Massachusetts Urban & Community Forestry Program

The Citizen Forester

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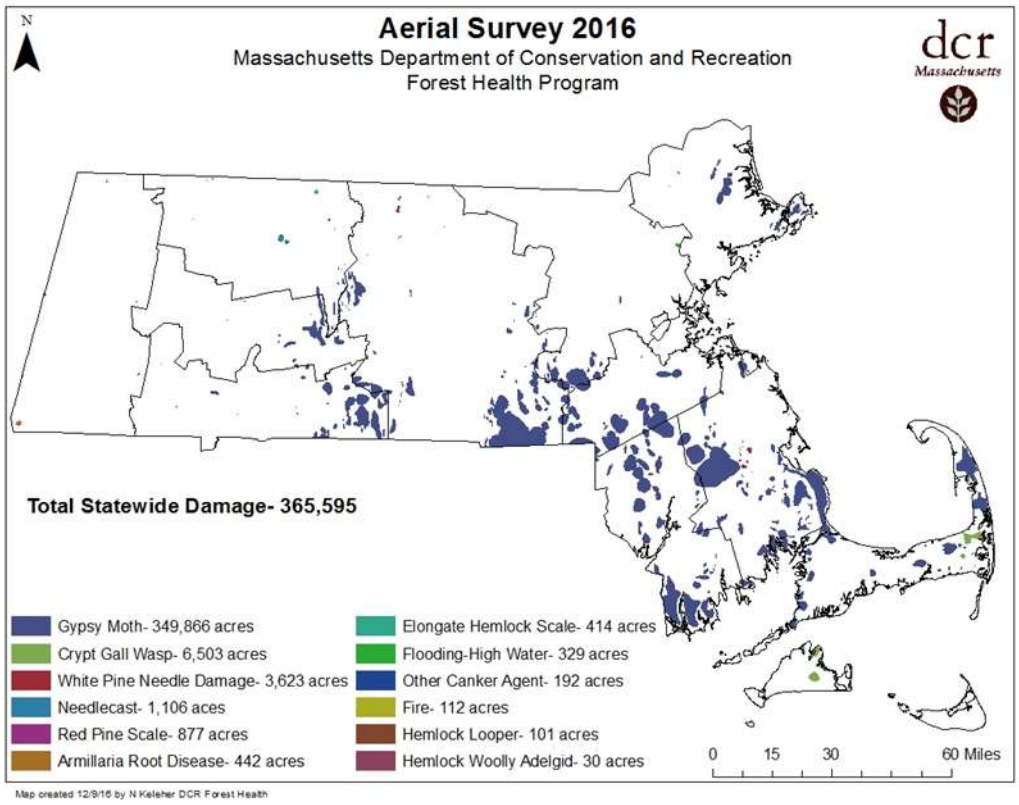
Gypsy Moth: What to Expect in 2017

Following the widespread defoliation from gypsy moth last year, state environmental officials predict another season of higher than usual caterpillar feeding in 2017. Based on egg mass surveys throughout the state, gypsy moth populations may be above the low threshold seen in the previous decade. Recent drought conditions have limited the effectiveness of a soil borne fungus, *Entomophaga maimaiga*, which has helped keep populations in check since the last large outbreaks of the 1980's. The 2016 gypsy moth population boom caused over 349,000 acres of damage statewide in Massachusetts. Damage ranged from light feeding and minimal leaf loss to severe damage with total stand defoliation.

Gypsy moth populations in Massachusetts have generally experienced cyclical patterns and have been controlled by natural factors, including weather, natural and introduced enemies, and the resilience of our forests to withstand defoliation. Though trees are able to overcome a defoliation event, successive years of severe insect feeding or the addition of other stressors such as drought, can lead to long-term tree damage or mortality. In areas that have seen repeated defoliation by gypsy moth, forest health specialists recommend targeted treatments using a biological control pesticide such as *Bacillus thuringiensis* spp. *Kurstaki* (BT) to reduce populations to manageable levels. Individuals interested in pursuing treatments should hire a licensed arborist or pesticide applicator to protect their trees in a safe and effective manner.



Find out more on the DCR Forest Health webpage.

Up Ahead:

dcr
Massachusetts

Gypsy Moth, *Lymantria dispar*—updated factsheet

Background

The gypsy moth has been a costly and persistent problem in Massachusetts since its introduction in 1869. Despite control efforts by federal and state agencies, gypsy moth populations continue to defoliate our forests here in Massachusetts and expand their range in the U.S.

Life Cycle and Identification

Gypsy moths have one generation per year. During their lifecycle they complete four distinct life stages: egg, larvae (caterpillar), pupae, and adult (moth).

Egg: Female adult moths lay egg masses by early August on trees, houses, outdoor furniture, or cars where they will overwinter. Egg masses are buff colored, approximately 1-1.5 inches long, and contain 100-1000 eggs.

Female laying eggs. Photo: Charlie Burnham, DCR

Larvae: Small, mostly black caterpillars (~1/16 in long) will emerge in early May: exact timing depends upon climate conditions (~145-200 GDD). It is at this small size that the gypsy moth disperse by wind, until they land on a host tree where they begin to feed on foliage. Caterpillars will continue to feed and progress through 5-6 instars until they reach a final size up to 2.5 inches. Larger caterpillars can be identified by their hairy bodies and five pairs of blue dots and six pairs of red dots down their back.

Gypsy moth larvae on the eggmass. Photo: Milan Zubrik, Forest Research Institute - Slovakia, Bugwood.org

Pupae. Photo: USDA-APHIS, PPQ

Pupae: Around the third week of June, caterpillars will find a safe, protected location to pupate. Pupae are reddish brown and 0.75- 1 in. long. Pupation takes 10-15 days to complete.

