Massachusetts Department of Conservation and Recreation

THE CITIZEN FORESTER

Urban & Community Forestry Program

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Disaster Recovery Steps for Urban Forest Resilience

By **Dudley R. Hartel**

Adapted from Hartel, Dudley R. 2019. Disaster recovery steps to maintain and improve urban forest resilience. In: Campbell, Lindsay K.; Svendsen, Erika; Sonti, Nancy Falxa; Hines, Sarah J.; Maddox, David, eds. Green readiness, response, and recovery: A collaborative synthesis. Gen. Tech. Rep. NRS-P-185. Newtown Square, PA: U.S. Department of Agriculture, Forest Service: 220-233.

Considerable research demonstrates the broad range of ecosystem services (i.e., benefits) attributed to urban trees either individually or in groups as part of parks, natural areas, riparian buffers, in green stormwater infrastructure, along streets, and in other urban public landscapes. Environmental services contributed by urban trees include stormwater management, carbon sequestration, and impacts on human health that include air quality and lower urban temperatures (urban heat island mitigation).

Communities that adopt arboricultural standards and practices and implement comprehensive urban forest management can provide the long-term outlook needed to manage and maintain these environmental services. One component of this management is disaster response and recovery, and this article will look specifically at a disaster response/recovery protocol that helps communities maintain viable and valuable urban tree canopy following destructive storm events.

The objective of this article is to introduce disaster planning, preparedness, response, and recovery utilizing professional arborists and urban foresters as a component of a comprehensively managed urban forest (i.e., community stewardship). It is intended to provide community groups, non-governmental organizations, civic leaders, and state and federal land and program managers with background on the Urban Forest Strike Team (UFST) disaster response and recovery program.

Community Preparedness, Vulnerability, and Typical Tree Damage

Many communities have implemented tree management and monitoring programs and adopted ordinances promoting urban tree protection and management. Important components of management programs include urban forest management plans that identify professional standards, adoption of best practices, detailed tree planting plans, and comprehensive urban forest risk management plans and practices. Monitoring efforts might include public tree inventories, public and private tree inventory sampling like i-Tree Eco or Urban Forest Inventory and Analysis (UFIA), and community-wide urban tree canopy (UTC) mapping and analysis. Urban forest management programs that promote healthy, diverse tree populations are integral to disaster preparedness.

Figure 1: Urban forest strike teams vehicle signage.

Regardless of the level of urban forest management in a community, trees remain vulnerable to damage and loss from natural disasters that include high winds and ice storms. The resulting storm damage increases the immediate risk to residents and visitors in the community, and, in the long-term, adversely affects production of environmental services. The purpose of urban forest management as a disaster planning tool is to improve overall urban forest health, identify tree defects, assess risk, and prioritize mitigation that reduces storm impacts on the trees in the urban forest.

Up Ahead:

(Continued on page 2)

Disaster Recovery Steps for Urban Forest Resilience (cont'd)

(Continued from page 1)

Extreme wind and ice events result in tree damage that is immediate and that requires mitigation to reduce risk to the public and begin the recovery of affected communities. It has been estimated that 80 percent of tree damage during natural disasters is associated with a preexisting defect (e.g., trunk decay and/or cavity, codominant stems, limb structure, damaged roots). Consequently, wind and ice events result in broken branches and limbs, split trunks, and toppled trees. UFST assessments for these types of disasters and damage can be made quickly and reliably and can be accomplished within the current Federal Emergency Management Agency (FEMA) timeline for public assistance.

While damage by flooding may include scoured trunks and toppled trees (particularly when accompanied by high winds), most damage will not become apparent for months after the flood event, when trees begin to die or fail to leaf out from extended saturated soils. UFST assessments for these disasters are most effective in later stages of recovery and can still provide risk-based assessment of damaged and failing trees regardless of the status of FEMA public assistance.

Communities that maintain healthy trees, reduce tree defects and their associated risk with appropriate mitigation (i.e., pruning or removal), and have a protocol in place to respond and recover from disasters or extreme storm events will reduce short-term risk and be able to maintain a higher level of environmental services over the long-term by keeping damaged but viable trees. Communities are encouraged to include the urban tree resource and its professional management in local disaster plans.

Urban Forest Strike Teams, Urban Tree Canopy, and Post-Disaster Objectives

Urban forest strike teams (UFSTs) are a disaster response and recovery project that is supported by the Southern Group of State Foresters and the Northeast-Midwest State Foresters Alliance and their respective state urban and community forestry (UCF) programs. The urban forestry program of the USDA Forest Service provides technical assistance and organizational support for UFSTs from Athens, GA, and Durham, NH (Figure 1). UFSTs are composed of state forestry agency certified arborists and urban foresters, municipal arborists, extension foresters, and tree wardens trained to make urban tree risk and damage assessments following natural disasters (i.e., wind events, ice storms). UFSTs have not been implemented in the western United States primarily because typical storm events and natural disasters (i.e., fire, floods, landslides) more often result in tree loss rather than damage. However, the UFST rapid assessment protocol could possibly be adopted for management and response to other disturbances of urban trees. The primary objectives of UFSTs include:

- Assistance to communities that do not have the professional capacity to manage the trees affected by the disaster
- Immediate and short-term risk management
- Retention of viable tree canopy and associated environmental services
- Compliance with FEMA criteria for reimbursement under public assistance

UFSTs provide rapid tree risk assessments to identify the risk that storm-damaged trees pose to people and property on publicly managed land (e.g., parks, streets and other rights-of-way, and around public buildings), support FEMA public assistance, and are the basis for professional recommendations for short-term risk mitigation.

