

A MAGAZINE OF THE CONNECTICUT FOREST & PARK ASSOCIATION

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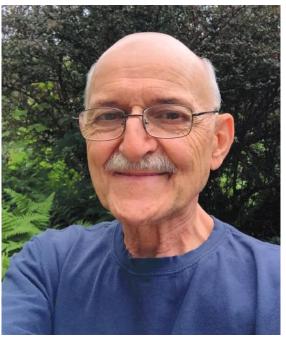


On the Cover: A monarch butterfly feeds on echinacea. Photo by Pete Vertefeuille.





Scientists work to restore the American chestnut to Connecticut's forests, page 9



For **Pete Vertefeuille**, a nature photographer based in Hampton, Conn., who shot this issue's cover, photography is all about sharing an experience with someone else. Pete, who's entirely self-taught, is a former Hampton Gazette staff photographer and spent nine years honing his craft as a darkroom technician. But these days, he says, Photoshop is his darkroom.

We caught up with Pete to learn more about his work and the changes he's witnessed over nearly five decades in the field.

(CFPA) is a 501c3 nonprofit organization that protects forests, parks, walking trails, and open spaces for future generations by connecting people to the land. Since 1895, CFPA has enhanced and defended Connecticut's rich natural heritage through advocacy, conservation, recreation, and education, including maintaining the 825-mile Blue-Blazed Hiking Trails system. CFPA depends on the generous support of members to fulfill its mission. For more information and to donate, go to ctwoodlands.org



These days, Nutmeggers forage for food and fun, page 16

Students in the GEMS program explore nature in their classroom, page 19

How did you first get interested in nature photography?

I've always loved nature and landscape photography, and I spend a lot of time outside. And I always had this urge to share what I saw with others. I used to write about it, or tell people about it, but that wasn't good enough. So, I got a cheap 35-millimeter camera and started shooting.

The most important thing to me about nature photography has always been the sharing part. I always thought about people who can't get out because they live in the city; or because they are too old or ill. I thought, maybe I could help other people see what I get to see. It's a lot of fun.

It can be incredibly difficult to photograph wildlife. How do you approach your work?

Each time I get into a new subject, I try to learn as much as I can. I spend hour after hour, day after day trying to capture the subject. I'm stalking all of these animals very slowly, even the tiniest insects. Sometimes it may take 20 minutes or more just to get close enough to a butterfly to photograph it. You have to sneak within a couple of feet to get a good shot. I even put the camera in front of my eye so I won't startle the butterfly as I approach it.

You've seen the industry change a lot over the past four decades. What are your thoughts about people now shooting primarily with their cell phones?

It's been a strange progression from film cameras, to digital cameras, to cell phones. I started out developing my own film and making my own prints. When the first digital cameras came out, they only had two megapixels, so I was pretty annoyed. But the cameras kept getting better, so I finally embraced them. I'm actually really happy because cell phones give everyone a chance to do photography, not just people who have access to a darkroom.

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Correction: The Spring 2019 issue should be catalogued as Volume 84, No. 2

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Editor's Note

On a recent business trip, I found myself chatting with the man seated next to me at the hotel bar. We talked about food, travel, and sailing. When we finally stumbled onto the topic of what I do for a living, he admitted that while he admires environmentalists, he thinks that our work is essentially in vain.

"The world is screwed, and ultimately there's nothing we humans can do about it," he said. "But it's a great piece of real estate while it's here."

I was stunned. Nothing could be further from my beliefs. Where he sees only real estate, I see a world that is dynamic and alive. And I strongly believe that people have a moral responsibility to protect and care for the Earth and each other. After his comment, our conversation became more strained. Although we shared some similar interests, we held such different beliefs that I couldn't understand his perspective. Without a sense of empathy, it becomes very challenging to have a civil conversation.

It is often said that "seeing is believing." But the opposite is also true—"believing is seeing." We look for evidence to confirm what we already believe. If you think that immigrants are a threat to our national security, for example, or that liberal politicians overstate the climate crisis, you'll see all sorts of examples that appear to support those beliefs. However, if you think that immigrants enhance our democracy, culture, and economy, or that climate change is the greatest threat that humanity has ever faced, you'll find plenty of examples to support those beliefs as well.

And herein lies the paradox: in order to *believe what you see*, you first must set aside your preconceived notions about what is true, or at the very least, accept that what you believe may, in fact, be wrong. That's easier said than done, but it's critical for any scientific discovery, and to find solutions to the problems we face.

For example, maybe transgenic technologies can actually help save endangered species. Maybe invasive weeds are actually a bountiful source of nutrition. Maybe the man at the bar was right—the world is just a screwed-up piece of real estate. If so, then our job is to help raise its property value by healing what has been damaged and conserving what is left. At least that's what I believe.

I'll see you outside,

Timothy Brown Editor

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Prescribed Burn Creates Diverse Habitats at Goodwin State Forest

You may be walking on ashes the next time you visit the James L. Goodwin State Forest in Hampton. This past April, four fields within the 2000-acre state forest underwent a prescribed burn to create a diversity of habitats.

We often think of forest fires as a bad thing, and with good reason. Unplanned fires can be devastating, as seen with last November's Camp Fire in Paradise, Cali. But when planned and executed by trained professionals, fires can greatly improve the overall health of our forests.

Fire is a natural part of forest ecosystems, and historically Native Americans used fire to clear land. Fire helps to maintain an early successional habitat for native plants, such as goldenrod and dogbane, and wildlife, such as the woodcock and bobolink. Also, burning helps to control some invasive plants, improves soil quality, and does not require expensive machinery or harmful herbicides.

