of Transportation (DDOT) manages all public street trees and also administers the Urban Forest Preservation Act of 2002, which regulates the removal of mature trees from private property. The Urban Forest Preservation Act of 2002 was amended in 2016 to include further protection of large trees with a circumference greater than 100 inches, deemed Heritage trees.

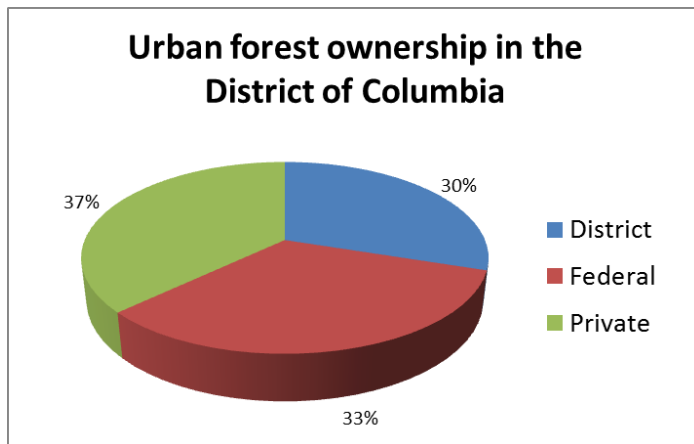
## Urban Tree Canopy by Ward in 2015



Washington, DC, urban tree canopy by ward in 2015.



