CONNECTICUT

Woodlands

FALL 2024

Creating on the NET

A MAGAZINE OF THE CONNECTICUT FOREST & PARK ASSOCIATION

Land Acknowledgment Statement

CFPA acknowledges we are on the traditional lands of the Mashantucket Pequot Tribal Nation, the Mohegans, the Eastern Pequot, Schaghticoke, Golden Hill Paugussett, Nipmuc, and Niantic peoples. We pay our respect to the Indigenous people who are no longer here due to colonization, forced relocation, disease, and warfare. We thank them for stewarding this land throughout generations. We recognize the continued presence of Indigenous people on this territory who have survived attempted genocide, and who still hold ties to the land spiritually and culturally. We shall be good stewards of the land we all call Quinnentucket, Connecticut.

CONTRIBUTOR'S *Spotlight*

Carole Cheah, an entomologist with the Connecticut Agricultural Experiment Station, is saving our riparian forests, one hemlock at a time. A pioneer in the use of Japanese ladybeetles to control hemlock woolly adelgid, her research shows that biological controls can be a safe and effective method to control invasive pests. We caught up with Dr. Cheah to learn more about her work.

What inspired your work as a research scientist, and your specialization in biological controls?
As a child, I was always intrigued and interested in animals and wanted to be a zoologist. The opportunity came in graduate school to specialize in applied entomology and conduct research that had the potential to help the environment and improve agriculture. The field of biological control was instantly appealing. It became the focus for my doctoral research and subsequent career as a research scientist, and has allowed me to combine field and laboratory research in an integrative approach.

In This Issue

Fall 2024 Volume 89/No. 4/ISSN #00106257

On the cover: Artist-in-Residence for the New England Trail Emma Aiken's nature journals reveal intimate worlds that most people miss.

You've worked with many partners on the ladybeetle project. How has your collaborative approach engendered greater success?
The most fulfilling aspect of my work has been sharing encouraging signs of hemlock recovery and providing the public with an alternative strategy for safely managing adelgid infestations without the use of chemicals. My hope is to have as many stakeholders as possible use this strategy by buying and releasing the ladybeetles, which are available commercially, to protect their own hemlock resources and in so doing, help hemlock conservation on a landscape scale.

Biological controls have been used to effectively control a variety of harmful pests and invasive species. Do they cause any known negative effects on the local environment?
Unfortunately, earlier releases of some agents, though well meaning, have been found to negatively impact non-target native species. It is imperative to do thorough research and careful assessments prior to releasing a biological control agent, and to use specialized natural enemies, predators, or parasitoids, which have narrow feeding niches, rather than generalists.

Do you envision a point when HWA is no longer a threat?
It is my hope that though HWA will quite likely always have a presence on our hemlocks, the exponential population explosions that devastated and stressed hemlock stands may be a thing of the past, allowing resilient hemlocks to recover naturally.

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Editor's Note

One Saturday morning in mid-April, a few months after we purchased our home in New Haven, a team of local high schoolers and a forestry professional arrived with four trees to plant in the narrow strip of grass between our sidewalks and the street. We had requested the trees from the Urban Resources Initiative, or URI, a community forestry nonprofit based at Yale. While the students were working, a neighbor stopped by to see what was going on; within minutes he had requested his own tree. Today, more than a dozen trees planted by URI crews line our street.

Over the years, we've cared for the trees—watered them, pruned them, protected them. I especially love watching songbirds each spring descend on our serviceberry to devour its tart, ruby fruit. (I have yet to get enough berries to make a jam, however).

Trees not only provide critical ecological services and social benefits, but they also mark time. When our children were born, we planted trees in celebration. When my father passed away, our family planted a memorial tree at the cemetery where he's buried. Today when I look at our street trees, I see not only how they have grown, but also how our family has grown.

What's so impressive to me about what URI is doing, however, isn't simply that they are planting trees, for free, for any New Haven resident who requests one—to date they have planted over 10,000 trees throughout the Elm City; that is obviously quite a feat. But it's the way URI engages the community as full and equal partners in the process that's truly changing this city. The work is not transactional; it's transformational.

This issue of Woodlands is filled with stories about people who are working to safeguard our trees and forests; people like Carole Cheah who is using biological controls to save our hemlocks, and the Connecticut Woodlands Conservation Corps, who spent the summer repairing and building hiking trails, footbridges, and rock stairs across the state. You'll also meet Emma Aiken, Artist-in-Residence for the NET, and learn about red maples—spectacular at this time of year—and our state's most common tree.

I'll see you outside,

Timothy Brown
Editor

Connecticut Woodlands

Timothy Brown
Editor

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Thanks to photo contributions from Emma Aiken, Carole Cheah, 2024 Connecticut Woodlands Conservation Corps members.

Sustainably printed on FSC certified paper using solar power and LED-UV curable inks, which don't release harmful VOCs into the atmosphere and can reduce energy consumption by 30% compared to conventional inks.

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THE VIEW FROM THE *Canopy*

BY ANDY BICKING

Connecticut is beautiful, resplendent with natural resources. As the third smallest state in the union, our land of steady habits ranks 25th in miles of hiking trails and 16th by percentage of forest cover. These data are even more compelling when one considers that we rank fourth in population density and 14th in cultural diversity. We have much to be proud of. When you put it all together, CFPA's mission to connect people to forests and parks and ensure their protection for future generations becomes not just relevant, but essential. If we can succeed here, conservation can advance anywhere.

And we are. Every Connecticut resident is within a 10-minute drive of a state park or forest and a 30-minute drive of a Blue-Blazed Hiking Trail. But as most lovers of the woods will tell you, there is still more work to do; climate change, poorly planned development, and deep inequities in our society threaten our natural environment and our access to it. Addressing these dynamics is not simple. Thoughtful and holistic strategies are needed to ensure ecological health and the resilience of outdoor spaces.

I've found inspiration in the words and works of our Artist-in-Residence for the New England Trail, Emma Aiken. In this issue, she shares her wisdom about the power of slowing down and observing what is around you. Similarly, in my first nine months as CFPA's Executive Director, I've enjoyed meeting and learning from our members and partners. Where our heart-full and hands-on organization goes from here is coming into focus.

Our Trail Program is maintaining and enhancing its 95-year focus on the Blue Blazed Hiking Trails. Enshrined in state law, this remarkable network is something to be cherished and protected. At the same time, we must make sure that access to the trails and other outdoor spaces is extended into urban communities. We also have an opportunity to grow our family by engaging recreational users from outside of the hiking community in constructive dialogue about the uses of public land.

