

# The Citizen Forester

MARCH 2015

## Conifers in the Urban Landscape: Application

By J. Casey Clapp,  
Rick W. Harper, and  
H. Dennis P. Ryan III

The basis for proper function is proper design. When designing an infrastructure system for a municipality, engineers and planners must take many different criteria into consideration to ensure that the system functions correctly and accomplishes the given objectives for that site or region. These criteria may include efficiency, costs and returns, current or future conflicts, and components available for use. The urban forest, as a part of the infrastructure system of a municipality, is no different. Just as when civil engineers take on the task of building a road network, urban foresters should strive to create an urban forest network that works as efficiently as possible, avoids major conflicts, provides a high return, and uses the best tools available.

In our introductory article ([January 2015](#)), we discussed some of the benefits associated with the use of evergreen conifers in urban plantings. These benefits include helping to increase the tree species diversity of the urban forest, increasing annual rainwater interception and annual pollution absorption, and the promotion of urban wildlife diversity. In this article, we will discuss important considerations that must be taken to ensure that conifers add value to the urban forest. It is important to use these different infrastructure components in the appropriate places; it is important to properly *design* the urban forest to ensure its optimal functionality.

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Due to seasonal changes and tree functional type (e.g. evergreen conifer, broadleaf deciduous, broadleaf evergreen), some trees provide services during certain times of the year, while providing less of those services – or even disservices – at other times. For instance, an evergreen tree provides summertime shading, which is generally regarded as a positive attribute, but also wintertime shading,

which may be a negative attribute. A deciduous tree, however, provides this same summer shading benefit, but does not maintain a thermal buffer or privacy barrier during the wintertime, which can be a negative attribute. These types of attributes must be considered in order to design and implement a dynamic and effective green infrastructure system.

Wintertime shading is a notably important aspect to consider when planting evergreen conifers in the urban landscape in New England, and most notably when planting them as street trees. Ice buildup on roads can cause significant issues, so it is necessary to allow for optimal winter sun exposure on streets. In New England, the sun strikes on the southern exposure and casts shadows to the north. Thus, planting evergreen trees on the south side of an east-west-oriented street will cause a shadow to be cast over the street during the winter (Fig. 1.). This conflict may be avoided, however, by planting evergreen species on the north side of the street and deciduous species on the south side. By employing this technique, one can obtain greater tree species diversity and the same year-round ecosystem services that were discussed in part I, while still gaining beneficial winter sun exposure. Furthermore, shade-tolerant evergreen conifers may be established within the vicinity of a permanent object (i.e. building) that is already casting shade. Because the road is already shaded, the evergreen conifer does not cause further shading, but does contribute positive ecosystem services. By taking sun exposure and aspect into account, conifers can be



Fig. 1. Evergreen conifers planted on the south side of an east-west oriented street.

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# Conifers in the Urban Landscape: Application

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included as street trees without causing conflicts by way of disservices during winter. In addition to proper placement along streets and travelled areas, installations of evergreen conifers may be designed to function as living screens.



Formal planting of an evergreen conifer grove offering year-round ornamental appeal.

Due to their dense, evergreen foliage, many evergreen conifers can efficiently block sight, sound, and wind. By using evergreen conifers as thermal buffers and wind blocks around a building, the building's efficiency can be increased by up to 25%

by limiting the amount of heat loss due to cold air infiltration, or by the cooling of the building shell via passing wind. Used as audio or visual barriers, evergreen conifers can also help to muffle unwanted road noise from highways and block unsightly views. Salt-tolerant species of conifers can also act as buffers between roads and nearby areas that may be sensitive to road salts. By planting evergreen conifers around freeways, the noise, sight, and salt pollution can be better contained to those areas. Evergreen conifers can also absorb pollution and particulate matter that is emitted from highway traffic and block water spray continuously throughout the year. Though the buffering benefits from evergreen conifers are obvious, they may also be planted as part of a strategy to help decrease the urban heat island effect often associated with urban settings.

It has been shown that outdoor spaces with high leaf area indexes (LAI) have lower soil, surface, and ambient air temperatures. LAI is a measure of how dense a tree canopy is, or how much leaf cover is present over a given unit of area. The higher the LAI, the denser the tree cover is. Studies have found that areas with high LAI have cooler soil and surface temperatures by 7°C (12.6° F) and 6°C (10.8° F), respectively. Many conifers maintain dense



Cones and seeds of evergreen conifers may be a useful source of nutrition for urban wildlife.

crowns year-round with high LAI. Planting evergreen conifers therefore helps to keep small outdoor spaces, or microclimates, cool. By cooling enough of these microclimates throughout the urban environment, the macroclimate may also be influenced positively, and the urban heat island effect can begin to be addressed.



Walkway planting of evergreen conifers.

