

The Citizen Forester

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NO. 197

What is i-Tree? Background and Updates for 2017

Adapted from the www.itreetools.org website.



i-Tree is a free, state-of-the-art, peer-reviewed software suite from the USDA Forest Service that provides urban and rural forestry analysis and

benefits assessment tools. The i-Tree Tools help communities of all sizes to strengthen their forest management and advocacy efforts by quantifying the structure of trees and forests and the environmental services that trees provide.

Since the initial release of the i-Tree Tools in August 2006, thousands of communities, non-profit organizations, consultants, volunteers, and students have used i-Tree to report on individual trees, parcels, neighborhoods, cities, and even entire states. By understanding the local, tangible ecosystem services that trees provide, i-Tree users can link forest management activities with environmental quality and community livability. Whether your interest is a single tree or an entire forest, i-Tree provides baseline data that you can use to demonstrate value and set priorities for more effective decision-making.

What are the tools?

Web-based tools (can use on any platform):

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[i-Tree Design](#) is a simple online tool for assessing individual or multiple trees at the parcel level. This tool links to Google Maps and allows you to see how tree selection, tree size, and placement around a building (or buildings) affect energy use and other benefits. The Design application is available for addresses in the United States and Canada.

[i-Tree Canopy](#) offers a quick and easy way to produce a statistically valid estimate of land cover types (e.g.,

Help Shape i-Tree's Future!

Please help the i-Tree Development Team ensure that the i-Tree assessment tools are meeting your needs today, and will more effectively enhance forest health and human well-being into the future.

Please take this brief survey:

<https://www.surveymonkey.com/r/iTreeSurvey>

tree cover), using aerial images available in Google Maps. Canopy now includes calculations of the value of the canopy in reducing air pollution and capturing atmospheric carbon. i-Tree Canopy can be used by urban forest managers to estimate tree canopy cover, set canopy goals, and to monitor canopy change over time. In addition, Canopy estimates can be used for data requirements in the i-Tree Hydro model and elsewhere where land cover data are needed.



[i-Tree Landscape](#)

Prioritizing planting locations, i-Tree Landscape

is a new web-based tool that allows users to explore tree canopy, impervious cover, land cover, and basic demographic information anywhere in the United States. Users can learn about the benefits and values that area trees provide, including carbon storage, air pollution removal, and hydrological effects. Landscape can help users prioritize tree planting and preservation efforts based on user-defined objectives and the current distribution of trees, people, and available space. i-Tree Landscape now includes ultraviolet radiation risk and improvements on the reporting function.

(Continued on page 2)

What is i-Tree? Background and Updates for 2017

NEW! [i-Tree Species](#) is a web-based tool that helps users select tree species based on hardiness, mature height, and desired environmental services. i-Tree Species provides a starting point for selecting tree species. Users can then refine the list to meet local limitations, needs, and conditions.

NEW! [MyTree](#) is a brand-new i-Tree app for smartphones and tablets to calculate individual tree benefits. Add trees to your property and the app creates a tree “nutrition label.”

Desktop (PC)-based tools [i-Tree Eco](#) provides a broad picture of the entire urban or rural forest. It is designed to use field data from complete inventories or randomly-located plots throughout a community or project area, along with local hourly air pollution and meteorological data to quantify forest structure, environmental effects, and values. It now includes information on reduction of ultraviolet radiation and effects on nine bird species.

[i-Tree Hydro](#) is a newer application designed to simulate the effects of changes in tree and impervious cover characteristics within a watershed on stream flow and water quality. Recent improvements extend Hydro's applicability to non-watershed areas. Users can select a U.S. city and simulate water flow and water quality changes qualitatively by modeling tree and impervious cover changes.

[i-Tree Streets](#) focuses on the benefits provided by a municipality's street trees. It makes use of a sample or complete inventory to quantify and put a dollar value on the street trees' annual environmental and aesthetic benefits. Streets also describes urban forest structure and management needs to help managers plan for the future.