We are restructuring our Education Program with the award-winning Master Woodlands Manager program at its center. People of all ages can learn about the sustainable management of trees and forests and connect with meaningful opportunities to put their knowledge into practice and make positive impact on the many environmental challenges we face—climate stress, habitat diversity, and invasive species and disease, to name a few.

Public policy to protect and improve Connecticut's natural resources and recreational access is core to our DNA. State bonding for parks and open space, the Passport to the Parks program that ensures all state residents can access state parks and forests at no charge, and protecting land owned by the Department of Energy and Environmental Protection from being conveyed to private interests remain critical. We will also advocate for the many state and federal programs that advance our mission.

As much as I've enjoyed planning for the future, on the cusp of our 130th anniversary, I'm in awe of CFPA's impact over time. One theme emerges as a common thread: The roots of our successes are our relationships with one another. CFPA can do what it does because there is an educated and informed public that cares deeply about its experience on trails and in forests and parks. Your support, partnership and time spent volunteering drives our organization and the movement we collectively represent. Together, we are acting on our values and caring for the land that we love.

See you on the trail!

Andy Bicking is the Executive Director of CFPA.

Fall Brings Fresh Faces and New Goals to the Master Woodland Manager Program

As the air cools and the leaves begin to change, the Master Woodland Manager (MWM) Program is kicking off its fourth year with renewed enthusiasm and a dynamic new cohort of 50 dedicated students hailing from 37 towns from across Connecticut; from North Stonington to Southbury, East Haddam to West Haven. CFPA awarded scholarships to 13 participants.

The new cohort is as diverse as it is dedicated. Participants include individuals eager to enhance their land stewardship; board members and trail managers from local land trusts seeking to make informed management decisions; active members of conservation commissions; classroom teachers and environmental educators who aim to integrate what they learn in this program into their own lessons; and Individuals involved with organizations focused on native plants, pollinator pathways, and food security. Even a licensed arborist and a certified sawyer are participating, adding their technical skills to the mix. This diverse background promises a vibrant and collaborative learning environment, enriching the program with a wide range of perspectives and experiences.

In addition to foundational courses in forest ecology, climate change, forest health, wildlife, and management practices, the refreshed curriculum includes exciting new programs on fire ecology, tree health in urban and suburban communities, and non-timber forest products, such as mushrooms and maple syrup. The program began in early September at Sessions Woods Wildlife Management Area in Burlington where students learned essential forest measurement techniques, setting the stage for a year of exploration and growth.

With its updated curriculum and a diverse, experienced cohort, the Master Woodland Manager Program is set for another impactful year. It's a fantastic opportunity for anyone passionate about woodland conservation to make a difference and connect with a community dedicated to preserving Connecticut's natural resources.

For more information about how you can get involved, please contact education@ctwoodlands.org.

Saving Connecticut's Hemlocks

A small ladybeetle is helping scientists conserve these iconic trees

By Carole Cheah

A mighty river winds its way through northwestern Connecticut. Emerging from narrow river valleys flanked by steep forested hillsides, the magnificent Farmington River is characterized by rocky stretches, riffles, and rapids that harbor cold water fisheries as it travels through undeveloped forest and past quaint small towns. This is the land of the Massaco people who fished and lived beside these waters for millennia before colonization. These riparian forests hold an abundance of evergreens, including towering hemlocks and white pine. Riparian forests, especially with high eastern hemlock components, are important conservation areas and a focus for protection.

In 1994, the National Park Service designated the Upper Farmington River, which stretches from the Goodwin Dam in Hartland to New Hartford, as the nation's first Partnership Wild and Scenic River (PWSR) renowned for its free-flowing nature, high water quality, incredible biodiversity, historic and cultural landmarks, and accessibility for recreation. Today that designation includes nearly 70 miles of the Lower Farmington River as well as its cold water tributary, Salmon Brook. Hemlock stands along the Lower Farmington and its tributaries are less abundant compared to the upper sections, but impressive, extensive stands still occur here.

Sasajiscymnus tsugae on HWA-infested hemlock after release.

Our native eastern hemlock (*Tsuga canadensis*), a long-lived, shade-tolerant conifer, is a critical ecosystem anchor for natural communities and provides important habitat for many wildlife species. Hemlocks are adapted to a variety of sites and soil types from ridges to lowlands, but favor cool, moist, well-drained soils and are found along many of Connecticut's rivers and streams. Their shade helps to mitigate extreme temperature fluctuations, protecting native brook trout streams prized by fishermen. The northern spring salamander, a threatened species, can only survive in headwater streams shaded by healthy hemlocks. The Blackburnian warbler is an indicator species for healthy hemlock canopies in which it breeds. But

our native hemlocks are vulnerable to an invasive and highly destructive non-native pest—the hemlock woolly adelgid (HWA).

This exotic insect, accidentally introduced from southern Japan into Virginia in the early 1950s, specifically attacks and feeds on native eastern and Carolina hemlocks. Hemlocks can perish in just a few years with the rapid buildup of HWA populations, which drain the tree's storage reserves, causing tip dieback. This weakens the tree, making it vulnerable to secondary pests like the native hemlock borer in stressed dry sites. Prolonged drought also exacerbates the impacts of HWA and other hemlock pests.

Hemlock woolly adelgid was first reported in Connecticut in 1985 and quickly spread, resulting in extensive hemlock mortality by the late 1990s, especially in southern and central Connecticut and along the Connecticut River. Infestations of HWA became entrenched and spread throughout the hemlock's natural range from Maine to Georgia, Nova Scotia to Michigan. The very survival of hemlocks was in doubt.

Longitudinal studies on the impacts of subzero temperatures on HWA survival have shown that significant winter mortality can occur during prolonged subzero daily temperatures and sudden polar vortex events. But the distribution and frequency of polar vortex outbreaks are unpredictable. For example, in the northwest corner of Connecticut, the coldest part of the state, absolute minimum daily winter temperatures must reach minus 11.2°F to achieve 90% HWA mortality while lesser subzero temperatures can equally kill HWA towards the coast. While cold temperatures can reduce insect stress on hemlocks, these natural mortality events alone cannot eliminate HWA populations as other non-impacted regions remain reservoirs for reinvasions. Recent successive warm winters have also resulted in new widespread

Top: Jill Humphreys (CT DEEP) (L) and Lori Lichtenauer (now CT Audubon) release ladybeetles at the American Legion State Forest in Barkhamsted. Above: Volunteers Roger Behrens (L) and Ralph Scarpino, releasing *S. tsugae* along the Upper Farmington River.

