OverSTORY
Timber Research Environmental Education

Newsletter of Maine TREE | Spring 2024 | Volume 6 Number 1

2023 Year in Review

At Maine TREE Foundation, forest-based education and workforce development were key themes in 2023. With a dedicated and creative staff, we accomplished a great deal toward our mission of educating and advocating for the sustainable use of the forest and the ecological, economic, and social health of Maine's Forest communities. We can't do this alone, and we worked with countless collaborators to reach students, teachers, foresters, loggers, landowners, and the general public with programming in 2023.

Forest-based Education for Students & Teachers

2023 was a pilot year for many events with Maine TREE while continuing to deliver our high-quality staple programming.

Teachers

The Forests of Maine Teachers' Tours held two sessions, bringing 37 educators on an immersive experience in Maine's Forest, meeting more than 40 Maine forest professionals along the way. We also concluded the Window to the Woods virtual professional development series, provided multiple Forest Ecology Research Network workshops for educators, presented at conferences in Maine, and shared our ideas with collaborators in other states.

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About Us

Educating and advocating for the sustainable use of the forest and the ecological, economic, and social health of **Maine's Forest Communities**

Maine TREE is a leading organization in the state promoting forest-based education for students, educators, forest professionals, landowners, and the general public. Our current goals are to address challenges associated with forest workforce development, climate education, and enhance public awareness about the importance of Maine's forest resources.

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Lena Ives, Director of Education
Hope Light, Communications Coordinator
Paulina Murray, Holt Research Fellow
Kayci Willis, Forest Programs Coordinator

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Augusta, ME 04330
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Maine TREE

Our Programs

As the state sponsors of **Maine Project Learning Tree (PLT)**, an initiative of the Sustainable Forestry Initiative, your support provides Maine teachers and students with forest-based programs, resources, and points of entry to green career pathways.

Since 1997, our **Forests of Maine Teachers' Tours** have hosted over 1,000 educators on our 4-day immersive experience to learn about the importance of Maine's Forests and increase their ability to integrate forest-based activities into their classrooms.

The **Forest Ecology Research Network (FERN)** connects students to Maine's forests through this field-based, exploratory, community science program. Support for FERN creates opportunities for students to practice scientific inquiry while learning professional skills with boots on the ground.

The site of ecological monitoring since 1983, **Holt Research Forest** demonstrates exemplary sustainable forest management practices and is becoming a vibrant hub of forest research and education. Contributions will support facility upgrades to accommodate growing community engagement and collaboration.

Certified Logging Professional (CLP) is a renowned safety training and education program for forest practitioners. After more than 30 years of excellence, we are updating the CLP program. Your gift supports ensuring that the CLP curriculum and resources reflect today's best practices in safety and sustainability.

CLP Certified Logging Professional

HOLT Research Forest

Forests of Maine Teachers' Tours

FERN FOREST ECOLOGY RESEARCH NETWORK

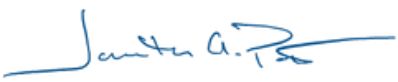
PROJECT LEARNING TREE MAINE

Spring has arrived! The transition from Winter to Spring provides a vivid reminder of the every changing landscape of Maine and its wide variety of ecosystems from the Coast to Mountains and interior North Woods. As the final snows melt, rivers and streams flow, and leaves pop out, the anticipation of warmer weather and summer hangs in the air. Then of course we are reminded of "bug" season!

For the Maine TREE Foundation, there has been a flurry of activity to advance its programs ranging from research at the Holt Forest, upcoming Teacher Tours this summer, ongoing Certified Logging Professionals (CLP) certifications, and everything in between. In particular, Kayci Willis has recently joined Maine TREE as its Forest Programs Manager. We are all excited Kayci has joined Maine TREE and look forward to her work to advance programs such as the American Tree Farm System. Please join me in welcoming Kayci!

The programs Maine TREE provides are essential to promote all the important values Maine forests provide, such as supporting local and regional economies, the environment, and social and historic fabric of our communities. Maine TREE is uniquely positioned to advance these values, from education, research, training, and numerous outreach programs. Your support of Maine TREE is greatly appreciated, and I hope you will join me in making a financial gift to Maine TREE to support these amazing programs.

Sincerely,



Jonathan Pottle
Board President, Maine TREE

Dear Maine TREE Community,

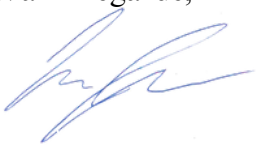
Spring marks a season of renewal and growth in nature and within our organization. At Maine TREE, we're embracing this season enthusiastically, ready to share the exciting developments that are blossoming.

Our team grew over the winter, expanding our educational programs, strengthening community outreach, and forging impactful collaborations with organizations all over Maine. We're thrilled to unveil a new component of our FERN community science project, a unique opportunity for students and individuals to engage directly in local forest research efforts. Additionally, our Teacher's Tours, with more demand than ever, are primed to offer educators even deeper insights into sustainable forestry in Maine.

We're grateful for the support of our volunteers, members, and partners. Your commitment is the cornerstone of our mission, helping to support Maine's forests and communities for future generations. Together, we're fostering a culture of stewardship, ensuring the health and vibrancy of our forests.

Thank you, each and every one of you, for your continued support of Maine TREE. As we step into this season of growth, we're excited to share our progress and the positive impact of our collective efforts.

Warm regards,



Logan Johnson
Executive Director, Maine TREE

Continued from pg 1

Students

With an emphasis on career exploration, Maine TREE staff worked across the school-age spectrum, introducing students all over Maine to forest careers. At the first grade level, the team did forest activities with students at Old Town Elementary. Third graders from Old Town Elementary and other schools in the area attended the Northeast Logging Association's Expo to see (and touch) equipment and learn about Maine's Forest Heritage. An increased interest in the Forest Ecology Research Network (FERN) at the Middle School level, got more students outside to collect data from the forest around their school. Working with the Piscatquis Environmental Education Collaborative, we co-hosted the first Piscataquis County Green Jobs Fair, where each student got hands-on experience at the five career stations. Students from Next STEP High School joined us for a Roots-to-Retail program at Higmo's Tree Farm and Lumber Mill in Brunswick. We attended numerous career fairs throughout the state to introduce forest-based careers to students and co-hosted a Conservation Career Expo at the National Association of Conservation Districts Northeast Regional Meeting for High School and College students. We also provided college students at the University of Maine Orono with a Project Learning Tree Workshop and welcomed incoming first-year students at Bowdoin to introduce and raise their awareness of Maine's Forests.

The Forestry Immersion Program, a collaboration with the Brewer School Department, brought nine students for an immersive experience in Maine's woods near Katahdin Ironworks. These students camped four nights a week for six weeks during a transformational program that included opportunities from hiking Katahdin to operating logging equipment while earning credit.

Forest Professionals & Landowners

Maine TREE expanded our professional development programming for forest professionals in 2023. The Certified Logging Professional Program, in its 33rd year, welcomed 64 new loggers to the program, recertified 337, and conducted 173 site visits. The team at Maine TREE spent the year assessing the current state of CLP and explored how the program can evolve to better serve the current and future generations of logging professionals.

As a collaborator with the Forest Climate Change Initiative with the University of Maine Center for Research on Sustainable Forests and the Forest Stewards Guild, four webinar and field tour sessions brought over 200 forest professionals from around the state together to discuss climate change topics, including Caring for Brown Ash in the Face of Emerald Ash Borer, Appalachian Mountain Clubs Research Forests, Burning as a Management Tool, and Long-term Watershed Research. We also hosted a Maine Division of the Society of American Forests Field Tour at Holt Research Forest and delivered three Tree Farm Inspecting Forester Trainings.