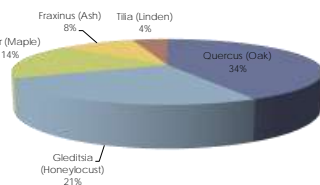
MyTree Benefits	
Serving size: 1 trees	
Carbon Dioxide(CO₂)	\$1.61
CO ₂ absorbed each year	161.30 lbs
Storm Water	\$12.76
Rainfall intercepted each year	1595 gal.
Air Pollution removed each year	\$0.96
Ozone	0.80 oz
Nitrogen dioxide	0.16 oz
Sulfur dioxide	0.00 oz
Large particulate matter**	12.80 oz
Energy Usage each year*	\$17.16
Electricity savings(A/C)	91.04 kWh
Fuel savings(ONG, Oil)	2.27 therms
Avoided Emissions	
Carbon dioxide	141.28 lbs
Nitrogen dioxide	0.00 oz
Sulfur dioxide	0.00 oz
Large particulate matter**	1.60 oz

Benefit values are estimates based on USDA Forest Service research and are meant for guidance only itreetools.org

*Positive energy values indicate savings or reduced emissions. Negative energy values indicate increased usage or emissions.

**Greater than 10 microns

MyTree benefits label



Output from i-Tree Streets

How have communities used tools in the i-Tree suite?

Read about how the Pennsylvania Horticulture Society used i-Tree Design:

<http://www.itreetools.org/resources/profiles/phsdesign.php>

i-Tree Canopy Assessment of Crystal River, FL:
http://www.itreetools.org/resources/reports/Crystal_River_Canopy_Assessment.pdf

A Method for Examining the Ecosystem Services of Roadside Trees in Springfield, MA:
http://www.itreetools.org/resources/reports/Method_for_Examining_the_Ecosystem_Services_of_Roadside_Trees_RKahn.pdf

Modeling Hydrological Ecosystem Services of Juvenile Trees in Worcester, MA:
http://www.itreetools.org/resources/reports/HydroWorcester_MA_afillipovic_AAGPoster.pdf

Street Tree Assessment and Stewardship Report for Radford, VA:
http://www.itreetools.org/resources/reports/Radford_Street_Tree_Assessment_and_Stewardship_Report.pdf

More resources:

Check out these short factsheets that will give you a snapshot of i-Tree and of the tools in the i-Tree Suite.

[i-Tree 2016 Suite Summary \(.pdf\)](#)

[i-Tree Design Fact Sheet \(.pdf\)](#)

[i-Tree Canopy Fact Sheet \(.pdf\)](#)

[i-Tree Landscape Fact Sheet \(.pdf\)](#)

[i-Tree Hydro Fact Sheet \(.pdf\)](#)

[i-Tree Eco v6 Fact Sheet \(.pdf\)](#)

Listen to this episode of the Municipal Equation podcast that discusses i-Tree

<https://soundcloud.com/municipalequation/ep-10>

And attend the online i-Tree Roundtable: Answering Your Questions About Using i-Tree on December 21, 2016

For more information, go to: <http://www.unri.org/itreetworkshops/>

Species Spotlight—Eastern White Pine, *Pinus strobus*

By Mollie Freilicher, DCR Community Action Forester

Chances are, you are already familiar with eastern white pine (*Pinus strobus*), as it is the second most common tree of Massachusetts forests (after red maple, *Acer rubrum*) and is the top species, by volume, harvested from Massachusetts forests. If you ever took Dr. Jack Ahern’s tree identification class at UMass-Amherst, you may have learned this as a “Mass Pike tree:” a tree you can identify while whizzing



by at 65 miles per hour because of its distinct form. As its common name suggests, eastern white pine is native to the eastern United States, ranging from Newfoundland, south to northern Georgia, and west along the Great Lakes to central Minnesota and Iowa, and it is hardy to zone 3. It grows from near sea level to 2,000 feet, and in the southern Appalachians it is found at elevations up to 5,000 feet. It is typically found in well-drained sandy soils, though it can tolerate a variety of soil conditions.



Leaves (Virginia Tech)

It is also a tree familiar to us from history, especially here in New England. As early as 1685, England regulated the cutting of timber in colonial New England to protect an important source for masts for the British Navy, and by 1711, England passed the first of the White Pine Acts, prohibiting the cutting of trees larger than



Fruit (Virginia Tech)



Bark (Virginia Tech)

24 inches in diameter at 12 inches high. During this time, the Pine Tree Flag emerged as a flag in colonial New England (an original design for a flag, unlike those based on British designs). Over the years, there were several versions of the flag, and the Massachusetts Legislature, in 1776, adopted a version with a pine tree in the center of a white field, with “An Appeal to Heaven” written above it. (You may have noticed this flag in the opening

credits to the “John Adams” HBO miniseries released in 2008.)