HWA invasions in all areas of the state. This crisis demands a viable strategy to manage HWA resurgence without chemicals, especially in sensitive riparian forests around reservoirs, feeder brooks, lakes, and wetlands.

Connecticut has developed a community strategy with diverse partners which is now being embraced and implemented in collaboration with state, private, non-profit, municipalities, and other stakeholders. At the heart of this plan is the tiny Japanese specialist ladybeetle *Sasajiscymnus (Pseudoscymnus) tsugae*, a predator of HWA first described by Japanese and Connecticut scientists. It was imported for research at the Connecticut Agricultural Experiment Station (CAES) in Windsor in 1994 and federally approved for the first release in 1995. It was mass reared for thousands of Connecticut releases through 2001 to mitigate HWA damage. Research by CAES scientists showed that both adults and larvae feed continuously on all stages of HWA from spring to mid-fall. (This species can overwinter in subzero winters). More than 176,000 predator releases were made throughout Connecticut from 1995-2007 in 26 forest sites to counter initial explosive infestations of HWA. After more than two decades, many original hemlocks in these early heavily infested sites have survived—and even thrived—despite heavy pressure from

S. tsugae, shipped from Tree Savers, prepared for release.

An adult ladybeetle, *S. tsugae*, feeds on HWA eggs.

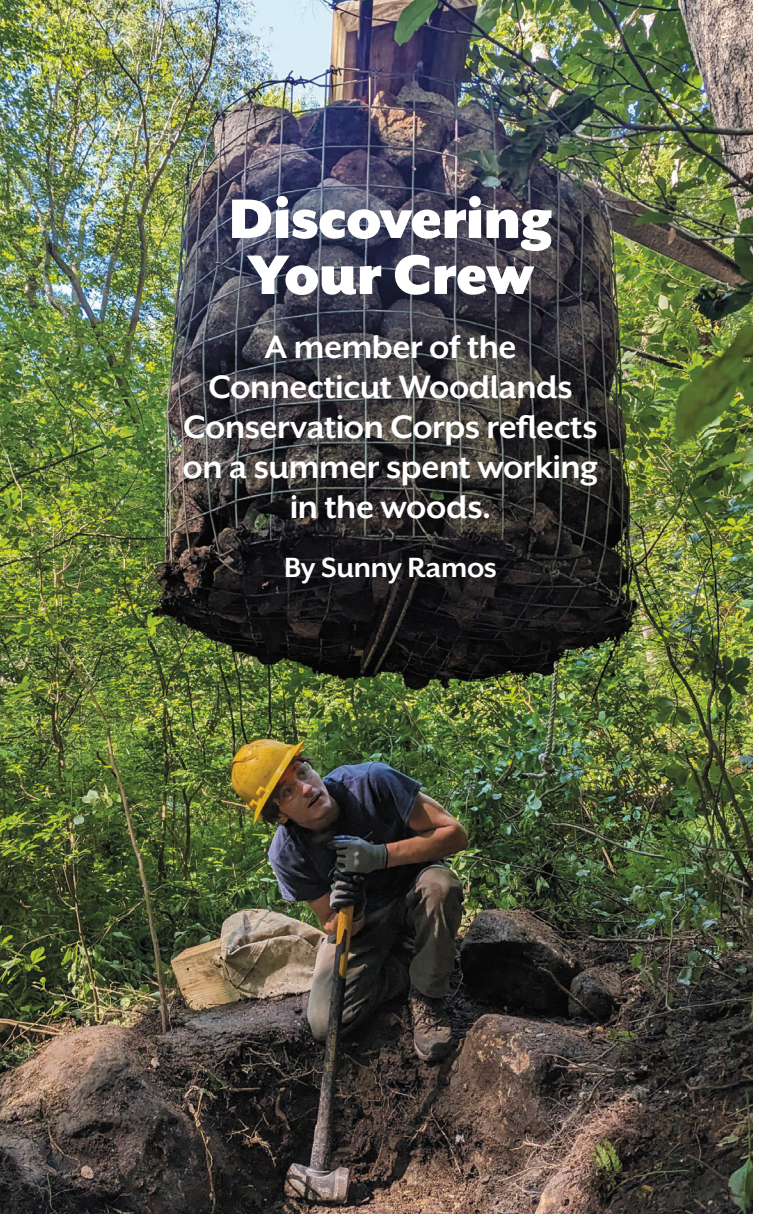
co-infestations of elongate hemlock scale, periodic severe drought, and secondary hemlock borer outbreaks. Recovery has persisted to this day and is evidence that *S. tsugae* is an effective, environmentally-friendly strategy to suppress HWA invasions, allowing hemlocks to recover without resorting to chemical use. This approach is particularly important for HWA management in riparian areas and water company lands where the use of chemicals is prohibited.

In 2017, I began to investigate the feasibility of small-scale biological control releases following a polar vortex event the previous year that resulted in a staggering 97% winter mortality of HWA statewide. Beetles were donated for research from the country's sole commercial rearing company, Tree Savers. Cooperative implementation involving foresters from the Connecticut Department of Energy and Environmental Protection, private foresters, and land trusts showed that the introduction of a few hundred beetles at the optimal time for impact on HWA reproduction could be a viable strategy to suppress HWA infestations and aid in hemlock recovery. These community releases are especially effective in further reducing the spread of HWA populations in new sites after significant winter mortality. Recent collaborations in the use of *S. tsugae* to control HWA along the Upper Farmington, Lower Farmington, and Salmon Brook, are helping to protect miles of important hemlock watershed forests on town open space; state parks, forests, and wildlife management areas; land trust preserves; and commercially-owned recreational lands. Beetles purchased from Tree Savers are released strategically on higher densities of HWA—100 beetles at a time—along rivers and streams where HWA survival is slightly higher after a severe winter.

Today, the eastern hemlock is Connecticut's most abundant conifer species according to the most recent U.S. Forest Service inventory analyses, despite dire predictions of hemlock extirpation when HWA ravaged the state in the 1990s, increasingly warmer winters, and the added stressors of periodic serious drought and other pests. Connecticut is the first state to bring together state agencies, towns, water companies, land trusts, and private preserves and organizations to apply biological controls to protect hemlocks on a landscape scale. Our collaborative practical approach is gaining popularity as a viable and effective strategy to safely manage the hemlock woolly adelgid and giving hope for a future with hemlocks.

