New England Society of American Foresters

News Quarterly

Volume 78, Issue 2 April, 2017

Special points of interest:

- *Publication info, page 2*
- *Lots of pictures, page 6*
- *Thank our conference sponsors, page 14*
- *A note from Ken L., page 16*
- *Is it taxing? page 17*
- *Apply for a job, page 23!*

Inside this issue:

Connect with us	**2**
NESAF Columns	**3**
SAF Board	**3**
NESAF Awards	**5**
Science Theme	**8**
Guest Column	**17**
State Affairs	**18**
In Memoriam	**22**
CFE Update	**23**

Paul Bunyan photobombs NESAF Conference!

The rain stopped just long enough for Paul and many NESAF members to take a quick break and have a group photo taken outside the Cross Convention Center in Bangor, ME last month. Photo by Ron Lemin.

Emerging Science: abstracts from the 2017 NESAF Annual Meeting
News Quarterly science theme– Dr. Anthony D'Amato, theme editor

This theme continues the concept started last year in the *News Quarterly*, a compilation of scientific and technical abstracts presented at the Annual Winter Meeting in Bangor. The focus is to highlight some research projects currently underway at our area universities and institutions, while also allowing the next generation of foresters an opportunity to establish themselves. The abstracts span a variety of topics, so it's likely that something will catch your attention. Many positive comments were received from the trial run last year, and hope the abstracts featured in this theme are equally well received!

NESAF Executive Committee Members

Chair: **Jeffrey S. Ward**
(o) 203-974-8495
Jeffrey.ward@ct.gov

Chair Elect: **Kevin S. Evans**
Kevin.S.Evans@dartmouth.edu

Immediate Past Chair: **Fred Borman**
(o) 603-679-5616
fred.borman@unh.edu

Secretary: **Mallory Bussell**
(c) 207-329-2178
Mallory.bussell@gmail.com

Treasurer: **Donn Downey**
Donn@forestmetrix.com

District Six Council Representative: **Si Balch**
(o) 207-359-3343
balch77@gmail.com

Canada: **Donald W. Floyd**
(o) 506-451-6866
dfloyd@unb.ca

CT/Grants Chair: **Mel Harder**
(o) 860-653-2444
Mel.harder@snet.net

ME: **David C. Parker**
parkr4st@maine.rr.com

MA/Awards: **William N Hill, CF**
(o) (413) 545-1576
William.hill@state.ma.us

NH: **Jonathan Nute**
Nutea@comcast.com

RI/Elections Coordinator: **Robert MacMillan**
(o) 401-521-6300*7318
Rmacmillan@provwater.com

VT: **Ed O'Leary**
eddoleary@gmail.com

Science/Tech Chair: **Anthony D'Amato**
(o) 802-656-8030
Awdamato@uvm.edu

Policy Chair: **Jas Smith**
(h) 802-496-6483
jasssmith123@gmail.com

Membership Chair: **Susan Francher**
(o) 603-271-2214
Susan.Francher@dred.nh.gov

NESAF Archivist: **Ken Laustsen**
(o) 207-287-3135
Ken.laustsen@maine.gov

CFE Coordinator: **Andrew Fast**
(c) 603-841-6544
Andrew.fast@unh.edu

Website Administrator: **Wendy Weisiger**
(o) 603-224-9945
Wendy.weisiger@gmail.com

News Quarterly Editor: **Joseph P. Barsky**
(o) 203-974-8540
nesafnq@gmail.com

State Chapter and Division Officers

Granite State

Chair: **Steve Eisenhaure** (o) 603-534-7979 stephen.eisenhaure@unh.edu
Vice-Chair: **Mike Powers** (o) 603-325-5430 mpowers@baystateforestry.com
Treasurer: **Steve Junkin** (o) 603-224-9945*310 sjunkin@forestsociety.org
Secretary: **Samuel Taylor** (o) 603-227-8735 samuel.taylor@dred.nh.gov
News Corres: **Steve Eisenhaure**

Green Mountain

Chair: **Mike White** (o) 802-231-2555 mike@calfeewoodland.com
Vice-Chair: Vacant *Secretary:* Vacant
Treasurer: **Jason P. Nerenberg** (o) 802-498-4342
Jason.nerenberg@state.vt.us
News Corres:

Maine

Chair: **Kristen Hoffmann** (o) 207-945-9200 kristen@fsmaine.org
Vice Chair: **Bob Cousins** (o) 207-570-0553 BCousins@wagnerforest.com
Sec/Treas: **William H. Livingston** (o) 207-581-2990 WilliamL@maine.edu
News Corres: **Tony Filauro** (H) 207-723-9401 filauroa@yahoo.com
Div. Manager: **Laura Audibert** (o) 207-834-0048 la4568@roadrunner.com

Yankee

Chair: **William Van Doren** (c) 413-522-9736
william_r_vandoren@yahoo.com
Vice–Chair: Vacant
Sec/Treas: **Tom Worthley** (o) 860-345-4511
thomas.worthley@uconn.edu

Rhode Island

Chair: **William J. Walker, Jr.** (o) 401-500-2356 William.walker@dem.ri.gov
Vice-Chair: **Paul Dolan** (o) 401-500-0399 Pcdolan1@verizon.net
Sec/Treas: **Robert W. MacMillian** (o) 401-521-6300*7318
rmacmillan@provwater.com
News Corres: **Christopher F. Modisette** (o) 401-822-8877
chris.modisette@ri.usda.gov

Connecticut

Chair: **Nancy Marek** (o): 860-345-5231 nancy.marek@uconn.edu
Vice Chair: **Larry Rousseau (**o) 424-3382 Lawrence.rousseau@ct.gov
Sec/Treas: **Emery Gluck**
News Corres: **Mel Harder** (o) 860-653-2444 mel.harder@snet.net

Massachusetts

Chair: **Jennifer Fish** (o) 545-5753 jennifer.fish@state.ma.us
Vice-Chair: **Ross Hubacz** (o) 860-974-0127 hubacz@hullforest.com
Sec/Treas: **Kate Marquis** (o) 413-992-8734 Kate.marquis@state.ma.us
News Corres: **William Hill** (o) 413-545-3891 william.hill@state.ma.us

Canada

News Corres. N. Brunswick: **Edwin Swift** (o) 506-452-3175
eswift@NRCan.gc.ca
News Corres. Quebec: Vacant

News Quarterly Publication and Advertising Information

Issue	Submission Deadline	Publication Date	Advertising Size	Advertising Rate
Winter	22-Dec	15-Jan	1/2 page	$90/issue
Spring	22-Mar	15-Apr	1/3 page	$70/issue
Summer	22-May	15-Jun	1/4 page	$50/issue
Autumn	22-Sep	15-Oct	1/8 page	$30/issue

The ***News Quarterly*** is the official publication of the New England Society of American Foresters. It is published in January, April, June, and October, and is mailed from Berlin, NH under a non-profit organization bulk mail permit. Address all inquiries to Joseph P. Barsky, 890 Evergreen Avenue, Hamden, CT 06518 or nesafnq@gmail.com

Still waiting for Spring! ~ Jeff Ward, NESAF Chair

We should all thank each of our sponsors, vendors, members, and students who helped make this year's joint winter meeting with Northeastern Forest Pest Council and the Maine Chapter of The Wildlife Society a success. A special thanks to **Kristen Hoffman**, who in her capacity as General Chair, successfully coordinated the folks handling the myriad details behind the scenes This meeting would not have been possible without the great team who took time out of their schedule developed a program with over 31 concurrent sessions, 7 field trips, and 5 workshops (Wow!) to contribute to our theme of Adapt, Adopt, Advance: Resiliency in Natural Resource Management. And thank you to **Mother Nature** for the break in the weather that allowed us to take a group photo with Paul Bunyan!

In the spirit of the Green Mountain Division initiative in 2015 to provided funding to reduce student registration fees at the NESAF annual meeting, repeated by the Yankee Division in 2016, the Maine Division and NESAF in 2017 continued this effort to make student registration affordable so they may be able to attend our conference. I am not sure of the final numbers, but heard around 80 students attended this year's meeting. As always, the Quiz Bowl was entertaining and had some questions that had us old-timers stumped. Congratulations to the **University of Vermont** students! NESAF's commitment to the next generation of foresters was also demonstrated by the Leadership Training Seminar organized by **Ken Laustsen**.

Congratulations to our members who were recognized for your service and contributions: **Everett L. Towle** – Distinguished Service Award; **Kirby Ellis** – Austin Cary Practicing Professional Award, **Jessica Leahy** – Ernest M. Gould Technology Transfer Award, **Anthony D'Amato** – Mollie Beattie Young Forester Leadership Award, and **Will Staats** – for the Integrity in Conservation Award. Congratulations to **Karin Bothwell** of University of Maine who became the first recipient of the National SAF Mollie Beattie Visiting Scholar in Forest Policy.

At the National SAF Convention in Madison, WI, **Fred Borman** and I attended the House of Society Delegates (HSD) meeting on November 1 and 2, 2016. The meeting was chaired by Greg Russell. On behalf of NESAF, Fred accepted the HSD Communications Award for the long-running NESAF Silviculture Working Group summer field meetings that was initiated by **Dr. Peter Hannah** back in 2017. National SAF staff provided updates on efforts to maintain and improve activities in a period of financial difficulties.

Finally, please welcome **Ed O'Leary** as the new Green Mountain representative to the Executive Committee and **Ken Laustsen** as our Historian/Archivist. Both of these gentlemen have previously served for six years on the EC and two years as NESAF Chair.

SAF Board of Directors report ~ Si Balch, District 6 Council representative

Natural resource care covers a broad variety of topics and responsibilities. SAF continues to expand and includes professionals across a widening spectrum. Urban forestry will increase in importance in connecting people to their environment. Conservation for purposes other than wood, water and wildlife will expand; while management for those same wood, water and wildlife benefits, will continue to be the driver on the majority of the forest landscape.

How does this connect to respect? Throughout my career I listen to foresters criticize other foresters. I admit to doing it myself on occasion. We target each others' practices, values, motives, and ethics. But, we are all people inspired by caring for the forest environment and addressing its relationship to its various owners. Foresters work with varying methods, and have different definitions of "success". Of course we have huge differences about goals, values and methods, BUT this does not justify the level of disparagement often leveled at our fellow foresters.