Prescribed burns, however, do require trained professionals who can manage the fire in a safe and controlled manner. Foresters, wildlife biologists, park supervisors, and fire protection staff must each review and approve a proposed burn plan, a process that can take months. In order to burn an area, experts consider public safety, wildlife habitat, and the effectiveness of a burn on that site. If all parties agree that a burn is in order, a "burn window" is set to take advantage of ideal weather conditions while also accounting for the breeding and nesting times of local wildlife. But the actual date of the burn is decided at the last minute. The site needs to be dry enough to burn, but not too dry. The time of day and site location even affect the burn decisions, because within each site there may be places that are drier or wetter than their surroundings, depending on their slope and exposure to sunlight.

For more information and to see videos of the recent burns, go to ctwoodlands.org

Exhibit Showcases CFPA's Legislative Victories

Since 1895, CFPA has been a strong advocate at the state capitol for Connecticut's land and the well-being of its citizens. Now an exhibit showcasing CFPA's long history of legislative victories is on display at the Museum of Connecticut History in Hartford, thanks in large part to Allen Ramsey, Assistant State Archivist at the Connecticut State Library. CFPA donated the collection to the library in December 2012.

The exhibit highlights four of CFPA's accomplishments: railroad locomotive spark arresters, fire patrols, and lines

to eliminate the causes of many forest fires; blocking billboards on rural roads, including the Merritt Parkway; Public Act 490 of 1963 concerning use value assessment for farm, forest, or open space land; and efforts to pass a constitutional amendment to protect the state's public lands. The exhibit is on display through the summer.

For more information about CFPA's historical documents and photos, go to ctstatelibrary.org/RG169_007.html



CFPA Leads with Values

Pick up a newspaper or turn on your favorite cable news channel and it may appear that this world, especially national politics, is getting more and more polarized. This column is my attempt to pull in the opposite direction and emphasize the shared values that both define CFPA's approach to conservation, and hopefully bring us closer together as members of the CFPA family.

In 2020, CFPA will celebrate an amazing 125 years of conservation leadership in Connecticut. With this exciting milestone on the near horizon, the gears are in motion to develop a Strategic Plan that will guide our work in 2020 and beyond for your forests, parks, and trails. This 2020 Strategic Plan should reflect our shared values, so please participate when we reach out to supporters like you over the next several months to get your input. Your involvement with CFPA and your feedback is very important to us.

You may be familiar with CFPA's mission "to connect people to the land to protect forests, parks, open spaces, and walking trails for future generations," but you may not be as familiar with CFPA's core values – the beliefs that drive not only what we do, but how we do it. We don't always express these values, but we certainly try to live them and of course, we hope you share these values too.

As members of the CFPA family, we believe that...

Civic Engagement and Action Makes a Difference

Sustainable conservation outcomes are the result of people acting individually and collectively at community, state, and national levels. Political leaders respond to informed, persistent, polite civic engagement, and we strive to embody this through our own actions and leadership.

Connecting to the Outdoors Improves the Quality of Life

Outdoor experiences on trails through forests, parks, and open spaces inspire deep connections with the land, and lead to efforts to understand, preserve, and share these experiences and special places with others.

Volunteers are Highly Valued

We value volunteerism and acknowledge that the work of volunteers is at the heart of what we do and how we do it. An active Board of Directors, Honorary Board, and volunteers for every program are essential to program delivery, community involvement, and implementing our conservation mission together.

Long-term Success comes from a Commitment to Excellence

Long-term success is based upon integrity, a commitment to quality in every aspect of our work, creativity to find and develop better ways to achieve our mission, and a culture of continual improvement to both lead and respond nimbly in a fast-changing world.

Strong Partnerships lead to lasting Successes

Sustainable change comes about by working with stakeholders who share in successes and work together to overcome obstacles. Partners, like individual volunteers or other organizations, amplify CFPA's positive impact on Connecticut.

Everyone is Welcome at CFPA

CFPA respects all people and embraces inclusion regardless of race, ethnicity, culture, language, gender, age, socioeconomics, physical abilities, sexual orientation, or any other qualities that enrich us.

The Best Natural Resource Management is Based upon Sound Science

Objective, empirical science should set the standard for the protection and management of natural systems. We promote sound science and believe that people deserve to be fully informed.

We look forward to hearing from you about CFPA's 2020 Strategic Plan, and would love to get your thoughts on these values above. To share your thoughts, please contact me, Eric Hammerling, via email at ehammerling@ctwoodlands.org or via phone at 860-346-2372. Thank you!

Eric Hammerling has served as the Executive Director at the Connecticut Forest & Park Association since 2008.



Adventures in Butterfly Farming

A Master Naturalist is drawn to the delicate world of butterflies.

s a Master Naturalist program graduate, I'm constantly thinking about what I can study next. My ongoing research ranges from studying terrestrial orchids (now in its third year), to plant surveys, to spring amphibian surveys. But last summer I got sidetracked by something I've always loved but never really studied—butterflies.

I am a serious gardener so planting native species and encouraging pollinators is second nature. Every summer I chase the swallowtails and fritillaries with camera in hand, trying to get the perfect shot. I've always attracted an abundance of black swallowtails (*Papilio polyxenes*) to my garden. But although I grow milkweed, monarchs (*Danaus plexippus*) have been fleet-



The eastern black swallowtail. Photo by Pete Vertefeuille.

Who needs to be a Mother of Vragons, when you can be a Mother of Butterflies?

ing visitors. Last year, I decided to try raising butterflies after I discovered several monarch larvae and was lucky enough to catch one just as it was beginning to pupate. I watched in fascination as the caterpillar rolled up its striped skin to reveal a distinct pale green chrysalis decorated with a line of golden dots.