UFSTs provide professional response and recovery services to communities following ice storms, hurricanes, and other natural disasters. Resource deployment is commensurate with the scale and intensity of the event and therefore may occur at the local, state, or regional level.

Deployment for risk assessment and debris classification typically occurs in the late stages of disaster response or early stages of disaster recovery before debris removal operations have been completed. In later stages of disaster recovery, UFSTs may assist by identifying appropriate planting sites and species to restore environmental services destroyed by the disaster.

(Continued on page 3)

Disaster Recovery Steps for Urban Forest Resilience (cont'd)

(Continued from page 2)

UFST deployment is merely one component of a comprehensive urban forest management strategy that ideally includes urban forest risk management and inclusion of urban trees and professional management of those trees in local disaster plans.

Urban Forest Strike Team Overview

The UFST initiative involves recruiting, training, and deploying professional urban foresters and arborists (required to have basic incident command system [ICS] training, and arboricultural certification or experience) to assess tree damage using FEMA criteria and tree risk management standards. Strike team members attend a multi-day training workshop and obtain continuing education via webinar, e-learning, and/or state-sponsored disaster training scenarios (i.e., disaster exercises).

As UFST personnel (i.e., task specialists) gain disaster experience, they are eligible for advanced training and promotion to team leader status. A typical deployed "team" includes two team leaders and 10 task specialists (i.e., five crews), with geographic information system (GIS) and communications support.

UFSTs evaluate individual trees, street by street, along trails, and in parks within a defined disaster area to assess storm damaged trees on public property and rights-of-ways to identify risk and recommend removal or pruning mitigation, and qualification for FEMA debris reimbursement under their public assistance program. Maps and data sheets are provided to the community to help them document debris for FEMA, plan the work needed, effectively contract for debris cleanup, document the cost of the damage, schedule additional post-disaster risk assessment, and prepare for additional restoration and mitigation pruning during long-term recovery (Figure 2).

The teams may also provide technical assistance with debris estimation during the initial response phase of a disaster and support for longer-term risk assessment and tree planting recovery efforts. Protocols and services provided by UFSTs follow

Figure 2: UFST crew discusses tree damage along city street. Photo by Dudley Hartel, USDA Forest Service.

national disaster policy, FEMA guidelines, and current arboricultural standards:

- Tree risk assessment (Tree Care Industry Association 2017)
- Best management practices (Smiley et al. 2012)
- FEMA public assistance program and policy guide (FEMA, various dates)

The Deployment Framework for Urban Forest Strike Teams

Municipalities typically request UFST assistance with disaster response and/or recovery through their local (municipality or county) emergency manager, state UCF coordinator, or state forester. Assisted by the state UCF coordinator, the municipalities are responsible for identifying and prioritizing areas for debris estimation and public property tree risk assessments (Figure 3). The state UCF coordinator is responsible for coordinating disaster recovery resources throughout the state when natural disasters are geographically extensive (i.e., significant impact in multiple communities). This community or state-based (i.e., bottom up) approach to disaster response is in keeping with FEMA's overall objectives for disaster planning at the local and state level.

A good fit for the process and UFST response might be a community situation where:

- There is **significant damage** to public trees in a community.
- The damage is such that the **community finds it challenging** to decide which storm-damaged

(Continued on page 4)

Disaster Recovery Steps for Urban Forest Resilience (cont'd)

(Continued from page 3)

trees meet FEMA debris standards or represent a significant risk to the public.

- The footprint of the **damage area is concise** enough that a team could work efficiently.
- The **community may not have staff with technical tree expertise**, or their staff may not have the time to do tree assessments because of the scale of the disaster or other disaster-related assignments.
- The **community has the capacity** to use and follow up on recommendations. a. Information compiled by the teams can be used immediately for FEMA documentation and in contracting for debris removal. b. Information can be used during long-term recovery for follow-up mitigation, restoration pruning, and tree health and risk assessments.

The UFST program has successfully worked with communities, state emergency management personnel, FEMA debris managers, and disaster management consultants to meet requirements of the response and recovery process during the past 10 years of operation.

UFSTs currently use ArcGIS Online (AGOL; Esri, Redlands, CA) with real-time reporting (assuming cell coverage is available), which enables the city arborist, local emergency management, and UFST team leaders to monitor progress and storm-damaged areas worked. Most state and local emergency management agencies have adopted ArcGIS Online as their geographic information system for managing disasters.

Urban Forest Strike Team Activities

UFSTs have responded to more than 21 disasters in 14 states in the eastern United States since the program's inception. Local communities, FEMA regional debris managers, and disaster management consultants have directly benefited from UFST assessments, data collection, and risk/damage reports developed for their use within FEMA public assistance. Deployments have ranged from multiple teams to single UFST crews. UFST currently has more than 250 task specialists and 30 team leaders trained (eastern U.S.).

