

The Citizen Forester

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Book Review: Wasp and Bee Management: A Common-sense Approach

By Rick Harper Intended for a broad-based audience, this guide is an informative, enlightening, and practical resource. Composed by one of the foremost authorities in the field of structural/urban pest management, the guidelines and recommendations offer tremendous application to help reduce the risks associated with the inevitable human-stinging insect conflict that will arise for many, including arborists. Laid out in a user-friendly manner, this book is divided into two sections: the first chapter titled 'Bees and Wasps' and the second chapter titled 'Common Wasps and Bees of the Northeastern United States.' Chapter one outlines the hands-on strategies involved in a successful stinging insect management program in the "human environment" (p. vii), and chapter two provides for the successful identification and natural history of species of importance from the stinging insect community.

From the preliminary stages of this book, the author gives voice to probably one of the most important issues concerning stinging insects: human allergic reactions to stings. The author clearly makes the

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point that a "relatively small number" (p. 1) of wasps and bees pose actual risks to humans, and that certain population levels of stinging insects should be tolerated since they perform important environmental functions. The guide is quick to define, advocate, and establish protocols pertaining to the use of a sustainable, holistic, integrated pest management (IPM) approach. Accepted, published action thresholds, for example, relative to population levels of specific types of stinging insects, including honey bees (*Apis mellifera mellifera*,

bumble bees (*Bombus* spp.), and yellow jackets (*Vespula* spp.), are presented. Cultural management options (i.e., removal of food sources, harborage, etc.) are emphasized, as is the judicious use of minimal amounts of least-toxic insecticides.

Continuing through the first chapter of the book, detailed regular assessment (i.e., inspection and monitoring) guidelines are outlined pertaining to the most common types of stinging insect pests: paper wasps (*Polistes* spp.), yellow jackets, and bald-faced hornets

(*Dolichovespula maculata*). Frequently, shrubs are used in landscape settings as habitat for nest-construction by stinging insects such as bald-faced hornets. Potential conflicts with this insect for arborists and landscape professionals, especially when pruning or shearing suitable host plant material [i.e., arborvitae (*Thuja occidentalis*), burning-bush (*Euonymus alatus*), yew (*Taxus* spp.)], makes awareness for this insect during hot-summer months a priority. Similar inspection guidelines are also made relative to other lower-risk stinging insects, including honey bees, bumble bees, and cicada killer wasps (*Sphecius speciosus*).

Other integrated management options given emphasis include preventing the establishment and buildup of stinging insect populations through proper sanitation, food source elimination, nest exclusion/removal, and trapping. Discussion of the elimination of often-overlooked food sources, such as pet food, compost piles, and other protein sources, like dead animals, is outlined. Sources



A colony of honeybees that formed on a tree limb that was in a very overgrown thicket and well protected from the elements. It is about one foot across and 1.5 feet deep. Timothy Haley, USDA Forest Service, Bugwood.org

(Continued on page 2)

Book Review: Wasp and Bee Management (Continued)

for wood fiber that may be used in nest construction are also recommended for elimination, including dead trees, wood chips, and dead limbs. For members of the arboriculture community, knowing this additional benefit about common practices like dead-wooding and removals/take-downs of dying or dead trees may be of particular interest.

Practices sometimes employed to detect and remove stinging insect nests from structures are outlined and include the use of sensitive sound-detection equipment (i.e., a stethoscope) to detect feeding vibrations or buzzing and thermal imaging to locate stinging insect colonies in a structure. Arborists may take note as these same practices are occasionally employed to detect insect activity and decay in trees. Additionally, the author even includes a cautionary note about removal of stinging insect nests when working from heights with a ladder; arborists are more than familiar with the risks associated with the use of ladders and the care that must be taken. Once detected, nest removal using mechanical means (i.e., insect-specific commercial vacuums) and exclusion through void sealing are outlined in detail.

Arborists who offer landscape pest management services may be familiar with the use of traps for pest emergence timing and possibly even pest population reduction. From proper trap construction and placement, to specified baiting instructions, this guide details the use of select trapping strategies that include the use of food-based attractants as a pesticide-free means of temporarily reducing numbers of select stinging insects. Though specific pesticide recommendations are not



Planned honey bee colony relocation during a tree removal in Washington, D.C. Photo by Chef Ian Bens of the Fairmont Hotel. For the full story on the relocation of this colony, go to: www.tonitoni.org/photos27.html.

made in this book, detailed best management practices relative to a last-resort, chemical-based approach to the treatment of a stinging insect-related issue are outlined. Safe work practices such as the use of personal protective equipment (PPE), timing strategies regarding the treatment of stinging insect nests (i.e., may be most effective if carried out in the cool of night), and even proper use of certain chemical formulations (i.e., the use of dusts for the treatment of cavities or the use of long-distance, aerosol-based sprays for the treatment of stinging insect nests at a greater distance) are detailed.