I collected five monarch caterpillars (including the one I watched pupate) and ten early instar black swallowtail larvae. I started with them in a Chinese lantern-style butterfly "cage," which seemed fine until two of the monarchs Monarch 2 exit the greenhouse). Monarch 4 presented a mystery. It pupated normally, but suddenly turned dark and oozed a green fluid. I left it for a week then declared it dead. All four of my viable monarchs were female. Monarchs can be sexed by the black spots on their hindwings; males have a big spot which females lack.

The black swallowtails, however, required more patience. Six pupated after a month, two unexpectedly died, and two caterpillars continued to grow well into the fall. Swallowtails take about 24 hours to form a full chrysalis.

By Deb Field

pupated up at the top, making it impossible for me to open the lid and add food for the caterpillars. An entomologist on Twitter posted a picture of caterpillars in mason jars with a piece of screen over the top. I moved all my "babies" to their own jars, filled them with fresh fennel or milkweed leaves, and safely stored the jars in my greenhouse.

About a month after my adventure began, Monarch 1—the one I saw pupate also treated me to its emergence. I marveled as it wiggled out of the pupa, slowly unfolded its wings, and sat on my hand for a few minutes. I placed her on some Joe-Pye weed where she rested for about half an hour before fluttering off. Monarchs 2, 3, and 5 went successfully on their way (my husband helped



Mason jars are ideal for pupating butterflies.

I understand now why I've never seen one in the garden—if a swallowtail pupates in a bushy host plant such as rue, it's almost impossible to see. They also spend considerably longer in their chrysalis—up to three weeks. Late season chrysalides can overwinter. Swallowtail 1 unexpectedly emerged early with an incomplete right wing. She could climb well, but not fly. I put her in the Joe-Pye weed and she fed until a bumblebee knocked her off. After she survived the first night, I brought her inside and fed her sugar water. This is when I realized I was not just a butterfly farmer, but had become a butterfly mom. She rode around on my shirt for hours, but attracted too much attention from my cats, so I put her back outside. Black swallowtail adults only live for 6 to 14 days; she managed to last for four days before she disappeared.

I missed Swallowtail 2's emergence, but was fortunate to witness number 3's and share the same "sit on my hand, walk out to the garden" experience that I did with the monarchs. At the beginning of September, I moved all the pupates out of their jars and hung them on a stick in case they emerged while I was at work. By mid-September Swallowtails 4, 5, and 7 had successfully emerged, while 8 and 9 died. The tenth was a bit of a mystery; the entire chrysalis simply disappeared. I can only speculate that an enterprising bird slipped into the open greenhouse and had a snack.

Though I never expected butterflies to become a project, I've got the butterfly bug now. I've done some research on how to better farm them and next year will be tagging monarchs for MonarchWatch.org. Who needs to be a Mother of Dragons, when you can be a Mother of Butterflies?

To learn more about how you, too, can become a Master Naturalist, go to friendsofgoodwinforest.org

Deb Field is a certified Master Naturalist and has been a marine and environmental science educator for 25 years. Her main goal is teaching people of all ages the importance of developing an understanding of nature.



Black swallowtail chrysalis (left) and adult butterfly on the author's hand. Photographs by Deb Fields.







After nearly vanishing a century ago, the American chestnut is on the cusp of staging a comeback.

By Hanna Holcomb

Top: A fence made entirely of chestnut rails. Below: Burs on a hybrid chestnut. ill Reid, Chief Ranger at The Last Green Valley in Danielson, Conn., is thinking about long-term forest management for a property he owns in New Hampshire. He is the third-generation owner and wants to leave his children a forest that can tolerate climate change's elevated temperatures.

"I went to a workshop about climate change and the presenters talked about the types of trees that would do well in a warmer climate," said Reid. "The American chestnut (*Castanea dentate*) was one of the trees mentioned."

But the American chestnut was wiped out by a fungus (*Cryphonectria parasitica*) in the early 20th century. The blight, imported on Japanese chestnut (*Castanea crenata*) trees, spread rapidly, affecting nearly every chestnut from southern Maine to northern Georgia by 1950.

The fungus infects trees through an open wound, killing the inner bark and cambium tissues. It grows around the tree and eventually cuts off the flow of water and nutrients. Aboveground the tree is killed, but its underground root system survives and continues to send up stump sprouts that grow to a few inches in diameter before succumbing to the blight.

"A lot of times as I'm hiking through the woods I find small saplings of American chestnut," said Reid. But prior to the blight's introduction, he would have hiked amongst 100-foottall giants. An estimated 4 billion chestnut trees grew in the U.S., with more than 100 million in Connecticut's forests alone.



WE SHOULD USE WHATEVER TOOLS WE HAVE TO PREVENT SOMETHING FROM GOING EXTINCT Allison Oakes

he American chestnut was considered a "cradleto-grave" tree because it supported life from birth to death. Its straight-grained, rot-resistant timber was used for telephone poles, buildings, and furni-

ture, and its tannins were used to tan leather. Its nut was a crucial nutrition source for people in rural communities as well as for domesticated animals and wildlife. The chestnut, a holiday favorite, was brought into cities by the cartload.



As the extent of the loss became clear, efforts were made to restore the chestnut to our eastern forests. Researchers began breeding American chestnuts with blight-resistant varieties as early as 1907. Connecticut has the longest continuous chestnut breeding program in the country, spearheaded by botanist Arthur H. Graves and Connecticut Agricultural Experiment Station (CAES) geneticist Donald F. Jones in 1930. The two researchers crossed Asian and American chestnuts, inoculated the hybrid trees with the blight, and rated their resistance.