UFST training workshops have been held every year across the eastern United States. This training also includes disaster exercises to maintain UFST readiness, improve the assessment protocol, and further develop the data collection and reporting system.

State forestry agencies in the southeastern United States have developed workable interstate deployment with the publication of mission-ready packages. When regional support is needed, states and communities are being encouraged to use the national mutual aid agreement and partnership Emergency Management Assistance Compact (EMAC) to support interstate deployments with the necessary legal and financial support to UFST resources. EMAC's strength lies in the relationships among federal organizations, states, counties, territories, and regions, and the ability to move just about any resource, including UFST, from one state to another.

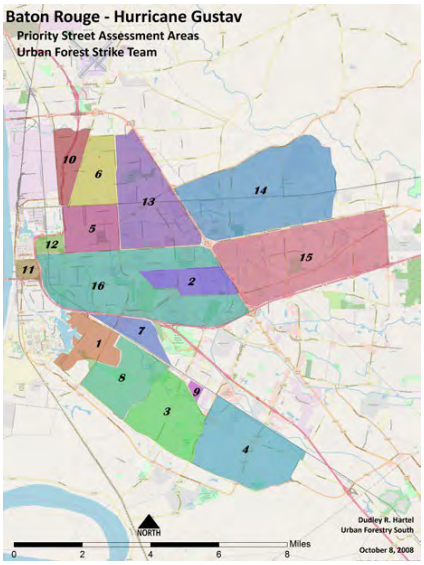

Figure 3: Baton Rouge (LA) storm damage prioritization map for UFST deployment. Photo by Dudley Hartel, USDA Forest Service.

The UFST program and protocols have undergone improvement throughout the 10-year history, but continue to use the incident command system (ICS) model including prerequisites and training standards, and an operational mode at the state level (initiated by the state UCF coordinator and state forester). Also during that time, protocols and equipment have been continuously updated based on after-action reviews, availability of new technology, and modified professional standards. UFST uses a risk-based approach based on the current arboricultural standards and best management practices (BMPs). UFST was initially

(Continued on page 5)

Disaster Recovery Steps for Urban Forest Resilience (cont'd)

(Continued from page 4)

developed to provide resources at a regional level but the program has evolved to place emphasis at the local, county, and state levels, which can be less expensive, more responsive, and adaptable to a wider range of storms and damage and to a wide range of community needs.

Urban Forest Strike Teams Support Communities

UFSTs provide an unbiased, third-party assessment of damage to trees from natural disasters with the primary objective of retaining as much viable and productive tree canopy as possible within the criteria used by FEMA's public assistance program and compatible with community goals, objectives, and management strategies. UFST can take community species (e.g., live oak, bald cypress, magnolia) and spatial priorities (e.g. maintain trees in specified neighborhoods or parks) into consideration to override allowable FEMA assistance. The results can include the following data and reports:

- FEMA tree removal list—can be prioritized by risk rating
- FEMA tree limb removal list—can be prioritized by risk rating
- FEMA stump list
- Mitigation that identifies local community priorities
- Trees with residual defect—for post-recovery management. During later stages of recovery and outside of the FEMA reimbursement process, UFST may assist with evaluations to support additional stewardship activities:
- Follow-up tree risk assessments (Level 1) — 12–18 months following the event
- Tree species selection based on prior disaster response (i.e., data analysis)
- Planting site evaluations to support long-term viability and productivity

Conclusions—What We've Learned

UFSTs can deploy quickly during late response and early recovery following natural disasters to help communities manage debris and maintain important, viable trees in their urban forest. The UFST role is to supplement and complement local resources that may be limited, depending on the scale and intensity of the storm event. UFSTs are professional foresters and arborists grounded in incident management, tree risk assessment, and FEMA guidelines who operate independently from the community and the debris management process, which makes for acceptance across the disaster management spectrum (i.e., community, city managers, disaster consultants, debris contractors, FEMA). USFTs are an important component of an urban forest and disaster management programs.

Regardless of the level of urban forest management or the degree of disaster preparedness, urban trees will be damaged during storm events. Pre-storm mitigation (i.e., pruning and removing trees with defects that represent unacceptable risk) can take place within the community's urban forestry or their disaster planning and preparedness programs. Addressing and identifying this mitigation in both, as collaborative or supporting plans, may help a community see the connection between their urban forest management and their preparation for disasters.

Regardless of the source of the mitigation, we know that a defective tree removed or a defective limb pruned cannot fail during any successive storm event. Anecdotally and with less certainty, we also observe that healthy, structurally sound trees of appropriate species growing on suitable sites will typically withstand greater storm impacts with lower levels of tree damage. These healthy, structurally sound trees of appropriate species growing on suitable sites are often the result of adoption and use of arboricultural standards and best practices, at some minimal level, that are used throughout the tree's life-cycle within a directed urban forest management program.

