

# Northeast-Midwest Prescribed Fire Science and Management Workshop

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**AUGUST 19-22, 2024**  
**ALBANY, NY**







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## Planning Committee

- John Bailey, TNC
- Alex Belote, DCR Mass
- Caren Caljouw, DCR Mass
- Dave Celino, DCR Mass
- Neil Gifford, Albany Pine Bush Preserve
- Scott Jackson, NYS DEC
- Amanda Mahaffey, FWS
- Craig Maier, Tallgrass Prairie & Oak Savanna  
Fire Science Consortium
- Larry Mastic, WFLC, NE Regional Committee
- Jack McGowan-Stinski, Lake States Fire  
Science Consortium (LSFSC)
- Zach Prusak, Tall Timbers
- Mikel Robinson, Full Scope Management
- Nick Skowronski, USDA FS
- Polly Weigand, NAFSC and The Forest Guild
- Gary Werner- Wisconsin Rx Fire Council



# Workshop Agenda

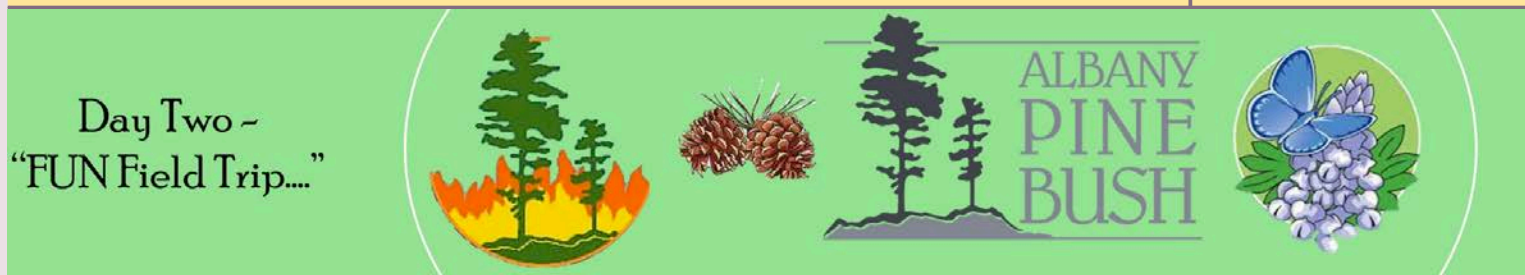


<b>Monday, August 19</b> (Pre-workshop Training Opportunities)	Pre-registration required
<b>Smoke TOOLS Workshop</b> – Alexia Prosperi, Air Quality Specialist, Eastern Region (WI), USFS and Ralph Perron, Air Quality Specialist, Eastern Region (NH), USFS	<b>Governor E</b> 10:00 am – 5:00 pm
<b>Fire History in the Northeast US: Understanding Long-term Fire Regime and Forest Change with Tree Rings and Fire Scars</b> – Joseph Marschall, Center for Tree-Ring Science, University of Missouri; Daniel Dey, USDA FS Northern Research Station; and Chris Guiterman, CIRES University of Colorado Boulder, and NOAA's NCEI	<b>Governor D</b> 1:00 – 5:00 pm
Early Registration Check-in ( <i>check-in early and pick up your badge and packet</i> )	4:00 – 6:00 pm

<p>Day One – “Once Upon a Time...”</p> <p><b>WELCOME</b></p> <p>Indigenous Fire Keeping &amp; fire history</p> <p>WHY do we Burn NOW? Contemporary Burning &amp; Fire Effects</p> <p>Capacity, Collaboration &amp; Communications</p>	
<b>Tuesday, August 20</b>	
Registration Check-in	7:00 – 8:30 am
<b>Welcome and Opening Remarks</b> Corey Lehman, Acting Deputy Commissioner, NYS DEC Office of Public Protection; Sean Mahar, Interim Commissioner, NYS DEC; Neil Gifford, Conservation Director, Albany Pine Bush Preserve Commission	8:30 – 9:00 am
<b>Indigenous Firekeeping</b> Moderator: Mike Dockry, Assistant Professor, Forest Resources; Affiliate Faculty, American Indian Studies, University of Minnesota; Bazile Panek, Fire-Plan Research Coordinator, University of Wisconsin-Platteville; Cheyenne Reuben-Thomas, PhD student, Cornell University; Troy Phillips, Enrolled member and Sub-Chief, Hassanamisco Nipmuc Tribe Chairperson. Commissioner, Massachusetts Commission on Indian Affairs	9:00 – 10:30 am
Networking break	10:30 – 11:00 am
<b>WHY do we burn NOW? Part One – Past is Prologue: Fire Ecology and Fire Effects</b> Dan Dey, Assistant Director Research, Northern Research Station, US Forest Service	11:00 – 12:00 pm



<b>Tuesday (continued)</b>	
<b>Lunch (provided)</b>	12:00 – 1:00
<b>WHY do we burn NOW? Part Two – Contemporary Burning: Why and Where</b> Moderator: Chris Guiterman, Assistant Research Professor, University of Arizona, Laboratory of Tree-Ring Research Polly Weigand, NAFSE and Fire Projects Manager Forest Stewards Guild Samuel Gilvarg, PhD student, Applied Forest and Fire Ecology Lab, SUNY College of Environmental Science and Forestry Jessica Cancelliere, Research Scientist/Forest Health Section Chief, NYS DEC Michael Gallagher, Research Ecologist, Northern Research Station, Silas Little Experimental Forest	1:00 – 2:30 pm
<b>Networking break</b>	2:30 – 3:00 pm
<b>Capacity, Collaborations, and Communications: Presentation/Panel</b> Moderator: Polly Weigand, Workshop Coordinator – NAFSE and Fire Projects Manager Forest Stewards Guild Chris Hawver, Executive Director, Albany Pine Bush Preserve Commission Robert Cavanagh, Acting Director, Division of Forest Protection, NYSDEC Amanda Mahaffey, Forest Ecologist, US Fish and Wildlife Service Caren Caljouw, Prescribed Fire Manager, Massachusetts Dept. Fish and Wildlife Jon Bailey, Maine Fire Manager, The Nature Conservancy Todd Breininger, Prescribed Fire Specialist, Pennsylvania Department of Conservation and Natural Resources Tom Brady, Executive Director, Northeastern Forest Fire Compact	3:00 – 4:30 pm
<b>Wrap up for the day</b>	4:30 – 4:45 pm
<b>Social reception with the Exhibitors and Sponsors</b>	4:45 – 6:45 pm



<b>Wednesday, August 21</b>	
<b>Morning Briefing</b> – Neil Gifford, Field Trip Coordinator – Conservation Director, Albany Pine Bush Preserve Commission	8:30 – 9:00 am
<b>Field Trip to Albany Pine Bush Preserve</b> (includes transportation and lunch)	9:00 am – 2:00 pm
Return to hotel	2:00 pm
Working group meetings	2:00 – 4:00 pm
Poster Slam and social reception	4:00 – 6:00 pm

Day Three –  
**NOT**  
 ✓ “The End”

Conclusions from  
 APB Field Trip

What should  
 RX fire  
 training look  
 like for the  
 Region?

Connecting Capacity:  
 A Facilitated  
 Discussion to Identify  
 and Overcome  
 Barriers to Good Fire

Outstanding  
 Questions –  
 What’s Next?

**Thursday, August 22**

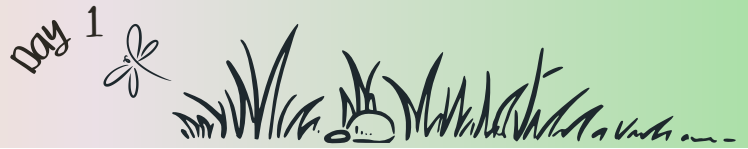
Morning Briefing	8:30 – 8:45 am
<b>Smoke/Air Quality updates</b> Alexia Prosperi, Air Quality Specialist, Eastern Region (WI), USFS Ralph Perron, Air Quality Specialist, Eastern Region (NH), USFS	8:45 – 9:00 am
<b>Training Needs for Prescribed Fire Practitioners</b> Moderator: Zach Prusak, Wildland Fire Training Specialist, Tall Timbers Research Station, Chair, Coalition of Rx Fire Councils Scott Jackson, Fire Management Officer, Division of Forest Protection, NY DEC Jim Elleson, Program Manager and Standards Committee Chair, Wisconsin Prescribed Fire Council George Jensen, Coordinator, Southwest Georgia PBA, Tall Timbers Sara Hart, Project Assistant, Division of Lands and Forests, New York State Department of Environmental Conservation	9:00 – 10:00 am
Networking break	10:00 – 10:30 am
<b>Connecting Capacity: A Facilitated Discussion to Identify and Overcome Barriers to Good Fire</b> Facilitator: Alex Belote, Fire Program Coordinator, Massachusetts DCR	10:30 – 11:30 am
<b>Connecting Capacity Roundup</b>	11:30 – 12:00 pm
Lunch (provided)	12:00 – 1:00 pm
<b>Special Presentation – TBD</b>	1:00 – 2:00 pm
<b>National Policy and Standards Updates</b> Dave Celino, Chief Fire Warden, Massachusetts DCR Steve Goldman, Deputy Director, Fire and Aviation, USFS, Eastern Region	2:00 – 2:45 pm
<b>Workbook Synthesis, Outstanding Questions – What’s Next?</b> Jack McGowan–Stinski, Program Manager, Lake States Fire Science Consortium Amanda Mahaffey, Forest Ecologist, U.S. Fish and Wildlife Service	2:45 – 3:00 pm
<b>Workshop Adjourns</b>	3:00 pm



# Workshop

## Speakers & Panelists

# WELCOME

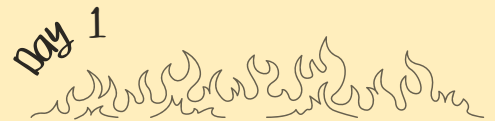


### **Neil Gifford,**

Conservation Director, Albany Pine Bush Preserve Commission

Neil Gifford is the Conservation Director for the Albany Pine Bush Preserve Commission in Albany New York. As the Commission's lead scientist he oversees management and research activities within the 3,400 - acre pitch pine-scrub oak barrens preserve. Neil has 30 years of prescribed fire experience and has been with the Commission for 27 years. As a fire scientist and land manager he and his team continue to assist with prescribed fire as they study how prescribed fire can help conserve endangered wildlife and rare ecological communities. He has authored and coauthored publications on various aspects of pine barrens conservation and endangered species recovery. Neil is also a Community Representative with the North Atlantic Fire Science Exchange, a licensed USGS Bird Bander, and a graduate of Paul Smith's College and Plattsburgh State University.

