Massachusetts Urban & Community Forestry Program

The Citizen Forester

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The Practical Science of Planting Trees: Part II

By **Rick Harper** and **Mike Davidsohn**

This month, we continue with a review of tree planting in the context of Watson and Himelick's 2013 text, *The Practical Science of Planting Trees.* For Part I, see the January 2017 issue.

Watson & Himelick have much to say about the proper installation of a tree. Prior to planting, a site should be inspected for compatibility with plant species selection options. It is always easier to select a tree in accordance with site limitations, than to try to alter the site conditions to match the plant species. Information pertaining to adequate space, drainage, pH, and soil permeability can all be obtained, both relatively quickly and relatively inexpensively.

After the site selection process is complete, the site may be prepared for planting. According to Day & Bassuk (1994), many urban soils feature a bulk density of approximately 0.5 mg/cm^3 higher than native, undisturbed soils. Simply put, urban soils where many trees are planted are often compacted as a result of construction-related activities. One means of addressing compaction before planting is to amend as large an area as reasonably possible around the location where a tree is going to be planted. This isn't just adding some compost to a planting hole, but rather to the site around where the tree is being installed. Watson & Himelick outline a volume of 10% compost that may be added in an effort to restore soil structure. According to the Urban Horticulture Institute, the more extreme soil conditions found in urban environments may require an addition of up to two parts soil, one part compost.

If trees could not be inspected at the nursery for excess soil on top of the root system, it is at this critical juncture that the presence of excess soil should be determined and corrected.

Up Ahead:

Consequences of deep planting (an excess of 3" of soil covering the flare and upper structural roots) for urban trees are only emerging, but slow growth, increased chance of infestation by insect or disease pests, chlorosis, poor flower production, and early mortality are among the many effects noted, depending on the tree species.

Removing excess soil to expose the root collar. (Photo: Mollie Freilicher)

Regardless of the tree production method, the planting hole should be dug at least two times the diameter of the root mass. The hole should be dug so that its depth correlates with the depth of the root collar. It is important to emphasize that the root collar should not be buried as a result of planting. Glazing is an important factor to be aware of, and the sides of the planting hole should be scarified if it is suspected that roots may have trouble penetrating into the new soil. The hole may also be dug in such a manner so that it tapers outward near the top, to encourage root penetration.

When installing a balled and burlapped (B&B tree), we recommend removing the wire basket in its entirety, in addition to any nylon and twine. This goes beyond some recommendations in the literature that advise practitioners to remove only the upper portion of the basket. It is important to note that this metal material will most assuredly never break down and has been shown to interrupt water and nutrient flow within the roots that it comes in contact with. When backfilling (with existing soil, or perhaps soil from the entire site that has been amended), stopping once or twice to water the soil (a process known colloquially as "mudding the tree in") is good practice to help eliminate air pockets and help "fasten" the tree into the ground. Light tamping is

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acceptable, but wholesale stomping can damage the tree roots and is simply not necessary. Once the tree is successfully installed and two to three inches of mulch have been applied around the tree to a distance of three times the diameter of the root ball, check to ensure that the trunk is free of contact from the mulch and that mulch is not mounded up like a volcano. A soil ring at the edge of the root ball may be created and left visible to help hold water in place over the first season. Following this, regular watering throughout the first season of growth should ensue. Adequate water is typically considered the key limiting factor to successful tree establishment. With long-term concerns in mind, it is important to select tree species that are tolerant of dry periods to preclude continually returning to water the tree once it has become successfully established.

Watson & Himelick, as well as other sources, discuss many options concerning guying. The options are usually some iteration of a three-point method where guying material is wrapped around the stem and attached to nearby stakes. We have probably planted dozens of larger trees produced for urban landscapes (and hundreds of whips for reforestation), and we've almost never had to stake and guy a tree. We have, however, inspected trees on hundreds of landscapes and all too regularly encountered trees with girdled trunks due to guying material being left in place. On the whole, this is a practice that typically has little need, but can generate severe consequences if carried out, left unattended, and if guying material is not removed after a season or two. One use related to staking and guying trees that has impressed me, however, is their application in highly urbanized areas to denote newly-planted trees and to help deter individuals from leaning or fastening their bikes to them.

