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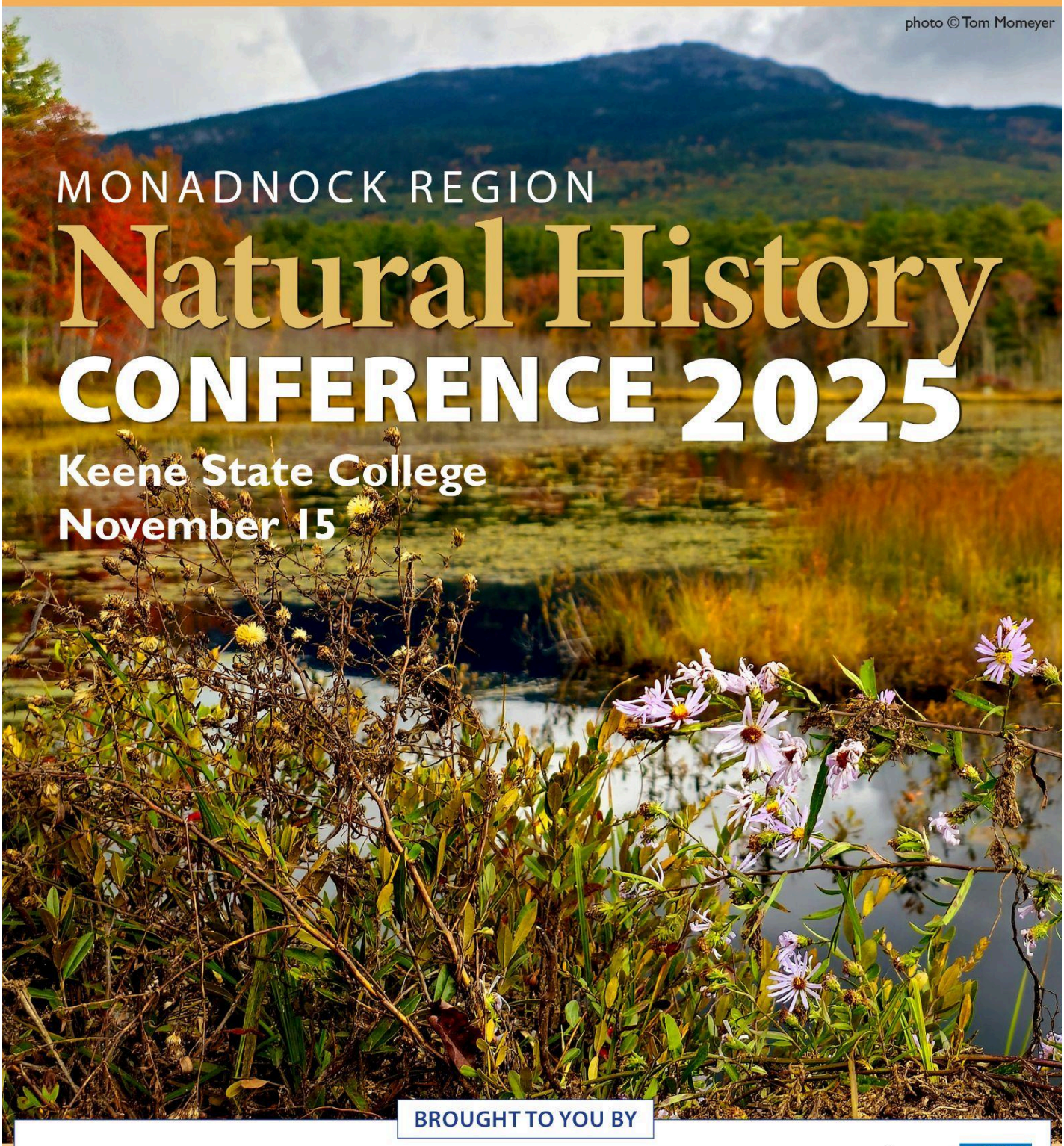

MONADNOCK REGION

Natural History CONFERENCE 2025

Keene State College
November 15

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Harris Center for Conservation Education

Keene State College

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Historical Society of Cheshire County

Society for the Protection of New Hampshire Forests

Presentation Abstracts

Abstracts are listed alphabetically by the lead author's last name.
Presenters are denoted with an asterisk (*).

Climate Change in Keene, New Hampshire: An Analysis of Weather Data from 1900 Through 2025

Hayden Anderson, Kodai Goodrow*, Sarah Mundorff*, Christian Clerge, Eden Donovan, Darien Espinal, Mary Keller, and Alexander White (Dublin School)*

Abstract: The Dublin School's Creative Data Representation class wanted to bring attention to the specific climate changes that are occurring in the Monadnock Region. We chose Keene, NH as a representative location because it had the longest record of temperature data in the area. We gathered temperature data going back to 1900 and found that, in Keene, low temperatures were increasing faster than high temperatures. We wanted to represent these data in an eye-catching and clear way, so we decided to make a weaving to hang in our science building. The weaving uses color to show the average low temperature by month in Keene for each decade, beginning in 1900, as well as potential temperatures in the year 2100. The class was also interested in depicting the uneven distribution of temperature changes across the globe. These data were pixelated and made into a quilt to show the regions on Earth that have changed the most from 1951 to 2023.

Presenter Bios: Sarah Mundorff and Hayden Anderson are high school seniors at the Dublin School in Dublin, NH. Kodai Goodrow graduated from the Dublin School in 2025, and is currently an undergraduate student at the University of Massachusetts Amherst.

Session: Poster

Raphael Pumpelly as Indiana Jones: Geology, Monadnock, and the Hidden History Beneath our Feet

Matthew Myer Boulton (SALT Project)*

Abstract: Raphael Pumpelly had an illustrious, sometimes swashbuckling career, including world travels, geological and archeological adventures, conservationist passions, controversial opinions — and a house in Dublin, NH, not far from the trail to Mount Monadnock's summit that now bears his name. In this overview, we'll explore his extraordinary scientific, economic, and cultural legacies, for good and for ill, and consider his story as a case study in how we might remember our forebears with equal parts understanding, appreciation, and critique. After all, if we want to understand the natural history of "the Granite State," or indeed of "the Monadnock Region," geology is an indispensable place to start — and Raphael Pumpelly, one of the region's preeminent geologists, is an indispensable guide.

