

CONNECTICUT BOTANICAL SOCIETY newsletter



Fall 2018 Volume 45, Number 2

Coming to a Powerline Right-of-Way near You ...

BY THE CBS RIGHTS-OF-WAY SUBCOMMITTEE

THEY CALL IT MAINTENANCE,

but it's really a land-cover change unlike anything we've seen before. Throughout Connecticut (CT), the electrical utility company Eversource is clearing large areas in powerline corridors and rights-of-way (ROWs) of vegetation, covering them with coarse gravel. Dirt access lanes are being transformed into thick gravel-pack roads. Due to new safety and maintenance standards, structures will, from now on, be maintained and/or replaced using heavy equipment, which requires a strong platform - usually a thick gravel work pad, 10,000 feet square or larger. Eversource still uses temporary wooden mats for maintenance platforms in sensitive areas like wetlands, farmlands, and residential yards. And the company has also used wood matting in other upland habitat, but it generally does not do so unless there is a documented population of a rare species. Critical habitat and rare and uncommon natural communities that are not in wetlands are not offered this protection.

Utility ROWs are known for

their biodiversity. Because they are maintained in an early-successional state, they host a suite of species, many rare, that cannot survive in mature forest or regularly mown fields and



The new packed gravel access roads and pads on a right-of-way. Photo: CBS.

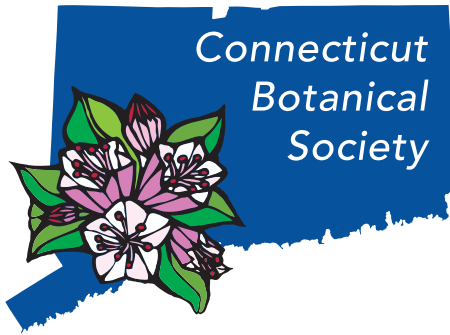
lawn. Among the most important and abundant upland critical habitat types that occur in ROWs are subacidic rocky summit/outcrops (on traprock, amphibolite, gabbro, and some other bedrock types), circumneutral rocky summit/outcrops (on marble bedrock), acidic rocky summit/outcrop (on granitic, pegmatitic, and siliceous bedrock among others), sand barren and sand-barren-like habitat, warm-season grassland, shrubland, and pitch pine woodland. Several types of critical wetland habitat also occur in ROWs, but the threats to them are

mitigated because of the temporary matting normally used in wetlands.

In 2015, the DEEP Natural Diversity Data Base conducted an analysis of the known state-endangered/threatened/special concern ("state-listed") species occurrences in and immediately adjacent to ROWs and counted approximately 350 occurrences of 167 species (80 listed plant species, 44 listed invertebrates, and 38 listed vertebrates). Adding recent rare plant discoveries of which the Committee is aware, there are now approximately 130 occurrences of at least 86 state-listed plants (26% of all state-listed plants) known to be in power line ROWs.

The CT Endangered Species Act (CT ESA) offers some protection for endangered and threatened species for "actions authorized, funded or performed by" a state agency (CGS Section 26-310). For example, if there is an occurrence of an endangered species on state property or where a permit is required from the Department of Energy and Environmental Protection (DEEP),

continued on page 3



Connecticut Botanical Society

Connecticut Botanical Society *Newsletter*
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The Connecticut Botanical Society, Inc., founded in 1903, is a non-profit 501(c)(3) corporation chartered in the State of Connecticut. Contact the president about tax-deductible contributions.

Visit the CBS web site:
www.ct-botanical-society.org

The CBS web site, created by Janet Novak, is visited by more than 1,000 people each day. The site provides an introduction to CBS and its activities, including field trips and meetings. The site also contains photo galleries, a guide to landscaping with native plants, and Newsletter articles.

