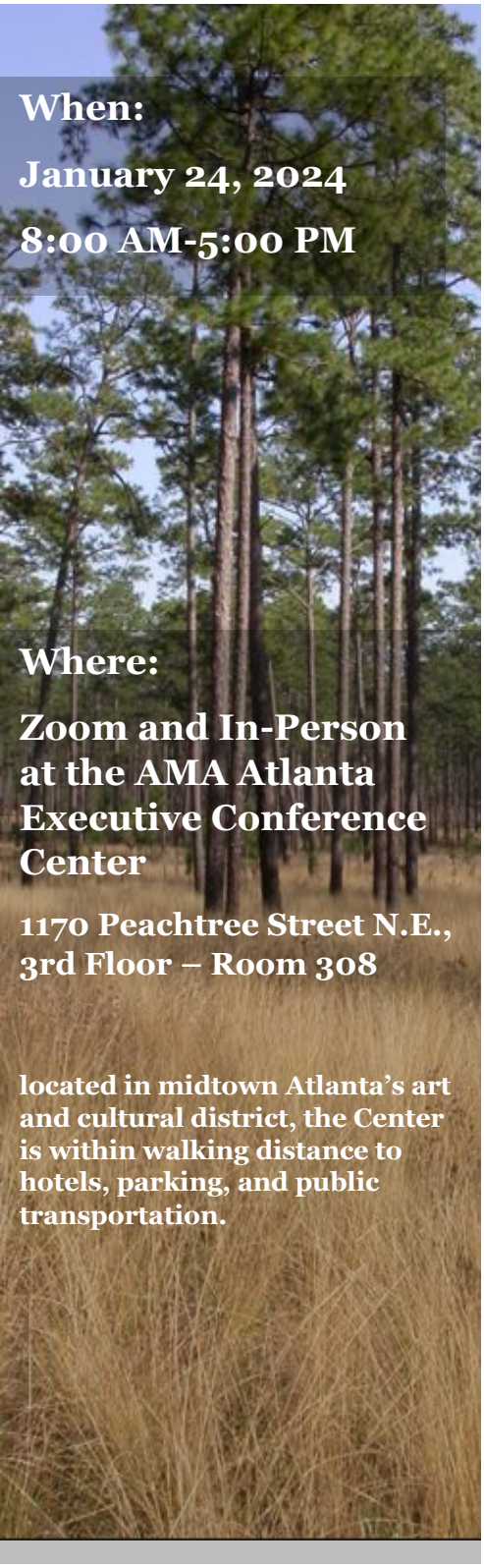

When:

January 24, 2024

8:00 AM-5:00 PM

Where:

Zoom and In-Person at the AMA Atlanta Executive Conference Center

1170 Peachtree Street N.E., 3rd Floor – Room 308

located in midtown Atlanta's art and cultural district, the Center is within walking distance to hotels, parking, and public transportation.

SE FireMap NRCS Workshop

Meeting Objectives:

This workshop is the second in our SE FireMap workshop series. We are targeting NRCS subject matter experts to provide input on the development of decision support tools, product enhancements and the end user interface. We will provide a broad overview of the existing SE FireMap and discuss application of new and improved products and how they relate to the development of conservation focused decision support tools.

8:00-8:45	Introductions (coffee and pastries)
8:45-9:00	Broadview objectives (Bridgett)
9:00-9:45	Overview of existing products
9:45-10:00	(break)
10:00-11:30	USGS presentations on Phase II products
11:30-12:00	New end user interface
12:00-1:30	(lunch, on your own)
1:30-2:00	Introduction to decision support tools
2:00-4:30	Focused group discussion on decision support needs
4:30-5:00	Wrap up and next steps

Register for In-Person and Virtual Attendance at:

http://tinyurl.com/4vyz4u96

Bios and Abstracts:

Todd J. Hawbaker, PhD, joined the U.S. Geological Survey as a research ecologist in 2008 and currently works at the Geosciences and Environmental Change Science Center in Denver, CO. His research with the USGS combines remote sensing with statistical and process-based ecosystem simulation models to understand patterns of ecosystem disturbances, the drivers behind them, and the impacts of disturbances on human and natural systems.

Presentation abstract: Monitoring spatial and temporal patterns of wild and prescribed fire is critical for understanding fire patterns across both public and private lands. In the Southeast, fire is especially important to healthy native landscapes, to conserve listed and at-risk species, manage for wildfire risk, and minimize the need to conserve species through regulation. Here we present new efforts to improve the accuracy and completeness of burned area mapping over existing datasets by extending the Landsat Burned Area Algorithm to the Harmonized Landsat and Sentinel-2 dataset. The results of this effort will increase processing efficiencies and data accuracy. Most importantly, the new burned area products will inform Southeast FireMap and ultimately promote better decision-making to prioritize funding for staff, projects, training, equipment, and allow fire partners to work smarter.

Melanie Vanderhoof, PhD, is a Research Geographer for the U.S. Geological Survey, Geosciences and Environmental Change Science Center in Denver, CO. She uses remotely sensed data to explore how ecosystems respond to mechanisms of change, such as climate extremes and wildfire.