Carpenter bee. Photo by David Cappaert, bug-wood.org.

Nicely wrapping up the stinging insect portion of this **guide is a seasonal IPM “checklist” detailing stinging insect monitoring and prevention strategies.**

The concerns and risks about stinging insect-conflict are further outlined in the final pages of chapter one. Injury and even death as a result of a sting are discussed, as is the fact that while most people have been stung, many individuals remain woefully unaware of their true sensitivity to a sting. Important first aid information, both in response to both single-sting and multiple-sting incidents, are detailed and include the use of cold compresses, oral/topical antihistamine treatments, and even the assistance of medical professionals. Though only a small number of people are identified as being highly allergic to a sting (approximately 2 out of 1000 according to this guide), anaphylactic shock and even death are discussed as possible outcomes and may occur in a relatively short period of time (15-30 minutes). Appropriately, the final page of this chapter is a two-sided, stinging-insect prevention/first aid summary.

As the name suggests, chapter two of this guide discusses **the identification and natural history of “Common Wasps and Bees of the Northeastern United States.”** After highlighting the benefits of stinging insects (i.e., they are important predators of pests; they pollinate over one-third of our food crops at an annual value estimated to be upwards of \$15 billion in US agriculture), the guide then delves into specific identification of over 20 groups

(Continued on page 3)

Book Review: Wasp and Bee Management (Continued)

and/or species of stinging insects. Some of these include yellow jackets, paper wasps, bald-faced hornets, honey bees, the Africanized honey bee (*Apis mellifera scutellata*), bumble bees, and carpenter bees (*Xylocopa virginica*). A color-coded risk-rating system and color photographs are used to help the reader more readily visualize and identify the **stinging insect(s) in question. The final pages of this chapter are a chart offering a useful “quick identification of wasps and bees” and their associated sting risk level.**

In summary, this guide represents a needed step in addressing both a current information shortage and lack of awareness relative to the risks associated with human-stinging insect conflicts and members of the arboriculture community. It spurs questions and thought about applications that translate directly to arboriculture, especially to arborists that offer a landscape IPM service. These applications include the emphasis of safe-work practices (i.e., the proper use of PPE, First Aid, etc.) and the commitment to both ongoing innovation and authentic practice of holistic pest management. Because of the information found in this book, perhaps in many communities across the United States where the use of pesticides is strongly discouraged select arborists may consider offering the service of addressing an outdoor stinging insect population with a commercial pest vacuum, instead of using a more traditional see-it and spray-it approach? Or perhaps a human-stinging insect conflict may be properly addressed, minimizing pain and suffering or even saving a life.

Gangloff-Kaufmann, J.L. 2011. Wasp and bee management: a common-sense approach. Cornell University. Ithaca, NY. 88 pp. ISBN 9781933395227

Rick Harper is Extension Assistant Professor of Urban & Community Forestry in the UMass Department of Environmental Conservation.

Grants

DCR Urban and Community Forestry Challenge Grants

Next 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.

Starting in 2016, funding for strategic tree planting grants will be tiered:

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

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.

Species Spotlight—Amur maackia, *Maackia amurensis*

By Mollie Freilicher, DCR This month, we are focusing on a lesser-known tree that one can find planted across the Commonwealth. Native to China, Japan, Korea, and far-eastern Russia, Amur maackia is a member of the pea family (Fabaceae) that is often planted for its mid-to-late-summer flowering and



bark is another distinctive feature of this tree, though this characteristic can be quite variable.

In June and July, the flowers of Amur maackia bloom in upright, racemes, 4-6 inches tall. Flowers are perfect, creamy-white—**Michael Dirr calls it “dull white”**—and are a half-inch long. They are not particularly showy, but they come into bloom at a time when few other trees are in flower.



Fruits are flat, brown pods, two-to-three inches long.

Amur maackia does not have any significant pests or diseases in the U.S. and foliage often looks great throughout the growing season. Quite adaptable to different pH levels and easily transplantable, Amur maackia grows best in well-drained soils in sunny locations, though it tolerate a variety of conditions. As a member of the pea family, it also fixes nitrogen.

Form: Mollie Freilicher; all other photos: UConn Plant Database



for its toughness. Paul W. Meyer, writing in *Arnoldia*, states, “*Maackia amurensis* is outstanding in its

promise as a tough and useful urban tree.” In its native range, Amur maackia grows in a variety of conditions, including along stream banks in sandy soils that are sometimes flooded and sometimes dry. It has been observed growing taller in the wild than we typically see in cultivation, where the tree reaches about 20 to 30 feet tall. Its form is small and rounded, with arching branches. It is hardy in USDA Zones 4 to 7.

