



Features:

Trees and

Forester

Water

Focus

Climate

Species

Spotlight

UCF News

On The

Horizon

Resiliency

P.1-10

P.11

P.12-15

P.16-17

P.18-23

P.24

THE CITIZEN FORESTER

Urban & Community Forestry Program

WINTER 2025 | NO. 269

Trees and Water Current and Future Considerations

Looking back on the dry summer and fall this year, one might ponder what the winter and spring will bring to Massachusetts. Will the trend for future years continue to be hotter and dryer? And when rain finally comes, will it be in the form of more intense weather events? How will these continuing changes to our local weather affect trees in our communities?

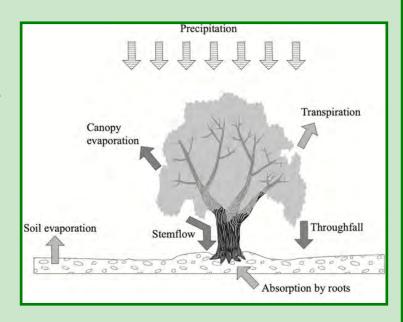
Looking at our blue planet from afar, there doesn't seem to be a lack of water. Purdue University Forestry & Natural Resources Extension states that water covers approximately 71% of Earth's surface, yet only 3% of the water on the planet is suitable for growing trees. It can be said that water is the single most limiting ecological factor in tree growth and survival. Trees use or lose





(Continued from page 1)

water by two separate processes. The first is **transpiration**, where water is taken up by tree roots from the soil and evaporated through the pores or stomata on the surface of leaves. Transpiration is a physiological process responding to soil and atmospheric factors. It is a passive movement of water through the tree system which allows columns of water to move to great heights. Water movement through a tree is controlled by the tug-of-war between water availability and water movement in soil versus water loss from leaves. Trees can absorb between 10 to 150 gallons of water daily, yet of all the water absorbed by plants, less than 5% remains in the plant for growth. They rely on available water in the soil to "rehydrate" during the nighttime hours, replacing the water loss during the daytime hours. The second process is the interception of water by the surfaces of leaves, branches and trunks during rainfall, and its following evaporation. Together, these two processes are often referred to as



evapotranspiration. Both

transpiration and evaporation are strongly affected by the amount of sunlight, wind speed, temperature and humidity in the local environment, as trees turn water into mist.

Nearly every plant process relies on water to function properly. Water is required to put other elements into a form that is usable by the plant.

Almost all essential elements are ionic forms dissolved in water, giving them the ability to move to stems, branches, and leaves for energy. The goal of proper tree management is to prevent or reduce the impacts of water loss. If adequate soil moisture is available, a tree's water loss will go unnoticed as it is replaced naturally.

(Continued from page 2)

However, during dry conditions, soil moisture content is reduced to the point where tree roots can no longer pull the water molecules from the soil. This results in responses from the plant such as wilting, early fall color, scorching and other symptoms.



So how much water does a new tree really need after planting to survive? Natural rainfall and soil conditions vary, but

newly planted trees require approximately 1.5 inches of rain per week. This translates to 10 gallons per caliper inch, per week, from spring to autumn (Hirons, Andrew & Thomas, Peter 2018 Applied Tree Biology). For example, a 1.5inch caliper tree would need 15 gallons of water each week. This is especially true in urban settings. Root loss during transplanting reduces the tree's ability to supply water to its crown

and additional water deficiencies can result from impermeable surfaces preventing water from penetrating into the soil, or from the soil being overly compacted. As a result, one of the primary reasons for premature mortality in both newly planted and established trees is a water deficit.

To supplement the water needs of newly planted trees, people should be providing some level of irrigation. This is especially true during times of drought. No matter how well planted, new trees will not survive if they are not receiving a sufficient amount of water to complete their biological processes. The people responsible for watering need to be identified before the tree is planted. In most cases, a public tree is watered by municipal staff and privately planted trees are watered by property owners. There are many variations that exist beyond the municipal and private watering structure, including publicprivate partnerships and non-profit organizations, whose mission involves the care and watering of trees.

(Continued from page 3)

The big question most people ask is, "how much will this tree cost me to water?" An average water utility rate in Massachusetts is \$0.01 per gallon. Therefore, watering a newly planted tree 15 gallons a week, for roughly 26 weeks from spring to autumn, would be \$3.90 in total. Not a bad investment when you start to consider what it costs to purchase and plant the tree, and the return on investment the tree benefits will provide over its lifetime.