Sandra Anagnostakis, an emeritus scientist at CAES, began her career working on plant disease-causing fungi, including chestnut blight. Following the retirement of tree breeder Richard Jaynes in 1983, she moved into chestnut breeding. At CAES, she works on producing trees that are resistant to the blight but still retain hallmarks of the American chestnut, such as straight timber and delicious nuts. The process is long and tedious, requiring several crosses and generations of trees to produce the hybrids.

"You chose the tree you want to be the mother tree, and when you can see the female flowers starting to form, you cover them with paper bags," said Anagnostakis. Then when the flowers are ready to be pollinated they are dusted with pollen from a selected male parent and the bag is put back on the tree. When the nuts are mature, the twigs are snipped with the bags and brought back to the lab. The seeds are refrigerated until February when they start to germinate and can be planted in the greenhouse.

This process is repeated several times; only the trees with the right traits remain in the selection process. CAES breeds both timber chestnuts, which are fast growing and put their energy into vertical growth, and orchard chestnuts, which are spreading and put their energy into fruit production. The long duration of Connecticut's breeding program has paid off. CAES has released a few cultivars of orchard chestnuts that are being sold by the nursery industry, and timber trees have been planted in the forest to test their viability outside of a nursery setting.

Though she officially retired in 2015, Anagnostakis plans to keep working on chestnut breeding to restore this staple of eastern forests.

"I think given the number of recent catastrophes, for example, chestnut blight, Dutch elm disease, maple decline, oak wilt, and now emerald ash borer, if we want any kind of forest at all, we're going to have to help," she said.

he American Chestnut Foundation (TACF), whose mission is to restore American chestnuts, supports the work of researchers like Anagnostakis. TACF also educates landowners, and the Connecticut chapter manages seven backcross breeding orchards.

Dr. David Bingham owns one of these orchards in Salem. Bingham grew up in a home that had chestnut beams and floorboards that were two-feet wide.

"My father remembered when American chestnut was a major forest species," said Bingham. "On walks in the local woods, he pointed out the trunks of fallen chestnut trees



Sandra Anagnostakis stands next to a 14-year-old timber chestnut hybrid.

GIVEN THE NUMBER OF RECENT CATASTROPHES IF WE WANT ANY KIND OF FOREST AT ALL WE ARE GOING TO HAVE TO HELP SANDRA ANAGNOSTAKIS

still persistent after many decades because they are so rot resistant." His father also showed him American chestnut sprouts. Bingham learned that rubbing mud on blight-infected bark and wrapping it in plastic helped the tree fight off the fungus.

"One tree in particular did well with this treatment," he said. "Although it clearly was diseased, it produced large areas of scarring, which was evidence of some resistance and healing."

When Bingham heard about TACF, he contacted them about pollinating his "mother tree" with fungus-resistant pollen. Today Bingham's orchard contains seeds that are about 94 percent American chestnut and 6 percent Chinese chestnut.

"Of over 500 seeds planted, about 225 are surviving," he said. "Some are 25 feet tall; others have died back and have multiple new sprouts that are at the sapling stage. The plan is to remove the trees that have the least blight resistance, and to save the 10 to 15 percent that show the most evidence of resistance to the blight." These remaining trees will be allowed to pollinate each other and the seeds from these pollinations will be planted in seed orchards. Of this group, only the trees with the top 1 percent blight resistance will be retained.

An alternative effort to restore the chestnut is underway at the SUNY College of Environmental Science and Forestry (ESF) in Syracuse. Researchers there are inserting a gene from wheat, oxalate oxidase, into the American chestnut genome, which allows the tree to break down oxalate, the toxic chemical produced by the blight.

"We're using genetic engineering to introduce a new gene into the tree that gives it the ability to live in harmony with the fungus," said Allison Oakes, Postdoctoral Research Fellow at ESF. "It's not like a fungicide; it doesn't kill the fungus. It just prevents the fungus from killing the tree."

The transgenic trees have been planted in research plots strictly regulated by the Department of Agriculture and have shown improved resistance to the blight. But more testing and review is needed to make sure that there are no unintended effects of the modification. Currently researchers are preparing for review by the USDA, EPA, and FDA before the genetically-modified seeds can be released.

There has been some opposition to the release of transgenic American chestnuts. The organization Stop GE Trees argues that it sets a precedent for genetic engineering to be used for monoculture plantations grown for lumber and fuel. They also state that the complexity of forest ecosystems makes it impossible to predict potential consequences of engineered American chestnuts.

But Oakes says this technology creates an opportunity to positively impact eastern forests.

"People have been changing nature for thousands of years to suit our needs, and it's about time we tinker in order to save something," she said. "We feel a strong stewardship of the forest. I think we should use whatever tools we have to prevent something from going extinct."

hristopher Martin, Director of Forestry at Connecticut Department of Energy and Environmental Protection, is looking forward to the American chestnut's return. "During its time, when it was a healthy native tree, the American chestnut provided ample wildlife food and wonderful forest products," he said. Restoration of the American chestnut will also help to restore diversity to Connecticut's forests, which are under attack from other pathogens like the emerald ash borer.

"The more diverse our forests are the more resilient they'll be and able to recover from other harmful agents like storms, temperature change, insects, and disease," Martin said.

More than a century after the chestnut blight altered eastern forests, the American chestnut is nearly ready to be replanted, this time armed against the blight. A tree remembered by grandparents could become the favorite tree of this generation's grandchildren.