Presenter Bio: Matthew Myer Boulton is a writer and filmmaker in Keene, NH, and a creative director at SALT Project, an Emmy Award-winning film production company. Educated at Northwestern University, Harvard University, and the University of Chicago, he has served on the faculty at Harvard Divinity School, as well as at seminaries in New England and the Midwest. He is currently at work on a book about the Monadnock Region as a microcosm through which we can understand the country, the continent, and the cosmos.

Session: Humans & Nature

A Fledgling American Kestrel Conservation Project for the Monadnock Region

Phil Brown (Harris Center for Conservation Education)*

Abstract: In 2022, the Harris Center launched a new bird conservation project aimed at bolstering the American Kestrel (*Falco sparverius*) population in the Monadnock Region. Building off the successes of collaborators in New Hampshire and beyond, this nest box project fills a geographic void in an area better known for its forestland than for the open spaces kestrels need. With a "build it and they will come" approach, the Harris Center partnered with Antioch University graduate students to conduct habitat modeling and monitoring, engaged volunteers in nest box construction, and approached landowners about hosting nest boxes. Over the last four years, we have built and installed 49 nest boxes in privately owned fields in 20 Monadnock Region towns. Kestrel occupancy of those boxes is still limited, but success is measured by each of the 62 nestlings that have been banded — and by how the project has touched a broader community of current and future stewards.

Presenter Bio: Phil Brown is the Harris Center's first bird conservation director. With a professional and academic background in natural resources and conservation, his interests lie at the intersection of conservation, stewardship, and education. He manages bird conservation projects focused on raptors, and is a frequent natural history and birding guide, as well as a field trip leader. He lives with his family in Hancock, NH, where he can be found in a variety of outdoor habitats in all seasons.

Session: Breeding Birds

Relative Abundance and Habitat Relationships of Mesocarnivores in the Monadnock Region

Andrew Butler (University of New Hampshire), Mairi Poisson (University of New Hampshire), Daniel Bergeron (NH Fish and Game), and Remington Moll (University of New Hampshire)*

Abstract: Accurate information on wildlife abundance and distribution is critical for management and conservation, yet collecting these data for mesocarnivores is challenging due to their secretive behavior and low densities. Our objectives were to quantify relative abundance and habitat relationships of eight mesocarnivore species, and to create predictive distribution maps. We deployed 37 camera traps in southwestern New Hampshire during the summers of 2022 to 2024. From May to September, coyotes were most frequently detected (n=383), followed by raccoon (n=136) and bobcat (n=133), while gray fox (n=28) and opossum (n=24) were less common; red fox (n=10), fisher (n=7), and skunk (n=5) were rarely detected. Relative abundance was generally higher in open, disturbed, or human-modified areas. Forest height positively influenced several species, while elevation negatively influenced most. Coyote and raccoon had the highest abundance (0.015 and 0.012 detections per day, respectively), whereas fisher, opossum, and skunk were relatively rare (mean ≤ 0.001). Bobcat, gray fox, and red fox were intermediate (0.002–0.006). The predictive maps we generated provide land managers and conservation organizations with spatially explicit information to guide habitat management and conservation planning, supporting long-term mesocarnivore conservation in the region.

Presenter Bio: Andrew Butler is a PhD candidate at the University of New Hampshire, where his dissertation focuses on the ecology and management of mesocarnivores in New Hampshire and beyond.

Session: Mammal Monitoring

The Role of Floodplain Complexity in Wood Turtle Habitat Use

Laura Deming (Moosewood Ecological)*

Abstract: Wood turtles (*Glyptemys insculpta*) occupy low-gradient streams throughout the northeastern United States and southeastern Canada. Studies across their range have quantified various aspects of their habitat, but none have examined stream or floodplain geomorphic complexity. The goal of this study was to explore the role of stream channel and floodplain geomorphology in wood turtle habitat use. Using bare-earth lidar, I calculated several metrics of stream and floodplain geomorphic complexity to compare the geomorphic condition of five floodplains along a New Hampshire wood turtle stream; in one, I also tested the effect of each of these variables and three components of vegetation structure on wood turtle habitat use. This research was done in the White Mountains, but applies to streams across the wood turtle's range, including the Monadnock Region. Although vegetation structure showed stronger predictive value than elevation metrics, the best overall model for predicting wood turtle habitat use included both vegetation structure and geomorphic complexity. These metrics provide a means of evaluating the floodplain geomorphic condition of wood turtle sites across a broad geographic range and serve as a starting point for creating a quantitative framework for evaluating floodplain conditions at multiple scales.

Presenter Bio: Laura Deming is a wildlife biologist at Moosewood Ecological, where she has surveyed for birds, turtles, and vernal pools, conducted water quality and invertebrate sampling, and evaluated municipal regulatory and planning documents to assist with community conservation efforts. Her doctoral research explored the role of floodplain geomorphic complexity on wood turtle habitat use.

Session: Poster

Juggernaut and Norway Ponds Since 1700 AD

Lisa Doner (Plymouth State University) and Tom Shevenell (Town of Hancock)*

Abstract: Paleolimnological studies of Juggernaut and Norway Ponds in Hancock, NH, reveal markedly different trends over the last 300 years. Using sediment coring, radioisotope dating, and organic and mineral chemistry analyses, we examined the impact of changes in land use and climate events, like the Hurricane of 1938 and modern warming, on the overall condition of these ponds. Both sites showed changes corresponding to the introduction of motorized machines in the early 1900s, with increased soil erosion apparent in both lakes. Interestingly, the lakes subsequently showed opposite trends in terms of the source of organic material found in lake sediments. After 1910, Juggernaut Pond appeared to gain most of its organic sediment from upland plants (trees, shrubs, and soils), typical of a low-productivity water body, while Norway Pond's organic sediments were mostly (and increasingly) from lake algae, indicative of eutrophication. Research on these sites is ongoing, with biological data such as diatoms, pigments, and cyanobacteria improving our understanding of lake changes over time in these two different settings.

Presenter Bio: Dr. Lisa Doner, an environmental science professor at Plymouth State University, specializes in research on lakes, with special focus on changes over time. Through an interdisciplinary research approach, she creates lake histories encompassing changes caused by European settlement, major storms, wildfires, and modern machinery. Recently, Dr. Doner has collaborated with Tom Shevenell and Amanda McQuaid to examine how these lake changes relate to increased frequency of harmful algal blooms.