One of the most common questions that we receive about planting, concerns the use of fertilizers and new trees, as well as the applications of mycorrhizal soil inoculants. Generally speaking, unless a soil test identifies a significant nutrient deficiency or there is some sort of visual cue (e.g., leaves of other nearby tree specimens denote an iron deficiency), fertilizing at the time of planting is typically not necessary in the Northeast. Mycorrhizal inoculants are also typically not warranted, and, according to the literature, their practical benefits are only observed in sterile nursery planting sites or on lands have been strip-mined. Pruning during planting should occur in a measured way where only defective, crossing, or diseased branches are removed. Watson & Himelick also detail the steps associated with relocating or transplanting trees. Before digging the actual tree as part of the transplanting process, a number of considerations should be made: Will the branches need to be tied? How far will the tree be transported? Will it be out of the soil environment for an extended period of time?

Removing the wire basket (Photo: Rick Harper)

According to Watson & Himelick, tops of spreading trees should often be tied before digging to protect against damage associated with movement. Depending on the distance travelled, other measures like wrapping the trunk may be employed to protect the stem of the tree from mechanical damage. When planning to move large trees, measures should be taken to make sure the specimen has been properly hydrated in the weeks leading up to the transplant effort. An understanding of the root system (spread, depth, etc.) before transplanting is also necessary to anticipate the challenges the tree will face after transplant, when its roots have been reduced to a fraction of what they were when it was growing in situ. Trees that produce vigorous lateral root systems might be expected to respond more resiliently to transplanting than trees that focus more energy on producing a deeper tap root.

One method of preparing a tree for transplant is to determine the diameter of root mass required to sustain the tree and to root prune by digging in accordance with this size before the actual transplanting occurs. According to Watson & Himelick "repeated, successive root prunings may be in order to encourage more numerous, smaller roots that may aid in transplant recovery. Timing should take place early enough so that vigor is not reduced at digging, but not so late that regenerated roots have spread widely at time of harvest." This of course, needs to be applied at a specific time of the year and may include a root pruning in September in preparation for transplanting the following fall. An advantage to transplanting in the fall is that watering may not be quite

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Proper mulch ring: away from trunk and not piled high. (Photo: Mollie Freilicher)

as crucial in the cooler autumn temperatures, and, in theory, the tree has additional time to become established before the hot summer months of the following year. A disadvantage is that, depending on the type of tree, plant desiccation may occur over the winter months if roots do not start to become established in the fall. This is especially so in relation to coniferous trees that maintain their foliage year-round. A spring transplanting effort, before trees break dormancy, eliminates the worry associated with cold winter temperatures, like freezing and thawing of the soil that may actually displace plants out of the ground. Digging strategies may vary depending on the season in which trees are moved, but measures may be taken to move trees spring through fall, including summer months. Generally, care should be taken to minimize damage associated with roots, and water should be made generously available to help the tree acclimate to its new environment and its reduced root system.

Regarding the actual digging of the tree itself, hand digging may be employed to move smaller trees and, long ago, this method was even used to dig large trees. Hand digging allows for careful, custom-removal of soil in relation to the root system of the tree in question, but time involved is much greater. A tree spade is a contemporary tool used to move trees that feature trunks typically 4-10" in diameter. If trees don't need to be moved far, it is not uncommon to see a tree spade carrying a tree from its origin to its new planting site in one trip. This tool and an expeditious transplant help to assure a higher success rate. Of course, tree spades have their limitations, as they are costly and may not be able to access the site where the tree is located if it is in a tight spot or on a slope. Another less frequently employed method involves using compressed air to remove the soil from the base of an established tree and then a combination of pruning and heavy equipment (e.g., forklift) to dig the tree free from its current site and move it to its new location. Exposing roots offers many advantages, including the opportunity to correct deformities like girdling roots and to greatly decrease the weight associated with moving a tree that would otherwise be orders-of-magnitude heavier with the soil being on the roots. Roots that are exposed may begin to desiccate quickly, and the plant itself may start to "wall off" roots via a process known as suberization – the production of oils that resist water movement and loss within the plant roots.