In addition, we helped plan for the 2023 Maine Tree Farm and Maine Woodland Owner Forestry Field Day to Celebrate the 2023 Outstanding Tree Farmers of the Year, Great Pond Mountain Conservation Trust, and presented at other landowner-focused events.

Celebrating Our Community

On October 19, Maine TREE hosted its first Forest Awards Night, bringing together Maine's Forest Community to celebrate the accomplishments of those who received awards from Maine TREE and our collaborators. The event recognized the 2022 Certified Logging Professionals Conventional Logger of the Year Bud Philbrook of Broken Arrow Logging, and the 2023 Outstanding Tree Farmer of the Year, Great Pond Mountain Conservation Trust. The Brewer School Department's Forestry Immersion Program received a certificate of appreciation for their collaboration during their pilot program. The Maine TREE Board of Directors selected Sarah Medina to receive the inaugural Sherry Huber Forest Champion Award for her decades of service to Maine's Forest Community. The Austin Wilkins Forest Stewardship Award was presented to the University of Maine School of Forest Resources to conclude the evening. Continuing a long-standing tradition and honor of receiving the Austin Wilkins Award, Governor Janet Mills also presented the award to the School of Forest Resource at the Blaine House in a later ceremony.

Connect with us!

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Paulina Murray
Research Forest Fellow

We've grown

We are thrilled to announce that Paulina Murray has joined Maine TREE as our **first-ever Holt Research Forest Fellow**!

The Holt Research Forest Fellow will manage and analyze five decades of data collected at the Holt Research Forest, including supervising ongoing data collection this summer. She will conduct a fundamental analysis of coastal oak-pine ecosystem responses to variable retention harvest, focusing on canopy composition and regeneration. These efforts will help to inform landowner management and provide a foundation for continued ecological monitoring and future research at the site.

Paulina was born and raised in New York and earned a BS in environmental sciences with a concentration in conservation from Siena College. She recently graduated from the University of Vermont with her MS in natural resources, where her research focused on understanding the effects of disturbance on forest ecosystem functions.

Before joining Maine TREE, Paulina was an Arthur V. Savage intern for Parks & Trails NY and also spent time as a non-voting member of the Green Mountain Club Board of Directors. Her time spent in these roles deepened her commitment to driving positive social and environmental change through non-profit initiatives and reinforced her beliefs in making science and data accessible to all as it fosters informed decision-making.

Hope Light
Communications Coordinator

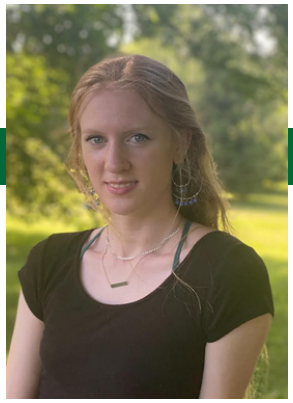
Outside of work, Paulina can be found wandering the woods, trying new foods, and finding novel and creative ways to entertain her energetic cat, Buko. She looks forward to utilizing her analytical skills and contributing to Maine Tree's forest-based education and research efforts.

and grown...

Join us in welcoming Hope Light, our communications coordinator, who joined our team last November.

Hope holds a BA in Food Systems, Policy, and Social Change from Empire State University and an MA in Social Justice and Community Organizing from Prescott College. Having had a successful career as a Chef, she has since turned her attention to the most pressing issue of our time, climate change, working as a social impact communication strategist with organizations like Maine TREE to help educate the public.

As the daughter of a (late) conventional logger, Hope recognizes the economic and ecological value of Maine's working forests and has enjoyed helping us get our message out to a larger audience these past few months. When she is not working, Hope can be found cooking, camping, or enjoying live music with her husband and their two children.



Kayci Willis
Forest Programs Coordinator

and grown...

As the daughter of a teacher and a state forester, Kayci Willis was raised with a passion for learning and a deep connection to land stewardship. She spent her childhood in the woods of North Carolina and knew early on that she wanted to pursue a career in natural resource conservation.

Kayci's academic journey revolved around studying the relationships between ecological, economic, and social drivers of conservation efforts. Driven by ambition and passion, she earned several degrees, including two Bachelor of Science degrees from North Carolina State University, one in Fisheries, Wildlife, and Conservation Biology and the other in Natural Resources Policy and Administration with a minor in Forest Management. Additionally, Kayci holds an Executive Master of Natural Resources and a Graduate Certificate in Global Sustainability from Virginia Tech.

Not one to shy away from field work, Kayci spent the first years of her career getting her hands dirty. Sooty, to be specific. Traveling across the country as a prescribed fire practitioner, she utilized fire as a land management tool, promoting ecologically appropriate forests and reducing the risk of catastrophic wildfires. During this time, she recognized the importance of holistic management of forests, and how these spaces can be utilized for people, wildlife, and ecosystem services at the same time.

Now at Maine TREE, Kayci looks forward to supporting and advancing sustainable forestry in Maine. As a dendrology nerd, she is equally excited to learn about the tree species and forest communities of the Northeast.

Kayci enjoys curling up with a book, sketching in her nature journal, playing tennis, disc golfing, and bike riding. As she explores her new home, she can be found trying out the new hobbies it offers. On the list is learning how to surf, rock climb, and ice skate.

Save the date!

Forestry Field Day
Saturday
September 7, 2024

Forest Awards Night
Thursday
October 24, 2024

CLP Banquet
Friday
December 6, 2024

Research and Revitalization at HOLT Research Forest

For the first time, Maine TREE has a full-time Holt Research Forest Fellow, Paulina Murray, on-site to synthesize the first 40 years of research at the property. We are gearing up for a productive summer at the Holt Research Forest! To support ongoing data collection efforts, we are pleased to welcome three new research technicians.

Our team consists of one Maine undergraduate studying ecology and environmental sciences at the University of Maine, an undergraduate from Pennsylvania State University studying forest ecosystem management, and a Master's student from Northeastern University studying bioinformatics.

In addition to conducting an independent research project, our technicians will be collecting seed, seedling, sapling, and overstory data to measure the response of a coastal oak-pine ecosystem to retention harvest, focusing on canopy composition and regeneration.

Looking ahead, we will facilitate research that provides insights into issues relevant to family forest owners around sustainable forestry and climate change, and support forest-based education programming to support Maine teachers, students, forest professionals, and landowners.

Become a Sponsor

Your donation will support the renovations of our facilities. The first phase of construction is underway, as we convert the current office into an apartment to increase housing for visiting researchers and summer technicians and build a new office and lab space on the ground floor to improve building accessibility. Subsequent phases will include the renovation of our log cabin and community gathering space.

All contributions of $500 or more will be memorialized on a plaque near the entrance on an exterior wall.

Visit mainetree.org/sponsor click the "Become a Sponsor" button and complete the form.

Teachers Implement Teachers' Tours Learning

First graders at Hilldale Elementary working on PLT's The Closer You Look. Photo credit: Stephanie Baker

By: Hope Light & Gavriela Mallory

The 2023 Forests of Maine Teachers' Tours brought Maine educators to commercial timberlands, recreation areas, mills, conservation lands, and family forests. Immersed in hands-on professional development, teachers learned about Maine's forest industry, forest ecology, green job opportunities for their students, and accessible models of outdoor education at any grade level. Through this program, Maine TREE facilitates connections between two of Maine's most critical workforces: professionals who steward the lands we depend on and professionals who educate and care for our children.