Amur maackia is alternate, with pinnately compound leaves—typically 7 to 11 leaflets that are opposite, with a terminal leaflet at the end. The leaflets are oblong, with a rounded base and blunt point at the apex. As the leaves emerge, they are gray-green and turn dark green. There is



no fall color for the leaves. They typically drop off the tree after the first frost, while they are still green. Buds have two scales and are 1/4-inch tall and dark brown. Twigs are stout and gray-brown to black. They have prominent, diamond-shaped lenticels. The mildly exfoliating, brown to copper-colored



Growing on Trees

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, which provides urban forestry analysis and benefits assessment tools.



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

July 20, 2016 - Introducing i-Tree Landscape
 August 16, 2016 - **What's New in i-Tree ECO**
 September 20, 2016 - Looking at i-Tree HYDRO
 October, 19, 2016 - DESIGN and CANOPY
 November 16, 2016 i-Tree STREETS
 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 1 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](#).

July 13, 2016 | 1:00-2:15 p.m. ET
 NUCFAC Highlights: Climate change impacts and adaptive strategies

Lance Davisson, NUCFAC
 Graeme Lockaby, Auburn University and
 Wayne Zipperer, USDA Forest Service
 Andy Whitman, Manomet Center for Conservation Sciences

In addition to advising the Secretary of Agriculture on urban forestry and related issues, the National Urban and Community Forestry Advisory Council (NUCFAC) develops grant categories based on the Ten-Year Urban

Urban Forestry Today

Seeing the Urban Forest for the Trees

July 14, 2016 12:00 p.m. - 1:00 p.m.

Presenter: David J. Nowak, Ph.D., US Forest Service. From climate change, to an ever-expanding human population, to invasive pests, our urban centers are challenged. But trees can help! Join Dr. Nowak as he details the benefits that trees provide to society on a national (and global) scale, and how communicating this resource value is essential to improving urban forest management and community well-being.

To attend, visit www.joinwebinar.com and enter the ID code 123-644-723.

Upcoming sessions:

The Science and Practice of Cabling and Bracing
 September 1, 2016 | 12:00 p.m. – 1:00 p.m. ET

Presenter: Mark Reiland, University of Massachusetts
 To attend, visit www.joinwebinar.com and enter the ID code 116-178-939.

For more information, contact:

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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.

EPA Green Infrastructure Webcast Series

August 2016

When Green Goes Bad: Lessons Learned from Past Green Infrastructure Projects

www.epa.gov/green-infrastructure and click on [Webcasts](#)

Forestry Action Plan and recommends to the Forest Service innovative urban and community forestry research and projects that should be considered for funding. In this webinar, we highlight two climate-related projects funded through this process. For more details go to <http://www.fs.fed.us/research/urban-webinars/>.

Future Webinars

August 10, 2016 | 1:00 p.m.-2:15 p.m. ET

September 14, 2016 | 1:00pm-2:15pm ET

Growing on Trees

Growing Greener—in Pittsfield

The City of Pittsfield just completed a DCR Urban and Community Forestry Challenge grant (\$3,500) planting trees in Wellesley Park. The project is part of a multi-phase effort to re-tree the park, which is populated by aging silver maples. The project was initiated by residents surrounding the park and their project idea gained the support of Jim McGrath and the Office of Community Development. Working with local Mass. Certified Arborist and Pittsfield tree advocate (really a rockstar for trees in Pittsfield) Bob Persutti, the group, along with the city, held a tree care workshop. Park neighbors attended and learned about tree care, selection, and planting. The project culminated with a community tree planting in the park.



Interested in applying for a DCR Urban and Community Forestry Challenge Grant? Check out information on our [website](#) or contact Julie Coop, julie.coop@state.ma.us or 617-626-1468 or Mollie Freilicher mollie.freilicher@state.ma.us or 413-577-2966. The next application deadline is November 1, 2016.

From the New England Chapter- International Society of Arboriculture

ISA Exam Prep Course

This three-day course instructs on the sixteen components of the **ISA Arborists' Certification Study Guide**. The goal of the course is to prepare participants to take the ISA Certified Arborist exam.

When: Wednesday, October 19, 2016, 7:45 AM - Friday, October 21, 2016 4:30 PM ET
Where: Acton, MA
Registration: \$175. Contact Heather Leff, NEC-ISA, 978-844-0441 or heather@newenglandisa.org

DCR Arbor Day Poster Contest Winner Announced

The winner of this year's 5th Grade Arbor Day Poster Contest was from Petersham Center School. Read more at the [Harvard Forest Schoolyard Ecology blog](#).