According to inventory data from across the United States, conifers appear to be notoriously underrepresented as street trees. Of the trees inventoried in Portland, Oregon (just under 40,000), only 2.2% were determined to be evergreen conifers. Chicago, Illinois featured only about 9.1% coniferous street trees, while Boston, Massachusetts had no conifers listed in their top 25 species that comprised 96.7% of their street trees. Minneapolis, Minnesota featured only 0.3% conifers, Charlotte, North Carolina 8.5%, and Berkeley, California featured only 4% conifers in their community tree inventories. These numbers equate to the simple fact that cities are not taking full advantage of the benefits that may be derived from increasing their numbers of evergreen conifers.

Urban populations derive numerous personal benefits from urban greenery that include reduced stress and increased quality of life, as well as healthier birth weights for newborns and more productive workplaces in what can potentially be more aesthetically-pleasing communities. Indeed, at no point are the aesthetic benefits of evergreen conifers more apparent than when deciduous leaves have turned brown and the trees themselves have become barren. Our hope is that evergreen conifers grow to become better recognized as key components of green infrastructure systems that can offer significant returns through their ecosystem services when they are incorporated into the design and installation of the contemporary urban forest.

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# Conifers in the Urban Landscape: Application

Table 1: Coniferous trees that may be well-suited to urban conditions.

| Common Name          | Scientific Name                     | Zone | Height (ft) | Soil  | Evergreen? |
|----------------------|-------------------------------------|------|-------------|---|------------|
| Western redcedar     | <i>Thuja plicata</i>                | ~5-8 | ~100        | Moist, nutrient rich  | Yes        |
| Chinese hemlock      | <i>Tsuga chinensis</i>              | 6    | ~80         | Moist to semi-dry   | Yes        |
| Incense cedar        | <i>Libocedrus decurrens</i>         | ~5-8 | ~50         | Moist well-drained to dry                                     | Yes        |
| Japanese cryptomeria | <i>Cryptomeria japonica</i>         | ~5-9 | ~60         | Wide range of soil types                                      | Yes        |
| Dawn redwood         | <i>Metasequoia glyptostroboides</i> | ~4-8 | ~100        | Wide range of soil types, can do wet soils and pollution well | No         |
| Norway spruce        | <i>Picea abies</i>                  | ~2-7 | ~60         | Wide range of soils types, prefers well-drained               | Yes        |
| Eastern redcedar     | <i>Juniperus virginiana</i>         | ~2-9 | ~65         | Wide range of soils types                                     | Yes        |
| Giant sequoia        | <i>Sequoiadendron giganteum</i>     | ~6-8 | ~100+       | Tolerant of dry soils, prefers moist, well-drained            | Yes        |
| Bald cypress         | <i>Taxodium distichum</i>           | ~4-9 | ~70         | Dry to saturated soils  | No         |

(Continued from page 2)

For more information on selecting and establishing conifers in the urban environment:

Aurders, Aris G. and Derek P. Spicer. 2013. *Encyclopedia of Conifers: A Comprehensive Guide to Cultivars and Species*. Royal Horticultural Society and Kingsblue Publishing: London.

Dirr, Micheal. 2011. *Dirr's Encyclopedia of Trees and Shrubs*. Timber Press: Portland, Oregon

Gerhold, H.D., N.L. Lacasse, W.N. Wandell. 2001. *Landscape Tree Factsheets (including evergreens for screens)*, Third Edition. The Pennsylvania State University.

Missouri Botanical Garden Plant Finder (online) <http://www.missouribotanicalgarden.org/plantfinder/plantfindersearch.aspx>

Wyman, D. 1965. *Trees for American Gardens*. Macmillan: New York.

*Conifers in the Urban Landscape: Parts I & II* are based on the peer-reviewed article "Rationale for the increased use

of conifers as functional green infrastructure: a literature review and synthesis" compiled by J. Casey Clapp.

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# Species Spotlight—Invasive Species

By **Mollie Freilicher**  
MA-DCR  
Community Action Forester

This month our focus is not on one species, but on two of six prohibited trees in Massachusetts. Under authority from Massachusetts General Law, including but not limited to, Chapter 128 Section 2 and Sections 16 through 31A, the Massachusetts Department of Agricultural Resources (MDAR) derives the authority to ban the importation, propagation, and sale of plants the Commonwealth has deemed noxious weeds. In 2006, MDAR, in collaboration with the Massachusetts Invasive Plant Advisory Group (MIPAG) identified 140 plants to be included on the newly created [Prohibited Plants List](#). On January 1, 2009, the prohibitions were fully put into effect. The list includes herbaceous and woody and terrestrial and aquatic plants. The ban does not impact plants already in the landscape. It is poor practice, and unlawful, to plant any of the plants on the list. For native alternatives, check out this list from the New England Wildflower Society: <http://www.newfs.org/docs/docs/invalt2.pdf>.

In this issue, we'll cover Norway maple, sycamore maple, and tree of heaven and we'll cover the remaining four in future issues. For the full list of prohibited plants, go the website: <http://www.mass.gov/eea/agencies/agr/farm-products/plants/massachusetts-prohibited-plant-list.html>

Norway maple (*Acer platanoides*)  
Sycamore maple (*Acer pseudoplatanus*)  
Tree of heaven (*Ailanthus altissima*)  
Amur cork-tree (*Phellodendron amurense*)  
Common buckthorn (*Rhamnus cathartica*)  
Black locust (*Robinia pseudoacacia*)

Species summaries are adapted from [Virginia Tech](#).