Recommendations to Communities

Local communities working with their state forestry agency's UCF program can participate in the UFST initiative at various levels. At the highest level, communities can develop in-house capacity in the UFST protocol by participating in training that is conducted annually throughout the eastern United States. This approach provides an increased understanding of disaster deployment

(Continued on page 6)

Disaster Recovery Steps for Urban Forest Resilience (cont'd)

(Continued from page 5)

and the assessment protocol to support mitigation and can be further supported by local adoption of BMPs for urban tree risk management, which may include the tree risk assessment qualification available through the International Society of Arboriculture. At the lowest level, communities can develop a closer working relationship with the state UCF Coordinator and participate in programs to expand local urban forest management to include an understanding of the UFST disaster deployment objectives and mechanism.

As a member of a local community group, nongovernmental organizations, or in your role as a civic leader, what steps might be taken to incorporate the UFST protocol into local planning, response, and recovery for disasters?

Consider:

- Becoming more knowledgeable of your state's urban and community forestry program
  - The state forestry agency's program and staff
  - Your regional or statewide urban forest council
- Becoming more knowledgeable of and involved with your community's urban forestry program
  - Staff, plans, standards, and practices, urban tree/forest risk management, funding local tree board, other partnerships
- Request your state forestry agency participation in UFST (Massachusetts participates)
- When talking to elected officials, explain the value of urban forests and disaster planning
- Participating in local disaster planning
  - Present professional urban forestry within context of natural disasters
- Participating in local comprehensive planning
  - For urban forest management
  - For disaster planning that includes urban forestry and response/recovery activities of UFST

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Tree Care Industry Association. 2017. Tree risk assessment, section a. tree structure assessment. ANSI A300, part 9. Londonderry, NH: Tree Care industry Association. https://www.tcia.org/TCIA/Build_Your_Business/A300_Standards/Part_9.aspx

Other References

UFST 3 minute video: https://www.dropbox.com/s/xn9ple5zrixmocf/UFST%203%20Minute.mov?dl=0

UFST 1 minute video: https://www.dropbox.com/s/9mx1o03vt1xn7c9/UFST%201%20Minute.mov?dl=0

Urban forest strike team: https://www.ufst.org/

UFST workflow and relationships: https://ufst.org/resources/library/ufst-deployment-event-workflow/at_download/file

Using UFST data: https://www.ufst.org/resources/library/ufst-tree-risk-and-data-uses/at_download/file

Emergency Management Assistance Compact: www.emacweb.org/

State urban and community forestry coordinators

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UFST Hurricane Gustav daily blog - www.ufst.org

The content of this paper reflects the views of the author(s), who are responsible for the facts and accuracy of the information presented herein.

Urban Forest Strike Team in Massachusetts

Massachusetts has a number of trained Task Specialists and Team Leaders who can assist with Urban Forest Strike Team responses. When a disaster occurs that results in substantial tree damage, Julie Coop, the Urban and Community Forestry program coordinator for Massachusetts, reaches out to the tree wardens affected. (Tree wardens may also reach out to Julie.) Through conversation with the tree warden and a site visit, Julie will help determine the response. The USDA Forest Service has data collection devices and expertise to share for a response. Currently, there is no funding mechanism within UFST to reimburse those participating in UFST activities, so it would be up to a sending institution or individual to shoulder costs. Contact Julie Coop, 617-626-1468 or julie.coop@mass.gov

Species Spotlight—Hardy Rubber Tree, *Eucommia ulmoides*

By **Mollie Freilicher**

Leaf, Virginia Tech

Hardy rubber tree is an unassuming member of many an urban forest. With no features that really stand out, hardy rubber tree blends in. Hardy rubber tree is in the family Eucommiaceae, where it is not only the only species in the genus, but the only genus in the family. While this is an interesting situation for the tree to be in, it also has practical implications for urban forestry, such as not having a lot of pests or diseases associated with it. (Ginkgo is another single species in a single genus in a family.)

Hardy rubber tree is native to central and southeastern China. It grows in mixed forests up to 6,500 ft. in elevation. It is estimated that there are fewer than 1,000 mature trees left in the wild; the International Union for Conservation of Nature lists it as vulnerable. For the past 2,000 years, it has been used in herbal medicine, and it is economically important for this reason, as well as for its use in the chemical industry. It has been harvested in the wild to the point that it is now difficult to find wild populations of the tree. Additionally, it has suffered when areas are deforested.

Fruit, Virginia Tech

Hardy rubber tree can produce rubber – it is the only tree of temperate zones that can do so – but it is not easy. It does not contain as much rubber as the rubber tree *Hevea brasiliensis*, native to South America (3% compared to 30%), but the quality of the rubber from *Eucommia* is different. Eucommia produces a hard rubber that that can be heated and cooled without much change in its properties. (That is, it is thermoplastic.) These characteristics make it an intriguing alternative to petroleum-based plastics. There have been a number of studies on the use of *Eucommia ulmoides* in various industries.

Back to urban forestry. Eucommia ulmoides is hardy in zones four to seven. In the landscape, it is a medium-sized tree, reaching heights of 40 to 60 feet, with a spread of 25 to 35 feet. It is a broad-spreading tree; Michael Dirr has described it as having "a dapper outline at maturity."