Day, S. and N. Bassuk. 1994. A Review of the Effects of Soil Compaction and Amelioration Treatments on Landscape Trees. *Journal of Arboriculture*. 20(1): 9-17.

Watson, G.W. and E. B. Himelick. 2013. *The Practical Science of Planting Trees.* Champaign, IL: International Society of Arboriculture.

For more information about *The Practical Science of Planting Trees* interested readers may visit: www.isa-arbor.com

Rick Harper, UMass Department of Environmental Conservation

Mike Davidsohn, UMass Landscape Architecture and Regional Planning

From UMass Extension

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

Spring Kickoff for Landscapers: Sustainable Landscapes Management
Thursday, March 30, 2017 - 9:00 a.m. - 3:30 p.m., Wareham

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

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

Species Spotlight—yellow birch, *Betula alleghaniensis*

By **Mollie Freilicher,** DCR Community Action Forester

Yellow birch (*Betula alleghaniensis*) is a Massachusetts native that is more commonly seen in the woods than in the planted landscape, but has many traits that recommend its more frequent use. It is easily recognizable by its golden, papery bark and its aromatic twigs. It is native from southern Newfoundland, south to northeastern Georgia (along the Appalachians), west to Iowa, and north to southeast Manitoba. It typically grows to heights of 60-75 feet, but can reach 100 feet. As a mature tree, in the open, its form is rounded and in the woods it is a bit irregular. Yellow birch is typically found growing in moist, well-drained, upland soils and mountain ravines. It is a tree of cool climates, hardy in USDA zones 3 to 7.

Leaves of yellow birch are three to five inches long, alternate, simple and ovate or oblong-ovate, with a pointed tip and heart-shaped base. Leaves are a dull green above and lighter underneath and, like other birches, turn yellow in the fall. The leaves are doubly-toothed and pubescent when young. Twigs are a dull yellow-brown and smell of wintergreen when scratched or broken. Buds are imbricate and pointy. The young bark of yellow birch is a distinctive shiny yellow, silver, or bronze color and forms curling papery strips. On more mature stems and trunks, the bark forms reddish-brown, ragged, scaly plates. Yellow birch is monoecious, with both male and female flowers (catkins) on the same tree. Male catkins are at the tips of twigs and are long and hang down. Female catkins are a bit stouter and more upright. Maturing in fall, the fruit is a plump, upright cone, ¾ to 1 ¼ inch long.

Like other birches, yellow birch is susceptible to bronze birch borer, though it is less so than the white-barked birches. Historically, wood from yellow birch was used in the manufacture of chairs, casks, and flooring. Today it remains important for furniture, cabinets, and flooring. (It also makes great firewood.)

G. B. Emerson notes that "The yellow birch has not often been cultivated for ornament, but it has great beauty." Emerson also notes that in 1836 in Lanesborough, he measured a specimen that was over 10 feet in girth at the ground.

While yellow birch is adaptable to a variety of soil pH and does not have a lot of insect pests, one thing it does not tolerate well is hot and dry conditions. Because of this, it is probably better suited for planting in natural areas or cooler locations in your community.

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

Photos (Left to right): leaves: UConn; bark, flower, fruit, twig: Virginia Tech

New England Chapter ISA: Mature Trees and Landscape Preservation

March 23, 2017 | 8:00* a.m. - 1:00 p.m. | Mt. Auburn Cemetery, Cambridge

*Meet at 7:00 a.m. for an early-bird walking tour

Earn 4.5 ISA Credits and 1 Pesticide Credit for this half-day information-packed course. Learn about Mount Auburn Cemetery's diverse tree collection and the management of 5,000 trees. Understand how insects and climate change are affecting the trees of Massachusetts (and New England). Hear about the Cemetery's current tree study. Find out more and register here.

Growing on Trees

Our 200th Issue!

We are pretty excited to be brining you this 200th issue of *The Citizen Forester*. At it for over twenty years (though in the past, not always every month), we strive to bring you information you can use about urban and community forestry in Massachusetts and beyond. If you have a story you'd like to share, a program you want to highlight, even just a photograph of a recent event or an item for the calendar, please get in touch. We are always looking for information from YOU! Contact Mollie Freilicher or 413-577-2966 or Julie Coop 617-626-1468.

