CONNECTICUT

Woodlands

WINTER 2019

Embrace the Cold

A MAGAZINE OF THE CONNECTICUT FOREST & PARK ASSOCIATION

The Connecticut Forest & Park Association (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

On the Cover: Winter engulfs Meriden's Merimere Reservoir, page 11. Photo by Bob Pagini

For the Glenney family, conservation is a way of life, page 8

CONTRIBUTOR'S *Spotlight*

Dan Donahue is a retired forester and wildlife biologist who previously served on the CFPA Board of Directors. When he's not working to conserve Connecticut's forests, Dan enjoys woodturning and saltwater fly-fishing.

We caught up with Dan to learn more about his work in land conservation and for an update on Connecticut's forests.

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Woodlands: You served as the chair of CFPA's Forest and Trail Conservation Committee for over 15 years. Describe the role of the committee in conserving Connecticut's forests.

Dan: The committee advises CFPA regarding the acquisition of forestland and conservation restrictions, including the establishment of programmatic policies and practices. Nearly all of these acquisitions have been gifted in areas where no local land trust is operating. As Connecticut's leader in forest conservation, CFPA works to conserve significant forestland anywhere throughout the state and accepts interests in land as a normal part of its mission.

You've spent decades working in Connecticut's woods. What trends have you observed in our forests throughout your career?

Dan: The significant changes in this region's forests during the past four decades are well documented. Most importantly, the quantity of land devoted to forest cover has been declining, and at a faster rate in Connecticut than all other New England states. Species composition has shifted due to high-grade logging, non-native insects, and climate change. On a positive note, the capacity of a well-managed forest situated on good soil to grow large volumes of timber has greatly exceeded what I thought was possible in the early 1980s.

You interviewed Dr. Glenney several times for your story. What were you most surprised to learn while writing this piece?

Dan: Chris suggested to Marcia that they were destined to be married—on their very first date!

Editor's Note

After yet another brutal election cycle, one that pitted friends and neighbors against each other, it's important that we seek common ground. I mean this in the most literal sense. The land, forests, waters, and wildlife of our beautiful state can unite us, and no one knows this better than the dedicated staff, volunteers, and members of CFPA. We come from different backgrounds, but are connected through our shared values. Some of us are scientists or foresters and have spent a lifetime working in the woods. Others are educators and artists working to reconnect a public who is all too often lost in a virtual reality, back to the natural world upon which all life depends. For some, trails offer a respite from the stresses of daily life, a kind of spiritual retreat. For others, they offer physical and mental challenges. For others still, they are an expression of our civic duty. When a developer threatened to destroy cherished woods, historic trails, and critical wildlife habitat in Hamden, the residents organized, fought back, and won, protecting the land for future generations. After last May's devastating tornados, staff and volunteers risked their own personal safety to clear trails and roads. Recently, CFPA mobilized an army of volunteers who worked to pass Question #2, ensuring transparency and public input when the fate of your public lands is in question.

This issue marks the beginning of my second year as Editor of Connecticut Woodlands. Over the past year I have been inspired by all the ways that our readers connect to the land. Their stories remind me that despite the angry rhetoric that permeates the airwaves these days, we can still come together as communities to safeguard that which we cherish the most.

We're always searching for new stories about people's connections to the land—*your* stories. And we're always looking for new writers and photographers to contribute to Woodlands. If you have a story to share, or would like to contribute, I'd love to hear from you.

Wishing you a joyful holiday season.

I'll see you outside,

Timothy Brown
Editor

Woodlands

Timothy Brown
Editor

David Leff
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Thanks to photo contributions from: Jim Arrigoni, Paul J. Fusco/DEEP Wildlife, Marty Gosselin, Amelia Graham, Laura Kolk, Steve Kornfeld, Carol Ann McCormick, Bob Pagini

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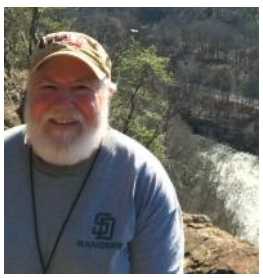
CFPA Updates

The Blue Trails Challenge had great participation again this season, with seven hikers joining that select group of folks who have completed 800 miles. The Challenge is open to all, and participants are awarded when they reach 200, 400, and 800 miles. The photos below show some of this year's challengers in their 800-mile vests.

Top row, from left: Bob Hart, Bob Cornell, Jim Giana. Bottom row, from left: Liane Stevens, Paolo Mannino, Sue Cornell.

This year, we had over 180 hikers complete the NET Hike 50 Challenge in celebration of the 50th Anniversary of the National Trails System. Here's a sample of hikers from Connecticut.