Bill Reid looks forward to when American chestnut seeds are widely available to the public so that he can plant them throughout his forest.

"I'd walk along this hillside in the forest where I know that there's open light and plant 200 to 300 seeds," said Reid. "I'm probably not going to live to see them nut out, but hopefully my children and grandchildren will benefit by having American chestnut."

Hanna Holcomb recently graduated from Wesleyan University with a degree in biology and English.

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Nurturing in Nature

At an historic family farm in Wolcott, "Doc Warren" cultivates well-being and the land.

By Timothy Brown

t sounds like something out of a movie: a man who doesn't own any land—or know anything about farming for that matter—trades his dependable, treasured Honda Shadow motorcycle for an old tractor with a busted electrical system. But that's exactly what Warren Corson III, a Bristol-based mental health counselor, did. "Doc Warren," as he is affectionately known, had a dream to create a nature-based therapeutic center and community farm where people could come for healing by reconnecting to each other and the land. And he needed a tractor.

At the time, his friend Walter "Walt" Atwood, who happened to own more than 50 acres in neighboring Wolcott, was looking for a potential buyer. Walt suggested that Doc Warren buy his property. "I knew he didn't want to get the property and sell it for development," Walt said. "Their mission statement refers to preserving nature."

The two agreed that Doc Warren would rent the land as he saved up for the down payment. In 2013, he was able to purchase over half the farm, including a 7800 square-foot, three-story barn that he uses for office space. He signed a 10-year lease with Walt for the remaining 24 acres. Today Pillwillop Therapeutic Farm, a program of the Community Counseling Centers of Connecticut, Inc., provides treatment for a variety of mental health illnesses, such as anxiety, depression, and PTSD, regardless of an individual's ability to pay. In addition to talk therapy, they offer alternative therapies such as art therapy and meditation. But the real draw is the land itself. Clients hike the trails and work in the soil. For Doc Warren, it's a dream come true.

"I've always been a hiker; I've always loved nature," he said. "Anytime you can mix work with something you love, it's a winning proposition." "We think of it as our farm family. We have people here from all walks of life."

Doc Warren" Corson



Clinical studies suggest that he is on to something. While they don't eliminate the need for other treatments, such as medication, nature-based therapies have been shown to be effective for people who suffer from trauma, anxiety, depression, and other illnesses. But insurance companies won't pay for nature-based treatments, and Doc Warren and the other clinicians can only bill for more traditional therapies.

"If you see me out in the field planting seeds, it may be with a client. But a lot of the work that incorporates nature right now is on a pro-bono basis," he said. "This is not a cash cow, but we love it." At Pillwillop, they raise vegetables, chickens, rabbits, and Christmas trees. Produce is available for free to volunteers. Over the past several years, the farm has grown into a community space, a kind of retreat from our increasingly harried lives. Volunteers work the soil, feed chickens, hike in the woods, and practice meditation. They donate their time, or on occasion, the use of their equipment, such as a tiller to prepare the fields for planting. Volunteers also designed and built an office on the third floor of the barn, increasing the clinic's functional office space by some 1600 square feet.

"We think of it as our farm family," Doc Warren said. "We have people here from all walks of life."

he Pillwillop Therapeutic Farm website emphasizes the importance of connecting with each other in nature. "When we connect with each other in nature," it reads, "we have a chance to learn more about ourselves and the way we interconnect with the world." It's a powerful vision in an era too-often defined by anger and distrust, and one that's helped to create a deep sense of community. As one client said, "I have been going there on and off for almost six years; it's become more like visiting family."

For Doc Warren, it's also quite literally a family operation. At 45, he still embodies the sort of optimistic entrepreneurial spirit of someone half his age. He runs the nonprofit and maintains an active caseload. When he's not seeing clients, or doing administrative tasks, he's working on the farm. His wife, also a fulltime clinician and a renowned artist, helps with farm chores, as does his son, Warren Corson IV, who's also a therapist. His mother, "Nana," answers the phone; his mother-in-law does the billing. It's this commitment to family and community, as well as to the land that convinced Walt that Doc Warren was the right person to buy Pillwillop.

Pillwillop Therapeutic Farm, situated at the former "Grand Junction" of the Mattatuck, Tunxis, and Quinnipiac Blue-Blazed Trails, has been in Atwood's family since at least 1860; Walt is the 5th generation owner. His great uncle, who raised vegetables and pigs there, sold cordwood to the brass mills in Waterbury and Ansonia in the early 1900s for seventy-five cents a cord. In the 1950s, his grandfather started a "Choose and Cut" Christmas tree farm. After college, Walt, who grew up cutting cordwood with an axe, took over the family wood business and Christmas tree farm. "I don't consider myself a farmer; I consider myself a woodsman," he said.

In 1964, his grandparents sold off 116 acres. Then, when his grandmother died, she left the remaining 52 acres to Walt and his brother who lives in San Diego. There are also five

sisters all of whom live out of state. But none of the siblings or their children wanted to take over the operation. With no heir apparent, Walt knew he would have to consider selling the land, and decided to put a conservation easement on the farm to ensure its protection in perpetuity.

"My dad spent his life holding the farm together. I didn't think I could do any less," he said. "We're all conservation-minded and avid hikers. We didn't want to see it developed."

Walt had met John Hibbard, former executive director of CFPA, through the Connecticut Christmas Tree Growers Association. The first easement, donated to CFPA, was completed in 1999; a second easement, also held by CFPA, was put on the land in 2011, shortly before Doc Warren purchased it.