# INDIGENOUS FIREKEEPING

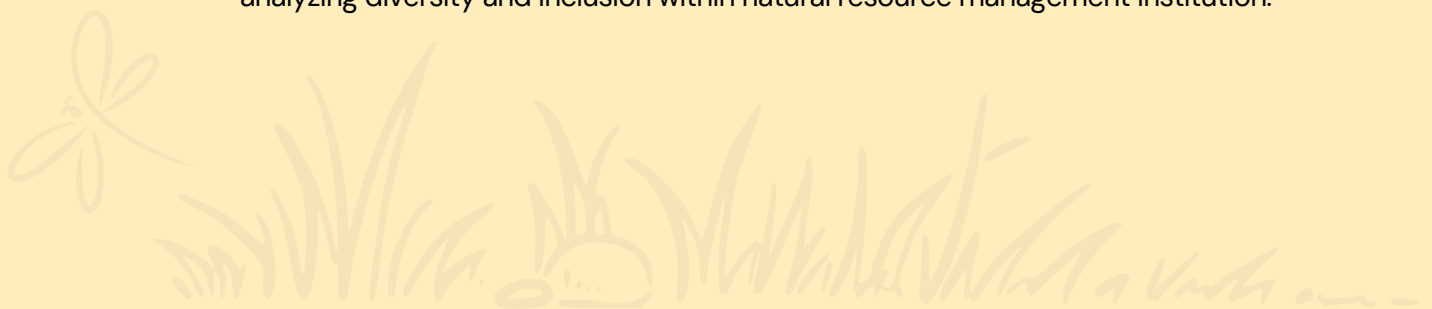


### **Moderator: Mike Dockry**

Assistant Professor, Forest Resources; Affiliate Faculty, American Indian Studies, University of Minnesota

Bozho Nikanek! I am a registered member of the Citizen Potawatomi Nation and an Assistant Professor in the University of Minnesota's Department of Forest Resources. I am also an associate faculty member of the American Indian Studies Department and an Institute on the Environment Fellow. I support tribal sovereignty and work to foster collaborative and respectful research relationships.

My research supports interdisciplinary sustainable natural resource management research with a focus on: (1) understanding and incorporating tribal perspectives into natural resource management (2) developing frameworks and best practices for building successful tribal partnerships for natural resource management, long-term planning, and research; and (3) analyzing diversity and inclusion within natural resource management institution.





### **Bazile Panek,**

**Fire-Plan Research Coordinator, University of Wisconsin-Platteville**

Bazile Panek’s roots come from the Red Cliff Band of Lake Superior Ojibwe in Northern Wisconsin where he was born and raised. His culture is an integral part of his life, as he consistently participates in cultural events and ceremonies. Bazile works as the “Fire-Plan Research Coordinator” at the University of Wisconsin-Platteville for a National Science Foundation-funded project that combines various ways of knowing to help heal fire-dependent lands and cultures in the Great Lakes region. Over the next two years, he will be facilitating listening sessions with tribal communities to discuss wildland fire and fire stewardship-related stories, insights, and needs to guide future research on fire. Bazile's guiding philosophy in life is to "honor my ancestors by becoming an honorable ancestor for future generations' and higher education.



### **Cheyenne Reuben-Thomas,**

**PhD student, Cornell University**

(Onkoyote’a•ká•/Oneida Nation of Wisconsin and Onöndowa:ga’/Tonawanda Seneca) (she/they) is a doctoral student in the Ecology & Evolutionary Biology and Entomology Departments at Cornell University. As an emerging Indigenous scholar, she is committed to ensuring community-driven research in biodiversity and genomic contexts. Cheyenne’s research explores the potential benefits of Traditional Ecological Knowledge-Practice Systems on insect biodiversity. Specifically, she will investigate the impacts of Good Fire (traditional/cultural applications of fire) on insect biodiversity and will compare this to impacts of settler land management strategies. She is actively collaborating with the Yurok Tribe of Northern California, Oneida Nation of Wisconsin, and US Forest Service in support of this work. Through her research, Cheyenne hopes to bring attention to the significant roles of our insect kin in cultural contexts, guide researchers on best practices regarding Indigenous data governance, and emphasize the need for Indigenous-led conservation and decision-making in policy.



### **Troy Phillips**

**Enrolled member and Sub-Chief, Hassanamisco Nipmuc Tribe Chairperson. Commissioner, Massachusetts Commission on Indian Affairs**

Troy Phillips, Enrolled member and Sub-Chief of the Hassanamisco Nipmuc Tribe, Chairperson and Commissioner of the Massachusetts Commission on Indian Affairs t3runwolf@aol.com Troy Running Wolf Phillips is an enrolled citizen of the Hassanamisco Nipmuc Band. He is considered a sub-chief within his tribe to assist or Sosqua (Chief) in tribal affairs. He also holds a seat on the Massachusetts Commission on Indian Affairs. The Commission’s rolls are to assist Native American individuals, tribes and organizations in their relationship with the state and local government agencies and to advise the Commonwealth in matters pertaining to Native American.



# WHY DO WE BURN NOW?

## PART ONE – PAST IS PROLOGUE: FIRE ECOLOGY AND FIRE EFFECTS

Day 1



### Dan Dey

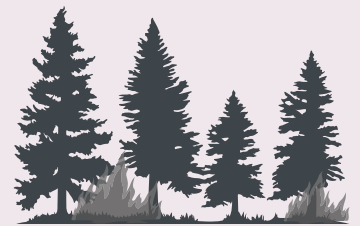
Assistant Director Research, Northern Research Station, US Forest Service

Dr. Dan Dey is Assistant Director of Research for the USDA Forest Service, Northern Research Station. Dan has been a Research Forester since 1987 to present. His personal research emphasis is the ecology and silviculture of eastern forests, woodlands and savannas. He supervises research units across the 20 state region of the Midwest, Great Lakes, MidAtlantic and Northeast. He received his Ph.D. in 1991 from the University of Missouri, and since then has worked as a research forester for the Ontario Ministry of Natural Resources, the Missouri Dept of Conservation and the USDA Forest Service Northern Research Station. He has been conducting research for the US Forest Service since 1998. Before becoming a scientist, Dan worked as a forester on the Ketchikan Ranger District, Tongass National Forest and the Red River Ranger District, Nez Perce National Forest.

# WHY DO WE BURN NOW?

## PART TWO – CONTEMPORARY BURNING: WHY AND WHERE

Day 1



### Moderator: Chris Guiterman

Assistant Research Professor, University of Arizona, Laboratory of Tree-Ring Research

Chris is a Research Scientist with the NOAA-based World Data Service for Paleoclimatology that manages public archives of fire history data along with many other global paleoenvironmental proxy data. His research interests include dendrochronology, fire ecology, and the drivers of historical fire activity.



### Michael Gallagher

Research Ecologist, Northern Research Station, Silas Little Experimental Forest

Michael Gallagher is a Research Ecologist in the USFS Northern Research Station's Physical and Ecological Fire Processes, Interactions, and Applications Research Work Unit and is stationed at the Silas Little Experimental Forest in the New Jersey Pine Barrens. Gallagher's research has spanned the gamut of wildfire and prescribed fire sciences, applications, and effects, but most recently has focused most heavily on the development of LiDAR-based approaches for monitoring vegetation conditions and the effects of management. Gallagher's work also has focused on the carbon dynamics of prescribed fire, tick control with prescribed fire, firebrands, and the fundamental physics of wildland fire processes. In his free time Gallagher enjoys gardening, home improvement projects, and tinkering on old trucks.





## **Polly Weigand**

**NAFSE and Fire Projects Manager Forest Stewards Guild**

Polly serves as the Fire Projects Manager for the Forest Stewards Guild, a national professional organization of foresters and affiliated natural resource stewards that promotes sustainable and ecologically responsible forest management. As a member of the North Atlantic Fire Science Exchange leadership team, Polly helps support increased capacity for science-based wildland fire management by hosting educational programs, developing innovative technical resources, supporting research initiatives and fostering connections between researchers and managers.

Polly hails from the Tug Hill Plateau, just west of the Adirondack Mountains of New York and lives on the east end of Long Island where she obtained a master's degree in urban ecology from Hofstra University; founded (and directs) the Long Island Native Plant Initiative, administers the Long Island Invasive Species Management Area, and most recently served as Science and Stewardship Program Manager, where she led the development of a Prescribed Fire Program for the Central Pine Barrens Commission.

Polly is excited to apply her expertise, established network and diverse knowledge of northeastern ecosystems, invasive species, scientific research, wildland fire management and program administration at a greater regional reach, including national and international too.



## **Jessica Cancelliere**

**Research Scientist/Forest Health Section Chief, NYS DEC**

Jess is a Research Scientist who, in 2023, became the Forest Health Section Chief with the New York Department of Environmental Conservation's Bureau of Invasive Species and Ecosystem Health. Jessica managed the Forest Health Research Lab for 13 years, where she focused on improving the detection and management of the region's most impactful forest pests and diseases. She has studied southern pine beetle since 2014 when it was first detected in NY, investigating the impacts of warming winters on SPB spread, documenting its northern expansion, and looking for relationships between habitat quality, SPB predator/competitor abundance, and their ability to control SPB. All that time spent on the beetle led to her great appreciation for pitch pine. In her new role, Jess works with her team to preserve and restore New York's pitch pine ecosystems through thinning and prescribed fire, while simultaneously looking for new ways to capture and quantify their management impacts on forest health and resilience. In her free time, she enjoys gardening, cooking, playing the piano, and despite her best efforts, thinking about forest health.