Session: Aquatic Ecology

Site Fidelity of Breeding Birds at Blue Feather Farm

Austin Gelinas (Blue Feather Farm)*

Abstract: In 2024, Dan Wenny and Wendy Gibbons established a new songbird banding station at Blue Feather Farm in Antrim, NH. Recapture data from individual birds banded previously — at this banding station or others — can help us better understand survival rates, population trends, and even migratory patterns of certain species. Utilizing 150 recapture records from the 2024 and 2025 banding seasons at Blue Feather Farm, I investigated within-year and between-year site fidelity (defined as the tendency for an animal to return to and reuse a location), generating a list of species that can later be used to assess the effects of habitat change on breeding birds. These baseline data may help us begin to understand which species are consistently returning to the farm, and inform future management strategies for the land around the banding station.

Presenter Bio: Austin Gelinas is a forestry assistant in the Water Supply Protection Division of the Massachusetts Department of Conservation and Recreation. He also volunteers for various conservation research projects with the Harris Center for Conservation Education, and at the Blue Feather Farm banding station.

Session: Poster

Are Old Farm Fields Bittersweet for Birds?

Wendy Gibbons and Daniel Wenny* (Blue Feather Farm)*

Abstract: Our presentation will describe the new songbird banding station we have started at Blue Feather Farm in Antrim, NH. We will share how we hope to nurture stronger connections among people in the Monadnock Region, resident wildlife species, and the local products we grow on our small farm. We will briefly describe how we recruit and train bird banding volunteers, and produce blueberries, Christmas trees, and honey to sell. The major emphasis will be on what we have learned from our bird banding data so far, including two seasons of over 800 individual bird captures comprising more than 60 different species, from Scarlet Tanagers (*Piranga olivacea*) to Black-billed Cuckoos (*Coccyzus erythropthalmus*). Our demographic data on bird populations helps track how birds use the farm to raise their young or to fuel up for migration, giving us a window into how birds affect local resources by eating insects such as mosquitoes and by dispersing seeds of both native and invasive plants. We will also compare resident and migratory species and describe the amazing voyages that some take to return to our farm from year to year. Our data provide context for understanding how declining bird species use habitats such as weedy farm fields in New Hampshire, and can help predict how farming might impact some of our local bird populations. Our goal is to share how we see wildlife as part of our community and to value the ecosystem services they provide, such as pest control, seed dispersal, and sustainable birding opportunities.

Presenter Bios:

Wendy Gibbons has worked as a canvasser, plant geneticist, field biologist, newsletter editor, science writer, ESL instructor, high school chemistry teacher, blueberry farmer, and house painter. She grew up in Honolulu, Hawaii, and has lived in five countries and eleven states. When she is not birding, she is botanizing, and when she is not botanizing, she is baking, gardening, or dreaming of her next adventure. Her spark bird was a Prothonotary Warbler.

Dan Wenny spent his childhood summers roaming the hills above Contention Pond outside of Hillsborough, NH. He studied Kentucky Warblers, Ovenbirds, and Worm-eating Warblers for his master's degree, and Resplendent Quetzals, Emerald Toucanets, and Three-wattled Bellbirds for his PhD research in Costa Rica. He has been studying birds for almost 40 years, but he is still learning new things about them. In 2016 he coedited the book, *Why Birds Matter*.

Session: Breeding Birds

Anticoagulant Rodenticides and Wildlife

Caelin Graber, Martha Rullman*, and Joan O'Brien (Rodenticide Free New Hampshire)*

Abstract: Raptors and other predators play a critical role in the ecosystem by controlling rodent populations. When predator species decline, rodent populations can surge, leading to increased human-wildlife conflicts and greater demand for rodent control. Widespread exposure of raptors and mammals such as raccoons, opossums, foxes, coyotes, and bobcats to second-generation anticoagulant rodenticides, or SGARs, has been rising at an alarming rate as pesticide companies are increasingly using SGARs as a long-term rodent control method. The persistence of these poisons in the tissues of these and other species is evidence that SGARs are becoming ubiquitous in the wildlife food chain. One study found that 100 percent of the Red-Tailed Hawks treated at the Tufts Wildlife Clinic tested positive for rodenticides. Several studies have also revealed that fisher populations in New England are declining due to rodenticide exposure. Rodenticide Free New Hampshire is a grassroots group of citizens that formed in 2025 to raise awareness of the harms of rodenticides and to support legislation aimed at curtailing the use of these pesticides in the state. Our poster will illustrate the important role rodents play in the food chain, how predators provide highly effective control of rodent populations, and how anticoagulant rodenticides are disrupting this balance.

Presenter Bios:

Caelin Graber has been a nature enthusiast since she was a child. She earned a bachelor's degree in biology and a master's degree in entomology, and has spent most of her career teaching. She also earned a BSN in 2011 and briefly worked as an RN before returning to the classroom in 2017. She is an active member of Rodenticide Free New Hampshire, along with other environmental advocacy groups, with a particular focus on biodiversity conservation.

Martha Rullman has a bachelor's degree in geology and biology and a master's degree in environmental studies. She has done extensive field research, conservation planning, and educational program development, and collaborated with community members and non-profits to organize presentations on a variety of cultural and environmental topics. She is a member of Rodenticide Free New Hampshire and a volunteer with NH Audubon's “Rescue Raptors and Wildlife from Rodenticides” campaign.

Session: Poster

Using Acoustic Monitoring to Estimate Bat Population Size Over Time

Megan Graham (University of New Hampshire), Sandra Houghton (NH Fish and Game),*
Haley Andreozzi (University of New Hampshire Extension), and
Laura Kloepper (University of New Hampshire)

Abstract: The ability to monitor bat populations is vital for bat conservation, especially in light of threats like white-nose syndrome. With some colonies reaching into the thousands, along with the unpredictability of where bats may exit roosting structures at dusk, it is often impossible to rely on eyesight alone to count bats. The University of New Hampshire, in partnership with NH Fish and Game, is developing a method to estimate bat colony sizes using passive acoustic autonomous recording units (ARUs). Pilot data from the Monadnock Region has shown that taking acoustic recordings of bat emergences throughout the summer provides not only an accurate population estimate but also shows important population trends such as pup volancy and colony dispersal. Findings are compared to the NH Bat Counts citizen science program to ensure accuracy. Our immediate project goals include finding more monitoring sites in southwestern New Hampshire and continuing to integrate the NH Bat Counts protocol into our project.