Form, Wikimedia

Leaves of hardy rubber tree can be helpful in identification. Without many pests, they are often free from chewing or discoloration. To the uninitiated, they might seem indistinctive, but look closely. They are alternate, elliptical in shape, and three to six inches long and half as wide. The margins are cuneate or serrate, and the leaf narrows to a point at the tip. They are lustrous and dark green and smooth above, becoming wrinkled at maturity. When torn apart, they exude a rubbery substance. They don't have much in the way of color in the fall. The buds are ovoid, scaled, and brown, about a quarter-inch long. There is no terminal bud; twigs end in a leaf. The twig is stout and olive-brown in color and has a chambered pith. A rubbery substance is also found in the bark. Bark on older trees is gray-brown and furrowed.

Hardy rubber tree is dioecious, with male and female flowers on separate trees. Appearing at the same time as leaves, the flowers are inconspicuous, greenish yellow, and blend in with the leaves. The fruit is a samara and resembles the fruit of an elm, but is a little larger. It is about one-and-a-half inches long, with one seed.

Hardy rubber tree is easy to transplant and tolerates a variety of soil conditions and pH, as well as drought. It grows best in full sun. It does not have notable pest or disease concerns, though

(Continued on page 8)

Species Spotlight—continued

(Continued from page 7)

Dirr notes that he and others have seen dieback due to disease. The flipside to trees that don't have insect pests, of course, is that they do not provide food that will local insect populations on which birds and other wildlife depend –something to consider in species selection. Dirr and Keith Warren recommend wide planting strips, if using hardy rubber tree as a street tree. Hardy rubber tree is sold at nurseries in Massachusetts and can be a good option for those difficult, urban sites where many tree species struggle to survive.

Bark, C. Stubler, W. Mark and J. Reimer, Calpoly

References

Dirr, M.A. 1998. Manual of Woody Landscape Plants: Their Identification, Ornamental Characteristics, Culture, Propagation and Uses. 5th Ed. Champaign, IL: Stipes.

Dirr, Michael A. and Keith S. Warren. 2019. *The Tree Book: Superior Selections for Landscapes, Streetscapes, and Gardens*. Portland, OR: Timber Press.

IUCN Red List. 2019. https://www.iucnredlist.org/species/31280/130694949.

Nakazawa, Yoshihisa & Bamba, Takeshi & Takeda, Tuyoshi & Uefuji, Hirotaka & Harada, Yoko & Li, Xuehong & Chen, Ren & Inoue, Sumihiro & Tutumi, Masafumi & Shimizu, Toru & Su, Yin-Quan & Gyokusen, Koichiro & Fukusaki, Eiichiro & Kobayashi, Akio. (2009). Production of Eucommia-rubber from Eucommia ulmoides Oliv. (Hardy Rubber Tree). Plant Biotechnology. 26. 71-79. 10.5511/plantbiotechnology.26.71.

Growing on Trees—Webcasts and Events

USDA Forest Service Urban Forest Connections

February 12, 2020, 1:00 - 2:15 p.m. (EST)

Phytoremediation of Soils using Fast-Growing Trees in Vacant Lots and Landfills

Ron Zalesny, USDA Forest Service
Sam Eanes, The Greening of Detroit
Fai Foen, The Greening of Detroit

To view the webinar and watch past archived webinars, go to https://www.fs.fed.us/research/urban-webinars/.

Urban Forestry Today

February 13, 2020 | 12:00 - 1:00 p.m. (EST)

The Science of Sap Flow

Dr. Abby van den Berg, University of Vermont

Go to www.joinwebinar.com; code: 858-679-363
Free ISA and MCA CEUs available.

To view archived webcasts, go to www.urbanforestrytoday.org/

Evenings with Experts

Events are at the Cambridge Public Library (449 Broadway, Cambridge, MA) **except for the first lecture, which is a special event at the** Harvard University Science Center Hall B (1 Oxford Street, Cambridge, MA).

First Wednesdays, Feb. - May | 7:00–8:30 p.m.

Find out More: https://grownativemass.org/Our-Programs/evenings-experts

February 5 – Nature's Best Hope - Doug Tallamy

March 4 - Climate Change, Conservation, and the Role of Native Plant Horticulture – Jesse Bellemare

April 1 – Designing with Plant Communities - Dan Jaffe

May 6 – Native Bee: Our Pollination Powerhouses – Heather Holm

NESAF Annual Meeting

March 25-27, 2020 | Springfield
100th annual meeting of the New England Society of American Foresters. Find out more at www.nesaf.org.

Growing on Trees—Webcasts and Events

ELA Conference & Eco Marketplace

March 4-5, 2020 | UMass-Amherst

ELA offers two full days of research and field-tested expertise as well as innovative case studies on a wide variety of topics.

Find out more: www.ecolandscaping.org

TREE Fund Webinar

March 26, 2020 | 1:00 p.m. (Eastern)

Why Do Tree Branches Fail?

Dr. Greg Dahle, West Virginia University

www.treefund.org/webinars

Mass. Land Conservation Conference

March 28, 2020 | Worcester

Keynote: Jad Daley, President & CEO, American Forests

Find out more: http://massland.org/conference

Berkshire Botanical Garden

Find out more: www.berkshirebotanical.org

February 21-March 6 – Tree Care for Gardeners (with Tom Ingersoll)

March 28 – Spring Pruning of Woody Ornamental Plants (with Ron Yaple)

April 18 – Transplanting Shrubs and Planting Small Ornamental Trees (with Ken Gooch)

Offerings from other botanical gardens can be found in the January *Citizen Forester*.