Carole Cheah is a research entomologist with the Valley Laboratory, Connecticut Agricultural Experiment Station in Windsor. She has spent several decades studying and implementing hemlock woolly adelgid biological control to save Connecticut's hemlocks.

Dr. Cheah wishes to thank the following partners whose support has been vital to this project: National Park Service, Farmington River Coordinating Committee, Lower Farmington River Salmon Brook Wild and Scenic Committee, diverse partners throughout Connecticut, and Tree Savers.



Discovering Your Crew

A member of the Connecticut Woodlands Conservation Corps reflects on a summer spent working in the woods.

By Sunny Ramos

Greater writers than I have captured the serene quiet of Connecticut trails. It seems that as long as there have been those to enshroud in their calm beauty, the woods have provided a refuge for any wandering soul.

It may be surprising, then, that I find amongst the mountain laurels and towering pines a community unlike any I've known. As a member of this summer's Connecticut Woodlands Conservation Corps, I've learned as much about myself as I have about my crew. Despite being from all over Connecticut and New York, with varying backgrounds and trail experience, we've become fast friends and excellent coworkers. These people have taught me to live deliberately. No one wants summer to end.

The hourlong drive to Peoples State Forest, where we will spend the next eight days, is an opportunity to catch up with members of the Rock Barbarians, one of two summer 2024 trail work crews. Peoples is one of several state forests in Barkhamsted, a quiet, historical town in northern Connecticut. The campground entrance sits across from the beautiful Farmington River, a welcome recess after long days spent hauling rocks and hiking tools.

Setting up camp and idly chatting re-energizes our crew after a scrambled morning spent organizing tools, learning the details of our assignment, and buying food for the week. The campsite is situated in a grove of impossibly tall pines that hug the central fire pit like impassive guardians. I hear about Jane's weekend and then Nicole's before the conversation shifts by way of laughter. My crew is bright, quick-witted, and hilarious, and the hole left in my heart when we're apart fills faster than we could do with a shovel when we reunite.

Typical mornings smell of oatmeal and peanut butter. The air is energized. This work would be difficult for any motley crew. But this job takes more than sheer determination and strength; it also demands perspective. In every crew member's eyes, I see a vision of a smooth rock staircase climb at the beginning of the Jesse Girard Trail's right branch.

Building a rock staircase is backbreaking work. The inimitable Wayne Fogg, leader of the CFPA volunteer crew "The Rock Stars," says that trail rocks must be "at least 150 to 300 pounds." Moving rocks of that size takes a ton of effort. They must be lashed to the

highline rig and then quarried into position. Raw grit is important, but when it comes to safety, trust and communication go a lot further than hard hats and gloves. That trust isn't just built at the worksite; it comes together piece by piece in the form of shared jokes, hardships, and life-changing experiences. Sweaty, milelong hikes in the rain are worth the exhaustion for the elation we feel at the conclusion of a difficult project.

Still, hiking up 200 feet of steep hill a dozen times and using a complex series of wire pulleys to haul 300-pound rocks back and forth drives home how important trust is. Without a word, crew members help one another flip a massive rock into position, avoiding each dusty root and treacherous foothold.

We're lucky to feel connected to the local community while we work. The Jessie Girard is a popular trail and a daily stream of hikers gives us the opportunity to discuss the project with the people we do it for. Note: if the rules permit, please bring your dog to our trails while we're working. The morale boost is unparalleled.

In between workdays, we also encounter a number of characters by the river, at the nearby Barkhamsted Historical Society, and the local grocery store. The kindness and curiosity we are shown drives home one of the central themes of this work: community. I started this position familiar with the woods as a place of solace; I've found myself in need of their nonjudgemental presence many times before. Working and camping with strangers in pursuit of improving these woods seemed challenging and counterintuitive. But the truth lies in a mantra I've carried with me since the early days of training: some lessons have to be learned in the field.

Sunny Ramos is a writer, trail worker, and hobby botanist who grew up walking trails all over New England. A Connecticut native, she is currently pursuing an associate's degree in journalism and can usually be found in the woods, peering at a tiny plant.


Section 11 – PACKARDVILLE to SHUTESBURY RD Pelham MA. MA.
75°F ~ Blue Sky dotted with fluffy clouds buzzing with many mosquitoes
The Sights of Section 11
As I strolled the trail my eyes caught on all the delicate beauty around me. At 5:30pm the sun cast a honey glow on my surroundings. The insects were out, bouncing from leaf to leaf. How enchanting!
mountain Laurel leaf spot
What kind of spider? It's web hung from it's waiting for its prey
Red maple seed
Acer rubrum
Mycosphaerella colorata
Beautiful to look at. Harmful for the Laurel.
some species of Tree – Clubmoss Genus Dendrolycopodium
So many creatures live in this Leaf litter
Species of pixie cup (Cladonia)

The Slower You Go, The More You See

As she hikes the New England Trail, artist Emma Aiken notices the little things that most people miss.

By Hanna Holcomb

As she hikes sections of the235-mile New England Trail, Artist-in-Residence Emma Aiken is zooming in on the details that many hikers miss.

"I'm always drawn to the small stuff," she said. "It's just so cool to look up close. It's like a whole little world."

From berries to ferns and frogs, Aiken shares wonders from the trail through nature journaling, the process of documenting experiences in nature through art and writing. Her intricate watercolor and pen drawings, along with her words, connect viewers with the sights and feelings of a particular section of trail. Aiken's artistic expertise is highlighted in her work, but she emphasizes that nature journaling is for everyone. It helps us to become immersed in nature, she says, in turn sharpening our observation skills and sparking curiosity.

Aiken grew up in Belchertown, Mass., where she developed a love for art and science at a young age. She was homeschooled for much of her childhood and able to pursue her interests more deeply than traditional schooling might have allowed. Her mom, a former teacher, was especially good at turning her curiosity into meaningful lessons. Her dad, a science teacher, instilled in her a love of science. They explored outside together, looking under rocks and using field guides to identify what they discovered. Later, she studied biology and liberal arts at Holyoke Community College where she was particularly interested in zoology and ecology-related courses.

Creativity and science go hand in hand.

