



**SOUTHERN
Fire Exchange**

Uniting Fire Science and Natural Resource Management



FIRE LINES

A Bimonthly Newsletter of the Southern Fire Exchange

December 2018-January 2019

Volume 8- Issue 6

IN THIS ISSUE

SFE Staff Changes

2

New Fact Sheets Available

SFE 2019 Event Schedule

Climate Change Assessment:
Wildland Fire Impacts

3

2018 Prescribed Fire Use Survey

Hurricane Synthesis Workshop and
Project

Cooperative Extension Wildland Fire
Initiative

Communities of Color Face Greater
Wildfire Vulnerability

4

Fire Research Consensus Working
Group Final Report

Natural Areas Association Fire Com-
pendium

TREX News

Steven Pyne Publication

IFTDSS Version 3.1.1

5

Funding Opportunities

FIRETEC in the News

The Science of California's Wildfires

Recent Fire Science Publications for
the South

6

Happy Holidays from SFE

Pyroaerobiology: The Start of a New Microscopic Frontier in Fire Ecology?

In a groundbreaking new study published in the November issue of the journal *Ecosphere*, [Kobziar et al.](#) documented that wildland fire can influence the transport of living microbes via smoke. They've coined this new field of study "pyroaerobiology" to describe the intersection of three key distinct disciplines (Figure 1). Using petri-dishes with agar growth medium, the researchers exposed the growth medium to smoke from outdoor prescribed fires in Florida as well as forest floor fuels burned in a combustion chamber in Idaho. Exposed petri-dishes were then incubated for up to 14 days and analyzed for microbial growth and a subset was later analyzed for composition via DNA analysis. The results demonstrated that fires influence the amount of microbes observed (via colony forming unit (CFU) counts) and the composition of microbes observed (via DNA analysis and 40 x microscopic observation). At the prescribed fire site, the number of CFUs

decreased with distance from the area burned. In the indoor combustion chamber, the composition of microbes differed among the fuel types, with evidence that the burned masticated fuels presented a unique assemblage of microbes.

The researchers suggest that pyroaerobiology opens the opportunity to consider the potential for wildland

fire smoke to be a vector for a variety of pathogenic and non-pathogenic microbiota. Can large wildfires transport harmful forest pathogens over long distances? Does fire frequency impact the composition of aerosolized microbial biota? Do aerosolized microbes pose health hazards to certain individuals exposed to smoke? The researchers are continuing their work to answer those and other questions using drones during prescribed fire experiments with the Prescribed Fire Science Consortium.

Read the full paper for free via Creative Commons: [Kobziar et al. 2018. Pyroaerobiology: the aerosolization and transport of viable microbial life by wildland fire. *Ecosphere* 9\(11\). <https://doi.org/10.1002/ecs2.2507>.](#)

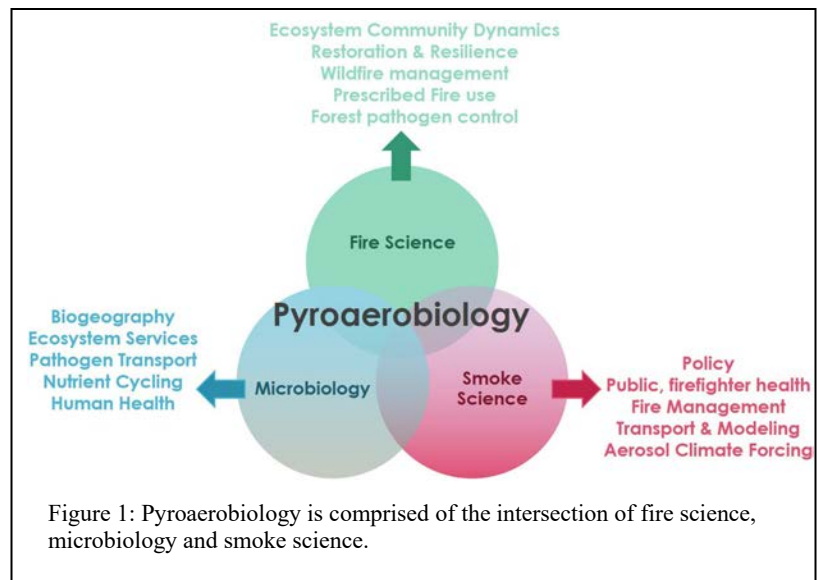


Figure 1: Pyroaerobiology is comprised of the intersection of fire science, microbiology and smoke science.