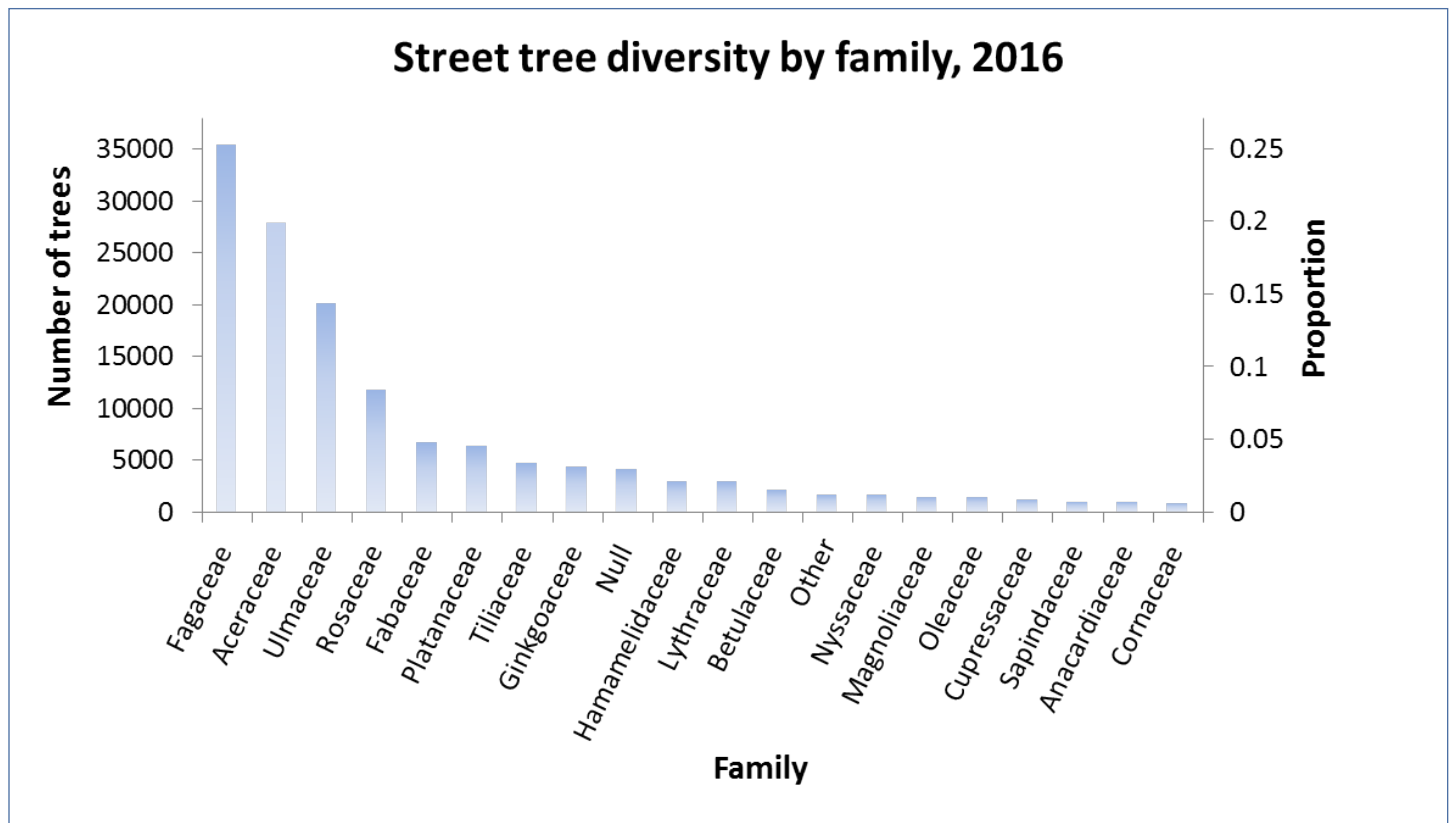
## Urban Forest Ownership



## Forest Inventory

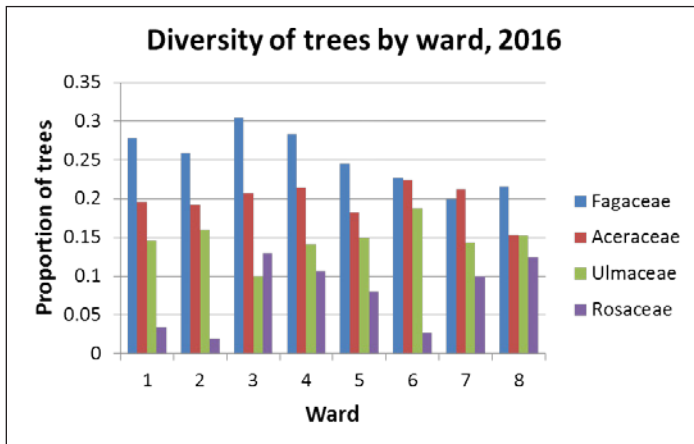
### Street Tree Diversity by Family

Diversity among street trees is quite high, as shown in the accompanying graphic. The "Other" grouping is comprised of 16 tree families, each constituting less than 0.5 percent of the total street tree inventory.



Street tree diversity in the District of Columbia in 2016 by tree family.

Across the District, individual tree families make up no more than 30 percent of the total proportion of street trees. However, at the Ward level, the Fagaceae family comprises slightly greater than 30 percent of the street trees in Ward 3.

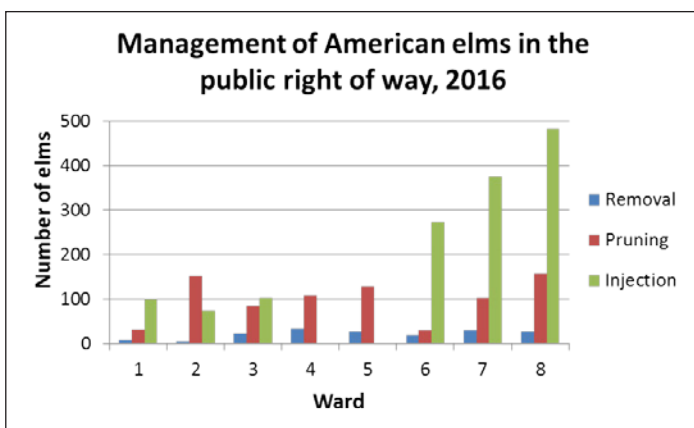


Diversity of tree families by ward shown for the four most common tree families in the District: Fagaceae, Aceraceae, Ulmaceae, and Rosaceae.

## Components of Change

### Dutch Elm Disease Removals

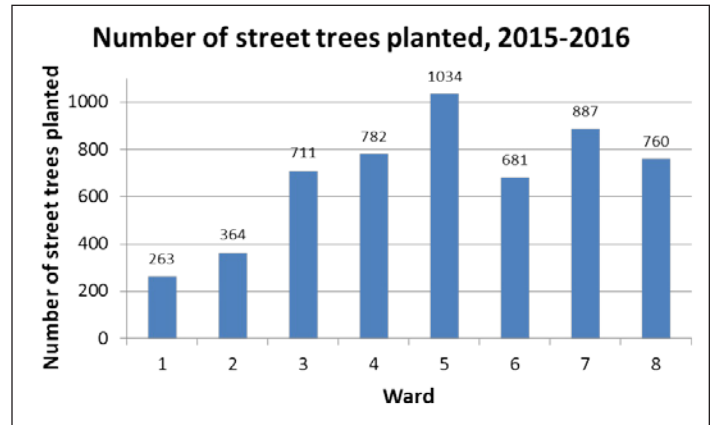
Management of elms in the District consists of fungicide injections, pruning, removals, and incorporation of Dutch elm disease-resistant cultivars. Removal of elms with Dutch elm disease is expedited to avoid additional infestations.