Stormwater

With luck, some watering needs are addressed by natural rainfall.
However, cities make it difficult for plants to receive rainwater, due to the increased amount of impervious surfaces. In an article in Landscape and Urban Planning, lead author Adam Berland states that these urban impervious surfaces convert precipitation to stormwater runoff, which causes water quality and quantity problems. In the US, cities are obligated to control sewer overflows under the Clean Water Act, and part of this process is to manage

stormwater runoff. Traditional stormwater management has relied on gray infrastructure such as piped conveyances to collect and move stormwater to treatment facilities or surface waters, but now cities are exploring green infrastructure such as trees, rain gardens, or bioretention areas to help manage



the water. The green infrastructure leverages the properties of soil and vegetation to enhance watershed detention capacity and manage stormwater volume.

(Continued from page 4)

According to the **PennState Extension** Roadside Guide to Clean Water, trees reduce stormwater and associated pollutant loads in several ways. Trees act like large umbrellas, intercepting rainfall in their canopies and often keeping that rain from ever reaching the ground. Deciduous trees can intercept 700 to 1,500 gallons of rainfall per year, while an evergreen can intercept more than 4,000 gallons per year. Large trees that produce canopy cover over paved surfaces such as streets, sidewalks, and parking lots provide the most stormwater benefit. Trees develop extensive, deep roots that increase infiltration of stormwater. Actively growing trees are natural water pumps that return water back to the atmosphere through evapotranspiration. A mature tree can transpire 100 gallons per day. Trees actively remove nutrients and other pollutants, such as heavy metals and chemicals (gas, oil, and pesticides) from polluted stormwater - a process called phytoremediation. Polluted stormwater can be treated and flooding reduced when the water is directed into areas planted with trees, instead of being piped directly into a stream. Trees are an especially attractive stormwater control measure because they provide a suite of ancillary social, economic and environmental benefits in addition to their stormwater role.



Urban areas tend to be densely populated with buildings, roads, and other infrastructure that can limit the amount of space for trees to grow. Moreover, the soils within urban landscapes are often

(Continued from page 5)

compacted by construction and heavy foot traffic, further inhibiting root growth and nutrient uptake. Many cities, unfortunately, lack adequate funding and resources for proper tree selection and maintenance, which can hinder the long-term health of urban tree canopies. The University of California Department of Agriculture and Natural Resources states that choosing a location for urban tree installation requires a lot of preparation and research beforehand, and failing to do so can lead to unsustainable and unintended consequences. The careful consideration of local ordinances and development density is crucial for efficiently balancing the needs of municipalities and private homeowners with the health of urban trees.

Research

So where do urban trees in Massachusetts currently get most of their water? To answer that question, a research team from Boston University, headed by Ian Smith, designed a study to determine

the source of the water found in trees in Boston. The research, published here, used natural abundance stable isotopes to estimate the proportional sources of water taken up by *Acer platanoides* street trees, including precipitation, irrigation, groundwater, and wastewater. They estimated water sources by comparing the natural abundance isotopic ratios of hydrogen and oxygen across potential water sources with water extracted from tree stem samples.

They found that during the summer of 2021, characterized by anomalously high rainfall, street trees predominantly utilized water from precipitation. Precipitation accounted for 72.3% of water extracted from trees sampled in August and 65.6% from trees sampled in September. Of the precipitation taken up by street trees, most water was traced back to large storm events in July, with July rainfall alone accounting for up to 84.0% of water found within street trees. They also found strong relationships between canopy cover

(Continued from page 6)

fractions and the proportion of precipitation lost to evapotranspiration across the study domain, supporting the conclusion that tree planting initiatives result in storm water mitigation benefits due to utilization of water from precipitation by urban vegetation.

The authors caution that although the mature trees studied here currently support their water demand from precipitation, the dependency of street trees on precipitation in moderate moisture cities may lead to increased water stress in a changing climate characterized by a higher frequency and severity of drought.