## **Samuel Gilvarg**

**PhD student, Applied Forest and Fire Ecology Lab, SUNY College of Environmental Science and Forestry**

Sam is a PhD student in the Applied Forest and Fire Ecology lab at SUNY College of Environmental Science and Forestry, where he is pursuing a course of study in Fire Ecology and the Ecology of Vector-borne Diseases. His current research is focused on elucidating the relationship between fire regime and tick population dynamics in Pitch Pine Barren ecosystems. The overarching goal of this work is to explore whether fire management can be used to promote resilient and biodiverse ecosystems while simultaneously providing a public health benefit to local human communities. Prior to entering academia, Sam worked with the U.S.National Park Service's Region 1 (Northeast Region) fire ecology program, both conducting prescribed fires and assessing the efficacy of those burns in meeting resource objectives. He holds a B.A. from Gettysburg College and a M.S. from the Cummings School of Veterinary Medicine at Tufts University.

# CAPACITY, COLLABORATIONS, AND COMMUNICATIONS:

## PRESENTATION/PANEL

Day 1



### **Moderator: Polly Weigand**

NAFSE and Fire Projects Manager Forest Stewards Guild



### **Chris Hawver**

Executive Director, Albany Pine Bush Preserve Commission

Chris Hawver has served as the Executive Director of the Albany Pine Bush Preserve Commission since 2000. He joined the organization as a seasonal fire tech in 1993. Within a year he became responsible for implementing the prescribed fire program for the next six seasons. As Executive Director, Chris is responsible for all fiscal, legal and administrative aspects of the Commission and its staff. He implements the decisions of the board and conducts the day-to-day business of the Commission. Chris ensures organizational compliance with all applicable policies, laws and regulations. He works closely with Commission members and counsel, as well as state, county and local government agencies, elected officials, conservation groups and landowners to raise and promote support for the Albany Pine Bush Preserve. Chris holds a BA in Environmental Science and MA in Natural Resources from the State University of New York at Plattsburgh.



### **Robert Cavanagh**

Acting Director, Division of Forest Protection, NYSDEC

Robert Cavanagh has over 30 years experience as a New York State Forest Ranger. He has extensive experience on wildfires both in New York and in other states. He has written several regional fire plans and helped in many capacities to develop the state's Wildfire programs. He has contributed to the development and adaption of numerous burn plans for prescribed fire management on both public and private lands. As Acting Director of the Division of Forest Protection he currently oversees all of the Department of Environmental Conservation's programs for both fire suppression and prescribed fire management.



### **Amanda Mahaffey**

Forest Ecologist, US Fish and Wildlife Service

Amanda Mahaffey joined the U.S. Fish and Wildlife Service with over a decade in leadership roles at the Forest Stewards Guild and North Atlantic Fire Science Exchange, where she built up communities of practice around fire science and management, forest climate adaptation, bird-friendly forestry, and women in forest stewardship. Currently in her role as a Forest Ecologist, she supports National Wildlife Refuges in the Northeast with ecological forestry needs. Amanda has been sought after as a facilitator, collaborator, and catalyst for change. She is passionate about bringing people together and supporting the next generation of forest stewards. Amanda is a Maine licensed forester and prescribed fire practitioner and holds degrees from Yale University and the University of Southern Maine. In her free time, she loves to hike and sing.





## **Caren Caljouw**

Prescribed Fire Manager, Massachusetts Dept. Fish and Wildlife

Caren Caljouw is the fire manager and a restoration ecologist with the Massachusetts Department of Fish and Game, Division of Fisheries and Wildlife. She coordinates prescribed fire and landscape restoration activities on MassWildlife lands statewide. Caren's been with the Division since 2015.

Caren is a skilled prescribed fire practitioner with knowledge and experience in managing fire-influenced ecosystems from Virginia to Maine. She has a keen interest in fire and ecosystem dynamics with a focus on fire and plant interactions and restoration benefits to improve wildlife habitats. She works to ensure collaboration and partnership in implementing safe wildland fire practices and developing mutually beneficial strategies and goals to further prescribed fire operations throughout Massachusetts and the region.



## **Jon Bailey**

Maine Fire Manager, The Nature Conservancy

Jon holds a Bachelor of Arts in Social Science, with a concentration in Wildland, Recreation, Land Management and Policy from Unity College, ME and is a NWCG qualified RXB2 Burn Boss. He currently serves as the staff, facilities, and land manager of The Nature Conservancy's Southern Maine Field and Fire Management Program office located in Wells, Maine. In this multifaceted role, Jon advances collaborative ecological management, prescribed fire operations and training, habitat restoration projects, and hazardous fuels treatments within the largest protected sandplain grassland and pine barren habitats of Maine. Jon is a founding member of the Maine Prescribed Fire Council whereafter he served as chairman from 2019-2023, and currently serves as Administrative Coordinator to help build and sustain prescribed fire locally, across Maine and in the northeast. He is equally active in his community of Cornish Maine, where he continues to volunteer as a structural firefighter and wilderness first responder as he has since 1999.



## **Todd Breininger**

Prescribed Fire Specialist, Pennsylvania Department of Conservation and Natural Resources

Todd is the Prescribed Fire Program Specialist for the Pennsylvania Department of Conservation and Natural Resources, Bureau of Forestry. His duties include overseeing the prescribed fire program for the Bureau, reviewing all the burn plans for Pennsylvania, serving as an Agency Representative to the Pennsylvania Emergency Management Agency, and assisting in the wildland fire program. Prior to his current position, he worked as a Fire Operations Forester for the Division of Forest Fire Protection and as a Service Forester in the William Penn Forest District. He has been active on the Steering Committee for the Pennsylvania Prescribed Fire Council since its inception and has been on the Board of Directors since 2016. He has served as the Vice-Chair, Acting Chair, and is currently the Secretary of the Board. He also serves on the Governing Board for the Coalition of Prescribed Fire Councils.

Todd has been involved with wildland fire since the early 90's and is currently qualified as a Task Force Leader and a Burn Boss. Every summer he takes a few fire details out in the western states. He received his B.S. in Forest Resources Management from West Virginia University.





### **Tom Brady**

Executive Director, Northeastern Forest Fire Compact

After a short stint working as a soil scientist in South Dakota, I was lucky enough to get a permanent job with the US Forest Service. I recently “graduated” from the USFS in Jan 2020 after 39 years. Worked in a multitude of positions on various National Forests in timber, recreation, fire, forest planning and district management in Virginia, Minnesota, Ohio and New Hampshire. Also worked as a Cooperative Fire Specialist with State & Private Forestry for many years assisting the Northeastern States & Compacts with their fire-related grants and agreements.

I have been on numerous fire assignments all over the western US as an Interagency Resource Representative (IARR).

I have a B.S. in Resource Management from SUNY ESF in Syracuse and an M.S. in Forest Management (Forest Soils) from the University of Idaho in Moscow.

I started serving as the Northeastern Fire Compact Executive Director, a part-time position, immediately after retiring in Jan 2020.

## SMOKE/AIR QUALITY UPDATES



### **Alexia Prosperi**

Air Quality Specialist, Eastern Region (WI), USFS

Alexia is an Air Resource Specialist for the Eastern Region of the USDA Forest Service. She covers the southern tier of the region, which includes MO, IL, IN, OH, and WV. In her role, Alexia works on smoke forecasting for prescribed fire, monitors visibility, and provides guidance regarding air quality impacts for prescribed fire projects. She is also an Air Resource Advisor (ARA) trainee preparing to assist with the understanding and prediction of smoke impacts during a wildfire. Alexia has a B.S. in Meteorology from Valparaiso University and a M. Eng in Applied Climate from the University of Michigan.

In her free time, Alexia enjoys hiking, traveling, playing basketball and sand volleyball, watching sports, and baking. She likes spending time with family and friends in the Milwaukee area, especially during the summer. This summer, she is looking forward to seeing Beyoncé and watching the Women’s World Cup.



### **Ralph Perron**

Air Quality Specialist, Eastern Region (NH), USFS

Ralph has been an Air Quality Specialist for the Eastern Region of the US Forest Service since 2008. His primary zone of work is the northeastern area of the Eastern Region, which includes the Allegheny, Finger Lakes, Green Mountain, and White Mountain National Forests.

Ralph has worked for the Forest Service for over 34 years. He started his Forest Service career as a Hydrologist, working for the Northern Research Station at the Hubbard Brook Experimental Forest in New Hampshire.

He holds a Bachelor of Science Degree in Water Resources Management from the University of New Hampshire (UNH). Before attending UNH, he enjoyed 6 years of traveling while enlisted in the US Air Force.

When not at work, much of his time is spent in the woods or in the garden, Gardening is high on the list of hobbies, growing blueberries, garlic, asparagus, and many other crops.



# TRAINING NEEDS FOR PRESCRIBED FIRE PRACTITIONERS



## **Moderator: Zach Prusak**

Wildland Fire Training Specialist, Tall Timbers Research Station, Chair, Coalition of Rx Fire Councils

Zachary Prusak currently works at the Tall Timbers Research Station as a Wildland Fire Training Specialist. In this role, he works with state, federal, local and private conservation groups and landowners to create and promote fire training opportunities and facilitate on-the-ground partnerships through collaboratives such as Fire Councils and Prescribed Burn Associations. He is also the lead for training coordination within the NE-MW region of the US, supported by funding from a Federal WRR Grant, and assesses the training needs of a wide variety of fire professionals and then provides solutions, including improving communication methods and constructing new hybrid fire course materials for both NWCG and private landowners. Zach also is the current Chair of the Coalition of Prescribed Fire Councils. Previously Zach served as the Florida Fire Manager for The Nature Conservancy, the South Region Land Manager for the Brevard County Environmentally Endangered Lands Program, conducted controlled burns and studied mosquito populations with the Reedy Creek Improvement District, and worked as a biologist for the Florida Park Service. Zach has close to 36 years of fire experience, is qualified as a Prescribed Fire Burn Boss Type 2 (RXB2) and is a State Certified Prescribed Burn Manager in Florida. He also provides Voice Over work for a variety of projects.



