



SOUTHERN Fire Exchange

A JFSP Knowledge Exchange Consortium



FIRE LINES

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Southeastern Section of the Association for Fire Ecology

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IN THIS ISSUE

Prescribed Fire Trends, Effectiveness, and Impediments in the Southeast	1
Effects of Fire Environment on Particulate Matter Emission Factors	1
UF SAFE: Raising Awareness about Prescribed Fire and Firewise	2
RxCADRE Fuel Measurements Now Available for Download	2
2014 Incident Review Summary	2
Upcoming Events	2
NC Sandhills Hosts a Successful Prescribed Fire Training Exchange (TREX)	3
Cohesive Strategy Corner	3
Regular Fire Maintains Shortleaf Pine Integrity	4
Join Us for Landowner Field Days in Florida and Georgia	4
New SFE fact sheet on Mechanical Treatments	4
News and Reminders	4

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Prescribed Fire Trends, Effectiveness, and Impediments in the Southeast: A Southern Fire Exchange Survey Product

You may remember receiving a survey request from the SFE regarding prescribed fire use and effectiveness, and some of you may remember answering the survey. Thank you to all who participated! More than 500 fire practitioners, working on private and public lands across the South, responded to the survey, and the results were recently published in the open-access online journal *Forests*. Although a total of 12 states were represented, most respondents were from Florida, North Carolina, and Georgia, with an average of 20 years of experience, and employed by public agencies. Comparing this survey's data on prescribed fire use with previous surveys suggests that while the amount of prescribed burning being conducted in the region is still increasing, the rate of that increase has slowed over time, especially in certain states and on private lands. Limited budgets and staffing were common barriers among public land managers, and private individuals viewed liability as the most important impediment. Numerous respondents commented that smoke management and weather constraints were also important. Managers consistently reported that a 1-2 year fire interval was effective at decreasing wildfire ignitions, behavior, and severity, while a 3-4 year fire interval was not viewed as effective. Examining the data by vegetation type showed that the length of perceived effectiveness was strongly correlated to the respondents' perception of the historical fire return interval for that community type. In addition, reasons for prescribed burning (e.g., fuels reduction, restoration, wildlife habitat) differed across states, management types, and vegetation types.

Comments discussed in the paper convey interesting insights into the nuances of the relationship between prescribed fire and wildfire. Overall results suggest that high-frequency burning is important for wildfire risk reduction, especially in ecosystems with rapid fuel recovery and historically short fire return intervals.
[Click here](#) to read the article.



Effects of Fire Environment on Particulate Matter Emission Factors

Particulate matter emission factors are numbers used to estimate the amount of emissions produced per biomass consumed, so they are important for inventories of atmospheric emissions from wildland fire. Among other emissions, particulate matter less than 2.5 micrometers in diameter ($PM_{2.5}$) is closely monitored due to human health impacts. To determine how different fire environment variables affect $PM_{2.5}$ emissions in pine-grassland ecosystems, a study was conducted during 41 prescribed burns. The burns took place in Florida and Georgia, and varied by years since previous fire, season of burn, and fire direction of spread. At each burn, fuel and emission measurements were collected, as well as fire behavior and weather conditions. The data were analyzed using structural equation modeling. Results showed that $PM_{2.5}$ increased from winter to summer months and with the percentage of fine fuels composed of pine needles. $PM_{2.5}$ was found to decrease with the percentage of grass content and the frequency of burning. The authors recommend timber thinning and frequent prescribed burning to reduce $PM_{2.5}$ on a per burn basis. [Click here](#) to read the full article.