While eastern white pine is widespread and prevalent in New England forests today, in pre-European settlement forests, it was less prevalent. In the pre-European settlement forest, eastern white pine was found primarily growing in sandy soils along rivers. In New England, it could reach heights of 150 feet and grew straight, with wood that was light and strong, making it a desirable building material, as well as a material for building ships and masts.

In the planted landscape, eastern white pine reaches heights of 50 to 80 feet, with a spread of 20 to 40 feet, though it can grow taller. As a young tree, its habit is pyramidal, and as the tree matures, its form is characterized by horizontal, upturned branches, that give the tree a distinctive, graceful profile that can lead you to identify it at 65 miles per hour.

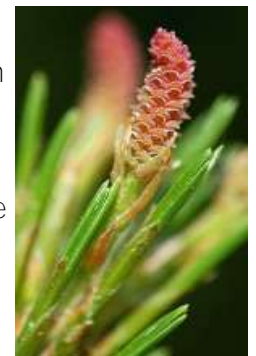
Leaves of eastern white pine are needles, in bundles of five per fascicle, which remain on the tree for two years. In late summer to early fall, these second-year needles turn yellowish-brown and fall off the tree. They are two to four inches long and flexible, with stomatal bands that give the needles a blue-green cast.

Buds of eastern white pine are one-quarter inch long and ovoid, coming to a sharp point. Twigs are slender and gray-green to orange-brown. On young trees, bark is thin, smooth, and gray-green. As the tree ages, the bark becomes rough and furrowed.

Eastern white pine is monoecious, with both male and female flowers on the same tree. Male flowers occur in clusters and are cylindrical in shape and yellow in color, while female flowers occur singly and are pink. The fruit is a cone, three to seven inches long and cylindrical in shape. The cone hangs down on a stalk, has rounded cone scales, and is resinous.



Twig (Virginia Tech)



Female flower (Virginia Tech)

(Continued on page 4)

Species Spotlight—Eastern White Pine (Continued)

The cones are light brown and mature in the second year, in the fall.

Eastern white pine is susceptible to diseases and insects that affect other pines. Two common ones are white pine blister rust and the white pine weevil. [White pine blister rust](#) can kill trees, and [white pine weevil](#) can deform trees. Eastern white pine is easy to transplant and will do best in moist, well-drained soils, though it can tolerate short periods of dry soil. It will do best in full sun, but can take some shade. Two things eastern white pine does not tolerate are air pollution and salt.

As a large tree, eastern white pine is best suited for large areas, such as parks and estates in locations without significant air pollution. There are many cultivars of eastern white pine available, including weeping, fastigiate, and dwarf varieties, among others.



Patch of eastern white pine at the Quabbin Reservoir

Resources

Abrams, Marc D. 2001. Eastern white pine versatility in the pre-settlement forest. *Bioscience*. 51 (11).

Cornell Woody Plants Database:

<http://woodyplants.cals.cornell.edu/plant/181>

Dirr, Michael. *Manual of Woody Landscape Plants*. Champaign, IL: Stipes, 2009.

Scholarship

The Massachusetts Tree Wardens' and Foresters' Association provides scholarships to University of Massachusetts students and Massachusetts residents actively studying arboriculture, community forest management, or urban forestry at an out-of-state college or university. Find out more about the application process at www.masstreewardens.org/scholarships.

Tree City USA—2016 Applications Now Being Accepted

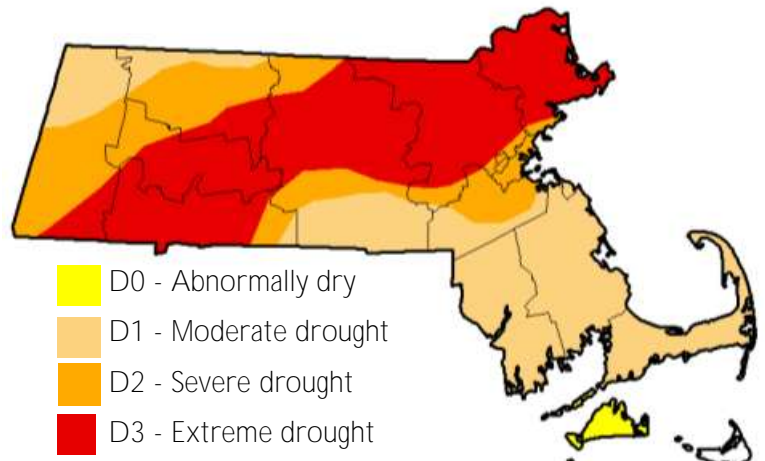
Also accepting Tree Line USA and Tree Campus USA Applications

Apply online or use the paper application. Go to www.mass.gov/dcr/urban-and-community-forestry and click on "Branching Out" at right. Applications are due December 31.

