



Facing Change: Reimagining forested communities in a time of disruption

2021 Annual Conference Agenda

December 16-17, 2021

December 16 – Day 1

10:30 – 10:45

Welcome and Introduction

FEMC Director Jim Duncan and FEMC Steering Committee Chair Nancy Mathews

10:45– 12:00

Plenary Session

Erika Svendsen is a social scientist with the USDA Forest Service. Erika is a leader in the field of environmental stewardship as it relates to governance, civic engagement, and urban forestry. Erika is also co-director of the NY Urban Field Station, a research-practice partnership committed to the co-production of knowledge and fostering collaboration among natural resource professionals. In recent years, Erika has focused her work on understanding the role of ‘green responders,’ or those who respond to acute and chronic disturbance through greening and community building efforts. She is a co-founder of STEW-MAP, a research project and sustainability to visualize, amplify, and support the work of thousands of civic groups as they care for their local environment. Erika received her doctorate in Urban Planning from Columbia University, a M.S. from Yale School of Forestry and Environmental Studies, and a B.A. in Political Science from Allegheny College.



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12:00– 1:00

Lunch Break

Join us from **12:15 PM to 12:45 PM** for a facilitated conversation about the near-term future of funding horizon and outlook for state and federal opportunities with host, FEMC Director James Duncan and guests Mr. Tom Berry and Dr. Breck Bowden. Mr. Berry serves as Policy Advisory for Senator Patrick Leahy on Agriculture, Energy, Conservation, and Natural Resources. Dr. Bowden leads the Vermont component of the Northeastern States Research Cooperative, as well as the Director of the Lake Champlain Sea Grant and Vermont Water Resources and Lake Studies Program.

We invite you to submit questions to Elissa Schuett (eschuett@uvm.edu) by December 14; questions will also be accepted during the conversation through chat.

1:00– 2:35

Contributed Talks 1

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

- Forest Disturbance
- Forest Recreation and Connections to Forest Condition and Management
- Changing Communities
- Translational Science

2:35– 3:00

Break

3:00– 4:30

Facilitated Sessions and Working Groups

- Introducing the Northeast Silviculture Library – *Grace Smith and Tony D’Amato*
- Scoping a Regional Methods Framework for Assessing the Impacts of Browse on Forest Vegetation – *Pia Ruisi-Besares*
- Developing Inclusive Field Protocols – *Emma Tait*
- New England Forest Inventory Network (NEFIN) Working Session – *Jennifer Pontius*



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Contributed Talks Day 1 Schedule

| | Forest Disturbance | Forest recreation and connections to forest condition and management | Changing Communities | Translational Science |
|------------------|---|---|---|--|
| 1:00-1:20 | Dragonfly Larvae as Mercury Biosentinels: From National Parks to National Forests | Climate change adaptation among urban and rural foresters in the Northeastern US: an assessment of motivations, practices, and barriers | Vermont's Resilient Right-of-Ways Project | Living on the edge in a warming world: distributions and thermal refugia of forest insects across the northeastern United States |
| | <i>Kate Buckman</i> | <i>Tessa McGann</i> | <i>Karl Honkonen</i> | <i>Michael T. Hallworth</i> |
| 1:25:1:45 | Updates on Federal Pest Deregulation and Status of Pests of Regional Concern | Forests on the Move: Tracking Climate Related Changes of Treelines in Montane Systems of the Northeast | Cooperative Forest and Wildlife Habitat Management in Central Wisconsin | Assessing the Resiliency of Oak Forests |
| | <i>Judy Rosovsky</i> | <i>Jordon Tourville</i> | <i>Joshua Benes</i> | <i>Logan Johnson</i> |
| 1:50-2:10 | Multiyear defoliations in southern New England increases oak mortality | The Effect of Harvesting on Lowland Northern White-Cedar Stand Structure and Composition | Winners and Losers in a Changing Climate | Utilizing Climate Change Refugia for Climate Change Adaptation and Management in the Northeast |
| | <i>Jeffrey S. Ward</i> | <i>Katlyn Schulz</i> | <i>Bob Popp</i> | <i>Sara Wisner</i> |
| 2:15-2:35 | Monitoring trends in the severity, extent, and frequency of key disturbance regimes in northeastern forests | Wildlife & Trail Recreation: Understanding, managing, and monitoring recreation effects | Training the next generation of New York City's environmental leader | Red Cedar Woodlands in Vermont: An overlooked form of old growth and potential climatic record |
| | <i>Jim Duncan</i> | <i>Meredith Naughton</i> | <i>Jessica Hoch</i> | <i>Matt Peters</i> |