SFE Welcomes New Outreach Coordinator Laurel Kays, Thanks Outgoing Specialist Leslie Bobby

On October 1st, 2018, the SFE team welcomed new Outreach Coordinator Laurel Kays. Laurel is based out of North Carolina State University Extension Forestry where she splits her time between the Southern Fire Exchange and other regionally focused prescribed fire projects. SFE would like to thank Leslie Bobby for her hard work over the past year and wish her the best of luck as she focuses full-time on her projects with Southern Regional Extension Forestry.



Laurel Kays, New SFE Outreach Coordinator

CONTACT INFORMATION

For questions and feedback, email contactus@southernfireexchange.org

Exchange Leads

Raelene Crandall (Lead PI)
David Godwin (Co-PI & Director)
Joseph O'Brien (Co-PI)
Kevin Robertson (Co-PI)
Joe Roise (Co-PI)

Exchange Staff

Chet Buell (IT Specialist)
Laurel Kays (Outreach Specialist)

NEW SOUTHERN FIRE EXCHANGE FACT SHEETS

Quail Turkey, and Deer: Fire Effects and Management Recommendations

SFE has recently released two new fact sheets. The first, [Quail Turkey, and Deer: Fire Effects and Management Recommendations](#), summarizes the most recent research on fire management impacts on three of the most important non-waterfowl game species in the Southeast. Management recommendations resulting from the latest research are also highlighted.

Online Tools for Weather Information

The second fact sheet, [Online Tools for Weather Information](#), introduces the National Weather Service's Enhanced Data Display and the State Climate Office of North Carolina's Fire Weather Intelligence Portal. The fact sheet introduces these two web-based tools and provides a brief overview of how to get started using them.

2019 SFE WORKSHOPS AND WEBINARS

SFE will be hosting a workshop on duff fire science and management at the Weymouth Woods-Sandhills Nature Preserve in Southern Pines, NC on Wednesday, June 26, 2019. Additional details will be available soon, and those with questions can contact SFE Outreach Coordinator [Laurel Kays](#). Other workshops and events can be found on the [events page of our website](#).

SFE has four webinars already scheduled for 2019. Continuing education credits from the Society of American Foresters will be available. As additional webinars are scheduled they will be posted [on our website](#).

- Jan. 17th 1:00 PM ET – [Longleaf and Ponderosa Pine Fire Ecology: How History can be your Guide](#)
- Jan. 24th 1:00 PM ET – **Mapping burned areas from the Landsat archive: a new way of monitoring of fire occurrence across the United States, and a southern example for fire management applications**
- Jan. 31st 1:00 PM ET – **2018 National Prescribed Fire Use Survey Report**
- Feb. 20th 1:00 PM ET – [Homeowner Preparedness in the WUI: What Motivates Action?](#)

UPCOMING EVENTS

To add your event to our calendar, email us at

contactus@southernfireexchange.org

Prescribed Fire Council (PFC) Meetings

North Georgia Prescribed Fire Council
February 7, 2019
Jasper, GA

Trainings

[South Carolina Certified Prescribed Fire Manager Courses](#)
January 9, 2019
Columbia, SC

[Longleaf Academy: F201, Fire & Longleaf](#)

January 15-17, 2019
Guyton, GA

[Longleaf Academy: H201, Herbicides & Longleaf](#)

February 12-14, 2019
Columbia, SC

[Mississippi Prescribed Burning Short Courses](#)

March 5-7, Hattiesburg, MS
June 18-20, Pearl, MS
September 24-26, Starkville, MS

[Florida Certified Burn Manager Courses](#)