She didn't study art in college, but art has always been a big part of her life. Inspired by her mother's creativity, she took a handful of art classes and began to specialize in detailed nature art and in fantasy drawings.

"My fantasy drawings are always a little nature-inspired," she said. "I do a lot of dragons and morphs of different creatures. It's very free flowing, whatever comes to my mind I draw."

Aiken's first introduction to nature journaling was as a teenager during a semester school program in Wisconsin.

"We did 'sit spots,' which is when you sit at and return to a specific spot throughout a certain period of time," she said. "We'd go every week and record the new things that happened. That was my first experience with nature journaling, and that was definitely inspiring."

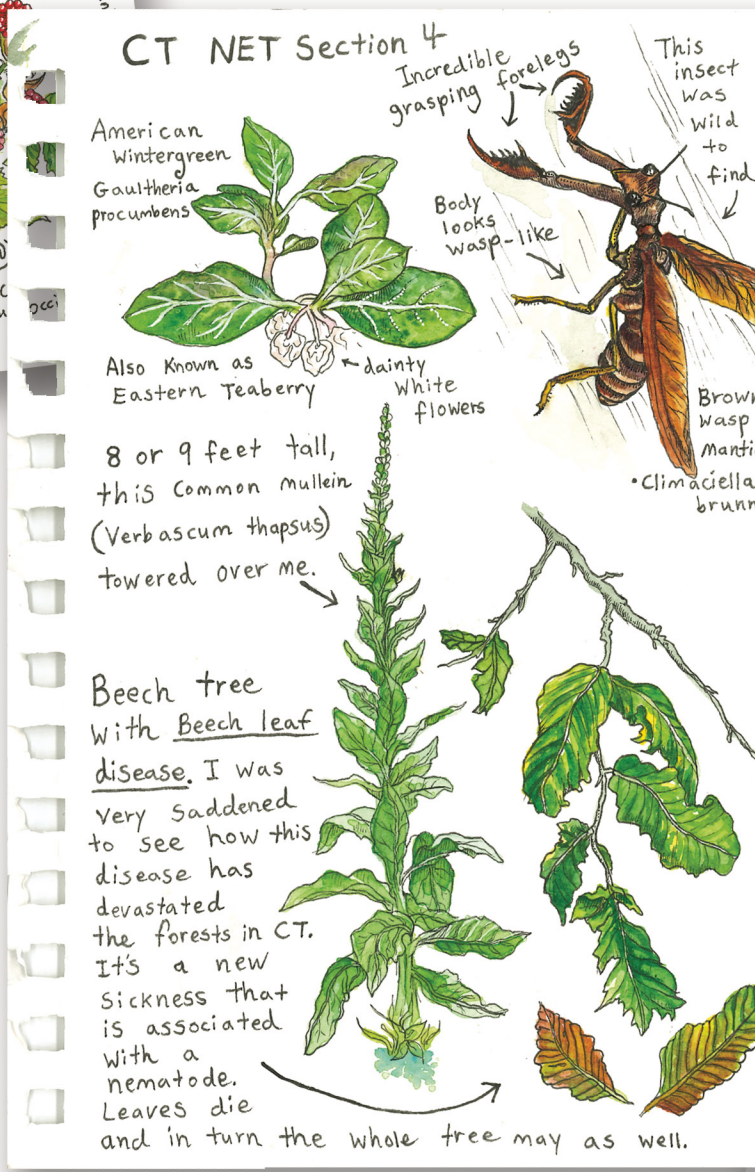
Now 22, Aiken is combining her passion for art, science, and nature as the New England National Scenic Trail (NET) Artist-in-Residence.

The Artist-in-Residence program, which began in 2012, is one of more than 50 artist residency programs hosted by the National Park Service. Through the program, artists use the surrounding landscape as inspiration for their craft, whether it be art, poetry, or music. Recent recipients include Marisa Williamson, a multimedia artist who created public art projects exploring whose stories on the trail are memorialized and whose are forgotten; and Ben Cosgrove, a composer who wrote and performed music inspired by the trail.

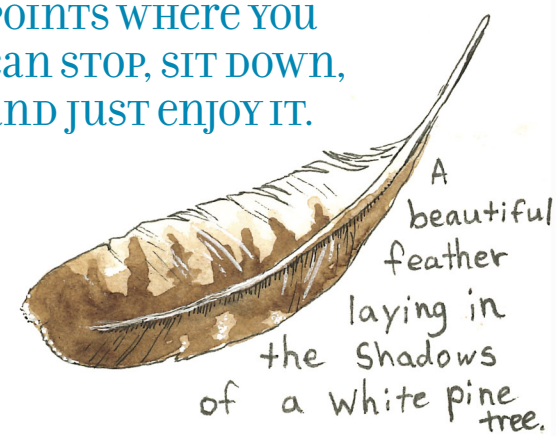
As this summer's Artist-in-Residence, Aiken is hitting the trail with a watercolor kit, pens, pencil, and paper. With no set destination in mind, she hikes slowly, looking for things that catch her eye. "I'm actually trying to go really slow because the slower you go the more you see," she said.

She sketches what she sees and writes about what she's hearing, seeing, and feeling in the field. "I'll just be walking around and be like, 'Oh, that's a cool piece of moss,' or 'Woah, that's a really interesting mushroom,'" she said. "Whatever really piqued my interest is what I'll draw." She creates as much as she can while on the trail, but if weather and biting insects force her to keep moving, she later uses guidebooks and photographs to help finish the entries.

Aiken says that nature journaling helps her observe nature on a deeper level. She'll sometimes spend an hour drawing one thing, a fern leaf, for example, to capture its intricate details accurately. During the 1800s and early 1900s, many scientists, such as Charles Darwin, did the same. Without high-powered cameras, researchers relied on art and text to record their observations and share their discoveries with others.



OFTEN PEOPLE ARE FOCUSED ON GETTING TO THE TOP OF THE MOUNTAIN. BUT THERE ARE SO MANY DIFFERENT POINTS WHERE YOU CAN STOP, SIT DOWN, AND JUST ENJOY IT.



Even with today's advanced imaging tools, art is still a great way to increase our understanding of science. By drawing an observation, rather than writing about it or taking a photo, we are more likely to notice details that we would have otherwise missed. Drawing requires deep focus and is an active way to visually and physically engage with an object. Through drawing, our brains create strong connections between what we're observing and our existing knowledge and experiences. These connections help us form stronger memories and can lead us to wonder more about what we're observing.