Drought Monitor

Conditions as of November 22, 2016. Check out drought conditions in Massachusetts, New England, and the U.S. All of Massachusetts is in drought, with over 40% of the state categorized as being in "extreme drought." <http://droughtmonitor.unl.edu/>

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



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.**

NOTE: The 2016 application contains [new guidelines](#) for strategic planting grants.

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

Start planning for next year's 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.

EPA Environmental Justice Small Grants Program

Under this Request for Proposals, EPA will award grants that support activities designed to empower and educate affected communities to understand environmental and public health issues and to identify ways to address these issues at the local level. Approximately 40 one-year projects will be awarded at \$30,000 each.

Applications are due on January 31, 2017 by 11:59 PM (ET).

For more information go to: <https://www.epa.gov/environmentaljustice/environmental-justice-small-grants-program> and tune in to one of the pre-application assistance calls the EPA is hosting on December 8, 2016, January 12, 2017, or January 24, 2017.

Five Star & Urban Waters Restoration Grants

Now Accepting Proposals through January 31, 2017

The Five Star and Urban Waters Restoration Program seeks to develop nation-wide-community stewardship of local natural resources, preserving these resources for future generations and enhancing habitat for local wildlife. Projects seek to address water quality issues in priority watersheds, such as erosion due to unstable streambanks, pollution from stormwater runoff, and degraded shorelines caused by development. Find out more: <http://www.nfwf.org/fivestar/Pages/home.aspx>.

Growing on Trees—Webinars

Urban Forestry Today Webcast Series

Urban Wood Utilization: A Two-Part Series
With the presence of invasive insects and urban tree decline and mortality, there is much concern about the large volume of wood that may be generated as a result of tree removals.

Part 1-Thursday, December 8, 2016

Budgeting for the Biomass: Urban Tree Mortality and the Bottom Line

Join Dr. Rich Hauer, University of Wisconsin-Stevens Point, as he outlines the (sometimes extreme) costs that communities are bearing as the killing front of Emerald Ash Borer expands, and steps to help communities and professionals plan accordingly.

To attend Part 1, visit www.joinwebinar.com and enter the ID code **185-155-115**.

Part 2-Tuesday, December 13, 2016

Urban Wood Utilization: Options and Alternatives

Join Sean Mahoney, Wood Utilization Forester, Massachusetts Department of Conservation and Recreation (DCR), in the second of this two-part series, as he outlines the options and practices communities and professionals may consider when it comes to capitalizing on their urban wood resources.

To attend Part 2, visit www.joinwebinar.com and enter the ID code **167-428-923**.

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

For more information, contact:

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

The Urban Forestry Today 2016 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.

i-Tree 2016 Webinars

Join us for a comprehensive, web-based instructional series that will introduce the latest tools in the i-Tree software suite, as well as bring you up-to-date on the improvements that have been made to the i-Tree collection of inventory, analysis, and reporting tools for urban and community forests. i-Tree is a state-of-the-art, peer-reviewed software suite from the USDA Forest Service and its partners that provides urban forestry analysis and benefits assessment tools.

All instructional sessions begin at 1:00 p.m. ET

December 21, 2016 - i-Tree Roundtable: Answering Your Questions About Using i-Tree

CEU Credits

Society of American Foresters CFE units and International Society of Arboriculture (ISA) CEUs are expected to be awarded for attending these online sessions. Each session is planned to last one hour.

For more information, go to: <http://www.unri.org/itreeworkshops/>

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](#).

Next webinar:

December 14, 2016 | 1:00 p.m.-2:15 p.m. (ET)

Future Webinars

January 11, 2017 | 1:00 p.m.-2:15 p.m. ET

February 8, 2017 | 1:00 p.m.-2:15 p.m. ET

March 8, 2017 | 1:00 p.m.-2:15 p.m. ET



Growing on Trees

Harvard Forest Fall 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>.