## Norway maple



### Native to Europe

**Form:** Medium-sized tree to 80 feet tall, usually with a dense rounded crown.

**Leaf:** Opposite, simple, palmately-veined, 5-7 lobed with long pointed teeth, dark green above, paler below; exudes milky white sap from the petiole when detached. A

purple-leaf variety known as 'Crimson King' is widely planted.

**Flower:** Species is dioecious (male and female flowers on separate plants); bright yellow-green in color and somewhat showy, appearing early in the spring before the leaves.

**Fruit:** Widely divergent 2-winged samaras, 1.5 to 2 inches long in clusters, relatively flat seed cavity, mature in late summer and persist into the winter.

**Twig:** Stout, brown with a large, dullish, buds that are initially green, maturing to purple.

**Bark:** Gray-brown, a bit corky, on older trees shallowly furrowed with long narrow, somewhat interlacing ridges.

**Where you'll find it:** Widely planted as a street tree, escapes to natural areas.

**Bark:** Gray-brown, a bit corky, on older trees shallowly furrowed with long narrow, somewhat interlacing ridges.

**Where you'll find it:** Widely planted as a street tree, escapes to natural areas.

## Sycamore maple



**Form:** Medium-sized tree, 40-60 feet tall, sometimes taller, usually with a wide-spreading crown and short trunk.

**Leaf:** Opposite, simple, 5-lobed, 5-6 inches long and broad, palmately-veined, coarsely serrate, heart-shaped base, dark green above and considerably paler below.

**Flower:** Species is monoecious (male and female flowers on same plant); yellow, in a 3 to 5 inch hanging cluster.

**Fruit:** Pair of samaras, spreading at about a 45 degree angle, each about 1.5 inch long, mature in late summer to early fall.

**Twig:** Moderate to stout, glabrous, greenish brown, leaf scars do not meet; buds are large and broad, green, with large scales.

**Bark:** Gray-brown to red-brown, breaks up into large scales that often exfoliate to reveal orange.

**Where you'll find it:** Planted as a street tree, especially along the coast, due to its tolerance of salt. Escapes into natural areas.

# Growing on Trees

## 2015 Mass Land Conservation Conference

When: Saturday, March 21, 2015 | 8:00 a.m. – 4:00 p.m.

Where: Worcester Technical High School,  
One Skyline Drive, Worcester, MA

[Register Online here](#)

This annual, day-long training and networking event provides land trust board members and staff, parks administrators and advocates, colleagues from federal, state, and local government agencies, students, and philanthropists an opportunity to participate in a full day of workshops and discussions that focus on fostering healthy communities in MA through land conservation. Join your colleagues in land conservation and acquire the information, skills, and connections you need to be most effective. More information is available at <http://www.massland.org/conference>.

## Central Mass. Lyme Conference

Saturday, March 21, 2015, 9:00 a.m. - 4:00 p.m.

Quinsigamond Community College, Worcester, MA  
Attend the first ever Lyme Conference and hear about Lyme from a variety of medical practitioners. Go to <http://masslymeconference.com/> for details.

## MassDOT's 2015 Innovation and Tech Transfer Exchange!

- Over 30 breakout sessions
- Opportunities to discuss with your peers, the advantages and challenges associated with the methods and technologies being presented
- Demonstrations by vendors displaying their latest technologies.

The event is open to all transportation professionals including MassDOT, municipalities, consultants, contractors, vendors and manufacturers.

[Click Here to See The Latest Agenda!](#)

[Click Here to See Our Topic Tracks!](#)

For more information and to register for the Innovation and Tech Transfer Exchange visit [www.MassDOTInnovation.com](http://www.MassDOTInnovation.com).

## 2015 Massachusetts Arbor Day Poster Contest Trees are Champions in My Community!

Each year, over 1,500 Massachusetts fifth graders participate in the Arbor Day Poster Contest. Fifth-graders create posters, and schools judge the posters and submit the winning poster to DCR. The winners reap rewards, including art supplies, ice cream, and a tree for their school. Each year there is a theme, such as "Trees are Terrific and Good for Our Health!" (2014) or "Celebrate a Tree" (2013), selected to encourage students to think about trees in new ways.

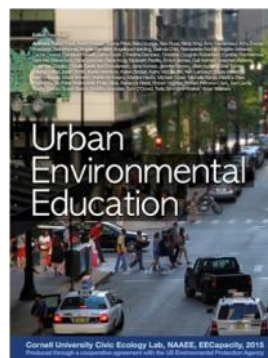


The 2015 theme, **Trees Are Champions in My Community!**, is designed to increase students' understanding of trees and the role trees play in their community.

The deadline for this year's entries is **April 1, 2015**.