Arbor Day Grant
New England Chapter-International Society of Arboriculture

The Arbor Day Grant supports small towns and communities that need help to build their Arbor Day programs. This grant awards $1,000.00 to a town, organization, or community that demonstrates need to promote and support their Arbor Day celebration.

Communities must complete and submit their Arbor Day Grant application by **March 31, 2017.**

Get more information and download the application at: http://newenglandisa.org/2017/2017_ArborDayGrant.pdf.

The Massachusetts Tree Wardens and Foresters Association

The Massachusetts Tree Wardens and Foresters Association sponsors an annual packaged seedling program as a popular way to help municipalities, garden clubs, businesses, arborists, and other interested individuals and organizations promote Arbor Day and to raise money for the Mass. Tree Warden Scholarship Fund. Available are a variety of shade trees, ornamentals, and conifers. All seedlings and transplant prices include bags, ties, shipping, and handling. The minimum order is 100 seedlings, and the ordering deadline is **April 15, 2017**.

For more information, go to http://masstreewardens.org/arbor-day-seedling-program/.

For information on conservation District Seedling Sales, see page 10.

Celebrate Arbor Day: April 28, 2017

Looking for ideas on how to celebrate Arbor Day this year? How was Arbor Day celebrated last year in Massachusetts?

- Planting trees at schools, town commons, along streets, and other locations
- Dedicating a tree
- Giving away seedlings to students and residents
- Organizing an Arbor Day of Service
- Arranging an assembly at a local school
- Having a tree pruning day
- Inviting a speaker to give a public presentation about trees
- Holding and Arbor Day picnic
- Staging a tree climbing and planting demo
- Working with a scout troop to plant trees
- Hosting a tree walk
- Holding an Arbor Day Festival
- Participating in the DCR Arbor Day Poster Contest

By state statute, Massachusetts observes Arbor Day on the last Friday in April.

Arbor and Bird Day

> Section 15. The governor shall annually issue a proclamation setting apart the last Friday in April as Arbor and Bird Day, recommending its observance by the public in the planting of trees, shrubs and vines, particularly those attractive to birds, in the promotion of forest growth and culture, in the adornment of public and private grounds, places and ways, and in such other efforts and undertakings as shall harmonize with the general character of the day. He shall further recommend that such day be observed in rural and suburban schools by exercises appropriate to Arbor and Bird Day. (M.G.L. ch.6 §15)

The last Friday in April coincides with the national observance of Arbor Day and is when many states in the Northeast, Midwest, and West observe Arbor Day. Sometimes, though, this occurs during school vacation and many towns choose to observe Arbor Day the week before or after.

Celebrating Arbor Day is one of the requirements to become a Tree City USA. For Tree City USA applicants, any day may be Arbor Day, so long as the community proclaims it. For more info on Tree City USA, contact Mollie Freilicher, 413-577-2966.

Growing on Trees

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.

New England Grassroots Environmental Fund Grants

https://grassrootsfund.org/dollars

Seed Grants

Quick project-focused grants dedicated to help volunteer groups launch and build their ***newly evolving project(s)***.
Deadline: Apply anytime (expect a decision in 4 to 6 weeks)
Grant range: $250 – $1,000

Grow Grants

Competitive group development grants dedicated to help ***established groups*** increase capacity, collaborate, and leverage impact.
Deadlines: March 15 & September 15 (expect decisions early June & December)
Grant range: $1,000 – $3,500

Growing on Trees—for students

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

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.

Scholarships

New England Chapter International Society of Arboriculture

Undergraduates and graduate students are invited to apply. Two $1,500 scholarships are offered for students studying Arboriculture, Botany, Entomology, Horticulture, Plant Pathology, Urban Forestry, or a related field. Applications due April 1, 2017. For complete instructions and eligibility, go to: http://newenglandisa.org/student_opportunities.html.

Mass. Arborists Association

MAA Gordon & Francis King Student Scholarships

Available for incoming students enrolling full-time in the four-year Urban Forestry program at UMass or in the two-year Arboriculture and Park Management program at the Stockbridge School of Agriculture. Application deadline: May 24. Click here to download a scholarship application.

