On October 12-13, thirty tree stewards from 22 communities around the state gathered in Petersham in the Fisher Museum of Harvard Forest for the DCR Tree Steward Training. This annual training is designed for community volunteers, tree wardens, and tree enthusiasts and provides a foundation in trees and urban and community forestry— from tree ID, to insect and diseases, to pruning, to inventory and i-Tree, to tree planting, and to working in the community and with utilities. Each year, the DCR invites speakers from the DCR Bureau of Forest Fire Control and Forestry, as well as tree wardens and other professionals to speak on those topics and more. The DCR and the Mass. Tree Wardens’ and Foresters’ Association sponsor the training, with support from the USDA Forest Service.

Harvard Forest offers a great location for the training—a beautiful setting with hiking trails, a modern facility, overnight accommodations on-site, and a retreat-like setting. The DCR strives not only to provide tree stewards with an opportunity to learn “the tree stuff,” but also to network with other community volunteers and tree folks. To facilitate this, we have meals together in a communal dining area, with delicious food provided by the Millers River Cafe. We even have a dedicated time at the end for a roundtable discussion. For arborists and foresters, we also offer professional credits for the session.

Each year, we schedule a mix of indoor and outdoor sessions, and this year was no different (though we did get a bit rained-out on Saturday). We spent time outside on Friday, wrapping up the day with a tree planting in the slanting, afternoon sun, at the site of the old Petersham Country Club, now known as Harvard Farm. We’ll be scheduling the next Tree Steward Training for fall 2019 in the coming months. Stay tuned!
2018 DCR Tree Steward Training

Many organizations, cities, and towns sponsored attendees at this year’s Tree Steward Training. Thank you!

Amherst Public Shade Tree Committee
City of Lowell
Emerald Necklace Conservancy
Franklin Regional Council of Governments
Green Cambridge
Groundwork Lawrence
Lanesborough Tree and Forest Committee
Lynnfield Tree Committee
Northampton Public Shade Tree Commission
Northern Berkshire Community Coalition
Roslindale Green & Clean
Southwest Corridor Park Conservancy
Town of Ashby
Town of Concord
Town of Palmer
Town of Watertown
Town of Weston
Town of Wrentham
Trees for Watertown
Worcester Tree Initiative
Joan and Steve Stoia, Centennial House, Northfield
Tim Bowen, Northfield Creamie
Jody James, Northfield Food Mart (Super IGA Market)
Robin McKeon, Northfield Yoga and Pilates
Libby Volkening, Northfield Yoga and Pilates

Tree Steward Training in the News!

Brian Sullivan, a reporter/producer/videographer/editor from WGBY in Springfield, was at our Tree Steward Training on Friday and had planned to produce a segment on the event for the show Connecting Point. After interviewing Amherst Tree Warden Alan Snow, who gave a session on tree pruning, Brian decided to expand the story and ended up producing a two-part exploration of urban forestry education and a comparison of urban and community forestry in two communities in Western Mass - Northampton and Lanesborough. Watch the segments below.

**Urban Forestry Pt. 1: Education | Connecting Point | Nov. 5, 2018**
What do we know about urban forestry? Well, for Connecting Point’s Brian Sullivan, the answer was nothing—until he attended a tree steward training event put on by the Massachusetts Department of Conservation and Recreation. From there he went to one of the country’s best training grounds for people in the urban forestry field to find out ...

**Urban Forestry in Western Mass Communities (Part 2) | Connecting Point | Nov. 7, 2018**
Earlier this week, Connecting Point explored the education that goes into the making of an urban forester. In the second part of this story, Brian Sullivan visits Lanesborough and Northampton, two western Massachusetts communities, to see how small and large towns implement urban forestry programs.
By now, most trees have lost their leaves in our area, and we are settling into the winter landscape. We may take extra notice of pines, spruces, and firs, which are still green, while everything else is moving toward brown. We may also be noticing broadleaved evergreens, like hollies, in the landscape, whether inkberry (Ilex glabra), a meserve holly hybrid (Ilex x meserveae), winterberry (I. verticillata), or our focus today, American holly (I. opaca).