Speaking of drought, another study led by Climate Scientist Solomon Gebrechorkos and published in Nature, shows that the atmosphere's growing thirst for water is making droughts more severe, even in places where rainfall has stayed the same. The paper details how this "thirst" has made droughts 40% more severe across the globe over the course of the past 40 years. "Drought is based on the

difference between water supply (from precipitation) and atmospheric water demand. Including the latter reveals substantial increases in drought as the atmosphere warms," said coauthor Chris Funk, director of the Climate Hazards Center at UC Santa Barbara.

Droughts are usually blamed on a lack of rain. But scientists have discovered another factor at work: warming air is increasing the atmosphere's evaporative demand. Atmospheric evaporative demand (AED) acts like a sponge, soaking up moisture faster than it can be replaced. This can pull more water out of soils, rivers and plants. Hot air holds more moisture. That's why you can blow your hair dry even after a steamy shower. It's also what dumps rain in the tropics and sucks water up from the desert soils.

They found that AED has increased faster than precipitation rates, suggesting an alarming tendency toward drier conditions. "I find these results very concerning, but perhaps not terribly surprising," co-

(Continued on page 8)

(Continued from page 7)

author Chris Funk said. "Most of us are familiar with how air temperatures are increasing rapidly, but most people may not realize the connections between this warming and the desiccating influence of the atmosphere. In warm areas, raising the temperature by just a couple degrees can dramatically increase the atmosphere's ability to draw moisture from crops, rangelands and forests," he added.

Researchers are also interested in uncovering how evaporation and atmospheric demand interact with water supplies, not just rainfall patterns. Scientists will need to study how farmers, cities and ecosystems can adapt to a world where the atmosphere constantly demands more moisture.

Issues like this are bad enough by themselves, but are often compounded with other plant health problems as well. In an article in the Journal of Arboriculture, by Michigan State University Professors of Horticulture, Bert Cregg and Mary Dix, they found a direct relationship

between tree moisture stress and insect damage. They said to minimize moisture stress and reduce the likelihood of attack by insect pests, it is important to employ cultural techniques that increase or conserve soil moisture. Supplemental irrigation, where available, is the most direct means to increase available soil moisture. However, mulching can also be very effective in conserving soil moisture. Increasing tree pit size is another means of reducing tree moisture stress in urban settings, thus reducing insect damage and tree mortality.

The authors also added that tree selection for urban environments must consider responses to increased temperatures and evaporative demand. Tolerance of soil compaction, road salts and pollutants are frequently cited as requisite traits for urban trees, however tolerance of atmospheric drought will also influence the degree to which trees experience moisture stress, and their ultimate longevity.

(Continued from page 8)

Selecting trees that do well in an urban environment has always been daunting. To help ease this process, the <u>University of New Hampshire</u> Extension developed an online publication about drought tolerant plants for New England landscapes.

They state that rainfall patterns can be highly variable in New England. Periods of above-normal precipitation may be followed by weeks with little or none. While many established trees and shrubs can tolerate two weeks or even longer without water, they may show signs of reduced growth, nutrient deficiencies, and/or increased susceptibility to certain pests and diseases during a prolonged drought. New plants need frequent watering for several weeks or even months (for large shrubs/ trees) to establish their roots in the surrounding soil.

Homeowners and landscapers who want to minimize irrigation needs or who live in areas with potential water restrictions should select plants that can tolerate drought. Keep in mind that even drought-tolerant plants

need ample water initially to encourage root establishment. Once established, in most years they require little or no water other than natural rainfall. When no rain occurs for a period of two weeks or more during the growing season, check on shrubs, trees and perennials and water the root zone thoroughly if they are showing signs of wilting or stress.

This list of drought-tolerant plants was compiled using several references. The plants included are cold hardy to zone 3 or 4 and are generally considered to be desirable landscape plants (not weedy, invasive, brittle, or especially pestprone).

Combining the latest research with the knowledge of experienced field practitioners can help urban foresters make informed planting decisions. The weather may remain unpredictable, but using sound science and best practices, we can enhance our urban areas to better deal with these variables. Increasing available soil areas, planting drought tolerant species,

(Continued on page 10)

(Continued from page 9)

and providing mulch and other water saving enhancements will all contribute to urban forests that will be more prepared for whatever lies ahead.