Presenter Bio: Megan Graham is a master's student at the University of New Hampshire, where she explores ways we can use acoustic methods to monitor bats over time. Previously, she worked for the Connecticut Department of Energy and Environmental Protection (CT-DEEP), where she gained important skills for bat conservation such as mist netting and harp trapping, bat handling, employing acoustic devices, radio telemetry tracking, and data processing in SonoBat Software. She has a strong interest in bat biology, and hopes to become a state or federal bat biologist in the future.

Session: Mammal Monitoring

A Century in the Woods:
Forest Management and Research at Yale-Toumey Forest

Laura Green (Yale Forests - Yale School of the Environment)*

Abstract: Over the past hundred years, the Yale-Toumey Forest in Keene and Swanzey, NH has grown from cut-over thickets to diverse pine and hardwood forests, weathered hurricanes and changes in wood markets, and borne witness to vast changes in the landscape of southern New Hampshire. This talk explores the way the forest has developed over the course of a century under Yale's ownership, the role of forest management and research, and what we have learned along the way about active stewardship to promote diverse, resilient, and sustainable forestlands.

Presenter Bio: Laura Green is the research & extension forester for the Yale Forests at the Yale School of the Environment, which steward over 10,000 acres of forestland across three New England states for education, research, and demonstration. Previously, she worked as an independent consulting forester and field botanist throughout southern New England. Laura received a master's degree in forestry from the Yale School of the Environment and is a licensed forester in the state of Connecticut.

Session: Ecosystem Management

Butterflies Without Borders: Tracking Monarch Migration

Lindsay Herlihy (NH Audubon), Diane DeLuca* (NH Audubon), Carol Foss (NH Audubon), and Levi Burford (Plymouth State University)*

Abstract: Monarchs (*Danaus plexippus*) are one of the most recognizable butterfly species in North America due to their large size and striking coloration. They are also the only North American butterfly that undertakes a long-distance, multi-generational migration. Unfortunately, these formerly abundant butterflies have experienced dramatic population declines since the 1990s. To better understand and protect this iconic species, NH Audubon biologists are attaching tiny radio transmitters to migrating monarchs to track their migration routes. From 2022 to 2025, we fitted 204 monarchs with Lotek nanopins. Data from these tags suggests that northeastern monarchs favor two migration routes that follow: 1) the Atlantic coastline, and 2) the Appalachian Mountains. In 2024, detection data showed more westward movement, raising questions about the role of prevailing winds in shaping monarch migration paths. The Motus system also recorded remarkable travel distances, prompting questions about the limits of monarch endurance. These tagging efforts are helping to build a deeper understanding of monarch behavior, habitat needs, and migration patterns — essential for developing effective conservation strategies. In 2025 and beyond, we will collaborate with researchers in Maryland and Kentucky to extend the southern range of our migration data. Combining these datasets will allow us to identify stopover habitats along the monarch's route, including those in southwestern New Hampshire, and to work with landowners and local organizations to enhance habitat quality through native wildflower plantings.

Presenter Bios:

Lindsay Herlihy is a seasonal program biologist at NH Audubon, where she coordinates Project Nighthawk and uses the Motus Wildlife Tracking Network to monitor breeding Wood Thrush and migrating monarch butterflies. Lindsay is also the founder and lead bander at Black Mountain Banding Station in North Sutton, NH, where she contributes to long-term monitoring of breeding songbirds and migrating Northern Saw-whet Owls.

Diane DeLuca is a senior biologist at NH Audubon. She has been responsible for the monitoring and management of breeding terns, winter eagles, grassland birds, and high-elevation forest birds. Currently, she is involved in enhancing pollinator habitat, studying monarch butterfly migration, and a long-term phenology project to document response to climate change. She is grateful for the opportunity to expand her knowledge of nature and to work alongside the volunteers who make it all possible.

Session: Migration

Migration Timing and Pathways of Wood Thrushes Breeding in New Hampshire

Pamela Hunt (NH Audubon), Michael Akresh (Antioch University), Phil Brown (Harris Center for Conservation Education), Allison Byrd (Tin Mountain Conservation Center), Lindsay Herlihy (NH Audubon), and Sarah Kendrick (US Fish and Wildlife Service)*

Abstract: Wood Thrush (*Hylocichla mustelina*) is a species of conservation concern that breeds in eastern North America and winters in Central America. As part of a range-wide study on migration and survival, we attached 61 nanotag transmitters to breeding thrushes in New Hampshire in 2024 and 2025. In 2024, most tagged birds migrated south along the Appalachians from Pennsylvania through northern Georgia, with a smaller number following a coastal route through southern New England and the mid-Atlantic states. Departures from New Hampshire occurred over a 23-day period centered on September 23, and passage through the northern Appalachians and mid-Atlantic occurred over a similar range of days (median date: September 28). In contrast to the wide range of passage dates in the north, most birds (16 of 19) detected in the southeastern US passed by during six days from October 4 to 9. Five birds were detected on the Yucatan peninsula from mid-October to mid-November, one of which (originally tagged in Hinsdale, NH) continued to Costa Rica; its straight-line migration distance was at least 4261 kilometers. Twelve birds were detected moving northbound in the spring of 2025, and available data suggest they took a more westerly course at least partially around the Gulf of Mexico. At least ten birds returned to the same areas where they were tagged in 2024. Our research, along with data from additional tagged birds from 2025, will improve our understanding of Wood Thrush migratory connectivity, non-breeding locations, and survival, and assist with conservation efforts for this declining species.

Presenter Bio: Pamela Hunt obtained her PhD from Dartmouth College in 1995, and started working at NH Audubon in 2000. In her current position as an avian conservation biologist, she works closely with NH Fish and Game to coordinate and prioritize bird research and monitoring in the state. She also authored New Hampshire's "State of the Birds" reports, has studied whip-poor-wills and cliff swallows (among other species), and coordinated the New Hampshire Dragonfly Survey from 2007 to 2011.