It is very hard to later solve joint problems with someone you have insulted. Debate is great, but disparagement is damaging. Please stick to the issues. We are all trying our best to care for the forests and people.

Thank you for your time to read and think about this.

2017 New England Society of American Foresters award recipients

Everett L. Towle

Distinguished Service Award

The Distinguished Service Award is the highest award given by the New England SAF, recognizing professional achievement in forestry, irrespective of age or tenure, by a New England SAF member.

Everett was born and raised in Hollis, Maine where his father paid for his University of Maine tuition by cutting timber off of the family woodlots, sawing it out, and selling the lumber. Imagine doing that today in light of current education costs and forest product markets? The B.S. Forest Management degree he received in 1956 was the start of a long career, 33 years with the USDA Forest Service, in a variety of places and positions. Two of those stints were in Washington, DC as Director of Policy Analysis for the National Forests and then as Director of Aviation and Fire Management. He retired in 1989 and moved back to that same family homestead and woodlots, and began a new career as a consulting forester, amongst other services.

As one endorsement noted, he became a passionate member of the Small Woodland Owners of Maine, serving as President for several terms. Under his leadership, membership increased, there was enhanced stewardship and advocacy programs, an expansion of their Land Trust program, and the creation of a forest certification program for small landowners. His policy background enabled him to represent forestry interests on contentious issues, like clearcutting, liquidation harvesting, and Maine's Tree Growth Tax Law. Another endorsement simply stated, "*I would not be practicing forestry without the help and generosity of Everett L. Towle. In 2009, deep in a recession, Everett agreed to be my sponsor for my Maine license, and he showed what it meant to be a role model forester in the Maine woods. He allowed me to work and experiment on both clients and his properties and learn from my mistakes.*" If honors and longevity were measures of distinguished service, then Everett could qualify, SAF Fellow in 2002, and last fall he was recognized by MESAF as a 60-year SAF member. The roles have been many; administrator, policy, community, and mentor. When asked about his career, his response is always the same, "*If I could go back and do it again, I'd do it exactly the same*."

Jessica Leahy

Ernest M. Gould Jr. Technology Transfer Award

The Ernest M. Gould Jr. Technology Transfer Award is given for outstanding contributions to natural resource science and management through education, extension, or youth service. Gould achieved wide acclaim for his expertise in analyzing and resolving forest resource policy issues while on the faculty of Harvard University. He was a graduate of the University of New Hampshire.

Dr. Leahy arrived at the University of Maine in 2005 and has been actively working ever since to make connections with the communities in the region, especially family forests. In the last four years alone, Jessica has helped author 14 peer-reviewed articles related to family forests. Besides the research, she shares her expertise, serving on the Maine Woodland Owners Board of Directors and as an officer, to the Maine's Healthy Forests Initiative, and the Kennebec Woodlands Partnership. She has a passion, enthusiasm, and a determination to get the job done in the best way possible, which of itself is infectious to those who work with her. She teaches through learning, inspiring students to ask questions, get involved, and to thoroughly enjoy the learning process, and most importantly, she instills the ethic to "pass it on," so her contributions will not end with her.

Jessica also finds time to serve her professional society, a past MESAF Chair, NESAF working group chair, and 2015 program chair for the SAF National Convention. Her work has assisted state policy and is recognized by other state agencies, in 2016 Inland Fish & Wildlife appointed her to the Landowner Sportsmen Relations Advisory Board. The New England Wood Bank Project has been another avenue of community involvement, helping 40 families in Belfast stay warm during the 2015-16 winter.

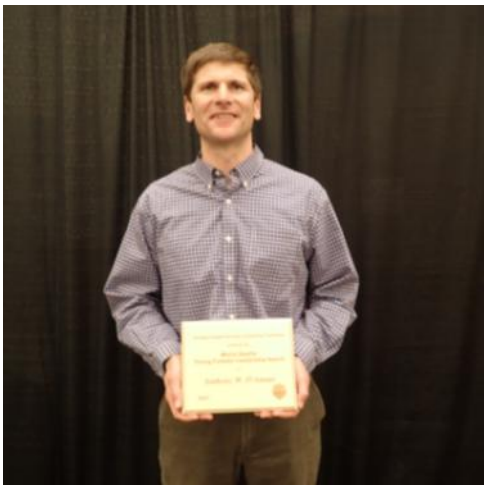
Kirby Ellis

Austin Cary Practicing Professional Award

The Austin Cary Award recognizes New England SAF members who have shown exceptional achievement as practicing forest managers. Austin Cary (1865–1936) graduated from Bowdoin College and introduced northern landowners to forest sampling, growth estimation, and simple silvicultural techniques. Cary's Woodsman's Manual, written in 1909, continued to be used as a textbook until the 1960's.

The nomination letter cited, "*I have known Kirby for over 30 years, both as a friend and professional forester. His kindness, enthusiasm, and energy for the forestry profession and customers are remarkable. As a small to medium landowner forestry consultant, Kirby excels when it comes to the personal touch necessary to make a consulting forester unique and valuable*."

His childhood was in Pennsylvania working on a dairy farm, then a greenhouse and truck farm. This led to Delaware Valley College with a major in horticulture and a minor in forestry. In 1974, he came to Corinth, ME to a teaching position, which unexpectedly continued to 2006 and ended at Dover-Foxcroft Academy. In the meantime he established Ellis' Greenhouse and Nursery in Hudson, ME, and worked part-time as a logger. With an increasing interest in forestry he became licensed in Maine, in 1989, and then completed a MF degree at UME. Today he is a Stewardship Forester, a Maine Tree Farm Inspector, a NRCS forestry technical service provider, and a certified field verifier for ME Master Logger program. In addition to his professional commitments, Kirby is an active community member in the town of Hudson, currently serving as a selectman. An endorsement letter, from a client, who now happens to be the 2017 Maine Outstanding Tree Farmer, noted that Kirby's forest management perspectives include a variety of options, including "*wildlife diversity, future tree growth, and possible economic value. He is willing to ask the landowner important questions regarding the future of their forest, while staying within the bounds of recommended forest practices*." He is a wonderful teacher/mentor of forest practice skills.



Anthony (Tony) D'Amato

Mollie H. Beattie Young Forester Leadership Award

The Mollie H. Beattie Young Forester Leadership Award is presented to a member of NESAF less than 40 years old who has shown leadership in a program or project benefiting the practice of forestry. Beattie was Vermont Commissioner of Forests, Parks, and Recreation, Deputy Secretary of the Agency of Natural Resources, and ultimately became Director of the U.S. Fish and Wildlife Service. Beattie was active in SAF. She co-authored ***Working with Your Woodland****; she is remembered for her tireless devotion to conservation, integrity, and quiet courage.*

In the nomination letter was this quote, "*To use a sports analogy, Tony is a franchise player. His leadership formally and informally has already had a significant impact on SAF and forestry here in New England, back in Minnesota, and across the country. He is a model for moving forward to address ecological and social challenges*."

In 2015, Tony returned to New England, becoming an Associate Professor – Rubenstein School of Environment and Natural Resources at the University of Vermont, and in 2016 he was appointed Chair of the UVM Forestry Program. He held silviculture positions of Assistant and Associate Professor at the University of Minnesota over the 2007-2014 period, following the awarding of his Ph.D. in Forest Resources from the University of Massachusetts-Amherst in 2007. Tony currently serves as the NESAF Forest Science Coordinator bringing a fresh vision and new formats to the "Science Theme" section in the News Quarterly. Last summer he co-organized a 3-day tour for the NESAF Silvicultural Working Group, which included a publication of the tour's proceedings. He served as Co-Chair- Planning Committee for 2016 SAF National convention in Madison, Wisconsin. One endorsement stated, "*He has single-handedly revitalized the discipline of silviculture by linking its historical substance with contemporary issues of resilience in the face of ecological change*." He is a strong role model for UVM students in becoming active SAF members.

Will Staats

Integrity in Conservation Award

The Integrity in Conservation Award recognizes an individual or organization working with natural resources who demonstrates adherence to principles and high standards in the face of adversity.

Since 1993, Will has been the Northern Regional Wildlife Biologist for the NH Fish & Game Department, an area of some 2,400 square miles. He received a B.S. in Wildlife Biology from UVM, and previous to 1993, held positions with Champion International and the VT Fish & Wildlife Department.

In his current position he is the department liaison to several types of large forest-land owners, including TIMO's, institutional, and the USDA Forest Service. His major responsibility is implementing the Habitat Technical Assistance Project which provides advice and on-the-ground assistance to landowners regarding wildlife habitat. In this role, Will provides foresters and land managers with review and implementation of timber sales, and assisting in long-term management planning. Other roles include environmental impact analyses of major development projects, and extension annually conducting numerous workshops and seminars on wildlife habitat management.

His professionalism has been challenged recently with two proposed major projects that will have significant and substantial impact on wildlife habitat in the NH North Country. One is a large wind farm and the other is a large transmission line corridor. The projects are controversial and to some degree politically oriented, but his testimony has remained factual and objective. An endorsement noted, "*It's not often that you find an individual so passionate about their work that they go out of their way and take, or make, the time to involve and educate others. His unbridled enthusiasm and easygoing laugh are unmatched and draw people into his work, where they can't help but learn a little something about wildlife.* " The other endorsement matched this with, "*Will has an infectious love for natural resources. His enthusiasm for the best interests of our natural resources has never waned over the many years that I have known him. He is respected by all natural resource managers that have had the experience of working with him*."