Timing is the key: on the importance of phenology for tree growth and survival

Friday, December 2, - [Join seminar online](#)

Michael Reed – Tufts Univ. and Harvard Bullard Fellow

What to Expect When You're Expecting...Extinction

Friday, December 9, - [Join seminar online](#)

Kate Ballantine – Mount Holyoke College

Long-term development and ecosystem functions of restored wetlands

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.

[2017 Arbor Day Poster Contest Instructions and Activities](#) (PDF, 1 MB)

Tree City USA

The Arbor Day Foundation's [online portal](#) for Tree City USA applications is now available for 2016 applications. We have posted detailed instructions on our website:

[2016 Tree City USA Application Instructions and Worksheets](#)  

[Sample Work Plans](#) 

Additional information: [What is Tree City USA?](#)



TREE CITY USA

Tree Line USA

Tree Line USA recognizes public and private utilities for practices that “protect and enhance” the urban forest. There are five core standards that companies meet. The goals of Tree Line USA are to promote a safe, reliable electric service and healthy trees in utility service areas. The annual deadline to apply is December 31. More information on the program can be found at:

<http://www.arborday.org/programs/treelineusa/summary.cfm>



TREE LINE USA.

Tree Campus USA

The Tree Campus USA program recognizes college campuses for management of trees and for student and community involvement. Tree Campus USA has five core standards that schools must meet to be eligible. The annual deadline to apply is December 31. More information on Tree Campus USA can be found at:

<http://www.arborday.org/programs/treeCampusUSA/index.cfm>



TREE
CAMPUS
USA.

For questions about the application process or to find out how your community, utility, college or university can participate, contact Mollie Freilicher, mollie.freilicher@state.ma.us or 413-577-2966.

Growing on Trees

Mass Tree Wardens' and Foresters' Association 104th Annual Conference

104th Annual Conference

January 10-11, 2017, Sturbridge, MA

Keynote Speaker: Dr. Erika Svendsen, USDA Forest Service

Other speakers and topics include:

Julie Coop, *DCR Urban Forestry Update* ♦ Jeff Enochs, *Forest Health Update* ♦ Paul Sellers, *Utility Arboriculture* ♦ Rick Harper, *UMass Urban Forestry Program* ♦ Michael Smith, *Safety Work Zones* ♦ Glenn Field, *Tree Nightmares* ♦ Tawny Simisky, *2016 Insect Pests in Review* ♦ Chapter 87 Panel Discussion ♦ Nicholas Brazee, *Pests and Pathogens of 2016*.



See the full schedule and register at <http://masstreewardens.org/annual-conference/>.

Growing Greener—in Petersham

With funding from a DCR Urban and Community Forestry Challenge Grant, the Town of Petersham Forest and Shade Tree Committee is currently carrying out several exciting projects in town.

Using “a combination of strategic tree plantings, invasive species removal, and community-wide education programs,” they are educating and empowering residents to appreciate and care for trees. Two parts of the project include organizing some community tree plantings and conducting invasive species removal to enhance the gateways to the town. Additionally, the Committee is hosting educational programs for residents. Most recently, they held a training on pruning. The grant also includes planting a ‘fruiting wall’ at the Petersham Center School.



November 30 – December 2, 2016
BOSTON CONVENTION & EXHIBITION CENTER

This year, hear from many great speakers on a variety of topics:

Ed Gilman, PhD., *Restoration Pruning After Storms*

Rick Harper, *New Management Strategies and Planting Practices in the Urban Forest*

Daniel A. Herms, PhD., *Climate Change and the Impact on Tree-insect Interactions*

Tom Smiley, PhD., *Tree Assessment: Likelihood and Consequences of Failure*

Michael Raupp, PhD., *Can Insect Pests be Managed Organically?*

Richard Casagrande, PhD., ***What's Ahead in Insect Pest Management?***

And more!

Go to

www.newenglandgrows.org

for more information.