The 2023 Forests of Maine Teachers' Tours traveled through Maine's Katahdin and Downeast regions. While each tour explored a different part of the state, Teachers on both tours built foundational understandings of Maine's forestry sector, visited a spectrum of managed woodlands, toured a mill, and worked collaboratively to start integrating key takeaways into their back-to-school planning. We've kept in touch with participants; many have shared how they've already implemented what they learned.

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Fifth-grade students at Lamoine Consolidated School record observations of their tree from the "Adopt A Tree" activity. Photo Credit Tiara Woods

Some participants, like Stephanie Barker of Halldale Elementary in Hallowell, have focused on promoting students' personal connection with Maine's forests. Stephanie's first-grade class started a "Tree Study," using the Project Learning Tree (PLT) activity guide and other resources. Starting with PLT's The Closer You Look activity, they examine different parts of the tree, observe the changes through the seasons, take a photo next to it, record observational drawings, and compare it to other trees. Adding something from each lesson to

their individual Tree Study books, students will create a personalized record of learning that they can then bring home to share with their families. Through this activity, Stephanie hopes her students feel more connected to the natural environment and acquire positive memories of exploring, studying, and appreciating the outdoors.

Other Teachers' Tour participants gained a deeper appreciation of the green job opportunities available within Maine's forest economy. Tiara Woods from Lamoine Consolidated School said that while she has always been passionate about teaching about trees and their importance in our ecosystem, "the Forests of Maine [Teachers' Tour] has inspired [her] to introduce forest health through forestry and the many careers that support the forests of Maine to my students." The Lamoine Conservation Commission leads 5th-grade students from Lamoine Consolidated School on a tree identification walk at a local preserve each year; this year, students were hooked on trees before the walk began. Tiara said that their heightened interest was due to the PLT "Adopt a Tree" activity her students had done in class, which inspired students' curiosity to learn more about tree identification. Tiara saw this annual event as an opportunity to incorporate a forest science unit into her 5th-grade curriculum during the fall trimester while connecting with community members. Educators from more urban regions of Maine gained a greater appreciation for the value of sustainable forestry practice. Sarah Lucas of Helen Thompson School in West Gardiner noted that her most significant takeaway from the tour was "that even here in the capital area where students live in a mostly urban area, forestry practices are still pertinent to our lives."

We are inspired by the many varied ways participating educators have implemented what they learned through the 2023 Forests of Maine Teachers' Tours. We are excited to see how their efforts positively impact their students and the larger community and look forward to helping them connect with foresters and forest-economy professionals in their communities.

2023 Teacher's Tour Testimonial

"I learned SO MUCH and I met wonderful people doing incredible work in conservation. Additionally, the accommodations at Leen's Lodge were exceptional. Our meals were fabulous, our beds were comfortable and the views could not be beat. We even had some time to enjoy a relaxing and refreshing dip in the lake with some fellow educators.

If you are an educator - traditional or not - I highly recommend the Maine TREE Teachers Tour to you all. "

- Kacey Weber
PCSWCD Education Coordinator,

Stay tuned for information about our 2024 Forests of Maine Teachers' Tours in the next issue of OverSTORY

2024 Forests of Maine Teachers' Tours

Met with Enthusiasm and Support from Maine Businesses and Educators.

Returning for its 27th year, Maine businesses and educators have enthusiastically received Maine TREE's Forests of Maine Teachers' Tours. Since 1997, Maine TREE's Forests of Maine Teachers' Tours have hosted over 1,000 educators. Through this program, Maine TREE facilitates connections between two of Maine's most critical workforces: professionals who steward the lands we depend on and professionals who educate and care for our children. These connections invigorate content delivery in classrooms, secure a sustained forest workforce, and prepare a generation of land stewards for Maine's future.

Classroom Teachers, Girl and Boy Scout leaders, conservation organization staff, and other educators are among those who join the tour to learn about Maine's forest resources from professionals working in the woods. Educators earn up to 30 contact hours toward their continuing education requirement for teacher certification renewal. The tours prepare participants to return to the classroom with stimulating approaches to share knowledge about the forest with students, colleagues, and communities. Throughout the four-day tour, participants engage in Project Learning Tree activities, meet professionals who work in the Maine woods, and develop ideas on how to bring the forest to the classroom or the classroom to the forest.

Each year, the tours are hosted in different regions throughout Maine. This year, tour participants will visit land owned by the 2024 program underwriters Hancock Lumber and Irving Woods and tour the companies' manufacturing facilities. Two tours are scheduled for this summer: July 9 to 12 in Fort Kent and July 23 to 26 in Poland Spring.

One tour participant, speaking about their experience attending a previous year's tour, said, "We need to keep our children here in Maine. We need children who have a connection to the natural world around them. The Teachers' Tours help those who work with children foster that love in the next generation of Mainers. Maine is such a beautiful place to live and work, and I am so grateful to be a part of an opportunity that looks to Maine's future for all of us!" 2023 tour participant and Piscataquis County Soil & Water Conservation District education coordinator Kacey Weber encouraged all educators to apply, saying, "I learned SO MUCH, and I met wonderful people doing incredible work in conservation (…) If you are an educator – traditional or not – I highly recommend the Maine TREE Teachers Tour to you all."

If your organization would like to join Central Maine Power, Hancock Lumber, Irving Woodlands and Seven Islands Land Company in supporting this program and increasing environmental literacy and educational opportunities for Maine educators, visit mainetree.org/sponsor/ or contact Logan Johnson, Maine TREE Executive Director, at logan@mainetree.org. Organizations that commit to supporting the 2024 Forests of Maine Teachers' Tours before June 7 will be listed as sponsors on the event T-shirt.

Thank you to our 2024 Program Underwriters

Hammond Lumber Company

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HANCOCK LUMBER

Central Maine Power
An Avangrid company

7 ISLANDS LAND COMPANY

FORESTRY IMMERSION PROGRAM RETURNS FOR A SECOND YEAR

Mark Savage, Outdoor Education Teacher at Brewer School Department (far left) with students in Brewer's 2023 Forestry Immersion program.

In 2023, Maine TREE and the Brewer School Department collaborated to introduce a Forestry Immersion Program. This program allowed students to spend six weeks in the forest while earning high school credits. We're thrilled to announce that the program is returning in 2024 thanks to a generous grant from the Maine Outdoor Learning Initiative*. This year, the program is fully funded and will offer an unparalleled opportunity to fifteen students to immerse themselves in Maine's forests and enhance their education in a unique way.

The program aims to empower young adults by strengthening their essential life skills and creating better opportunities for their future. It focuses on honing skills such as teamwork, communication, a strong work ethic, and problem-solving abilities. Though these skills are not new, the program aims to explore and deepen them through unique careers and forest exploration, thereby opening up new life opportunities. Over the six weeks, participants camp in the Maine woods four nights a week, visit job sites, engage in online academics, and go on hands-on discovery tours in the forest to learn and grow. During the program, the students operate harvesting equipment, including a chainsaw, processor, and forwarder, at an active logging operation, contribute to construction projects, embark on day hikes in some of Maine's most iconic woodlands, and collect forest inventory data through the Forest Ecology Research Network Program. Participants can earn up to two credits toward high school graduation while gaining the tools and values necessary to become stewards of the Maine woods and influence others to do the same. The program provides a unique and enriching learning experience unlike any other.