Management of American elms in the public rights-of-way in the District of Columbia in 2016.

## Planting

Each year UFA plants several thousand trees in the public right-of-way in support of reaching the 40 percent urban tree canopy goal by 2032. In the 2015-2016 planting season, approximately 5,500 street trees were planted throughout the District. This total is somewhat lower than usual due to weather-related constraints on planting.



Number of street trees planted in the District of Columbia from 2015 to 2016 by ward.

## Forest Health Issues

### Exotic or Novel Pest Introductions

#### Early Detection Rapid Response

In 2016, the District participated in the U. S. Forest Service Early Detection Rapid Response (EDRR) Program. UFA arborists established six sites distributed across the District. Each site was chosen due to its proximity to a feature with high risk of exposure to non-native wood-boring pests. Sites were located on land managed by the District, National Park Service (NPS), National Zoo, and the National Arboretum. For example, the Ft. Totten site, managed by NPS, is located just above Ft. Totten Transfer Station, which receives solid waste that includes holiday trees and greenery.



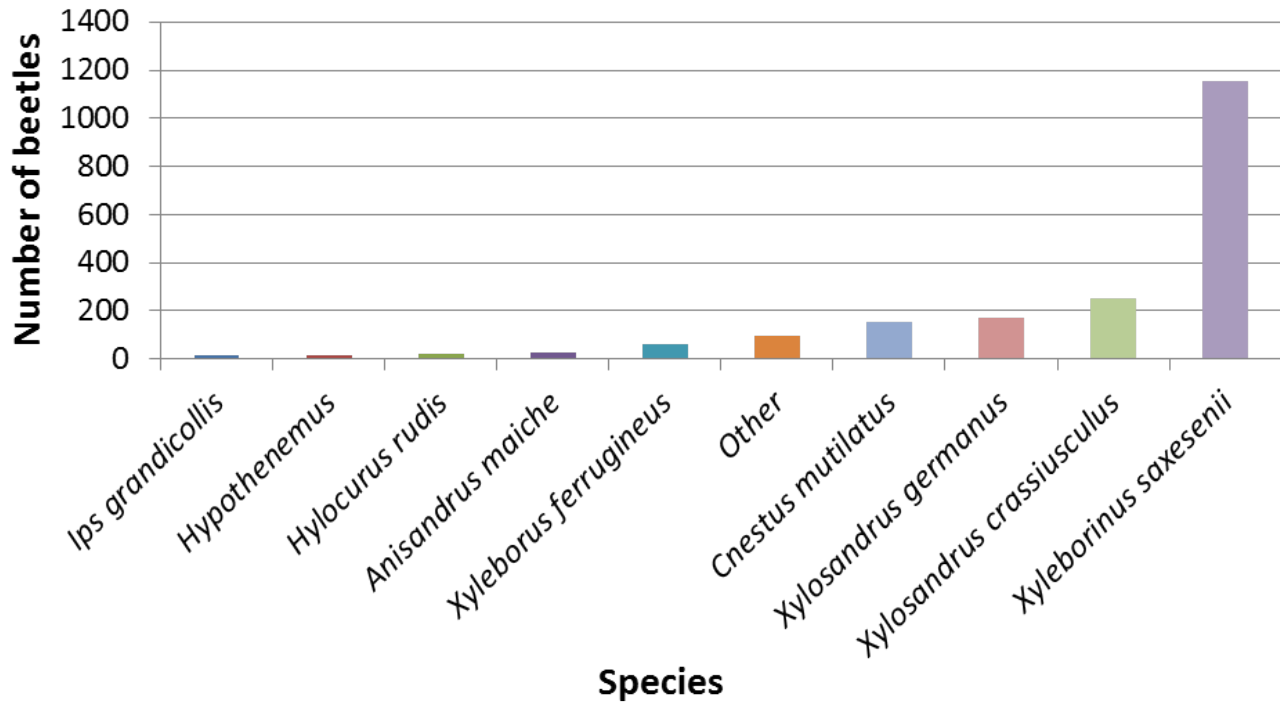
UFA Arborist Taryn Farber inspects a trap located near the Ft. Totten Transfer Station.