## **Scott Jackson**

Fire Management Officer, Division of Forest Protection, NY DEC

Scott Jackson is the Fire Management Officer for the NYS DEC Division of Forest Protection. As a Forest Ranger, he has over 20 years of experience with wildfire suppression and prescribed fire implementation. He is a NWCG Prescribed Fire Burn Boss, and he has experience developing, reviewing, and implementing prescribed fire plans in New York State.



## **Jim Elleson**

Jim Elleson started doing prescribed burns in 1995, on his 110-acre property in Wisconsin's Driftless region. In 2003 he founded Quercus Land Stewardship Services, an ecological restoration contractor focused on helping landowners take care of their land. He stepped down from running the business in 2020, and his "retirement" projects include leading the development of a prescribed fire burn boss certification program for the Wisconsin Prescribed Fire Council, mentoring the next generation of prescribed fire leaders, and managing his own little corner of Wisconsin's Driftless area





A circular photograph of George Jensen, a man with a beard and a cap, working with a large black hose, likely a fire suppression tool, in what appears to be a fire truck or a similar vehicle.

## George Jensen

George Jensen, originally from Savannah, Georgia, grew up in Berlin, Wisconsin. George attended the University of Wisconsin, Stevens Point, where he studied Wildland Fire Science and Conservation Biology under Dr. Ron Masters. During this time, George had heavy involvement in the UWSP interagency fire crew, where he was an officer for two years; George burned with the crew in Wisconsin, Oklahoma, Chicago, Florida, Georgia, and, South Carolina. George also worked for the federal government on a fuels module and helitack crew and did fire with WDNR. Upon graduation, George took a job as a Conservation Biologist for the Natural Heritage Conservation section of the WNDR and was also on the state burn team. George was also a biologist for the private sector in central Wisconsin. George attended graduate school for forestry at Mizzou under Dr. Ben Knapp. George worked his master's tenure at the Jones Center at Ichaaway, where he researched how Resistance, Resilience, and Transition silviculture treatments affect fire behavior and effects in longleaf pine ecosystems during atypically hotter and drier days. He also studied fine-scale fire effects in patches of longleaf pine. Currently, George works for Tall Timbers as the Southwest Georgia Prescribed Burn Association Coordinator and is an Adjunct professor of ecology at Thomas University in Thomasville, Georgia.

A circular photograph of Sara Hart, a woman with dark hair, wearing a red jacket and a backpack, standing in a forest with green foliage.

## Sara Hart

Sara Hart is Project Assistant in NYSDEC's Bureau of Forest Preserve and Conservation Easements, Division of Lands and Forests. Sara focuses on two areas: she works on Forest Preserve-based research coordination, overseeing research initiatives and serving as liaison to academic institutions and partner organizations. Sara also helps with giving voice to Indigenous perspectives on a variety of Division-wide projects. Sara earned her MLA from CCNY, her MA from UCLA, and her ABS in horticulture from SUNY Farmingdale after receiving her BA in her native Budapest, Hungary. Sara's year-round passion is to be outside with her husband to learn from or otherwise celebrate the plants, birds and critters of the Northeast. In warmer months, Sara happily gardens in the native landscape she's growing at her Albany home, and in colder months she meddles in knitting and felting projects. Sara is a proud mom of two daughters who live in NYC.

# NATIONAL POLICY AND STANDARDS UPDATES



**Dave Celino,**  
Chief Fire Warden, Massachusetts DCR

Dave has been the State Fire Supervisor for Massachusetts since 2007, and during in tenure has been the chair of the Northeast Forest Fire Supervisors, and is the current Chair of the Cohesive Strategy Northeast Regional Strategy Committee and represents the Northeast States on the NWCG Incident Position Standards Committee. He has been in the fire service, both structural and wildland, for over 30 years and was a rural call/volunteer Fire Chief prior to taking on his current state role.



**Steve Goldman**  
Deputy Director, Fire and Aviation, USFS, Eastern Region

As the Deputy Director for Fire and Aviation Management within the Eastern Region of the USDA Forest Service, Steve is responsible for oversight and delivery of all aspects of the Cooperative Fire Management (SFA, VFA, FEPP/FFP) Program, Eastern Area Coordination Center, and ESF4 support to FEMA Regions I, II, III, V, VII. Serves as the Deputy Director for all Eastern Region FAM operations including the National Forest System. Prior to becoming Deputy Director in 2018, Steve served as the Regional Fuels Program Manager. During his Forest Service career Steve also served as District Ranger in Michigan and worked in recreation in Arizona. Steve is an advocate for the wise use of fire as a landscape process and he is qualified as Incident Commander Complex, a role he served for one of the Eastern Area Incident Management Teams. He earned his bachelor's degree from the University of Arizona. He is married and has an adult son and together they enjoy hunting for agates along the shores of the Great Lakes.





# Poster

## Presentations

### 1 Training and Certifying Prescribed Fire Burn Bosses in Wisconsin

Jim Elleson, Program Manager, Wisconsin Prescribed Fire Council

**Keywords:** prescribed fire, training, certification

There is a pressing need to increase the use of prescribed fire to restore and maintain Wisconsin's fire-dependent ecosystems. Nearly 4.5 million acres would benefit from fire management, and up to one million acres need to be burned annually. Currently, an estimated 50,000 to 75,000 acres are burned statewide each year.

The Wisconsin Prescribed Fire Council (WPFC) is an organization representing government agencies, non-profit organizations, private contractors, landowners, and educators, whose mission is to promote the safe and effective use of prescribed fire in Wisconsin. The WPFC has set a goal to achieve 500,000 acres burned in the state per year within the next ten years.

An important challenge in meeting this goal is increasing our human and organizational capacity to implement prescribed burns. We do not have the capacity to meet the current demand, much less a six- to ten-fold increase. A key to increasing our burn capacity is to develop more trained and experienced fire leaders. To meet this need, the WPFC in cooperation with the Wisconsin Department of Natural Resources (WDNR) has undertaken development of a program for training and certifying prescribed fire burn bosses.

A volunteer committee led by the WPFC has been working since 2021 to develop the protocols and procedures for the certification and training program. The proposed program is currently undergoing administrative review within WDNR, with a target date of January 15, 2025 for official rollout. This poster provides background information and summarizes the key elements of the program.



Jim Elleson started doing prescribed burns in 1995, on his 110-acre property in Wisconsin's Driftless region. In 2003 he founded Quercus Land Stewardship Services, an ecological restoration contractor focused on helping landowners take care of their land. He stepped down from running the business in 2020, and his "retirement" projects include leading the development of a prescribed fire burn boss certification program for the Wisconsin Prescribed Fire Council, mentoring the next generation of prescribed fire leaders, and managing his own little corner of Wisconsin's Driftless area.

**Additional Authors:** Lucas LoBreglio, Wisconsin Prescribed Fire Council, Program Specialist





## 2 Muddy Brook Wildlife Management Area - The Restoration of a Cryptic Barrens Landscape

Alex Entrup, Prescribed Fire Program Leader, MassWildlife

**Keywords:** Prescribed fire, oak, restoration, rare species, logging

The poster summarizes restoration work and the ecological response at Muddy Brook Wildlife Management Area in Hardwick, Massachusetts. Initial restoration work began in 2014, which included logging, scarification, and prescribed fire. Over the decade since work commenced over 50 fire-influenced plant species have emerged. There has been a ~300% increase in the number of bee species, which is now over 150. The valley now hosts 1,500 species of moths including 9 state-listed species – seven of which returned only after restoration. Woodland specialist birds have dramatically increased in abundance, with Eastern Whip-poor-Will returning to breed in large numbers after a 40-year absence.



Alex Entrup, Fire Program Leader for MassWildlife, has been working in natural resource management for 19 years. He is a prescribed fire burn boss having participated in over 400 prescribed fires in eight states, and has served as an engine boss on western wildfires. Current projects are primarily in pine barrens, grasslands, calcareous wetlands, maritime systems, and oak forests/woodlands.

**Primary Author:** Chris Buelow, MassWildlife Natural Heritage and Endangered Species Program, Senior Restoration Ecologist

## 3 Speciation and aqueous dissolution of macronutrients in fire ash: variation across ecosystems

Lingqun Zeng, Graduate student, UNIVERSITY AT ALBANY OF SUNY

**Keywords:** wild fire, ash, macronutrients, speciation, dissolution

Vegetation fires are a common and possibly the most pervasive disturbance to many terrestrial ecosystems, and macronutrient cycling is among the many ecosystem processes affected by them. This study is the first to investigate the speciation and aqueous dissolution of macronutrients in fire ash from diverse ecosystems, exploring the variations and their causes. The speciation of phosphorus (P), calcium (Ca), and potassium (K) in fire ash from five globally distributed ecosystems was simultaneously characterized using X-ray absorption spectroscopy and sequential fractionation. Aqueous dissolution of the macronutrients was measured by batch experiments at acidic and alkaline pHs. Phosphorus speciation data showed the presence of varying abundances of Ca-bound phosphates (Ca phosphate). Calcium existed mainly as double carbonates, calcite and sulfates, whose relative abundance depended on Ca abundance and probably fire temperature. Potassium was closely associated with Ca minerals (as double carbonates or K-doped calcite), with small fractions of phosphates and chloride identified in some ash samples.

Differences in Ca and P speciation existed between ash and smoke from laboratory burning. The rates, extents, and pH dependencies of macronutrient dissolution differed among macronutrients and depended on their speciation, with K being highly soluble and the P and Ca regulated by solution pH. The variability in macronutrient chemistry (i.e., content, speciation and solubility) and ecosystem-specific fire ash loads, resulted in varying loads and availability of individual macronutrient from fire among ecosystems. This study provides a mechanistic understanding of how fires transform the chemistry of macronutrients and affect macronutrient returning to soils across different ecosystems, which is essential for evaluating the disturbance to ecosystem nutrient cycling by fires.