We thank Janet Novak, Eleanor Saulys, Arieh Tal, and others for the excellent photos on the web site. CBS members are encouraged to submit web materials to: chris.wyse@cox.net

Newsletter design: Susan Lindberg



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Two More Conservation Victories

BY SIGRUN GADWA

Connecticut conservationists can breathe a sigh of relief. Two serious, large-scale threats to critical habitats have been averted. The first was the controversial proposal to expand the Tilcon quarry onto 72 acres of trap-rock terrain owned by the New Britain Water Company. CBS did a thorough technical review of the environmental sections of an approximately 400-page environmental report submitted by Tilcon, and we prepared detailed testimony for the state agencies reviewing the Tilcon proposal. We emphasized the exceptional biodiversity value and ecological integrity of the threatened resources and highlighted the newly discovered presence on the parcel of the very rare mountain fir-moss (*Huperzia appressa*), not observed in Connecticut since the 1880s. Sigrun Gadwa, chair of the CBS Conservation & Ecology Committee, spoke before the Council for Environmental Quality (CEQ) in Hartford in May, and letter reports were submitted to CEQ and the Water Planning Board (WPB). The letter to WPB, submitted on behalf of our Conservation & Ecology Committee and the Berlin Land Trust, emphasized the threats to multiple vernal pools and healthy

populations of state-listed Jefferson salamanders and eastern box turtles. New Britain Mayor Erin Stewart's recent withdrawal letter was the final nail in the coffin for this threat.

There has also been a positive resolution of the proposal to develop the last significant remnant of a rare Connecticut critical habitat, the North Haven Sand Plain. Located in Wallingford, the remarkably undisturbed approximately 25-acre parcel includes two critical habitats: dry acidic forest and sand barren. Seven members of the CBS Conservation & Ecology Committee contributed detailed testimony to the Wallingford Planning & Zoning Commission. The application has been withdrawn due to the unfavorable public response, and Allnex, the corporation that owns the land, is no longer willing to sell to the local excavator-developer, so we do not expect submission of a modified application. We especially thank two CBS board members, Nelson DeBarros and Charles Strasser, for persistently urging us to maintain hope and testify strongly in favor of sand plain protection.

Sigrun Gadwa chairs the CBS Conservation & Ecology Committee and runs Carya Ecological Services LLC.

A New Key to the Asteraceae of the Northeast

A new online interactive key to 186 species of northeastern composite plant species (Asteraceae), by Arieh Tal, is now operational at his website: <http://botphoto.com>. The key covers nearly all of the species most people are likely to encounter in New England, New York and adjacent states. The key is "dichotomous," but with lots of assistance in the form of detailed photographs of the plants, and links to an illustrated glossary. There is also an illustrated tutorial, that helps users understand the morphology of plants in the composite family. There is even assistance in how to use the key itself — detailed photos of six sample species are provided, and users unfamiliar with the key are encouraged to practice using it to identify one or more of the sample species. From the home page of botphoto.com, select the option for "Resources" under the Asteraceae section, and follow the prompts to the key.

Powerline

continued from page 1

the CT ESA applies. Otherwise, there is little or no legal protection for state-listed species. Moreover, many areas along ROWs have not been surveyed, so there is no record of what is there, and regulations protecting critical habitat for rare species have not been established in CT.

The rare plant occurrences currently documented probably represent only the tip-of-the-iceberg of the real numbers that exist in the ROWs. The Connecticut Siting Council, a quasi-judicial body charged with “balancing the need for adequate and reliable public utility services at the lowest reasonable cost with the need to protect the environment and ecology of the state,” oversees infrastructural changes like Eversource’s. However, DEEP’s policy of recommending surveys only for listed species whose presence is already documented in an area, combined with the CT Siting Council’s apparent indifference to the significant biodiversity of ROW upland habitats, and the fact that Eversource currently does not consider rare habitats and natural communities as resources worth protecting in their own right, is resulting in an imperfect storm of destruction of much critical habitat and many rare species populations.