Last year, Walt and his wife relocated to Phoenix to be closer to their daughter who had just given birth to twins. He's grateful to be close to his grandchildren, but he admits it was hard to leave the farm.

"Doc Warren did keep me on as the property manager as long as I lived there," Walt joked.

Doc Warren is proud of what they're doing at Pillwillop, but is quick to give credit to Walt.

"Without Walt none of this farm—none of this—would be here."

For more information about Pillwillop Therapeutic Farm, including their mental health services and volunteer opportunities, go to www.docwarren.org



Walter Atwood's great grandmother, Cole, pushes a baby carriage in front of the original farmhouse in the mid-1890s.

Timothy Brown is the Editor of Connecticut Woodlands.

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The Good Earth: Foraging in Connecticut

These days, foraging is catching the interest of many Nutmeggers.

By Katherine Hauswirth

s summer expands toward its lush peak, we are called to look, listen, smell, and feel the abundance around us. But what about *tasting* it? Many of us savor the fruits of our garden labor or visit the blueberry patch as a relished rite of summer. But more of us, also, are exploring foraging. There is much more to eat out there than meets the untrained eye.

much healthier, urging people to return to our Stone Age dietary roots. Roots is a fitting word for a true hunter-gatherer diet. Research shows that foraging played a much bigger role than hunting in the pre-farming era. Looking at modern non-agricultural societies, we see a similar pattern. The Hadza diet, for example, is 70% plant based, including tubers, berries, and baobab fruit.

Of course, foraging is hardly a new concept. We humans got our food from hunting, gathering, and fishing until agriculture started about 10,000 years ago. Flash forward to modern day, and *National Geographic* tells us that the Hadza people in Tanzania are some of the last true hunter-gatherers in existence. On the flip side, advocates of the Paleo diet cite research that says hunter-gatherer societies were



Karen Monger of The 3 Foragers searches for wild grapes.

If you come across an experienced forager in our area, it's unlikely that they view foraging as a means of subsistence, or even a primary source of nutrition. Even Karen Monger, well known as one of The 3 Foragers who routinely leads foraging talks and walks in Connecticut, considers foraging a hobby, albeit one that consumes much of her family's time and has filled two chest freezers in their apartment. But Karen has a day job and entertains no notion of living off her family's pickings. (The other two of The 3 Foragers are her husband, Robert, who photographs their finds, and their 14-year old daughter, Gillian).

Karen and Robert stumbled into foraging. The couple started spending more time outside after Gillian was born, since farther-flung travel wasn't as easy with a child in tow. Robert, who comes from Hungary, idly remarked one day that he remembered a forest plant—some kind of wild onion—that his family used to gather. This led to a search for something analogous here in the States. Foraging became a fulfilling way to spend more time outside, and had the added benefit of slowing the family down so they could take in their surroundings even more. Karen sees the element of the "treasure hunt" for edibles as the icing on the cake. More than a decade after that first foraging adventure, Karen published Adventures in Edible Plant Foraging: Finding, Identifying, Harvesting, and Preparing Native and Invasive Wild Plants (Skyhorse 2016). numerous resources—books, websites, and local mentors—as well as attending classes. She sometimes sees teachers who are under-experienced and don't provide good information; she has found books that misinform as well.

aren encourages new foragers to start slowly and focus on regional resources as plant and mushroom availability and appearance vary from place to place. She adds that often new foragers are excited and seem to want to put every growing thing into their mouths. People sometimes choose to overlook attributes that don't match the guides they are consulting. Besides the emphasis on caution and safety, The 3 Foragers stress the importance of abiding by local laws. Foraging for plants on state property is illegal, while foraging for mushrooms (for personal use only) has been legal since 2017. Permission must be obtained, of course, to forage on all other types of property.

*Weeds are exponentially more nutritious than anything we can grow." Chef Bun Lai, Miya's Sushi

The 3 Foragers' favorite summertime finds include blueberries, wineberries, and garlic mustard. Wineberries and garlic mustard are invasive plants, so Karen points out the opportunity to go "hog wild" with gathering these persistent growers that crowd out native species. While it's difficult to imagine foraging enough to eradicate any population of invasives, putting them to good use may help make a dent, and Karen notes that the practice of storing and eating such finds can help us feel a bit less irritated with these unwelcome botanics.

Summer is also prime mushroom season. Robert is the Education Director at the Connecticut Valley Mycological Society; Karen runs the Society's newsletter. She says that Americans seem much more fearful about eating misidentified wild mushrooms as opposed to wild plants, when in fact plants can be just as (or even more) dangerous.

Any foraging resource worth its salt will come with a prominent note of caution, and this includes people presenting themselves as experts. The 3 Foragers distribute a handout that begins: "Only eat what you have identified with 100% certainty!" It goes on to stress the need for familiarity with edible as well as poisonous look-alikes, and to use more than one resource to help identify picks. Karen is quick to emphasize that she and Robert have studied foraging intensely for over a decade. This has involved consulting Ed Smith, who teaches Exploratory Science at Two Rivers Magnet Middle School in East Hartford and is an instructor at the James L. Goodwin Conservation Center's Master Naturalist program, has been foraging for over 50 years. His first foraging experience as a child was pokeweed; other early samplings included dandelions and daylilies. These days, his favorite forage is the ostrich fern fiddlehead. He likes to blanch and freeze them for future meals. Ed also likes black walnuts or butternuts in cookies or pancakes as well as juneberry, stinging nettle, and cattails. Ed advises new foragers to join groups like the Connecticut Mycological Society and the Connecticut Botanical Society, and he considers Euell Gibbons' 1962 classic, Stalking the Wild Asparagus, and other Gibbons books, the "bibles" of foraging. However, he supplements these sources by Googling for "updates and new knowledge that Euell did not have." Like Karen, Ed emphasizes the need to consult multiple sources-especially about toxicity-before sampling a forage. Ed also notes that people should always taste small portions when trying something new; he has noticed that some people report a "peppery tingling" in their mouth, which might indicate an allergy.