Trevor Levensalor, one of the 2023 student participants, reflected on his experience, saying, "I think that this summer was one of the best experiences I've ever had because of how integrated the learning was for each student there and being able to have a say in what we do each day. Along with having our projects around camp and some kids like me who just wanted to go operate the equipment. Overall as a whole, this program has changed the way I look at the woods,"

Hunter Dawson, another student, shared, "This summer changed my whole view on education. It showed me that it is possible for teachers to adjust the way that they teach in order to comply with their student's needs. The less schedule-based education allowed us (the students) to learn at a rate that encouraged our personal learning styles as well as tendencies. The dedication of the students and educators allowed us to make a program that encouraged our growth as students as well as people."

The application for the 2024 summer session is now available and can be found on the Brewer School District website at www.breweredu.org/o/brewer-high-school/page/summer-programs.

FERN
FOREST ECOLOGY RESEARCH NETWORK

"FERN-kits" to be Deployed

Getting students hands-on experience observing and studying the forest around them is critical to developing their appreciation and understanding of these vital ecosystems. That's why, thanks to a grant from the Davis Conservation Foundation, Maine TREE is expanding our Forest Ecology Research Network (FERN) program and deploying "FERN-kits" to collaborating organizations throughout Maine to provide students and teachers the resources they need to collect data from the forests around their school and community.

The FERN program, originally known as the Forest Inventory Growth or FIG project, was rebranded in 2019 to reflect its focus on fostering ecological research and understanding among students. Since then, the team at Maine TREE has developed new resources to create more opportunities for students to interact with their plots and make the program more accessible for teachers to implement.

Creating these FERN kits, equipped with the necessary tools and resources for students and teachers to collect data from the forest, marks a significant milestone for the program. Previously, the program relied on foresters to bring their collection of tools to work with students.

However, these standardized kits now provide everything a class needs to collect data on one of the 10 activities in the FERN user guide.

"Thanks to generous funding from the Davis Conservation Foundation, we will have five new FERN kits available for classrooms throughout Maine," said Logan Johnson, Maine TREE Executive Director. "This is a huge step for the program as we work to meet the needs and growing demand of educators throughout the state who want to use the forest as their classroom."

The kit includes data collection tools, FERN activity sheets, identification resources, and Project Learning Tree curriculum and guides, all housed in pack baskets supplied by Pack Baskets of Maine.

A unique tool for the FERN Sapling activity, the 'Tree Fork,' was custom-developed thanks to the Randolph Union High School Innovation Center in Vermont. This tool, made by students and their teacher using laser cutting technology, is designed to quickly classify the size classes of sapling-sized trees on a 1/50th acre plot. The Tree Fork provides a visual representation of size classifications, helping students understand why and how professionals can collect high-quality data quickly, making it a valuable addition to the FERN program.

If you want to get involved with the FERN program, Maine TREE hosts workshops for teachers and foresters on establishing the plots and working with students to collect data. These workshops provide valuable skills, insights, and networking opportunities related to the program and will leave you ready to take your classroom to the forest.

News from Certified Logging Professionals Program

33rd Annual CLP Banquet

Maine's logging community members gather for a festive evening at Jeff's Catering in Brewer to recognize excellence in their field.

"The program was inspiring," said an attendee as they departed the Annual Certified Logging Professional Banquet. Maine's Logging Community members gathered on the first Friday of December for the 33rd Annual CLP Banquet at Jeff's Catering in Brewer. The evening, centered around the community enjoying a fantastic as-always meal together, celebrated the accomplishments of this year's class of 64 new CLPs, the 2023 CLP Loggers of the Year, and three guest speakers who provided innovative solutions to challenges we are all facing in the logging community.

The banquet began with an opportunity for everyone to socialize and mingle, followed by opening remarks from Bill Taylor, the CLP Advisory Committee Chair, and Logan Johnson, the Executive Director of the Maine TREE Foundation. After dinner, Mike St. Peter, the CLP Associate Director, recognized the achievements of the new CLPs for this year, and Johnson presented the 2023 Logger of the Year Awards. Gene Daigle from Lincoln won the Conventional Logger of the Year award. Kent Perreault from New Canada, who works for TNT Road Company of Fort Kent, won the Mechanical Logger of the Year Award.

Gene Daigle, Conventional Logger of the Year and Kent Perreault, Mechanical Logger of the Year.

The program's highlights included noteworthy talks from three speakers: Maine Forest Service Director Patty Cormier, Vice-President of Innovative Natural Resource Solutions((INRS) Eric Kingsley, and Mark Savage and the Forestry Immersion Program from Brewer High School.

Maine Forest Service Director Patty Cormier shared with the group two new resources specifically for Logging Professionals. The first was a new cost-share program to help forest operation professionals purchase skidder bridges. Director Cormier also announced the creation of the Adaptive Best Management Practices (BMP) Cooperative. Also known as ABC, the new program endorses BMP-specific training programs to ensure quality and consistency while allowing professionals to track their training progress.

Eric Kingsley of INRS provided an overview of

new and emerging products that may soon come from Maine's Forests. These products included wood fiber insulations, which have already begun production in the state, cross-laminated timber, and biochar, among others. Kingsley acknowledged the lack of excitement that the current wood market invokes while providing an inspirational outlook on the future of Maine's forest product sector.

Mark Savage of the Forestry Immersion Program at Brewer High School provided an overview of how the program brought nine (9) students into the forest this summer to offer an alternative, hands-on style of education. The students spent six weeks learning everything from forest ecology to lumber production while having the opportunity to operate a cut-to-length system with a processor and forwarder. Fellow instructors and a student joined Savage to share why they found the program immensely valuable to the students who attended.

The close of the event was the annual raffle of a chainsaw-carved bear and safety equipment. CLP Mike Thurlow donates the chainsaw-carved bear annually to raise funds for the Make-A-Wish Foundation. Brian Flewelling of Key Bank won the bear this year, and the raffle tickets raised $490 for Make-A-Wish. Finally, many CLPs were excited to win new safety and operations equipment. Gene Daigle recognized earlier in the evening as the Conventional Logger of the Year, also won the Chainsaw raffle.

Thank you to everyone who made the evening possible, including the sponsors.

Getting to know the 2023 Mechanical Logger of the Year: Kent Perreault

Kent Perreault poses with his award at the 2023 Certified Professional Logging Banquet

The Certified Logging Professional (CLP) of the Year award winner for 2023 in the Mechanical logger category is Kent Perreault of New Canada, Maine. Mechanical Logger of the Year Kent has been in the CLP program since 1996, but he's had a passion for the profession since he could walk, crying when he was little because he wanted to join his father, who was also a logger, on the job. His father insisted he stay in school, telling him he'd pay his way through college, but Kent always knew that what he wanted to do was log.

Kent comes from a long line of loggers in Maine. Both of his grandfathers owned their own logging companies. When he was still in high school, one of them asked Kent and his brothers to go to work for him in the woods, and Kent jumped at the opportunity. Initially, he helped the cook and painted the floors, cleaned the camps, and made runs for parts. After graduating high school, he went on to work machines for his father. Logging is genuinely a family legacy for Kent. His mother, Gene, worked as the clerk for his father's logging company and was recognized by the Maine Literary Society for a book she wrote about logging, Memories Grow on Trees/ L'arbre des Memoires, published in 1986.

The 1984 693B John Deere, the first Fellerbuncher to come to Aroostook County, which Kent operated.

"I go to work every day, and I'm happy. I work with a group of nice people; it's encouraging when you go to work and you're happy." Kent told Maine TREE

"Safety first, and integrity at the yard, where most of the actions and visuals are taking place. But I noticed Kent communicates in a way that is so important in safe operations where things are happening at a fast pace when I visited the TNT Road Company's Logging operations in T19 R11 this summer for an inspection. Kent was able to articulate the situation on the ground so I could conduct my field inspection in a safe and professional manner. I have visited his employer's operations numerous times in the past eight years and have always seen Kent as a selfless team player that makes the operations go smoothly." Said Randy Lagasse, District Forester with Maine Forest Service, when he nominated Kent for the Mechanical Logger of the Year award.