In-person various dates and times
Available online for experienced burners

Find More Resources at

www.SouthernFireExchange.org

UPCOMING EVENTS CONTINUED

Conferences, Workshops, and Festivals

Looking Inland: Fire, Forests, and Floodplains

January 12, 2019

Brunswick, GA

Flatwoods Fire and Nature Festival

January 26, 2019

Gainesville, FL

Prescribed Fire for Wildlife

February 26-28, 2019

Quincy, FL

Southern Silvicultural Research Conference

March 12-14, 2019

Shreveport, LA

Wildland Urban Interface Conference

March 26-28, 2019

Reno, NV

After the Flames Workshop and Conference

April 1-3, 2019

Denver, CO

6th International Fire Behavior and Fuels Conference

Apr. 29-May 3, 2019

Albuquerque, NM

Southern Blue Ridge Fire Learning Network

May 14-16, 2019

Athens, TN

Longleaf Festival

May 18, 2019

New Hill, NC

Fire in the Eastern Oak Forests

July 23-25, 2019

State College, PA

Shortleaf Pine Conference

October 1-3, 2019

Van Buren, MO

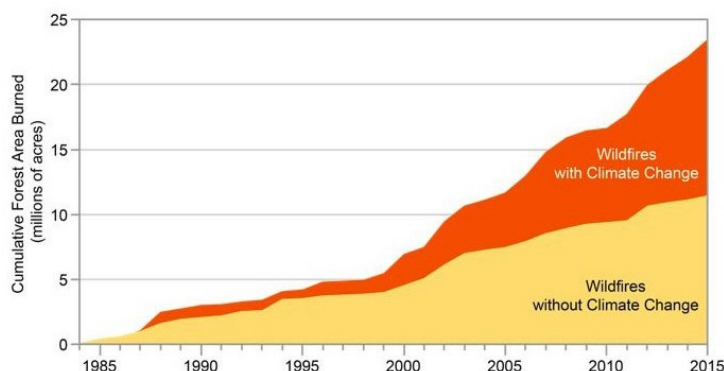


The Southern Fire Exchange is funded through the Joint Fire Science Program, in agreement with the United States Forest Service, Southern Research Station. This institution is an equal opportunity provider.

WHAT'S NEW?

Climate Assessment Predicts Increased Wildfires, Reduced Effectiveness of Prescribed Fire in Southeast

The [4th National Climate Assessment](#), released the Friday after Thanksgiving, includes predictions for the Southeast with respect to wildland fire. Rising temperatures and increasing drought occurrence and intensity are predicted to increase wildfires and reduce the effectiveness of prescribed fire. A [blog post on Wildfire Today](#) contains wildland fire-related excerpts from the report, including summaries of the results broken down by region.



Cumulative forest area burned 1984-2015 with and without climate change impacts (Wildfire Today, originally adapted from Abatzoglou and Williams 216)

2018 National Prescribed Fire Use Survey

The National Association of State Foresters and the Coalition of Prescribed Fire Councils have released [the findings of the 2018 National Prescribed Fire Use Survey](#). The survey found there has been a 12% decrease in the use of prescribed fire on forested land since 2011. While the Southeast continues to lead the nation in acres burned (7.6 million), the West is the only region trending upwards in its use of prescribed fire between 2011 and 2017. Join us on Jan. 31st at 1:00 PM ET for a [SFE webinar](#) exploring the results of this regional study.

National Science Foundation Hurricane Synthesis Workshop

Applications are being accepted to participate in a working group examining ecosystem responses to hurricanes, with a workshop likely taking place April 28-May 1, 2019. All participants must have and be able to share time series data covering the period before and after a major hurricane or tropical storm landfall event. Full information on the project objectives, implementation, and requirements for participation, as well as the application to participate, [can be found here](#).

New Cooperative Extension Wildland Fire Initiative

The [Association of Natural Resource Extension Professionals](#) has started a new Wildland Fire Initiative. This initiative will allow Cooperative Extension professionals to better address wildland fire issues in their communities. The initiative is open beyond Extension agents and fire science professionals interested in connecting with this effort can contact [Jennifer Fawcett](#).

UPCOMING EVENTS CONTINUED

Conferences, Workshops, and Festivals

3rd Cohesive Strategy Workshop

October 21-24, 2019
Plymouth, MA

International Fire Ecology and Management

Congress

November 18-22, 2019
Tucson, AZ

Upcoming Webinars

Fire Ecology of Longleaf and Ponderosa Pine: How History Can Be Your Guide

January 17, 2019 - 1:00 PM ET

Mapping Burned Areas from the Landsat Archive: A New Way of Monitoring Fire Occurrence Across the US, and a Southern Example for Fire Management Applications

(Registration coming soon)
January 24, 2019 - 1:00 PM ET

2018 National Prescribed Fire Use Survey Report

(Registration coming soon)
January 31, 2019 - 1:00 PM ET

Homeowner Preparedness in the WUI: What Motivates Action?