Ilex is the only genus in the Aquifoleaceae family, species of which can be found in temperate and subtropical regions around the world. Native to Massachusetts, American holly is found in shady woods from eastern Massachusetts, south to central Florida, west to eastern Texas, and north to central Missouri. It is found in the Appalachians up to 4,000 feet. It was certainly all over the woods (and the planted landscape) where I grew up in Maryland.

American holly is a slow-growing, medium-sized tree, reaching heights of 40 to 50 feet with a spread typically of 15 to 30 feet. Young trees have a dense, pyramidal form, and as the trees mature, they become more cylindrical and irregular. American holly is hardy in USDA zones five to nine. American holly is alternate, simple, and evergreen, with an elliptical leaf, one-and-a-half to three inches long and about half (or a little more than half) as wide, and with spiny teeth – up to seven or eight per edge. Thick and leathery, the leaves are dull and dark green in color above and yellow-green below, and without hairs. The petiole can be up to a half-inch long and is typically downy.

Buds are scaled, ovoid, and one-eighth to one-sixth inch long, and the stem is green when young, becoming smooth and brown with age, though older stems will eventually become rough, with prominent raised lenticels.

American holly is dioecious, with separate male and female plants. Male flowers are in cymes, while female flowers are white and four-lobed, occurring in groups of one to three on a peduncle. Fruits form on female plants and are a berry-like red drupe, up to a half-inch wide, and are borne singly on a short stalk. They mature in mid-fall and will persist into the winter. For flower production, Michael Dirr recommends one male plant for every two to three female plants.

Many insects and diseases find American holly hospitable, including holly leaf miner, bud moth, scales, beetles, whiteflies, tar spots, cankers, and others.

American holly grows in full sun or part shade and will do best in a site that is protected and not too dry. It can tolerate cold, but is not tolerant of winds, particularly drying winter winds. It can tolerate a variety of soil conditions, but will do best in moderately fertile, loose, acidic soils. It does not tolerate wet soils or soils with poor drainage.

American holly seems to elicit strong feelings for some. Albert Burneko, in a review of American holly on Deadspin writes, “The American holly is ornery, yes. Its leaves are spiny and stiff, and they don’t glow underneath when the sunlight falls on them, like the altogether much more pleasant leaves of the tulip poplar. Nor are they feathery and rich, like the foliage of many friendlier evergreens. They do not rustle or whisper when the wind blows through them; they rattle, like a symphony of maracas. This is okay. The American holly has its own
Species Spotlight—American holly, *Ilex opaca*

Burneko enjoys holly’s form, its red ‘berries,’ and the glossy green foliage (that he does not have to rake).

Going back 172 years to G.B. Emerson’s, *Report on Trees and Shrubs Occurring Naturally in the Forests of Massachusetts*, Emerson also enjoys the foliage and fruit of American holly. He describes the tree as “a handsome, low tree” and writes that the “tree is found plentifully at Quincy, at Cohasset, and especially at New Bedford, and on Naushon Island. It has considerable beauty, and is particularly valuable for retaining its bright green leaves through the year, and for the beauty of its scarlet berries […]” On an early spring trip to Nantucket a few years ago, I also saw American holly in the woods there—a nice infusion of green in March.

American holly makes a good specimen plant, particularly in a grouping, and, today, there are lots of cultivars available, from varieties with unique forms, to heavy fruit set, to spineless leaves. As a Massachusetts native, American holly makes a handsome addition of green to the winter landscape.

**References**


Tree City, Tree Line, and Tree Campus USA Applications Due December 31

We are accepting applications for Tree City, Tree Line, and Tree Campus USA. Complete instructions are on the [DCR website](http://www.mass.gov/dcr). If your community, utility, or school does not currently participate in these programs, contact Mollie Freilicher, mollie.freilicher@mass.gov or 413-577-2966 to find out more and how you can apply next year.

Fifth-grade classes from public and private schools across the Commonwealth are encouraged to participate in the annual Arbor Day Poster Contest by having fifth-grade students create posters highlighting this year’s theme, *Trees Have Mass Appeal*, and then hosting a school poster contest. The winning poster from each school can be submitted to DCR. Home-schooled or non-participating school students may submit their posters and enter the contest individually.

For complete rules and guidelines, go to the [Arbor Day Poster Contest page](http://www.mass.gov/dcr) on the DCR website.