LandVest®

SERVING TIMBERLAND INVESTORS SINCE 1968

Full Service Forestry Consulting Across New England, New York and Pennsylvania

Timberland Marketing and Investment Analysis Services Provided throughout the U.S and Canada

Foresters and Licensed Real Estate Professionals in 15 Regional Offices:

Bangor, ME (207) 947-2800
Bethel, ME (207) 836-2076
Clayton Lake, ME (877) 376-3418
Jackman, ME (207) 668-7777
Portland, ME (207) 774-8518
St. Aurelie, ME (418) 593-3426
Lowville, NY (315) 376-2832
Tupper Lake, NY (518) 359-2385
Concord, NH (603) 228-2020
W. Stewartstown, NH (603) 246-8800
Kane, PA (814) 561-1018
Eugene, OR (541) 790-2105
Hancock, NY (607) 637-2264
Newport, VT (802) 334-8402
Americus, GA (229) 924-8400

www.landvest.com

Stewardship For Your Timberland Investment

SEWALL

JAMES W. SEWALL COMPANY / *Since 1880*

Natural Resource Solutions

Appraisals & Investment Analysis
Economics & Policy
Resource & Market Analysis
Timber Inventory & Design
Growth & Yield Modeling
Aerial Photography & Imaging
Forest Management GIS
Web & Geoportal Services

Offices nationwide
sewall.com
800 648 4202
forest@sewall.com

2016 Annual Winter Meeting scrapbook

Scientific and technical abstracts presented at the 2017 Annual Winter Meeting

Integrated forest ecosystem assessment to support sustainable management decisions in a changing climate

James Duncan[1,2] and Jennifer Pontius[1,2,3]
[1]Forest Ecosystem Monitoring Cooperative (formerly the Vermont Monitoring Cooperative)
[2]Rubenstein School of Environment and Natural Resources, University of Vermont
[3]US Forest Service Northern Research Station

Abstract: To refine our understanding of how climate may impact forested ecosystems, this project combines results from long-term monitoring, manipulative experiments and theoretical models to provide an integrated assessment of the role of climate in forest ecosystem health and function. The overall goal of this five-year project, is to support more fully informed forest management on a spatial scale that reflects the complexity of the northern forests. Using maps quantifying current and projected forest structure and ecosystem services, combined with climate projections and forest growth models, land managers can assess the probability of success for specific management objectives and compare the impact of various management alternatives in a spatial, structured decision framework. This framework will allow land managers to compare the probability of management activities meeting objectives on a pixel by pixel basis, reflecting the complexity of the northeast's heterogeneous landscape. Here we present several of the preliminary models developed to identify sugar maple niche and assess relative hemlock vulnerability to hemlock woolly adelgid under various climate scenarios. This merging of scientific knowledge with management needs is an important step towards both improving our understanding of the relationships between forests and climate, and, more importantly, effecting change on the ground by informing management and policy decisions.

Oak success following regeneration harvesting in Connecticut

Jeffrey S. Ward and Joseph P. Barsky, Connecticut Agricultural Experiment Station.

Abstract: Over 1100 sample points on 57 stands were inventoried during 2015-16 to ascertain quantity and quality of tree species regeneration on hunted (n=31) versus non-hunted (n=26) locations across three treatment regimes: clearcut (n=28), shelterwood (n=16), and irregular shelterwood (n=13). Stands were harvested between 2004 and 2014, representing over 2269 acres (918 ha) throughout Connecticut. At each sample point, all stems ≥ 3 feet tall (1m), or having free-to-grow (FTG) status and at least 1 foot (30cm) tall, were identified and grouped into height classes on 1/400 ac (1/988ha) plots. In addition, oak (*Quercus spp.),* hickory (*Carya spp*.), and pine (*Pinus spp.*) 1-3 feet tall (30-100 cm) were tallied and assigned a FTG status on 1/1000 ac (1/2471 ha) plot. Finally at each sample point, up to four FTG trees which were rated as most likely to form the upper canopy of a mature forest were identified. Preliminary results indicate a management goal of 60 FTG oaks per acre (150/ha) was achieved on 52% of hunted stands but only 7% of non-hunted stands following regeneration harvests. Oak regeneration success was much higher following shelterwood or overstory removal harvests (54-67% of stands) than on stands with irregular shelterwoods (33% of stands). Land managers looking to retain a high proportion of competitive oak stems should consider deer density and complete overstory removal when developing silvicultural prescriptions.

Supporting Women in Forestry Today (SWIFT): small-scale discussions with large-scale implications

Kara K.L. Costanza[1*], Karin N. Bothwell[1], Erin W.A. Schlager[1], Savannah L. Haines[1], Mindy S. Crandall[1],
Laura S. Kenefic[2], Jessica E. Leahy[1], Marie-Cécile Gruselle[1]
[1]School of Forest Resources, University of Maine, Orono, ME 04469.
[2]US Forest Service, Northern Research Station, Penobscot Experimental Forest, Orono, ME 04469.

Abstract: Forestry is still a male-dominated field. Yet the profession has gained an increasing number of women, many of whom are striving to succeed and find their place within the discipline. Using a U.S. Forest Service model, a group of women faculty and students from the University of Maine's School of Forest Resources (SFR) formed SWIFT (Supporting Women In Forestry Today) in the fall of 2015. Since then the informal group has grown to more than 30 participants, making up more than 50% of the women in the program. Participants come from diverse backgrounds, represent all majors, and include all levels of the department, such as undergraduate and graduate students, faculty, and professional staff. This poster reviews (1) how and why SWIFT was formed, (2) meeting structure, (3) lessons learned to-date, (4) participant feedback and evaluation results, and (5) plans for long-term sustainability. Based on observational data and evaluation results, outcomes from SWIFT include: (1) increased awareness of gendered language, interactions, and/or discrimination; (2) development of a female community within SFR; (3) increased conversation between students, faculty, and staff; (4) career preparation; and (5) growing confidence among participants. These results lay the groundwork for developing SWIFT groups at other institutions. We believe groups like SWIFT not only provide safe a place for women to learn, but foster a community atmosphere and create a support network that can serve to encourage and empower women in forestry to succeed.

Vegetation management and modeling for storm resistant roadside trees and forests

Thomas Worthley, Dr. Jeffrey Ward, Dr. Jason Parent, Dr. Anita Morzillo, Dr. John Volin

Abstract: Recent catastrophic storm events in Connecticut illustrate how daily lives can be disrupted by tree failure. Ninety percent of power outages during recent storms were caused by partial and whole-tree failure along wooded roadsides and distribution lines. While some blame might be placed on increased storm intensity and aging infrastructure, a key factor is the age, structure, composition and condition of the forest surrounding our homes, roads and power lines. The woods along many of our roadways have never been managed or tended in any way to ensure healthy robust trees and many trees are crowded, stressed, and unhealthy. **"Stormwise"** is an innovative and multi-faceted forest management and public education initiative with the goal of reducing the risk of power outages and other damage caused by wind-related tree failure at the forest and power-infrastructure interface. The **Stormwise** management concept is based upon four basic principles:

- Trees with space to grow are healthier trees
- Tree branches and limbs grow toward the sunlight
- Trees exposed to wind and with space to move in the wind develop wind-firmness
- The right tree needs to be grown in the right place

Growing and maintaining storm-adapted trees and forests can increase the resilience of the power supply while maintaining public forest benefits. To do so, however, involves the participation of wide variety of stakeholders, including the utilities, elected officials, property owners, a highly trained work force and professional planners and land managers.

Driving factors of tree sway in temperate deciduous forests of the northeastern United States

Amanda Bunce, Dr. John Volin, Dr. Jason Parent, Dr. David Miller

Abstract: The extensive urban forest areas of the northeastern United States provide extensive aesthetic and ecological benefits. However, trees are the most common cause of utility damage and power outages during storms in this region. Previous studies on tree sway and risk-of-wind-throw have largely been conducted in heavily managed, even-aged, monospecific coniferous stands, while relatively little has been investigated in northeastern mixed temperate deciduous forests. The objective of this study is to identify drivers of tree sway frequency in temperate deciduous forests from characteristics of wind condition, tree architecture and stand structure. We monitored the natural sway of 41 trees from three sites in southern New England and examined the relationship of their fundamental vibrational frequencies (FVF) with a number of potential predictor variables to create a predictive model for FVF. We found that significant predictors included a calculation of slenderness that has been found to predict FVF in studies on coniferous trees, namely diameter at breast height (DBH) divided by tree height squared (HT^2), as well as environmental variables accounting for the presence or absence of leaves and for temperatures below freezing. Past studies have suggested a relationship of FVF to wind-firmness. This relationship of FVF to a potentially manageable attribute such as DBH/HT^2 may be beneficial for forest management practices to help mitigate tree-related storm damage to utility infrastructure. Future work includes an examination of the prediction of sway amplitude, the amplitude-FVF relationship, and the effects of forest stand thinning on tree sway as related to the development of wind-firmness.

Quantifying and mapping risk of spruce budworm carbon and timber resource impacts in New England

John S. Gunn[1,2], Mark J. Ducey[1] and Ethan P. Belair[1*]
[1] Department of Natural Resources & the Environment, University of New Hampshire, Durham, NH
[2] University of New Hampshire Cooperative Extension, Durham, NH

Abstract: Spruce budworm (SBW) is one of the most destructive native insects in North America. Outbreaks occur every 30-50 years in a natural cycle associated with the maturation of balsam fir across a given region. Populations of SBW have been increasing in southeastern Canada since 2006, and are likely to begin impacting the Northern Forest region soon. A moderate to severe SBW outbreak will have significant regional consequences for carbon stocks, timber resources, tourism, and conservation. A 2016 risk assessment of the impending outbreak, published by the Maine Spruce Budworm Task Force, categorized stand-level risk. Categories are based on the susceptibility of different species to SBW defoliation, prior investment in stand tending, and stand age and structure. Using those risk category definitions, we created a series of rule-based classifications that categorize stands based on objective inventory data, including information on species composition, age class structure, density, and elevation. We used data from all US Forest Service Forest Inventory and Analysis (FIA) plots in the Northern Forest region collected during the most recent annualized inventory cycle (2011-15; n = 15,802). We used these data to classify stands into risk categories and evaluate spatial patterns in risk across the region. We estimate that less than 2% of the Northern Forest landscape falls into the two highest risk categories. However, several counties in Maine have more than 20% of their forest land in these high risk stands. We are examining the consequences for climate change mitigation and forest product markets. Finally, we also created an interactive public web mapping tool intended to help visualize where outreach, prevention, and salvage work may be most needed.

Can portable band sawmill operators help address Connecticut's small scale forest management needs?