Instructions will be posted at - <http://www.mass.gov/eea/agencies/dcr/conservation/forestry-and-fire-control/>

## Urban Environmental Education Book Is Available



Washington--Edited by Alex Russ and written by environmental educators in the United States, this book advances understanding of settings, audiences, teaching approaches and goals of urban environmental education. This book is appropriate for in-service and in-training educators in the United States and elsewhere.

The authors say that they hope the book will help educators to reflect on their own work, and inspire new ideas to improve their programs. [Download the book for free](#) at the Web site of the North American Association for Environmental Education.

# Growing on Trees

## Celebrate Arbor Day!

Friday, April 24, 2015

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
- Holding a planting ceremony
- Holding a ceremony in recognition of a Champion tree in town
- Giving away seedlings to students and residents
- [Organizing an Arbor Day of Service](#)
- Arranging an assembly at a local school
- Inviting a speaker to give a public presentation about trees
- Holding an educational event for students at the library
- Organizing a "Trees 101" educational event for residents
- Staging a tree climbing and tree planting demonstration
- Working with a scout troop to plant trees
- Partnering with a Rotary Club or other organization to plant trees.

## Tree City USA

**\*Important Reminder about Tree City USA Program Requirements\*** –To receive the Tree City USA award, your community must conduct an **Arbor Day ceremony** and issue an **Arbor Day proclamation** each year. We urge you to use this requirement to the advantage of your community forestry programs by conducting a timely and well-considered ceremony, such as a tree planting at a local school in conjunction with the reading of the proclamation by local municipal leaders. This is just one of the many possibilities for recognizing and celebrating Arbor Day and bringing attention to the community forest and your efforts to protect and manage it with care.

**Other requirements** for Tree City USA are a **tree board or department**, a **tree ordinance** (which many Massachusetts communities satisfy with Chapter 87 of Mass General Laws), and a **community forestry program** with an annual budget of at least \$2 per capita. For information on how your community can apply this year, contact Mollie Freilicher, Community Action Forester, [mollie.freilicher@state.ma.us](mailto:mollie.freilicher@state.ma.us).

## Celebrate Arbor Day with Tree Seedlings! 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, 2015**. For more information, go to <http://masstreewardens.org/arbor-day-seedling-program/>.

## 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 district seedlings sales in Massachusetts.

**Berkshire Conservation District:**

[www.berkshireconservation.org](http://www.berkshireconservation.org)

**Middlesex County Conservation District:** [http://middlesexconservation.org/?page\\_id=38](http://middlesexconservation.org/?page_id=38)

**Plymouth County Conservation District:**

<http://www.plymouthcountyconservation.org/>

**Worcester County:**

<http://worchesterconservation.org/seedling-sale-15.html>

We do our best to ensure that listings are accurate, but please check with program organizers for the most up-to-date information.

# Growing on Trees

## Webcasts

### Urban Forestry Today Structural Soils in the Urban Environment: The Practitioner's Perspective—**New ID Code**

Thursday, March 26, 2015, 12:00 p.m. – 1:00 p.m. (EDT)

Join us for the final installment in this two-part series as we hear from Andrew Hillman, Community Forestry Consultant/Urban Forestry Coordinator with the Davey Resource Group, as he highlights his many years of work overseeing and implementing planting projects that have involved CU Structural Soil (CU-Soil) in Ithaca, NY and around the world. Hillman will discuss his first-hand observations relating to the dos and don'ts of using CU-Soil as part of growing the urban forest. This broadcast is free and will offer the opportunity for Arborists to earn 1.0 ISA CEU and 0.5 MCA credit.

To attend, visit [www.joinwebinar.com](http://www.joinwebinar.com) and enter the **updated ID code #131121483**.

#### For more information, contact:

Rick Harper, Department of Environmental Conservation  
University of Massachusetts, Amherst  
[rharper@eco.umass.edu](mailto:rharper@eco.umass.edu)

*Sponsored by the University of Massachusetts Department of Environmental Conservation, in cooperation with the Massachusetts Tree Wardens' & Foresters' Association, University of Massachusetts Extension, and the Massachusetts Department of Conservation and Recreation.*

### "Springcasting!"

**Tuesday, March 3, 12:30 p.m. (EST)**

Dr. Toby Ault, Cornell University  
Nature's Notebook and the Emerging Climate Risk Lab  
of Cornell

To join, visit: <https://www.usanpn.org/nn/Webinars>

### Harvard Forest Seminar Series

Fridays at 11:00 a.m. Eastern Time.

Harvard Forest Seminar Room or online via webcast.  
Seminars are free and open to the public;  
no pre-registration is required.