Session: Migration

Listening to Moose:
Monitoring Moose Presence with Acoustic Recorders

Sandesh Lamichhane, Remington Moll, and Laura Kloepper (University of New Hampshire)*

Abstract: Acoustic monitoring is a relatively new technique for studying animal behavior and movement patterns, habitat use, and population size. Our research aims to use cost-efficient acoustic recorders at the landscape level. In 2024, we deployed 51 sound recorders in northern New Hampshire to determine high-activity hotspots, estimate habitat use patterns under different conditions, and explore acoustic characteristics of moose (*Alces alces*). We deployed recorders in early September to coincide with the start of the rutting period, and used the machine learning tool BirdNET to develop a method to automatically detect moose vocalizations. Our detections were also manually verified. Our initial findings suggest that our detector is able to successfully identify moose vocalizations, and that moose vocalizations are most likely to occur from 5 to 7 a.m. and 8 to 9 p.m. This pilot project was conducted in Coos County alongside existing camera traps, but we plan to expand across the network of over 250 trail cameras maintained by the University of New Hampshire, including cameras in the Monadnock Region. Moreover, our sound recorders captured different birds, wildlife, and noise such as forest harvesting. We believe that these low-cost monitoring tools could be useful for learning more about moose and other wildlife species and their habitat, as well as anthropogenic noise.

Presenter Bio: Raised in the remote hills of Nepal, Sandesh Lamichhane started chasing wildlife at higher elevations, which inspired him to conduct research on snow leopards. In 2021, he served as a technical team member for the radio-collaring of snow leopards. He completed his BS in Forestry and MS in Wildlife Management and Biodiversity Conservation in Nepal. Sandesh is currently a PhD student at the University of New Hampshire, where he's conducting research on moose using acoustic recorders.

Session: Mammal Monitoring

Biodiversity Matters: How Your Nature Photos Can Help

Steven Lamonde (Moosewood Ecological & Antioch University)*

Abstract: Biodiversity is everywhere – from pristine forests to roadside wetlands, and even household gutters. Countless species are at risk of disappearing, and there are not enough scientists to keep track of them all. But your nature photos can help! Through iNaturalist, one of the world's leading community science platforms for documenting biodiversity, everyone has the power to actively contribute to scientific discovery, conservation initiatives, and nature-based community education. iNaturalist makes it easy to convert the nature photos on your phone or computer into valuable scientific datapoints. As such, the platform is a popular tool for anyone interested in learning about and cataloging biodiversity. This presentation will provide an overview of how iNaturalist works and highlight current examples of how community-sourced data are informing biodiversity science and conservation in the Monadnock Region.

Presenter Bio: Steven Lamonde is a New Hampshire-based ecologist with Moosewood Ecological, a company dedicated to helping landowners and communities better understand their natural resources and how to steward them. Steven is also a senior lecturer at Antioch University, where he teaches graduate-level GIS courses. In his free time, he serves on the boards of two local land trusts and volunteers as a dedicated contributor and data reviewer for eBird and iNaturalist.

Session: Community Science

The Conservation Value of Silvicultural Systems for Breeding and Post-Fledging Forest Bird Communities in Southwestern New Hampshire

Chris Liazos (Antioch University), Michael Akresh (Antioch University), and Hale Morrell (Long View Forest)*

Abstract: Forest bird communities (FBCs) in the Northeast are declining due to an overabundance of homogenous mature forest cover. Silviculture, the art and science of forest management, serves as a conservation tool by creating areas of interspersed young and structurally complex mature forests. We explored the relationship between FBC conservation-value indexes and basal area and canopy cover in both harvested and unharvested forests by conducting bird point counts and vegetation surveys across southwestern New Hampshire over the course of two years. Additionally, in the second year, we conducted post-fledging surveys using point counts and playback methods. Our models found higher conservation values in young and mature forests with low or moderate canopy cover than in forests with high canopy cover. These findings support the idea that open- and mixed-canopy stands provide better habitat for FBCs as well as specific species, despite being underrepresented in New Hampshire's forested landscape. Our research underscores the importance of silviculture as a conservation tool for supporting FBCs during both the breeding and post-fledging seasons.

Presenter Bio: Chris Liazos is currently pursuing an MS in Conservation Biology at Antioch University, with a particular interest in breeding forest bird communities in the Northeast. He is enthusiastic about collaborating with various landowners and managers in New Hampshire, and about exploring a variety of interests related to resilient forest landscapes.

Session: Ecosystem Management

Forest Resilience Site Assessment of Southwestern New Hampshire Through Suitability Modeling

Chris Liazos (Antioch University)*

Abstract: Forest ecosystems in the northeastern United States are increasingly vulnerable to climate change, and adaptive management has been recommended to address near- and long-term impacts. To evaluate resilience, I compared The Nature Conservancy's Terrestrial Resilient Sites framework, based on landforms, with a Forest Resilient Site Assessment (FRSA) developed for four counties in southwestern New Hampshire. The FRSA suitability model integrated diversity, connectivity, and resilience sub-models using TreeMap2016 and NLCD 2023 datasets, guided by peer-reviewed literature. Results revealed that ecoregions and prior land use influence diversity and connectivity-driven resilience. However, forest community and landform resilience assessments showed limited correlation, further supported by a lack of correlation with Climate Tree Atlas adaptability codes. This suggests that forest community resilience and landform resilience should be treated separately, despite occasional overlap, though both assessments can guide adaptive land protection and stewardship efforts. Overall, southwestern New Hampshire's forests are ranked "average" in resilience; variation across the landscape highlights the need for tailored adaptation approaches.

Presenter Bio: Chris Liazos is currently pursuing an MS in Conservation Biology at Antioch University, with a particular interest in breeding forest bird communities in the Northeast. He is enthusiastic about collaborating with various landowners and managers in New Hampshire, and about exploring a variety of interests related to resilient forest landscapes.

Session: Poster

The Turtle Connection: Exploring Habitat Connectivity and Solutions

Jeff Littleton, Arianwen Jones-Lamonde, and Laura Deming (Moosewood Ecological)*

Abstract: Communities in the southern half of New Hampshire have experienced ever-increasing pressures from development over the past several decades. Conservation planners seek to balance this growth with natural resource protection and to reduce human-wildlife conflict, especially in light of climate change, with varied levels of success. To help bridge the gap, we will provide preliminary results from the Monadnock Region Turtle Conservation Initiative, a project of the Cheshire County Conservation District, in which we examined habitat connectivity for turtles throughout Cheshire County and assessed culverts for their functionality as safe, under-road passage for turtles.

Presenter Bio: Jeffry Littleton is the principal ecologist at Moosewood Ecological, with more than 30 years of experience in ecological studies and environmental education. He specializes in conservation planning, land management and stewardship, habitat restoration and enhancement, and native plantings to promote biodiversity and ecological resilience on multiple scales. Jeffry is also an adjunct faculty member at Antioch University, and serves on the advisory board for the Cheshire County Cooperative Extension.