The Arbor Day Poster Contest is sponsored by the Department of Conservation and Recreation, the U.S. Forest Service, and the Massachusetts Tree Wardens’ and Foresters’ Association.
Growing on Trees

Managing Roadside Tree Mortality Workshops

This past October, DCR, National Grid, and the Massachusetts Tree Wardens’ and Foresters’ Association teamed up to put on a workshop for tree wardens on how to manage roadside tree mortality. Many communities are experiencing widespread loss of trees due to repeated gypsy moth infestations and recurring drought. The 2018 DCR Forest Health aerial survey of the state showed widespread mortality, as well as significant pockets of tree loss in and around Douglas, Sutton, Northbridge, Millis, and the North Shore. Many communities are facing hundreds or thousands of dead trees, and these workshops were designed to help communities move forward in addressing this problem.

Nicole Keleher, from the DCR Forest Health Program, provided an overview of the damage, including results from the 2018 aerial survey. While fewer acres were defoliated in 2018 than last year, areas are now seeing more mortality than in the past. Mollie Freilicher, from the DCR Urban and Community Forestry Program, discussed windshield surveys as a tool to help communities prioritize removals. Javier Marin, from the Department of Agricultural Resources, gave a quick update on Spotted Lanternfly, which was followed by a presentation on state laws and the roles and responsibilities of tree wardens by Mollie Freilicher. The day ended with a presentation from Anne-Marie Moran and Christopher Rooney of National Grid about the utility perspective, opportunities for partnership, and a unique program in Rhode Island that National Grid implemented in cooperation with the state of Rhode Island. The workshop, planned for November 16, was rescheduled to December 7 due to snow.

Emerald Ash Borer Update

Currently, EAB can be found in 42 communities throughout the Commonwealth, as well as in all five other New England states.

Learn how to identify the insect and damage at the UMass Extension webpage.

Drought Monitor

With the recent rains, as of November 27, 2018, no areas of Massachusetts are in drought status or classified as abnormally dry. The Boston climate summary for the period from 9/1/2018 to 11/30/2018 showed a wet fall, with over 11 inches of rain above normal and 30 days with 0.10 inches of rain or more (21 of which consisted of heavy rain). Check out the National Weather Service Seasonal Climate Report here.

Find out more at the US National Drought Monitor.
Growing on Trees

Webcasts and Events

Urban Forestry Today Webcast
An Introduction to GIS Applications in Urban Forestry
December 5, 2018 | 12:00 – 1:00 p.m. (Eastern)
Dr. Forrest Bowlick, UMass-Amherst
To attend live and receive free CEUs, go to: www.joinwebinar.com and enter the ID code: 500-170-851
Archived webcasts are available at www.urbanforestrytoday.org under ‘Videos.’
This broadcast is free and will offer the opportunity for arborists to earn 1.0 ISA CEU and 0.5 MCA credit.
The Urban Forestry Today Webcast Series is sponsored by the University of Massachusetts Department of Environmental Conservation, in cooperation with the USDA Forest Service, Massachusetts Department of Conservation and Recreation, University of Massachusetts Extension, and Massachusetts Tree Wardens’ & Foresters’ Association.

Urban Forest Connections
The USDA Forest Service’s Urban Forest Connections webinar series brings experts together to discuss the latest science, practice, and policy on urban forestry and the environment. These webinars are open to all. Past webinar presentations and recordings are available here.

Rekindling the Forest in Our City: A Story of Research, Responsibility, and Care
December 12, 2018, 1:00—2:15 p.m. (Eastern)

Upcoming Urban Forest Connections Webinars
January 9, 2019 | 1:00 p.m.-2:15 p.m. (Eastern)
February 13, 2019 | 1:00 p.m.-2:15 p.m. (Eastern)
March 13, 2019 | 1:00 p.m.-2:15 p.m. (Eastern)

i-Tree Online Session
Expanded i-Tree Mapping Capabilities
December 6, 2018, 1:00 p.m. (Eastern)
Learn about the ways i-Tree continues to enhance features for mapping your projects. This session will introduce the latest enhancements to the i-Tree platform of tools.
PRE-REGISTRATION is required for this session in order to provide the most streamlined user experience.
To register, please visit https://tinyurl.com/y9sbt725