Trapping in 2016 resulted in 37 species of bark and ambrosia beetles (Subfamily Scolytinae) collected throughout the season, which lasted from April into the first week of July. Ambrosia beetles in the Platypodinae Subfamily were not inventoried. Twenty-three species of ambrosia beetles were collected, of which 57 percent were non-native. Fourteen species of bark beetles were collected with just one non-native species, *Scolytus multistriatus*, a significant vector of Dutch elm disease. Ninety-five percent of all species collected consisted of nine species, as shown in the graph on top of the next page. The most common species, *Xyleborinus saxesenii*, comprised approximately 59 percent of all collections, followed by *Xylosandrus crassiusculus* at 13 percent, *Xylosandrus germanus* at 9 percent, *Cnestus mutilatus* at 8 percent, and *Xyleborus ferrugineus* at 3 percent.

Species	Count	Percentage
<i>Ambrosiophilus atratus</i>	1	0.05%
<i>Cyclorhipidion bodoanum</i>	1	0.05%
<i>Dryocoetes affaber</i>	1	0.05%
<i>Hylesinus aculeatus</i>	1	0.05%
<i>Hylocurus</i>	1	0.05%
<i>Scolytus multistriatus</i>	1	0.05%
<i>Xyleborinus gracilis</i>	1	0.05%
<i>Xyleborus affinis</i>	1	0.05%
<i>Ambrosiodmus obliquus</i>	2	0.10%
<i>Hylastes tenuis</i>	2	0.10%
<i>Phloeotribus liminaris</i>	2	0.10%
<i>Pityophthorus lautus</i>	2	0.10%
<i>Thysanoes</i>	2	0.10%
<i>Xyleborus pubescens</i>	2	0.10%
<i>Gnathotrichus materiarius</i>	3	0.15%
<i>Xyleborus impressus</i>	3	0.15%
<i>Ambrosiodmus rubricollis</i>	4	0.20%
<i>Cyclorhipidion pelliculosum</i>	4	0.20%
<i>Dryoxylon onoharaensum</i>	4	0.20%
<i>Monarthrum mali</i>	5	0.25%
<i>Xyleborus xylographus</i>	5	0.25%
<i>Monarthrum fasciatum</i>	6	0.30%
<i>Pityophthorus</i>	7	0.35%
<i>Dryocoetes granicollis</i>	8	0.41%
<i>Cnesinus strigicollis</i>	9	0.46%
<i>Euwallacea validus</i>	9	0.46%
<i>Xyleborus celsus</i>	9	0.46%
<i>Ips grandicollis</i>	17	0.86%
<i>Hypothenemus</i>	18	0.91%
<i>Hylocurus rudis</i>	20	1.01%
<i>Anisandrus maiche</i>	26	1.32%
<i>Xyleborus ferrugineus</i>	63	3.19%
<i>Cnestus mutilatus</i>	153	7.76%
<i>Xylosandrus germanus</i>	174	8.82%
<i>Xylosandrus crassiusculus</i>	249	12.63%
<i>Xyleborinus saxesenii</i>	1156	58.62%
<b>Total Count</b>	<b>1972</b>	<b>n/a</b>

2016 EDRR Trapping results.

## 2016 EDRR Collections



Total number of individuals for each beetle species collected throughout the season. Species listed individually comprised a minimum of 1 percent of all collected beetles. All other species representing less than 1 percent of total collections were combined and included in the "Other" category.

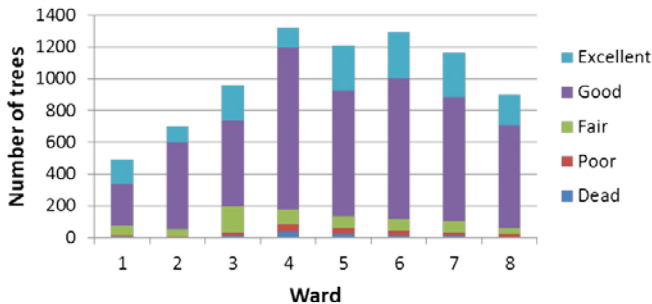
## Ongoing Efforts

### Dutch Elm Disease

American elms are iconic trees in the District of Columbia. They line many of the state avenues and form a beautiful closed canopy over the west-bound approach to the Capitol building. Unfortunately, American elms in the District are also subject to Dutch elm disease (DED). UFA employs a diverse arsenal to