February 20, 2019 - 1:00 PM ET

Webinar Recordings Available

Lessons Learned from Hosting Learn-n-Burn Events

Using Drone Imagery to Analyze Prescribed Burns

Prescribed Fire and Grazing

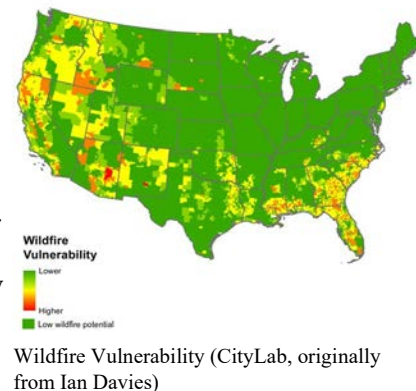
Prescribed Fire Tracking with SIPFIS

We Bring Fire with Us: The Role of People in Changing Modern U.S. Fire Regimes

Fire in Wetlands

Communities of Color Face Greater Vulnerability to Wildfires

A study published in *PLoS One* in November used a social-ecological approach to examine wildfire vulnerability; a measure that accounts for landscape wildfire risk and socioeconomic factors that influence how an area is able to recover after a wildfire event. The study found this vulnerability is spread unequally across race and ethnicity, as census tracts with a population that is majority Black, Hispanic, or Native American face a roughly 50% greater vulnerability to wildfires. Using this social-ecological perspective, researchers also found that while the Southeast has moderate scores in wildfire hazard alone, it stands out as a region with a [high vulnerability to wildfire](#).



Natural Areas Association Fire Compendium 2010-2017

The Natural Areas Association has released its [2nd Fire Compendium](#) covering 2010-2017, which includes articles from the *Natural Areas Journal* on fire ecology and management. This is a supplement to the [original compendium](#), which covered articles published between 1983 and 2009. Unlike most articles from the *Natural Areas Journal* the **articles included in the 2nd Fire Compendium are available for free via open access publishing.**

Upcoming Women's TREX at Tall Timbers Research Station

A Women-in-Fire Prescribed Fire Training Exchange will be held at Tall Timbers Research Station outside Tallahassee, FL March 18-29, 2019. Applications are welcome from all genders, nationalities, and levels of fire experience. While [applications](#) were due by the end of the day Friday, January 4, 2019, it may still be possible to apply. Check out [this resource](#) from The Nature Conservancy for more information about Prescribed Fire

Regional Fire Survey Prologues Included in Steven Pyne Joint Fire Science Program Final Report

A recent [JFSP final report](#) by acclaimed American fire historian Dr. Steven Pyne provides several snapshots from his [To the Last Smoke](#) series on the contemporary American fire scene. Some of the regional books are available from the [University of Arizona Press](#), while others will be published in the near future.

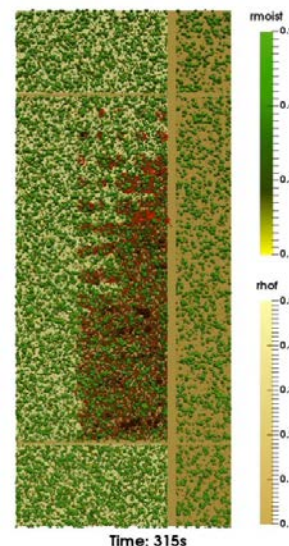
NEW TECHNOLOGY AND TOOLS

IFTDSS Version 3.1.1 Available

The [Interagency Fuel Treatment Decision Support System Version 3.1.1](#) has been released. This update contains several new and expanded features, which are covered on a [flier](#) and the “[what’s new](#)” section of the website. [A video](#) about the new and expanded features is also available. Users are encouraged to [give feedback](#) to help improve future versions of the tool.

FIRETEC in the News

Modeling programs like FIRETEC have been featured in multiple prominent media outlets, particularly in the wake of the most recent California wildfires. [Wired](#) covered the programs use along with supercomputers to determine where prescribed burns can be most effective for wildfire risk reduction. The latest edition of [Fire Management Today](#) featured an article by USDA Forest Service Fire Management Specialist James Furman on the benefits and preliminary results of FIRETEC’s capabilities. SFE has been fortunate to work with the FIRETEC team on several events and webinar recordings and model runs can be viewed [on the SFE YouTube channel](#).