Growing on Trees—Upcoming Courses

From the Arnold Arboretum

Upcoming lectures and programs this December/January

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

- Exploring the Arboretum for Educators (ongoing)
- Urban Forests: A Natural History of Trees and People in the American Cityscape (Dec. 8)
- The Hidden Half of Nature: The Microbial Roots of Life and Health (Jan. 8)
- Landscape for Life (Four sessions starting Jan. 11)
- The Alchemy of Creativity (Jan. 12)
- Pruning in Winter (Jan. 29)

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:

December 4, [City Gardening with New England Natives](#)

December 10, [Shrubs in Winter](#)

January 10, [Wetland Shrubs in Winter](#)

January 14, [Winter Botany](#)

February 4, [Bare Trees and Naked Shrubs](#)

February 8 (first of several classes), [Understanding and Managing Soils](#)

From UMass Extension

For more information on these and other programs, go to www.umassgreeninfo.org

Invasive Insect Certification Program for Landscape, Nursery, and Urban Forest Pests

Location for all sessions: Hadley Farms Meeting House, 41 Russell Street, Hadley, MA

Part 1: The Characteristics, Impacts, and Costs of Invasive Insects and Related Federal and State Regulations

February 2, 2017 | 9:00 a.m. – 2:30 p.m.

Part 2: Invasive Forest and Agricultural Insects in Massachusetts: Highlighting Current and Potential Future Pests February 16, 2017 | 9:00 a.m. – 2:30 p.m.

Part 3: Movement and Biological Control of Invasive Forest Insect Pests and the Interface with Forests and Managed Landscapes in Invasive Insect Management March 2, 2017 | 9:00 a.m. – 2:30 p.m.

Invasive Plant Certification Program

Location for all sessions: Doubletree Hotel, Milton, MA

Principles and Fundamentals of Weed Science (A1)

February 21, 2017 | 9:00 a.m. – 2:30 p.m.

State Regulations Pertaining to Invasive Plant Management (A2)

March 16, 2017 | 9:00 a.m. – 3:00 p.m.

The Invasive Plant Issue and Invasive Plant Identification (A3)

March 21, 2017 | 9:00 a.m. – 2:00 p.m.

Developing an Invasive Plant Management Program (B)

April 11, 2017 | 9:00 a.m. – 2:30 p.m.



Gleanings

Climate Resilience Toolkit

Meet the Challenges of a Changing Climate

Find a framework and tools to understand and address climate issues that impact people and their communities.

For many Americans, adapting to new climate conditions means developing new expertise.

Decision-makers across the nation are using data and tools to confront their climate threats, identify vulnerabilities, and reduce their risks from the impacts of climate variability and change.

Watch a three-minute [video](#) to learn about the purpose and components of the Climate Resilience Toolkit.



Check out case studies, tools, and topics, including the recently-added section on the built environment.

Selected case studies:

[Fortifying Chicago's Urban Forest](#)

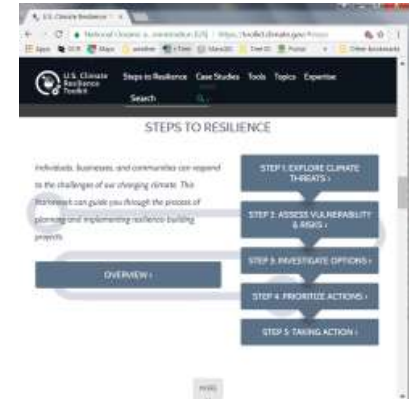
[Green or Gray?](#)

[Incorporating Climate Change Into a New Forest Management Plan](#)

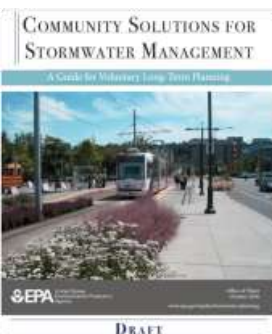
[Using Demonstration Storms to Prepare for Extreme Rainfall](#)

[And more!](#)

<https://toolkit.climate.gov/>



New Guide (Draft): Community Solutions for Stormwater Management A Guide for Voluntary Long-Term Planning



Click [here](#) for more information.

(<https://www.epa.gov/green-infrastructure/community-solutions-stormwater-management-guide-voluntary-long-term-planning>)

News

The Big Green Payoff from Bigger Urban Forests

By Laura Bliss

October 31, 2016—Plant a tree in a city, and it pays off in dividends. You'll get carbon sequestered, pollutants and rainfall absorbed, a provision of oxygen, shade and cooling, and psychological boosts to boot. Especially as climate change worsens heat waves (already the world's leading weather-related cause of death), and as growing urban populations generate more harmful fine particulate matter, trees are one of the single best infrastructure investments cities can make, and [an emerging body of scientific literature proves it](#).