Peter S. - East Hartland
"Try it once and you'll be back for twice." We couldn't have said it better ourselves! Thank you, Peter, for joining the Challenge! *Photo at the Tariffville Gorge, Simsbury.*

Mary, Darin, and Scarlett K. - Colchester
For Mary, Darin, and Scarlett, the Hike 50 Challenge was a family affair! This adventurous trio earned their points by hiking, staying overnight at the Cattails shelter, and by thanking our adopters for their trail work. Scarlett currently holds the title of youngest Hike 50 participant! *Photo at Millers Pond, Durham.*

In the Winter 2017 issue of Woodlands, we reported that there would be a major trail relocation of the Mattabesett Trail in Durham to eliminate a 1.25-mile road walk. Now, we're thrilled to report that the new 4.2-mile trail is open. On October 11th, an enthusiastic crowd celebrated the official trail opening. Many thanks to the CFPA Rock Stars, countless volunteers, and our Summer Trail Crew, as well as our partners at DEEP, Regional Water Authority, and the Towns of Durham and Madison for their hard work that made this trail relocation possible.

An AmeriCorps NCCC crew worked on the Blue-Blazed Hiking Trails this fall, completing various projects, including bog bridging on the Cockaponset, Highlawn, Tynan Park, and Walcott Trails. They were a great crew and helped us improve the trail system, making it better than it's ever been!

From the Statehouse

By Eric Hammerling

Victory for Public Lands, and a Challenge for the Future

When Question #2 passed on Election Day 2018 with nearly 85% of voters responding "Yes," I imagined state parks, forests, and other irreplaceable public lands sharing a collective sigh of relief.

After all, for many years, the General Assembly has been able to give away public lands at the end of each Legislative session through last-minute legislation passed without any public input. In the future, the General Assembly will not be able to do this without violating the state constitution.

Passage of Question #2 immediately amended the state constitution to ensure that *before* the CT General Assembly could sell, swap, or give away public lands in the future, they must first 1) hold a public hearing; and 2) achieve a two-thirds majority vote on proposals to convey away state parks, forests, wildlife management areas, and state-owned farmlands. (Technically, the two-thirds vote extends to lands or interests in lands such as conservation easements held either by the Department of Energy & Environmental Protection or the Department of Agriculture).

As you know, Question #2 is not about protecting every piece of state-owned public land forever. The focus of Question #2 is to require public input and transparency in the state constitution when the fate of public lands hangs in the balance. Since these public lands belong to all of us, this should be a basic right for the public, and fortunately a large majority of voters agreed.

But hard-won rights are just like parachutes—they only work when you use them, and that is the challenge for the future. Guess what happens when public hearings are held on a proposal to sell, swap, or give away public lands and people don't show up or submit testimony? That sends a signal, accurately or not, that the public doesn't care, and that's when controversial proposals are able to move forward. Now that we have the constitutional right to ensure these proposals are discussed in the light of day, we must ensure that we use that right.

So, will you participate when public hearings about public lands are held in the future? I certainly hope so. One of my personal goals is to help publicize widely whenever opportunities to participate when such public hearings arise.

Before forging ahead, I think we should all take a step back to look at both what was accomplished, and how. The seeds of this public lands victory were sown five years ago when CFPA and dedicated partners like the Connecticut Land Conservation Council, Council on Environmental Quality, Friends of Connecticut State Parks, Rivers Alliance of Connecticut, and others, began the research into specific solutions to better protect public lands from the whims of the General Assembly. It took years of effort to turn ideas into policy proposals, build a coalition of over 135 groups, find dedicated legislative champions, and advocate consistently though several legislative sessions to get the issue on the ballot. Lastly, a positive campaign for its passage at the polls finally turned the high-minded concept of "constitutional protection for public lands" into reality on November 6th.

This was the first time any environmental issue had been on the statewide ballot in Connecticut, and the landslide victory showed conclusively that Connecticut residents care enough about public lands to show up and vote in large numbers to protect them. We hope that this will send a signal to next year's General Assembly that public lands are an issue that voters care about, and hopefully build momentum for future successes for public lands in Connecticut. Thank you for your support of CFPA that makes all of this positive momentum possible!

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

A Family Tree Grows in a Woodland Preserve

For three generations of the Glenney family, conservation is a way of life.

By Dan Donahue

Dr. Chris Glenney greets me at the door of his early American home with the same warmth and good humor that marked our first meeting over a decade ago. The near-original interior of this antique residence—the core structure dates to 1658—is decorated with family photographs and artwork spanning the 53 years that Dr. Glenney and his late wife, Marcia, have made it their home. Framed black and white photographs of their ten children mingle with color pictures of some of their thirty grandchildren. A rich trove of family memories is the real treasure within this architectural gem.