Adult: Adult moths will emerge in mid-July. Female moths are larger (2-2.5 in.), white with brown chevron markings, and flightless. Male moths are smaller (1.5 in.) and light brown with dark brown chevron markings. Males will fly to females to mate and complete their lifecycle.

Gypsy Moth Impacts

Damage to trees and forests by gypsy moths primarily occurs through defoliation by the caterpillar life stage. Dense feeding populations can consume all the leaves on a tree, defoliating entire stands. The preferred host tree species are deciduous oaks, maple, birch, poplar, willow, apple, and hawthorn. Other, less preferred deciduous trees and even conifers, like white pine or eastern hemlock, will be attacked by gypsy moths when there are large outbreaks. Typically, a healthy deciduous tree can survive one complete defoliation event, because they have enough energy reserved to produce new foliage in the same growing season. However, multiple years of defoliation or additional stress can cause deciduous tree mortality. Conifers will die after only one heavy defoliation event.

Adult male (left) and female (right). Photo: USDA-APHIS, PPQ

Population Dynamics

Across Massachusetts, gypsy moth density can fluctuate greatly from year to year. Gypsy moths have cyclical periods of small persistent populations and large outbreaks. Population trends are primarily driven by climate conditions and the balance of natural predators and disease. Predation from small mammals, birds, and insects, as well as, parasitic infection from flies and wasps regulates small populations.

Females laying eggs. Photo: Rich Anair, Mass DCR

Larvae killed by *Entomophaga maimaiga*. Photo: Charlie Burnham, Mass DCR

Under certain conditions, gypsy moths can be significantly impacted by disease. Nucleo-polyhedrosis virus (NPV) is a wilt disease that causes high mortality in caterpillars and pupa when populations have been maintained high density in an area. The introduced fungus *Entomophaga maimaiga* (EM) causes high mortality in during both periods of low and high density infestations, but requires specific moisture and temperature conditions to effectively spread and

Gypsy moth

infect the caterpillars. EM has kept gypsy moth populations from reaching large outbreak stages since the late 1980's. However, dry conditions in Massachusetts can lead to large outbreaks due to lack of EM fungal success.

Management Strategies

There are several steps Massachusetts residents can take to protect their trees from mortality caused by gypsy moths. The first step in gypsy moth management is assessing and monitoring the population. Be aware of the caterpillars seen feeding in the spring, the presence and location of adult moths, and the abundance of egg masses.

Defoliated areas in the eastern part of the state. Photo: Felicia Andre, Mass DCR

The recommended insecticide treatment for gypsy moth is *Bacillus thuringiensis* spp. *kurstaki* (Btk) or other biological pesticides. Applications should be done by licensed applicators with the specialized equipment required to completely coat a tree's leaves. Btk should be applied directly to foliage soon after caterpillar emergence where it will be consumed during feeding. Btk is most effective in young caterpillars and will not be effective on large caterpillars. Treatments should typically be applied at 90-400 GDD. Often, by the time caterpillar feeding is noticeable on a tree, it is too late to treat. This is why it is important to check for egg masses before emergence and look for the small caterpillars in early May.

Many commonly recommended treatment options are not effective in decreasing gypsy moth population or minimizing damage to trees. These include burlap strips, duct tape bands, or moth traps.

If trees have been defoliated by gypsy moth, assess and monitor tree health and recovery. Trees may require additional watering, fertilizing, or mulching to promote refoliation. Avoid additional stressors, such as, mechanical or chemical damage or soil compaction.

Finally, an important effort in management is to minimize gypsy moth spread. Egg masses can be located on more than just trees; common locations include cars, trucks, storage and moving containers. Anytime after eggs are laid in August, check for hidden egg masses to avoid spreading gypsy moths. Viable egg masses will be firm to the touch and have no holes.

For more information:
DCR Forest Health Program
Phone: (413) 253-1798 x204
Website: http://www.mass.gov/dcr/forest-health

MDAR Pesticide Program
Phone: (617)626-1700
Website: http://www.mass.gov/eea/agencies/agr/pesticides/

If You're Looking for More on Gypsy Moth

"A New Gypsy Moth Outbreak in Massachusetts"
Check out this article by Joe Elkinton and Tawny Simisky that appeared in the fall 2016 issue of the *Pro Grow News*, the magazine of the Massachusetts Nursery and Landscape Association. Find the article on pages 16-19.

And in case you missed it last month, we highlighted another article, "Gypsy Moth Outbreak of 2016," by Joe Elkinton and Jeff Boettner from the fall issue of *Mass Wildlife*, the magazine of the Massachusetts Department of Fish and Game, Division of Fisheries and Wildlife.

Blast from the Past!

Don't try this at home! Burning gypsy moth egg masses. Source: Edward H. Forbush and Charles H. Fernald, *The Gypsy Moth,* 1896. View this early monograph of gypsy moth and the early eradication work online.

Species Spotlight—chestnut oak, *Quercus montana*

By Mollie Freilicher, DCR Community Action Forester

Our species spotlight this month has the distinction of being the Society of Municipal Arborists (SMA) 2017 Urban Tree of the Year. Chestnut oak, (*Quercus montana*, syn. *Q. prinus*) also known as rock oak and rock chestnut oak, grows on rocky, upland sites and is native to the eastern United States, from southern Maine to Georgia, west to Mississippi, and north to Michigan and southern Ontario. In Massachusetts, it is found in every county except Barnstable and Dukes. Its common name, chestnut oak, comes from the likeness of the tree (and particularly the leaves) to American chestnut, its relative in the *Fagaceae* family. Chestnut oak grows in USDA hardiness zones four to eight.