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Facilitated Sessions and Working Groups Descriptions

Introducing the Northeast Silviculture Library

Grace Smith and Tony D' Amato

Rubenstein School of Environment and Natural Resources, University of Vermont, Northeast Climate Adaptation Center

The uncertainty around the impacts of climate change, forest pests, and extreme weather events poses a significant challenge to sustaining forest ecosystems in the Northeast. Much of our current management is guided by silvicultural research; however, the complex forest conditions of our region and rapidly changing environment are not always captured by this work. Personal experiences gained from managers across the region serve as a powerful source of information to address current management challenges given every silviculture treatment is an experiment with every forest manager both a teacher and a learner. The Northeast Silviculture Library is designed to serve as a community of practice where forest managers exchange real, on-the-ground examples and outcomes of their management activities. This working group session will introduce the Northeast Silviculture Library (NESL) to forestry professionals and research scientists working in the Northeast region, including site access and navigation, current content available, and instruction for submitting case studies. We welcome submissions from anyone with direct experience managing forest lands in the Northeast region and will use feedback on the NESL during this season to increase its utility to stakeholders. The outcomes of this session will inform managers on how to submit their own silvicultural prescriptions and outcomes, review the cases already published, solicit submissions from other authors, and, importantly, kick off what we hope will be a key resource and community of practice for managers in formulating adaptive strategies to sustain northeastern forests into the future.

Scoping a Regional Methods Framework for Assessing the Impacts of Browse on Forest Vegetation

Pia Ruisi-Besares

Forest Ecosystem Monitoring Cooperative, Rubenstein School of Environment and Natural Resources, University of Vermont

This year the Forest Ecosystem Monitoring Cooperative (FEMC) is initiating a regional project to address inconsistencies in methodologies used for assessing the impact of ungulate browse on forest health, specifically tree regeneration and other vegetation impacts. The project is still in its early stages but aims to identify the most comprehensive and accurate methods of browse assessment and to provide easily accessible resources for land managers and monitoring



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professionals to collect browse impact data and contribute regionally comparable data to a larger body of information. In addition, the Hubbard Brook Research Foundation (HBRF) is continuing discussions on forest regeneration more broadly following the early 2021 “Regeneration of Northern Hardwoods Roundtable” event. Together, FEMC and HBRF are seeking to convene foresters, land managers and resource planners to join a conversation about the current suite of available browse methods and key priorities for regional browse impact assessment and synthesis. Through a series of guided breakouts and group discussions, this session will focus on the various methods of browse assessment that are in use and the definition of priority criteria for quantitative protocols. The outcomes of this session will directly impact the direction of the regional project and inform further monitoring and research, so please join us at this important moment in our shared work!

Developing Inclusive Field Protocols

Emma Tait

Forest Ecosystem Monitoring Cooperative, Rubenstein School of Environment and Natural Resources, University of Vermont

How do we make fieldwork experiences more inclusive, diverse, equitable, safe and just? Field ecologists often have standard of practice (SOP) documents to capture all of the field methods and protocols to be used when collecting ecological data. However, we often do not have SOPs to guide our field planning and to support field crews in aspects of diversity, equity, and inclusion. FEMC is working to revise our SOP to support diverse field crews. We have heard interest from cooperators in doing the same for their organizations. In this working session we will discuss some of the barriers to inclusive field work and possible solutions. We will also provide resources and an opportunity to review and revise participants existing SOPs. Attendees should pre-register and plan to bring your current SOP, if available.

New England Forest Inventory Network (NEFIN) Working Session

Jennifer Pontius

Forest Ecosystem Monitoring Cooperative, Rubenstein School of Environment and Natural Resources, University of Vermont

Across the northeast, there is a wealth of continuous forest inventory (CFI) data collected by state, federal, academic, non-profit, and commercial entities, representing a range of ownerships, management approaches, disturbances history, and site characteristics. In order to develop a better understanding of forest structure, composition, and condition across the spatial and structural complexities of the region’s forests, the Northeastern Forest Inventory



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Network (NEFIN) has been working to aggregate CFI data into a consolidated database and online tool for use by land managers, research foresters and practitioners.

In this workshop, we will share the status of CFI data holdings and demo the capabilities of the online NEFIN tool. Workshop participants will discuss key information, analyses or research questions that should be addressed with the NEFIN tool. Our goal is to identify potential use case studies and collaborators interested in working with our team to utilize this regional aggregation of CFI data to improve or understanding of current forest productivity, composition, structure, and condition, as well as implications for the future.