The problem with the current approach to rare plant protection in transmission ROWs is well illustrated by one that passes through a state forest in coastal CT, where there is an exemplary meta-occurrence (population cluster) of sand blackberry (*Rubus cuneifolius*), special concern

in CT. Eversource replaced the old powerline structures there in 2015, but was able to preserve much of the sand blackberry occurrence by using the temporary wooden matting. Recently, however, Eversource determined that all wooden poles need to be replaced with metal poles and submitted a plan to the Connecticut Siting Council and DEEP that called for extensive



A large gravel-paved maintenance pad. Photo: CBS

cut-and-fill and gravelling over of this ROW habitat. Unknowing destruction of rare plant populations would have ensued but for a timely coincidence: a comprehensive rare plant survey was commissioned by land managers at the site just prior to the receipt of the plan for replacing all poles. The survey revealed landmark (very large) occurrences of two additional state special concern plants: Virginia copperleaf (*Acalypha virginica*) and Dillenius’ tick-trefoil (*Desmodium glabellum*). These populations were unknown to Eversource because their biologists had focused only on previously documented species in their surveys.

Eversource’s contractors have recently indicated their willingness to work with the land managers to take measures to preserve all of the

rare plant occurrences in the ROW at this site, and we hope they will follow through. The example of the earlier 2015 work among the forest’s sand blackberry populations illustrates that Eversource is capable of using temporary matting in upland habitat and leaving very little evidence of long-term disturbance to rare plants and critical habitats — *if* they elect to do it.

Rare plants may disappear for various reasons from suitable habitat and then reappear many years later as long as the suitable habitat has not been irreversibly altered (e.g., by replacing rocky outcrops with graveled-over roads and parking-lot-like landscape). If the native landscape and soil features of critical habitat are not destroyed, native rare plants that are not evidently present may reappear from the seed bank following some disturbance or by dispersal from another population (as may rare animals that require that habitat). This appears to have happened in a section of the above-mentioned state forest ROW that was not disturbed significantly by Eversource in 2015, where a state-endangered orchid reappeared after having not been observed for 22 years.

Common plants that occur in ROWs are also important. Composites, including abundant goldenrods (*Solidago* spp.) make up a significant component of ROW plant communities. They offer late-season nectar and pollen for wild bees, wasps, butterflies, moths, and beetles, which in turn are preyed upon by other invertebrates and vertebrates. Wild indigo (*Baptisia tinctoria*), *Lysimachia* species, and heaths that thrive in

continued on page 4

1. Comprehensive surveys, also called “de novo” surveys, are surveys for all rare species that might reasonably be expected to occur in a ROW section, based on habitat present, the known habitat affinities and phytogeography of the rare species known from a given region, as opposed to surveys focused only on the rare species previously documented from the ROW section or within a small geographic radius of it. The few de novo surveys of transmission ROWs of which we are aware that have been performed by qualified surveyors in the last 40 years have resulted in a disproportionately large number of new discoveries of rare plant and animal species occurrences, which strongly suggests that 1) large portions of transmission ROWs have not been extensively surveyed by qualified persons for rare species in the past, and 2) transmission ROWs are highly likely to host rare plant and animal species occurrences that have not been documented and reported.



Packed gravel deters most vegetation, but the invasive plant mugwort (*Artemisia vulgaris*) thrives — and spreads. Photo: B Sullivan.

Powerline

continued from page 3

4 ROWs provide critical nutrition to many rare insects (Wagner et al. 2014). Some of this rich diversity is now being covered with gravel that grows little but mugwort (*Artemisia vulgaris*), an invasive species.

We estimate, based on a GIS analysis of aerial photography from September 2017, that, as of that month, Eversource had cut and filled and graveled over nearly 1,000 acres of ROW habitat in the last 2-3 years, while having replaced only about 25% of their structures. This suggests that by the time they finish replacing structures they will have destroyed or profoundly degraded roughly 4,000 acres of ROW habitat, along with untold numbers of populations of rare species.

In addition to the impacts on plants, habitat fragmentation caused by the new packed gravel roads and pads poses a real threat to birds, the New England cottontail, and other wildlife. The shrubby component of powerline ROWs offers an oasis for declining shrubland birds, such as field sparrow, brown thrasher, eastern towhee, and blue-winged, chestnut-

sided, and prairie warblers (Askins and Field 2016). The dense thickets that often develop in these corridors have been a refuge for New England cottontails both as permanent habitat and as dispersal routes between habitat patches (Fenderson et al. 2014). These corridors offer habitat and connectivity among populations for eastern box turtles as well.