Chestnut oak typically reaches 60 to 80 feet tall, with a 50 foot spread, and at maturity has a rounded and dense form. Leaves of chestnut oak are alternate, simple, ovate, about four to six inches long and about half as wide, with an acute or acuminate tip and a cuneate or rounded base. They are coarsely toothed, with obtuse teeth. Leaves are shiny and yellowish-green and fall color is yellow to reddish-brown. The bark of chestnut oak is distinctive, dark brown in color and with long deep furrows.

Twigs are shiny, hairless, and brown with gray lenticels. The buds are imbricate, slightly hairy, gray or reddish brown and ¼ to 3/8 inch long, resembling those of red oak (*Q. rubra*). Flowers are long catkins that appear in May, after the leaves have begun to emerge. Maturing the first year, the fruit is an acorn, about an inch long with a cap that can enclose up to half the fruit. The acorn is sweet and while crops are infrequent, black bears, squirrels, deer, and other wildlife enjoy the acorns. Historically, wood from chestnut oak was used for fuel and timber, and the bark, with its high tannin content, for tanning.

In its press release on the 2017 Urban Tree of the Year, the SMA notes that "[t]here's growing interest in using chestnut oak in the urban environment because it is pH-adaptable, handles dry soils and periods of drought, has a beautiful mature form, requires minimal pruning, and tends to be free of major pests and diseases." The forestry assistant for Dublin, OH, Jocylyn Kerr, nominated the tree. Of the tree, she says, "We started using chestnut oak in Dublin in 2009 as a street tree," she says. "We have planted it to replace some of our ash trees as well as using it in greenspaces throughout the city. It has adapted well to the alkaline soils of Dublin and it seems to handle the salt well. The pyramidal shape is an added plus in its young age because it allows for our snowplows and garbage trucks to pass without destroying any branches."

Going back a little further, in his 1846, *A Report on the Trees and Shrubs Growing Naturally in the Forests of Massachusetts*, G.B. Emerson notes that, "[t]his beautiful tree has many claims to attention," and though he does not recommend it for use in the landscape, he recommends it for use on sites where nothing else will grow, for fuel, and for its sweet acorns. Lorin Dame and Henry Brooks, by contrast, in their 1901 book, *Handbook of the Trees of New England*, do recommend its use in the landscape, noting that "[i]ts vigorous, clean habit of growth and handsome foliage should give it a place in landscape gardening and street use." They also note that it is occasionally available from nurseries, which propagate it from seed and that it is "more easily and safely transplanted than most oaks."

Chestnut oak's tolerance of drought, salt, and acidic or alkaline soil conditions recommends this tree for use in cities and towns. Though it may be challenging to find in nurseries, chestnut oak can make a great native addition to the urban forest, whether along a street or in a park or other large area.

Photos: Form: Cornell Woody Plants Database; Leaf, Twig, Flower: John Seiler, Virginia Tech; Acorn: Keith Kanoti, Maine Forest Service, bugwood.org; Bark: John Seiler, Virginia Tech

Dirr, M.A. *Manual of Woody Landscape Plants* (Fifth Edition). Champaign, IL: Stipes Publishing, 1998.

Society of Municipal Arborists, Urban Tree of the Year, http://www.urban-forestry.com/assets/documents/toy-2017-chestnut-oak.pdf.

Growing on Trees

By Rick Harper On Tuesday, January 10 and Wednesday, January 11, 2017, the Massachusetts Tree Wardens' and Foresters' Association (MTWFA) hosted over 300 attendees and over 30 exhibitors at the Host Hotel in Sturbridge, MA. The two-day event featured a trade show floor filled with exhibitors displaying equipment, technology, and literature for sale and for give-away, and educational sessions with a roster of well-renowned speakers. In addition to the annual business meeting and informative lectures, the conference also featured door prizes, opportunities for networking, and a lunchtime awards ceremony.

Speakers on the first day included state specialists from the Massachusetts Department of Conservation and Recreation, Julie Coop and Jeff Enochs. Ms. Coop, the Urban and Community Forestry Program Coordinator, discussed community reforestation initiatives in Gateway Cities, the annual Arbor Day Poster Contest, new DCR factsheets, and gave some additional program updates. Mr. Enochs, a forester in the DCR Forest Health Program, provided an update on forest heath activities in the state, including results of the aerial surveys for defoliation in the state and the latest on gypsy moth, Asian longhorned beetle, emerald ash borer, southern pine beetle, winter moth, and the cynipid gall wasp on the Cape and Islands – invasive insects all currently present in Massachusetts and known to be detrimental to tree health. Included on the afternoon speaking roster was Michael Smith, Technical Training Specialist from Baystate Roads, University of Massachusetts Transportation Center. He discussed the importance of setting up a proper work zone that complies with regulations and statutes, and helps to keep traffic moving and workers safe.

Day one wrapped up with the keynote speaker for this year's conference, Dr. Erika Svendsen, Research Scientist with the USDA Forest Service. Dr. Svendsen discussed findings from her research program and from other Forest Service scientists, pertaining to urban natural resource stewardship and how local greening initiatives can strengthen social trust, enhance civic participation, and foster innovation. She highlighted specific instances where community disturbance provided opportunities for residents, stakeholders, and decision-makers to come together in a spirit of resilience, building social capital, and fostering environmental stewardship.

On the second day, attendees learned how hurricanes and severe storm events can impact communities and urban forests, how to interpret forecasts and warnings, and where to get the latest forecast information from Glenn Field, Warning Coordination Meteorologist with the National Weather Service.