Kent said he'd known Randy for years, and whenever Randy checked on his jobs, he always liked them but that Randy had never mentioned his intention to nominate him, leaving Kent completely surprised by the award.

His employer and supervisor echo the attributes that inspired Randy to nominate Kent. " Kent is a perfect example of what an operator needs to be. He plans his day ahead of time, takes care of his equipment, and is very proactive in having a plan to harvest the wood lot. No matter what machine he operates, he knows the machine's capabilities and also knows what needs to be done to keep the machine working every day as well as the crew. He has the ability to see ahead and set up the job so everyone else behind him doesn't struggle to complete their tasks. We have a lot of pride as a company having Kent on our team. He definitely defines what it takes to be "logger of the year." said Steve Theriault, Owner of TNT, noting that Kent had been with the company since 2013.

Kent's supervisor, Glenn Collin told us that "Kent is always thinking ahead. He is always prompt on the job and starts early to make sure that when his drivers show up, they are going to have their loads ready. Kent takes pride in any machine he operates and is proactive with Steve and I on his maintenance, letting us know when something doesn't look or sound right. Those characteristics are worth a lot to us and this company. His attitude and drive are what makes him a great asset to this family at TNT."

Kent's typical day starts when some of us are just falling asleep, hitting the road around midnight he heads to his worksite where he is currently operating a grinder, creating biomass for the mills. He explained that the trucks he fills with biomass are compensated by the load, always thinking about how he can help the folks he works with; he added that " (…) the faster they can get their load to the mills, the more money they can make. I'm really looking out for those guys so they can make their money; when big storms come, I'll go up earlier before the plows get out and plow the roads so the trucks don't have a hard time. "

Kent explained some of the differences between conventional and mechanical logging and why he enjoys working as a mechanical logger. He noted

that conventional loggers are more impacted by snow and other inclement weather, telling us that when the snow is deep, conventional loggers have to shovel around the tree they are cutting versus sitting in a cab and going up to a tree and pushing a button, saying "the machine cuts the tree, the snow doesn't really bother (mechanical loggers)." Noting that, unlike conventional loggers who have to bundle up against the elements, mechanical loggers can just sit in their heated cab in a shirt.

Kent elaborated that the cab not only protects loggers from the elements but also protects them from falling limbs. Conventional loggers are more exposed, having to rely on their hard hats, and chaps to protect from injury. He also explained that the lights on machines help extend the working day, allowing some mechanical logging companies to work early morning or evening shifts in low light conditions that would be hazardous without the machines.

He went on to talk about how technology helps him and his coworkers deliver a pristine finished lot. "my company cuts a lot for private owners, and if they give us a lot to cut, they'll tell us what they want, we'll grind brush to create biomass for the mills, and we bring it to the road and cut it. Nothing stays in the woods. When we're cutting the trails, we use GPS systems, and the trails are straight, without leaning trees; it looks more professional, the brush is cleared, the ditches stay clear, and it is better for the environment."

Kent's logging heritage has been at a time of remarkable innovations and improvements to safety in the industry. His ability to adjust to changing times has been his greatest asset, not only to him but to the next generation of loggers he oversees. Kent is a great citizen of his community, committed to upholding excellence in his work and supporting his coworkers and all whose work is impacted by his own. We invite our entire community to celebrate his commitment to excellence in his field.

Getting to know the 2023 Conventional Logger of the Year: Gene Daigle

Gene Daigle, 2023 Mechanical CLP Logger of the Year, poses with his award at the 2023 CLP Banquet.

2023 Conventional Logger of the Year, Gene Daigle, has been a Certified Logging Professional since 1995. Although Gene admits he didn't fully appreciate the learning opportunity when he took his first CLP training, looking back, he recognizes how significant the program is, saying, "When I first took this program, we learned about different ways of felling trees and cutting wood and safety, and it was great. I learned a lot—at the time, I was kind of resistant to change, as most people are. I like the CLP program; it really made a difference in the safety of my work. The biggest part of my line of work was learning the different styles of felling trees and ways that were safer." He elaborated that he enjoys recertifying every two years because it keeps him up to date on new techniques and the industry's economic condition.

Gene had been working in the woods long before becoming a CLP. His father would take him along starting when he was 10; at first, Gene was only allowed to watch, but by the time he was in high school, his dad had him running the tractor; later in high school, he worked at a saw shop on the weekends and still sometimes ventured into the woods with his dad.

Gene took a two-year break from logging after high school when he was drafted into the military, but as soon as his service was completed, he went straight back into the woods, working with his dad for a couple of years. Since then, he has only worked for two contractors, only changing contractors because his current contractor bought out the first contractor, whom he had worked for for over 20 years.

Gene has been the owner of G.A.D logging for over two decades now, and although he spends his workdays alone in the woods, he attributes his success to the years spent working with his dad. Saying, “When I started, it was a hard start; if it weren’t for my father, I probably wouldn’t have made it – he got me started and helped me along.“ However, he went on to explain that he’s glad he no longer has to be involved with the trucking or truck maintenance aspect of the business as he did when he worked for his father, saying, “When I worked with my dad, I had to do everything, the sawing, and the trucking, and I had to take care of the truck in the evening. When I got home, I had to take care of the truck, which was never-ending. When I got out on my own, I was done when I left the woods; I hardly ever had to work on the skidder.” He also reflected on how the industry has changed throughout his career, welcoming one change in particular. “When I first started out, we were always cutting 4 ft and 8 ft wood, and I hated that. In the early 80s, everything changed to focus on tree-length wood,” he said.

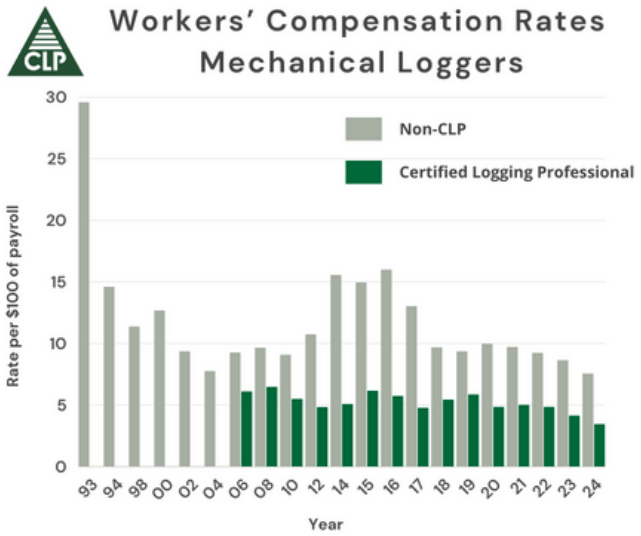
Having been in the woods for over 50 years, Gene admits that he’s slowed down over the years. His once long work days are kept to 6 or 7 hours now with an hour lunch break. ”Working alone 95% of the time, Gene enjoys the solitude his job offers.” I enjoy being out in the woods. I don’t know what it is about it; it’s hard to explain, but I love cutting the wood and being out in the woods. I just love doing it!“

Gene Daigle, 2023 Mechanical CLP Logger of the Year, on the job.