The CT Botanical Society (CBS) has been concerned about the threats to plants, plant communities, and associated wildlife in powerline ROWs for some time. In March of 2017, CBS President David Yih commented on Eversource's Petition 1293 to the CT Siting Council, which requested that no Certificate of Compatibility and Public Need (CCPN) be required for all transmission line maintenance being planned to comply with new National Electric Safety Code standards. Yih expressed that Eversource should be required to demonstrate the specific public need for each project in light of the damage to be done to "unique and valuable habitats." He further requested that ecological surveys be conducted before work commenced in areas that were known to have rare species, and that comprehensive surveys be done for

undocumented sections of ROW. He recommended that the temporary wooden matting Eversource uses in wetlands also be used in uplands rather than permanent gravel pads.

The Siting Council ruled on Petition 1293 that no CCPN was necessary, with some conditions. Eversource was required to file with the Council a sub-petition for each site-specific maintenance activity — including an impact statement and mitigation plan for wetlands, flood zones, natural diversity areas and vegetation management — and provide evidence that they had given a 30-day advance notice to affected towns and abutting landowners.

CBS's Conservation and Ecology Committee has designated a subcommittee to specifically address concerns in ROWs. The new ROW subcommittee provided extensive comments on a DEEP wetland permit application for work in the ROW corridor through Robbins Swamp, pointing out that Eversource had overlooked at least one rare plant population that would be impacted by the project. Again, this omission was evidently due to their focusing their surveys only on previously documented populations known to DEEP, instead of conducting a comprehensive survey for all rare species that would reasonably be expected to occur in this unique area. Because it was a DEEP-issued permit, the CT ESA applied, and there was a public comment period. The subcommittee plans to collaborate with other ecology-minded associations (e.g., birding, entomology, conservation organizations) and meet with Eversource to express our concerns.

What can you do?

1. Stay informed. Visit the CT Siting Council Website regularly. The Siting Council "is responsible for balancing the need for adequate and reliable public utility services ... with the need to protect the environment and

ecology of the state.” You can even receive email alerts about Council meetings and hearings.

2. Even if Eversource has a right-of-way through your land or through land you manage, you can still negotiate with them to minimize impacts. A number of landowners/managers have been granted some modifications and/or remediation of gravel areas. Eversource is required to provide 30-days advance notice to towns and abutting property owners.

3. Be sure to submit your documentation of threatened, endangered and special concern plants to the CT DEEP Natural Diversity Database. See: http://www.ct.gov/deep/cwp/view.asp?a=2702&q=323460&depNav_GID=1641. If no one knows about a rare plant or animal, it cannot be protected.

4. Talk to your legislators. Is the loss of valuable habitat being adequately considered along with the need for reliable utility services and lowest rates?

5. Demand that Eversource conduct comprehensive surveys for all potential Endangered/Threatened/Special Concern species and critical habitats and that they use methodologies that preserve both.

Works Cited

Askins, RA and CR Field. 2016. Rabbits and rebounding populations bring hope for shrubland birds. In Connecticut State of the Birds. The Connecticut Audubon Society.

Fenderson, LE, AE Kovach, JA Litvaitis, KM O'Brien, KM Boland, and WJ Jakubas. 2014. A multiscale analysis of gene flow for the New England cottontail, an imperiled habitat specialist in a fragmented landscape. *Ecology and Evolution*, Open Access.

Wagner, DL, KJ Metzler, SA Leicht-Young, and G Motzkin. 2014. Vegetation composition along a New England transmission line corridor and its implications for other trophic levels. *Forest Ecology and Management*, 327 (2014) 231-239.

The Connecticut Botanical Society's Rights-of-way Subcommittee is a part of its Conservation & Ecology Committee.