Foraged food is also making its way onto restaurant menus. New Haven chef Bun Lai has received widespread praise for his use of both foraged plants and invasive seafood species at Miya's Sushi, billed as the world's first sustainable sushi

"While it's difficult to imagine foraging enough to eradicate any population of invasives, **putting them to good use may help make a dent.**"

restaurant. In an interview with The Table Underground, Bun waxed enthusiastic at the abundance of food all around us. He noted, "Weeds are exponentially more nutritious than anything that we can grow, because over tens of thousands of years of cultivation, we've cultivated the nutritiveness [sic] out of the foods that we eat. It makes sense for us to be eating weeds and...they are also hardy against the yoyoing of the climate." He added that people don't typically eat enough greens, and that those we do eat are often conventionally cultivated and can be laden with pesticides. Using foraged plants can be a healthier alternative.

Bun harvests wild finds as well as cultivated plants at his farm in Woodbridge. He has also experimented with cultivating weeds that are not typically eaten in this area. For

Garlic Mustard Roulade

1 pound garlic mustard greens, flower stalks, and flowers 1/2 tsp. ground nutmeg

- 1/2 tsp. sea salt
- 1 tsp. smoked paprika
- 2 tsp. granulated garlic
- 1/2 tsp ground black pepper
- 4 egg yolks
- 4 egg whites
- 2 cups shredded mozzarella cheese
- 1. Heat oven to 425° F. Prepare a sheet pan with parchment paper.
- 2. In a large pot of boiling water, blanch the garlic mustard greens for 1 minute. Shock the greens in ice water to stop the cooking process, and squeeze as much water from them as possible.
- 3. Add the cooked greens to a food processor. Add the nutmeg, salt, smoked paprika, granulated garlic, black pepper and egg yolks. Pulse until the garlic mustard greens are finely chopped.
- 4. In a mixer, whip the egg whites until stiff peaks form. With a spatula, fold 1/3 of the egg whites into the greens mixture, mixing until no more whites are seen. Then gently fold in the remaining egg whites, until the mixture is uniform.

example, he let sorrel take over a bare plot by culling the other weeds that came up around it. Forages such as purslane, garlic mustard, and dandelion have made their way onto his tempting menu.

No article about foraging can promise a completely safe and easy time of it—there is no substitute for experience, and caution is clearly a key principle. But, caveats aside, the natural world holds a veritable jungle of possibility ripe for our gathering and eating pleasure. This "excuse" to be outdoors is a lovely way to become even more intimate with our local landscape.

Katherine Hauswirth writes primarily about nature and contemplation. Visit her at First Person Naturalist or read her The Book of Noticing: Collections and Connections on the Trail.



- 5. Spread the garlic mustard and egg mixture evenly on the parchment paper covered sheet pan, leaving an inch of exposed paper around the entire edge. Bake until the egg is set, about 12-15 minutes.
- 6. Loosen the roulade from the parchment paper. Sprinkle the top with whatever you are using as a filling, or just cheese.
- 7. Starting with the wider side, roll the roulade up like a jelly roll, ending seam side down. Bake an additional 10 minutes to melt the cheese and warm the filling.

Makes one, 12" roll, about 8 servings.

Recipe used with permission of Karen Monger at The 3 Foragers blog.

Always use caution, respect property rules, and consult multiple expert sources about all foraged foods!

Bringing Nature Inside

Girls in an afterschool STEM program develop a deeper connection to nature by raising tadpoles in their classroom.

By Emma Kravet

he girls in the GEMS program (Girls Excelling in Math and Science) at the Bethany Community School are inquisitive learners. Every other Friday, these 4th and 6th graders come together to explore STEM topics with Connecticut-based women scientists. Now in its ninth year, roughly 30 girls participate in the popular program, which is led by media and library specialist, Michelle Schwenger.

Last year, I taught the GEMS students about honeybees. I brought them large posters of honeybees, beeswax candles, and some honeycomb to pass around. I was impressed by their thoughtful questions and enthusiasm. This year, I wanted to do something extra special for these girls, and reflected on some of the most meaningful and impactful experiences from my elementary school years.

In school, I had many more opportunities to closely observe nature *indoors* than I did *outdoors*. In third grade, we raised monarch caterpillars and released them as butterflies in the spring. We raised praying mantises in 4th grade, and hatched ducks and chickens. Through these experiences I discovered the diverse and complex life cycles of various animals, including their habitat needs, food and water requirements, and how to carefully handle--or not handle--them. But most important, these formative, up close and personal encounters instilled in me a deep connection to the natural world and inspired a fierce desire to live symbiotically and peacefully within it.

While outdoor field trips are certainly a memorable and exciting way for students to engage with the natural world, the cost of bussing and other constraints can make it difficult for teachers to provide these opportunities. Bringing nature into the classroom is an alternate way to create inspiring educational experiences for students of all ages.



GEMS students (left to right) Brylee (10), Mia (9), Alexa (9), and Sawyer (9) check on the tadpoles' development.

Students aren't the only ones who find the tadpoles fascinating; parents and other teachers frequently stop by the classroom to check on their development.