We first met in early 2007 after Chris and Marcia contacted CFPA to learn how they might preserve their 375-acre forest. Even in a small state with well over a hundred land trusts, there are still gaps in Connecticut's land trust service areas. As Connecticut's oldest conservation organization and a leader in forest conservation, CFPA has been a land trust since its inception and has often fulfilled this role where these gaps exist. Well-informed on conservation and farming practices, Chris was aware that CFPA was Connecticut's leader on forestry issues and the best place to start a conversation about preserving the family forest. That first meeting was the beginning of a multi-year effort to make the forest a permanent natural resource for current and future family members. In December of 2007, the Glenneys donated permanent conservation restrictions on 375 acres of the family woodland. In 2015, Dr. Glenney's two oldest sons, Chris and Dan, added another 33 acres to this protected forest. CFPA will continue to partner with the Glenney family as the association fulfills its obligation to monitor and safeguard the conservation values of this significant private woodland.

Chris met Marcia Goodman in Michigan in 1944. She had received a 4-H scholarship to attend Michigan State University and Chris had travelled there from his family farm in Coventry, Connecticut, to study veterinary medicine. Having grown up on a farm, Chris relished the work and responsibility of daily feeding and watering of animals, milking cows, and collecting eggs, so much so he took full responsibility for managing the farm operation while just a sophomore in high school. Veterinary medicine was a natural choice of study for this farm boy. But the late stages of World War II would separate Chris and Marcia for two years and change the course of their lives. Chris was initially drafted by the Army and trained to be a corpsman. But he ended up spending most of his service in the Navy, including time on a hospital ship, a vastly different learning environment from a veterinary school. After he

was discharged from the Navy in 1946, Chris travelled to Michigan where he and Marcia were reunited. They married the following year and soon moved to Connecticut where Chris went on to practice orthopedic surgery. But farming would remain one of his lifelong passions.

In 1963, an antique home in Norwichtown Chris and Marcia admired became available at about the same time a farmhouse and 100 acres came on the market. They had to have both. Over the next 50 years, Chris, with the frequent help of his children, would grow and sell thousands of Christmas trees. Vegetables of every sort were raised for family use, a practice Chris was accustomed to when he was a boy, when family memories of the Great Depression were still fresh in the minds of his elders. Chris and Marcia acquired more abutting forestland in the 1980s and 90s, growing the property to more than 350 acres and adding valuable natural features, including land along the main stem of Old Stone Mill Brook.

Guided by a man with a passion for farming, the children grew up with the land, helping on the farm, planting and shearing Christmas trees, harvesting vegetables, picking berries, hunting woodcock and ruffed grouse in the woods and field edges. As they matured, Chris and Marcia's children watched the trees grow larger, the forest grow older, and the unexpected decline of some of the birds of their youth. As adults they were prepared to embrace the responsibilities of land ownership. Their work would become more complex and exceedingly more important as they embarked on their plans to preserve the family forest.

Son Chris helped negotiate a donation of the land's development rights to CFPA. He was also instrumental in establishing the Old Stone Mill Foundation Trust, a tax-exempt organization that serves as a mechanism for building long-term financial stability. Son Dan led the way on acquiring and building a sheltered sawmill on the land a few years ago that has been used to produce lumber for a number of family building projects. Lumber milled from Glenney timber was donated for building a storage building for a local church; some family members were also involved in constructing and painting the new structure. Caleb is one of the grandchildren who spends as much of his free time as possible on the family land and, according to his grandfather, "knows those woods as well as anyone." The sawmill, which is located outside the conservation restriction, has been a recent focal point for family projects and Caleb has been able to spend quality time working hand in hand with his grandfather and others.

Generations of conservationists: Seated from left, sons Dan and Chris with their father, Dr. Chris Glenney.

The conservation practices employed by Dr. Glenney's children produce a variety of benefits for current and future family members. Generations will know the joy of a simple walk in the family woodland, the satisfaction of improving habitat for species in decline, and the financial rewards of harvesting timber from a sustainable forest management program and milling the logs into value-added lumber for family use.

There are many more people across a much larger landscape that will benefit indirectly from this preserved private forest. The Glenney forest fits into a forest conservation strategy that spans all of New England. Forests just like theirs, from Connecticut to Maine, are being prioritized for conservation because they are part of the largest remaining concentrations of interior forest habitat in the region.

Among the most important beneficiaries of the Glenney's forest management are wildlife who require young forest and shrub habitat stands, such as the New England cottontail rabbit, a native species that has lost much