A New Bluet Species for Connecticut

This spring we heard from Stan Malcolm, former president of the Connecticut Entomological Society and an avid nature photographer. He attached a photo of an unusual species of *Houstonia* he'd seen at Rocky Neck State Park. His wife Julie had spotted it, and their daughter Elizabeth subsequently identified it as tiny bluet (*Houstonia pusilla*), not previously known in Connecticut. We circulated the photo to CBS experts for verification, and CBS Herbarium Committee Chair Sam Saulys quickly confirmed the identification in the field and took a specimen for the Herbarium. The New York Botan-

ical Garden and Arthur Haines of the New England Wild Flower Society concurred in the identification but pointed out that some authorities consider Delaware to be the northern limit of tiny bluet's range in the eastern states. Thus, though it occurs in New Jersey, New York, and now in Connecticut, tiny bluet is deemed "adventive" (recently arrived) in these states.



Chaffseed (*Schwalbea americana*) Reappears in New England

Plant conservation circles were abuzz this summer over the discovery on

Cape Cod of a large population (2,600 stems) of chaffseed (*Schwalbea americana*), a federally listed endangered species not seen in New England for over 40 years. In July, Doug McGrady, a CBS member and 15-year Plant Conservation Volunteer with the New England Wild Flower Society, returned to a spot where he'd seen a thistle late last year,



Federally endangered chaffseed (*Schwalbea americana*), rediscovered in New England this year. Photo: D. McGrady

to see if it might be the rare *Cirsium horridulum* (yellow thistle). "It was not, but I noticed this other oddball," he wrote. Oddball indeed — chaffseed was last observed in Massachu-

setts in 1965, over a half-century ago. It belongs to the largely parasitic

Orobanchaceae family and is a hemiparasitic plant. A report on Doug's find noted that "there are historic records of American chaffseed along coastal plains from Massachusetts to Louisiana, but populations declined over time due to habitat loss and fire suppression. Since chaffseed depends on partly-open habitat, it requires disturbance on the

landscape." Doug's response when we tried to make a fuss: "I don't know that congratulations are in order. I was simply in the right place at the right time."

1. McGrady's comments are from an email of 8/16/18.
2. Rare Plant Found on Cape Cod. 2018. Massachusetts Division of Fisheries and Wildlife and MassWildlife's Natural Heritage & Endangered Species Program. <https://www.mass.gov/news/rare-plant-found-on-cape-cod>. Accessed 9/20/18.

“Presalvage” and the Problem of Emerald Ash Borer

BY JOHN P. ANDERSON JR.

The word “presalvage” has turned up in some discussions and reports regarding the harvest of ash trees in response to the advent of the emerald ash borer (*Agrilus planipennis*) in North America. I have some training and experience in conservation and natural resource management, and I understand what salvage means as a forestry term, but when I started hearing about presalvage it just didn’t make any sense to me. What is presalvage, and is it an appropriate response to the emerald ash borer?

A walk through many woods in Connecticut today reveals a quiet devastation that will change them for a long time to come. The emerald ash borer (EAB) is damaging and killing native ash trees (*Fraxinus* spp.) throughout much of the state and eastern US (1). There are three native species found in Connecticut: white, black and green ash. Common trees of Connecticut woodlands and forests, they make up approximately 3 to 4% of all trees in the state and up to 20% of urban trees in some communities (2, 3). White ash is often associated with the early stages of forest regeneration and occurs in many of our forests and open woodlands, such as dry summits. It’s also widely planted as a shade or street tree. Green and black ash may be found in wetlands.

A native of east Asia, EAB was discovered in Detroit, Michigan and Windsor, Ontario in 2002 and quickly spread to many other states, arriving in Connecticut in 2012 (1, 2, 3). The beetle lays its eggs on the trunk of an ash tree, and when the larvae hatch out they bore into the outer bark and wood layers where they feed on nutrient-rich tissues, girdling the tree in three to five years (2, 3). After a year or two, the larvae pupate and emerge as adults primarily in June and July, exiting through the bark and leaving a distinctive D-shaped hole. They fly off

in search of a mate, lay eggs on more ash and continue their destructive cycle. Control has proven difficult.