Advanced Tree Risk Assessment

This comprehensive, two-day workshop covers Level 3 Advanced Tree Risk Assessments and is separated into two distinct components. The first day focuses on classroom activities covering risk theory and methods of non-invasive site and tree assessment and diagnosis. The second day is field-based and covers the use of a range of invasive diagnostic tools. Earn 15 ISA CEUs, including BCMA!

When: Thursday-Friday, August 18-19, 2016
Where: Hanover, NH
Registration: \$250. Contact Heather Leff, NEC-ISA, 978-844-0441 or heather@newenglandisa.org

UMass Extension Green School

Green School is coming this fall! Offered biennially, Green School is a great opportunity to learn the latest in one of three tracks—arboriculture, turf, and landscape management—earn a certificate, earn pesticide credits, and more.

The arboriculture track curriculum will help attendees learn to identify potential problems and to avoid being injured on the job. Topics of particular benefit to arborists include arboricultural safety standards, construction injury to trees, pruning, cabling and guying, insect and disease problems of trees, and tree risk identification and management. This track is designed especially for arborists, tree wardens, and municipal DPW workers.

For more information, go to: <https://ag.umass.edu/landscape/education/umass-extensions-green-school>

Tree City, Tree Line, and Tree Campus USA Awards Celebrated in Worcester

Thank You for your sponsorship, National Grid!

Representatives from communities across the Commonwealth gathered at the College of the Holy Cross in Worcester on June 15 to receive recognition for participating in the Tree City, Tree Line, and Tree Campus USA programs in 2015. National Grid generously sponsored the event, and the College of Holy Cross hosted the event at the Hogan Campus Center. Thank you!

The Tree City, Tree Line, and Tree Campus programs, sponsored by the Arbor Day Foundation and the USDA Forest Service, recognize communities, utilities, and college and university campuses for their management of trees. Eighty-three communities received Tree City USA recognition, including five communities that won Growth Awards. This year, the program recognized four Tree Campus USA participants and one Tree Line participant. First time participants include: Town of Rochester, City of Malden, Smith College, and UMass-Amherst. Congratulations!



Ted Heywood, Superintendent of Grounds, College of the Holy Cross, discussing the Roosevelt Tree, foreground, planted by President Theodore Roosevelt in 1905. Ted led a walk to the tree following the presentation of awards.

Tree City USA:	Framingham 25	Mattapoissett 8	South Hadley 21	Tree Campus USA
Amherst 29	Grafton 16	Medfield 3	Springfield 30	College of the Holy Cross
Andover 17	Great Barrington 4	Medford 18 G	Stoneham 16	Smith College
Arlington 14	Greenfield 14	Monson 2	Sturbridge 27	UMass-Amherst
Bedford 16	Groton 20	Nantucket 17	Sutton 16	UMass-Lowell
Belmont 30	Hanscom AFB 29	Natick 9	Swampscott 25	
Beverly 15	Haverhill 20	Needham 21	Wakefield 15	Tree Line USA
Boston 20	Hingham 28 G	Newburyport 20	Walpole 8	National Grid
Boxford 10	Holyoke 15	Newton 27	Warren 8	
Brockton 18	Ipswich 14	Northampton 9	Watertown 25	
Brookline 28	Lanesborough 11	Orleans 18	Wellesley 33	
Cambridge 24 G	Lawrence 14	Peabody 18	West Bridgewater 22	
Chatham 3	Leominster 18	Petersham 6	West Springfield 26 G	
Chelmsford 3	Lexington 27	Pittsfield 11	Westborough 7	
Chelsea 12	Longmeadow 14	Plymouth 27	Weston 13	
Chicopee 23	Lowell 18	Quincy 18	Weymouth 16	
Danvers 29	Ludlow 10	Reading 31	Winchester 5	
Dedham 7	Lynn 26	Rochester 1	Worcester 30 G	
Duxbury 25	Lynnfield 10	Salem 14		
Easton 24	Malden 1	Saugus 17		
Fall River 11	Marblehead 17	Sheffield 6		
Falmouth 19	Marion 19	Somerville 21		



Program sponsor National Grid with DCR Commissioner Leo Roy and Julie Coop, DCR Urban and Community Forestry Program Coordinator.



DCR Commissioner Leo Roy addresses the crowd



John Matheson, City Councilor, (right) representing first-time Tree City USA Malden.



Attendees listen to one of the morning speakers.