"I think that creativity and science go hand in hand," said Aiken. "Science is all about asking questions and being curious and following your interests, and that's really the same with art."

By slowing down and observing, art helps us develop a stronger connection with nature, resulting in a greater appreciation for and responsibility to the environment. The resulting artwork can also inspire environmental stewardship. For example, the artwork of Thomas Moran, created from a journal he kept during an 1871 expedition to the Yellowstone region, helped convince Congress to establish Yellowstone as the nation's first national park.

Everyone can benefit from it, but nature journaling can be particularly effective in classrooms. Studies have shown that sketching and annotating observations of natural phenomena improve students' critical thinking, attention to detail, and the ability to organize and categorize information. In addition to positive learning outcomes, nature journaling gets kids outside, connecting them with local ecosystems and helping to lower feelings of stress.

Part of Aiken's goal for this residency is to inspire others to create.

"Something I always say is that I want to create a creative ricochet," she said. "I'm hoping that through my work and workshops people get inspired and then pass that along to someone else. It just ricochets to others."

To help people get started in nature journaling, Aiken is hosting two workshops to teach people how to nature journal. She's also created a zine, a small circulation of self-published work, as a how-to guide for nature journaling. This zine, in addition to one she created about insects on the trail, can be found at libraries, trailheads and visitor centers along the trail. In addition, her work will be displayed in a gallery at the Holyoke Children's Museum in October.

Aiken's advice for new nature journalers is to simply go out and do it.

"Don't be scared, just go out," she said. "You can tailor it to any of your skills. Like if you love writing or poetry you can focus on that. If you love sketching or you want to get better at sketching, just go sit and try to draw with no pressure."

She also recommends keeping it to yourself. That way you can capture your observations, thoughts, and experiences without the pressure of other people's judgment.

With just a pencil and paper and something in nature that interests you, whether it's a summit view or a plant growing in the sidewalk, you can start a nature journal.

"It's a great way to slow down," said Aiken. "It's a great way to get off your phone and just observe and be immersed in nature. It's so mind clearing."

Hanna Holcomb, a native of Woodstock, Conn., is a freelance writer and naturalist living in Idaho.

Allium Tuberosum

We've planted them
all around the garden.
Their garlicky aroma wards off
moles from tunneling
through our beds—
or so we've been told.

For stir-fries of shiitake,
red pepper, and tofu,
we snip off their flat,
gray-green leaves
that push up through wet,
fallen leaves in early spring.

But what we love most
is their late summer blooms—
white sparkling stars
atop tall, sturdy stalks.
Waving in the breeze
to celebrate fall's arrival.

Aaron Caycedo-Kimura

Aaron Caycedo-Kimura is an award-winning writer, visual artist, and a teacher. His work has been widely published in journals and anthologies. He teaches creative writing at Trinity College and lives in Bloomfield with his wife, Luisa, a writer, translator, and educator.

PLANTING TREES AND GROWING COMMUNITY

The Urban Resources Initiative is partnering with community members to restore New Haven's urban forest.

By Timothy Brown

It's a hot afternoon in mid-August. The air is still and humid, and the mosquitos are out in force. But, somewhat surprising, the six New Haven teenagers I'm chatting with don't seem to mind the heat. Instead of complaining, they're reflecting—almost wistfully—on what they've gained from spending the summer working with the Urban Resources Initiative, or URI, to plant trees, remove invasives, and restore the city's natural areas.

"Working here has opened my eyes to all the different types of plants here. Now I don't just see a green plant; I see mugwort or burning bush or poison ivy," said Joshua Colon, a senior at New Haven's Common Ground High School. "It's like my eyes have opened in a way."

Connecticut's third largest city has plenty to boast about. It is home to one the world's leading research universities, a vibrant arts community, and a thriving foodie scene that has become a must-stop for folks traveling between New York and Boston. But the city also has plenty of challenges. More than 40% of its residents struggle to meet their basic needs and 34% of young children live in poverty. These injustices, legacies of redlining and systemic racism, tend to disproportionately affect people of color, who represent more than 70% of the city's population. In addition, New Haven's diverse neighborhoods have unequal access to greenspace and natural areas, and to the numerous benefits that street trees provide.

I see how my hard work has meant something, trying to make this place better for future generations.

Luis Diaz

URI, a community forestry organization based at the Yale School of the Environment, is working to change this narrative by engaging the community as an equal partner in social revitalization and environmental restoration. They connect Yale students—who often have limited interactions with New Haven residents—with community members throughout the city. And they provide good paying jobs and training for high school students and formerly incarcerated adults, individuals for whom it is often difficult to gain meaningful employment.

In addition to planting trees, URI crews remove non-native invasives in natural areas.

This is the first job for these high schoolers. It's undeniably grueling work, but the students do much more than physical labor; they gain crucial career and life skills, from canvassing door-to-door to learning how to navigate the city's bus system. Despite the physical demands of the job, students insist they'd work with URI in the future and lament the end of the summer season.

"I do wish the program lasted a bit longer because I had so much fun working here," said Kymani Chapman, a sophomore at Common Ground. "You're getting physical activity outside and at the same time you're learning."

"I see how my hard work has meant something, trying to make this place better for future generations," adds Luis Diaz, a recent Common Ground graduate.

Jasmine Gormley, a 2024 graduate of Yale College, worked with the students as URI's Community Forestry Intern. She grew up backpacking near her hometown of Bosquin, N.H., population 3000, but says she didn't know you could have a career in the environmental field when she came to Yale. "I'm from a small town and a lot of folks don't go to college," she said. "A lot of people worked outdoors but in a really different way." Gormley took a gap year during the pandemic and worked with the Conservation Corps in New Mexico, which inspired her to apply for the position with URI, although she says her roles were completely different. "This is working with people more than working with plants," she said.

Leet Miller, also a 2024 Yale College graduate and California native, served as this year's GreenSkills Research Assistant. While Miller has always loved gardening and previously volunteered with Friends of the Urban Forest in San Francisco, he says the highlight from this job was getting to know New Haven from a new perspective. "It's been really cool to feel like I've finally been a part of New Haven as a city," he said. "It's opened my eyes to all the different neighborhoods. Going out with high schoolers who are from here, you learn so much more about New Haven and see it for what it is. I know they have some freshman orientation programs get you involved with New Haven, but I wish it was more integrated into Yale's education. I think that would be a huge way to build those relationships more."

