



2022 Annual Conference

Advances in Forest Science: The role of technology and innovation on stewardship and engagement

December 15, 2022

Agenda

8:15 – 9:00 am

In-person and virtual

Fireplace Lounge

Coffee and Registration

Arrival and check-in. Virtual participants will be able to log in to trouble-shoot any technical challenges and understand how to attend sessions throughout the day.

8:30 – 8:45 am

In-person and virtual

Jost Foundation Room

What is the FEMC?

An opportunity for new participants to learn about the FEMC. In-person and virtual participants can attend.

9:00 – 9:15 am

In-person and virtual

Grand Maple Ballroom

Welcome and Introduction

FEMC Director Alison Adams and FEMC Steering Committee Chair Justin Perry will provide introductory remarks.

9:15 – 10:30 am

In-person and virtual

Grand Maple Ballroom

Plenary Session

Technological advances in forest science have improved our ability to monitor, assess, and understand forested ecosystems. However, the use of new technologies varies in the accessibility, utility, and interpretation. New innovations, ranging from remote sensing technologies to management tools and community science, must balance the needs of various stakeholder groups. The 2022 FEMC Annual Conference will explore advances in forest science, how these advances are related to applied practices, and how our community can benefit from new approaches.

Dr. Colin Beier, Associate Professor at SUNY-ESF, will lead the plenary session with a presentation, followed by a facilitated discussion with a panel of experts:

Dr. Aidan Ackerman, Assistant Professor at SUNY-ESF

Jarlath O'Neil-Dunne, Research Associate and Director of the Spatial Analysis Lab at the University of Vermont



2022 Annual Conference

Dr. Sara Kuebbing, Research Scientist and Director of the Yale Applied Science Synthesis Program

10:30 – 10:40 am

Wrap-up and Plan for the Day

In-person and virtual

Grand Maple Ballroom

10:40 – 11:00 am

Coffee Break

In-person only

Fireplace Lounge

11:00 – 11:30 am

FEMC State Coordinator Updates

In-person and virtual

Grand Maple Ballroom

Lightning talks from each of the FEMC State Coordinators about forest health in each of the seven states.

11:35 am – 12:20 pm

Contributed Talks 1

In-person and virtual

Jost Foundation, Chittenden Bank, Williams Family, and Silver Maple Ballrooms

Parallel tracks of 20-minute presentations contributed by cooperators on various forest ecosystem research, monitoring, and outreach activities.

- Tools and Techniques 1
- Carbon Storage
- Restoration
- Disturbance

12:20 – 1:30 pm

Lunch Break

In-person only

Sugar Maple Ballroom

Buffet-style lunch



2022 Annual Conference

1:30 – 2:40 pm

In-person and virtual

Jost Foundation, Chittenden Bank, and Williams Family

Contributed Talks 2

Parallel tracks of 20-minute presentations contributed by cooperators on various forest ecosystem research, monitoring, and outreach activities.

- Community Science and Monitoring
- Climate Change
- Tools and Techniques 2

2:40 – 3:00 pm

In-person only

Coffee Break

3:00 – 4:30 pm

In-person and virtual

Jost Foundation, Chittenden Bank, and Williams Family rooms

Facilitated Sessions and Working Groups

Sessions led by partners to share resources and build connections across the network.

4:30 – 5:30 pm

In-person only

Fireplace Lounge

Poster Session and Social Hour

Cash bar available.

Contributed Talks 1 Schedule

	Tools and Techniques 1	Carbon Storage	Restoration	Disturbance
	Jost Foundation Room	Chittenden Bank	Williams Family Room	Silver Maple Ballroom
11:35 – 11:55	Northeast Forest Inventory Network	Relative effects of functional diversity and structural complexity on late-successional northeastern hardwood forest carbon	Barriers for emerging tree planting strategies in response to global change	Regeneration response to salvage logging following tornado disturbance
	<i>Xana Wolf</i>	<i>Samantha Myers</i>	<i>Peter Clark</i>	<i>Colby Bosley-Smith</i>
12:00 – 12:20	Urban Tree Inventory Tools and the Road to Health Tree Canopy Cover	A map-based stock change approach for fine-scale biomass and carbon accounting in New York State	A community led wood ash recycling program to restore forest nutrition in Muskoka, Ontario	Ground truthing forest change in working forests of the US Northeast
	<i>Joanne Garton</i>	<i>Lucas Johnson</i>	<i>Shaun Watmough</i>	<i>Madeleine Desrochers</i>

Contributed Talks 2 Schedule

	Tools and Techniques 2	Community Science and Monitoring	Climate Change
	Jost Foundation Room	Chittenden Bank Room	Williams Family Room
1:30 – 1:50	Virtual environments for communicating changing forests	Vermont’s long-term rare plant monitoring in a changing world	Mapping climate change exposure for northeastern tree species
	<i>Michael Mahoney</i>	<i>Aaron Marcus</i>	<i>Lukas Kopacki</i>
1:55 – 2:15	Utilizing occupancy models to compare effectiveness of dogs and humans at detecting the invasive spotted lanternfly in vineyards and forests	Leveraging community science to complement professional field surveys and fill data gaps for invasive insects	Decadal changes in forest adaptability and vulnerability to climate, insects, and disease
	<i>Angela Fuller</i>	<i>Mitchell O’Neill</i>	<i>Soren Donisvitch</i>
2:20 – 2:40	Forest monitoring for early successional species in the Green Mountain	Population dynamics of montane invertebrates and birds	Patterns and drivers of woodland understory flower phenology and canopy closure
	<i>Laurence Clarfeld</i>	<i>Jason Hill</i>	<i>Jordan Tourville</i>