Gleanings

In The Mood for Drama? Go To an Urban Tree Hearing

By Cara Giaimo

June 1, 2016— Sometime last month, the street trees of Somerville, Massachusetts were overtaken by a strange crop. Seemingly overnight, vertical inhabitants of all sorts—sprawling neighborhood giants, slim sidewalk-shaders, even the occasional telephone pole—sprouted identical flyers. In inch-high all-caps, in standard bureaucratic font, the signs carried an ominous message: "NOTICE OF A PUBLIC HEARING," they read, "IN RELATION TO THE REMOVAL OF THIS TREE."

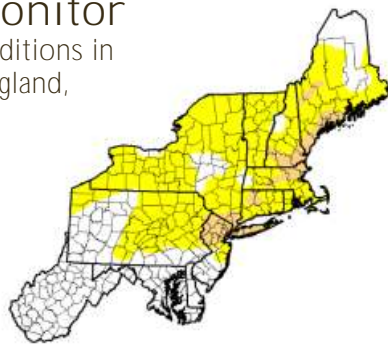
In another city, such an appearance might amount to a death sentence for the trees. It's easy to imagine busy urbanites walking or biking right past these signs, en route to work or the grocery store, thinking "that's too bad"—and then, months later when the chainsaws come, thinking it again. But this is Somerville, winner of a Tree City USA award at least 17 years running. Such honors do not come without a populace committed to tree preservation. So at 5:30 p.m. on a balmy Thursday, a good 50 people have stuffed themselves inside the city's Water Department Building to exercise their arboreal rights. Some have come straight from work, and roll up their shirtsleeves as they step into the stuffy room. Others tote in children, who crane their necks towards the Little League game across the street. The rows of folding chairs filled early, and stragglers are packed into the narrow aisles—meaning the tree hearing is, fittingly, standing room only. Read the full story at [AtlasObscura](#).

What is going on with white pines?

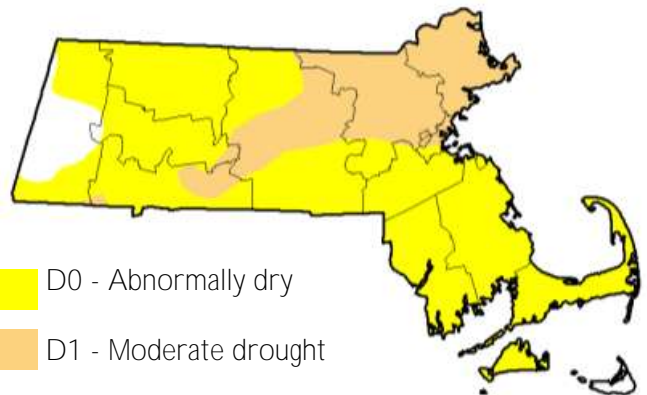
If you've noticed white pines in decline and dying in your area, you are not alone. Nick Brazee, of UMass Extension, recently put out a bulletin on what may be causing the decline. Check out the report here: [Dramatic needle browning and canopy dieback of eastern white pine \(Pinus strobus\) in southern New England](#), as well as some [management recommendations](#). Also, check the latest UMass Extension Landscape Message for information on gypsy moth: <https://ag.umass.edu/landscape/landscape-message>.

U.S. Drought Monitor

Check out drought conditions in Massachusetts, New England, and the U.S.



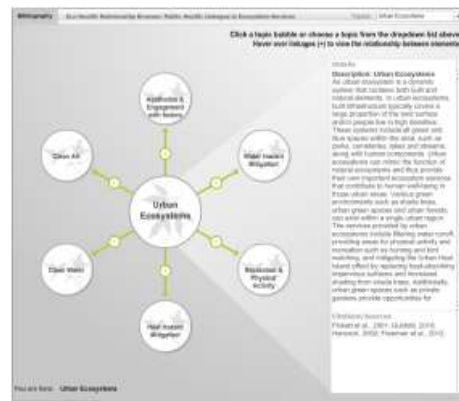
Conditions in the Northeast.



EnviroAtlas Eco-Health Relationships

The [Eco-Health Relationship Browser](#) illustrates scientific evidence for linkages between human health and ecosystem services. This interactive tool provides information about several of our nation's major ecosystems, the services they provide, and how those services, or their degradation and loss, may affect people.

[View the Browser demo video](#) to get a brief introduction to the Browser's components and navigation.



Gleanings

Henry Lappen: Trees and solar panels can coexist

Wednesday, June 08, 2016, [Daily Hampshire Gazette](#), Letter to the Editor

We on the Amherst Public Shade Tree Committee are receiving many requests to cut down town street trees to allow home owners to install solar panels on their roofs.

While we strongly support the use of solar energy, we believe that existing trees provide far greater ecological benefits.

In the last few months, we have received a half-dozen requests to take down large shade trees — oaks, maples, pines, etc. Homeowners say these trees are blocking sunlight from hitting the roof. But these are your public shade trees. They were planted to line our streets, cool our neighborhoods, and provide beauty as we pass by.