Mass. Arborist Association

February 25, 2020 | Safety Saves & Dinner Meeting. More info at www.massarbor.org.

Urban Tree Symposium

February 6, 2020, 8:30 am-4:30 pm | Tower Hill Botanic Garden (Snow Date: February 7)

Join us as experts in the field explore the importance of our urban forests, as well as ways we can create sustainable urban forests for the future.

Find out more at www.towerhillbg.org/.

BayState Roads Workshops

Municipal Budgeting and Finance

Feb. 6 – Franklin Feb. 26 – Yarmouth
Mar. 4 – Greenfield Mar. 17 – Shrewsbury
April 23 – Great Barrington

Chainsaw Maintenance
February 12—Wellesley

Chainsaw Skills & Safety (2-Day)
April 14-15—Halifax

Find out more and see additional offerings: www.umasstransportationcenter.org

Western MA. Tree Wardens Dinner Meeting

March 24, 2020, 5:30—7:00 p.m. | Northampton
Treescape Design—Kristina Bezanson, BCMA
New Tree Introductions—Mandy Bayer, Ph.D.
www.masstreewardens.org

Mass. Arborist Association

February 28, 2020 | Elm Bank, Wellesley

Overview of the MCA program, including what to expect for the new MCA 3.0 exam material, helpful study tips, a review of key points, and useful strategies for Tree ID.

Find out more at www.massarbor.org.

Hilltowns Responding to Environmental Crises—Lecture Series

Feb 17 —Our Landscape & Global Climate Change
March 16 – Gardening for Wildlife
April 20—Creating and Supporting Biodiversity in Your Landscape

All talks held at 7:00 pm at the Plainfield Public Safety Complex, 38 North Central St, Plainfield.

Growing on Trees

2020 DCR Arbor Day Poster Contest

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 Please**, 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.

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.

For complete rules and guidelines, go to the Arbor Day Poster Contest page on the DCR website.

Massachusetts Town Forest Event

April 19, 2020 | West Springfield

The annual event, now in its eighth year, will showcase the Tri-City Carbon Project. Admission is free with pre-registration and includes lunch.

Contact MA DCR Service Forester Douglas Hutcheson for more information.
douglas.hutcheson@mass.gov |(413) 545-7020

NASF Centennial Challenge

The National Association of State Foresters is turning 100!

Please help support the Massachusetts DCR Bureau of Forest Fire Control and Forestry in our participation in the National Association of State Forester's 100th anniversary Centennial Challenge! Our theme for this challenge is "**100 Legacy Trees Across Massachusetts**." We are asking people to help us reach our 100 legacy tree goal by nominating unique, significant, and otherwise noteworthy trees on public and private land across Massachusetts. A legacy tree can be any tree that is compelling for its age, size, form, history, species, and/or botanical interest.

Please visit https://www.mass.gov/guides/massachusetts-legacy-tree-program to learn more about the legacy tree program and to fill out an online nomination form or print a pdf of the form.

To learn more about the NASF centennial challenge, please visit www.stateforesters.org/centennial/.