In 2016, the conference included a panel on Chapter 87, with attorney Julie Steiner, Professor of Law, Western New England University School of Law, and tree wardens from across the state. The panel was so successful, it was included again this year and Professor Steiner provided an overview of how and when to hold a tree hearing. Then Dave Hawkins, MTWFA board member and Tree Warden of Pelham, moderated a discussion with the audience and three panel members, Paul Sanborn, Tree Warden for the town of Andover, Marc Fournier, Deputy Director of Public Works, town of Andover, and Chris Courville, Tree Warden for the town of Princeton. There was a wide-ranging discussion of scenarios for when a hearing is required, who pays the advertising costs when a resident requests a healthy tree to be removed, whether a hearing is needed to transplant a tree, and many issues related to property lines.

Faculty and staff from the University of Massachusetts were also listed on the conference schedule over the two-day event. Dr. Nick Brazee, UMass Extension Pathologist and Plant Diagnostic Director, provided an update on woody plant diseases he saw in the lab in 2016. According to Dr. Brazee, many plants suffered the effects associated with the hot, dry conditions of 2016 and select diseases were noted like anthracnose on sycamore trees and rust on ornamental conifers and deciduous trees and shrubs. Tawny Simisky, the new Extension Entomologist provided an update on the insect pests and pressures that arose during the growing season of 2016. A number of scale insects and as many remember, gypsy moth, were prolific throughout Massachusetts this past spring, summer and fall. Rick Harper of the UMass Amherst Department of Environmental Conservation presented a UMass Urban Forestry program update.

The 2017 Seth H. Swift Tree Warden of the Year Award was presented to Chris Hayward, Tree Warden from the Town of Watertown. This award was created in

MTWFA 104th Annual Conference

2000 to recognize individual tree wardens who exhibit notable leadership, dedication, and commitment to the profession. The individual must hold the position of Tree Warden in their municipality, their community must actively participate in the Arbor Day Foundation's Tree City USA program and, among other criteria, the individual must demonstrate active leadership and dedication to the protection of urban trees, including outreach and education to community members. The recipient is presented with a sculpture of a silver, windswept tree and an announcement online and in the quarterly newsletter, The Bark. Congratulations, Chris!

For more information about the conference and how you can nominate your tree warden for Tree Warden of the Year visit the MTWFA website at: www.masstreewardens.org. Congratulations to the MTWFA on the completion of yet another successful annual conference – 104 years and going strong!

Rick Harper, UMass Department of Environmental Conservation

Grants

DCR Urban and Community Forestry Challenge Grants

Deadline: November 1 (Full Application)

Challenge grants are 50-50 matching grants (75-25 for environmental justice projects) to municipalities and nonprofit groups in Massachusetts communities of all sizes for the purpose of building local capacity for excellent urban and community forestry at the local and regional level.

The USDA Forest Service provides funding for the grant program, and DCR administers the grants with guidance from the Massachusetts Tree Wardens' and Foresters' Association. The DCR Urban and Community Forestry Program assists communities and nonprofit groups in their efforts to protect and manage community trees and forest ecosystems, with the ultimate aim of improving the environment and enhancing the livability of all of Massachusetts's communities.

Project areas include:

- Building and Strengthening Citizen Advocacy and Action Organizations
- Securing or Training Professional Staff
- Developing and Implementing Systematic Urban Forestry Management through tree inventory and analysis, resource assessment, and development of plans
- Attaining a Tree City USA Award, Growth Award, Tree Campus USA Award, or Tree Line USA Award
- Completing strategic community tree plantings and "heritage" tree care projects
- Other projects

NOTE: In 2016 we implemented new guidelines for strategic planting grants.

Grant Funding Request	Eligibility
$1,000 - $7,000	All communities may apply
$7,001 - $20,000	Community must be a Tree City USA
$20,001 - $30,000	Contact DCR Urban and Community Forestry to discuss

Start planning for the next round! Read the complete guidelines and download the news application at: http://www.mass.gov/eea/agencies/dcr/conservation/forestry-and-fire-control/urban-and-community-forestry-challenge-grants.html.

For more information on the Challenge Grants, including our National Grid Partnership Grants and Eversource Go Green grants, contact Julie Coop at 617-626-1468 or julie.coop@state.ma.us or Mollie Freilicher at 413-577-2966 or mollie.freilicher@state.ma.us.

Growing on Trees

2017 DCR Arbor Day Poster Contest

"Trees are Terrific...from Berkshires to Bay!"

Each year, over 1,500 Massachusetts fifth graders participate in the Arbor Day Poster Contest. Each school holds its own poster contest and submits their winning poster to the DCR. Prizes include art supplies, ice cream, and a tree for the winner's school. Each year there is a theme to encourage students to think about trees in new ways, such as "Trees Grow with Us and for Us" (2016), "Trees are Champions in My Community," (2015), or "Celebrate a Tree" (2012.) The theme for 2017 is "Trees are Terrific…from Berkshires to Bay!" The deadline for the 2017 contest is March 15, 2017. Contact Mollie Freilicher, mollie.freilicher@state.ma.us or 413-577-2966 for more information

2017 Arbor Day Poster Contest Instructions and Activities file size 1MB

UMass Summer College—help spread the word

There's a shortage of qualified workers in the tree care industry; many of you have probably experienced it firsthand. Training new employees who have no experience takes time away from production; hiring employees who have at least a basic understanding of arboriculture means the new hires can get up to speed on the crew more quickly. Not all new hires will have the benefit of a Stockbridge / UMass Arboriculture degree, but we can give them a good start. For the past three summers, UMass and Stockbridge have offered a "pre-college" course in Arboriculture & Urban Forestry for high school students. In the course, students get an overview of the Arboriculture & Urban Forestry curriculum that two- and four-year students at Stockbridge and UMass take. We hope to offer the course again this summer, but we need enough students to cover the costs. The course will run for one week (35 hours of training—in the classroom and in the field) in July 2017. Find out more here.