From the New England Wildflower Society

For more information and for the complete course catalog, go to: http://newenglandwild.org/learn/our-programs

Selected upcoming courses and programs:

Urban Gardening Series: Pests of Urban Gardens – March 8

Live Webinar: What to Consider when Designing with Natives – March 8 (online)

New England Plant Diversity: Session 3 – March 26

New England Plant Diversity: Session 4 – June 11

From the Arnold Arboretum

Find out more and register at: http://www.arboretum.harvard.edu/education/adult-education/ (Click "list of classes" at left.)

Upcoming lectures and programs:

Director's Lecture Series- Naomi Oreskes – March 6

Director's Lecture Series-Richard Holmes – March 20

Planning and Creating a Compact Orchard – March 18

Woodwork and the Arts of Japan – March 27

The Songs of Trees – April 12

The New American Chestnut – April 17

The Genius of Birds – April 18

Don't Miss

ELA Conference, March 8-9, Amherst

Mass Land Conservation Conference, March 23, Worcester

MAA Safety Saves, Dinner Meeting, March 28, Framingham

MCA Exam, April 7, Wellesley

Growing Greener—in Northampton

Following three years of increasing activity around its public shade trees, the City of Northampton just completed its first tree inventory and management plan. In 2014, a group of volunteers completed a sample tree inventory that, in addition to providing a snapshot of the urban forest, helped the city estimate the total number of trees in their RFP for the complete inventory. To fund the inventory, the city applied for, and was awarded, a DCR Urban and Community Forestry Challenge Grant. A contractor conducted the inventory in the fall of 2016 and summarized its findings and analysis in a report to the city. The inventory included a risk assessment on trees and information on planting locations. Re-formed in 2014, the city's Tree Commission helped with the application and has been a major player in helping to revitalize urban forestry in the city. In addition to the tree commission, a volunteer-led organization, "Tree Northampton," is working to plant trees in the city. To learn more about the tree commission, click here. For information on the DCR Urban and Community Forestry Challenge Grant, click here. Is your community growing greener? Let us know!

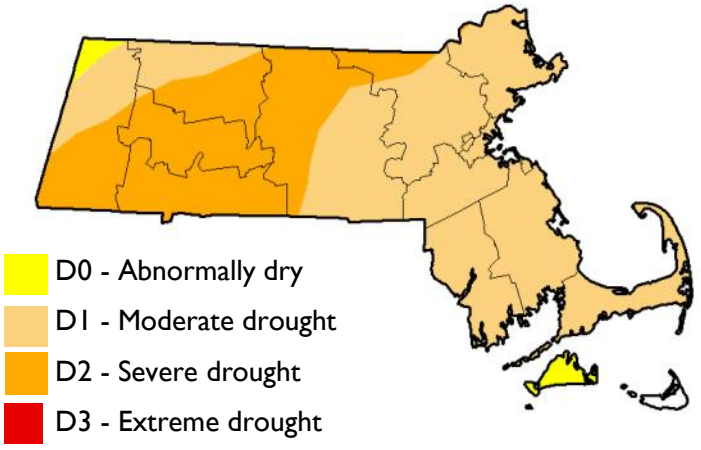
Growing on Trees

Drought Monitor

Conditions as of February 28, 2017. Check out drought conditions in Massachusetts, New England, and the U.S. Almost all of Massachusetts is in drought, but none of the state is in "extreme drought" at this point. The percentage of the state categorized as "severe drought" is 37%.

http://droughtmonitor.unl.edu/

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



From Baystate Roads

Wood Chipper Operation and Safety—two dates! March 16 and March 17 in Westford

This program will improve your safety skills and knowledge while operating a chipper. Chipper operator safety depends on the ability to properly maintain and operate equipment, to help avoid serious injury or death. Hands-on training will be provided.

Who Should Attend: Anyone who uses a chipper in their daily/occasional work to maintain property, do storm damage cleanup, right-of-way clearing, etc. can benefit from this workshop.

Participants must bring PPE - Safety helmet, eye, and ear protection.

Please see the **course brochure** for more information.

Work Zone Safety

There is no room for error when working next to traffic! It is important for personnel to have a solid understanding of work zone safety, the MUTCD (Manual on Uniform Traffic Control Devices), and proper temporary traffic control plans. This workshop will discuss the roles of individuals at the work zone, the elements that create a work zone and provide an opportunity to set up a practice work zone.