In fact, a [major new report by the Nature Conservancy](#) concludes that trees are essentially the only cost-effective solution addressing both deteriorating air quality and rising urban temperatures. Some of the world's largest cities could dramatically improve public health by those standards by investing just \$4 per capita in their canopies, it finds. Crunching some numbers on how additional street trees (coniferous or leafy—palms don't count here) could reduce pollution and heat inside the world's 245 largest cities, the report shows that the residents of ultra-dense, ultra-populated, and ultra-polluted metropolises of Southeast Asia would see especially high ROIs, since the trees' benefits would spread to so many people per square mile, and since material costs are comparatively affordable. Read the full story at [CityLab](#).

The Tricky Nature of Reusing Urban Timber

Two Connecticut brothers collect the remains of city trees and fashion them into furniture and art.

By Mimi Kirk

November 14, 2016—The benefits of urban trees are well documented, from storing carbon and absorbing rainfall to easing depression and increasing property values. But what happens to our stately benefactors when they come down due to disease, development, weather, or old age? Millions of trees in the United States meet this fate every year; New York City alone cuts down around 8,000 trees annually. Read the full story at [CityLab](#).

Natural Protectors: Foresters, Arborists Try to Raise Awareness of Tree Benefits



Greenfield — Street trees are great for providing shade on hot summer days and beautifying urban environments, but there are other values that are less obvious. Urban foresters and arborists are trying to quantify those values and make them more visible. A program called i-Tree has been developed using data from the U.S. Forest Service, and thanks to the efforts of the Greenfield Tree Committee, people can now stroll down Main Street and discover the environmental benefits and species of some of the trees.

“We chose 25 trees of various sizes and types, and, using i-Tree, we calculated how much carbon dioxide they sequester annually; how much stormwater they intercept, which increases rainwater infiltration, storage and filtration; and how much cooling and heating energy is avoided because of reduced summer temperatures and winter wind block,” said Todd Beals, Greenfield Tree Committee member and ISA certified arborist, in a news release. Beals did the calculations. Read the full story at [The Recorder](#).

News Headlines in Brief

- [Hugh Johnson's Lifelong Journey Among the Trees](#)
- [Satellites Help Scientists See Forests for the Trees Amid Climate Change](#)
- [Database Captures Most Extensive Urban Tree Sizes, Growth Rates Across United States](#)
- [Venerable Elm Tree Finally Succumbs to Dutch Elm Disease](#)
- [India's 105-year-old Mother of Trees](#)
- [Ireland to Plant Largest Grove of Redwood Trees Outside of California](#)
- [Palmageddon? Britain's Palm Trees Face Extinction after Killer Beetle Discovered](#)

On the Horizon

- Nov 30 – Dec 2 New England Grows, Boston,
www.newenglandgrows.org
- Nov 30 – Dec 2 American Society of Consulting Arborists Annual Conference, Boston,
<http://www.asca-consultants.org/>
- Dec 1 Nominations due for Tree Warden of the Year, MTWFA, www.masstreewardens.org
- Dec 2 New England Botanical Club meeting, *Aquatic and Terrestrial Decomposition of the Invasive Norway Maple*, Cambridge,
<http://www.rhodora.org/meetings/upcomingmeetings.html>
- Dec 8 Urban Forestry Today Webcast, www.joinwebinar.com, and enter code: 185-155-115
- Dec 8 Urban Forests: A Natural History of Trees and People in the American Cityscape, Lecture, Arnold Arboretum. Registration Required.
- Dec 13 Urban Forestry Today Webcast, www.joinwebinar.com, and enter code: 167-428-923
- Dec 21 i-Tree webinar: i-Tree Roundtable: Answering Your Questions About Using i-Tree, www.unri.org/webcasts/itreeworkshops/
- Dec 31 Deadline for Tree City, Tree Line, and Tree Campus, USA Applications, contact Mollie Freilicher, 413-577-2966 or mollie.freilicher@state.ma.us

- Jan 10-11 **Mass. Tree Wardens' and Foresters' Association** 104th Annual Conference, Sturbridge,
www.masstreewardens.org
- Feb 19-24 Municipal Forestry Institute, Society of Municipal Arborists, Lake Arrowhead, CA,
<http://www.urban-forestry.com/mfi-2017>
- Mar 7 UMass Community Tree Conference, Amherst



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