**Upcoming Seminar: Friday, March 6,, 2015**

Matthew Duveneck – Harvard Forest  
*Managing for resilience in multiple dimensions under climate change.*

Get the full schedule at: <http://harvardforest.fas.harvard.edu/seminars>

*department of Conservation and Recreation*

### The Consortium for Climate Risk in the Urban Northeast

Wednesday, March 4, 4:00 p.m. (EST)

"Assessing Ecosystem Services Associated with Urban Trees"

Part of the Green Infrastructure, Climate, and Cities Seminar Series presents:

Speakers TBD

To register for the above webcast or to watch archived webcasts, visit: <http://ccrun.org/seminars>

### Changes in Forest Composition and Structure Under Alternative Climate Scenarios in the Northeastern U.S.

April 29, 2015 - 3:30 p.m. (EDT)

Speaker: Frank R. Thompson, US Forest Service  
Changes in regional forest composition in response to climate change are often predicted using niche-based models or biophysical process models that either do not account for or greatly simplify processes such as succession, dispersal, and tree harvest. We simulated changes in forest composition and structure from year 2000 to 2300 in the Northeastern U.S. using a modeling approach that accounted for succession, tree harvest, and climate change. Read more at the [Northeast Climate Science Center](http://www.northeastclimatecenter.org).

### Urban Forest Connections Webinar Series

Wildlife Conservation in Cities and Suburbs: Research, Programs, and Tools

March 11, 2015, 1:00-2:00 p.m. (EDT)

Susannah Lerman, USDA Forest Service & University of Massachusetts

Naomi Edelson and David Mizejewski, National Wildlife Federation

Save the dates for upcoming webcasts

April 8, 2015, 1:00 - 2:00 p.m. (EDT)

May 13, 2015, 1:00 - 2:00 p.m. (EDT)

Find out more at: <http://www.fs.fed.us/research/urban-webinars/>

# Growing on Trees

## From the New England Chapter, International Society of Arboriculture (NEC-ISA)

### Arbor Day Grant

The Arbor Day Grant was created in 2007 to support small town and communities that needed help to build their Arbor Day programs. This grant presents one award in the amount of \$1,000.00 to a town, organization, or community that demonstrates need to promote and support their Arbor Day celebration. Application deadline: **March 28, 2015**. Get more information and download the application at: [http://newenglandisa.org/arbor\\_day\\_grant](http://newenglandisa.org/arbor_day_grant).

### Scholarship Opportunity

Since 1990, the NEC-ISA has awarded scholarships to students pursuing an education in a field of study dedicated to plant material-oriented fields. The purpose of the awards is threefold: to help promote interest in shade and ornamental trees, to recognize scholarly endeavors, and to assist in financial aid.

The New England Chapter grants two scholarship awards of \$1,500.00. Each recipient will receive \$1,500 toward their educational expenses.

For the complete requirements, go to <http://newenglandisa.org/scholarships.html>. The deadline for Application is **Friday, April 3, 2015**.

To download the application, go to: <http://newenglandisa.org/scholarships.html>

## Fall River Urban Forestry Workshop

**March 19, 2015 9:00 a.m. to 12:30 p.m.**

1 Government Center, Hearing Room, City Hall  
Fall River, MA

This **FREE** workshop will feature site selection for urban tree planting and emphasize proper planting techniques. Local forestry specialists will be on hand to provide regional updates. ISA and MCA continuing education credits will be offered, and morning refreshments will be served. Please **pre-register** by contacting Joanne Buchanan, University of Massachusetts. [jbuchanan@umext.umass.edu](mailto:jbuchanan@umext.umass.edu) or (413) 545-4300

## From UMass Extension

Register for all UMass events at [www.umassgreeninfo.org](http://www.umassgreeninfo.org)

### 36th Annual UMass Community Tree Conference

#### Preserving Trees and Landscapes in a Changing Environment

March 10, 2015 9:00 a.m. – 4:00 p.m.

Location: Stockbridge Hall, UMass Amherst

This one-day conference is designed for tree care professionals, volunteers, and enthusiasts including arborists, tree wardens/municipal tree care professionals, foresters, landscape architects, and shade tree committee members. The theme of this year's conference will involve perspectives relating to the care of mature/vintage trees and their affiliated landscapes, in a time of climatic, regulatory, and environmental change. Topics will include: Appraising and Ascribing a Monetary Value to Historic Trees, Pruning and Cabling of Historic Trees, and Updates pertaining to the Latest Landscape Pathogens and Nutrient Management Regulations that may impact those that manage trees and landscapes in the Commonwealth of Massachusetts. *One pesticide contact hour for categories 36, 40, and 00 (licensed applicator). 4 ISA, 5 SAF, 5.5 CFE, and 1 MCH credits available. MCA and MCLP credits have been requested. Cost is \$65 for first registration, \$40/person for each additional registration from the same company.*

### Pollinator Health for Agriculture and Landscapes

Thursday, March 26, 2015 - 8:45 a.m. to 4:00 p.m.  
UMass Amherst—Campus Center Auditorium

A full-day program for all sectors of the agriculture and landscape communities, including agricultural producers and grounds management professionals. University and national experts on pollinating insects, protection of pollinators, and pesticides will share the latest scientific research on factors affecting the health of honeybees and other pollinators and on best practices for sustaining populations and minimizing negative impacts with responsible production and land management strategies. Cost: \$65 per person, if two or more from same business, then \$40/person. Online registrations include a nominal processing fee.