Presentation abstract: Remotely sensed burned area (BA) products are critical to support fire modelling, fire policy, and land management. However, BA products often require further processing before use, even when delivered at an annual time-step. Fire management across the U.S. will benefit from comprehensive, spatially explicit fire occurrence data, delivered in a format to facilitate their direct use by diverse stakeholders. We produced a suite of contemporary fire history metrics from the Landsat BA products from 1984–2020 across the conterminous U.S. Fire history metrics, alone, or combined with historical or target fire regime data, enables Landsat BA data to help inform management of fire-dependent species and ecosystems, fire behavior and emissions modeling, fire risk analysis, and prescribed fire planning, all elements that are sensitive to fire history.

Josh Picotte has 15+ years of using field based and remote-sensing based research for fire science applications. His infatuation with fire (and fire science) began while working at Tall Timbers Research Station. He is currently working at USGS EROS on the MTBS, LANDFIRE, and SE FireMap projects.

Presentation abstract: We developed regression models that describe the relationship between the Composite Burn Index (CBI) field-derived and remotely sensed assessments (i.e., derivations of the Landsat derived Normalized Burn Ratio [NBR] index) of burn severity at different ecologically relevant scales for the conterminous United States (CONUS). Overall, we found a reasonable goodness of fit (R^2) of 0.55 for the differenced NBR (dNBR) and a poor fit ($R^2 = 0.33$) for NBR at the CONUS scale, and much better fits ($R^2 \geq 0.75$) for some smaller scale vegetation classifications. We will discuss how our simple decision tree framework allows a user to decide which scale and model may meet their needs to transform remotely sensed to on-the-ground burn severity metrics.

Holly Nowell, PhD, joined Tall Timbers in August of 2022 after completing a post-doc at FSU where her studies included analyzing biases and uncertainties in the satellite detection of fires in the Southeast United States, as well as modeling their emissions. Her current work at Tall Timbers will focus on various aspects of SE FireMap including assessing regional patterns and impacts of burning on ecosystem services, and predicting and communicating the uncertainties in the burned area product.

Presentation abstract: This talk will show some preliminary research and discuss upcoming research on how to use SE FireMap to conduct landscape-level analysis of burning trends across the Southeast US region. Current areas of focus in the preliminary work include temporal trends in burning on public vs. private lands in non-agricultural settings at a county level.

Casey Menick joined the U.S. Geological Survey, Geosciences and Environmental Change Science Center in Denver, CO earlier this year. She is interested in using remote sensing to characterize wildfire impacts and landscape change and is currently working to evaluate burn severity as a part of the SE FireMap project.

Presentation abstract: Burn severity is a crucial element to characterize fire effects and can provide valuable information to support resource management decision-making. We will discuss our ongoing efforts to map burn severity for fires occurring within the Southeast, particularly for small and prescribed fire events. Modeled burn severity data, alongside SE FireMap fire history metrics, will expand our characterization of fire in the Southeast and provide useful data to guide prescribed fire application and ecosystem restoration actions.

Chris Matechik is a remote sensing analyst at Tall Timbers with a B.S. in Biology from Florida State University and an M.S. in Fisheries from Auburn University. Originally a stream ecologist, Chris shifted his focus to remote sensing at the landscape scale while studying how forest community changes in watersheds impacted habitat suitability for endangered fishes. Since then, Chris has completed two projects with NASA DEVELOP, a program that trains biologists in remote sensing, including one project identifying wildfire risk factors in Chile. After DEVELOP, he started at Tall Timbers where he currently produces the annual products for the Southeast FireMap and is also developing a rule-based approach to attributing Southeast FireMap detections as prescribed fires or wildfires.

Presentation abstract: In the southeastern United States, fire is a natural disturbance that maintains biodiversity, promotes grassy and herbivorous groundcovers, limits shrubs and woody plants, improves wildlife habitat, and preserves populations of threatened and endangered species. Prescribed fires are often used to meet management objectives where wildfires have been suppressed. Consequently, understanding the frequency and distribution of prescribed fires and wildfires across the landscape is critical to managing fire-prone ecosystems. Point data for wildfires and prescribed fires are available in the United States Forest Service's (USFS) Fire Program Analysis Fire-Occurrence Database (FPA FOD) and the Southeastern U.S. Prescribed Fire Permit Database respectively, but point data only provide general information about a fire's size and location. Perimeters of large wildfires are usually recorded in federal databases such as Monitoring Trends in Burn Severity (MTBS) and the National Interagency Fire Center (NIFC) Database, but fire perimeter data for small wildfires and prescribed fires are scant. Satellite-based remotely sensed products such as the Southeast FireMap provide a uniform methodology for mapping both fires across the southeast, but the Southeast FireMap does not currently distinguish between wildfires and prescribed fires. We are investigating the potential of attributing Southeast FireMap burn detections as wildfires or prescribed fires by using a rule-based approach that first attributes any burn detection that overlaps with MTBS or NIFC, and then attributes the remaining burn detections based on the meteorological conditions at the time of the fire, the regularity of the burn scar, the property type (public or private), the number of parcels the burn scar intersects, and the average fire frequency of the area within the burn scar.