UF SAFE: Raising Awareness about Prescribed Fire and Firewise

Contributed by Aidan McCormick, University of Florida

Members of the University of Florida chapter for the Student Association for Fire Ecology (SAFE) recently participated in Fire Fest—an annual public education event hosted by Paynes Prairie State Park near Gainesville, Florida. Charlie Wilson, Heather Larson, and Aidan McCormick organized and ran a station focused on educating the public on wildfire mitigation and particularly Firewise landscaping. UF SAFE members had a few minutes with each passing group to convey key Firewise concepts, such as having 30 feet of defensible space around your home, breaking up the continuity of fuels in your yard, and keeping roofs and gutters clear of leaf and needle litter. They also discussed how the use of prescribed fire reduces the risk of wildfire and therefore protects wildland-urban interface homes—a point that many people found very interesting. Participants were encouraged to pick up publications from the University of Florida, USFS InterfaceSouth, Southern Fire Exchange, and Florida Forest Service. An educational poster on the role of fire in natural ecosystems, a one-page checklist on how to maintain a Firewise home, and a multi-page pamphlet on Firewise landscaping were among the most popular publications. After speaking with several local families, out of town visitors, and a very enthusiastic Girl Scout troop, the SAFE members reported the following lessons learned:

- The majority of the people had some previous familiarity with prescribed fire.
- People recognized the term ‘controlled burning’ over ‘prescribed fire.’
- Out of town visitors showed higher interest in prescribed fire than those who lived in nearby cities.



“This was a great experience, exposing fire ecology students to the importance of public education about prescribed fire.”

RxCADRE Fuel Measurements

Now Available for Download

For researchers, students, and land managers interested in fuel loading and consumption, detailed fuel loading, fuel consumption, and fuel moisture measurements from the renowned RxCADRE 2008, 2011, and 2012 prescribed fire experiments at Eglin Air Force Base are now available for free download (<http://www.fs.usda.gov/rds/archive/Product/RDS-2014-0028>). The data archive also includes an extensive collection of photos from the sample plots.

2014 Incident Review Summary

The Wildland Fire Lessons Learned Center (LLC) recently released the [2014 Incident Review Summary](#) and encourages you to use this information in your upcoming training topics and discussions. This 10-page document summarizes incident reports submitted to and gathered by the LLC during 2014. Incidents involving chainsaw use and those involving the use of medical emergency plans were common. Reading the report is not enough; make sure you discuss the information with your colleagues and identify at least one change you can make based on what you learned.

UPCOMING EVENTS

Visit the SFE Calendar and the JFSP Calendar to learn more about upcoming events. To add an event to our calendar, send the event information to contactus@southernfireexchange.org.

Webinars

Burning for Birds

April 3, 11am Eastern

Easy-to-Use Smoke Tools

April 16, 2pm Eastern

JFSP Extreme Fire Behavior Webinar Series

Vortices and Wildland Fire

April 30, 3pm Eastern

Crown Fire Behavior in Conifer Forests

May 7, 3pm Eastern

Workshops and Trainings

Georgia Landowner Field Day

April 21, 2015

Folkston, GA

Florida Landowner Field Day

April 23, 2015

Lake City, FL

Southern Blue Ridge FLN Regional Workshop

May 12-14, 2015

Morganton, NC

Prescribed Burning Workshop

May 7-9, 2015

DeRidder, LA

Landowner Prescribed Fire Workshop (info will be posted soon)

May 21, 2015

Woodville, TX

Conferences

13th International Wildland Fire Safety Summit & 4th Human Dimensions of Wildland Fire Conference

April 20-24, 2015

Boise, ID

11th Symposium on Fire and Forest Meteorology

May 5-7, 2015

Minneapolis, MN

Fire in Eastern Oak Forests Conference

May 27-29, 2015

Tuscaloosa, AL

Backyards & Beyond: Wildland Fire Education Conference

October 22-24, 2015

Myrtle Beach, SC

Society of American Foresters 2015 National Convention

November 3-7, 2015

Baton Rouge, LA

6th International Association for Fire Ecology Congress

November 16-20, 2015

San Antonio, TX

NC Sandhills Hosts a Successful Prescribed Fire Training Exchange (TREX)