# Growing on Trees

## From UMass Extension

### Spring Kickoff for Landscapers: UMass Extension Landscape Education Day

March 12, 2015, 10:00 a.m. - 3:30 p.m.

Location: Elks Lodge, 2855 Cranberry Hwy (Route 6), East Wareham, MA

Every new year comes with its own challenges for successful maintenance of healthy and attractive landscapes. These challenges include variable and unpredictable weather, insect pests, weeds, and changing regulations. Join UMass Extension Educators at the UMass Cranberry Research Station in East Wareham for a day of learning about the latest research-based information to help you kick off a successful landscape management season. Topics include early season weed management in the landscape, 2015 disease and insect pest forecast for woody ornamentals, troubleshooting problems of annuals and perennials in the landscape, IPM for landscape and residential turf, and pruning ornamental trees and shrubs. Cost: \$75 includes lunch. *Four pesticide contact hours for categories 29, 36, and Applicators License. 1.5 ISA, 3.5 CFE, and 1 MCH credits available. MCA, MCLP and AOLCP credit requested.*

## Upcoming Courses

Check out the offerings this spring at the **Arnold Arboretum** or go to the Arboretum website:

<http://my.arboretum.harvard.edu/Info.aspx?EventID=1>

### The Oldest Living Things in the World

*Rachel Sussman*, Photographer

Monday, March 2, 7:00–8:30p.m.

**Location:** Hunnewell Building

**Free. Member-only registration through December 15; General registration after December 15**

### DIRECTOR'S LECTURE SERIES

#### China, Biodiversity, and the Global Environment

*Peter Raven*, PhD, President Emeritus, Missouri Botanical Garden

Monday, March 23, 7:00–8:30 p.m.

**Location:** Hunnewell Building

#### The Orchard Ecosystem

*Michael Phillips*, Farmer and Orchardist, Lost Nation Orchard at Heartsong Farm, Groveton, NH

**1 Session:** Wednesday, March 18, 12:30–3:30 p.m.

**Location:** Wellesley College Science Center, Room SCI-277

### Planning and Creating a Compact Orchard

Staff, Wakefield Estate

Sat Mar 21, 9:00–11:00 a.m.

**Location:** Wakefield Estate, Milton, MA

### Eye of the Beholder: Johannes Vermeer, Antoni van Leeuwenhoek, and the Reinvention of Seeing

*Laura Snyder*, PhD, Science Writer and Professor of Philosophy, St. John's University

Wednesday, April 8, 7:00–8:30 p.m.

**Location:** Hunnewell Building

### Growing Plants from Seeds

*Jack Alexander*, Plant Propagator, Arnold Arboretum

Saturday, April 11, 9:00 a.m.–1:00 p.m.

**Location:** Dana Greenhouse Classroom

### Healthy Places in the Transition Century

*Ann Forsyth*, PhD, Professor of Urban Planning, Harvard Graduate School of Design

Tuesday, April 28, 7:00–8:30 p.m.

**Location:** Hunnewell Building

The **New England Wildflower Society** also has many courses this spring. Go to:

<http://www.newenglandwild.org/learn/>

### Small Motor and Garden Tool Maintenance

Have you ever walked into your shed or garage and felt overwhelmed by the many tools in need of maintenance? Don't be left in the dark this spring—join us for a workshop on the basic techniques every gardener needs to maintain hand tools and equipment. We'll cover oil-changing, greasing, air-filter cleaning and replacement, blade sharpening, handle replacement, storing and maintaining hand tools, and much more. Bring a bag lunch.

**Sunday, April 12, 9:00 a.m.-2:00 p.m.**

**Location:** Garden in the Woods, Framingham

**Program Code:** HOR3351

**Instructor:** Nate McCullin

**Fee:** \$60 (Member) / \$72 (Nonmember)

**Limit:** 16 **Certificate:** Elective: HD/Adv.HD **CEU:** 1 AOLCP

## Gleanings

### Witness Tree

In February, Lynda Mapes, a Bullard Fellow at Harvard Forest, presented on her forthcoming book, *Witness Tree*. Mapes is a nature/environment reporter for the *Seattle Post-Intelligencer* and has been living in Massachusetts, first as a Knight Science Journalism Fellow at MIT and currently at Harvard Forest as a Bullard Fellow. Her presentation outlined her book and the collaborations she has had while at Harvard Forest.

From the [Harvard Forest](#) website:

During her 12-month [Bullard Fellowship](#) at the Harvard Forest, veteran newspaper journalist and author [Lynda Mapes](#) is taking a deep, long look at one tree: a 100-year-old red oak. With the help of Harvard Forest collaborators [John O'Keefe](#), [Andrew Richardson](#), [David Foster](#), and other experts, Lynda is probing the human and natural history of "BT QURU 03," a tagged, tracked red oak in a long-term [phenology](#) study at the forest. Her goal is to learn what one tree can tell us about our changing world, and our relationship to nature. The result will be her forthcoming book, *Witness Tree*, under contract with Bloomsbury Publishing.