I am a PhD candidate in Environmental Engineering with a specialized background in soil biochemistry. My research focuses on the intricate role of extracellular enzymes and biochar interactions in regulating soil organic matter composition. My presentation will explore the variations of these processes across different ecosystems and their subsequent effects on nutrient cycling. This research is pivotal in understanding how fire impacts soil chemistry and nutrient dynamics, contributing to more effective fire management and ecological restoration strategies.

**Additional Authors:** Shyrill F. Mariano (Graduate student, Department of Environmental and Sustainable Engineering, University at Albany)

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#### 4 **Down to the core: Fire and vegetation history in a Jack Pine dominated ecosystem**

Amelie Przedwiecki, Research Assistant, SUNY Plattsburgh Center for Earth and Environmental Science

**Keywords: fire dependent ecosystem, disturbance history**

Paleoecological studies provide insight into historical community assemblages, species migration patterns, and disturbance history (e.g., fire occurrence). Sediment cores from lakes and wetlands, provide a continuous record of how systems have changed over time. In northeastern North America, dominated by northern hardwood forest, fire-dependent pine barrens represent such a case. The Altona Flat Rock is an approx. 2000 hectare sandstone pavement *Pinus banksiana* (Jack Pine) dominated pine barrens ecosystem located in northeastern NY. This pine barrens is a fire dependent ecosystem and at the southernmost limit of Jack Pine's distribution, making it at risk from both the direct effects of climate change (i.e., warming), and changing disturbance regimes. In January, 2024 we sediment cored a wetland at the Altona Flat Rock, using a 5 cm diameter Russian Peat Corer. Sediment was collected in 0.5 m segments to a depth of 3.74m. Core segments were further separated into one cm thick cookies from which one cubic cm sections were taken for loss on ignition (LOI) organic carbon analysis and pollen analysis, while the remainder was used for macrofossil identification and charcoal fragment counts. Each sample was sieved to separate the plant and charcoal fragments from the sediment matrix to then be identified and counted under a dissecting scope. Radio carbon dating at intervals along the core will determine the dates of species occurrence/arrival and fire occurrence. Specifically, results will show when the Flat Rock became a fire-adapted Jack Pine dominated ecosystem, the fire return interval that has maintained the system as such, and how the system has recovered following past wildfires. Knowledge of the history and timing of these events will help to better understand and manage this ecosystem going forward.



Ecology undergraduate and SUNY Plattsburgh. I work at the Lake Champlain Research Institute as a research assistant and educator. I am the president of Environmental Club and in the honors program. I am a blackbelt in Tae Kwon Do. I earned my Gold Award in Girl Scouts by creating a Monarch Meadow to help the monarch butterfly population. I love trees and want to learn more about how to manage ecosystems.

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**Dr. David Franzi (SUNY Plattsburgh, Plattsburgh, NY), Dr. Mark Lesser (SUNY Plattsburgh, Plattsburgh, NY)**

#### 5 **Leveraging Satellite Remote Sensing and Modeling to Support Prescribed Fire**

Yi Yin, Associate Professor, New York University

**Keywords: remote sensing, modeling, decision-making, prescribed burning**

Prescribed fire is a critical management tool for maintaining ecosystem health, reducing wildfire risk, and promoting biodiversity. However, implementing prescribed fires requires precise planning and monitoring to ensure efficacy and safety. Advances in satellite remote sensing and modeling provide novel opportunities to enhance the planning and execution of prescribed burns. This poster seeks to engage practitioners and policymakers in discussing how satellite remote sensing and modeling can be leveraged to support prescribed fire management and decision-making. We will present relevant satellite remote sensing datasets, such as Landsat, MODIS, Sentinel, ECOSTRESS, and SMAP, which offer near-real-time data on vegetation, land surface temperature, soil moisture, fire radiative power, and burned area. Additionally, we will discuss fire emission estimates and atmospheric transport models that simulate fire emissions and smoke dispersion based on fuel and meteorological conditions. Our goal is to engage field experts and policymakers in conversations about assessing the needs that could potentially be addressed using these datasets and tools. This includes decision-making regarding when and where to perform prescribed fires and understanding the trade-offs between prescribed burning and potential wildfire risks. Ultimately, leveraging satellite remote sensing and modeling represents a significant advancement in prescribed fire science and management, offering a data-driven approach to enhancing fire planning, execution, and monitoring.

Yi Yin is an ecologist and atmospheric scientist. Her research explores the interactions between the terrestrial biosphere, the atmosphere and anthropogenic drivers. She seeks to understand the impacts of climate change and its feedback mechanisms, with a focus on extreme events such as heatwaves, droughts, wildfires, and floods. To that end, she has developed novel numerical tools for ecological monitoring and forecasting, leveraging advances in in-situ measurements, remote sensing, data assimilation, atmospheric inversions, and land surface modeling. At the heart of her work is a commitment to providing actionable insights for equitable climate mitigation and adaptation efforts.

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## 6 Resistance of American Chestnut Bark to Extreme Heat

Maya Niesz Kutsch, Research Assistant, Applied Forest and Fire Ecology Lab at SUNY ESF

**Keywords:** American chestnut, bark, heat-tolerance

The American chestnut, *Castanea dentata*, once dominated the forests of the eastern United States. However, at the turn of the 20th century, an invasive fungus, *Cryphonectria parasitica*, was introduced which causes a deadly blight in the American chestnut. It wiped out the American chestnut in a matter of decades. Due to its extermination, the chestnut's relationship to fire could not be understood. Now that restoration of this species is on the horizon, understanding this relationship is more important than ever. This research project seeks to quantify the heat-insulating qualities of American chestnut bark in young trees. This will be done by recording the length of time it takes for a lethal temperature to reach from the outside of the bark to the inside of the tree. This will inform the wider relationship between the American chestnut and fire.



Maya is a Masters student entering her second year at SUNY ESF. She is working within the American Chestnut Research and Restoration Project and the Applied Forest and Fire Ecology Lab, researching the fire-adapted traits of the American Chestnut. She received her Bachelors degree in Botany with Honors from Kent State University in 2023.

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Andrew Newhouse, co-advisor, Director of the American Chestnut Research and Restoration Project  
Andrew Vander Yacht, Professor and leader of the Applied Forest and Fire Ecology Lab.

## 7 Fire history of the Green Hills Preserve, North Conway, New Hampshire

Aiden Gifford, Research Technician, University of Colorado Boulder

**Keywords:** Tree rings, fire scars, historical fire, wildland fire, blueberries, red pine

The role of fire as a natural and human caused disturbance in Northern New England (ME, NH, VT) has undergone increased scrutiny by resource managers and the public. In response, research into natural communities that exhibit fire adaptations has also increased. This research is crucial to provide information needed to recognize the dynamics that shaped these systems, the threats these systems face when fire is removed, and the tools needed to live safely alongside fire-prone and fire-adapted landscapes. We worked as a team of forest and fire managers and researchers to develop a history of wildland fire across a forested mountain preserve in north-central New Hampshire owned and managed by The Nature Conservancy. Focusing on extant and unlogged stands of red pine (*Pinus resinosa*), we sampled fire-scarred trees, snags, and logs in four plots dispersed across four different mountains. Living trees ranged in age from 100–270 years, with some remnant logs dating back 300 or more years. Sampled trees had 3–8 fire scars, which we used to assemble fire history chronologies for the last 200 years in these stands. Many fire events were synchronous across the mountain range, underscoring the potential for widespread fires historically and at present. Although given over 100 years since the last widespread and synchronous fire (in 1909), we believe major transformations of dominant vegetation could have altered the fuel dynamics of the Green Hills Preserve.

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Michael Crawford, Northern New Hampshire Land Manager and Burn Boss, The Nature Conservancy of New Hampshire  
Jeff Lougee, Director of Land Management, The Nature Conservancy of New Hampshire

This project is separate and distinct from a previous submission by Aiden. Both are highly valuable and demonstrate a continued effort to understand historical fire in the northeast.



## 8 Developing a Tree-Ring Fire History for the Albany Pine Bush Preserve, Albany, New York

Aiden Gifford, Temporary Paleoclimatology Researcher, CIRES

**Keywords:** Dendrochronology, Fire History

The Albany Pine Bush Preserve in Albany, New York, is an exemplar of ecosystem restoration for the benefit of endangered species, like *Plebejus melissa samuelis* (Karner Blue Butterfly). A key management tool for the 3,407-acre preserve is prescribed fire. Fire management has been largely experimental, utilizing observations of the responses of key species such as *Pinus rigida* (Pitch Pine), *Quercus ilicifolia* (Bear Oak) and *Quercus prinoides* (Chinkapin Oak) in the Pitch Pine-Scrub Oak Barrens because of the lack of reference sites, Traditional Indigenous Knowledge, and historical fire data. Recent mechanical treatments in one area of the Preserve revealed several fire-scarred pitch pines, in which the marks of multiple fires from heretofore unknown years were preserved in the growth rings of Pitch Pine trees. We were provided sections of these stumps to dendrochronologically analyze, initiating the construction of a tree-ring fire history for the Preserve that will hopefully reveal many aspects of its historical fire regime.

**Additional Authors:** Christopher H Guiterman, University of Colorado Boulder and NOAA's NCEI, Research Scientist

## 9 Haudenosaunee Fire Ecology: Past, Present & Future

Jade Haumann, Graduate Student in the Applied Forestry & Fire Ecology Lab, SUNY ESF

**Keywords:** Haudenosaunee, Cultural Fire, Indigenous Fire

Just as there are hundreds of Indigenous communities on Turtle Island, each with their own distinct culture, there are just as many distinct relationships to fire. While it is widely understood that Indigenous Peoples have a long history of fire practices, much of this understanding is broad and a generalization that typically doesn't recognize the individuality of each Indigenous culture's relationship to fire. This work collaborates with the Northeastern Indigenous community, the Haudenosaunee Confederacy, to articulate Haudenosaunee's life with fire throughout time while considering future land decisions in the face of climate change. Northeastern Indigenous fire history is considerably less publicized compared to Western Indigenous cultures. While this work is in its early stages, it is hoped that the findings will forever establish Haudenosaunee history and perspectives in northeastern fire ecology conversations. The research approach combines archival research, modeled historical data from LandFire, and traditional ecological knowledge shared by visiting community members. The current goal is to gather more archival resources from the northeast. Anyone with related resources or interested in talking about Haudenosaunee fire ecology is encouraged to reach out to Jade Haumann at [jhaumann@esf.edu](mailto:jhaumann@esf.edu).