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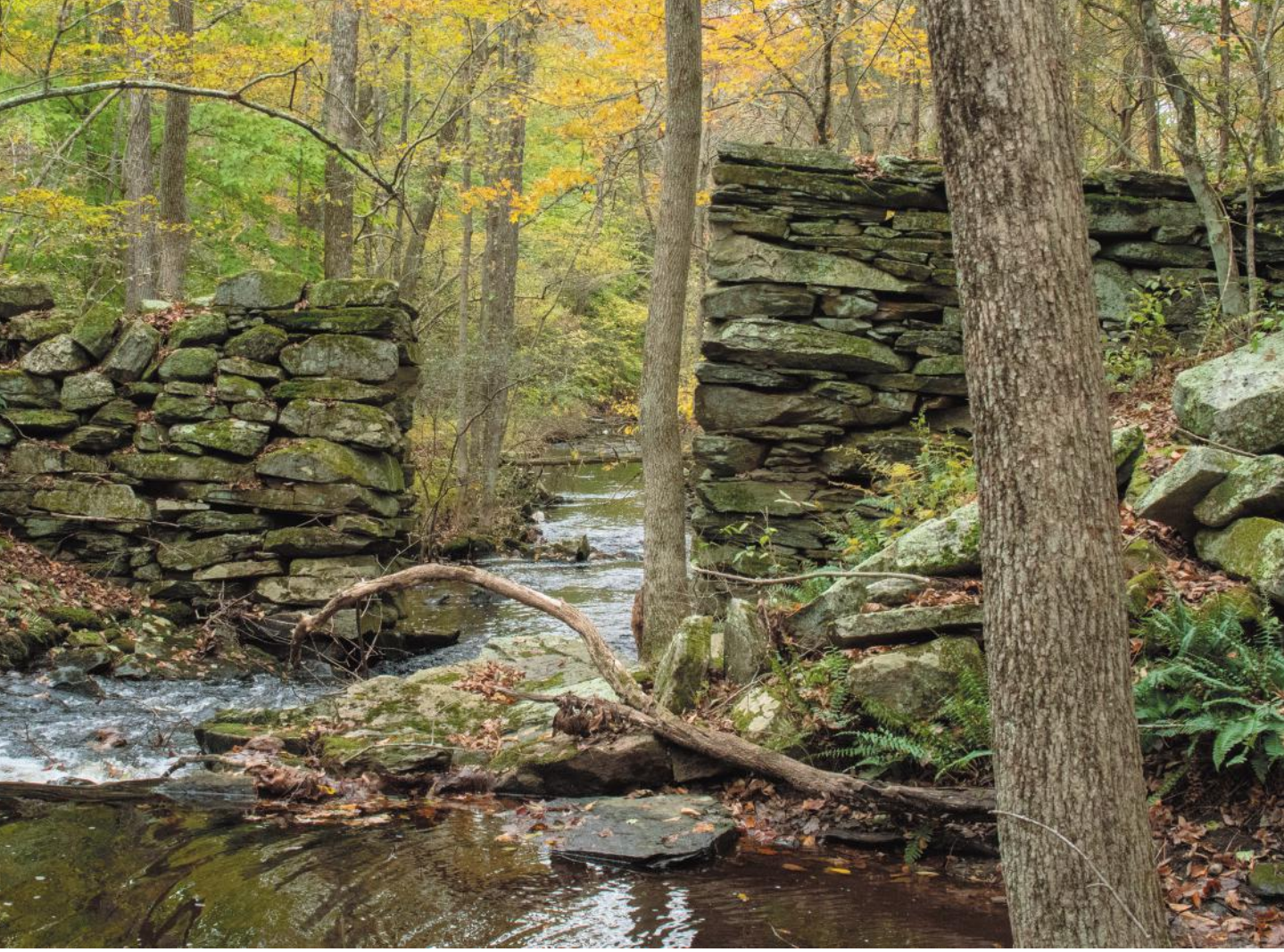

of its habitat to the introduced Eastern cottontail rabbit and was recently considered for the federal endangered species list. Others that may use this young forest habitat include American woodcock and ruffed grouse, birds the Glenney children remember fondly from their youth but rarely see today.

Large-scale forest conservation is necessary to counter one of Connecticut's prominent land use trends over the past four decades—forest loss and fragmentation by an ever-expanding network of paved roads and the development that inevitably follows. This spider's web of convenience has penetrated every part of the state, contributing to forest loss and threatening wildlife species that require large expanses of unbroken forest to survive. In 2006 UConn's Center for Land Use Education and Research estimated that out of the state's more than three-and-a-half million acres, a mere 1,000 acres of forestland are located more than a mile from a public road. As a result, wildlife habitats, water and air quality, and the ability of forest ecosystems to resist and adapt to the stresses of climate change are being diminished.

Researchers, academic authorities and leading conservation organizations, including Harvard Forest, The Nature Conservancy, Highstead, Mass-Conn Regional Conservation Partnership, and CFPA are emphasizing the conservation of the largest remaining undeveloped forest landscapes in Connecticut. And among the most important ingredients for success are conservation-oriented landowners. With the vision and generosity of landowners like Chris and Marcia Glenney and their like-minded children, it may yet be possible to preserve the last, great, forested habitats of New England.

The Glenney forest fits into a conservation strategy that spans all of New England.

Dan Donahue is a former director of CFPA and served as the chair of CFPA's Forest & Trails Conservation Committee from 2001 through 2016.

Seeking Solitude

Winter backpacking provides new perspectives for those willing to embrace the cold.

The campfire flickered and danced on the snow-covered rocks, casting a warm light on the blanket of white around our campsite. Not a trace of light could be seen in the sky above. This was winter backpacking at its finest, when familiar places offer a new perspective.