Individual trees can be treated with insecticides, but treating large forest tracts is not considered practical due to the high cost and many negative effects to the environment and public health. Biological controls are being tried out but with limited success so far. Attempts to limit the spread of this beetle have been made by quarantining counties and states where the species now occurs so as to control the movement of wood that could be infected (4, 5). With many ash now dead or dying, removal of these trees has been ongoing. Safety is cited as the primary concern, especially for trees next to roads and trails (6). The unsightly aspect of the dead and dying is likely another consideration as is the economic loss of trees for both ornamental uses and wood products.

This brings me back to my previous concern: what the heck is presalvage? I first heard this term when I was contacted about logging on Dennis Hill State Park in Norfolk. State parks are not supposed to have commercial forest harvest operations and the town was notified (I chair the town’s Conservation Commission) the day after operations began. Two stands were to be cut; one has been completed at the time of this writing. Unlike for state forest harvests, there was no prior notice given to adjacent landowners or to the town. When I contacted the state forester who wrote the forestry plan and was supervising the cutting, he referred to this as a presalvage operation. As forester Jerry Milne explained it to me, all the ash are going to die in the state, so wouldn’t it be better to cut them now before they get infected, damaged and killed by the EAB. I was told no EAB were found in the stands to be cut but it had been found in towns several miles to the

south. So this did not appear to be a case of urgency. Yet this forester is not alone in concluding that this is the best practice, not only to preserve the value of the wood for sale, but to make harvesting the trees easier and safer than it would be once they were dead or dying. After several conversations with others, it seems that this may be the prevailing thought.

State Forester Christopher Martin (personal communication) told me that the State has no written policy for dealing with EAB, but follows Standard Operating Procedures and adaptive or emergency management (this means there are no requirements for public notice, review or comment). Because of what he sees as the imminent (meaning 3 to 5 years) loss of ash to EAB, the Forestry Department is doing a rapid assessment and marking of trees to be harvested. The reasoning, Martin said, for harvesting is cost and liability avoidance: the State can make some money on the sale of live trees now, rather than pay to have them removed after death. Salvage and presalvage began in 2014 at Putman State Park in Redding and to date over 50% of the high priority areas have been harvested. I was by told Martin that the State Park managers and staff of the Connecticut Agricultural Experiment Station were in agreement with this unwritten policy. This policy, however, seems to be generic and not site specific: for example, at Dennis Hill State Park there was no nearby or imminent EAB infestation and most of the ash were not near trails or other recreation areas.

Again, I came back to the word presalvage. Why not just call it a tree harvest or logging? The term “presalvage” suggests that the cutting is inevitable and therefore necessary, even urgent. Since there is not supposed to be commercial harvesting on state parks, or even forest harvest plans



LEFT: Presalvaged ash logs. RIGHT: Ash trees marked for cutting. Photos: J. Anderson

as on state forests, the term presalvage cutting may be an attempt to get around this issue, a practice that could be considered just part of regular park maintenance. Following up on these conversations, I researched what management options were recommended. What I found was that many states, including the CT DEEP on its website, *do not* recommend preemptive removal of ash from forests and woodlands, (3, 4, 7, 8)! Such practices will not slow the spread of this insect (7). Some states recommend reducing ash where the species makes up a large portion of the forest composition (9). However, research has revealed more rapid mortality in stands with lower densities of ash, due to the high concentration of beetles (10). And there may be unintended consequences: the loss of diverse seed sources for the next generation of ash, opening up areas to invasive plants, reduction of food and cover for native species, and the loss of potentially resistant varieties of ash. There is some hope that biological controls may allow some survival and eventually regeneration. There is also not 100% mortality of ash throughout its range and “lingering” trees continue to survive.

It is understandable that we have a sense of urgency to do something, any-

thing, to help our forest trees from the multiple bombardments of exotic insects and diseases, as well as pollution, invasive plants, and human disturbance. And removing hazard trees near trails, roads and recreation areas will be necessary. But sometimes we go too far and don't consider possible unintended consequences. The operation was a success, but the patient died!