So earlier this spring, a week after I heard the first quacking calls of wood frogs (*Lithobates sylvaticus*) in the vernal pool behind CFPA's headquarters, I gently scooped up a mass of their eggs and carefully delivered them to the girls in the GEMS program. I had already taught them about vernal pools, vernal pool critters, and their importance to Connecticut's woodland ecosystems. The plan was for the students to observe the eggs as they hatched into tadpoles and then into frogs. Then, before their legs were fully developed, the frogs would be returned to their vernal pool home in the Highlawn forest.

"I have enjoyed every minute of having them in here with me," said Beth Sharkey, a STEM teacher who hosts the tadpoles in her classroom. "I have had some great discussions with our students, including insightful conversations about how long the development will take, and whether or not the warmth of the room has spurred their development."

The students are particularly interested in how quickly the eggs hatched, and make thoughtful observations about their amphibian guests. "I can totally see their eyes! You can see that they are growing into frogs!" exclaimed one student. Another commented that the tadpoles "look like they are wearing a belt; there's a separation into two sections of their body." These observations have led to questions about why the mother lays so many eggs and what happens to their tails, as well as more complex discussions about predator-prey relationships and food webs.

The students aren't the only ones who find the tadpoles fascinating; parents and other teachers frequently stop by the classroom to check on their development. "One woman told me that she finds them incredibly peaceful, and people having a tough day should come in here and watch," Ms. Sharkey said. "Everyone who visits has observations and reflections. People even share about playing with frogs when they were younger." Nationwide, similar programs are cultivating awareness and empathy for nature by bringing wildlife into schools. For example, Trout in the Classroom, a popular program managed by Trout Unlimited, allows Connecticut students to raise trout from eggs to fry and then release them into approved coldwater streams and lakes. This act of raising, monitoring, and caring for trout aims to foster in students a conservation ethic and promote an understanding of our shared water resources.

Courtney Bauknecht, a K-3 science teacher at Brass City Charter School in Waterbury, who also started bringing nature into her classroom with a tank full of tadpoles, says that through Trout in the Classroom, her students "think about the impact of the environment on the development of the trout." On release day, students participate in related activities, such as macroinvertebrate sampling, fly casting, pond fishing, and a forest field survey along the stream to widen the perspective of trout habitat. "A lot of parents and volunteers show up to help out with the stations, and everyone comes away with a greater appreciation of nature and the environment," she said.

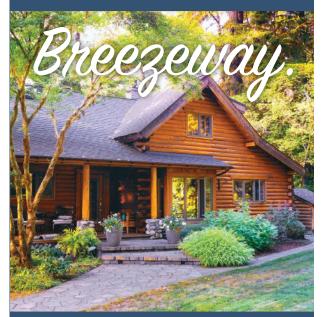
Back at the Bethany Community School, the GEMS girls watch as the tadpoles develop into adult frogs. "I'm excited because they are starting to grow their legs!" said Mattia. "They are getting a lot bigger and I think it's really cool to have them in our school." Another student, Rayna, said, "I wish they could turn into frogs sooner so that they could lay more eggs so we would have more tadpoles. They are amazing!"

"The learning and discussions around the tadpoles has been wonderful to observe as both a nature lover and a science coach," notes Ms. Sharkey. "I love when students who might not normally be exposed to an experience like this can have a conversation about it with a friend."

Emma Kravet is the Education Director at CFPA.







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but as I come closer I can see it is a large snapping turtle, having left its pond, no longer fecund or starved by a siege of new houses ringing its shore, crossing a border into territory it does not understand, at the mercy of power, its mud-covered carapace now a useless shelter.

INTERSECTION

In a better world

strangers would slow and then stop, backing up traffic both ways despite the clueless horns of entitlement until this wizened being older than the dinosaurs can plow ahead, one stiff step at a time, this immigrant, this Other,

the bravest among us getting out of our lives to lend a hand.

Steve Straight's books include The Almanac (Curbstone Northwestern University Press, 2012) and The Water Carrier (Curbstone, 2002). He is professor of English and director of the poetry program at Manchester Community College, in Connecticut.







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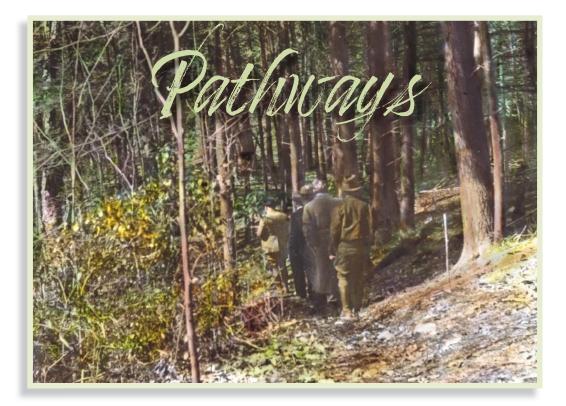
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here is no better season than summer to get out and explore Connecticut's forests and parks. From Sherwood Island State Park in Westport, to Macedonia Brook State Park in Kent, to the 27,000-acre Pachaug State Forest in Voluntown, the Nutmeg state is full of outdoor recreation fun for the whole family. And with over 825 miles of Blue-Blazed Hiking Trails, which this year celebrate their 90th anniversary, there is bound to be a trail close to you.

The above photograph, taken in 1931, shows hikers at Sleeping Giant State Park in Hamden. Last May, tornadoes ripped through the area (read our story in the Fall 2018 issue), toppling trees and destroying trails. After a massive clean-up, involving numerous state and contract workers, and the Sleeping Giant Park Association, the popular park, which features miles hiking trails, multi-pitch rock climbing, and numerous picnicking sites, is set to re-open to the public this summer.





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