Backpacking in what is often called the "off-season" may not be for everyone, and it definitely has its challenges—icy snow, howling winds, freezing temperatures. But there are also many aspects that I love. It allows me to expand my comfort zone, to see wildlife in winter, and to experience solitude. Plus, I simply can't imagine missing an entire season outside!

I first met Scott at a backpacking fundamentals clinic. He was enthusiastic about the outdoors and had always wanted to try winter backpacking, but wasn't sure where to begin. As an experienced guide, I was more than happy to help.

On a bitter January morning, we hit the Mohawk Trail in northwestern Connecticut. Our goal was to make it six miles to camp. We entered the woods with our paper maps in hand. Thick spruce and white pine towered above leafless black birch. The snow was smooth; not a track as far as we could see. The air smelled clean and would bite at our throats if we breathed it in too long. But soon the wind picked up. Snow began to fall, piercing our jackets. We stopped to put on our goggles and outer shells to protect the other layers from freezing. Layering is critical for winter backpacking. It allows you to adapt to varying conditions without carrying an excessive amount of clothing and weight.

Bigger packs are also the norm for an adventure at this time of year. The extra space provides room for all of the necessary gear—extra clothing, a backup stove and fuel, spare lithium batteries, oven bags for a vapor barrier liner—to safely and comfortably spend a few days outside in the constant cold.

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Merimere Reservoir in winter's grip. Photo by Bob Pagini

We moved slowly through the deep snow. Our snowshoes helped us to avoid sinking into the snow with each step. Postholing, as it is called, is inefficient and tiring for even the strongest of ankles. By using snowshoes, we were able to create a smoother surface for hiking, saving our energy and reducing the chance of injury.

Tiny crystals began to coat our balaclavas as our climb intensified. We shortened our poles and engaged the heel lift bars on our snowshoes. I asked Scott how much water he had left. Staying properly hydrated in the winter can be challenging and requires discipline. Looking at our maps, we found a stream where we could stop to rehydrate.

After refilling our water bottles, we continued the climb, our bodies adjusting once more to the harsh conditions. Our steps were deliberate and rhythmic, and the sounds from our crampons and the spraying snow created a hiker's meditation. It's hard not to draw your attention to the present moment in such an eerily quiet landscape.

We arrived to the highest elevation of the trip, Barrack Mountain. Ice-glazed rock cracked like glass with each step. The crisp air and bright sun felt refreshing. But suddenly the surrounding peaks began to disappear. I've seen this before. Snow squalls can pass through at any time. Unsure how long this one would last, Scott and I moved quickly to get below tree line where we would be less exposed to the approaching storm.

The wind picked up, rushing ahead of the squall, and we were soon in the middle of a whiteout.

The wind picked up, rushing ahead of the squall, and we were soon in the middle of a whiteout. You couldn't spot a blue blaze on the trees. We discussed our options—dead reckoning, kicking or throwing snow before each move, or descending rapidly using our maps and compass to navigate. But we were in a safe location and decided to stay put for a few minutes, hoping the storm would pass. Our decision paid off. After several minutes, we were able to see a couple of feet in front of us, then a couple more, and then more until we found ourselves on the other side of the menacing cloud.

We finally reached our camp, a spacious and unoccupied site, around 3:30. Night would soon fall and we needed to take advantage of the last remaining daylight. We began what I call a "campsite routine"—storing food, setting up shelters, creating a kitchen, building a campfire. The routine helped us remain efficient as the light dwindled.

With our campsite set up, we sat down to a hearty meal of homemade, dehydrated chili. On average, winter backpacking burns between 3,500 to 5,000 calories a day. After dinner, we sipped hot chocolate by the fire as we dried our damp clothing and gear.

Stars pierced the sky above our camp. The only sounds were those of our crackling fire, a gentle breeze passing through our camp, and a pack of coyotes howling in the distance. In Connecticut, solitude like this isn't hard to find if you're willing to embrace the cold. But it definitely has to be embraced. No matter how many trips I take, each one is refreshing a nd new. It's moments like these that make winter backpacking so special.

Mat Jobin is the founder and owner of Reach Your Summit, with a mission to make the outdoors enjoyable and accessible for everyone. He lives in Collinsville and can be contacted at reachyoursummit.net

Staying Warm

Winter Backpacking Tips

Keep Moving Clothing will help trap heat, but it's our bodies that keep us warm. Stay on the move and do so at a reasonable pace to avoid excessive sweating.

Eat More High-fat snacks such as chocolates, nuts, and cheeses can help keep your internal furnace burning in freezing temps.

Drink Up You can dehydrate just as quickly in winter as you do in summer. Keeping hydrated will help with temperature regulation. Add sugary mixes to the water to help prevent it from freezing and for a quick energy boost.

Carry a Sit Pad During a snack break, thermal conduction can take our heat from us quickly. Set a sit pad down before you rest to avoid letting this happen. Don't have a sit pad? You can use your pack in its place.