European beech, Yarmouth

Growing on Trees

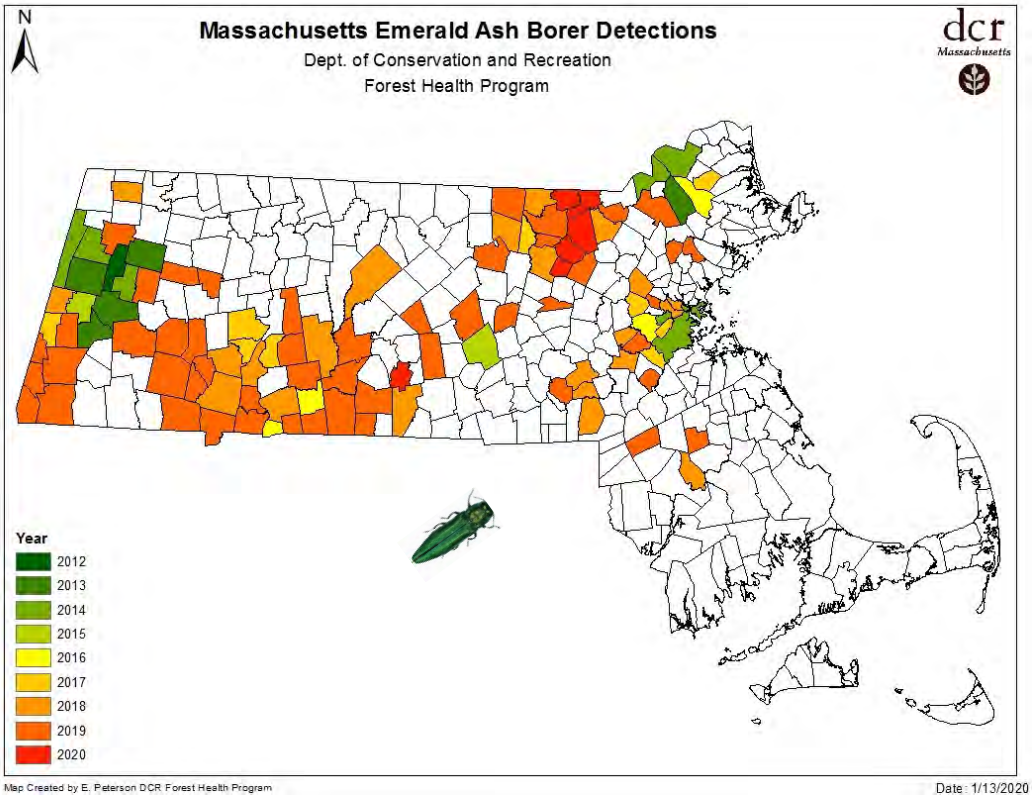
Emerald Ash Borer Update

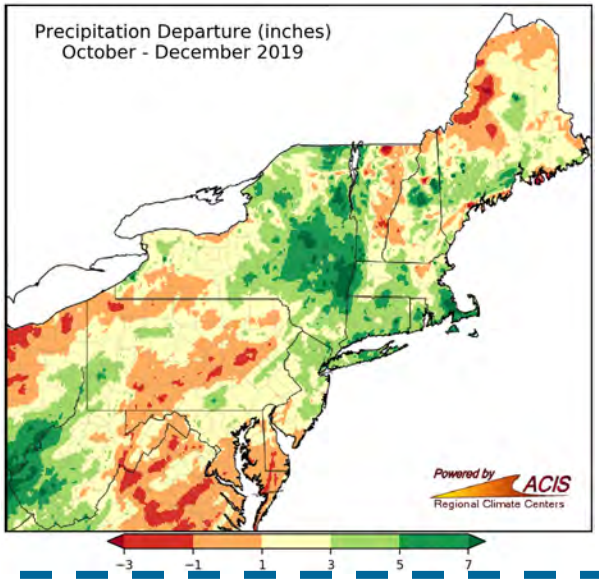
As of January 13, 2020, emerald ash borer (EAB) has been detected in 105 communities in 10 counties in Massachusetts.

Emerald ash borer attacks ash trees (*Fraxinus* spp.), as well as fringetree (*Chionanthus virginicus*). It does not attack mountain ash (*Sorbus* spp.), which is in a different family.

Learn how to identify signs and symptoms of EAB here. Think you've seen EAB? Report it at massnrc.org.

Interested in the latest from MassNRC? Follow MassNRC on Twitter @MassPests





Weather and Climate

This month we're officially broadening this regular feature to include other climate trends and information, in addition to information on drought. This month, we're looking at precipitation trends from the fall. According to the Northeast Regional Climate Center, most areas of Massachusetts have experienced average or above average precipitation from October to December.

Find out more at the Northeast Regional Climate Center: http://www.nrcc.cornell.edu/regional/drought/drought.html

DCR Landowner Workshops

Check out the calendar (page 14) for information on two upcoming workshops on oaks in Belchertown, February 4, and in Douglas, March 4. Connect landowners and local professionals for resources that can help you steward your trees.

Growing on Trees

Arbor Day Seedling Program

Each spring, the Massachusetts Tree Wardens' and Foresters' Association (MTWFA) sells seedlings to support the MTWFA Scholarship Fund. Many municipalities and organizations use these seedlings in their Arbor Day or Earth Day celebrations. Arbor Day is a great opportunity to advertise the message of trees—by supplying the gift of seedlings for both children and adults, and by encouraging them to plant and care for trees. To find out more about the program, go to https://masstreewardens.org/arbor-day-seedling-program/.

Scholarships

Do you know a high school senior or current undergrad or grad student studying arboriculture, urban forestry, or a related field? Check out this recent news post on the New England Chapter ISA website about available scholarships. More info: www.newenglandisa.org.

Gleanings

Ecopsychology: How Immersion in Nature Benefits Your Health

By **Jim Robbins**

Luisa Rivera for Yale Environment 360

January 9, 2020 – How long does it take to get a dose of nature high enough to make people say they feel healthy and have a strong sense of well-being? Precisely 120 minutes.

In a study of 20,000 people, a team led by Mathew White of the European Centre for Environment & Human Health at the University of Exeter, found that people who spent two hours a week in green spaces — local parks or other natural environments, either all at once or spaced over several visits — were substantially more likely to report good health and psychological well-being than those who don't. Two hours was a hard boundary: The study, published last June, showed there were no benefits for people who didn't meet that threshold.

The effects were robust, cutting across different occupations, ethnic groups, people from rich and poor areas, and people with chronic illnesses and disabilities. Read the full story at e360.yale.edu.

Research Highlights from the USDA Forest Service Northern Research Station

Northern Research Station scientists work collaboratively with partners from diverse regions and institutions, as well as landowners, to co-produce research that is practical, useful, and ultimately improves the health and productivity of our nation's forests and associated natural resources. The Northern Research Station continues to deliver timely scientific knowledge and tools that land managers can use to manage natural resources during a time of unprecedented changing conditions.

Check out highlights from 2019 here, including a look at the value of urban trees in New York City.