References:

Berland, Adam (2017) The role of trees in urban stormwater management. *Landscape and Urban Planning* 162 167-177

Cregg, Bert (2001) Tree moisture stress and insect damage in urban areas in relation to heat island effects. *Journal of Arboriculture* 27(1)

Hirons, Andrew & Thomas, Peter 2018 Applied Tree Biology

Ponte, Sarah (2024) Interactions between management context and tree water use influence stormwater management potential of urban forests. *Urban Forestry & Urban Greening* 95 128321

Rosenberger, Lea (2025) Providing sufficient water for urban trees with limited root space during drought: Modeling of irrigation scenarios in a temperate climate. *Urban Forestry & Urban Greening* 104 128670

Smith, Ian (2024) Water sources for street trees in mesic urban environments. *Science of the Total Environment* 908 168411

https://www.purdue.edu/fnr/extension/purdue-landscape-report-how-do-trees-use-water/

https://extension.psu.edu/roadside-guide-toclean-water-urban-and-suburban-trees

https://ucanr.edu/blog/water-supply-securitywss/article/urban-trees-and-their-rolestormwater-management

https://phys.org/news/2025-06-atmosphere-thirst-droughts-worse.html

https://www.bu.edu/ioc/2021/05/22/where-do-urban-trees-get-their-water/

https://extension.unh.edu/resource/droughttolerant-plants-new-hampshire-landscapes-factsheet

Forester F@cus



A deeper look into today's Urban Forestry topics

A Surprise Tree Planting

Assistant District Attorney Cahill honored at Fall River Heritage State Park

Lieutenant Governor Kim Driscoll joined Bristol County District Attorney Thomas Quinn and Assistant District Attorney Courtney Cahill at Fall River Heritage State Park this fall to plant a tree in recognition of the significant impact ADA Cahill has made in addressing domestic violence, sexual violence and human trafficking.

Superior Court ADA
Courtney Cahill was
honored for her service
by the Executive Director
of the Governor's Council
to Address Sexual
Assault, Domestic
Violence, and Human
Trafficking.

The DCR Urban Forestry team, as well as the DCR Park Operations team, were on hand to facilitate the set up of the event,

including delivering the tree and supporting the planting.

It turns out that the event was a surprise for ADA Cahill and was kept secret until she arrived on site. Good work DCR and congratulations to ADA Courtney Cahill!

Photos: DCR



From Left: Bristol County ADA Courtney Cahill, DA Tom Quinn and Lt. Governor Kim Driscoll



CLIMATE RESILIENCY

Healey-Driscoll Administration Awards Over \$559,000 to Plant Trees in Gateway Cities

Grants Promote Tree Planting, Community Engagement, and Solutions to Combat Urban Heat

Boston - The Healey-Driscoll Administration today announced over \$559,000 in grants to support community green spaces, remove concrete and asphalt, and encourage local participation in Gateway Cities across Massachusetts. This funding will support three municipalities, six nonprofit organizations, and one high school through the Greening the Gateway Cities Program (GGCP).

A total of \$370,800 will be allocated through the GGCP Implementation Grant Program, which provides financial resources for municipalities and nonprofit organizations to plant and care for trees, remove impervious surfaces, and undertake related activities to enhance urban tree canopy. An additional \$188,747 will go to seven projects under the GGCP Non-Profit Partnership Grant Program, focusing on grassroots outreach to ensure more trees are planted where they're needed most.

(Continued from page 12)

"Tree plantings provide cleaner air, cooler streets, and healthier neighborhoods. These grants focus on investing in gateway cities, which have faced higher pollution levels and fewer green spaces," said **Energy and Environmental Affairs (EEA) Secretary Rebecca Tepper**. "By reducing heat, managing stormwater, and improving public health, this work supports the goals of our recently proposed Mass Ready Act, which aims to build stronger, more resilient communities across Massachusetts."

The Greening the Gateway Cities Program is a collaborative effort involving the Executive Office of Energy and Environmental Affairs (EEA) and the Department of Conservation and Recreation's (DCR) Urban & Community Forestry Program, along with local governments and community organizations. This program aims to plant trees in urban neighborhoods, improving air quality, reducing energy costs, preventing flooding, and alleviating the increasingly intense heat experienced in Massachusetts summers. Trees offer shade and cooling benefits, helping neighborhoods thrive even during the hottest days of the year.