Contributed by Jennifer Evans, North Carolina State University

A hardy group of prescribed fire trainees recently braved the elements to participate in a successful NC Prescribed Fire Training Exchange (TREX). TREX is an innovative program that has proven to be successful in taking steps toward increasing the number of trained and qualified professionals needed to meet the increased demand for more prescribed burners across the country. With the support of numerous organizations including the Southeast Regional Partnership for Planning and Sustainability (SERPPAS) Prescribed Fire Working Group led by North Carolina State University, the North Carolina Prescribed Fire Council, the Fire Learning Network, The Nature Conservancy and many others, a TREX was held in the Sandhills of NC from February 15-28, 2015. Despite some of the coldest temperatures on record in the NC Sandhills and precipitation in the forms of snow, ice, and rain, 45 participants and 13 cadre members were able to share knowledge and techniques to enhance their prescribed burning skills.

Training took place in the classroom and through on-the-ground training on both private and public lands, with thirty-five of the participants working on their position task books for NWCG qualifications. Approximately 525 acres of longleaf habitat were burned on both private and public lands. By many accounts, the most valuable aspect of the training was the exposure to techniques, approaches, and culture of fire programs from many different organizations, different states, and experiences in different fuel types. Incident Commander Mike Norris from the NC Chapter of The Nature Conservancy said, “Despite the poor weather, we maximized the training opportunities on each burn by having solid plans, motivated participants, and well-coordinated operations at each prescribed fire.” Based on how well this TREX went, he is already starting to make plans for another TREX in May 2017.

Read the full article, [A Review of #NCTREX2015: A Little Cold and Precipitation Can't Stop Us!](#), on the Southeast Prescribed Fire Update website. Would you like to participate in a future TREX? Check out the [2015 schedule](#).



COHESIVE STRATEGY UPDATE: INCREASING FIRE SCIENCE OUTREACH FOR LANDOWNERS

Among the many opportunities and organizations that focus on science delivery and outreach for landowners and the general public, the Cooperative Extension Service (CES) is unique—CES just celebrated its 100th anniversary, giving it a much longer history than other public and landowner educational programs. With that longevity, CES, especially through county extension offices, has gained the trust and respect of landowners across the country. In the last 25 years, CES has been a key player in some large educational programs related to wildland fire and prescribed burning, most notably in Florida in 2000 and through the University of Nevada, Reno's *Living with Fire* program, which has been replicated in many states. A recent quick survey of CES forestry specialists across the Southeast demonstrated that in most states, CES currently collaborates with state forestry agencies and others to conduct landowner workshops on prescribed burning. Recognizing CES' unique position, the national and regional Cohesive Wildland Fire Management Strategy is looking at other ways to involve CES in educational and science delivery programs. A workshop in Tucson, AZ in early March described ongoing fire-related Extension programs in the western U.S. with ideas on how to expand those efforts to meet both Cohesive Strategy and local goals. The Southern Region Extension Forestry (<http://www.sref.info>) office is investigating opportunities for similar expansion in the Southeast region. At the same time, the Southeast Regional Partnership for Planning and Sustainability's (www.serppas.org) Prescribed Fire Work Group is sponsoring a Communications Summit this summer to evaluate opportunities for improving landowner outreach related to prescribed burning. Having a good handle on current or recent programs will be key to expanding science delivery to landowners and the general public. If you know of CES programs and activities related to fire in the Southeast, please send a short note to ajl2@ufl.edu or hcampbell@sref.info that describes the activity and a contact person.

www.southernwildfire.net

The Southern Regional Strategy Committee for the Cohesive Strategy has launched a new website to educate the public about the benefits and risks of wildland fire in the South and to provide examples for minimizing those risks. Take a few minutes to explore the website and get to know the resources available.