Lynda chose Harvard Forest because she wanted to research and write the book through a deep immersion experience. In her own words: "Writers need three things to tell a story well: characters, location, and a narrative, and with the forest's unique long-term historic records and scientific data; beautiful setting, and crack collaborators – including one spectacular tree -- I have all three. Living in my research site, a short walk from my tree, on the historic [John Sanderson Farm](#) couldn't be a better way to tell this story of a changing natural world, and our relationship to it."

[Learn more and visit the \*Witness Tree\* blog](#) to read about her experience at Harvard Forest.

### The International Space Station Will Soon Be Able to Measure Forest Density Using Lasers

By Max Kutner

February 2015—Yes, the future of the world's climate is tied to the ability of forests to absorb atmospheric carbon. But exactly how well they can do that job depends on the density of the forests themselves, and scientists

### Tree Maps Showing the State of American Forests in 1884

By Rebecca Onion

These tree maps, commissioned by the United States Census and published in 1884, were compiled at the direction of [dendrologist](#) and horticulturist Charles Sprague Sargent. The



complete set of 16 maps, [digitized by](#) the David Rumsey Map Collection, represents American forests by genus of tree, density, and position. The USDA [estimates](#) that while the total area of forested land in the United States has diminished by 30 percent since the date of European settlement in 1630, "75 percent of net conversion to other uses occurred in the nineteenth century." Sargent's project was meant to capture the contours of the forest as it stood in the Victorian era.

Sargent, a Bostonian and officer in the Union Army, [was a professor of horticulture](#) and the first director of the Arnold Arboretum at Harvard. As such, he was part of the first generation of professional American foresters; during his career, the [Society of American Foresters](#), the [U.S. Forest Service](#), and Yale's [School of Forestry and Environmental Studies](#) were all founded. Read the full story at [Slate.com](#).

don't have exact measures of that—yet. Soon they'll have a new way to obtain that information from 268 miles above the earth. The Global Ecosystem Dynamics Investigation (GEDI) is a LiDAR, or laser-based, instrument being developed for the International Space Station. Once installed, in 2018, the \$94 million device will beam three infrared lasers at earth, 240 times per second, or 16 billion times per year. Those light pulses will hit the forest floor and canopy, and the time that the reflections take to reach the space station will indicate the height of the trees. Three-D maps based on that information will lead to new estimates of forest biomass and, hence, the appetite for atmospheric carbon dioxide, consumed during photosynthesis. Read more at [Smithsonian Magazine](#).



## Gleanings

### For Philadelphia and Baltimore, Parks Are Central to Livability

By Karen Grajales

February 3, 2015—"Many people think parks are easy, but parks are one of the hardest things for governments to do because of the physical and human aspects," explained Peter Harnik, Hon. ASLA, director of [The Trust for Public Land's Center for City Park Excellence](#), while introducing a panel of experts at the [New Partners for Smart Growth](#) conference in Baltimore. The complex undertaking of how to best to create and maintain parks — for both governments and non-profits — is a thread that connected all speakers. Mark A. Focht, FASLA, first deputy commissioner of [Philadelphia Parks and Recreation](#) and former president of ASLA, gave an overview of the amazing progress made in Philadelphia's expansive park system over the past few years. Some 80 percent of the city's residents are already meeting Mayor Michael Nutter's "goal of everyone being within a ten-minute walk away from a park." Examples of recently built green spaces and amenities that help the parks department to reach all city residents include Paine's Park, a skate park and public space; the Schuylkill River Dog Park; and the Schuylkill Banks Boardwalk. Read the full story at [The Dirt](#).

### Want Your City to Thrive? Look to Its Trees

By Deborah Snoonian Glenn

Feb 13, 2015—To paraphrase a beloved children's book, trees are nice—they give us oxygen, filter air pollutants, and absorb rainwater. Plus, [research shows](#) that trees in urban areas slow down traffic, foster civic pride and identity, and improve property values. These perks haven't been lost on officials in Culver City, a neighborhood in [ever-greenifying](#) Los Angeles whose picturesque tree-lined streets are among the most coveted and expensive places to live in the area. Like a growing (sorry) number of American cities, Culver City is developing an urban forest master plan to ensure the long-term health and sustainability of its tree canopy. Because of Los Angeles's size and diverse geography, not to mention a [stripped-to-the-bones tree maintenance budget](#), the city would have a tough time ginning up a unified plan. But incorporated areas of L.A. County like Culver City, a town of roughly five square miles and 40,000 residents, have the freedom to act more nimbly. Read the full story at [CityLab](#).