"This \$100,000 investment in Springfield's urban canopy is about more than planting trees—it's about planting opportunity, equity, and resilience. Through this program, we're helping to cool our neighborhoods, reduce energy costs for residents, and improve air quality in areas that need it most," said **Senator Adam Gómez (Hampden District)**. This funding will ensure newly planted trees are properly watered and maintained, while also enabling the installation of green infrastructure in a hotspot identified for environmental justice. It's a smart, community-centered investment in public health, climate resilience, and the long-term vitality of Springfield."

"I am thrilled to hear that the state is making important environmental investments in some of its most vulnerable communities," said **Representative Joseph McGonagle (28th Middlesex)**. "Gateway Cities have long been overlooked, and it's time to recognize the value these cities have in the Commonwealth. Everett has been making strong efforts to improve

(Continued from page 13)

environmental assets in the city so I'm grateful the Governor and Lieutenant Governor are standing up to support us."



The GGCP Implementation Grant awardees are:

City of Everett- \$100,000 to consistently water public trees planted by the Greening the Gateway Cities Program.

One Holyoke- \$34,800 to consistently water public trees planted by the Greening the Gateway Cities Program.

Saint Bernard's High School- \$36,000 to remove impervious surfaces around a school, located in an identified hotspot, to facilitate tree planting by the Greening the Gateway Cities Program.

City of Salem- \$100,000 to water trees planted by the Greening the Gateway Cities Program and to plant trees in an identified hotspot.

City of Springfield- \$100,000 to water trees planted by the Greening the Gateway Cities Program and install green infrastructure to facilitate planting of shade trees in an identified hotspot.

The Non-Profit Partnership Grant awards empower nonprofit organizations to work directly with residents and business owners, helping them access free trees through the Greening the Gateway Cities Program. These partnerships are critical to maximizing the number of trees planted in neighborhoods that can benefit the most.

The GGCP Non-Profit Partnership Grant awardees are:

Growing Places- \$41,846 to raise community awareness of the GGCP in both Leominster and Fitchburg, conduct door-to-door canvassing, connect DCR foresters with new landowners for tree planting in environmental justice neighborhoods, mail literature, and undertake tabling at community events to increase knowledge of the many benefits of urban tree planting within both communities.

Lowell Parks & Conservation Trust- \$26,901.39 to conduct door-to-door canvassing, social media outreach, and tabling at community events to raise awareness of GGCP tree planting, as well as to conduct training and educational programs.

Salem Sound Coastwatch- \$30,000 to conduct outreach and generate interest in the GGCP program and recruit residents to have tree(s) planted on their property, as well as identify high-priority planting locations across the designated planting zone in coordination with DCR.

Revitalize CDC- \$60,000 to conduct outreach to generate interest in the GGCP program and communicate the benefits of urban canopy in environmental justice neighborhoods in Chicopee and Holyoke.

Wildlands Trust- \$30,000 to conduct social media and community outreach, literature mailings and tabling at community events to raise awareness of GGCP tree planting and communicate the benefits of urban canopy in environmental justice neighborhoods within Taunton.

For more information, visit:

https://www.mass.gov/news/healey-driscoll-administration-awards-over-559000-to-plant-trees-and-green-urban-spaces-in-gateway-cities

Species Spotlight Bur Oak, *Quercus macrocarpa*

Bur oak, also called mossycup oak, is a member of the white oak group and is native to the Great Plains and parts of eastern North America, including parts of New England. In his *Report on the Trees and Shrubs Growing Naturally in the Forests of Massachusetts*, G.B. Emerson discusses known bur oaks in



Stockbridge and elsewhere in the southern Berkshires. At the time of the Report, the distribution of bur oaks throughout Massachusetts was known to be patchy. It is hardy in zones 3a to 9b, making it suitable for all regions of Massachusetts. Bur oak is a large tree, reaching heights of 70-80 feet, with a comparable spread.

In youth, the tree is somewhat pyramidal, and becomes stout and broad with an open crown. In the wild, bur oak is found in dry uplands, ridges, or floodplains.

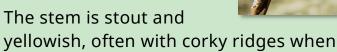
Leaves of bur oak are alternate, simple, and obovate, and range from four to ten

inches long. The lower half of the leaf has two to three deep lobes and the upper portion of the leaf has five to seven shallow, wider lobes. The tip of the leaf is broadly rounded.



During the growing season, leaves are a dark green color and shiny above. In the fall, the leaves turn yellow or brown.

Buds of bur oak are imbricate and conical to ovate. The tips of buds can be either sharp or blunt and are often pubescent. Stipules may be present around clustered buds.





young. The stem can be either smooth or downy.