And they are already collecting solar energy. They are also cleaning the air we breathe, capturing and storing carbon, lessening flooding and erosion by catching storm-water runoff, blocking the wind, and cooling our streets, as mentioned above. They are also providing habitat for birds, butterflies, and other wildlife.

While all trees give benefits, street trees are particularly beneficial in towns and cities to reduce urban heat islands. According to a study in Argentina, streets without trees can be as much as 16 degrees hotter than

those that have them. **Wouldn't you rather walk along in 80 degree shade than in 96 degree sunlight this summer?**

There is an alternative to destroying our urban canopy: community solar. In community solar projects, homeowners join together and put their solar panels in one large solar electric plant.

Such projects are producing energy in Massachusetts towns such as Sterling and Taunton, and more are being planned, including one in Greenfield. By joining one of these, you can receive the benefits of lower electric bills, do your part to combat climate change, and still keep our town tree canopy. The benefits of cheaper electricity, net metering credits, and return on investment accrue to multiple homeowners.

We can start a project like this in Amherst, or you may be able to join one in another town such as the solar farms being built by Coop Power in Greenfield or the Clean Energy Collective in Worcester. And there are other groups that build projects themselves and sell you the electricity at a discount.

We can have all the advantages of trees and solar at the same time. Our arboreal citizens need and deserve our fullest protection. They will give back plenty in return!

Henry Lappen, Amherst

The author is the chair of the Amherst Public Shade Tree Committee.

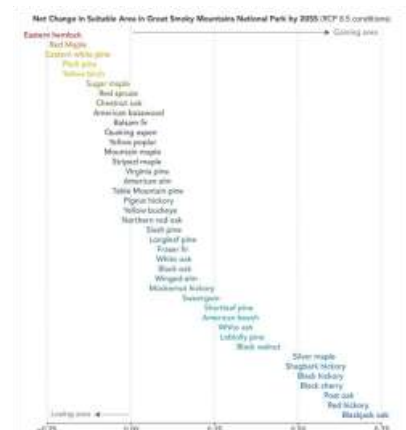
These are the Trees NASA Predicts will get Hit Hardest by Climate Change

By Josh Hrala

June 19, 2016—Ecologists studying the effects of climate change have completed a new study that details which U.S. trees will have the toughest time adapting as our world heats up. The findings suggest that while some species will thrive in a warmer environment, like red hickory and blackjack oak, some species - such as the eastern hemlock, red maple, and eastern white pine - will lose ground, which may eventually lead to them disappearing from their current habitats completely. But before jumping **into the new findings, it's important to note that American forests have had a tough time ever since European settlers arrived on the continent in the 17th century.** As developments and cities flourished to life, many forests were leveled and replanted, leaving them fragmented and weak.

[...] When their model was done crunching the numbers, the researchers created a [graph](#) that shows how the resulting conditions would change for 40 different species of trees that are present today inside the Great Smokey Mountains National Park.

[...] **Despite the soundness of the results, there is no word if the team's findings, which are detailed in the recently published book *Climate Change in Wildlands: Pioneering Approaches to Science and Management*, will be published in any peer-reviewed journals, so for now, were taking their word for it. Read the full article at [sciencealert.com](#).**



Gleanings

Urban Agriculture Toolkit

The face of agriculture is changing, and urban agriculture is one of the latest movements to challenge the traditional view of farming. From rooftop gardens, to aquaponics centers in old warehouses, to growing crops on abandoned properties, urban agriculture provides many benefits to a community, including closer neighborhood ties, reduced crime, education and job training opportunities, and healthy food access for low-income residents.

USDA Urban Agriculture Toolkit:

[Urban Agriculture Toolkit](#) (PDF, 8.5MB) - Lays out the common operational elements that most urban farmers must consider as they start up or grow their operations.

[Urban Agriculture Kick-off Webinar](#)  (May 3, 2016)

[USDA Urban Agriculture Toolkit: A Brief Overview](#) (PDF, 1.4MB)

[Urban Agriculture Toolkit Press Release](#) (April 29, 2016)

More information at: <http://www.usda.gov/wps/portal/usda/knownyourfarmer?navid=kyf-urban-agric>.