Frances P. Champagne, Thomas Worthley, Dr. John Volin

Abstract: The shrinking average size of forested land parcels in the Northeastern United States, along with an increased interest in activities involving small-acreage treatments for wildlife habitats and roadside forest management, necessitate scale-appropriate management methodologies in sustainable forestry. Corresponding value-added processing for wood products, such as with portable band sawmills, has the potential to foster local markets and utilization of wood products in the small quantities produced. Portable sawmills could be part of an array of specified benefits in addressing small scale forest management needs in order to sustain our forest resources. A survey of portable band saw mill operators (PBSOs) in the state of Connecticut was conducted to help determine the capacity for PBSOs to assist in addressing small-scale sustainable forest management needs. Results revealed that the majority of sawmill owners are over the age of 60; age and annual income had significant effects on interest in operating a PBSO business, whereas sawmill ownership and income effected possible interest in becoming part of a niche market. Sawyers indicated need for education in harvesting and operations, value-added techniques, marketing, and obtaining logs from roadsides. PBSOs are one example of how small scale forest management needs can be addressed sustainably.

Patterns in forest harvesting in New England and New York: using FIA data to evaluate silvicultural intent

Ethan P. Belair[1,*] and Mark J. Ducey[1]
[1] Department of Natural Resources & the Environment, University of New Hampshire, Durham, NH

Abstract: It is a basic tenet of modern forestry that stand-level silvicultural prescriptions: 1) influence long-term outcomes, and 2) should be tailored to individual stand's ecological and structural characteristics. However, despite their important long-term effect on forests of the northeast, data on silvicultural approaches used in this region are lacking. Some states have best management practices or laws which regulate the size, placement and frequency of forest harvesting. However, where data are collected (e.g. Maine), silvicultural intent is based on self-assessment rather than objective evaluation and there are reasonable doubts as to the efficacy of some regulations. To better characterize silvicultural operations in New England and New York, we developed a rule-based system (RBS) designed to encompass both even-aged and uneven-aged systems. We used the RBS to assess all FIA plots in this region with 1) repeated measurements taken, 2) after the advent of an annualized inventory system, where 3) there were trees classified as removed. Our sample included 1337 plots, across numerous ownership types. We used a variety of FIA variables to evaluate each plot and assign one of several "harvest types". Harvest classifications covered silviculturally sound and unsound practices, including various types of partial harvesting, clearcutting, thinning and apparent high grading. Several general trends emerged from our analysis. Rates of harvest were higher in more rural areas, particularly in Maine. Across the region, low-value, non-commercial species were removed at the same rate as more preferred, commercial species. The majority of harvests were classified as partial harvests, with basal area retention between 40 and 100 ft^2/ac. The mapped-plot FIA design creates challenges for unambiguous assignment in some situations. Detailed results will be of interest to those working with forest managers in an educational or regulatory capacity.

Exotic larch at the Fox Research & Demonstration Forest, Hillsborough NH

Ingeborg Seaboyer, Bruce Allen
Ingeborg Seaboyer Program Forester, Caroline A. Fox Research and Demonstration Forest, NH Division of Forests and Lands

Interest in growing exotic larch isn't new - as early as the mid 19th century European Larch (*Larix decidua*) was brought to the US, with some early plantings in NH at the Dartmouth College Park. Early reports of the NH Forestry Commission recommended planting larch - one of the first species produced at NH's State Forest Nursery in 1911 with stock available into the early 1930's and 12,000 seedlings distributed. However, Henry Baldwin (NH's first research forester) reported that no records of the seed source existed for these early trees. Starting in 1934 Dr. Baldwin began to receive larch seed samples -primarily European, but some Japanese (*Larix leptolepis*) - from various locations (including Scotland and Italy) which he grew in a nursery at the Fox Research & Demonstration Forest (Fox) in Hillsborough NH. In 1936 the first seedlings were set out in experimental plots at Fox and at Vincent State Forest. From 1938 to 1940 additional European, Japanese, Dahurian (*Larix gmelinii*) and Siberian larch (*Larix sibirica*, and *Larix polonica sudetica*) (from Czechislovakia, Germany, Austria, the French Alps and Finland) were planted at Fox. In 1946 Fox received seeds from the International Union of Forest Research Organizations (IUFRO) from low, mid and high elevation sources in the Austrian Alps, Italian Alps and Switzerland. With the IUFRO provenance test Dr. Baldwin indicated Fox held representation from all the areas where larch naturally occurs. Additional plantings in 1950-1960 included Hybrid larch. Fox's larch has resulted in numerous publications. A 1985 effort to re-establish monumentation saved the IUFRO plantation and four others from being lost. The best way to manage the Fox plantations has been debated and ice storms have done damage. But when exotic larch in NE is discussed, Henry Baldwin, his successors and the Fox larch are usually part of the discussion.

Strategic directions of USDA Forest Service research and development in the northeastern United States

Woodall, Christopher, Kenefic, Laura, King, David, Kolka, Randy, Palik, Brian, Rustad, Lindsey, Yamasaki, Mariko

Abstract: The Research and Development branch of the USDA Forest Service has operated over a dozen experimental forests across the northern tier of US forests (Maine to Minnesota) for many decades representing cumulative monitoring approaching 1,000 years on 50,000 acres. Conducted in cooperation with state, local, and industrial partners, this body of applied research has not only trained generations of foresters but also produced impactful research ranging from the discovery and mitigation of the effects of acid rain to the development of northern hardwood silvicultural guidelines. As federal research should be reflective of collective needs of a changing society, the time has come to reevaluate the status and strategic directions of federal forest research in New England. A re-focus on applied forest science with maximum positive effect on rural communities, economies, and ecosystem services is suggested as a path forward to align with anticipated executive and legislative directions. The poster will suggest a future model of federal forest research in New England and invite constructive feedback.

Silvicultural effects on carbon sequestration at the Penobscot Experimental Forest from 1950-2016

Joshua J. Puhlick[1,3], Aaron R. Weiskittel[1], and Laura S. Kenefic[2]
[1]University of Maine, School of Forest Resources
[2]US Forest Service, Northern Research Station

Abstract: Determining whether forests are a source or sink of atmospheric CO_2 is important for developing forest management strategies to mitigate climate change. The carbon stock change approach is one method that is commonly used to determine whether forests are sources or sinks of atmospheric CO_2. We used this method to calculate the average annual net change in carbon stocks for time periods between inventories of tree attributes on permanent sample plots in a long-term northern conifer (mixedwood) silvicultural experiment at the Penobscot Experimental Forest (PEF) in central Maine. For each stand in the long-term study of silvicultural affects on composition, structure, and growth (Sendak et al. 2003. Can. J. For. Res.), we then derived an index of average annual net carbon stock change from the 1950s to the 2010s. This index includes changes in aboveground carbon stocks (live tree as well as dead wood resulting from non-harvest mortality and logging residues) and carbon stored in harvested wood products. We present trends in carbon sequestration for a range of forest management treatments including selection cutting, shelterwood cutting, exploitative cutting, and no management. We also evaluate the influence of forest management treatment, site quality, stand structure, and disturbance severity on carbon sequestration. Our overall hypothesis was that forest management treatments that have promoted and maintained trees of large sizes and fast-growing species were the largest sinks of atmospheric CO_2 from 1950 to 2016. While a previous study of carbon storage at the PEF made comparisons among forest management treatments at a single point in time (Puhlick et al. 2016. Can. J. For. Res.), this study improves our knowledge of carbon dynamics from the standpoint of changes in stocks over time. The combined results from these studies can be used to inform planning and policy decisions concerning enhancing carbon storage in forests.

Opportunities for and barriers to wood reuse from utility company vegetation management

Danielle P. Kloster[1], Anita T. Morzillo[1], Thomas E. Worthley[1,2], John C. Volin[1]
[1]University of Connecticut Department of Natural Resources and the Environment, Storrs, CT; [2]University of Connecticut Cooperative Extension, Haddam, CT

Abstract: Utility vegetation management generates large quantities of wood that require disposal. To explore opportunities to reduce wood waste and promote wood recovery, the University of Connecticut partnered with United Illuminating (UI) and Eversource Energy to explore and develop biomass recovery pilot programs. Pilot programs began in the service territory for each utility in Summer 2015. Tree crews were trained to identify commercially valuable logs on portions of trees below the power lines. In 2015 and 2016, researchers interviewed crewmembers that were not yet involved in the pilot programs (n=42), crewmembers that had recently implemented the protocol as part of a pilot program (n=13), and crewmembers that had implemented a revised protocol focused on wood recovery (n=11). Interview questions focused on workflow, interactions with homeowners and the public, and opportunities for and barriers to implementation from crewmember perspectives. Crewmembers who were not yet involved in the program expressed interest, and indicated that they already leave the portion of the tree below power lines whole whenever possible. Potential barriers included: (1) inability to follow the protocol because of obstacles such as mailboxes and stone walls, (2) homeowners wanting to keep the wood, and (3) low quality wood (i.e., containing rot or metal). Overall, crewmembers that had implemented the program expressed that it was going well. However, some concerns included the time required and safety issues. With the input of tree crewmembers, a wood recovery program has the potential to be successful in reducing wood waste from utility vegetation management.

Effects of pest-induced tree species change on nitrate leaching and carbon storage in northeastern U.S. forests

Katherine F. Crowley and Gary M. Lovett
Cary Institute of Ecosystem Studies, Box AB, 2801 Sharon Turnpike, Millbrook, NY 12545 USA

Abstract: As tree species composition changes due to invasive forest pests or other stressors, the extent to which forests will sequester nitrogen (N) and carbon (C) remains uncertain. We used a species-specific forest ecosystem model (Spe-CN) to investigate how tree species change due to emerald ash borer (EAB), hemlock woolly adelgid (HWA), or beech bark disease (BBD) might influence nitrate leaching or C storage. We also asked how nitrate leaching might vary among stands dominated by different species. In model simulations, predicted pest effects on nitrate leaching were species-specific: for example, 100 years post-invasion, the model predicted a 73% leaching increase if sugar maple replaced white ash due to EAB, vs. a 55% decrease if red oak replaced ash. Effects of tree species change on C storage also varied in magnitude, direction of effect, and timing of response, depending on the identity of the declining and replacing species. For a stand where sugar maple replaced American beech due to BBD, the model predicted a change from net C loss (-13% after 100 years) to net C storage (+10% after 300 years), as plant C gain (+36%) overtook C loss from soils (-11%) and downed wood (-24%). In contrast, 300 years following replacement of eastern hemlock by yellow birch due to HWA, total C differed little between invaded and un-invaded stands. Among stands dominated by 12 northeastern U.S. tree species, simulated nitrate leaching varied widely, and increased with either increasing N deposition or forest age, to a larger extent for deciduous (except red oak) than for coniferous species. Overall, this analysis suggests that effects of pest-induced species change on forest C and N cycling can be large, variable, and play out over hundreds of years, but that we can use species-specific modeling to understand this variation and make meaningful long-term predictions.