Bark of bur oak is gray or gray-brown,

and rough, with deep ridges that develop as the tree ages.

Species Spotlight—Continued

(Continued from page 16)

Flowers are brown catkins and are not important ornamentally. The fruit of bur oak is a large, stalked, solitary acorn, three-fourths to two inches wide. It is ovoid, downy, and half of the acorn is covered with a cap that is fringed at the edge. The acorns provide food for wildlife and oaks generally support numerous insects that birds and other wildlife rely on for sustenance.

Bur oak and white oak are susceptible to similar diseases and insect pests, including anthracnose, leaf spots, powdery mildew, armillaria, many galls, and insects, such as pin oak sawfly, saddleback caterpillar, two-lined chestnut borers, and others. Even with these issues, bur oak is a tough tree for urban and suburban conditions.

Bur oak can be difficult to transplant, but it is tolerant of a variety of city conditions. It does best in full sun, in well-drained, alkaline soil. Bur oak requires a large space and may be best suited for parks or other large areas where it can thrive as a specimen tree. The cultivar 'Urban Pinnacle' has been developed for streetscapes. It grows to 55 feet and has a smaller acorn than the species.

Bur oak can make a great native addition to the urban forest, either



planted as a large specimen tree in an open area or as a cultivar in the streetscape.



Photos:

DCR, <u>Virginia Tech</u> & <u>UConn Plant Database</u>

Tree Stewards Training 2025

Worcester— This fall, the DCR Urban & Community Forestry (U&CF) Program continued the popular Tree Stewards Training Program. To try and make classes even more accessible, this year both trainings were held at a central location at the DCR Blackstone Heritage Visitor Center in Worcester, MA.



The trainings started with an update from DCR's U&CF Program Lead, Julie Coop, who provided information on the state's U&CF program, as well as resources for funding and education.

Gianna Hayes, Geographic
Information System Specialist from
DCR, provided information on free
online resources such as the <u>suite of</u>
<u>iTree tools</u>, so trainees can estimate



the value of the benefits that the trees in their communities provide. They also learned of software that can be used to conduct tree inventories.



(Continued from page 18)

Next the classes went outside to learn about young tree pruning and training by Jen Kettell of Radiant Leaf Consulting. Trainees improved trees along the greenway, with some hands on exposure to pruning young trees in need. Following the principles they learned in the class room, students were able to make decisions on future form and structure of trees through their pruning.

After lunch, the trainees then heard from Rich Parasiliti, the Tree Warden



from Northampton, who discussed Tree Boards and Ordinances or ByLaws for communities. They were very animated sessions, with a variety of questions centered around real world issues occurring in the student's home communities. Examples of what was working, or

For more information, visit:

what wasn't working, were shared by a variety of participants.



Each class concluded with two tree planting demonstrations by DCR's Mathew Cahill that took place along the greenway. A big thanks goes out to the local DCR Worcester tree planting crew for their assistance with the events!



https://www.mass.gov/info-details/urban-and-community-forestry

GGCP Fall Planting Season

This fall, the Greening the Gateway Cities Program (GGCP) planted on a reduced schedule, due to the drought conditions. However, crews

planted in locations that had a high need for trees, and provided water and maintenance to keep the trees



DCR Fitchburg crew installing trees around a multi-





DCR Lowell crew planting at a newly renovated playground.



(Continued from page 20)

growing strong. A big thanks to all the planting crews who put in the time and effort to make this program a continuing success each season!



Western Mass crew planting trees in Chicopee



Western Mass crew improving the city of Holyoke



DCR Honors UCF Forester Rachel DeMatte

In November 2025, the DCR
Performance Recognition Program
Recipients were announced. The list
included a member of the Urban and
Community Forestry team, Urban
Forester Rachel DeMatte!

Rachel, currently working as a regional supervisor for the Greening the Gateway Cities Program, but she has worked in several different positions within her 14 year career with the MA DCR.

Rachel began her career with DCR in 2011 as a seasonal tree planting laborer, she then went on to work full time with the agency with the ALB Eradication Program, and has now spent the last 11 years working with the GGCP. She received her Forestry degree at UMass Amherst, and she is an International Society of Arboriculture Certified Arborist.