Upcoming Conferences

38th Annual UMass Community Tree Conference - Utilities, Communities and Urban Trees: Partnerships in Practice

See page 11

From the Ecological Landscape Alliance

38th Annual ELA Conference & Eco-Marketplace 2017

March 8-9, 2017, UMass Amherst

Join us for the 2017 Annual ELA Conference! Wednesday's speakers will focus on the functionality of plants and the art of stormwater management. Thursday's sessions address revitalizing the soil food web, protecting our waterways, transitioning to a toxin free landscape, dealing with drought, and many other topics.

Find out more and register at www.ecolandscaping.org or download the conference brochure.

Mass Land Conservation Conference

Scaling Up: Meeting New Challenges

Saturday, March 25, 2017 – 8:00 a.m. – 4:00 p.m., Worcester

The Massachusetts Land Conservation Conference provides an opportunity for staff and volunteers from land trusts, urban and rural community groups, colleagues from federal, state, and local government agencies, students, and philanthropists to participate in a full day of workshops and discussions that focus on fostering a green future in our state through land conservation and greening strategies.

Find out more and register at: http://www.massland.org/conference.

Growing Greener—in Sheffield

In the Berkshires, the town of Sheffield is home to a dedicated group of individuals who make up the Sheffield Tree Project. The Sheffield Tree Project's mission is "to work with the community to plant and care for a beautiful and diverse population of trees in the public areas of Sheffield, Massachusetts, and to educate the public on the benefits of community forestry." The Sheffield Tree Project operates under the umbrella of a local non-profit organization, the Sheffield Land Trust. The goal of the Sheffield Tree Project is to bring community members together and build civic pride through trees. They have planted more than 150 trees along the streets and in other locations in town. (Click here for a map of plantings.) The group works in partnership with local nurseries, professional arborists and landscape contractors, and local community organizations. Funding for plantings has come from in-kind donations from local nurseries and tree companies, private donations, and Mass ReLeaf (now part of the DCR Urban and Community Forestry Challenge Grant.) They are also active in planning the town's Arbor Day celebration and maintaining Sheffield's status as a Tree City USA, one of four Tree City USA communities in Berkshire County. For Arbor Day in 2016, the Sheffield Tree Project, in conjunction with the Sheffield Land Trust, the Appalachian Trail Conservancy, the Appalachian Mountain Club, and the National Park Service planted trees as part of the restoration of the monument marking the site of the last battle of Shays' Rebellion. Watch a video produced by the Berkshire Edge on the event and find out more about the Sheffield Tree Project at www.sheffieldtreeproject.org or on their Facebook page: https://m.facebook.com/SheffieldTreeProject/.

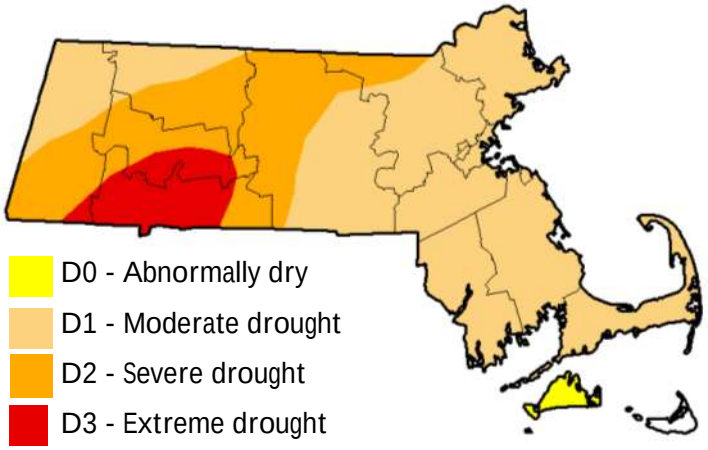
Growing on Trees

Drought Monitor

Conditions as of January 24, 2017. Check out drought conditions in Massachusetts, New England, and the U.S. Almost all of Massachusetts is in drought, but the portion of the state in "extreme drought" is now 9%. (That is down from 36% the week of December 27, 2016.) The percentage of the state categorized as "severe drought" has also dropped from 59% the week of January 17, to 29% in the current report.

http://droughtmonitor.unl.edu/

Massachusetts drought resources may be found here: http://drought.unl.edu/Planning/DroughtPlans/StatePlanning.aspx?st=ma



Rain as a Resource: St. Paul, MN Innovates Shared, Sustainable Stormwater Management

New infrastructure systems in St. Paul, MN use rain as a resource instead of letting stormwater enter area lakes and the Mississippi River, along with all of the pollutants that water collects. This new method of managing stormwater is called "shared, stacked green infrastructure," meaning the system does more than one thing on site, it can provide additional community services or amenities that add a sense of community. Learn more at smartgrowth.org.

Webcasts

Urban Forestry Today

Underfoot and Underappreciated: Urban Soils in the Age of Green Infrastructure Stormwater Management

February 9, 2017 | 12:00 p.m. – 1:00 p.m. (Eastern)

Dr. Susan Day, Virginia Tech

This session will help you better understand how the soil environment impacts and affects urban tree longevity, performance and key environmental benefits associated with the urban forest, including stormwater management. Dr. Day will also discuss the use of engineered solutions (structural soils, suspended pavement), as well as the effects of soil compaction and remediation measures.

To attend this webinar, go to www.joinwebinar.com and enter the code 215-369-739.

This broadcast is free and will offer the opportunity for arborists to earn 1.0 ISA CEU and 0.5 MCA credit. For those who are unable to attend the live broadcast, archived sessions will be available in the 'videos' section at www.urbanforestrytoday.org

View an archived version of the January webinar which could not be broadcast due to technical difficulties. Go to www.urbanforestrytoday.org to view the archived webinar.