Jade Haumann is a member of the Seneca wolf clan of the Haudenosaunee Confederacy living in Onondaga. She is working on her master's thesis, *Haudenosaunee Fire Ecology: Past, Present, and Future*, at SUNY ESF. Jade carries her passion for her culture and community into her work, following Indigenous research methodologies to collaborate with Haudenosaunee communities to articulate fire's role throughout the confederacy's history.



## 10 Effects of Southern Pine Beetle on Coarse Woody Debris in the Long Island Pine Barrens

Luke Myers, Student, SUNY ESF

**Keywords:** Downed Woody Debris, Southern Pine Beetle, Pitch Pine, Fuels Loading

Brookhaven National Laboratory (a U.S DOE facility located on Long Island, NY) is situated amid 5,265-acres of a globally rare ecosystem, the Northern Atlantic Coastal Plain Pitch Pine (*Pinus rigida* Mill.) Barrens. The pine barrens ecosystem is predicated upon the regular fire. Frequent fire within pine barrens maintains an open canopy, savannah like stands with dominant pitch pine and sapling scrub oaks, and understory containing various flowering plants. As regular disturbance is necessary for the maintenance of such stands, frequent burning is necessary for the continuation of the Pine Barrens ecosystem. As a result of extensive fire suppression during the 20th century, Pine Barrens community composition has changed from being predominantly characterized by xeric species to those that are more tolerant of mesic conditions. This change in fire regime, along with globally warming causing warmer winters, allowed for the invasion of southern pine beetle (SPB; *Dendroctonus frontalis*), which creates tunnels within the cambium of pitch pines, cutting off nutrient flow and kills the tree within months. Therefore, adding more downed woody debris, thus changes the fuel dynamics within the barrens. Extra deadwood within a fire dependent ecosystem may affect fire behavior, the execution of prescribed burns, and wildfire suppression tactics. An analysis of the downed woody debris (DWD) within an area in relation to time will help determine the effects of SPB on the fuel dynamics of the pine barrens. The analysis of downed woody debris was done using Browns's transects to determine if time since infestation of SPB increases DWD. It was found that there was an increased amount of DWD as time since attack of SPB increased. It was also concluded that the average DWD in control plots was less than that of the average of those plots with SPB infestation.



Luke Myers is a Junior at SUNY ESF studying Conservation Biology. He took a fire ecology class during sophomore year and has been hooked since. He has been volunteering at burns in the Central Pine Barrens of Long Island, and the Fire Ecology and Management class at SUNY ESF. This summer he also interned with Brookhaven National Laboratory doing research on ticks and their relationship to fire.

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## 11 Fire effects on box turtle spatial ecology using opportunistic capture

Eric Jergensen, Undergraduate Student, Summer Intern, SUNY ESF, Brookhaven National Laboratory

**Keywords:** Fire, Turtle, Opportunistic, Frequent, Infrequent

Existing literature regarding wildfires and prescribed burn treatment in forests and its effects on the eastern box turtle (*Terrapene carolina carolina*) focuses largely on turtle mortality rates without investigating broader ecological impacts. Turtle grazing habits and habitat use are most likely affected by fire, as burns both destroy and facilitate materials crucial to box turtle ecology such as vegetation growth, woody debris, and leaf litter. Fire history and opportunistic turtle capture data was collected by the Environmental Protection Division at Brookhaven National Laboratory over a 20 year period starting in 2004. This data along with any rx and wildfire burns that took place over the 20 year period were used with the ArcGIS® program and RStudio® statistical analysis program to plot and visualize trends. Over the course of data analysis, turtles found in the field during other studies were captured, processed, and entered into a database before being released. More turtles per year per hectare were observed and captured around frequently burned habitats (~0.021 N/yr/ha) than around infrequently burned habitats (~0.009 N/yr/ha). More turtles per year per hectare were observed and captured around habitats that had been burned 11-15 years prior to turtle capture (~0.011 N/yr/ha) than habitats burned more recently (~0.004 N/yr/ha and ~0.005 N/yr/ha). Fire history had no significant effect on turtle health, quantified by average weight (P-value = 0.4549, P-value = 0.2974). Both frequently burned and less recently burned habitats could lack oppressive overstory, allowing greater thermoregulation and grazing opportunities. Turtle health may not correlate with fire history due to nearby refugia and the box-turtles' extensive home ranges. The data used was opportunistic, meaning further standardization could lead to more significant results. Better standardization strategies such as isolating exact capture instance conditions and accounting for human presence probabilities could prove useful for further interpretation of the given data.





Eric Jergensen is a senior at SUNY ESF studying Wildlife Sciences. Since beginning his academic career, he has been focused on pursuing a career in herpetology and has already begun independent research investigating salamander immune defenses. For his summer internship at Brookhaven National labs, Eric began an observational study with his two coworkers, Erin and Joe, to explore the relationship between eastern box turtle ecology and habitat fire history.

Joseph Castellazzo is Junior at SUNY ESF studying Wildlife Science. He is interested in many facets of biology including topics like ecology, genetics, physiology, and evolution. Joe spent his summer doing tick fire ecology research at Brookhaven National Laboratory, as well as research on the relationship between eastern box turtle spatial ecology and fire history.

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## 12 Use of Fire in Drinking Water Supply Watersheds

Virginia Dautreuil, Natural Resources Analyst, MA Department of Conservation and Recreation - Division of Water Supply Protection

**Keywords: watersheds, drinking water, prescribed fire**

The Massachusetts Department of Conservation and Recreation – Division of Water Supply Protection (DWSP) protects and supplies drinking water for over 3 million residents of Massachusetts. Recently DWSP has revived the use of prescribed fire on watershed lands for a variety of objectives, including restoring fire-adapted natural communities, meeting silvicultural needs, and mitigating wildfire risk. Working with the results of published scientific research and case studies, DWSP has begun exploring the use of prescribed fire for improving water quality.



Ginny Dautreuil works for the Natural Resources section of the Massachusetts Department of Recreation and Conservation – Division of Water Supply Protection (DCR – DWSP) where she plans and coordinates prescribed fire in collaboration with DCR Fire Control. Her varied background spans both terrestrial and aquatic systems. Outside of work Ginny enjoys spending time with her family and too many animals.





## Pitch pine health assessment from southern pine beetle across treatments in the Central Pine Barrens

Melanie Costello, Student, SUNY College of Environmental Science and Forestry

**Keywords:** pitch pine (*Pinus rigida*), southern pine beetle (*Dendroctonus frontalis*), prescribed fire, mechanical treatment

Brookhaven National Laboratory (BNL) lies within the fire-adapted and globally rare Central Pine Barrens. Over the past decade, rapid spread of declining and dead pitch pines (*Pinus rigida*), infested with the southern pine beetle (*Dendroctonus frontalis*; SPB), have been noted across Long Island, New York. This project determined the effects of SPB on overstory trees and regeneration across six different disturbance histories: one or two prescribed fires, a wildfire, wildfire and thinning, wildfire thinning and a prescribed fire, and unmanaged controls through reductions in pitch pine canopy cover, mortality and vigor, as well as regeneration counts. Eight stands across the six treatments, each with six plots were randomly selected at least twenty meters apart from one another. The stand's range in size from five to fifty hectares. At each sampling plot center, in a variable radius from a 10 BAF prism, tree diameter, canopy density, pitch pine mortality rates and infestation presence were measured. Regeneration was then tallied within a twenty-five by two meter belt transect from a random bearing at plot center. A total of 362 trees were surveyed, 201 were pitch pine (56%). Of the 201, 50% were dead and an additional 14% were currently infested. Stands that underwent multiple forms of restorative treatment methods, fire and thinning, were found to have the lowest percentages of SPB infestation (20–35%), mortality (0–5%) and highest regeneration counts (175+) of the stands surveyed. This study may help confirm that active forest management through varied restorative treatments (fire and thinning) can mitigate the negative effects of SPB as climate change continues to solidify their habitat expansion in the northeast.



Melanie Costello is a Master of Forestry student at SUNY-ESF and will graduate in May 2025. After switching careers from fashion merchandising to natural resources, Melanie became interested in fire ecology and prescribed fire as a forest health tool in the northeast. Being from Long Island, having the opportunity to work in the Central Pine Barrens was an incredible way to care for the land that raised them. She is excited to learn more this fall in Dr. Vander Yacht's Fire Ecology course at ESF and during this workshop!

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## 14 Manganese Oxidation During Biomass Burning

Shyrill Mae Mariano, Graduate student, University at Albany, State University of New York

**Keywords:** wildland fire, elemental cycling, manganese, ash

Wildfires are pervasive events that affect aboveground nutrient pools and soil biogeochemical processes. The thermochemical transformations of major nutrients, such as nitrogen and phosphorus, have been well-studied, but understanding of equally important micronutrients is still lacking. Manganese (Mn), an essential micronutrient in terrestrial ecosystems, mediates various soil processes, and it is tightly coupled with cycling of other nutrients like carbon and nitrogen. The involvement of Mn in these processes is dependent on its oxidation state. The microbe-mediated oxidation of Mn in the forest floor is kinetically slow, whereas heat-mediated oxidation occurs within relatively shorter time periods, dictating the rates at which different Mn forms participate in soil processes. In this study, the thermochemical transformation of biomass Mn during burning was investigated. The chemistry of Mn (e.g., content, extractability, and average oxidation states – AOS) in ash from laboratory burning and wildland fires (both prescribed burns and wildfires) was characterized through spectroscopic and colorimetric analysis. Total Mn content in the wildland fire ash varied across different ecosystems (300 – 5,400 mg/kg). Manganese existed predominantly as divalent state in unburned biomass (regardless of compartments), while it was rapidly and differentially oxidized after burning. Manganese in biomass was almost completely oxidized to Mn(IV) after laboratory burning at 550 °C for ~6 h, whereas Mn AOS in ash collected from wildland fires varied between 2.6 to 3.3. The relatively low and variable Mn AOS of wildland fire ash are likely caused by: 1) different initial Mn(II) species in fire-affected biomass with different activation energies, 2) variable heating times of wildland fires with likely shorter heating durations than laboratory burns. The oxidized Mn species in laboratory burning ash were also shown to be capable of degrading catechol, suggesting their redox reactivity and their potential role in post-fire environments.