FIRE SCIENCE FROM OUTSIDE THE SOUTH

The Science of California Wildfires

A recent [PBS News Hour segment](#) gave an excellent overview of the many factors contributing to the destructive wildfires seen in California. Covering California ecosystems, weather and topography as well as the history of forest management, fire exclusion, and the growth of the WUI, the segment is an excellent primer on the situation. A full-length NOVA documentary titled “Inside the Megafire” will air in the spring of 2019.

Fire Research Consensus Working Group Final Report

The [Fire Research Consensus \(FRC\) has released a final report](#) which identifies common ground among fire scientists on the desirable severity of fire in western US forest ecosystems. The report is intended to address disagreements on topics including fire history and ecology, human impacts, and many others, and is intended to inform management operations.

FUNDING OPPORTUNITIES

AFE and JFSP TREE Grants for Student Travel

The Association of Fire Ecology has been awarded the privilege of administering the [Joint Fire Science Program’s TREE grant](#). These grants help graduate students travel to present at conferences and other events related to wildland fire science and management. Applications are due 60 days before the start of the event the student plans to attend.

Department of Defense REPI Challenge

The Department of Defense Readiness and Environmental Protection Integration (REPI) Challenge is now accepting pre-proposals. Selected projects will support the rebuilding of military readiness. Past projects have included funding for land conservation and management activities, targeted land conservation, and other activities. The program may provide up to \$15 million in FY19. [Submit pre-proposals](#) by Friday, January 25, 2019 at 8:00 PM ET.

RECENT FIRE SCIENCE PUBLICATIONS FOR THE SOUTH

Knott et al. 2019. [Shifts in forest composition in the eastern United States](https://doi.org/10.1016/j.foreco.2018.10.061). *Forest Ecology and Management*. 433:176-183. <https://doi.org/10.1016/j.foreco.2018.10.061>.

Tanner et al. 2018. [A macroscopic charcoal and multiproxy record from peat recovered from depression marshes in longleaf pine sandhills, Florida, USA](https://doi.org/10.3390/quat1030025). *Quaternary*. 1 (3): 25. **Open Access** <https://doi.org/10.3390/quat1030025>.

Coates et al. 2018. [Mineral soil chemical properties as influenced by long-term use of prescribed fire with differing frequencies in a Southeastern coastal plain pine forest](https://doi.org/10.3390/f9120739). *Forests*. 9 (12): 739. **Open Access** <https://doi.org/10.3390/f9120739>.

Reimer and Eriksen 2018. [The wildfire within: gender, leadership and wildland fire culture](https://doi.org/10.1071/WF17150). *International Journal of Wildland Fire*. 27(11):715-726. **Open Access** <https://doi.org/10.1071/WF17150>.

Hawley et al. 2018. [A novel approach to fuel biomass sampling for 3D fuel characterization](https://doi.org/10.1016/j.mex.2018.11.006). *Methods X*. 5:1596-1604. **Open Access** <https://doi.org/10.1016/j.mex.2018.11.006>.

Hiers et al. 2018. [Fine dead fuel moisture shows complex lagged responses to environmental conditions in a saw palmetto \(*Serenoa repens*\) flatwoods](https://doi.org/10.1016/j.agrformet.2018.11.038). *Agricultural and Forest Meteorology*. 266-267:20-28. <https://doi.org/10.1016/j.agrformet.2018.11.038>.

Nowell et al. 2018. [A new picture of fire extent, variability, and drought interaction in prescribed fire landscapes: insights from Florida government records](https://doi.org/10.1029/2018GL078679). *Geophysical Research Letters*. 15(45): 7874-7884. **Open Access** <https://doi.org/10.1029/2018GL078679>.

Looking for more information on a specific topic?

Check out the [publications](#) section on the SFE website.

There are more than 50 factsheets that explore different aspects of fire science available, and archived issues of Fire Lines.

IN NATURAL RESOURCES WE ARE REMINDED THAT WE
HAVE SO MANY REASONS TO BE

Grateful

HAPPY NEW YEAR FROM YOUR FRIENDS AT
THE SOUTHERN FIRE EXCHANGE