Buried dead wood: an often overlooked detrital pool in the Acadian Forest.

[1]Gruselle, M.-C., [1]Fraver, S., [1]Puhlick J.J., [1]Fernandez, I.J., [2]Woodall, C.W.
[1]School of Forest Resources, University of Maine, 5722 Deering Hall, Orono, ME 04469,
[2]U.S. Forest Service, Northern Research Station, Center for Research on Ecosystem Change, 271 Mast Road, Durham, New Hampshire 03824-0640.

Abstract: Managing forests with the goal of enhancing C storage requires an accurate accounting of C stock distribution among ecosystem components. Buried wood (BW) is overlooked in most forest inventories making it the most poorly known of all forest pools. Dead wood can be gradually buried by litter and overgrown by ground vegetation in some ecosystems, which slows its decomposition. Our aim was to quantify BW biomass at sites in Maine with known land-use histories such as the Bear Brook Watershed in Maine (BBWM), the Howland Research Forest (HRF), and the Penobscot Experimental Forest (PEF). The stands at BBWM and PEF were mixed and composed of varying proportions of northern hardwood tree species (*Acer* spp., *Betula* spp., and *Fagus grandifolia*) and conifers including red spruce (*Picea rubens*), balsam fir (*Abies balsamea*), and eastern hemlock (*Tsuga canadensis*). At HRF, the stand was red spruce and eastern hemlock dominated. The BW inventories were performed using the line intercept method at BBWM and HRF versus O horizon sampling at PEF. The BW biomass was 2.5 ± 2.5 Mg ha-1 at BBWM and 1.1 ± 0.7 Mg ha-1 at HRF. At the PEF, Puhlick et al. (2016, For. Eco. Manage. 364: 90-100) reported BW biomass within the Oe + Oa horizon of 3.8 ± 4.8 Mg ha-1 across long-term silvicultural treatments. Our biomass estimates of BW for these mixed-species forests are within the range of values, albeit at the lower end, reported for forest ecosystems in North America. This study also points to site and management conditions that influence the accumulation of BW in the Acadian Forest. Further inventory and research efforts are needed to better understand the relationships between BW pools and forest ecosystem processes such as organic matter dynamics, nutrient cycling, and ultimately forest productivity.

Perceptions of roadside tree management to reduce power outages

Daniel Hale, Dr. Anita Morzillo

Abstract: Power delivery systems are most vulnerable to extreme weather events. During storms, most power outages are caused by damage from trees and tree limbs falling on local electricity distribution lines and poles. To address this problem, researchers are developing tree and forest management practices to reduce the number and duration of power outages. Implementing these practices on a large scale would require many trees to be trimmed, removed or replaced, and much of this would take place on or adjacent to private land. This study will survey residents who would be affected by these proposed changes in tree and forest management. Resident input will be used to identify pathways to acceptance of our new management practices. Spatial analysis will seek out patterns in responses as they relate to landscape characteristics. This study seeks to understand how public perceptions of roadside tree and forest management practices vary based on landscape characteristics.

Carbon forestry options using exotic and hybrid larches in northern New England

Alec Giffen, Lloyd C. Irland, David I. Mass

Abstract: Exotic European (*L. decidua*), Japanese (*L. kaempferi* or *leptolepis*) and Dahurian larches (*L. gmelinii*), and their hybrids, have been planted in numerous small trials and operational plantings in this region. Estimated volume growth rates far exceed what is obtained by native conifers. Stands can reach small sawlog sizes in 16-20 years. In northern New England, we have collected 7 stands between 30 and 75 years. They are between 73 feet and 105 feet in height (growing 1.4 to 2.1 feet per year). Seven other stands of exotic larches were between 22 to 24 years old; these grew in diameter at an average of .43 inch per year and reached heights between 45 and 67 feet (1.9 to 2.8 feet per year). These results show that, with only basic management, planted larches can offer another option for carbon forestry in this region. This is interesting as the volume can be used for longlived wood products instead of paper or energy as is expected with other SRIC species being studied in the Northeast. We compare estimated carbon storage results in a 60 year management period using these larches. We assess these against relevant benchmarks. We evaluate financial as well as carbon storage results. Forest plantations offer only limited leverage on the regional carbon budget, but we believe larches deserve consideration as one option. Finally, larch leaf litter is nutrient rich and the species can be used in a variety of silvicultural roles.

Factors driving woody plant recruitment in a planted urban forest

Danica Doroski,Yale School of Forestry and Environmental Studies; New Haven, CT
Alexander Felson; Yale School of Architecture; New Haven, CT
Mark Bradford, Yale School of Forestry and Environmental Studies; New Haven, CT
Emily Oldfield, Yale School of Forestry and Environmental Studies; New Haven, CT
Richa Hallett, USDA USFS; Durham, NH
Sara Kuebbing, Yale School of Forestry and Environmental Studies; New Haven, CT

Abstract: Cities around the world are investing in urban forests as a form of green infrastructure. While significant resources are being dedicated to these projects, there is little research on urban forest dynamics and even less on woody plant recruitment and regeneration in urban forests. The few urban recruitment studies that have been done suggest that in urban settings and on degraded sites, recruitment can be one of the most limiting factors to reforestation. Working in partnership with the New York City Department of Parks and Recreation and the US Forest Service on experimental plots that were established as part of the MillionTreesNYC Initiative, we measure natural regeneration in 54 plots in a high-traffic urban park. Pre-planting treatments such as compost amendments increased the number of woody plant recruits but had a trade-off in terms of native vs. non-native regeneration. Interactions between pre-planting treatments also impacted the number of woody plant recruits by either increasing or decreasing woody plant recruitment depending on whether or not treatments were implemented independently or in combination with others. These findings have the potential to be implemented in future planting projects to encourage natural regeneration and steer species composition to achieve a healthy and sustainable urban forest in NYC and other cities worldwide.

Identifying old-growth northern white-cedar: a practitioner's guide

Nathan Wesely, University of Maine, School of Forest Resources, Orono, ME,
Laura Kenefic, U.S. Forest Service, Northern Research Station, Bradley, ME
Shawn Fraver, University of Maine, School of Forest Resources, Orono, ME
Aaron Weiskittel, University of Maine, School of Forest Resources, Orono, ME
Jean-Claude Ruel, Laval University, Quebec, QC, Canada
Alan White, University of Maine, School of Forest Resources, Orono, ME

Abstract: Forestry practitioners must determine which stands are suitable for active management and which have characteristics that merit protection. Old-growth stands have high conservation value and are designated as reserves (Type I old-growth) under Forest Stewardship Council (FSC-US) certification guidelines; harvested stands that retain old-growth characteristics must be managed with ecological forestry (Type II old-growth). Though guidance is available to identify old-growth stands in many forest types, this information was lacking for northern white-cedar (*Thuja occidentalis* L., white-cedar). To address this need, we compared 16 old-growth and 17 partially harvested white-cedar stands in Maine and New Brunswick. Our findings indicate that volume of highly decayed downed logs (i.e., those in decay stages 4 and 5 using a 5-stage system) and large live-tree quadratic mean diameter (QMD) are distinguishing structural characteristics of old-growth white-cedar stands. With this information, we were able to develop a guide for practitioners that allows classification of white-cedar stands as Type I or Type 2 old-growth at a level of confidence chosen by the user. This work not only improves our understanding of white-cedar stand development and processes, but provides a useful tool for the successful management of white-cedar within the context of competing ecological and economic objectives.

North Atlantic Fire Science Exchange

Dr. Nick Skowronski, Principal Investigator. USDA Forest Service Northern Research Station, Erin Lane, Exchange Coordinator. USDA Northeast Climate Hub, Inga LaPuma, Co-PI and Science Communications Director. Visiting Scientist, Center for Remote Sensing and Spatial Analysis, Rutgers University Amanda Mahaffey, Workshop and Fleld Trip Coordinator. Forest Stewards Guild Northeast Region Director.

Abstract: The North Atlantic Fire Science Exchange (NAFSE) is a valuable, credible, and relevant hub for fire science information delivery and collaboration between managers and researchers to create a safe and resilient North Atlantic landscape. NAFSE offers research briefs, webinars, field trips, workshops, newsletters, and social media resources on fire science and management in the North Atlantic region

Exotic and hybrid larch in the northeast: existing and potential markets

David I. Maass and Lloyd C. Irland

Abstract: Since the 1930's trial plantings of exotic and hybrid larches have been planted around the Northeast. Since the 70's, operational plantings have been made largely on private lands, especially in New York and Maine. The total acreage involved is not large but the growth performance has been extraordinary, and is being increasingly documented by remeasurements. Larch is now being harvested commercially in Michigan and Maine for pulpwood. Its use in Asia and Europe for solid wood products has been routine for generations. So, its technical properties are well known.

In the US, availability of larch in any local sawmill procurement area is limited at best, so its use has been confined to small and specialty mills to date. Its drying schedule would preclude its wide use in high volume dimension mills in any case. Yet, small and specialty producers are using larches for a variety of products.

Identifying and extracting trees from publically available LiDAR data

Katrina Schweikert, Blue Marble Geographics

Abstract: As LiDAR data permeates the mainstream, its use and utility is becoming much more widespread and diverse. As a spatial commodity, LiDAR is the raw material from which a wide variety of 3D datasets are generated. Technology improvements over recent years have seen the cost of data acquisition decrease and consequently the coverage and availability of LiDAR data expand dramatically. Concurrently, software developers have been creating increasingly more powerful and affordable tools to allow the full utilization of LiDAR data, making it accessible to everyone.