For more information, contact Rick Harper, Department of Environmental Conservation, University of Massachusetts, Amherst, rharper@eco.umass.edu

The Urban Forestry Today 2017 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.

New England Botanical Club

2017 Meetings, Various locations. For the complete schedule and additional information, go to: http://www.rhodora.org/meetings/upcomingmeetings.html

Upcoming Meeting:
February 3, 2017
Dr. Jenica Allen, Assistant Professor, Department of Natural Resources and the Environment, University of New Hampshire, Durham, NH.
Invasive Plant Risks and Advantages with Climate and Land Use Change

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.

February 8, 2017 | 1:00 – 2:15 p.m. (Eastern)

Give Me the Numbers: How Trees and Urban Forests Really Affect Stormwater Runoff

In order for managers to make the case for trees and green infrastructure as a part of stormwater management, they must be able to quantify the benefits of such interventions. Current research can aid managers in estimating tree function as a part of a green stormwater infrastructure treatment train.

Eric Kuehler, USDA Forest Service
Aarin Teague, San Antonio River Authority

To access the webinar, go to https://www.fs.fed.us/research/urban-webinars/.

Future webinars:
March 8, 2017 | April 12, 2017 | May 10, 2017

Harvard Forest Winter/Spring Seminar Series

Seminars are Fridays at 11:00 a.m. Eastern Time, unless otherwise noted. They are held in the Harvard Forest Seminar Room at Harvard Forest in Petersham, MA, and also can be joined online via webstreaming. Seminars are free and open to the public; no pre-registration is required. See the full schedule at http://harvardforest.fas.harvard.edu/seminars.

Friday, February 3, - Join seminar online
Brenden McNeil - West Virginia University & Harvard Bullard Fellow
Revisiting 'The Adaptive Geometry of Trees' using *hyper-remote sensing: implications for ecosystem ecology and global change*

Friday, February 10, - Join seminar online
Brian Donahue – Brandeis University
Sustainable working landscapes--friend or foe?

Friday, February 17, - Join seminar online
David King – USDA Forest Service
Range shifts through time and space inform conservation of birds in the face of climate change

Growing on Trees

Resources for Tree Boards

Are you a new member of a tree board or are you already on a tree board and are looking to help take your tree board to the next level? Here are two resources for you.

Tree Board Handbook

This is a comprehensive guide to help community tree board members understand their role and how they can best contribute to the board. The 42-page booklet covers a variety of topics, including tips on being an effective tree board member, planning strategies, getting work done, external communication, celebrating Arbor Day, and available resources. The booklet is available for $8.95 from the Arbor Day Foundation (Bulk discounts available). More information at: https://shop.arborday.org/product.aspx?zpid=2252

Tree Board University

This is a free, self-paced, online training geared toward new tree board members and those interested in serving on a local tree board (or maybe even starting a tree board!) The online training contains eight modules:

- Tree Board 101
- Partnerships and Collaboration
- Engaging in the Political Process
- Community Forestry Planning
- Communications and Marketing
- Financing, Budgeting, Grants, Fundraising

Getting Things Done
Moving Forward

This unique training will prepare you to be your best on your tree board. Find out more at www.treeboardu.org.

From the Massachusetts Arborists Association

February 28, 2017 - MAA Safety Saves Seminar, Elm Bank Wellesley, 2:30 - 4:30 p.m. Register at MassArbor.org

February 28, 2017 - MAA Annual Meeting at Ken's Steakhouse in Framingham. Members and non-members welcome for networking, an educational talk, steak dinner and election of officers for 2017. Register at MassArbor.org

March 28, 2017 - MAA Safety Saves Seminar, Elm Bank Wellesley, 2:30 - 4:30 p.m. Register at MassArbor.org

March 28, 2017 - MAA Dinner Meeting at Ken's Steakhouse in Framingham. Members and non-members welcome for networking, dinner and an educational talk. Register at MassArbor.org

April 7, 2017 - MCA Exam at Elm Bank, Wellesley MA. Pre-registration is required.

April 28, 2017 - MAA's Arbor Day of Service - statewide. Information at MassArbor.org

Mass Certified Arborist (MCA)

The Massachusetts Arborists Association (MAA) sponsors the Massachusetts Certified Arborists (MCA) program. The MCA program is a voluntary certification program initiated in 1957 by leading Massachusetts arborists. Since the program's inception, more than 800 tree care professionals have obtained the MCA designation. The purpose of the MCA program is to raise the level of public awareness as to the importance of working with trained professionals and to provide a means of self-improvement and continuing education for the certified professional.

Exams are offered twice yearly (generally the first Friday in April and October).

The next MCA Exam is scheduled for April 7, 2017 in Wellesley.
Find out more about the exam at www.massarbor.org

Growing on Trees

From UMass Extension

To register or find out more about these and other programs, go to: http://ag.umass.edu/landscape/upcoming-events

Invasive Insect Certification Program

February 2, 16, and March 2, 2017 | Hadley

See the full agenda at: http://ag.umass.edu/landscape/education-events/invasive-insect-certification-program

This three-day program will look at the characteristics of invasive insects, the impacts and costs they have regionally and nationwide, and highlight the biology, ecology, and identification of some of the most destructive insects including, but not limited, to: emerald ash borer, gypsy moth, winter moth, Asian longhorned beetle, hemlock woolly adelgid, spotted lanternfly, cynipid gall wasp, invasive scale insects, and more. Management of these insects in the landscape will include strategies to prevent human assisted movement. Integrated Pest Management will be the focus, highlighting cultural and mechanical management options along with the use of biological control.

Participants may receive a certificate in INVASIVE INSECT MANAGEMENT by attending all three sections and earning a passing score on a quiz following each class. Participants not interested in a certificate may also attend without taking the quizzes. Attendees are encouraged to take all three sessions in one season to get the most out of the information.