In his nomination, Forester Mark Brooks said, “I regard Gene as an outstanding logging professional. As a forester with W T Gardner & Sons, I have worked with Gene for a couple of decades now. His attention to the high quality of his work is comforting for the company. When Gene is cutting wood, we are confident that the best job possible will be done. (Gene has) always been mindful of safety and environmental concerns and harvesting compliance while working in the woods. He is honest and a hard worker and will put in the extra effort to make sure the job is done right, squared, and cleaned up upon completion of any given job. When you want a good job done, one that addresses a landowner’s concerns and objectives for silviculture, environmental concerns, safety at the workplace, honesty, and integrity, you go with Gene!”

When he’s not in the woods, Gene’s priorities shift to his family. He cherishes the time spent with his three grandchildren and his great-grandchild, often taking them to sporting events like baseball and basketball. Gene has been married to his wife, Nancy, for over 50 years.

Workers' Compensation Rates Hit Record Low for Certified Logging Professionals in Maine



Despite the industry's notorious reputation as the most dangerous occupation in the United States, a subset of Maine's Logging Professionals are experiencing significantly lower injury rates and have been rewarded with all-time low workers' compensation rates.

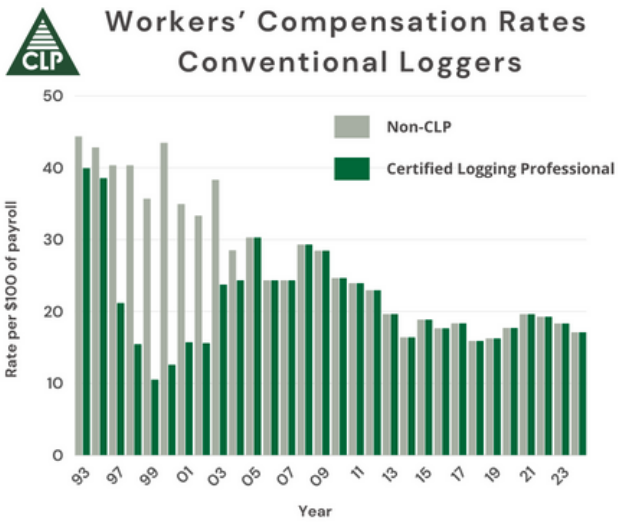
Founded in 1991, Certified Logging Professionals is a combined effort of loggers, landowners, environmental specialists, and safety consultants to establish a standard for professionalism in the Maine woods. Offering professional development and certification for Maine loggers, the program's immediate goal was to combat the high rate of logging accidents and the resulting Worker's Compensation costs for logging contractors.

Today, the program takes pride in the fact that the accident rate for loggers is significantly lower than when the program began. As a result, mechanical certified loggers have earned a Workers' Compensation rate 48% lower than non-certified mechanical loggers, and the conventional CLP logging rate is 83% lower than in 1988.

Initiated by Maine TREE, an agreement with the Maine Bureau of Insurance was devised outlining stipulations that, if met, would lead the bureau to set a discounted rate for Certified Logging Professionals. The stipulations were as follows: the logger education program would include subject areas and recommendations from loggers and various industry stakeholders for certification and recertification. Onsite performance-based workplace evaluations would be completed with recommendations for continuous improvement. A database of active CLPs would be documented for workers' compensation companies. After three years, the CLP rate would stand on its own. CLP was granted its separate designation by the Maine Insurance Bureau in 2006. As a testament to the program's effectiveness, the injury rate has continuously improved; subsequently, rates have continued to be lower. "It is great to see the industry continues to experience some of the lowest injury rates and associated insurance rates nationwide. These low rates are a great benefit for all, and we must remain focused, with continuous improvement and professional development to maintain a safe working culture in Maine's forest." Said Mike St. Peter, Associate Director, Certified Logging Professional Program

"It's important to emphasize that not only are Maine-based forestry businesses saving money through lower workers' compensation rates for their CLP-certified employees, but Certified Logging Professionals throughout Maine are experiencing fewer injuries and, in turn, fewer disruptions in their lives. It's important to celebrate the improved working conditions and

safety of our forest-based workforce in addition to the economic benefits of the CLP program." added Hope Light, Communications Coordinator for Maine TREE



Equally important, our participants helped CLP meet its overall objective of cultivating skill, knowledge, and pride in the Maine woods. To be certified, candidates must attend a CLP-sponsored four-day (32-hour total) workshop and pass a worksite evaluation. The workshop includes three days of classroom instruction in first aid/CPR, forest management and silviculture, safe and efficient wood harvesting, and business. The final day is devoted to on-site instruction and hands-on tree felling using the nationally recognized Game of Logging system or mechanical harvesting safety. Times devoted to each topic may vary depending on the class's needs. To be certified, CLP candidates must pass an inspection at their work site. Evaluators interview each participant, observe their work practices, and then determine whether the logger adheres to the principles presented in class. The evaluators recommend certification or non-certification to the CLP Board of Directors, making the final decision.

CLP candidates are offered certification in five categories: Conventional for loggers who operate skidders and chainsaws, mechanical for loggers who operate harvesting equipment, contractor/supervisor for employers and people who supervise loggers, associate for individuals who are interested in logging but who do not actively log or supervise loggers, this group includes foresters, truckers, and others connected with the logging industry, and apprentice for graduates of high school and post-secondary wood harvesting programs, those who qualify for the apprentice program can earn certification once they have six months of paid experience and pass the field interview.

The mission of the CLP program is to offer top-quality training and education to individuals employed in the Maine logging industry. The program is dedicated to recognizing the skill and professionalism of those who meet and surpass the CLP standard. The successful candidate of the CLP program will be equipped to work securely, efficiently, and in a manner that safeguards, enhances, and sustains the forest. Our program is constantly evolving to reflect changes in the forest products industry and to provide a way for continuous professional development."For over three decades, the CLP program has strived to improve safety at harvest operations in Maine's forests. The recent record-breaking low in workers' compensation rate for program participants is a testament to the successes achieved through CLP's continuous effort and innovation in the sector. This outstanding accomplishment reflects the professionalism and excellence exhibited by Maine loggers," said Logan Johnson, Executive Director of Maine TREE.

If you would like to know more about the Certified Logging Professional program, please visit clploggers.com.

News from Maine Tree Farm

2024 Maine Outstanding Tree Farmers of the Year Announced

Larry and Barbara Beauregard – 2024 Maine Outstanding Tree Farmers of the Year Award Recipients and David Wardrop, Golden Forestry Services

Larry and Barbara Beauregard have been named the 2024 Outstanding Tree Farmers of the Year by the Maine Tree Farm Program. The couple has owned their 117-acre woodlot since 1981 and have been active Tree Farmers since 2005.

Their goals for their woodlot are to promote sustainable growth of forest products for commercial harvest while leaving legacy trees and maintaining forest aesthetics and identify and harvest non-timber products for personal and family use, such as maple sugaring, wild mushrooms, edible berries, and balsam fir. They also strive to provide recreational opportunities for family and friends, all while preserving and stimulating opportunities for wildlife viewing.

Larry and Barbara spend a lot of time enjoying their woods, which they consider a source of recreation and their passion. They see their woodland as an opportunity to learn and contribute by participating in several Citizen Science projects sponsored by the Maine Forest Service and Maine Department Inland Fisheries & Wildlife, including Budworm Tracker, HERON (Heron Observation Network), Maine Bumble Bee Atlas, and Bug Watch. They frequently host events at Beauregard Woodlands in collaboration with the Maine Forest Service, Maine Woodland Owners, Maine Tree Farm Program, UMaine School of Forest Resources, Maine Audubon, and Hirundo Wildlife Refuge.