Foresters are among those who are now able to make use of publically available LiDAR data to measure and analyze the characteristics of the forest. By examining the geometric properties and patterns within a LiDAR point cloud, those points that represent ground are identified and automatically classified. Subsequently, points representing vegetation above a defined height threshold from ground level are detected and assigned to the high vegetation class. A vector extraction process is then employed to identify individual trees comprised of a collection of these reclassified points, with each tree attributed with its measured height and spread. Calculations and queries can be applied to the resulting tree points to create a rudimentary inventory of the forest resources.

Collaborative monitoring of regional forest health issues and trends: the new Forest Ecosystem Monitoring Cooperative

James Duncan[1,2] and Jennifer Pontius[1,2,3]

[1]Forest Ecosystem Monitoring Cooperative (formerly the Vermont Monitoring Cooperative)

[2]Rubenstein School of Environment and Natural Resources, University of Vermont

[3]US Forest Service Northern Research Station

Abstract: For over 25 years, the Vermont Monitoring Cooperative (VMC) has been providing crucial support to state, federal and other stakeholders to monitor and assess the conditions of Vermont's forested ecosystems. But as the challenges that face our forests grow in complexity and scale, this state-level approach begins to limit our ability to understand and effectively respond to change. To address this reality, the VMC has worked with stakeholders in Maine, Massachusetts, New Hampshire and New York to expand its collaborative network and services for forest professionals. The resulting Forest Ecosystem Monitoring Cooperative will bring the cooperative successes realized in Vermont to the greater region. These include data archive, management and sharing services provided through FEMC's sophisticated database and web portal; coordination of forest health assessment, monitoring and synthesis efforts and network building around key forest health issues defined by our regional partners. Current stakeholder projects will be highlighted as examples of this collaborative approach, introducing attendees to the expanded cooperative model of the FEMC and how they can benefit from the Cooperative's products and services.

Thank you to all of the great sponsors of the 2017 NESAF Annual Meeting!

Stantec

7 Islands Land Company

Crop Production Services
TIMBERLAND DIVISION

IRVING
IRVING WOODLANDS, LLC

White Pine Programs

SEWALL
JAMES W. SEWALL COMPANY / Since 1880

LANDMARK
Spatial Solutions, LLC

VALENT BIOSCIENCES CORPORATION

LandVest®

Blue Marble GEOGRAPHICS
Mind the gap between world and map

KATAHDIN FOREST MANAGEMENT LLC

Fountains Land
AN F&W COMPANY

HUBER
HUBER RESOURCES CORP

WAGNER
FOREST MANAGEMENT, LTD.

Forest METRIX

wildlife ACOUSTICS
BIOACOUSTICS MONITORING SYSTEMS

Ken Laustsen

FARM CREDIT EAST

TRC
Results you can rely on

Weyerhaeuser

BAYER

Prentiss & Carlisle
Forest Resource Management and Timberland Services

BASF
The Chemical Company

Nufarm

DOW®

Dow AgroSciences

Thank you to all of the great exhibitors at the 2017 NESAF Annual Meeting!

VALENT BIOSCIENCES CORPORATION

NCP COATINGS

SEWALL
JAMES W. SEWALL COMPANY / Since 1880

LANDMARK Spatial Solutions, LLC

LandVest®

FOREST SOCIETY of MAINE

Yale School of Forestry and Environmental Sciences

THE AMERICAN CHESTNUT FOUNDATION

Forest METRIX

NEW ENGLAND FORESTRY FOUNDATION

Blue Marble GEOGRAPHICS
Mind the gap between world and map

SOLENO Mastering Storm Water

Scythe Supply

Project Learning Tree®

Crop Production Services
TIMBERLAND DIVISION

I would like to express my deep appreciation and thanks to the NESAF Executive Committee and all members for the wonderful gift of a personally embossed New England crafted rocking chair that was presented to me at the recent Awards luncheon.

To say I was surprised is an understatement, to say I was honored by the recognition is without words. It has been a wonderful adventure, providing service and leadership within the various levels of SAF that are in Maine, New England, and nationally. I would encourage anyone of any age or membership tenure to consider raising a hand and saying, "*I can help*," you will not regret taking that step, because the lifetime interactions are extraordinary.

Thanks,
Ken

Timber Basis Decision Model: a calculator to aid in federal timber tax-related decisions

Andrew Fast,
University of New Hampshire
Cooperative Extension Service
andrew.fast@unh.edu

Usually speaking, foresters are far more interested in spending time in the woods than they are behind a desk. If they were interested in taxes, they would have become accountants. So why then is it important that foresters understand the basics of federal timber taxes? An understanding of timber tax basis and how it can affect a forester's clients can justify forester fees, generate business, and provide a better service to landowners.

Overview

Once a timber basis is established, landowners can elect to deplete timber thereby reducing their taxable gain on timber sales. However, there is often a cost to establishing a timber basis since a timber and land appraisal is required. UNH Cooperative Extension in conjunction with faculty partners at UNH and Oregon State University developed a calculator to help determine the financial benefit of establishing a timber basis.

Basis Refresher

"Basis" refers to the capital investment in a property for tax purposes. When forestland is acquired, a certain portion of the purchase price is allocated to the timber, the land, and potentially other assets such as a house. The basis is separate from fair market value (FMV), which is the appraised value of an asset.

Basis Determination Example (a) Total acquisition cost $100,000			
Asset descrip-tion	FMV (b)	% of total FMV (d)=b ÷ c	Basis (e) = d * a
Timber	$100,000	50	50,000
Land	$100,000	50	50,000
Totals	**$200,000 (c)**	**100**	**$100,000**

Depletion

As timber is harvested, timber can be depleted which reduces taxable gain. Harvest volume is multiplied by a depletion unit to calculate how much the gain is reduced (i.e. the depletion allowance). The timber basis is established for the date of acquisition; this represents the total volume of wood on a property. Each unit of volume (e.g. ton) has an associated depletion unit, i.e. the timber basis ÷ volume. *Note: As volume on a property increases over time, it will affect the depletion unit calculation.*

Example: 1000 tons are harvested and sold for $15,000. $10,000 is depleted (1000 tons harvested * $10/ton depletion unit) for a gain of $5000. Assuming a capital gains rate of 15%, the tax savings for the landowner is $1,500.

Depletion Unit (DU) Example:
Basis = $50,000
Volume = 5000 tons

DU = basis ÷ volume
DU = $50,000 ÷ 5000 tons
DU = $10.00 / ton

10 years later with additional growth:
Basis = $50,000
Volume = 6000 tons

DU = basis ÷ volume
DU = $50,000 ÷ 6000 tons
DU = $8.33 / ton

Forester Benefit

A knowledgeable forester can identify this tax savings for their client providing a "forester benefit." Moreover, a timber appraisal is necessary for establishing a basis, so in certain situations, a landowner can pay a forester for an appraisal (or full management plan that includes a timber valuation) and save money in taxes. A win-win for the forester and landowner.

Timber Basis Decision Model

A calculator was recently developed by Mark Ducey (UNH), Tamara Cushing (Oregon State University) and Andy Fast (UNH Cooperative Extension) that uses a number of basic inputs and provides the financial benefit of establishing a timber basis in current dollars. It can be found at: extension.unh.edu/timber-basis/. The decision model is flexible; inputs (assumptions) can be as conservative as the user wants them to be. There are two options to input assumptions – directly into cells or answering a series of questions.

The inputs are mostly common questions: How long have you owned the property? Are you interested in having a timber sale in the near term or at some time down the road? What does the resource look like (forester observation of stocking, value, etc.)? Could the woodlot benefit from a treatment in the near term or does it need to grow (forester observation)? If it could benefit from a timber sale, would it generate a modest amount of money per acre or a more significant amount (forester observation)?

Outputs to the model show the financial impact of establishing a timber basis, i.e. net present value tax savings, net cost of an appraisal after tax savings, and tax savings in excess of the appraisal cost. There are additional outputs such as basis calculations, total harvest volume, and a calculated depletion unit.

(Article continues on page 19)

Maine Division News ~Anthony Filauro

Mining in Maine

In January, the Board of Environmental Protection provisionally adopted new regulations governing mining operations in Maine. Several environmental organizations and individuals from the public oppose the new rules, which still need to be approved by the Legislature. Major concerns focus on ground water pollution and long-term contamination resulting from open-pit mining. JD Irving Corp plans to construct a 500 acre open pit mine at Bald Mountain, about fifteen miles west of Portage, ME.

Concerns by environmental groups and the public results from the Callahan open-pit mine that operated in Brooksville, in Hancock County, in the 1960's and early '70's. This mine site is now an EPA Super Fund site, costing the American taxpayer $27 million in cleanup costs. The proposed Bald Mountain operation would be larger in scale than the Callahan mine site currently being reclaimed in Brooksville.

The Legislature held a public hearing on March 20 concerning the proposed mining regulations. At this point, the public needs to be assured that new mining regulations will protect Maine's environment and will not financially burden Maine's residents with clean-up costs after a mine ceases operation. MESAF members are encouraged to submit written comments to the Joint Environment and Natural Resources Committee of the Legislature, to voice their opinion about the new mining regulations.

Project Learning Tree

In 2017, Project Learning Tree will sponsor two Maine Teachers' Tours. On July 11-14, a tour will be held at The Birches Resort, on the west shore of Moosehead Lake, near Rockwood. On July 25-28, a second tour will be held at Camp Wapati, east of Baxter Park. Participation by MESAF members is encouraged. Information about the tours is available at www.mainetreefoundation.org or call 207-621-9872.