She has been working tirelessly over the last decade to help improve Environmental Justice communities across the state, while coordinating personnel and sourcing the best trees for the planting program.



As the lead for a team of all female foresters, Rachel serves as an inspiration to future environmental professionals. Congratulations!





News and Stories from the Northeast Region

The <u>Forest Service Urban & Community Forestry Program</u> provides **Urban Tree News in the Northeast**, a collection of articles published in the media that have relevance to urban forestry in the Northeast.

<u>City living isn't good for a tree's microbiome, study shows. Here's what</u> that means

Boston's Food Forests Take Root as a Climate Equity Strategy

<u>How Is Climate Change Affecting New England? - Boston University Today</u>

Experts weigh in on logging's impact on New England forests

<u>How high-rise forests can transform city life – and make us happier</u>

Over \$12 Million Awarded to Protect Parks and Land Across State

<u>Healey-Driscoll Administration Announces Over \$6 Million in Land and Water Conservation Fund Grants</u>

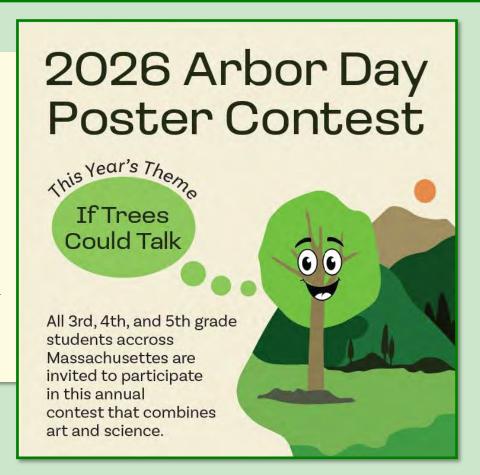
On The Horizon

| December 4 | Webinar: Yale Forest Forum — Changing Ideas of Forestry: Rethinking Old Growth https://yff.yale.edu/speaker/nancy-langston |
|---|---|
| December 9 | Webinar: TREE Fund — Assessing the Mechanical, Physiological and Carbon Accounting Effects of Different Pruning Regimens https://treefund.org/webinars |
| December 11 | Webinar: Realistic expectations for invasive species management https://www.emeraldashborer.info/eab-u |
| December 11 | Webinar: Trees & Solar Power – Understanding the Relationship http://www.urbanforestrytoday.org/ |
| January 6 -7 | Event: Tree Wardens Annual Conference—Sturbridge, MA https://www.masstreewardens.org/annual-conference/ |
| February 11 | Webinar: Spotted Lanternfly Webinar https://newenglandisa.org/events/spotted-lanternfly-webinar |
| UCFS URBAN & COMMUNITY FORESTRY SOCIETY | Newsletter: City Trees — a free bimonthly publication for anyone interested in urban and community forestry at any level. https://ucfsociety.org/city-trees/ |
| THIS OLD TREE PODCAST | Podcast: This Old Tree — Heritage trees and the human stories behind them. Old trees are awe inspiring links to the past that fire our historical imagination. https://www.thisoldtree.show/ |

The Arbor Day Poster Contest is Here!

For contest rules, information, and how to apply visit:

mass.gov/guides/annual -arborday-postercontest



The Citizen Forester is made possible by:

A grant from the USDA Forest Service Urban and Community Forestry Program and the Massachusetts Department of Conservation and Recreation, Bureau of Forestry

Department of Conservation and Recreation — Bureau of Forestry

10 Park Plaza, Suite 6620 Boston, MA 02116

Julie Coop, Urban and Community Forester julie.coop@mass.gov | (617) 626-1468

Mathew Cahill, Community Action Forester mathew.cahill@mass.gov | (617) 626-1464

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

Subscribe? Unsubscribe? You are receiving this because you have requested to receive *The Citizen Forester*. If this is an error or you do not wish to receive this newsletter, please email mathew.cahill@mass.gov

Maura T. Healey, Governor

Kimberley Driscoll, Lieutenant Governor

Rebecca L. Tepper, Secretary, Executive Office of Energy and Environmental Affairs

Nicole LaChapelle, Commissioner, Department of Conservation and Recreation

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





The Department of Conservation and Recreation prohibits discrimination in employment on the basis of race, color, creed, religion, national origin, ethnicity, gender, gender identity or expression, age, sexual orientation, Vietnam Era Veteran status, or disability.