Don't Let Your Water Freeze Insulate water bottles with a glove, wool sock, or a thermal sleeve, and store your bottles upside down to help prevent the lids from freezing.

Make Every Step C.ount Use snowshoes, hiking poles, and crampons to save energy and reduce the chance of injury.

Bring Extra Gloves and a Hat An extra pair of gloves and a hat that is a little thicker than the one you wear while hiking can be used during breaks or when you're sleeping.

Thanks to Sales Manger Paige Cox and REI Co-Op in West Hartford.

Connecting Students to the World Outside

A field trip for local sixth graders to the Goodwin State Forest bridges many gaps.

By Emma Kravet

The James L. Goodwin Conservation Center in Hampton, Conn., is just a 12-minute drive from the center of Windham, but a world away for many of Windham Middle School's students. This past October, Windham's sixth-grade class—some 240 students—had the chance to explore the state park's diverse ecological features while building community and connections to the land.

Guided by skilled volunteers from CFPA and the Friends of Goodwin Forest, students rotated through a number of stations where they investigated woodland, meadow, and pond habitats; learned to read trail blazes; and built shelters out of sticks. CFPA's staff educators, Emma Kravet and Beth Bernard, designed the content-rich program, which was connected to the school's curriculum. But the program also allowed the students time to just be kids, exploring the woods on their own terms. "We want students to have real-world experiences," said assistant principal Marcus Ware, who also attended the field trip. "This is exactly what they needed."

One focus of the program was to encourage students to develop empathy for all living things. Students held pond snails, learned to be mindful not to step on slugs, and observed caterpillars and spiders in the meadow. "The students were able to experience nature with their own senses, including the slimy, the scaly, and the beautiful parts," said Beth Bernard, program director at Goodwin. "The students embraced every minute of this opportunity to learn outside of the classroom!"

"We were the last ones at the water," boasted one student who ended her day at the pond station. "So we got to put the tadpoles back and they'll become frogs."

Both program leaders and the students were able to learn from each other. While the staff were able to share their knowledge of the natural world, the students—a talented, multilingual group—were able to share the names of plants and animals with their guides in other languages such as Spanish, Portuguese, and K'iche'. For example, students

> "In the forest I learned how to do a shelter and I saw mushrooms. When I went to the next station I noticed that there were no mushrooms because it was another habitat. Then I caught a katydid and I saw a caterpillar." **Denise-age 10**

"I learned how you can pick up a bug without hurting it. I also learned that dragonflies are born in a pond. In the pond, I got a net and went to catch something. I caught a tadpole." **Telma-age 11**

caught dragonfly nymphs in the pond and learned that these insects begin their lives in the water. "Then they taught their guides that these critters are called *libélulas* in Spanish," said CFPA development assistant Amelia Graham.

Myra Gonzalez Cruz, science teacher for the dual language program, noted that many of her students face socio-economic challenges at home and that the day offered an opportunity for her students to forget about these challenges. As she watched the students work together to construct debris huts out of sticks, Cruz said, "This is of great value for them socially and emotionally, not just educationally."

The field trip was made possible through the generous support of the Janvrin Fund at the Community Foundation of Eastern Connecticut. The Goodwin Conservation Center and State Forest are managed through a joint partnership by the Connecticut Department of Energy & Environmental Protection and the Connecticut Forest & Park Association.

Emma Kravet is the Education Director at CFPA.

Waiting for Winter

How climate change is impacting Connecticut's hibernators

By Hanna Holcomb

On chilly winter days, we shiver, stomp, and jump up and down to stay warm. Blood vessels near our skin's surface constrict to reduce heat loss. Goosebumps appear and our fine body hair stands up, trapping warm air against our skin. But ultimately, we put on more clothing and head indoors to drink hot cocoa.

Connecticut's fauna has adapted to winter in other ways. For example, blue-winged warblers migrate towards the equator. White-tailed deer gain weight and grow a special winter coat to stay warm. Eastern chipmunks dig underground burrows to stash nuts that they'll eat throughout the winter. Other animals, like black bears, big brown bats, and wood frogs have evolved to sleep it away.

Animals hibernate to conserve energy when food is scarce and the weather is extreme. During hibernation, their metabolism, heart rate, and respiration slow, and their body temperature drops until spring arrives. The depth of these animals' dormancy varies. True hibernators, like woodchucks, drop their heart rate to the single digits and their body temperature falls to about 40 degrees Fahrenheit. Others, like skunks, are more casual snoozers. Their heart rate and body temperature don't decrease as much and they can be roused from sleep.

The environmental cues, like temperature and food availability, that tell these animals when to hibernate are being affected by climate change. Winters in the northeastern United States are becoming shorter and milder, and spring thaws occur earlier, according to the National Climate Assessment. These seasonal changes are impacting the animals' overwintering behaviors.