Cost: $90 per class

Part 1 - The Impacts and Costs of Invasive Insects
Thursday, February 2, 2017 - 9:00 a.m. to 2:30 p.m.

Part 2 - Invasive Forest and Agricultural Insects in Massachusetts: Current and Future
Thursday, February 16, 2017 - 9:00 a.m. to 2:30 p.m.

Part 3 - Management of Invasive Forest and Landscape Insect Pests
Thursday, March 2, 2017 - 9:00 a.m. to 2:30 p.m.

Pesticide and other credits will be available, go to www.umassgreeninfo.org for details.

To register or find out more about these and other programs, go to: http://ag.umass.edu/landscape/upcoming-events.

38th Annual UMass Community Tree Conference - Utilities, Communities and Urban Trees: Partnerships in Practice

Tuesday, March 7, 2017 - 8:00 a.m. to 3:30 p.m., Stockbridge Hall, UMass Amherst

This one-day conference is designed for tree care professionals, volunteers, and enthusiasts including arborists, tree wardens/municipal tree care specialists, foresters, landscape architects and shade tree committee members. The theme of this year's conference pertains to utilities and community trees. Topics include: Design Solutions for Tree and Overhead Utility Conflicts, Utility Storm Resiliency, Communities and Utilities in Partnership for Urban Trees, and Updates from the UMass Diagnostic Lab.

Registration The registration rate is $90 for a single individual, $75 for each additional registration from the same company.

Pesticide and Professional Credits One pesticide contact hour for categories 29, 35, 36, and 00 (licensed applicator), valid for equivalent categories in all New England states.

ISA, SAF, CFE, MCA, MCH, MCLP, CTSP credits have been requested.

Sponsored by UMass Extension in cooperation with the UMass Dept. of Environmental Conservation, the Massachusetts Department of Conservation and Recreation, and the USDA Forest Service Urban Natural Resources Institute.

Spring Kickoff for Landscapers: Sustainable Landscapes Management

Thursday, March 30, 2017 - 9:00 a.m. - 3:30 p.m., Wareham

Topics will include: designing pollinator friendly landscapes, including native shrubs in the landscape, sustainable management of invasive plants in the landscape, managing insect pests of trees and shrubs sustainably, and sustainable management of common diseases of perennials in the landscape.

Spring Blooming Tree and Shrub ID Walk

Wednesday, May 10, 2017 - 3:00 p.m. to 5:00 p.m., Bowditch Hall, UMass Amherst

Landscape Pests and Problems Walkabout - Insects, Diseases and Weeds

Thursday, May 18, 2017 - 5:00 p.m.,
Stanley Park, Westfield

Gleanings

Boulder, CO's Repurposing of Ash Trees Also Gives Homeless New Hope

By Charlie Brennan

December 26, 2016—A pilot project by Boulder in which the recently homeless are put to work using wood from felled emerald ash trees for crafts projects — enabling them to hone skills preparing them for employment — is being called a success, several months after its launch. Billed as Tree Debris to Opportunity, the city earlier this month concluded its first session with clients from the Bridge House Ready to Work Program.

They mastered activities ranging from woodworking to laser printing and related computer applications, in converting trees lost to the invasive emerald ash borer into items such as cutting boards or intricate butterfly ornaments.

Margo Josephs supervised the program through her role as manager for community partnerships and outreach in Boulder's Parks and Recreation Department. She said three women and four men completed the first session, running from September to early December, with one more participant dropping out due to personal reasons. "It's been pretty incredible for us to have gotten to know them and to see their transformation through this program," Josephs said. "They have all taken something different out of it, but it has all been impactful to their personal lives."

Boulder received a grant of $200,000 earlier this year to support the program on an 18-month pilot basis, the money coming as an award through the $5 million Knight Cities Challenge hosted by the Knight Foundation. The challenge is staged in 26 communities around the United States that were once home to newspapers owned by the brothers John S. and James L. Knight. Read the full story at dailycamera.com.

The Old Oak: A Year in the Life of a Tree – photo essay

The seasons change, but the tree remains: Christopher Thomond has been photographing a single, 200-year-old Lancashire oak throughout 2016

By Christopher Thomond and Patrick Barkham

January 9, 2017—When *Guardian* photographer Chris Thomond volunteered to spend a year photographing a tree, he spent "a mad couple of weeks auditioning trees" – sending photos of them to his picture editors. "Many were an hour away from my home and we realised we needed something nearby. As I was driving along one day, 10 minutes from my house on the edge of Manchester, I saw a farmer repairing a fence and said, 'You probably think I'm bonkers, but have you got any nice-looking trees?' He was a bit wary but then he said, 'I think I've got just the one. People are forever photographing it.' It just went from there." Check out the whole photo essay at *The Guardian.*

Mapping the Urban Tree Canopy in Major Cities

By Feargus O'Sullivan

January 4, 2017—Which cities have the greenest streets? MIT's Senseable City Lab is pushing toward an answer to this question with a new project called Treepedia. A map website that catalogues the density of the tree canopy in 10 global cities, Treepedia uses information from Google Street View to create what it calls the Green View Index—a rating that quantifies how green a street view looks according to the number of trees it contains.

Rating a huge number of street corners for the relative greenery of their appearance, Treepedia also allows browsers to click on a series of dots that reveal street view images of the location in question. The result is one of the most detailed catalogs of urban greenery available. Read the full story at Citylab.com.

News

Northeast Warming More Rapidly Than Most of U.S.