As awful as it is that so many ash have and will die from EAB, I for one don't believe we should merely try to get the most economic value from their presumed demise. Not all ash trees will die, but how do we predict which ones will survive? There are other values to consider, ones that won't immediately have a dollar value. Like allowing the forest gaps from dead ash to regenerate naturally without the disturbance of heavy equipment. And leaving snags and downed logs for the benefit of wildlife. Let's leave our still healthy ash trees alone and let them live while they can, dispersing their seed, providing food and cover for a diversity of wildlife and beauty for us. Let's not presalvage trees that could have survived to provide these and other ecological values. Maybe, if some survive this onslaught (whether by beetle or man), a stronger, more resistant breed of ash will prevail.

Sources

1. National emerald ash borer information network. www.emeraldashborer.info/ accessed 09/12/2018.
2. Guidelines for preserving trees in the presence of the emerald ash borer. Cowles. 2012. Connecticut Agricultural Experiment Station. https://www.ct.gov/caes/lib/caes/documents/publications/fact_sheets/valley_laboratory/eab_fact_sheet_2012_cowles_locked.pdf accessed 09/12/2018.
3. General information on EAB in Connecticut. Connecticut Department of Energy & Environmental Protection. https://www.ct.gov/deep/cwp/view.asp?a=2697&q=464598&deepNav_GID=1631 accessed 09/12/2018.
4. Managing emerald ash borer in Connecticut. Connecticut Department of Energy & Environmental Protection. https://www.ct.gov/deep/cwp/view.asp?a=2697&q=523278&deep_GID=1631 accessed 09/11/2018.
5. Moving firewood: Federal quarantine information. National emerald ash borer information network. <http://www.emeraldashborer.info/moving-firewood.php> accessed 09/12/2018.
6. Officials warn of increasing danger of dead trees. 08/23/2018. Associated Press, Hartford. Published in the Republican-American. <http://www.rep-am.com/news/2018/08/23/officials-warn-of-increasing-danger-of-dead-trees/>
7. Emerald ash borer: information for forest landowners. Vermont Forest Health. June 2018. Vermont Department of Forests, Parks & Recreation. http://fpr.vermont.gov/sites/fpr/files/Forest_and_Forestry/Forest_Health/Library/EAB%20Landowner%20FAQs.pdf accessed 09/11/2018.
8. Important message to private landowners of Connecticut's woodlands regarding emerald ash borer. Connecticut Cooperative Extension System. http://www.ct.gov/deep/lib/deep/forestry/eab/eab_message_for_the_private_landowners_of_connecticut_linked_update.pdf accessed 09/11/2018.
9. Emerald ash borer and forest management. Revised May 2014. Wisconsin Department of Natural Resources.
10. Factors affecting the survival of ash (*Fraxinus* spp.) trees infested by emerald ash borer (*Agrilus planipennis*). 2013. Knight, K. S., et al. *Biological Invasions*. Vol. 12, pp. 371-383.

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Become a Plant Conservation Volunteer with the New England Wild Flower Society!

The New England Wild Flower Society is seeking enthusiastic people who have a commitment to plant conservation and protecting natural habitats to participate in the Plant Conservation Volunteer (PCV) Program. The PCV Program engages volunteers to collect information on rare plants and their habitats across all six New England states. The majority of the work focuses on rare plant monitoring, but there are also occasional opportunities to assist with invasive species removal, habitat management projects and botanical surveys that benefit rare plants. The Society also offers free field trips and some learning opportunities to PCVs. It's an excellent opportunity to put your botanical skills to work, learn more about the flora of New England, meet other botanists, and help preserve your state's natural heritage.

To apply, visit our website and fill out the electronic application by February 1st, 2019 to be considered for the 2019 field season <http://newenglandwild.org/conserve/saving-imperiled-plants/plant-conservation.html/>

Contact:

Laney Widener, New England Wild Flower Society

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