Black Bears *(Ursus americanus)*

In the fall, black bears prepare for winter by going into a period of hyperphagia, or overeating. They eat more than 15,000 calories a day, gorging on nuts, fruits, and insects, and gain about 35 percent of their body weight. Plumped up, black bears enter a den in mid-to-late November where they will stay for the winter.

"They look for dens that are sheltered and secretive," said Paul Rego, a wildlife biologist at the Connecticut Department of Energy and Environmental Protection (DEEP). "Often the den is under a brush pile, in rocky crevices, under domed logs, and occasionally in a manmade structure like in a culvert or under the deck of a house."

During the denning period, the bear's metabolism slows and their respiration and heart rate drop. They do not eat, and often don't urinate or defecate. But black bears are not completely dormant during the winter. They can be

awakened, and mothers even give birth to a litter of two or three cubs every other January. Warmer springtime temperatures prompt the bears to emerge from their den and become active again.

"We don't have long-term data to say what the average denning length used to be 50 or 100 years ago," said Rego. "But we do know that a number of the environmental cues that signal start and stop of denning are affected by climate change."

According to the National Climate Assessment the average temperature in the Northeast has increased by 2 degrees Fahrenheit since 1985, and if greenhouse gas emissions continue to rise, the temperature could rise by as much as 10 degrees by 2080. Further, scientists predict that spring will arrive two days earlier each decade in New England.

Warmer autumn temperatures extend the growing season and the time during which bears can forage, which may delay the start of denning. A study of black bears in Colorado found that for every 1.8 degree increase in average fall minimum temperature, denning was postponed by more than two days. The same increase in average spring temperature caused the bears to emerge more than three days earlier.

Shorter denning periods can lead to increased bear-human conflicts. If bears emerge from their dens before natural foods begin to grow, they are more likely to seek out garbage cans and bird feeders. If other techniques like relocation and aversive conditioning do not dissuade the bear, euthanasia often becomes a last resort.

Big Brown Bats *(Eptesicus fuscus)*

Like black bears, big brown bats also go into hyperphagia, feasting on insects such as beetles, moths, and flies to gain weight before moving to their winter hibernation locations.

They hibernate in warm spaces like underground caves, basements, and buildings. During hibernation, their metabolism slows allowing them to conserve energy when food is scarce. But this also suppresses their immune system and makes them susceptible to white nose syndrome, a fungal infection that interferes with a bat's hibernation. White nose syndrome disrupts sleep patterns, causing the bats to emerge during the winter and burn up fat reserves. The disease also degrades wing tissue; wings become brittle and tear, preventing the bats from flying and foraging.

"White nose syndrome has had a phenomenally negative impact on our bat population," said Jenny Dickson, a wildlife biologist at DEEP. "For bats that hibernate, most of their populations have dropped by 95% or more in the past decade. And as a result, most of those cave bats, with the exception of big browns, are now state listed species."

Bats typically emerge from hibernation in late March or early April, feeding on insects that have also become active. They leave their hibernation sites, forage, and gradually move to their summer sites. Like black bears, bats are delaying the start of their hibernation because of warmer falls. Without a hard frost, invertebrate populations survive

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The environmental cues, like temperature and food availability, that tell these animals when to hibernate are being affected by climate change.

later into the season, giving the bats a steady food supply. The frost-free season has increased by about ten days in the Northeast since the 1990s compared with the 20th century average, according to the National Climate Assessment.

"The bats are now playing a game: 'Oh look it's still 50 degrees in late November. I can stay out a little while longer,'" said Dickson.

Big brown bats are tolerant of light frosts, but delaying hibernation increases the likelihood that they'll get caught in a bitter cold snap and die.

"Spring weather has been extremely variable in the last few years," said Dickson. "Emergence time used to be a little bit more predictable, but now it's harder to predict because of changes in weather patterns."

Variation in emergence times can cause mismatches in predator-prey relationships. For example, if insects emerge early because of a warm spring, but bats emerge at their "normal" time, the bats will miss their regular post-hibernation feed. Also, the early-emerging insect populations will be higher because they are not reduced by bat predation.

Wood Frogs *(Rana sylvatica)*

Unlike black bears and big brown bats who can internally regulate their body temperatures, wood frogs are poikilothermic, their body temperature matches the surrounding environment. Frogs sit with their belly pressed against the soil and thus the frog and soil are the same temperature. When the soil on which they overwinter freezes, they do too.

Water expands as it freezes, so ice inside a frog's cells would cause them to rupture. But when the wood frog starts to freeze, its liver produces an excess of glucose that floods the space between the frog's cells and acts like antifreeze. It draws water out of the cells and—like putting salt on an icy sidewalk—lowers water's freezing temperature, preventing ice from forming inside the frog's cells. During the winter, the wood frog is cold to the touch, an icy frogsicle with no heartbeat or respiration.

The frog stays frozen until soil temperatures rise. Its internal organs thaw first. Then its heart begins to beat again, and within a day it becomes fully awake, ready to eat and mate.