Founded in 1991 by Yale School of the Environment professor William "Bill" Burch, a renowned forest sociologist and a pioneer in urban and community forestry, URI's Greenspace program provides material and technical assistance for community-led environmental rehabilitation projects. Colleen Murphy-Dunning, Director of both URI and Yale's Hixon Center for Urban Ecology, says Burch's vision was all about "environmental rehabilitation as well as community-building and community stewardship and responding to community-identified needs." Burch, who passed away this past July at the age of 91, often talked about a "mutual pathway of learning"—a non-hierarchical relationship whereby professionals and community members learn from and with each other.

"We listen with humility to learn from them about how their neighborhood works; what their neighborhood needs; how it can be best solved; what are their neighborhood's assets. And then bring our technical knowledge about forestry to that conversation as an equal partner. We're learning from each other and working together and listening to their leadership," said Murphy-Dunning.

Neighborhood groups or organizations can apply to URI for assistance with a Greenspace project, such as planting trees or removing non-native invasives. Over the past three decades, URI has partnered with tens of thousands of New Haven residents to complete hundreds of Greenspace projects, from rehabilitating a vacant lot to improving municipal parks.

"When we started this program, we did a lot of street tree plantings," said URI Associate Director Chris Ozyck. But over the years, the program evolved in response to community concerns.

"As the Greenspace groups migrated from tree work to a lot more work in parks and natural areas, their capacity has grown tremendously," he said. "Groups that started as small spaces within a park take on a much larger and larger piece of that park, or even a larger system." One group that began working in New Haven's Edgewood Park is now engaged with the entire West River system.

This shift in attention is vital as non-native invasives have come to dominate many natural areas, Ozyck says. "If left unchecked, we will not have high quality natural areas left, especially in our underserved communities," he said. "That's why engaging people in these spaces now is so critical."

In 2007, URI launched their GreenSkills program which provides free street trees to any New Haven resident—including renters—who requests them. To date, URI crews have planted over 10,000 trees throughout the Elm City.

Trees are planted in a public right of way, between the sidewalk and the road, which is city property. URI crews return to prune the tree after one and five years, but the resident is expected to water the trees—25 gallons per week—for the first three years. While Murphy-Dunning acknowledges it's not a perfect system, she says it's the most efficient way to water the tree from the shortest possible distance. It also provides an entryway to environmental stewardship.

"It's both about addressing low canopy environmental justice wherever it exists and trying to target areas that have fewer trees," Murphy-Dunning said. "But we don't want to plant a tree where it's not wanted."

URI's Tree Ambassadors help to inform residents that trees are freely available. Ambassadors knock on doors in areas that have been identified as lacking trees, engaging with folks who might not be aware of the program.

"The Tree Ambassador program means it's not just URI carrying this message out," said Murphy-Dunning. "There are many people who are trusted in different neighborhoods who have different language skills, different cultural experiences, and knowledge that our staff does not have." Recently URI partnered with the New Haven-based Integrated Refugee & Immigrant Services, or IRIS, to employ young, new Americans as Tree Ambassadors.

While many municipalities hire professional contractors to plant trees, URI's unique model of partnering with the community has engendered high survival rates of nearly 100%.

"It's not just about the physical landscape; it's about working with the human community and recognizing that our environmental problems are based in human behaviors," Murphy-Dunning said. "If we're to work in a city which is, as an ecosystem, really defined by its human population and the built environment, we have to learn how to engage people in the city to be active stewards."

Each year, URI plants 500 trees throughout New Haven. Last spring, the nonprofit received a $2.6 million grant from the Department of Agriculture that will enable them to double the number of trees they plant each year for the next five years. "The Biden administration's $1 billion investment recognizes finally the importance of urban forestry as a nature-based solution in cities and why cities are so important during this climate change crisis," said Murphy-Dunning.

Trees provide numerous environmental, social, and health benefits. They help to offset the urban heat island effect, the process whereby cities hold more heat—especially at night—than surrounding rural areas, and research shows there can be a 20-to-30-degree temperature difference between shaded and sunny areas. And a study by the Vibrant Cities Lab showed that a 10% increase in New Haven's tree canopy was associated with a 14% decrease in property crimes and a 15% decrease in violent crime.

"Trees provide cooling, water quality, air quality, and a sense of respite during heat waves, creating social spaces where people can gather and feel safe," he said. All of this contributes to the restoration of what Ozyck calls the urban forest.

"A free street tree is part of the urban forest. A lot with trees around it; the trees that are in your yard are part of that urban forest," he said. "And all those spaces are important because they're a public health amenity to people who live in urban areas."

But while New Haven is becoming a greener, healthier community one tree at a time, URI isn't resting on its laurels.

"It's nice to see all this success," Ozyck said, "and there's an awful lot of work to do."

For more information about the Urban Resources Initiative and to get involved, go to uri.yale.edu.

Timothy Brown is the editor of Connecticut Woodlands and a resident of New Haven.

GET READY FOR

Connecticut's Red Maples Show Their True Colors

By Laurie D. Morrissey

As I drive along the back roads of northwestern Connecticut on a misty September day, I am struck by a sudden swath of vivid color. The scarlet foliage of red maple trees contrasts brightly with the dark green of pines and spruces. In a happy optical illusion, gray sky makes the brilliant leaves appear brighter than they would on a sunny day. For some leaf-peepers and photographers, cloudy days are preferred. On the other hand, the contrast of red leaves against blue sky and puffy white clouds is hard to beat.

Depending what part of the state you live in, peak foliage season may still be a few weeks away—but the red maple (*Acer rubrum*) is an early fall gift. This species—the most numerous tree in Connecticut—is among the first to show its autumn colors. Its various shades of red begin showing up in early September, especially in places where water is not far below the surface, such as Kent's West Aspetuck Scenic Wetlands Preserve. It is a harbinger of the annual visual feast that is fall in New England.

The reason red maples are so numerous is that they grow in many different habitats and conditions. "Red maple is a very versatile species found on almost all Connecticut soil types, from dry to wet," says state forester Christopher Martin. According to the U.S. Forest Service, red maples make up 24.5 % of the tree stems in the state, followed by northern red oak and black oak. The Department of Energy and Environmental Protection (DEEP) estimates there are nearly 190 million red maple trees in the state. By some estimates, red maple is the most numerous tree in the eastern U.S.