Maine Forest Service Reports

In December 2016, the Maine Forest Service issued the 2015 Silvicultural Activities Report and the 2015 Stumpage Prices Report for the State of Maine. The reports are available at www.maineforestservice.org

Field Tours

Plans for summer field tours are in initial stages of development. On Friday, August 18, there will be a hands-on demonstration tour at the Geospacial Lab, at the University of Maine, that will focus on the open source QGIS application. Two other field tours will be scheduled; however plans had not been finalized prior to publication of the *News Quarterly*. Information about all tours will be sent to MESAF members at a later date. Information will also be available at the MESAF website www.mesaf.org

The Future of Maine's Forest Industry

The U.S. Department of Commerce's Economic Development Administration (EDA) issued a report under the Maine Forest Economy Growth Initiative (MFEGI), outlining a strategy to improve Maine's forest industry. The MFEGI report recommends evaluating the demand for Maine's forest products in a global market, analyze the state's future wood supply, scrutinize the state's transportation infrastructure, support research to develop new wood technologies, reinvigorate Maine's aging workforce, repurpose defunct mill sites and help diversify Maine's rural economy. This tall order is necessary in order to map the way forward for Maine's forest industry. Oak Ridge National Laboratory, under the U.S. Department of Energy, will help researchers with this effort at the University of Maine.

The Economic Development Assessment Team, under the EDA, will invest $4 million for development of economic projects in the state, with more than a third of the funds dedicated to the forest products industry. Results are critical and are needed to support an industry that contributes $8.5 billion to the state's economy and employs 33,500 Maine residents.

MESAF members are encouraged to speak to their State and Federal representatives about their support of this initiative and their personal efforts to move the project forward. A significant portion of Maine's future hangs in the balance.

Sappi Investment

In February, Sappi announced that $165 million would be invested in the Skowhegan mill to upgrade No.#1 paper machine. The announcement is welcomed news that buoys hope for an industry that confronts significant economic challenges here and abroad. The project will disrupt operations during the year but will be completed by April 2018. Increased utilization of pulp grade wood products helps to support forest management activities and improves the economic outlook for the forest industry.

Possibilities on the Penobscot

Efforts are being made to reactivate the Great Northern Paper mill located in East Millinocket, for production of a bio-energy product that would be used in the transportation industry. The project is to be developed in collaboration with biomass energy facilities currently operating in the state. Purchase of the mill site and financial backing for the project have not been finalized.

The proposed project is far from certain; however it would constitute the only bio-resource manufacturing facility to operate in the Penobscot watershed, since the closing of all paper manufacturing facilities that once operated along the Penobscot River.

Granite State Division News ~ Stephen Eisenhaure

Over 170 people attended our winter meeting on February 10 at the Attitash Conference center in Bartlett, NH. There were a number of interesting presentations and lively discussions. The major topic of the winter meeting was low grade markets and was addressed with presentations by Lloyd Irland of the Irland Group, Eric Kingsley from Innovative Natural Resource Solutions and (remotely) Al Steele from the U.S. Forest Service.

Our new officers for this year are Mike Powers (Chair), Maggie Machinist (Incoming Chair) and Gabe Roxby (Treasurer). Forester of the year was Charlie Levesque of INRS, LLC. Other award recipients included Thompson School student George Main, baccalaureate student Adrian Reyes and graduate student Adele Fenwick. We celebrated our stellar N.H. Tree Farm inspectors that included: Charlie Morneo (most inspections); Jeff Snitkin (most new tree farms); and Andy Fast, Harold Cook, Jeremy Turner, Patrick Kenney, Peter Farrell, Tim Fleury, Jeff Snitkin, Jeff Smith, Peter Rhoades, and Wayne Young (completed 6 or more inspections). SAF Years of service awards went to: Ernest Dixon, Dr. Haijin Shi and Robert Wilcox (10 years); Christopher Fife and Nathan Siegert (20 years); Frederick Blum, James Cullen, Susan Francher, Donald Frenette and Charles Levesque (30 years); Samuel Stoddard & Harry Valentine (40 years); Walter Winturri and Bradford Wyman (50 years); and Robert Slagle (60 years!).

Our division has been actively addressing state legislation that could have great influence on our low grade markets. At the winter meeting a resolution was passed that Granite State SAF actively oppose repeal of the NH Renewable Portfolio Standard, and actively support Senate Bill 129, which is in support of biomass as a renewable energy. Our members have been enthusiastically engaging their legislators and testifying at hearings to promote these actions.

Forestry professionals from around the region were invited to a roundtable discussion at the conservation center in Concord. Hosted by Rich Guldin, SAF Senior Research Fellow and John Barnwell, Director of Government and External Affairs, the topic titles included "improving lives" and "science you can use." This roundtable was one of seven; the others held in Seattle, Sacramento, Boise, Santa Fe, Chicago, and Greenville., South Carolina. The findings will be provided in a document from National SAF later this year.

We love our Forestry Students! Qualifying Granite State businesses and other organizations can apply to our division for a grant to help hire students for the summer. For more information contact Tom Hahn, thahn@forecollc.com. Information can also found at the Granite State Division website: http://www.nesaf.org/new-england-society-american-foresters-divisions-granite-state.asp.

(Timber basis- article continued from page 16)

The tool is only as good, or as accurate, as the inputs of the forester; it is a resource which can justify action or inaction, inform clients, and provide tangible financial benefits to clients. In general, landowners are most likely to benefit from establishing a timber basis if their timber harvest generates a moderate or significant amount of income and that income occurs shortly after the appraisal costs are incurred. These tend to be landowners with a mature forest and who are interested in active forest management.

Lastly, tax implications of harvest revenue are one of many considerations when managing land; as such, landowners should be careful not to manage their property for tax benefits exclusively if it is destructive to the long-term financial returns of their forestland, or negatively impacts other attributes of the property. Using this model in its proper context can provide quantitative data that will aid forest landowners in federal timber tax related decisions. It is intended to reduce complexity around a complicated topic; there are many additional resources that may be required to fully understand federal timber income tax treatment options. Additional resources are provided on the National Timber Tax website, timbertax.org.

Some of the timber basis decision model inputs:

- Cost of a timber appraisal
- Cost of the land appraisal
- Years until appraisal cost
- Discount rate
- Years until the timber harvest
- Capital gains rate
- Harvest Volume
- Inventory Volume at Harvest
- Estimated Volume & Value at acquisition

Vermont Division News~ Russell Reay and Ginger Anderson

It has been several issues since the NQ has had news from the Green Mountains, so this will catch you up a bit.

Dept of Forests, Parks, and Recreation
Mike Snyder, who was appointed commissioner by Gov Peter Shumlin (D) in 2011, was re-appointed by new governor Phil Scott (R) in 2017. A new position of deputy commissioner was created and filled by **Sam Lincoln**, a logger from Randolph. **Allen (AJ) Follensbee** has been appointed Windsor county forester, replacing the retiring **Jon Bouton.**

Forester Licensing
Forester licensing was instituted in Vermont as of July1, 2016, leaving Rhode Island as the only New England state without licensing. Vermont's program is heavily modeled on the SAF Certified Forester requirements. At the consulting foresters' meeting in May 2016, director of professional regulation, Colin Benjamin, said when the State sets out to regulate a profession it researches existing procedures in other states or professions rather than create a new one from scratch He described the SAF program as meeting Vermont's expectations and needs, and was already in place and functioning. The Board of Advisors for forester regulation is **Richard Carbonetti** of Landvest, **Dan Kilborn** of Vermont Land Trust, and **Paul Harwood**, consulting forester. Nearly a year into licensing there are approximately 200 licensed foresters in Vermont.

Green Mountain Division
Some officer chairs are currently vacant, past chair **Mike White** is seeking a chair, chair-elect, and secretary. **Jason Nerenberg** faithfully guards the treasury, and **Ed O'Leary** is serving as representative to the NESAF executive committee. The annual winter meeting was held on February 17, at the Lake Morey Inn in Fairlee. Presentations covered the following: drones, earthworms, invasive plant species, composition of spruce-fir forests, maple tapping guidelines, wood products markets, legislative update, and the introduction of FPR's new deputy commissioner, Sam Lincoln. Forests, Parks & Recreation Commissioner Mike Snyder gave an update on pending legislation of interest to the forestry community. **Ron Kelley** and **Dave Stevens** were recognized as Golden Members, and presented with certificates honoring 50 years of SAF membership. The James Wilkinson Outstanding Student award was presented to **Diana Gurvich** of UVM.

UVM
Fifteen undergraduate and seven graduate students from the UVM Forestry Program attended the NESAF winter meeting in Bangor. UVM students won the quiz bowl, beating teams from UMaine and UMass.

Proudly displaying the Quiz Bowl Cup, University of Vermont forestry students, Katyln Willard, Jonah Salzman-Cohen, Helena Murray, and Diana Gurvich (L to R) at the NESAF Conference in Bangor, ME, .

Connecticut Chapter News ~ Mel Harder

Annual Winter Business Meeting
On February 27, 2017, about 40 CTSAF members attended the annual winter business meeting held at CT Park & Forest in Rockfall CT. Chair Nany Marek opened the meeting and introduced 2017 chair elect Larry Rousseau and secretary/treasurer Emery Gluck. The current terms run through 12/31/2017, so CTSAF will need candidates for chair elect and sec./treas. for 2018. Please consider candidates for nomination and/or volunteer yourself.

Jeff Ward, chief scientist CT Ag Exp. Station, talked about oak health and mortality after gypsy moth defoliation and drought. He also discussed the results of a recent member survey regarding the status of Yankee Division. Yankee includes the MA, CT & RI chapters, but since the state chapters now all hold their own annual business meetings and summer field meetings, Yankee has been basically idle for the last few years. However, when the NESAF winter meeting comes around to southern New England, it is the Yankee Division that is host. The results of the survey showed a wide range of opinion, but at some point the question as to whether to disband Yankee or not may be put to the membership.

Brian Boom, botanist with the New York Botanical Garden, discussed ongoing research regarding distribution of ash species and susceptibility for EAB. State forester Chris Martin gave an update on current and proposed legislation that effects the practice of forestry.

District 6 Presidential Field Forester Award
Si Balch, District Six Board of Directors Representative, attended the CTSAF winter meeting and presented CTSAF member Emery Gluck with the Presidential Field Forester Award.
There is nothing more important in forestry than good people delivering good management. All our other work in education, research, policy, etc. supports the actual practice of field forestry in all its variety. SAF has a national recognition award for such people; The Presidential Field Forester. One person is chosen annually from each district. Recent District 6 winners are Bruce Breitmeyer, Hans Bergey, Donald Schaufler, Danial Cyr, and Tom Gilman.