Tracy Rittenhouse, an Associate Professor in the Department of Natural Resources and the Environment at the University of Connecticut and her student Jason O'Connor have studied freezing frogs in natural habitats. They used small radio-transmitters to follow frogs to overwintering sites within leaf litter on the forest floor. Data loggers measured the temperature of the soil the wood frogs were sitting on throughout the winter. Then after every snowfall, they removed the snow covering half the frogs. They left snow on the other half.

Frogs froze and thawed seven times on average during the winter. But the coldest temperature that a frog experienced during the winter predicted whether or not the frog would survive the winter.

"When there's thick snow, the soil surface doesn't freeze. The snow acts as a blanket," said Rittenhouse. "The frogs that had the snow removed from them did worse."

The National Climate Assessment shows that the percentage of snow pack out of total yearly precipitation has decreased. So even though the northeast is expected to get more precipitation during the winter, including a higher frequency of intense storms, it is likely that most of that precipitation will fall as rain. Without snowpack, wood frogs are exposed to colder soil temperatures and are less likely to survive the winter.

* * *

Black bears, big brown bats, and wood frogs are just a few of the animals affected by shorter and milder winters. But climate change is forcing all wildlife to adapt to a human-altered environment, and threatens the health of species across Connecticut.

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

Growing Christmas Trees in Connecticut

Connecticut boasts over 500 Christmas tree farms. Most are family-run businesses, including Herzig Family Tree Farm in Durham (pictured above). Tree farms help to preserve open space, protect ground water, and provide wildlife habitat. And growers contribute some $10 million dollars annually to our state's economy.

Warren Herzig and his brother-in-law first planted Christmas trees—eight acres of white and blue spruce—on their family's farm in 1980. They continued to plant nearly 1000 trees a year, and in 1988 had their first sales. Warren, who eventually bought out his brother-in-law, now grows some 8000 trees along with his son, Jon, who helps with planting, shearing, and holiday sales.

We sat down with Warren to learn more about the Christmas tree business.

Woodlands: What do you think people enjoy most about getting a Christmas tree?

WH: I think a lot of people like the tradition of coming to a farm, feeling welcomed, spending time with their family, walking the property. Some people come and tailgate for a portion of the day. I see a lot of repeat customers every year, and now children from former customers are purchasing trees from us.

How has the business changed over the years?

People are getting their trees earlier and earlier. I'm trying to stick to tradition. I don't want to do anything before Thanksgiving regarding trees. Let's do Thanksgiving first, and then we can do Christmas.

It took you eight years after planting before you had your first sales.

You don't get into it overnight. It's a long wait before you collect anything. And you don't just put the seedling into the ground and then come back years later. Except from Christmas to March, there's something to do most of the time—planting, mowing, shearing. Most weekends you're up at 5, shearing or mowing until 8, then carrying on with the rest of the day.

Anything else you'd like to add?

I've been very fortunate to have people work for me during the tree season; without their help, we wouldn't have what we have. On busy weekends, we have five to seven people helping out. They get breakfast and lunch; they get paid and tips, but it's more than that. Most of them have been doing this since they were in junior high.

Who is listening

Maybe I have crown shyness
it happens in the forest when we are not looking
trees grow toward the canopy
and as they approach one another they leave room
do not touch with their outstretched limbs
letting light flood down

Lately the words people say
get stuck in my mouth and I have to spit them out.
There are too many thoughts turning into words
the forest floor of my mind is getting overgrown

The other day I looked out to the mountains
glorified in copper and yellow
All I could think of was how much pain gets
put down on that mountain...
riven into minerals and diamond streams
carrying, diluting, disseminating
our stories

No one has to think too hard to wonder
if the edge of the field
bathed in slanted afternoon light
will take your tears willingly
while the forest at your back
hums

Cheryl Della Pelle is a master gardener and poet who lives and works in NW CT. Her love of the natural world was forged on the family farm in SE PA. She has led classes in poetry, gardening and meditation. Publications include magazines, anthologies and a collection of poems, Down To The Waters.

Pathways

The Civilian Conservation Corps (CCC) established Camp Walcott in May 1933 in what is now Burr Pond State Park. The CCC—a major part of President Roosevelt's New Deal—offered unemployed, unmarried men, aged 18-25, labor jobs in conservation and natural resources on public lands. CCC enrollees, as they were called, built dams, trails, and roads, and the buildings in which they lived. In exchange, they were provided food and clothing and $30 a month, $25 of which had to be sent to families back home. Nationwide over 3 million men participated in the CCC program from 1933-1942.

At Camp Walcott, the CCC constructed a stone dam at Burr Pond and built a 3-mile foot trail around the pond. They also built a stone administrative building, roads, and miles of ski trails. The men lived at the camp for months at a time, and during off time had to provide their own entertainment. The photo, originally a positive glass plate, shows one such outing—a log-sawing contest.

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