Massachusetts Tree Wardens’ and Foresters’ Association 106th Annual Conference
January 8-9, 2019 | Sturbridge
Registration is open for the MTWFA annual conference. Sign up for education-packed days, connecting with colleagues and vendors, and continuing education credits. To view the full program and to download a registration form, see the 2019 Conference Brochure. Online registration is also now available.
More information: www.masstreewardens.org

Storm-Resilient Urban Forests: Response Resilience, Are You Prepared to Respond?
Storms happen and the urban forest responds accordingly to steps taken beforehand to create storm-response resilience. Recovery from storms also happens, and the success is predictable based on how well a community prepares in advance to respond.
Storms occur in both small communities and large metropolitan areas. Planning early and often is good advice to prepare for your initial storm response. A triage approach for debris management takes care of the worst first and productively leads to a timed and planned response to the aftermath of storms. During this webinar, extension agents and educators will learn a variety of approaches communities have used to respond to storms and ultimately manage tree damage and tree debris. The speaker will also discuss a variety of actions to incorporate into community storm response before a storm happens.
View this on-demand webinar anytime at forestrywebinars.net.

TREE Fund Webinar
December 13, 2018, 2:00 p.m. (Eastern)
Reducing Tree (and Soil!) Damage during Construction
Dr. Nina Bassuk, Cornell University
More information is at www.treefund.org/webinars

Upcoming TREE Fund Webinars:
February 2019 – Trees and Health
Growing on Trees

Spotted Lanternfly Preparedness Conference
February 7, 2019 - 8:30 a.m. – 3:30 p.m. | Milford
The spotted lanternfly (Lycorma delicatula) was first detected in the United States in Pennsylvania in 2014. This non-native, invasive insect has since had a large impact on agricultural and ornamental crops and the quality of life of many Pennsylvania residents. While this insect is associated with the invasive tree of heaven (Ailanthus altissima), it has been reported from 70+ species of host plants, including apple, plum, peach, grape, and many native and ornamental trees and shrubs. This insect is unfortunately on the move, having been detected in additional states including Delaware, New York, Virginia, New Jersey, Connecticut, and Maryland.

What can we do in Massachusetts to prepare for this insect? Knowledge is power. This conference will provide the latest research and information about the identification, life cycle, impact, monitoring, and Integrated Pest Management options that are known for this insect. Landscapers, arborists, tree wardens, foresters, nursery operators, lawn care professionals, grounds managers, and tree fruit and small fruit growers are encouraged to attend. Join UMass Extension in learning more about the spotted lanternfly!

CREDITS: 6 pesticide contact hours for categories 25, 27, 29, 35, 36, and Applicators License. Association credits: ISA, MCA, MCH, MCLP and AOLCP credit requested.

Find out more at the Center for Agriculture, Food, and the Environment website.

Making Your Community Forest-Friendly: A Worksheet for Review of Municipal Codes and Ordinances
This new publication was designed to help communities review and revise their development regulations so future projects conserve valuable trees and woodlands and encourage new plantings. It provides a set of questions to help determine whether existing local codes require, allow, or prohibit “forest-friendly” development practices. The worksheet can be used by municipal staff, non-governmental organizations, and others to identify specific approaches to improve codes. The document also provides additional resources, ideas, and guidance for developing a community forestry program.

This publication was developed with input from subject matter experts, including foresters, planners, transportation engineers, homebuilders, and fire administration representatives. The practices aim to maximize tree cover protection without compromising other goals, such as public safety, visibility, access, and economic value. Making Your Community Forest-Friendly was developed by the Center for Watershed Protection, with funding from the USDA Forest Service. For questions about this resource, contact Karen Cappiella at kc@cwp.org.
Gleanings

Climate Effects on the Culture and Ecology of Sugar Maple

By Mike Crowley

October 31, 2018—Northeast Climate Adaptation Science Center (NE CASC)-affiliated investigator Kristina Stinson completed project focused on the impact of climate on the production of maple syrup. Maple syrup is produced from the sap of sugar maple trees and is collected in the late winter and early spring. Native American tribes have collected and boiled down sap for centuries, and the tapping of maple trees is a cultural touchstone for many people in the northeast and Midwest. Because the tapping season is dependent on weather conditions, there is concern about the sustainability of maple sugaring as the climate changes throughout the region. In spite of this, maple syrup production is increasing rapidly, with demand rising as more people appreciate this natural sweetener. The research team examined sugar maple’s sap yields coupled with the sugar and biochemical composition of sap throughout the geographic range of sugar maple. Sap quality and quantity was related to historical and projected climate changes across the species range and was modeled for climate change scenarios.