The 2016 winner is **Emery Gluck** who has been a Forester with the Connecticut Department of Energy and Environmental Protection for the past 34 years. He has spent his entire career working as a field forester managing state forest land, and for the last several years has also been a private forest landowner, practicing silviculture, non-native invasive plant removal and prescribed fire on his own land. He is the epitome of a dirt forester in the very best sense of the term, performing hands-on work in the woods to apply regeneration silviculture and prescribed fire. Emery is also an accomplished and prolific writer, communicator and educator, spreading the word of forest use history, forest ecology, silviculture and the benefits of sound forest and ecological management. Emery has served as president of the Connecticut Chapter of SAF and received the Yankee Division David M. Smith Outstanding Forester Award in 1993. You can reach him at 860-345-8522 or via email to congratulate him.

CTSAF Member Pete Merrill received a 50 yr. member certificate and pin (L), and Emery Gluck received the SAF Presidential Field Forester Award from Si Balch (R).

Upcoming Events
June 14, 2017 - CT PA490 training
To be held at the CT Forest & Park Association in Rockfall. This training is only given once a year. This year there will not be a webinar training session. Forester certificates for PA490 qualification are good for 4 years, so check the expiration date on your certificate.

In Memoriam

Eric Anderson Johnson of Andover, NH passed from this life March 14, 2017, at the age of 47 from the effects of ALS (amyotrophic lateral sclerosis). As a person who loved big snowstorms, it seems fitting that his passing would be during a big nor'easter. Like Lou Gehrig, and despite ALS, Eric also considered himself lucky, and fit a remarkable variety of experiences into his too-short lifetime. Eric was born on February 21, 1970, in Cambridge, Mass. First living in Stow, Mass., then moving to Cape Cod, he had plenty of opportunities to spend time on the ocean, sailing and windsurfing. He graduated from Proctor Academy in 1988, and went on to graduate from St. Lawrence University (1992) concentrating on Government and African Studies, after spending six months with SLU's program in Kenya. Eric returned to teach at Proctor Academy in the social science department, and mountain classroom program from 1992 - 1999. His love for the outdoors led him to lead summer wilderness trips with Longacre Expeditions, and the National Outdoor Leadership School before apprenticing and then working as a timber framer with Northeast Joiners from 1999 - 2002.

Always interested in being active within his community, Eric was a member and past chair of the Andover Planning Board 1999 - 2013. Eric then 'branched out' into what became his most satisfying work - with the New Hampshire forestry industry. He founded Tucker Mountain Timber, doing diversified forestry in New Hampshire, Rhode Island and Vermont. This led to what he considered 'his perfect job' - being Program Director with the New Hampshire Timberland Owners Association (2009 - 2015), which blended his love of teaching, New Hampshire's forests, and the remarkable men and women who work in our state's great forests.

Daniel Rolfe Bennett, formerly of Berlin, NH passed away peacefully on Feb. 28, 2017, following a long illness. A longtime resident of Berlin NH, he was born on July 6, 1928, in Wilson Mills, ME, the son of Daniel Clinton and Gladys Martha (Cameron) Bennett. He was a graduate of Gould Academy in Bethel, Maine, class of 1946. Upon graduation Dan joined the U.S. Army and was a veteran of World War II. After an honorable discharge from the Army, he followed both his father and grandfather entering the University of Maine at Orono in 1949, to pursue a career in forestry, continuing a passion he had established early on working summers when he was a teen as a river driver on the Swift Diamond, Dead Diamond and Androscoggin Rivers in Northern NH and Maine.

He graduated in 1953 with a Bachelor's Degree in Forestry. Shortly afterwards, he began a nearly 45 year career as a Professional Forester licensed in Maine and NH working for the Brown Company in Berlin NH, and its subsequent ownerships by James River and Crown Vantage. During that time Dan held numerous positions including logging camp Scaler & Cruiser, Camp Boss, Assistant Logging Supervisor, Wood Procurement & Operations Forester, Superintendent Stumpage Sales and prior to retirement Manager of Forestry. Dan was a member of the Society of American Foresters, Northeastern Loggers Association, the American Pulpwood Association & its Safety Committee, an Associate Commissioner for the Coos County Conservation District and the Forest Fire Warden for Wentworth Location NH for nearly 20 years. He served as the company's representative to the Berlin High School vocational forestry program for many years. A tireless advocate for the forest products industry and in particular the pulp & paper industry, Dan was respected by colleagues, peers, loggers and landowners alike.

Samuel T. Hudson, Jr., of Fairfax, VT, passed away on February 16, 2017. He was born on September 20, 1927 in New York City, NY. Sam was a veteran of both World War II (US Maritime Service in 1945/46) and the Korean War (US Army in 1951-1953). As a merchant marine man on US transports going back and forth to the war zones in Europe, he traveled to England France, Italy and Cuba. He was a graduate of North Carolina State University where he ran track and majored in forestry. He was the Franklin County Forester (*Nicknamed "Tree man" not only for his profession but also managing many wood lots)* for the State of Vermont from 1957 to 1982. He served two terms as a Vermont State Senator representing Franklin County. Among his many community and service oriented activities, Sam was the longtime Chairman of the St. Albans Maple Festival, President of the Vermont State Employees Association and President of the New England Chapter of the Society of American Foresters.

Continuing Forestry Education Update ~ Andrew Fast, UNH

DATE	TITLE	LOCATION	CATEGORY
16-Dec	CLP - Supervisor/Contractor Class 2016	Augusta, ME	2.0/I, 1.5/II
17-Jan	Conservation Easement Basics for Realtors	Meredith, NH	3.0/I, 3.0/II
25-Jan	Grow Maine Green Expo	Augusta, ME	4.0/I, 1.0/II
2-Feb	The Characteristics, Impacts, and Costs of Invasive Insects	Hadley, MA	4.0/I
14-Feb	Supervisory Registration Certificate - General Use Category C1 - Forestry	Concord, NH	7.0/I
17-Feb	Harvesting Timber? Think Taxes.	Manchester, NH	1.0/I
17-Feb	Timber Depletion - a 'Value-Added' Service for Foresters	Manchester, NH	1.0/I
17-Feb	Green Mountain Division Winter Meeting	Fairlee, VT	4.0/I
21-Feb	Improving Wildlife Habitat	North Haverhill, NH	2.0/I
1-Mar	Winter Wildlife Tracking Workshop	North Sandwich, NH	4.0/I
1-Mar	Advanced Vegetation Management (Day 1)	Bangor, ME	7.0/I
1-Mar	SFI SIC Quarterly Meeting	Augusta, ME	2.5/I
2-Mar	Advanced Vegetation Management (Day 2)	Bangor, ME	6.0/I
2-Mar	Fisheries Improvement Network (FIN) Annual Meeting	Augusta, ME	5.0/I
8-Mar	2017 NESAF Winter Meeting (Day 1)	Bangor, ME	5.0/I
9-Mar	2017 NESAF Winter Meeting (Day 2)	Bangor, ME	6.0/I
10-Mar	2017 NESAF Winter Meeting	Bangor, ME	6.5/I, 3.0/II
13-Mar	Nercofe (Day 1): Multi-Use of Forest Lands and Forest Products	Orono, ME	3.0/I
14-Mar	Nercofe (Day 2): Applied Forestry Technology	Orono, ME	6.0/I
21-Mar	America's Snake: The Rise and Fall of the Timber Rattlesnake	Hillsborough, NH	1.5/I
21-Mar	NHAA 2017 Spring Meeting	Concord, NH	4.0/I, 0.5/II
28-Mar	Thirty Eight: The Hurricane That Transformed New England	Hillsborough, NH	1.5/II
3-Apr	Logger and Forester First Aid, CPR, and AED	NH	6.0/II
4-Apr	Wildflowers of New England	Hillsborough, NH	1.5/I
5-Apr	Vernal Pools and Timber Harvesting	Barkhamsted, CT	2.5/I
6-Apr	Forest Soils in the Hogback Ecoregion (lecture 1)	Bristol, VT	1.5/I
6-Apr	Logger and Forester First Aid, CPR, and AED	NH	6.0/II
8-Apr	Forest Soils in the Hogback Ecoregion (field trip 1)	Bristol, VT	3.0/I
8-Apr	VWA Annual Meeting	Randolph Center, VT	2.5/I, 1.0/II
12-Apr	Logger and Forester First Aid, CPR, and AED	NH	6.0/II
14-Apr	Logger and Forester First Aid, CPR, and AED	NH	6.0/II
15-Apr	Forest Soils in the Hogback Ecoregion (field trip 2)	Bristol, VT	3.0/I

Employment Opportunities

The New York City Department of Environmental Protection seeks to hire six (6) Watershed Foresters for its Natural Resources Division - Forestry operations in Carmel (2), Downsville (2), Grahamsville (1) and Kingston (1), New York. The Watershed Foresters will be responsible for designing and implementing forest management activities in accordance with DEP's Watershed Forest Management Plan. For more information or to apply for this position, go to https://a127-jobs.nyc.gov/index_new.html?agency=826 and search for **Job ID 281729** in the advanced search function.

NEWS QUARTERLY,
c/o Joseph P. Barsky, editor
890 Evergreen Avenue
Hamden, CT 06518

NON PROFIT ORG
U.S. POSTAGE
PAID
BERLIN, NH
PERMIT NO. 42

NEW ENGLAND SOCIETY OF AMERICAN FORESTERS

forests. resources. communities.

Our mission as foresters is to be responsible stewards of the earth's forests while meeting society's vital needs. The challenge of our mission lies in keeping forest ecosystems healthy and intact while concurrently drawing on their resources. We will meet this challenge by carefully monitoring and managing the effects of natural and human forces on the forest. Our decisions will be guided by our professional knowledge, our compassion for all living things, our desire to improve citizens' lives, and our respect and concern for the entire forest ecosystem. By advancing forestry science, education, technology, and the practice of forestry, NE SAF will provide the leadership to achieve its mission.