Larry Beauregard strongly promotes sustainable forestry practices as they apply to small woodland owners. He has done several interviews on the subject, resulting in published articles and a TV program. He has also written several newsletter articles describing his family's woodland experiences. He has taken multiple courses on sustainable forestry practices at the University of Maine School of Forest Resources and participates in online programs offered by various organizations. Larry is a member of several organizations that relate directly to the forests and woodlands of Maine, including the Maine Tree Farm Program, Maine Woodland Owners, and The American Chestnut Foundation. As the Maine Tree Farm Program Secretary, Larry was instrumental in the program's recent restructuring, leading the process for the group to become an independent 501(C)3 nonprofit organization in 2023. Additionally, Larry serves as the Maine Woodland Owners Penobscot Valley Chapter Leader.

With the help of their consulting forester, Dave Wardrop, the Beauregards have had three commercial harvests designed to improve forest health. The most recent harvest was completed in 2021 with assistance from NRCS EQIP funding. The harvest consisted of a 3-acre overstory removal patch cut, 12 acres of marked crop tree release, and a selection harvest of approximately 30 acres. The couple has also completed several NRCS-supported projects, including installing two culverts and a bridge, creating a 1.1-acre pollinator plot, and invasive plant identification and management on two sites.

Larry and Barbara are proud of the work that they have done and plan to do on their woodlot in Old Town and are anxious to share their experiences with fellow woodland owners, forestry professionals, students, and the public.

The Outstanding Tree Farmers of the Year award is annually awarded to recognize exceptional forest management practices and dedication to sustainable forestry. The award is sponsored by the Maine Tree Farm Program, a program of the American Tree Farm System.

Larry and Barbara Beauregard (right) hosting a Forestry for Maine Bird Workshop with Tree Farm County Chair, Andy Shultz (left, in vest) in 2019

After an odd, rainy winter, spring is finally here and much more welcomed! I hope all have been getting out in the woods to enjoy the short amount of time we have before the black flies and mosquitos get so thick it's tough to enjoy.

With the changing of the seasons also comes some exciting changes to the Maine Tree Farm Program. We would like to welcome Kayci Willis to the Maine Tree Farm Program as the new program coordinator. Working officially through Maine TREE as the Forest Programs Coordinator, she will work on outreach to landowners, foresters, and folks simply interested in all things forest. As the coordinator for the Maine Tree Farm Program, you all will see and hear from her regularly keeping you connected to the program.

Looking ahead, we are committed to enhancing the value we provide to our Tree Farm members and the foresters who play a crucial role in our program. We are expanding our Stewardship Hub network, offering landowner courses, and developing more resources for active landowners. We also plan to reinstate our inspector appreciation events, which we hosted several years back but haven't occurred in some time.

Keep an eye out for our annual appeal and census in your mailbox. As a registered 501c3 nonprofit organization, your donations are now completely tax deductible. Whether big or small, your contribution is invaluable and will help us build the program. We also invite you to fill out our 2024 census and share your thoughts on how we can better serve you as a landowner, forester, or organization.

I hope to see you all at the Outstanding Tree Farmer Field Day celebration on Saturday, September 7, in Old Town. Enjoy the summer and sunshine until then!

Jesse Duplin
Maine Tree Farm Committee Chair

Managing Beech for Resiliency to Pests and Pathogens at the Wildlands

Trailhead at Great Pond Mountain Wildlands, recipient of the 2023 Maine Outstanding Tree Farmer Award. Photo by Logan Johnson, Maine TREE Foundation.

Written by Paulina Murray

Third in the Maine Forest Climate Change Webinar & Field Tour Series, Maine's Forest Climate Change Initiative (FCCI) hosted an interactive webinar and field tour at the Great Pond Mountain Conservation Trust's (GPMCT) Wildlands, which focused on forest pests and pathogens. Recipient of the 2023 Maine Outstanding Tree Farmer Award, the GPMCT Wildlands is described as "a place where you may see a moose while mountain biking, an osprey while paddling along a pristine shore, or enjoy an amazing view from more than one mountain – all within minutes of Rte. 1," and is the place to go to witness adaptation and implementation in action. Together with the Forest Stewards Guild, Maine TREE Foundation, and UMaine's Center for Research on Sustainable Forests, the FCCI hosted a diverse group of forest professionals, including foresters, loggers, students, researchers, and family forest owners, to discuss the management of a prominent tree species, forest defoliators, and disease threats in the Acadia region. The session began at stand 241, aptly described by Roger Greene, a forestry consultant with the GPMCT, as "the worst stand of beech I'd ever seen."

Historically recognized by its smooth, gray bark, the American beech is a native species common throughout eastern North America. With the ability to produce root sprouts, or "suckers," American

beech trees often produce nearly uniform stands, presenting significant challenges in their management. These aggressive growth patterns are exacerbated by disease and mortality, leading to the exclusion of the regeneration of desired species and reduced site biodiversity.

Contrasts between managed (above) and unmanaged (below) beech stands—photos by Logan Johnson and Paulina Murray, Maine TREE.

Stand 241 and neighboring stands were originally slated for residential development, but the plans were abandoned before construction in the late 1990s. Acres of land were clearcut and left to regenerate without interference. What resulted were stands of pure beech. Now, there are standing trees, slash, and sprouted stumps in the managed stand, unlike the dense and uniform unmanaged stands. Roger explained how a high-stumping technique, where beech is cut below the first live branch to discourage sprouting, is used in stand 241 to reduce beech regeneration. To some, the managed stand might look messier and unmanaged due to the high piles of slash and stumps left behind. However, this complexity creates more opportunities for wildlife habitats and resources.

Beech regeneration following the high-stumping technique. Photo by Logan Johnson, Maine TREE Foundation.

Beech trees provide habitat and resources for many wildlife species, including birds, mammals, insects, and more. For example, beech trees commonly provide cover for black-capped chickadees and other cavity-dwellers. Beech masts are particularly important for mice, squirrels, black bears, foxes, ruffed grouse, and ducks. Furthermore, American beech trees support 126 caterpillar species in Maine and, thus, provide more food options for terrestrial birds. At stand 241, Private Lands Biologist Joe Roy with the Maine Department of Inland Fisheries and Wildlife shared a story about weasels using beech slash piles for hunting. By standing on their hind legs at the top of a slash pile, weasels can double their height to give them a better view of their prey, another excellent example of how complexity can provide more opportunities for wildlife.

Beech bark disease is the primary cause of mortality in American beech trees throughout most of their natural range in North America. The disease was first reported on a shipment of infected European beech trees from Europe in 1920 and has since

spread steadily throughout most of its North American range. The infection takes part in a two-step process. First, infestation occurs by the beech bark scale Cryptococcus fagisuga, predisposing them to infection by two fungi: Neonectria coccinea var. Faginta and less often N. galligena. The bark scale creates open bark wounds that allow the fungi to infect the tree, resulting in beech trees laden with thick, bubbling cankers and a light red rash blooming across the bark. As the cankers spread, branch and crown dieback eventually result in the tree's death.

Joe Roy discusses wildlife opportunities in beech stands—photo by Logan Johnson, Maine TREE Foundation.

One emphasis of the webinar and field tour was embracing the idea of a gradient of resistance to beech bark disease, with some being more susceptible than others. A susceptible beech has sunken cankers and callus tissue with cracked or recessed centers caused by the scale insect infestation and fungal infection. In the middle of the spectrum are tolerant beeches. These trees have delimited cankers and have been infected by the bark scale and fungi but formed a wound periderm, also known as the outer layer of a plant stem thickened in response to infection or wound, preventing the infection from reaching the vascular cambium. Underneath these cankers is clear and healthy bark. A resistant beech looks smooth and free of cankers, wounds, or fungal infections. Resistant beech trees are often found close to one another, and some research indicates that resistance is a genetically inheritable trait that can originate from root sprouts. Their success in resisting the disease may be due to having significantly lower concentrations of some amino acids and amino nitrogen in the bark.