Session: Aquatic Ecology

Flight of the Common Nighthawk: A Migration Model

Nate Marchessault (Harris Center for Conservation Education) and*
Steven Lamonde (Moosewood Ecological & Antioch University)*

Abstract: As long-distance migratory songbirds with a specialized diet of flying insects, Common Nighthawks (*Chordeiles minor*) face numerous threats that have led to significant population declines since the 1970s. During their fall migration to South American overwintering sites, they form large, highly visible flocks, making migration counts a valuable method for tracking population trends. Furthermore, the spectacular flocking behavior of Common Nighthawks elevates their use as a flagship species to garner public attention and support for bird conservation. While migrating nighthawks can be seen nearly anywhere in New Hampshire, larger flocks, and therefore productive counting sites, tend to concentrate along major river valleys. Using community-sourced eBird data, we spatially modeled Common Nighthawk migratory corridors and identified suitable locations for surveys. We found that observations of ≥100 nighthawks strongly correlated with landcover openness, low elevation relative to the local watershed, and proximity to high-order streams or large waterbodies. Potentially suitable counting sites were located within modeled corridors and close to public roads, had high sky visibility, and avoided western aspects. The Monadnock Region's heavily forested landscape limits the availability of prime viewing locations, yet we identified several publicly accessible sites for counting large numbers of nighthawks along the Ashuelot and Contoocook Rivers.

Presenter Bios:

Nate Marchessault is an ecologist working for the Harris Center for Conservation Education and Moosewood Ecological, and a master's student at Antioch University.

Steven Lamonde is a New Hampshire-based ecologist with Moosewood Ecological, a company dedicated to helping landowners and communities better understand their natural resources and how to steward them. Steven is also a senior lecturer at Antioch University, where he teaches graduate-level GIS courses. In his free time, he serves on the boards of two local land trusts and volunteers as a dedicated contributor and data reviewer for eBird and iNaturalist.

Session: Poster

Bald Eagle Breeding Territory Recovery in the Monadnock Region, 1998-2025

Chris Martin (NH Audubon)*

Abstract: After their near-extirpation due to the widespread use of DDT, Bald Eagles (*Haliaeetus leucocephalus*) gradually reestablished breeding territories throughout the Monadnock Region, starting in the late 1990s. In this review, we'll explore what we've learned about their recovery. Which sites have been most productive? How many years do individual eagles hold onto their spots, and how long do pairs stay together? Are there differences between lake and river territories? Who are some of the people who have helped with local eagle recovery? And what does the future look like for eagles?

Presenter Bio: Chris Martin has worked as a raptor biologist at NH Audubon for nearly 36 years. A big part of his job has been recruiting, training, and coordinating volunteers to monitor nest sites across the state. He's explored much of the state on foot and by canoe, documenting Bald Eagles, Peregrine Falcons, Ospreys, and Northern Harriers, as well as American Pipits and Great Blue Heron colonies. But he's still looking for that first Golden Eagle nest!

Session: Breeding Birds

Hidden Patterns in Small Parcels: Trail Cameras Reveal Wildlife Behavior Across New Hampshire Landscapes

Jaime McGuigan (Access Conservation) and Peter Palmiotto (Antioch University)*

Abstract: Trail cameras do more than record species lists; they also reveal hidden behaviors and surprises in our forests. This presentation blends ecological research, conservation management, and public engagement with stories and footage captured over the course of six months at two small conservation parcels in southwestern New Hampshire. Using 28 trail cameras at Glover's Ledge in Langdon, NH and Distant Hill Gardens and Nature Trail in Walpole and Alstead, NH, I collected more than 4,600 camera-hours, providing insight into species richness and behavioral ecology. While richness was similar, fine-scale patterns diverged: Glover's Ledge supported greater spatial and temporal partitioning shaped by complex upland and successional habitats, while Distant Hill, with more riparian habitat and higher human visitation, showed more overlap among mesocarnivores (e.g. bobcat, coyote, raccoon). Directional data showed that wildlife at Distant Hill followed trails and streams, while movement at Glover's Ledge was more diffuse. The footage also revealed biodiversity hotspots, breeding activity, and cross-boundary corridors, offering cost-effective insights for adaptive management. Collectively, these findings show habitat complexity and land use shaping biodiversity on small parcels. Beyond research, trail cameras are powerful tools for engagement, connecting people to wildlife and transforming data into stories. When trail camera footage shows intimate behaviors, such as bobcat kittens bounding after their mom or bear cubs startled by their own reflections, it not only enriches our ecological understanding but also sparks connections to the wildlife around us.

Presenter Bio: Jaime McGuigan is an ecologist and the co-founder of Access Conservation. She studies wildlife habitat, connectivity, and the role of microhabitats in shaping species interactions, using trail cameras, GIS, and naturalist observation. Jaime holds a master's degree in conservation biology from Antioch University and is passionate about making conservation science accessible and engaging to the public.

Session: Mammal Monitoring

Spider Webs and Forest Health: A New Tool for Biodiversity Monitoring in New Hampshire

Jeffrey Miller (University of New Hampshire)*

Abstract: New Hampshire's forests are home to countless species. Traditional wildlife surveys and monitoring efforts are often expensive and time-consuming, making it difficult to incorporate biodiversity information into forest management plans. That's where environmental DNA (eDNA) — genetic material left behind by organisms — can help. This project explores a creative, cost-effective way to help landowners, stakeholders, and foresters gain information on local species assemblages using a surprising new tool: spider web eDNA. Alongside other University of New Hampshire faculty and Extension researchers, we are piloting this method to detect a wide range of forest life, including pathogens, invasive species, and even large mammals. Sample webs were collected in managed forests that host other biodiversity monitoring and surveillance efforts, including the Green Hills and Surry Mountain Preserves. This new method may help land managers cost-effectively assess biodiversity and make more informed decisions about harvesting, habitat protection, and conservation planning. This work not only supports forest health and sustainability in New Hampshire, but also builds bridges between science, education, and environmental stewardship by bringing students into the process through a University of New Hampshire course, where they analyze real-world spider web eDNA.