By David Abel

January 13, 2017—New England is likely to experience significantly greater warming over the next decade, and beyond, than the rest of the planet, according to new findings by climate scientists at the University of Massachusetts Amherst. The region's temperatures are projected to rise by an average of 3.6 degrees Fahrenheit above pre-industrial levels by 2025, according to the study, published this week in PLOS One, a journal published by the Public Library of Science. The scientists found that the Northeast is warming more rapidly than any other part of the country except Alaska — and that the 3.6 degree Fahrenheit rise in the region is likely to come two decades before the rest of the world gets to that point. Read the full story at the *Boston Globe*.

Why Some Places Need to Burn

By Bill Chaisson

January 4, 2017—After a few delays due to higher winds, The Trustees of Reservations burned part of Wasque on Nov. 14. Folks over 50 might remember television commercials that concluded with Smokey Bear pointing at viewers and saying in a deep voice, "Only you can prevent forest fires." By now Americans are getting used to the idea — Vineyard residents are already used to it — that you have to burn some natural places in order to save them or make them work. Read the full story at mvtimes.com.

Tree-Bark Thickness Indicates Fire-Resistance in a Hotter Future

January 11, 2017— A new study has found that trees worldwide develop thicker bark when they live in fire-prone areas. The findings suggest that bark thickness could help predict which forests and savannas will survive a warmer climate in which wildfires are expected to increase in frequency.

Trees in regions where fire is common, such as savannas and the forests of western North America, tend to have thicker bark, while trees in tropical rainforests have thinner bark, researchers at Princeton University and collaborating institutions reported Jan. 9 in the journal *Ecology Letters*. Bark protects the inside of the trunk from overheating and is one of a handful of adaptations that trees use to survive fire. Read the full story at ScienceDaily.

Yet Another Gypsy Moth Infestation Ahead for Massachusetts

By Maddie Kilgannon

January 22, 2017—Massachusetts experienced a near-biblical swarm of gypsy moth caterpillars last summer, as the voracious, finger-long, invasive pests devoured trees across more than 100,000 acres in large swaths of the state. Now, state environmental officials are predicting widespread defoliation from gypsy moths again in 2017. Foresters surveyed areas throughout the state and found egg masses, pointing to the likelihood of another moth-infested season ahead. Read the full story at the *Boston Globe*.

Chicopee, Holyoke to Create Urban Street Gardens to Reduce Storm Water

By Jeanette DeForge

January 25, 2017— Chicopee -The city is embarking on a new, innovative way to reduce the amount of untreated storm water and raw sewage that is dumped into the rivers in heavy rains and at the same time is hoping to make neighborhoods more attractive and greener. Instead of having rain water flow into storm drains, the city is hoping to create urban green areas along streets and in the yards of willing homeowners will be complete with trees to soak up the water instead of having it flow into storm drains and eventually into the Chicopee and Connecticut Rivers. Read the full story at masslive.com.

News Headlines in Brief

Winter Storm Fells One of California's Iconic Drive-Through Tunnel Trees, Carved in the 1880s

The Death of the Tunnel Tree

Birmingham, UK Tree To Be Cut Down and Replaced With Concrete Barriers To Protect City From Berlin-Style Attack

More Than 350 Trees Have Fallen Around San Francisco Since Saturday Night (a period of 5 days)

Study Documents Tree Species' Decline Due To Climate Warming

Interactive Chart Reveals the Diversity of NYC's Street Trees

On the Horizon

Feb 2	The Impacts and Costs of Invasive Insects, UMass Extension, Hadley, www.umassgreeninfo.org
Feb 6	Aerial Lift Specialist (Arborist Safety Training Institute), Portsmouth, NH, www.tcia.org
Feb 7	Webcast: Drought, Water Extremes and Infrastructure
Feb 8	Urban Forest Connections webinar, www.fs.fed.us/research/urban-webinars
Feb 16	Invasive Forest and Agricultural Insects in Massachusetts: Current and Future, UMass Extension, Hadley, www.umassgreeninfo.org
Feb 23	i-Tree Webinar, *Success Stories: Using i-Tree in the Community*, www.unri.org
Feb 28	MAA Safety Saves Seminar, Elm Bank Wellesley, Register at MassArbor.org
Feb 28	MAA Annual Meeting, Framingham, www.massarbor.org
Mar 2	Management of Invasive Forest and Landscape Insect Pests, UMass Extension, www.umassgreeninfo.org
Mar 7	UMass Community Tree Conference, www.umassgreeninfo.org
Mar 8-9	ELA Conference & Eco Marketplace, UMass Amherst, www.ecolandscaping.org
Mar 13-15	ISA TRAQ Course, Wellesley, www.newenglandisa.org
Mar 14	Western Mass Tree Warden's Dinner Meeting, Northampton
Mar 15	Deadline for DCR Arbor Day Poster Contest
Mar 15-16	Certified Tree Safety Professional Two-day Workshop, Two-Day Advanced Safety/Behavioral Workshop and Certification Exam, Windsor, CT, www.tcia.org
Mar 22	Aerial Lift Specialist (Arborist Safety Training Institute), N. Franklin, CT, www.tcia.org
Mar 22	Urban Forestry Workshop, Fall River (more info soon)
Mar 25	Massachusetts Land Conservation Conference, Worcester, www.massland.org/conference
Mar 28	MAA Safety Saves Seminar, Elm Bank Wellesley, www.massarbor.org
Mar 28	MAA Dinner Meeting, Framingham. Members and non-members welcome for networking, dinner, and an educational talk. Register at www.massarbor.org
Mar 30	Spring Kickoff for Landscapers, UMass Extension, Wareham, www.umassgreeninfo.org
Apr 7	MCA Exam at Elm Bank, Wellesley MA. Pre-registration is required. www.massarbor.org
Apr 28	Arbor Day in Massachusetts
Apr 28	Mass. Arborist Association's Arbor Day of Service - statewide. www.massarbor.org

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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.), please contact Mollie Freilicher or click here.

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