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## Plant-Soil-Fire Feedbacks: Understudied Belowground Drivers of Forest Mesophication in the Eastern United States

Eva Legge, Graduate Student, SUNY College of Environmental Science and Forestry

**Keywords: mesophication, plant-soil feedback**

In forests throughout the eastern United States, regeneration of pyrophytic trees like oaks (*Quercus* spp.) and pines (*Pinus* spp.) is currently limited by “mesophication” – a positive feedback where darker, wetter, and cooler microsites promoted by fire’s prolonged absence favor shade-tolerant, drought-intolerant, and fire-sensitive trees that further promote such conditions. Given regional forecasted increases in drought and fire, management reversing mesophication may better ensure forest resilience by promoting drought-tolerant and pyrophytic tree regeneration that will smooth impending compositional transitions. However, such action requires a more complete mechanistic understanding of mesophication. Research to date has focused almost exclusively on aboveground drivers, including shifts in microclimates and fuel-bed flammability, and largely ignored potentially important belowground drivers. Our conceptual review and preliminary data suggest that plant-soil-fire feedback plays a role in mesophication, and that the process cannot be fully understood – and thus reversed – without considering belowground drivers. Such insight can inform management strategies seeking to promote drought tolerant and pyrophytic tree species ahead of future climates under which they are likely to be favored. Finally, we summarize research that is being undertaken to disentangle biotic versus abiotic belowground drivers of mesophication.



Eva Legge is an incoming PhD student in the department of Biology at Syracuse University. Her research aims to bridge the gap between basic mycorrhizal research and applied forest management, and she is lucky to work dually in Dr. Christopher Fernandez’ Mycorrhizal Ecology Lab at SU and Dr. Andrew Vander Yacht’s Applied Forest and Fire Ecology Lab at (AFFEL) at SUNY College of Environmental Science and Forestry. Eva’s graduate research examines how cut severity and fire frequency affects ectomycorrhizal symbioses. Throughout her career, she aims to work with landowners, forest managers, and local knowledge holders to help manage forests to be more resilient to global change. She’s also an avid science communicator, a practice which was inspired by her science writer grandfather. She believes good communication is necessary for any scientific practice that strives to be wide-reaching and inclusive.

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## The Sandplain Grassland Network, a partnership to enhance biodiversity conservation in sandplain grasslands

Karen Lombard, Director of Stewardship & Restoration, The Nature Conservancy

**Keywords: grasslands, partnerships, restoration, management**

Coastal sandplain grasslands are threatened, disturbance-dependent plant biodiversity hotspots host to a number of state- and federally-listed species. A large proportion of regional plant biodiversity occurs in hotspots of species richness that cover small areas created and maintained by disturbance. Sustaining plant diversity in these areas requires region- and habitat-specific management of disturbance and, increasingly, habitat expansion or restoration to offset species losses. The Sandplain Grassland Network (SGN) was formed in 2016 in an effort to bring together sandplain grassland managers, land owners, and scientists to share knowledge, collaborate on challenges, and identify research gaps for future work. Through this network, the SGN has created open access management guidelines with examples from across the habitat range. This collaboration has led to a recent paper on the state of sandplain grasslands in the northeast bringing together published and unpublished sandplain grassland literature as well as interviews with grassland managers about management challenges and successes. The literature review and managers' experiences together led to multiple recommendations for grassland maintenance and restoration. At the regional scale, monitoring management effects, identifying parcels for potential grassland expansion, and increasing supplies of ecotype-specific native plant seeds are urgently needed. Climate change exacerbates these issues and the demand for research to inform the development of adaptive management strategies, such as assisted migration and accelerated colonization. Workshops and conferences held by the SG Network continue to bring together experienced practitioners as well as those new to working in these habitats. The SGN continues to learn from groups like the Southeastern Grasslands Initiative, an organization dedicated to rebuilding grasslands in the southern US. Creating and maintaining networks of managers and scientists, to share information and experiences, has the potential to improve land management that enhances rare species conservation within these critical biodiversity hotspots.



Karen Lombard is the Director of Stewardship and Restoration for the MA Chapter of The Nature Conservancy (TNC) and has been working in stewardship and restoration with TNC since 1997. She leads a TNC stewardship team that manages 8000 acres of TNC fee land and monitors 2,500 acres of conservation easement land in Massachusetts.

Karen has 30 years of experience in restoring and managing habitats on TNC and partner lands including floodplain forest restoration, application of prescribed fire, and invasive plant control.

She co-leads the Sandplain Grassland Network, a regional network focused on improving management in coastal sandplain grassland ecosystems. Karen recently led a team of TNC managers in the creation of a guidance document on managing for climate resilience on TNC lands. She has an M.S. in Natural Resource Management from the University of Michigan and a B.A. from Williams College.

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**Kelly Omand, Nantucket Conservation Foundation**

**Polly Weigand, Forest Stewards Guild**

**Robert Wernerehl, Massachusetts Natural Heritage and Endangered Species Program, Mass Wildlife**

**Michael Whittemore, NH Audubon Society**

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## The NJ Fire Camp Experience

Sarah Malinowski, Forester trainee 1, NYS DEC

**Keywords: fire, ecology, workshop**



Welcome to Fire Camp! Those were the first words I heard when I arrived at YMCA of the Pines in Medford NJ this past May. For the past two years, the North Atlantic Fire Science Exchange (NAFSE) has partnered with the New Jersey Forest Fire service (NJFFS) to offer a rich, unique and affordable prescribed fire experience for college students and young professionals just starting to involve themselves with fire. From the moment you arrive at fire camp you will be brushing elbows with experienced professionals and professors ready and excited to share their fire knowledge with you. This 4 day field based workshop explores various prescribed fire applications for hazardous fuel reduction, habitat management, silviculture, and/or other ecological objectives through various field trips across the New Jersey pinelands. Check out my poster to find out more about what goes down at Fire Camp and hear my testimonial about the experience!

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## Introducing and Applying the National Fire Scar Survey

Joseph Marschall, Senior Research Associate, Center for Tree-Ring Science, University of Missouri

**Keywords: fire-scars, tree-rings, co-production**

Fire history researchers at the Center for Tree-Ring Science (University of Missouri) and land management agency partners at the Mark Twain and Talladega National Forests have developed a unique co-production model utilizing a new tool to document and collect very old, rapidly disappearing, fire-scarred pine remnant trees (i.e., stumps, snags) across state, federal, and private lands throughout the eastern US. These remnants, and the tree-ring and fire-scar chronologies they hold, provide site specific, irreplaceable information about historical fire regimes (e.g., fire frequency, extent, and seasonality) and the historical distribution of fire-adapted and -dependent vegetation communities. As changes in climate and land-use (e.g., suburban development pressure and increased prescribed fire use) occur, this critical and already rare resource is at increased risk to being lost forever. The National Fire Survey is a smart-device application that allows non-experts who encounter fire-scarred remnants during outdoor work or recreation activities, to upload location and fire-scar/tree-ring information, and photos, to a centralized database that can then be assessed and prioritized for sample collection. In this manner, critical fire history information is being rescued for current, and future, research and management applications.



Joe Marschall is a Senior Research Associate at the Center for Tree-Ring Science at the University of Missouri, and also coordinates activities for the Oak Woodlands & Forests Fire Consortium.

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## Spatial analysis of forest owner perspectives on prescribed fire in Mid-Atlantic USA

Jesse Kreye, PhD, Associate Research Professor, Penn State University

**Keywords: Prescribed Fire Demand, Private Landowners, Social Science**

Fire is an important ecological process that shapes many ecosystems worldwide, but changes in climate and land use, and long-term fire suppression have altered historic fire regimes, often leading to severe wildfires and loss of biodiversity in many regions. In the Mid-Atlantic US, private lands make up the majority, but burning is rare, making it difficult to restore fire-dependent ecosystems. To inform policies that promote prescribed burning on private lands, we surveyed private forest owners across the region to examine their interest in burning and assess spatial variation in their opinions. Respondents had limited knowledge and experience with burning, but most (64%) expressed interest in burning and were willingness-to-pay (WTP) an average \$6 to \$14/acre. Respondents had low-risk perceptions and high trust in agency and burning professionals. Landowner opinions were spatially clustered and varied across state boundary and ecoregions. Landowners from NY had low knowledge of prescribed fire, high-risk perception, low trust in burners, and were less interested in burning compared to VA landowners. PA landowners were unique because they were willing to pay a much higher price for burning compared to VA where burning is more common, indicating a significant opportunity for the use of prescribed fire on private lands in that region. Most forest landowners in piedmont and southeastern coastal plain ecoregions had prior experience with prescribed fire and were interested in burning. Education, technical support, financial assistance, and access to professionals will be important for helping landowners use prescribed fire to achieve important management objectives.