Presenter Bio: Jeffrey Miller is a research assistant professor in the Environmental Genomics and Bioinformatics Lab in the Department of Molecular, Cellular & Biomedical Sciences at the University of New Hampshire. His research is centered on understanding the connections between humans and biota, most often using molecular tools for monitoring (eDNA). He often collaborates with groups that wish to utilize these tools to evaluate restoration efforts, such as anadromous fish passage and dam removals.

Session: Mammal Monitoring

Collaborative Land Management: Aquatic Habitat Restoration of Great Brook in Walpole, New Hampshire

Michael Nerrie (Distant Hill Gardens and Nature Trail)*

Abstract: Great Brook, a small first-order stream in the highlands of Walpole, NH, provides habitat for fish, wildlife, and many other species that depend on clean, healthy waterways. Like many streams in New England, Great Brook has been modified over time, making its habitat less resilient and less supportive of aquatic life. In 2024, a group of local landowners agreed to try to change that. Working with Trout Unlimited and the National Resources Conservation Service (NRCS), and with the cooperation of four landowners along nearly two miles of the brook, a restoration project was launched using an innovative technique called Strategic Wood Addition (SWA). By carefully placing wood back into the stream, we hope to restore natural flow patterns, create pools and cover for fish, and improve overall stream health. This presentation will share how neighbors, conservationists, and restoration experts came together to improve Great Brook, the benefits of SWA, and how collaborative land management can make a lasting difference for both people and the environment.

Presenter Bio: Born in 1951, Michael Nerrie grew up exploring the forests, fields, and wetlands on the south shore of Long Island, just 25 miles from Manhattan. He learned firsthand how development can rapidly destroy open land, highlighting the importance of land conservation. Currently, he serves as the builder and resident naturalist at Distant Hill Gardens and Nature Trail, an environmental and horticultural learning center that he founded in 2013.

Session: Aquatic Ecology

Mending Old Walls: An Environmental History of Ceremonial Stone Landscapes in the Northeast

Ben Radcliffe (Antioch University)*

Abstract: Ceremonial Stone Landscapes (CSLs) — stacked stone structures found throughout New England, including sites in Surry, NH, and nearby Bellows Falls and Putney, VT — stand as enigmatic testaments to Indigenous presence, ecological stewardship, and the contested narratives of colonial history. This research reexamines CSLs using an interdisciplinary approach that bridges Indigenous, colonial, and environmental perspectives to unlock their cultural and ecological significance in the Monadnock Region. By situating these landscapes within broader conservation and management debates, this presentation advocates for new strategies that honor both historical truth and contemporary Indigenous sovereignty. Despite their significance, New Hampshire currently lacks comprehensive state-level protections for Indigenous stone features, making local advocacy and Tribal stewardship crucial for their preservation. Protecting CSLs in the Monadnock Region demands challenging mainstream erasures, advancing science-based documentation, and fostering collaborative, decolonized conservation.

Presenter Bio: Ben Radcliffe is pursuing a master's degree in environmental advocacy at Antioch University, where he researches climate policy and campaign finance. He is also the garden steward for Antioch's Westmoreland Garden Project, a 1.5-acre farm that donates all of their produce to The Community Kitchen food pantry. When Ben is not harvesting veggies or doing research, he enjoys playing at open mics and going on hikes.

Session: Poster

Bridging the Gap: The Role of Access in Realizing Nature's Benefits

Peder Schillemat (University of West Georgia)*

Abstract: There is no doubt that nature, in its many forms, provides significant benefits to mental, physical, and social well-being. One might assume, then, that the mere presence of natural spaces is enough to gain these benefits. While this seems logical, many people still struggle to experience these benefits — even in areas considered rich in natural environments. A key factor in understanding this gap is how people are able to access nature. Access involves more than just proximity; it includes historical, legal, and social dimensions. For example, the English Enclosure Acts restricted common land use to the wealthy, setting a precedent for land ownership and exclusion. In the US, legal rights, such as the right to exclude others from private land, continue to shape who can access natural spaces. However, legal access alone does not guarantee that people feel welcome. Psychological and physical factors — such as signage, cultural norms, or physical barriers — can make a space feel either inviting or off-limits. In this presentation, I will delve into how the history, legality, and psychology of nature are displayed in the Monadnock Region's trails, public nature, and forests. Of particular interest is how places such as the Nelson Town Common or the Industrial Heritage Trail in Keene, NH help us to understand when nature affords health benefits and when those benefits are precluded. By emphasizing these natural spaces in the Monadnock Region, we can have grounded conversations about inclusive and effective strategies for connecting people with the natural world.

Presenter Bio: Peder Schillemat is a PhD student at the University of West Georgia. His research into how access to nature is mitigated in rural areas began in Georgia, when he was running on local streets and noting the restricted access to lakes and rivers there. He currently teaches psychology courses at West Georgia Technical College and Duquesne University, emphasizing the need for experiential knowledge in understanding psychological functioning.

Session: Humans & Nature

From Forests to Backyards:
Tracking Fisher Movements Across the Landscape

Frank Shinost, Jr. (University of New Hampshire),*
Andrew Butler (University of New Hampshire), Mairi Poisson (University of New Hampshire),
William Chrisman (University of New Hampshire), Andrew Timmons (NH Fish and Game),
and Remington Moll (University of New Hampshire)

Abstract: Fishers (*Pekania pennanti*) are wide-ranging forest carnivores that have recolonized much of New Hampshire over the past century, yet their activity in the Monadnock Region remains surprisingly limited — highlighting the ecological factors that shape where fishers occur. Using GPS collar data and camera trap detections, our research illustrates the daily movements of individual fishers across the landscape, including crossing forests, rivers, and even developed areas. Their choices reveal the risks they take in a human-dominated environment. Animated maps bring these movements to life, highlighting the scale of dispersal and the selective use of different habitats. While fishers remain scarce in the Monadnock Region, their capacity for long-distance movements may help sustain populations despite low densities. Absence itself can tell a powerful story; understanding it is essential for conserving carnivores and the ecosystems they shape.

Presenter Bio: Frank Shinost is a second-year master's student in wildlife and conservation biology at the University of New Hampshire, graduating in 2026. He aims to research wild game and furbearer conservation for state or federal agencies, and to work with landowners on research-based management. Originally from the Black Hills of South Dakota, Frank developed an early passion for the outdoors and later served 21 years in the US Marine Corps before moving with his family to Auburn, NH.