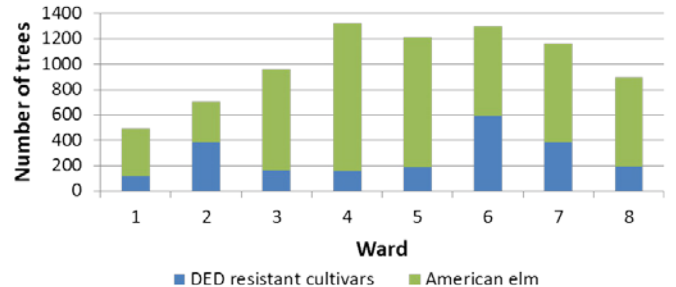
manage DED, including the use of fungicide injections, sanitation pruning, and expedited removal of infested specimens. In addition, new plantings include DED-resistant cultivars.

### Condition of American elms in the public right of way, 2016



Condition of American elms in the public right-of-way in the District of Columbia in 2016.

### American elms in the public right of way, 2016



Diversity of American elms in the District of Columbia right-of-way in 2016.

## ***Emerald Ash Borer***

Emerald ash borer (EAB) was first observed in the District in 2013. Fortunately, the street tree inventory consists of very few ash trees—less than 1 percent of all trees in the public right-of-way. Following the discovery of live emerald ash borer in 2014, UFA began tracking observations of emerald ash borer in street trees and ash trees located on other District-owned properties. To date, emerald ash borer has been observed in six out of eight District Wards. UFA expedites the removal of any District-owned ash trees known to be infested with EAB.

The overall urban forest in the District contains a greater proportion of ash trees compared to the street tree inventory, particularly in riparian areas such as Kenilworth Aquatic Gardens. An i-Tree analysis indicates that the urban forest is comprised of approximately 5,000 ash trees, making up 1.9 percent of all trees in the District (Nowak and Hoehn 2010).



*Signs and symptoms of emerald ash borer infestation in late spring 2016, Ward 8.*

## ***Additional Pests and Pathogens***

There are a variety of additional pests observed on street trees in the District of Columbia. *Scolytus rugulosus* has been

observed on numerous species of cherry street trees such as *Prunus x yedoensis* and *Prunus virginiana*. This species was also observed in ethanol-baited traps as part of the Early Detection Rapid Response program in the spring of 2015.

Scale insects are often observed, particularly on maple and oak street trees. In particular, oak lecanium scale are prevalent on willow oak trees. Both young and mature willow oaks may sustain heavy infestations of oak lecanium scale, often identified by the appearance of sooty mold. Red maples are also susceptible to gloomy scale. Some infestations result in heavy accumulation on limbs, which exhibit a mottled appearance and rough texture.



*Scale observed on a willow oak in the public right-of-way.*

Anthracoze is present in the District and was observed in street trees such as sycamore and London plane trees in the late summer. Bacterial leaf scorch (BLS) was also observed in a variety of street trees during the summer, though widespread testing was not conducted for BLS in 2016. Bacterial leaf scorch is most prevalent in such District street trees as red oak (*Quercus rubra*), pin oak (*Q. palustris*), American elm (*Ulmus americana*), and sycamore (*Platanus occidentalis*) (Harris and others 2014). As of 2014 BLS had been detected in all wards, with the exclusion of Ward 7. However, in the fall of 2016, BLS was detected in a rapidly declining red oak located in Ward 7.

## Urban Tree Canopy Map

Hanou, I. 2016. Urban tree canopy assessment, District of Columbia, 2011–2015. Plan-It Geo, LLC, Arvada, CO.

## References

- Harris, J.L.; Di Bello, P.L.; Lear, M.; Balci, Y. 2014. Bacterial leaf scorch in the District of Columbia: distribution, host range, and presence of *Xylella fastidiosa* among urban trees. *Plant Disease*. 98: 1611–1618.
- Nowak, D.J.; Hoehn, R.E. 2010. *i-Tree Ecosystem Analysis*, Washington DC. Newtown Square, PA: U.S. Department of Agriculture, Forest Service, Northern Research Station.



### Forest Health Programs

State forestry agencies work in partnership with the U.S. Forest Service to monitor forest conditions and trends in their State and respond to pest outbreaks to protect the forest resource.

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