Regular Fire Maintains Shortleaf Pine Integrity

Restoring prescribed fire may be important for protecting the genetic identity of shortleaf pine in its native range. Historically, fire-tolerant shortleaf pine grew on drier sites with more frequent fire than loblolly pine, which is relatively fire intolerant at young ages. Widespread planting of loblolly pine across the South since the 1940s has resulted in the two species growing close together in many locations. Where they grow together they frequently hybridize and backcross, resulting in trees with a range of intermediate characteristics. Fire exclusion presumably enhanced this process by allowing both loblolly and hybrid seedlings to grow to fire tolerant sizes, with further cross breeding. This hypothesis was recently tested by scientists at Oklahoma State University and the U.S. Forest Service in collaboration with Tall Timbers Research Station where mixed stands of loblolly, shortleaf, and hybrids developed in the early 1900s on old agricultural fields. A long history of comparing fire exclusion versus burning every two years in these stands provided a unique opportunity to evaluate how



repeated fire has influenced regeneration under those stands. John Stewart, Rodney Will, Kevin Robertson, and Dana Nelson recently described the results of their analysis of genetic markers in seedlings and saplings under the two fire regimes (Conservation Genetics (2015) 16: 491-495 <http://www.treesearch.fs.fed.us/pubs/47680>). Although the overstories in unburned and biennial burn plots were similar in shortleaf, loblolly, and hybrid composition, young trees in the understory were remarkably different. Seedlings in fire-excluded areas had a high rate of hybridization, but those in the burned areas were almost pure shortleaf. With loblolly pine so prevalent across the region, frequent prescribed burning will be an important tool for managing and sustaining natural shortleaf forests.

Join Us for Landowner Field Days in Florida and Georgia

SFE is helping plan two workshops/fields days for landowners to learn about longleaf pine management and restoration, prescribed fire, cost-share opportunities, and wildlife management. At both events, the morning will consist of indoor presentations and the afternoon will consist of a field tour with visits to sites on public and private lands. Participation is free and lunch provided, but registration is required.

- ⇒ April 21, 2015; 8:00 am – 4:00 pm ET
Okefenokee National Wildlife Refuge, Folkston, Georgia
Registration Link: <https://galandownerfieldday.eventbrite.com>

- ⇒ April 23, 2015; 8:30 am – 4:30 pm ET
Gateway Community College, Lake City, Florida
Registration Link: <https://flandownerfieldday.eventbrite.com>

New SFE Fact Sheet on Mechanical Treatments

A new SFE fact sheet, [Mechanical Treatments in Pine Flatwoods: A Temporary Rearrangement of Fuel Structure](#), provides a summary of recent research that investigated the impacts of mechanical mowing treatments for managing understory fuels in pine flatwoods. Key points from the fact sheet include:

- Mechanical "mowing" treatments can alter the structure and arrangement of understory and midstory fuels in pine flatwoods thereby reducing post-treatment flame lengths and rates of fire spread. Shrubs, however, can quickly recover following treatment and reduce the longevity of this effectiveness.
- Surface fuels resulting from the mowing of small trees and shrubs may present challenges given that long-duration combustion can occur in these compact fuels.
- The timing of subsequent mechanical or prescribed fire treatments may be very important for achieving management objectives.

NEWS AND REMINDERS

REQUEST FOR SPEAKERS

The Florida Scrub Working Group is looking for workshop presenters for an event they are planning for fall 2015, with the theme "Managing for Heterogeneity" in Florida ecosystems. If you have recommendations for managers or researchers that could share their experiences and knowledge on this topic, please contact David Godwin at drg2814@ufl.edu.

PRESCRIBED BURN MANAGER CERTIFICATION TRAININGS

Several states have Prescribed Burn Manager Certification Trainings scheduled. [Click here](#) for a list of known events in the SE.

ARCHIVED WEBINARS

If you missed any of the recent monthly fire science webinars hosted by JFSP, IAWF, and LLC, you can watch the recorded versions at your convenience. Check out the list of archived webinars on the [LLC website](#).

FIRESCIENCE.GOV

Join [JFSP's FireScience.gov email list](#) and receive weekly announcements with fire science and management news.

FIRE LINES CONTRIBUTIONS

Send your fire-related news, field stories, or photos to Annie Oxarart (oxarart@ufl.edu) to be included in future issues of Fire Lines.



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