This is the first completed study to document potential climate-related changes in sap production and sap quality across the full geographic range of sugar maple.

Major findings:
- Declines, as well as increased variability, in sap flow near the southern range limit and increased sap flow at the northern range limit suggest long-term range shifts toward the north, as well as geographic variation in expected syrup production over the next several decades.
- Survey results highlighted that producers do perceive changes in climate variables and concomitant shifts in sap production.
- Many producers are willing to shift sap harvesting practices in response to changing climate scenarios, but producers are split in their perceptions about the importance of individual variables and their level of concern about future impacts on the industry.

Overall, these results can be applied to design more effective extension programming and adaptation plans to mitigate the risk of climate in maple systems.

View the Project Page and the Final Report Here >>

Mike Crowley is a NE CASC Communications Intern

Accounting for Trees in Stormwater Models

This paper is intended to help the stormwater engineering community more easily account for trees in runoff and pollutant load calculations and incorporate them into stormwater management strategies. It summarizes existing hydrologic and hydraulic models that can be applied at the site and small watershed scales to account for the stormwater benefits of conserving existing trees and/or planting new trees. The paper also includes examples of specific techniques to modify stormwater models to account for urban tree benefits, as well as associated resources and tools for estimating the hydrologic benefits of trees in the urban landscape.

The resource, funded by the USDA Forest Service, was developed with input from experts in stormwater engineering and urban forestry. This adds to a robust collection of resources the Center for Watershed Protection completed in 2017 on “Making Urban Trees Count,” which includes a comprehensive literature review and research-based tools for crediting trees in stormwater and water quality management programs.

For questions about this resource, contact Karen Cappiella at kc@cwp.org.
News

Bringing Back Butternut Trees
October 12, 2018 – Butternut trees, also known as white walnuts, used to be abundant in the forests of the Northeast and the Midwest, but have now been devastated by a fungus. As the Allegheny Front’s Andy Kubis tells us, help for this struggling species may soon be at hand. Ecologists in Pittsburgh, Pennsylvania, recently found a small group of healthy butternuts and are studying how these hardy trees resisted the fungus. Listen to the full story on Living on Earth.

News Headlines in Brief

Redrawing the Map: How the World’s Climate Zones Are Shifting (Yale Environment360)
California Wildfires Start in the Woods. Why Do Cities Keep Burning?
How Hong Kong plans to replace 100,000 trees
Part of the Answer to Climate Change May Be America’s Trees and Dirt, Scientists Say
We Asked, and You Delivered — Toronto Star Readers Share their Favorite Trees
Scientists Find Great Diversity, Novel Molecules in Microbiome of Tree Roots

Some pictures from the Greening the Gateway Cities Fall Planting Season

Find out more about Greening the Gateway Cities here.

Photos courtesy of Mathew Cahill, DCR Urban and Community Forestry
On the Horizon

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<th>Date</th>
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<td>ASCA Annual Conference,</td>
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<td>Dec 5</td>
<td>Urban Forestry Today Webcast, 12:00 pm (Eastern), <a href="http://www.joinwebinar.com">www.joinwebinar.com</a> and enter the ID code: 500-170-851</td>
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<td>TREE Fund Webinar, Trees and Construction, 2:00 p.m. (Eastern), <a href="http://www.treefund.org/webinars">www.treefund.org/webinars</a></td>
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<td>Jan 8-9</td>
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Tree City, Tree Line, and Tree Campus USA Applications Are Due December 31.

Contact Mollie Freilicher
413-577-2966 or [mollie.freilicher@mass.gov](mailto:mollie.freilicher@mass.gov)

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The Citizen Forester is made possible through a grant from the USDA Forest Service Urban and Community Forestry Program and the Massachusetts Department of Conservation and Recreation, Bureau of Forestry.

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