A managed beech stand containing standing trees, slash, and stumps—photo by Logan Johnson, Maine TREE Foundation.

A lesser-known disease gaining attention is beech leaf disease, which kills native and ornamental beech tree species. The disease was first detected in Ohio in 2012 and later in Waldo County, Maine in 2021. It has since spread prevalently throughout the midcoast region. As the name suggests, beech leaf disease affects the leaves of a beech tree and is associated with the nematode Litylenchus crenatae mcannii. Infected beech tree leaves will have uncharacteristic colors and deformities like dark banding between the veins or shriveled and leathery textures. Premature bud drop, aborted buds, and thinning canopies are other common signs of the disease. However, identifying beech leaf disease can often be challenging because infected trees can simultaneously contain heavily infected clusters of leaves and unaffected branches.

Roger Greene introduces participants to stand 24 photo by Logan Johnson, Maine TREE Foundation.

FCCI participants gather for the GPMCT Wildlands field tour. Photo by Logan Johnson, Maine TREE Foundation

A memorable moment of the tour was when one participant remarked, “It’s all about balance; even doing nothing benefits some, but not others.” As we delve deeper into understanding the dynamics of Maine’s forests and their interactions with pests and pathogens, the concept of balance becomes increasingly important, both in the present and as we plan for the future.

FCCI is a collaborative effort between Maine TREE Foundation, the Forest Stewards Guild, and UMaine’s Center for Research on Sustainable Forests (CRSF). Through webinars and field tours, the initiative fosters conversation and learning on the impacts of climate change in the Maine woods.

You might have noticed some changes if you’ve visited the Maine Tree Farm recently. Our website has been undergoing an overhaul and will continue to be improved throughout the year. These changes will help us provide better service and clearer communications with our Tree Farm community.

www.mainetreefarm.org

Research, Policy, and Management: A Visit to Bear Brook Watershed

FCCI Winter Field Tour attendees gathered at Bear Brook Watershed. Photo by: Roger Merchant

Written by: Gavriela Mallory

Maine's Forest Climate Change Initiative (FCCI) hosted a discussion of long-term research, hydrology, soil chemistry, and conservation at its winter field tour in early December. Exhales created small clouds of fog as participants circled up for introductions. The nearly 0° morning didn't dampen the excitement for a field visit to the decades-long experiment at Bear Brook Watershed in Maine (BBWM) on Lead Mountain in Beddington.

BBWM is a testament to the importance of science in policy-making. In the 1960s, as industry boomed across North America, scientists at Hubbard Brook in New Hampshire noticed drastic increases in the acidity of routine rain samples, like carbon dioxide, sulfur, and nitrogen oxides released by burning fossil fuels. These gasses spread widely with wind, typically moving from the west to the northeast in the eastern United States. As they combine with water particles in the air, precipitating rain, snow, and fog become dramatically more acidic than normal. Acid rain was one of many industry-tied ecological and public health concerns raised in the 20th century, and growing evidence of impacts led to the passage of the Clean Air Act (CAA) in 1970. The CAA was developed based on the available science, but many questions remained unanswered. As Congress looked ahead to policy revisions over the coming decades, investment in air pollution studies was prioritized.

Experimentation to better understand ecosystem response to acid rain was among such prioritized initiatives. Ivan Fernandez, then an early career researcher at UMaine Orono, proposed, along with colleagues, a project that would become the now

third-century-long study at Bear Brook. The foundation of the experimental model is two adjacent, "paired" watersheds: East Bear Brook and West Bear Brook.

Watersheds are geographic units characterized by surface water flow. Precipitation and snowmelt move across the landscape in patterns based on geographic features, like hills and streams. A watershed is an area of land that drains all water on its surface to one defined point. Thanks to Ivan and his team at East Bear Brook and West Bear Brook, these drainage points are home to V-notch weirs, concrete installations that allow scientists to measure and sample all outflows from each watershed.

Participants view the V-notch weir at the base of East Bear Brook. Photo by: Roger Merchant

FCCI participants warmed up by hiking up to the outflow of East Bear Brook to explore the V-notch weir. The seasonal road up Lead Mountain climbs through a dense hardwood stand, and snow crunched underfoot. As the group gathered around the large concrete basin, Ivan shared BBWM's origin story and some highlights from a third-century of fieldwork.

For 26 years, helicopters dropped ammonium sulfate (a chemical composed of Nitrogen, Hydrogen, Sulfer, and Oxygen) on Bear Brook West every other month. These drops mimicked the chemical impact of acid rain on the western watershed, while the eastern watershed served as an untreated ecosystem of reference, its changes reflect environmental shifts on a broader scale. By comparing data on tree physiology, soil chemistry, stream chemistry, and many other ecosystem factors in the treated western watershed with the untreated eastern watershed, scientists at BBWM began to tell a more comprehensive story of the impacts of acid rain.

BBWM's weirs sit below catwalks loaded with data collection equipment. Ivan pointed out one instrument used to measure precipitation volume on a systematic timescale. Water runs into a pan. When the pan fills fully, it dumps. This movement mechanically triggers a notch mark on a record sheet wrapped around the device. The instrument is hand-wound by field technicians, who measure the marks to record flow volume over time. Ivan chuckled as he described the analog process, noting it as a reminder of the longevity of the research.

Findings from the BBWM study informed amendments to the CAA in the 1990s as initially intended and continue to inform pollution and climate policy-making today. The impacts of this research extend beyond policy. Since its establishment, the experiment has been an educational tool, providing students with valuable and applicable field experience. Sean Smith, a professor in UMaine's School of Earth and Climate Sciences, regularly uses data from the BBWM experiment in classes. With these data sets, students answer impactful questions such as: How does land use impact water flow across a landscape? And, how does climate impact hydrologic patterns over time?

Participants view the restoration project on the Narraguagus River. Photo by: Maddie Eberly, Forest Stewards Guild.

After visiting both weirs and the streams that feed them, FCCI attendees closed out the field tour by descending Lead Mountain and crossing Route 9 to see a habitat restoration project on the Narraguagus River. Owned by the same entity that leases the BBWM to UMaine, this property has also received investment for decades-long returns. Here, hardwood boles and coarse woody debris were engineered into bank buffers to improve Atlantic Salmon habitat. When Maine's timber industry depended on waterways to move logs to mills, channels like the Narraguagus were widened and homogenized to support efficiency. These buffer installments reintroduce differences in temperature
installments reintroduce differences in temperature and flow rate within the river, while also impeding erosion, all of which support habitat for freshwater species. As with the Clean Air Act, this project was guided by research that provides insight into what interventions and protections this ecosystem needs to thrive.

In Maine, we are lucky to have an abundance of forested land. The BBWM demonstrates how much we have to gain from observing these landscapes carefully, often, and on the timescale of ecological change. Such investments support effective and economically efficient policy-making and management. They support the learning and practice necessary to foster future generations of scientists. They support the endurance of habitats and ecosystems that characterize the landscapes we call home.

FCCI is a collaborative effort between Maine TREE Foundation, the Forest Stewards Guild, and UMaine's Center for Research on Sustainable Forests (CRSF). Through quarterly webinars and field tours, the initiative fosters conversation and learning on the impacts of climate change in the Maine woods.

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