Who Should Attend: Public Works professionals, both management and operations, involved in establishing and/or working in a work zone.

March 22—Taunton
March 29—Bedford
Find out more here.

Webcasts, Seminars, and Workshops

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**.

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

March 8, 2017 | 1:00 – 2:00 p.m. (Eastern)
Let Them Climb Trees! The decline of play outdoors and the rise of sensory issues
Presenter: Angela Hanscom, TimberNook

Future webinars:
April 12, 2017 | May 10, 2017 | June 14, 2017

Urban Forestry Today

No webcast this month.
Tune in on April 13, 2017 for *Urban Trees and the Law,* with Attorney Julie Steiner, Professor of Law, Western New England University. Go to www.joinwebinar.com and enter the ID code: 473-592-579.
More information: www.urbanforestrytoday.org.

Fall River Urban Forestry Workshop

Wednesday, March 22, 2017, 11:00 a.m. – 3:00 p.m.
Program:

- Program Introduction: **The Role and Benefits of an Urban Forest in Fall River**
- Andy Hillman, Arborist: **Diversify Now!!**
- Chance Perk, Arborist: **Maintaining an Urban Forest in New Bedford**
- Kristen McCullin, TRR/Haskell Gardens: **Nursery Care**
- MA DCR: **The Health of Massachusetts Forests**
- Mollie Freilicher, MA DCR: **Forest Pest Planning**

Register by e-mail: MaryannWordell2851@comcast.net or online at: www.frstpp.org. Light lunch will be available, as well as on-site parking, for those registering.

Northeast Climate Science Center

March 8, 2017 | 3:30 p.m.
A Sticky Situation: When Maple Syrup Producers Receive Conflicting Guidance from Different Climate Models

April 12, 2017 | 3:30 p.m. Drought in the Northeast and Implications for Ecosystems Keith Nislow, US Forest Service, UMass Amherst and Northeast Climate Science Center

https://necsc.umass.edu/

Harvard Forest Winter/Spring Seminar Series

Seminars are Fridays at 11:00 a.m. (Eastern), 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, March 3 - Join seminar online
Christoph Nolte – Boston University
Protecting more, but where? Spatial drivers of conservation acquisitions in the conterminous U.S.

Friday, March 10 - Join seminar online
Kristin DeBoer – Kestrel Land Trust
Practical tools for land conservation

Friday, March 17 - Join seminar online
Aaron Ellison – Harvard Forest
Using large forest plots and codispersion analysis to identify foundation tree species before they disappear

Friday, March 24 - Join seminar online
Walter Carson – University of Pittsburgh & Harvard Bullard Fellow
On the causes and consequences of region-wide changes in the browsing and disturbance regimes within the Eastern Deciduous Forest Biome

Friday, March 31 - Join seminar online
Bill Labich – Highstead
Expecting the unexpected partners: frontiers in collaborative regional conservation in New England and eastern New York

Call for Proposals!

Partners in Community Forestry Conference, Tulsa, Oklahoma, on November 15-16
The **Partners in Community Forestry Conference** serves as the annual learning and networking opportunity for all who impact community trees, featuring presentations on sustainable partnerships and collaboration models. Deadline **March 31, 2017**. Go to https://www.arborday.org/programs/pcf/ for more information.

Gleanings

The Sustainable Urban Forest: A Step-by-Step Approach

Now available online at www.itreetools.org.

Developed as part of a collaboration between the U.S. Forest Service and the Davey Institute, this free handbook is designed to help urban forest managers assess the state of their urban forest, identify issues and opportunities, and chart a path toward long-term sustainability. An updated self-assessment method, based on the pioneering "Model of Urban Forest Sustainability" first developed by Jim Clark and colleagues in 1997, forms a cornerstone of the guide. The assessment tool enables users to set goals and track progress on numerous targets within three broad categories: Trees and Forest, Community Framework, and Resource Management Approach. (To request a hard copy of The Sustainable Urban Forest, contact author Michael Leff at MLeff@ecologicalconnections.com.)

http://www.itreetools.org/resources/content/Sustainable_Urban_Forest_Guide_14Nov2016.pdf

Conservation District Seedling Sales

Massachusetts Conservation Districts sponsor spring seedling sales to raise money for district programs. A conservation district is a legal subdivision of state government, responsible under state law for conservation work within its boundaries. Boundaries in Massachusetts are along county lines. Conservation districts work with the Natural Resource Conservation Service to protect soil and water resources across counties in Massachusetts. They often sell a variety of trees and shrubs in small sizes. Below are links to some of the conservation districts that have held seedling sales in Massachusetts.