Red maples (sometimes called swamp maples) are one of several *Acer* species found in Connecticut. They are medium-sized trees that are relatively fast-growing and can reach 40-70 feet in height. They prefer moist, acidic soils, although they also can be found in drier locations. They can do well even in the compacted soil of urban parks and neighborhoods, making them valued shade trees. Young red maples have a crown that is pyramidal or elliptical, but as they age, they develop a rounded or oval outline, especially when growing in an open area.

To get acquainted with the red maple, you might start by learning a bit about the genus *Acer*. To identify a member of the *Aceraceae* family (especially in winter), it can be useful to start with the phrase "madcap horse." Maple, ash, dogwood, horse chestnut, and members of the *CAP-rifoliaceae* (or honeysuckle) family have branches that grow on opposite sides of the twig. Most other species have an alternate branching pattern.

After the red maple, Connecticut's second-most common (and likely favorite) is the sugar maple, *Acer saccharum*. Mountain maple (sometimes called moose maple) is a small understory tree. Boxelder, which is found on poor sites and considered a weed tree, is the most widely distributed maple in the United States, but it is seldom recognized as such because of its different leaf structure. (Like an ash or hickory, it has pinnately compound leaves rather than singular). Silver maple grows in floodplains and along streambanks and has leaves that are whitish on the undersides. Black maple is the least common of the state's maple species and grows mostly on river bottoms. Similar in appearance to sugar maple, it is no longer considered a separate species but rather a subspecies of *A. saccharum*. The non-native Norway maple has been planted as an ornamental, but it is now considered invasive.

Red maples have several distinguishing characteristics. In summer and fall, they can easily be identified by their leaves. The leaves have finely toothed margins and typically have three lobes. (You can count them using the three letters of the word "red"). The dips between lobes are V-shaped. The sugar maple's leaves, which are slightly larger, typically have five lobes and U-shaped dips. Bark is not the best identifying feature because its appearance changes as the tree ages. A young red maple's bark is light ash-gray and smooth. Older specimens have darker, more textured bark with vertical cracks.

Red is clearly this species' favorite color: buds, flowers, emerging leaves and twig stems, and fruit (the two-winged samara we sometimes call spinners or helicopters) all are tinged with red. Its flowers appear as early as March, long before those of other trees. (This also makes it an early source of nectar and pollen). In fall, cooler temperatures bring out the red that is present in the leaves all year. As temperatures grow cooler, the flow of water to the leaves is blocked and the chlorophyll that makes leaves green breaks down.

One of the curious aspects of this tree is that it is what you might call gender-fluid. Trees are mostly male or female, but sometimes produce flowers of the opposite sex. A tree that has been female for years can start producing male flowers, and vice versa.

The shallow-rooted red maple is the predominant tree species in Connecticut's swampy woodlands, according to DEEP's Christopher Martin. Durham Meadows in the floodplain of the Coginchaug River is an outstanding example of a red maple swamp. These swamps provide food and shelter for many types of wildlife, and harbor several endangered species, such as the box turtle and least bittern.

In spite of its fall beauty and other attributes, red maple is not always the forester's favorite. "Red maple has lower wildlife value compared with other native tree species. It does not produce hard mast for food like our oaks do," says Martin. Although it was used by Indigenous people for making arrows, spoons, and baskets, it is not desirable for lumber or veneer since it is relatively soft. "It splits and burns well, but has lower BTU values than oak and hickory," Martin says. "You can produce maple syrup from it, but you need twice the sap volume as sugar maple."

If you love leaf-peeping, however, and can't wait for peak foliage season, red maple is worth its weight in gold.

Laurie D. Morrissey is a New Hampshire-based writer whose work has appeared in Connecticut Woodlands since 2016. She has also been published in Northern Woodlands, Art New England, New Hampshire Home, Appalachia, and numerous poetry journals.

IN 1686, THE FIRST ELMS WERE PLANTED ON THE NEW HAVEN GREEN,

a place which had been for nearly 50 years—and continues to be today—the center of civic life in New Haven. A century later, in 1784, James Hillhouse, a prominent local landowner and civic leader, sponsored the country's first, public tree planting. Some 250 trees, mostly elms, were planted along the Green, as well as Temple and Grove streets and the avenue that today bears his name. Such a feat was the Great Planting that New Haven thereafter became known as the Elm City.

The American elm, a hearty tree native to eastern North America and once common along flood plains and bottomlands from Nova Scotia to Texas, is prized for its sweeping canopy. They are particularly well-adapted to cold winters and can reach heights of a hundred feet or more. Street tree elms, precisely spaced, stretch toward each other, arms outstretched, creating an arboreal cathedral for passersby below.

But by the early twentieth century, New Haven's trees were in trouble, victims of mismanagement and neglect. In 1909, George Alexander Crombie, a Yale forestry grad, was hired as the city's forester. By 1921, 5,000 dead or diseased trees had been removed, and twice that number—mostly elms, lindens, sycamores, and maples—had been planted.

Fifteen years later, a new pathogen arrived in America; a fungal infection originally from Asia and first identified in Holland. Spread by bark beetles and root grafts, Dutch elm disease devastated elms in cities across the country. The Hurricane of 1938 toppled the last of the Elm City's towering elms.

In 1953, the Garden Club of New Haven (GCNH) began to plant and care for elm trees on the Green. In 2013, they launched the American Elms in New Haven project, which included the continued removal and replacement of diseased or dying elms with disease-resistant cultivars; an informative brochure and audio Walking Tour of the Green; and an Emmy-nominated documentary by local filmmaker Karyl Evans narrated by Paul Giamatti.

Today, the New Haven Green appears similar to how it looked in 1889, with majestic elm trees lining the perimeter of the park and both sides of Temple Street.

Photo courtesy of the Connecticut Museum of Culture and History.

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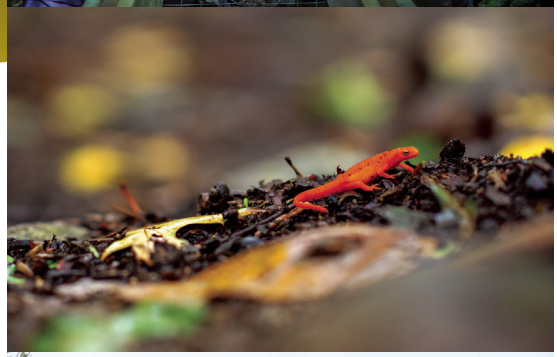

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