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December 17 – Day 2

8:30 – 8:35 **Welcome and Introduction**

FEMC Director Jim Duncan

8:35 – 9:45 **Plenary Session**

Dr. Julia Barton is an Associate Professor, Michigan Technological University, and holds an appointment as an Adjunct Associate Professor at SUNY College of Environmental Science and Forestry (ESF). Julia's research examines the role of silviculture in sustaining a broad range of values, functions and services in forests such as carbon sequestration, wildlife habitat, biodiversity and cultural values, as well as timber production. Her group develops robust experimental and analytical frameworks to determine whether and how silvicultural management can be used to sustain these values in the face of changes in climate and disturbance regimes. Recent studies focus on how plant functional traits can inform our understanding of forest community response to climate change and associated effects on ecosystem functions and services. This research has real-world implications for agencies, landowners and conservation organizations tasked with managing forests for a range of ecosystem services in an increasingly uncertain world. Please visit Julia's research page for more information (forestecosystemsilviculture.weebly.com).

9:45 – 10:00 **Break**

10:00 – 11:35 **Contributed Talks 2**

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

- Forests as natural climate solutions
- Technology & Innovation
- Wildlife



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11:40 – 12:30

Poster Session

A virtual poster session with opportunities to ask questions of the presenter in a Zoom breakout room. The posters can be viewed in the Virtual Poster Session room available at <https://go.uvm.edu/2021femcconfposter>, and you can chat with presenters in the Zoom Events sessions.

12:30 – 12:45

Closing Remarks

FEMC Principal Investigator Dr. Jennifer Pontius



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Contributed Talks Day 2 Schedule

| Time | Forests as Natural Climate Solutions | Technology and Innovations | Wildlife |
|---------------|--|---|---|
| 10:00-10:20 | Northern Hardwood Seepage Forest: A Newly Classified VT Natural Community with Implications for Climate Resilience, Wildlife, and Wetland Conservation | Monitoring forest health with UAS ("drone") technologies | Measuring Municipal Land Use Approaches for Maintaining Forests and Wildlife |
| | <i>Dan Farrell</i> | <i>Adam Zylka</i> | <i>Jamey Fidel</i> |
| 10:25-10:45 | Carbon benefits of Family Forest Carbon Program practices in the Northeast region | Forest Farming in the Northeast: Building a Community of Practice | White-tailed Deer Harvest Success and its Impact on Forest Understory Vegetation: Evaluating Management Program Efficacy in Southeastern New York |
| | <i>Chris Zimmerman</i> | <i>Karam Sheban</i> | <i>Ralph H. Green III</i> |
| 10:50-11:10 | Conservation planning for the next generation of forest land management at Smokey House Center. | Using a new tool: Forest Impacts of Climate Change: Monitoring Indicators | Where will wildlife cross the road? Using electrical circuit analysis to map wildlife movement and inform transportation management in Vermont |
| | <i>Jesse Pyles</i> | <i>Pia Ruisi-Besares</i> | <i>Caitlin Drasher</i> |
| 11:15 – 11:35 | Forest Cents: Using Carbon Markets to advance Forest Conservation | Assessing the efficacy of assisted migration: physiological response of seedlings to moderate severity drought and adaptive silviculture treatments | Evaluating ONRAB Vaccine Bait Fate and the Use of Bait Stations in the Oral Rabies Vaccination Program in Burlington, Vermont USA |
| | <i>Jim Shallow</i> | <i>Al Freeman</i> | <i>Maggie Batton</i> |



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Poster Session Day 2

- 1 A cultural keystone species on the brink of demise: Assessing radial growth of black ash and occurrence of basket-quality trees before impacts associated with the emerald ash borer invasion

River Mathieu

- 2 Physiological response of canopy red spruce to an experimental extreme drought

Kelly French

- 3 Sixty years of coastal red spruce: Stand dynamics and climate sensitivity at historic inventory sites

Camilla E. Seirup

- 4 Maine TREE (Timber Research & Environmental Education)

Kelly French

- 5 Bird Species Richness of the Saint Michael's Natural Area

Liam Conran

- 6 The Vermont Atlas of Life: Discovering and Sharing Biodiversity Knowledge

Kent McFarland

- 7 Persistence of the leaf economic spectrum across the temperate-boreal ecotone in New York and northern New England

Matthew Hecking