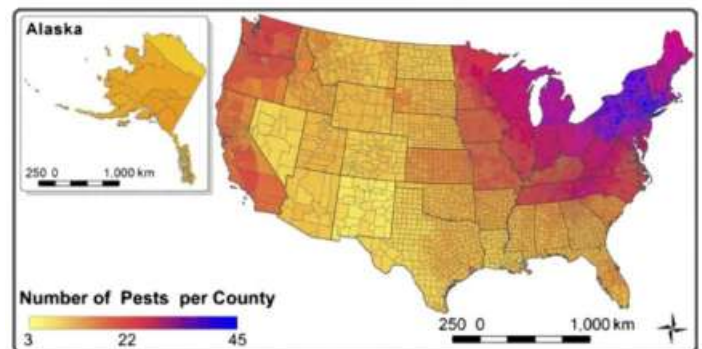
What It Would Take to Stop Invasive Pests from Destroying Millions of U.S. Trees

By Julian Spector

May 10, 2016—When cheap consumer goods arrive on American shores, they sometimes bring invasive parasites that go on to decimate forests and urban trees. A [new study](#), out Tuesday in the journal *Ecological Applications*, synthesizes the information available on the true costs of these species and lays out the best available policy responses.

Tree-killing insects have been hitching rides across the oceans for years, but the rate of imports to the U.S. has risen dramatically over the past three decades and now totals 25 million shipping containers a year. As trade expands, so too do the opportunities for parasites to cross over in wooden shipping material or nestled into imported plants. (Their increase is tracked in the chart below.) A hundred years ago, it was chestnut blight and Dutch Elm disease; today, leading pests include emerald ash borer, the Asian longhorned beetle, and hemlock

woolly adelgid. When these insects arrive and find trees that lack evolved defenses to them, they can wipe out entire species within a few decades. A startling 63 percent of U.S. forests are now at risk of [losing trees to invasive species](#). Read the full story at [CityLab](#).



Number of nonnative forest pests per county in the U.S. in 2012. Reproduced from Liebhold et al. 2013.

News Headlines in Brief

- [Millions of Caterpillars are Decimating the Trees in New England](#)
- [Gypsy Moth Population Surging](#)
- [Trees Stripped by Caterpillars Visible From Space](#)
- [EAB Research: Saving Trees Early Less Costly than Replacing Them](#)
- [The Oldest White Oak Tree in the Country is Dying—Basking Ridge, NJ](#)
- [Emerald Ash Borer Rears its Unwelcome Head in Worcester](#)
- [Hemlock Woolly Adelgid Ravages Trees, Closes Road in Smokies](#)
- [Baseball Bats Threatened by Invasive Beetle](#)

News

Holy Cross, Worcester Get Tree City State Honors

By Cyrus Moulton

June 15, 2016—Worcester - Prospective students visiting the College of the Holy Cross usually make their decision about applying to the school within 15 minutes, said Superintendent of Grounds Ted Heywood.

The state honored Mr. Heywood and the college Wednesday for providing those students with a very good first impression.

“That’s my Disneyland. Everything needs to be perfect in that area, because we do need to attract students,” said Mr. Heywood, describing the campus tree-lined main entrance of Linden Avenue. **“And I think if parents see the school can take care of the flowers and shrubs and trees, it can take care of their children, too.”**

The state Department of Conservation and Recreation honored Holy Cross as a Tree Campus and celebrated Worcester’s 30th anniversary as a Tree City at the agency’s Tree City USA Awards. [Read the full story at telegram.com.](http://telegram.com)

After Beetles and Bulldozers, New Urban Forest Emerges

By Cyrus Moulton

June 11, 2016—The SUVs, pickup trucks and cars in the cul-de-sac in Holden were packed with saplings stuffed **among car seats and brightly colored plastic children’s toys.** Meanwhile, Derek Lirange pushed mulch around the base of the young American hornbeam that had just found a new home. **“Don’t push the mulch up right against the bark,”** Mr. Lirange, of the Worcester Tree Initiative, told the crowd of young parents and neighborhood kids who had gathered. **“We don’t want a tree volcano, we want a doughnut of mulch.”** The hornbeam was among 90 trees, among them dogwoods, tulip trees, sweet gum, and serviceberry - species all approved by the Massachusetts Department of Conservation and Recreation - being distributed for planting within the 110-square-mile Asian longhorned beetle quarantine zone. But the quintessential suburban cul-de-sac hadn’t lost its tree cover to a devastating beetle infestation, but to the bulldozer that cleared land for the houses. [Read the full story about planting efforts and research underway by Clark University, at telegram.com.](http://telegram.com)

Hundreds of Island Trees Slated to Come Down Because of Gall Wasps

By Alex Elvin

June 2, 2016—As cynipid gall wasps continue wreaking havoc on the Vineyard, Eversource Energy hopes to protect its main utility lines by removing a large number of trees that it says are damaged or dying as a result of the outbreak, which began about four years ago. Hundreds of blue ribbons appeared along roads in Edgartown, Vineyard Haven, West Tisbury, Chilmark, and Aquinnah in May, marking the damaged or threatened trees. Eversource has identified about 800 trees so far and plans to seek permission from property owners to remove them beginning as early as this fall. Official notices went out to homeowners on Tuesday by mail. **“This is going to be a long process,”** Eversource spokesman Michael Durand said, speaking to the Gazette by telephone this week.