Session: Mammal Monitoring

Monitoring the Fall Migration of Northern Saw-whet Owls Through the Monadnock Region

Hillary Siener, Brett Amy Thelen, Annamarie Saenger, Phil Brown, and Dr. Jonathan Atwood (Harris Center for Conservation Education)*

Abstract: Identification of migratory, overwintering, and breeding distributions is an important management step for the conservation of bird species that may be vulnerable to anthropogenic stressors such as climate change, including the Northern Saw-whet Owl (*Aegolius acadicus*). Since 2022, Harris Center staff and volunteers have been banding saw-whet owls to monitor the fall migration of this secretive and nocturnal species through the Monadnock Region. Following methods outlined by Project Owlnet, a continent-wide group dedicated to owl research, the Harris Center has banded nearly 300 saw-whet owls. Through this study, we are documenting the timing of peak migration in the region, fluctuations in population size, age and sex demographics, and movement of the species to and from other regions. A total of 19 saw-whet owls encountered during the Harris Center study were also previously or subsequently encountered at 15 different locations across the United States and Canada, ranging from Quebec to Virginia. Continued long-term monitoring of saw-whet owl population dynamics and movement ecology will aid in the conservation of the species in the future, here in New Hampshire and across North America.

Presenter Bio: Hillary Siener is the lead bander and one of the founders of the Harris Center's saw-whet owl monitoring project. She also works as a wildlife biologist for the Massachusetts Department of Conservation and Recreation, where she is tasked with wildlife monitoring and management projects focused on protecting water quality. She has worked in various natural resource management and conservation positions for the last twenty years, and holds an MS in Conservation Biology from Antioch University.

Session: Migration

Snap, Share, Care: Leveraging the City Nature Challenge to Supercharge Conservation Engagement

Ally Snell (The Nature Conservancy) and*
Levent Akinci (Nashua Sustainability Department & Manchester Conservation Commission)*

Abstract: The City Nature Challenge (CNC) is an annual global citizen science initiative that harnesses the power of community science to document regional biodiversity through mobile technology platforms like iNaturalist. For local conservation organizations, participation in the CNC offers a unique opportunity to engage the public, expand biodiversity data, and foster environmental stewardship through a fun, accessible Earth Month challenge. Used strategically, this event can become a powerful tool for connecting new audiences with nature and conservation, helping them build a deeper connection with their local environment. Shifting the focus from large-scale, distant conservation efforts to tangible, observable nature in one's own neighborhood, the CNC provides an entry point for those who may not identify as "naturalists." Join two of the organizers of New Hampshire's 2024 CNC for a hands-on session, where you will gain insights for mobilizing volunteers, utilizing digital tools, and amplifying conservation messaging through this dynamic annual event. We will walk participants through the entire process — from concept to planning to implementation — and demonstrate how to leverage the accessible and free iNaturalist platform to supercharge conservation engagement with new and diverse audiences.

Presenter Bios:

Ally Snell is the community partnerships manager for The Nature Conservancy in New Hampshire, with over 20 years of experience in community development, communications, and civic engagement. She's led federal programs, worked in higher education, and served with agencies like the Peace Corps and USDA. Ally is a certified cultural intelligence trainer and serves as co-chair of the board for Volunteer NH, advancing service and sustainability statewide.

Levent Akinci is Nashua, NH's sustainability planner, leading efforts in municipal sustainability, micromobility, and community outreach. He manages greenhouse gas inventories, runs a local air sensor network, and serves on ICLEI USA's Membership Advisory Group. Levent also holds roles with the Manchester Conservation Commission and Friends of Piscataquog River Park.

Session: Community Science

Know Knotweed for No Knotweed

Paul F. Steblein (US Geological Survey)*

Abstract: Invasive species can have a great effect on native species and ecosystem function, with consequent impacts on society. Japanese knotweed (*Reynoutria japonica*) is one of the most pernicious and widely distributed invasive plants in the world. New Hampshire classifies it as a prohibited invasive species. This presentation summarizes information on knotweed to support the development of a knotweed management strategy, including: 1) scientific review of the biology, impact, and control of knotweed; 2) survey of knotweed distribution in Westmoreland, NH; 3) policies affecting knotweed management; and 4) potential actions that could comprise an integrated pest management strategy. While challenging, using the best available information can guide a management strategy toward the best chance of success in eradicating knotweed from an area, and serve as a model for control of other invasive species.

Presenter Bio: Paul Steblein is an emeritus scientist at the US Geological Survey (USGS), where he worked with 200 scientists to produce information, data, and tools used before, during, and after wildfires. Paul has 35 years of experience addressing complex natural resource and land management issues from a variety of positions (policy, budget, GIS/data, science, and management) at a variety of field, regional, and national leadership positions in the National Wildlife Refuge System, USGS, and the Department of the Interior.

Session: Ecosystem Management

Knotweed Biology and Management

Paul F. Steblein (US Geological Survey)*

Abstract & Presenter Bio: See above.

Session: Poster

Regenerative Farmers as Keystone Species

Miller Ward (Antioch University)*

Abstract: I meet a lot of farmers who think like conservationists, but I don't meet a lot of conservationists who think like farmers. Considering that 50% of the continental US is farmland, if we don't treat farms as ecosystems, the conservation movement will be significantly limited in scope and efficacy. Silvopasture, the integration of trees into animal systems, is the most important change we can make in farming to increase biodiversity, build topsoil, heal water cycles, eliminate the use of pesticides and fertilizers, and create genuine intergenerational food security. Six potent arboreal allies are most applicable to regenerative silvopasture systems: yellowbud hickory (*Carya cordiformis*), chestnut (*Castanea* spp.), oak (*Quercus* spp.), mulberry (*Morus* spp.), persimmon (*Diospyros virginiana*), and honey locust (*Gleditsia triacanthos*). These trees are sources of perennial oils, carbohydrates, and nutrient-dense mast that reduce off-farm inputs, allowing us to raise more food that is higher quality, in more biodiverse and resilient contexts, in the Monadnock Region and beyond.

Presenter Bio: Miller Ward is fascinated by ecosystem restoration, particularly with humans framed as keystone species. He has a diverse background in beaver restoration, stream restoration, and regenerative agriculture. He currently works at Yellowbud Farm, a wholesale agroforestry nursery that grows hundreds of thousands of select seedlings, including yellowbud hickories, chestnuts, oaks, persimmons, mulberries, and honey locusts. Miller is also pursuing a master's degree in conservation biology at Antioch University.

Session: Poster