## News

### There's a Whole World of Maple Syrup Beyond This Small-Town Massachusetts Sugarer

By Kristin Toussaint

February 13, 2015—During the first blizzard of this season, Ron Kay was walking through the snow. He had work to do, and the looming storm couldn't keep him from checking his maple syrup taps. Despite it being 18 degrees, Kay, 68, spent five hours outside, alone on a snowy hill scattered with sugar maples. Kay taps trees throughout the surrounding woods of Maynard, even going into neighbors' yards to get access to all the sap in town. He runs rubber hosing from tap to tap, and collects all the sap in a stainless steel tank. The tubing crisscrosses his neighbors' backyards like fallen power lines. They don't mind; Kay is a central figure of the community. He's owned [Maynard Maple Farms](#) for over 30 years and has been sugaring for even longer. He tapped his first tree 61 years ago. Read the full story at [Boston.com](#).

### Researchers Unlock New Way to Clone Hemlock Trees Able to Fight Off Deadly Pest

By Sandi Martin

February 2, 2015—In a new paper published in *Trees-Structure and Function*, researchers in UGA's Warnell School of Forestry and Natural Resources outline how they were able to generate [hemlock](#) tissue cultures, cryogenically store them and then grow plants from the cultures after thawing them several months later—the first to successfully do so. As part of their efforts to freeze the germplasm, they also developed a method that will allow them to clone hemlocks, particularly important as they seek to propagate [trees](#) naturally resistant to the insect that has destroyed millions of hemlocks in 18 states since it was accidentally introduced into the eastern U.S. Read more at: [Phys.org](#)

### Urban Pollinators Get The Job Done

By Jonathan Morales

February 12, 2015— A new study from San Francisco State University shows that native [bees](#) are able to provide adequate pollination service in San Francisco, despite the urban setting. And, in what appears to be good news for farmers in space-starved cities, the amount of pollination a plant received was driven not by how large the garden was, but how densely it was populated with flowers. The research was published Jan. 15 in the journal *Urban Ecosystems*. Read more at: [Phys.org](#).

# On the Horizon

- Mar 10** UMass Community Tree Conference, Amherst, MA  
[www.umassgreeninfo.org](http://www.umassgreeninfo.org)
- Mar 11** Urban Forest Connections Webinar, Wildlife Conservation in Cities,  
<http://www.fs.fed.us/research/urban-webinars/>
- Mar 12** Spring Kick-off Day for Landscapers, UMass Extension, East Wareham, MA, [www.umassgreeninfo.org](http://www.umassgreeninfo.org)
- Mar 21** Central Mass. Lyme Conference, Worcester, MA, [www.masslymeconference.com](http://www.masslymeconference.com)
- Mar 21** Mass Land Conservation Conference, Worcester, MA  
[www.masslands.org](http://www.masslands.org).
- Mar 26** Urban Forestry Today Webcast: Structural Soils in the Urban Environment: The Practitioner's Perspective,  
[www.joinwebinar.com](http://www.joinwebinar.com)  
(and input the **UPDATED** code ##131121483)
- Mar 26** Symposium: Climate Change and the Future of Plant Life, Cambridge, MA, [www.newenglandwildflower.org](http://www.newenglandwildflower.org)
- Mar 26** [Pollinator Health for Agriculture and Landscapes](http://www.umassgreeninfo.org), UMass Amherst, [www.umassgreeninfo.org](http://www.umassgreeninfo.org)
- Mar 28** ISA Exam, UMass Amherst, [www.newenglandisa.org](http://www.newenglandisa.org)
- April 1** **Deadline: Arbor Day Poster Contest**



- April 1** **Deadline:** Intent to Apply [Urban and Community Forestry Challenge Grant](http://www.mass.gov/urbanandcommunityforestrychallengegrant) (DCR)
- April 3** Mass. Certified Arborist (MCA) Exam, Elm Bank, Wellesley, MA [www.massarbor.org](http://www.massarbor.org)
- April 21** MAA Dinner Meeting, Framingham, MA, [www.massarbor.org](http://www.massarbor.org)
- April 24** Arbor Day in Massachusetts
- April 24** MAA Arbor Day of Service
- May 1** **Deadline for Applications:** [Urban and Community Forestry Challenge Grants](http://www.mass.gov/urbanandcommunityforestrychallengegrants)
- May 15** Plant Something Day, [www.mnla.com](http://www.mnla.com)
- June 12-13** New England ISA Tree Climbing Competition, Northampton, MA [www.newenglandisa.org](http://www.newenglandisa.org)
- July 23** MNLA Annual Summer Conference, Topsfield, MA, [www.mnla.com](http://www.mnla.com)
- Aug 5** Mass. Certified Horticulturalist (MCH) Exam, Westborough, MA, [www.mnla.com](http://www.mnla.com)
- Oct 2-3** 2015 DCR Tree Steward Training
- Oct 9-11** Women's Tree Climbing Workshop, Petersham, MA

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**dcr**  
*Massachusetts*



**Charles D. Baker**, Governor

**Karyn E. Polito**, Lieutenant Governor

**Matthew A. Beaton**, Secretary, Executive Office of Energy and Environmental Affairs

**John P. Murray**, Commissioner, Department of Conservation and Recreation

**Peter Church**, Director of Forest Stewardship, Department of Conservation and Recreation

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**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](mailto:mollie.freilicher@state.ma.us) or click [here](#).**

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