2022 Annual Conference

Facilitated Sessions and Working Groups Descriptions

Exploring Benefits and Challenges of Phenology Monitoring in the Northeast

Alyssa Rosemartin¹ and Alana Russell²

¹USA National Phenology Network, ²University of Rhode Island

Jost Foundation Room and Virtual

Phenology is critical to ecosystem processes, from carbon cycling to pollination, and monitoring phenological events can be key to understanding ecosystem response to climate change. In this session we'll share examples of phenology monitoring for natural resource management already happening in the region and identify potential gaps. Together we will explore the benefits of monitoring phenology on a state- and region-wide scale, and outline the potential challenges to embarking on a coordinated phenology monitoring effort. We aim to share lessons learned and develop the groundwork for FEMC partners to make informed decisions about the relative priority of phenology monitoring in forest management.



2022 Annual Conference

Feedback for a Northeastern Mountain Science and Stewardship Network

Joshua Benes¹

¹*University of Vermont*

Chittenden Bank Room and Virtual

Alpine ecosystems are islands across the northeastern region and are isolated due to their geography. They are also very important places to study and steward, as they contain species sensitive to the impacts of climate change and are unique ecosystems in the region. Joshua Benes, with the University of Vermont, will give an overview of some historic and recent initiatives to develop regional alpine monitoring and research networks in the northeast and how these networks could integrate into international programs. Nat Scrimshaw, with the World Trails Network Hub for the Americas, will share plans for developing a regional alpine stewardship center. We will conclude by seeking feedback from participants, both online and in-person, about how to design inclusive, effective, and sustainable mountain science and stewardship networks in the region.



2022 Annual Conference

Forest Management Across Property Boundaries: The Woodlots Program Toolkit

Monica Przyperhart

Cold Hollow to Canada

Williams Family Room Only (Virtual option not available)

With over 80% of land in Vermont in private ownership, maintaining forest health and resilience relies heavily on the decisions and actions of landowners. Cold Hollow to Canada (CHC) has addressed this challenge by creating a program that convenes neighboring landowners in high priority forest blocks who together learn strategies for maintaining forest resilience, receive technical assistance, and when possible are connected with funding opportunities to put plans into action.

News of the program's success has spread throughout Vermont and even out of state, and Cold Hollow to Canada has been asked by numerous groups for detailed information on how to initiate similar programs, methods for running them, and guidance on how to make similar initiatives successful elsewhere. Thanks to funding from the High Meadows Fund and a Vermont Watershed Grant, CHC has developed an online "Woodlots Toolkit" to enable adoption by conservation groups in other geographies.

In this session, we will share the Toolkit and provide tips on how it can best be used. We will then shift to an engaged discussion about how groups can use or adapt this tool to advance forest stewardship and conservation in locations with different social and physical settings. We recommend attendance by those who work with private landowners with goals of forest stewardship and conservation.

Poster Session – Fireplace Lounge

- 1** **Adaptive Silviculture for Wildlife: Supporting forest biodiversity through forest climate adaptation**

Jahiya Clark, University of Massachusetts

- 2** **Approaches to increase the utility of tree regeneration inventories: Characterizing drivers of sapling recruitment and seedling survival**

Lucas Harris, University of Vermont

- 3** **Bat activity and forest characteristics in managed Adirondack forests**

Julia Rizzo, SUNY College of Environmental Science and Forestry

- 4** **Beetle in a haystack: successfully engaging volunteers in early detection and monitoring efforts for southern pine beetle (*Dendroctonus frontalis*) at Mohonk Preserve**

Kate O'Connor, Mohonk Preserve

- 5** **Effects of cold-air pooling microclimates on species composition in New England Forests**

Melissa A. Pastore, University of Vermont

- 6** **Establishing a low-cost sensor network to address local and regional research questions and support STEM education across the Northern Forest Region**

Karin Rand, University of Vermont

- 7** **Forest management and climate change impacts on understory microclimates**

Peter Breignzer, University of Maine

Poster Session – Fireplace Lounge

8 **Identifying species and ecotypes suitable for assisted migration in the Northeast U.S.**

Samuel Zuckerman, University of New Hampshire

9 **Mount Mansfield Science and Stewardship Center**

Joshua Benes, University of Vermont

10 **Northeast Silviculture Library**

Grace Smith, University of Vermont

11 **Songbirds in the sugarwoods: Assessing the impact of forest structure and diversity on bird communities in Vermont sugarbushes**

Liza Morse, University of Vermont

12 **The Cotton Brook landslide: Effects on water quality and macroinvertebrate community health**

Aaron Moore, State of Vermont

13 **Twenty years into a 150-year soil monitoring study, significant results!**

Don Ross, University of Vermont

14 **Mycorrhizal-Mediated Silviculture**

Amelia Fitch, Dartmouth College

15 **Regional Expansion of the Forest Health Monitoring Program at FEMC: Insights from 2021**

Matthias Sirch, FEMC