“Once we compile the list of trees, which we are still doing, not only do we have to get approval from towns, but we have to get approval from private homeowners if they own the tree.” [Read the full story at the Vineyard Gazette.](http://vineyardgazette.com)

Trees Are Very, Very Good for our Health. But in Many Cities, They’re Struggling

By Chris Mooney

June 17, 2016—**It’s a huge paradox.**

More and more research has been [pouring forth](#) lately demonstrating just how valuable trees in urban areas are to human health and well-being. A [new study](#) by U.S. Forest Service and University of California at Davis researchers underscores the point. They find that California’s 9.1 million urban street trees are worth \$1 billion in benefits per year to humans, in ways ranging from providing shade and pulling pollution out of the air, to retaining storm water and driving up real estate values.

“Given an average annual per-tree management cost of \$19.00, \$5.82 in benefit is returned for every \$1 spent,” the study concluded. It was published this week in the journal *Urban Forestry & Urban Greening*.

Yet the very same study finds that despite these large benefits, city streets in California are far from flush with trees — **they’re only at a little over a third of what would amount to “full stocking.”** This means people are reaping far fewer benefits from trees than they could. Even worse, it found that while total tree numbers grew, the density of street trees is actually in decline in the state over time. [Read the full article at the Washington Post.](http://washingtonpost.com)

Journal reference: E. Gregory McPherson, N. van Doorn, J. de Goede. Structure, function and value of street trees in California, USA. *Urban Forestry & Urban Greening*, 2016; 17: 104
DOI: [10.1016/j.ufug.2016.03.013](https://doi.org/10.1016/j.ufug.2016.03.013).

On the Horizon

- Jul 13 Urban Forest Connections webinar, <http://www.fs.fed.us/research/urban-webinars/>
- Jul 14 Urban Forestry Today webinar, www.joinwebinar.com and enter code **123-644-723**.
- Jul 20 i-Tree webinar: Introducing i-Tree Landscape, www.unri.org/webcasts/itreeconferences/
- Jul 22 Plant Health Care Workshop, Tree Care Industry Association, www.tcia.org/training
- Jul 28 Down to Earth Summer Conference, Massachusetts Nursery and Landscape Association, Walpole, MA, www.mnla.com/
- Aug 16 **i-Tree webinar: What's new in i-Tree Eco**, www.unri.org/webcasts/itreeconferences/
- Aug 18-19 Advanced Tree Risk Assessment, New England Chapter-ISA, Hanover, NH, www.newenglandisa.org
- Sept 1 Urban Forestry Today webinar, www.joinwebinar.com and enter code **116-178-939**.
- Sept 9-11 **Women's Tree Climbing Workshop, Petersham, MA**
- Sept 20 i-Tree webinar: Looking at i-Tree HYDRO, www.unri.org/webcasts/itreeconferences/
- Sept 20 Western Mass. Tree Wardens Dinner Meeting, Northampton, MA
- Sept 21 Saluting Branches, <http://www.salutingbranches.org/>
- Sept 27 Massachusetts Arborists Association Dinner Meeting, Framingham, MA, www.massarbor.org
- Oct 14-15 2016 Tree Steward Training, Petersham, MA
- Oct 19 i-Tree webinar: Using Design and Canopy, www.unri.org/webcasts/itreeconferences/
- Oct 19-21 Certified Arborist Prep Course, New England Chapter-ISA, Acton, MA, www.newenglandisa.org
- Nov 6-8 New England Chapter-ISA 50th Annual Conference, Burlington, VT, www.newenglandisa.org
- Nov 10-12 TCI Expo Tradeshow and Conference, www.tcia.org
- Nov 15 Society of Municipal Arborists Annual Conference, Indianapolis, IN, www.urban-forestry.com
- Nov 16 i-Tree webinar: i-Tree Streets, www.unri.org/webcasts/itreeconferences/
- Nov 16-17 Partners in Community Forestry Conference, Indianapolis, IN <https://www.arborday.org/programs/pcf/>
- Nov 30 – Dec 2 New England Grows, Boston, MA, www.newenglandgrows.org
- Nov 30 – Dec 2 American Society of Consulting Arborists Annual Conference, Boston, <http://www.asca-consultants.org/>
- Dec 21 i-Tree webinar: i-Tree Roundtable: Answering Your Questions About Using i-Tree, www.unri.org/webcasts/itreeconferences/

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

Leo Roy, 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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