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## Fire-Effects on Hydrology in Forest Soils of the Northeastern United States

Maria Loughran, Graduate Student, SUNY ESF

**Keywords: soil, hydrology, fire effects, climate change**

Climate change is altering precipitation regimes across the northeastern United States. Unprecedented rainfall events can and have overwhelmed local soil infiltration capacity, and subsequently entire watersheds, to induce large-scale flooding in down-stream communities. In contrast, the intensity and frequency of drought is also increasing across the northeast during which high rates of transpiration, driven by the region's robust forest cover, depletes water reserves and increases wildland fire potential. How hydrologic processes in soils vary across forest types, landscape positions, and burned versus unburned areas is well studied in the western states, but poorly understood in northeastern forests. My research will explore how each of these factors influence forest soil capacity to accept high rainfall events. This poster outlines the reasoning and experimental design for this project, which will involve laboratory experiments that monitor the hydrologic behavior of soil cores collected from ridges, mid-slopes, and toe-slopes in intermediate forest types in the Catskills. Hydrologic tracing tests will be performed on soil cores, then burned in a lab across three fuel treatments: pyrophobic-dominant litter (unmanaged forest conditions), pyrophytic-dominant litter (resilient management) and current fuel compositions. The research will determine how soil hydrologic function varies across landscape positions in a Catskill forest, and how fire may alters this function under various fuel conditions, informing how management can be used to optimize soil hydrology and minimize ecological damage from flooding and wildland fires.



Maria Loughran is entering her second year as a master's student at the State University of New York College of Environmental Science and Forestry. Her studies focus on the effects of fire on soil hydrology under various fuel conditions and slope positions in the Castkill Mountains, as well the survival and growth of American chestnuts (*Castanea dentata*) seedlings in areas treated with prescribed fire. Working as an outdoor educator and all around biological science technician for the past ten years, Maria became a fire lighter in 2019 burning longleaf pine habitat in southern Georgia, and has not looked back. Most recently working as a fire effects monitor with the National Park Service, she is using her various skills and experiences from the field to further the study of fire ecology in the northeastern United States.

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# Sponsors and Exhibitors

## Major Sponsors



### Albany Pine Bush Preserve

We invite you to visit our information table to learn about the Albany Pine Bush Preserve, a unique and valuable ecosystem right here in Albany, New York. As one of the largest inland pitch pine-scrub oak barrens in the world, the Albany Pine Bush is a haven for biodiversity, including rare and endangered species like the Karner blue butterfly. Our table provides an opportunity to explore this extraordinary landscape and understand the critical conservation efforts that sustain it. Discover how prescribed fire plays a key role in maintaining the preserve's ecological health and resilience, but also delve into the broader aspects of this natural gem. Engage with our dedicated team to learn about the diverse flora and fauna, the history of the preserve, and the ongoing research and community programs that support its preservation. Find out about the volunteer opportunities, educational programs, and upcoming events that help people experience the beauty of the Albany Pine Bush firsthand. Whether you're a fire management professional, a conservation enthusiast, or simply curious about this remarkable ecosystem, our table offers a wealth of information and inspiration. Stop by to see how we are preserving one of New York's most treasured natural areas



### Northeast Regional Strategy Committee

The Northeast Regional Strategy Committee (NE RSC) provides executive leadership, coordination and guidance for implementation of the Northeast Regional Action Plan while providing a forum for members to recommend and guide joint strategic direction on fire and land management activities. The NE RSC continues to collaboratively support, recognize and assist the National Cohesive Wildland Fire Management Strategy goals and implementation efforts.

## Bronze Sponsors



### Consortium of Appalachian Fire Managers and Scientists (CAFMS)

The Consortium of Appalachian Fire Managers and Scientists works to increase and accelerate the flow of fire science and improve land management strategies by connecting fire managers and scientists throughout the Appalachian region.



### Tallgrass Prairie/Oak Savanna Fire Science Consortium

We are fire practitioners, scientists, outreach and extension specialists, volunteers, educators and enthusiasts from the Tallgrass Prairie and Oak Savanna Region. We host webinars, discussions, field trips and more to foster knowledge sharing within our regional fire community. We use existing fire-managed areas to explore both local and regional issues related to fire management and science. And we organize events for discussing research, experience, and information about fire in tallgrass prairie and oak savanna ecosystems.



### Timmons Group Inc.

Many agencies and organizations struggle with managing data and workflows, overcoming inefficiencies, and communicating the intrinsic value of their essential work. With decreased funding in the system and staffing shortages, these challenges are exacerbated. Timmons Group is committed to building long-lasting relationships with our clients to solve their complex wildfire issues. We help agencies and organizations streamline their efforts, implement best practices, and leverage data to its fullest potential.



### Camelot Tools

Camelot Tools is a veteran-owned and woman-owned business that provides modern, professional grade, USA-made, versatile hand tools that work more efficiently to get manual work done better and safer.

Our vision is our mission: to use deliberate design and modern technology to make a real difference in the lives of hardworking folks getting out there in extended efforts day in and day out—from our wildland firefighters to our trail builders, conservation workers, and more. Our hand tools are sold through multiple distributors nationwide and through public service state contracts.



### Full Scope Management, Inc.

Full Scope is an Association Management Company special that specializes in managing and providing administrative services to nonprofit trade associations and professional associations. We help associations and non-profits operate more efficiently, effectively, and sustainably, enabling them to focus on their mission and make a greater impact in their communities



### International Association of Wildland Fire

The IAWF is a professional membership association dedicated to uniting the global wildland fire community. We are uniquely positioned as an independent organization whose membership includes experts in all aspects of Wildland fire management. IAWF independence and breadth of global membership expertise allows it to offer a neutral forum for the consideration of important, at times controversial, Wildland fire issues.



### Michigan Prescribed Fire Council

The Michigan Prescribed Fire Council was formed to bring together practitioners, guides, and students of prescribed fire to provide a network through which information could be disseminated, partnerships could form and the use of prescribed fire would be protected. The mission of the Michigan Prescribed Fire Council is to protect, conserve and expand the safe use of prescribed fire on the Michigan landscape. Find resources and more information at [www.FireCouncil.org](http://www.FireCouncil.org)



### Star Tree Wildfire Protection

Star Tree Wildfire Protection is a respected, family-owned business dedicated to delivering top-notch services for wildland fuel mitigation in Rhode Island, New York, New Jersey, and Massachusetts. Our range of services covers forestry mowing and prescribed burning, ensuring comprehensive solutions for our clients. We are a Technical Service Provider for the Natural Conservation Resource Service (USDA) in prescribed fire, fire breaks, and fuel break construction. Most recently we are working to provide Air Curtain Burner Services to customers that have needs to environmentally and cost effectively remove wood waste and forest fuels. Please contact us if you are interested in our services, <https://www.startreewildfire.com/>



### Wisconsin Prescribed Fire Council

The Wisconsin Prescribed Fire Council formed in 2003 to improve the safety, effectiveness, and public perception of prescribed fire statewide. With a dedicated team of staff and volunteers representing government agencies, nonprofit organizations, for-profit businesses, and private landowners, the WPFC takes a comprehensive approach to getting more fire on the ground through the work of its five committees: Training, Implementation and Standards, Education and Outreach, Liability, and External Relations.

The scope of WPFC programming is more ambitious now than ever before. This year has seen the development of private landowner training and Wisconsin Prescribed Burn Boss certification, which act as alternatives to NWCG training that are tailored to the ecosystems of Wisconsin and the practitioners that are best positioned to sustain their historical fire regimes. Other WPFC accomplishments include developing educational materials, hosting a yearly prescribed fire conference, and acting as a hub of knowledge and resources for the statewide prescribed fire community.

Membership is affordable and available to all, and any type of engagement is welcomed. Come chat with us at our display table, and learn more about the WPFC at [prescribedfire.org](http://prescribedfire.org).



## Robotics 88

The Robotics 88 decco is a comprehensive UAS (Unmanned Aerial System) solution specifically designed to optimize prescribed fire management. Our user-friendly drone technology eliminates the need for a dedicated pilot, saving time and resources.

**Enhanced Planning and Execution:** Prior to the burn, the Robotics 88 decco conducts a high-resolution 3D subcanopy mapping flight. This map informs fire behavior predictions and establishes a baseline for post-burn comparisons.

**Real-Time Situational Awareness:** During the burn, the decco autonomously patrols the fire line, continuously calculating the rate of spread. This real-time monitoring allows for early detection of spot fires, minimizing the risk of escapes.

**Comprehensive Post-Burn Analysis:** After the burn, the decco conducts a final subcanopy mapping flight. This data facilitates the creation of post-burn reports, including fuel volume reduction and scorch height maps.

Benefits of Robotics 88's UAS:

- **Reduced Liability Exposure:** Live monitoring of fire behavior and weather conditions minimizes the risk of escaped burns.
- **Enhanced Reporting:** Spatial fire metrics enable effective post-burn assessments.
- **Forest Health Report Card:** Repeated surveys powered by data analysis become your report card on how prescribed fires are improving forest health.

The Robotics 88 decco empowers land managers to conduct prescribed burns with greater efficiency without compromising safety.



## Forest Stewards Guild

The Forest Stewards Guild practices and promotes responsible forestry as a means of sustaining the integrity of forest ecosystems and the human communities dependent upon them. The Guild engages in education, training, policy analysis, research, and advocacy to foster excellence in stewardship, support practicing foresters and allied professionals, and engage a broader community in the challenges of forest conservation and management.



## The Oak Woodlands & Forests Fire Consortium (OWFFC)

The Oak Woodlands & Forests Fire Consortium (OWFFC) is one of fifteen fire science exchanges funded by the Joint Fire Science Program (JFSP Fire Science Exchange Network), serving much of the Central Hardwoods Forest Region in the eastern U.S. The Fire Science Exchange Network's efforts are guided by principles emphasizing inclusiveness, neutrality, and innovation. The OWFFC's mission is to provide fire science information to resource managers, landowners, and the public about the use, application, and effects of fire. The fire science needs of oak ecosystems in the eastern U.S. are primarily related to management and restoration as opposed to protection, setting a unique stage for the fire topics addressed and activities offered by the OWFFC.



## North Atlantic Fire Science Exchange

North Atlantic Fire Science Exchange

The North Atlantic Fire Science Exchange (NAFSE) is a valuable, credible, and relevant hub for science information delivery and collaboration between managers and researchers to create a resilient North Atlantic landscape.

We bring people together. We serve as an anchor for the fire science community in the northeast United States by:

- connecting scientists and managers
- helping generate innovative solutions for fire-related challenges
- promoting and facilitating fire science research and partnerships
- increasing evidence-based knowledge exchange