Berkshire Conservation District: www.berkshireconservation.org.
Pioneer Valley Conservation District: http://pioneervalleyconservation.org/events.php
Worcester County: http://worcesterconservation.org/seedling-sale-15.html
Middlesex County Conservation District: http://middlesexconservation.org/?page_id=38

Sites We Like for Tree ID

We often are asked about websites people can go to for information about trees. Some of our favorites:

UConn Plant Database
Search by family genus, species, common name, or by basic traits, such as plant form and size, foliage character, USDA hardiness zone, and native/non-native

Virginia Tech Dendrology Factsheets
Search by family, genus, species, common name, state, hardiness zone, and/or biome. There is also a free app that allows you to do the same when you are on the go on your Apple or Android device.

One we recently started using is the **Cornell University Woody Plants Database**
Search by botanical name, common name, or a variety of characteristics, including height, leaves, light, pH, salt tolerance, and more. With the extensive search options, you can use this site to help you choose a tree for a particular site.

Ad for Nicer Living: Discover Trees, Now With Chlorophyll

We hear one of the five selected listener suggestions for NPR's updated Commercials for Nicer Living project: trees. Listen or read here.

DIY Ice Storm

What's the best way to study the effects of an ice storm? Obviously it's to create your own! This short, slick National Science Foundation video describes an ongoing, multi-year study at Hubbard Brook Experimental Forest designed to help understand the resiliency of forests to ice. Researchers applied ice to 10 different research plots by spraying the plots with fire hoses to recreate ice storm conditions. Early results may be useful for cleanup and salvage cutting efforts.

Western Mass Tree Wardens Dinner Meeting

March 14, 2017, 5:00 – 7:30 p.m., Northampton
Forest Health Update—MA DCR
The Science and Practice of Pruning Trees with Wildlife in Mind—Dr. Brian Kane and Dr. Paige Warren, UMass-Amherst
ISA and MCA CEUS available.
Registration deadline is March 9. For more information go to: http://masstreewardens.org/register-now-for-the-western-mass-spring-meeting/.

News

Chicopee Launches Program to Plant More Trees

By **G. Michael Dobbs**

January 13, 2017 – Chicopee is joining Holyoke and Springfield in an effort to increase the number of trees in the city and to design new plantings as a way to control the flow of storm waters. At a meeting conducted at the Chicopee Public Library on January 10, Director of Planning Lee Pouliot explained that while the city planted 250 new trees last year to increase it inventory and is currently reviewing all of its tree ordinances, this new effort would create a pilot project on Dwight and Perkins streets, where a Combined Sewer Overflow (CSO) reconstruction is going to take place.

The project is funded through a grant of $239,900 from U.S. Forest Service, with a matching grant of $487,000 in live trees from the Massachusetts Department of Conservation and Recreation. No city funds are being used at this time.

Students from the Conway School of Design will draw up plans on the techniques that could be used. The public will be invited to review the plans, and Pouliot is hoping that, as the city undertakes more street reconstructions to address additional CSOs, these strategies can be employed. Read the full story at The Reminder.

Study Finds Secret to Diverse Forests' Super Success

February 28, 2017—We've long known that diverse stands of trees tend to be more productive than monocultures. What we haven't known is why. In a paper published today in the scientific journal *Nature Ecology & Evolution*, researchers from the University of Minnesota and Université du Québec à Montréal show the talent behind the trait: Thanks to their natural different growth forms and ability to modify their shape to fit the available space, multiple species are able to fill in vertical gaps with branches and leaves. This maximizes their combined ability to soak up the sun falling on a particular plot of land and turn it into tree—absorbing planet-warming carbon dioxide and producing wood in the process. Read the full story at: phys.org.