USDA Forest Service Challenge Cost Share Grant Program RFP

Proposals are due **March 30, 2020**.
Find out more: https://grants.urbanandcommunityforests.org/.

News

Street Trees Could Help Boston Adapt To Climate Change. If They Can Survive, That Is

By **Miriam Wasser**

January 23, 2020—Mike Nichols is covered in dirt. He's kneeling in the bed of a landscaping truck parked on a street in East Boston. Sitting next to him is a small, leafless maple tree. The sapling is about 6 feet tall and its skinny trunk is only 3 inches wide. But with all the wet soil packed around its roots, it weighs between 300-400 pounds.

"Let me get my guys to help me out and get the tree down," Nichols says, hopping down from the truck and waving over his two assistants. The three men work for the landscaping company Hartney Greymont, and today they've been hired by the city of Boston to remove two dead trees and plant new ones in their place.

While his assistants stand the tree upright, Nichols starts up a small fork lift and gently scoops the tree from the truck. He drives the sapling to the hole his team dug nearby and, very gently, puts it down.

He says he's "trying to give it as much chance of survival" as possible.

Tree survival is especially important in a place like East Boston. The neighborhood has the lowest tree canopy coverage in the city, which means that during the summer, it also has some of the worst hot spots.

Urban heat kills about 600 Americans every year, and sends another 65,000 to the emergency room, according to a recent report from the Urban Land Institute. Climate change is going to make these problems worse, the report's authors write. Read (or listen) to the full story at wbur.org.

News Headlines in Brief

Taylor Guitars Sources Wood for Guitar from Ash from California Urban Forests

Maine Farmer Urges Caution When Feeding Christmas Trees to Goats, Sheep

A Warning from Ancient Tree Rings: The Americas Are Prone to Catastrophic, Simultaneous Droughts

The Story of The World's Loneliest Tree

Understanding the Mechanisms of Seemingly Chaotic Synchronization in Trees

How to Eat a Tree

Ed Richardson, Who Chronicled Thousands of Connecticut's Biggest Trees, Dies At 95

Denmark's First Timber Parking Garage Will Be Enveloped in Greenery

The End of the Lookout Tree

Asian Longhorned Beetle Found in ALB-Regulated Area in Auburn

The Secret That Helps Some Trees Live More Than 1,000 Years

The Past and the Future of the Earth's Oldest Trees

Warm Winter Triggers Early Cherry Tree Bloom on National Mall, But Spares Showstoppers

Bigleaf Maple Syrup Flows As Profits Drip From Once-Maligned Northwest Tree

Old Growth, New Problems: The Battle Over Tree -Cutting In Cambridge

On the Horizon

Feb 4 Oak Health Workshop, DCR, Belchertown, Contact Doug Hutcheson, 413-545-7020

Feb 6 Urban Tree Symposium, Tower Hill Botanic Garden, Boylston, www.towerhillbg.org

Feb 9 Tu B'Shevat, "New Year of the Trees"

Feb 12 Urban Forest Connections Webinar, 1:00 p.m. (EST)

Feb 12 Tick Talk Webinar, UMass Extension, 12:00 p.m. (EST)

Feb 13 Urban Forestry Today Webcast, 12:00 p.m. (EST)

Feb 23-28 Municipal Forestry Institute, Gulf Shores, AL, www.urban-forestry.com

Feb 24-28 National Green Infrastructure Certification Program, Boylston, www.ecolandscaping.org

Feb 25 Safety Saves & Dinner Meeting, www.massarbor.org

Feb 26 ISA Certification Exam, Worcester, www.newenglandisa.org

Feb 26 Pollinators in Our Landscapes Conference, www.UMassgreeninfo.org, Milford

Feb 26-29 ASCA Consulting Academy, Sacramento, CA www.asca-consultants.org

Feb 28 Overview for MCA Exam 3.0, Wellesley, www.massarbor.org

Feb 29 MACC Annual Conference, Worcester, https://www.maccweb.org/

Mar 2-3 Tree Risk Assessment Qualification Course, Springfield, www.newenglandisa.org

Mar 4 Oak Health Workshop, DCR, Douglas, Contact Chris Capone, 857-406-0175

Mar 4-5 ELA Conference & Eco-Marketplace, Amherst, www.ecolandscaping.org

Mar 10 UMass Community Tree Conference, Amherst, www.umassgreeninfo.org

Mar 10 Cape Cod Professional Education Seminar and Trade Show, Hyannis

Mar 15 Deadline for DCR Arbor Day Poster Contest

Mar 24 Western Mass. Tree Wardens Meeting, Northampton, www.masstreewardens.org

Mar 25-27 New England Society of American Foresters Winter Meeting, Springfield, www.nesaf.org

Mar 28 Mass Land Conservation Conference, Worcester, http://massland.org/conference

Apr 10 MCA Arborist Exam, MA Arborists Association, Wellesley, www.massarbor.org

Apr 19 *Note New Date Town Forest Event, DCR, West Springfield

Apr 24 Arbor Day in Massachusetts

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www.mass.gov/dcr/urban-and-community-forestry

If you have a topic you'd like to see covered or want to submit an item to *The Citizen Forester* (article, photo, event listing, etc.), contact Mollie Freilicher or click here.