The newsletter is also posted in the Massachusetts Grove on the American Grove.

Featured Research: Data Quality in Citizen Science Urban Tree Inventories

by **Gavin McEwan**

February 7, 2017—Tree and green space managers who use volunteers to gather data should incorporate checks on this to avoid systemic biases, according to U.S. and Swedish researchers. "Citizen science urban forest inventory and monitoring projects should use data validation and quality assurance procedures to enhance and document data quality," the researchers, from several U.S. and Swedish institutions, conclude.

Having compared street tree data collected by both volunteers and experts in three U.S. and one Swedish city, they found that volunteers

- occasionally missed trees (1.2%) or counted extra trees (1.0%)
- were around 90% consistent with experts for site type, land use, dieback, and genus identification;
- recorded species consistent with experts for 85% of trees
- scored 99.8% on "mortality status", though they note there were few dead trees to record;
- slightly overstated diameter at breast height (DBH), by 0.33cm on average.

They also found that crown transparency and wood condition "had the poorest performance and participants expressed concerns with these variables," and concluded "these variables should be dropped from future citizen science projects."

However, "volunteer data collection may be a viable option for some urban forest management and research needs, particularly if genus-level identification and DBH at coarse precision are acceptable," they stated.

The findings are published in *Urban Forestry & Urban Greening*.

News Headlines in Brief

A Tree Finally Succumbs to Disease, Leaving a Hole in a Neighborhood
New Map IDs Epicenter of Sierra Nevada Tree Mortality
In Search of New Hampshire's Biggest Trees
Soil Fungi Help Tree Seedlings Survive, Influence Forest Diversity
An Ancient Forest Reveals the Sun's Behavior 290m Years Ago
How Much Drought Can A Forest Take?

On the Horizon

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 8-10	New England Society of American Foresters Annual Winter Meeting: Adapt. Adopt. Advance: Resiliency in Forestry, Bangor, ME, www.nesaf.org
Mar 13-15	ISA TRAQ Course, Wellesley, www.newenglandisa.org
Mar 14	Western Mass Tree Warden's Dinner Meeting, Northampton, www.masstreewarens.org
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 16	Wood Chipper Operation and Safety, Baystate Roads, Westford
Mar 17	Wood Chipper Operation and Safety, BaystateRoads, Westford
Mar 22	Aerial Lift Specialist (Arborist Safety Training Institute), N. Franklin, CT, www.tcia.org
Mar 22	Urban Forestry Workshop, Fall River, Register online at: www.FRSTPP.org or by emailing MaryannWordell2851@comcast.net.
Mar 23	Mature Trees and Landscape Preservation, New England Chapter-ISA, Cambridge, www.newenglandisa.org
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 at Ken's Steakhouse, Framingham. Members and non-members welcome for networking, dinner, and an educational talk. Register at www.massarbor.org
Mar 29	Webinar: Clean Water State Revolving Fund: Flexible Funding for the Urban Tree Canopy, 1:30 - 3:00 p.m. (Eastern), More information
Mar 30	Spring Kickoff for Landscapers, UMass Extension, Wareham, www.umassgreeninfo.org
Apr 4	Webinar: Drought and Forest Ecosystems, 2:00 p.m. (Eastern)
Apr 7	MCA Exam at Elm Bank, Wellesley MA. Pre-registration is required. www.massarbor.org
Apr 12	Webinar: Drought in the Northeast and Implications for Ecosystems,
Apr 13	Urban Forestry Today Webcast, Urban Trees and the Law. Go to www.joinwebinar.com, code: 473-592-579.
Apr 19	Webinar: Southern Pine Beetle Biology, Ecology, and Management, 1:00 p.m. (Eastern)
Apr 28	**Arbor Day in Massachusetts**
Apr 28	Mass. Arborist Association's Arbor Day of Service - statewide. www.massarbor.org

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Bureau of Forestry
Department of Conservation and Recreation
251 Causeway Street, Suite 600
Boston, MA 02114

Julie Coop, Urban and Community Forester
julie.coop@state.ma.us, 617-626-1468

Mollie Freilicher, Community Action Forester
mollie.freilicher@state.ma.us, (413) 577-2966

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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