



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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Learn more about our [Partners](#) and the [JFSP Knowledge Exchange Consortia](#).

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SFE Spotlight on Fuel Treatments

The next Southern Fire Exchange (SFE) Spotlight Series will focus on science resources related to treatments for managing vegetative fuel loads. We'll be sharing several new fact sheets to provide you with a summary of the most important findings from the following recent research in the Southeast:

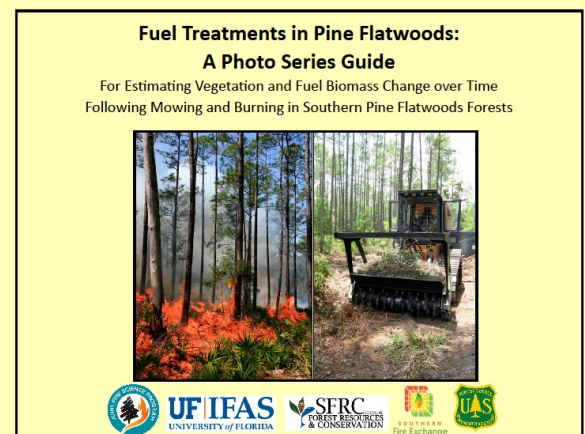
- Research that was conducted in South Carolina by Brett Moule to compare mechanical mastication, herbicide application, and prescribed fire within an established longleaf pine sandhill ecosystem (see article on page 2 for a quick overview of this research).
- A study completed by Jesse Kreye and Leda Kobziar in pine flatwoods in Florida to look at the immediate and short-term response of understory fuels following mechanical mastication.

In addition, a review article recently published in *Forest Ecology and Management* summarized the current knowledge of fire behavior and fuel characteristics following mechanical fuel mastication. This collaborative work entitled **Fire Behavior in Masticated Fuels: A Review**, includes information from many studies across the country, including the Southeast. Look for an upcoming SFE fact sheet that will summarize the key points and management implications.

Fuel Treatments in Pine Flatwoods: A Photo Series Guide

Photo guides are a common reference tool for informing forest management decisions. They are often used to estimate fuel loading and to predict potential fire behavior. However, few guides show understory succession after mechanical fuels treatments and prescribed burns. A new photo series guide illustrates three fuel manipulation treatments (Mow, Burn, and Mow and Burn) compared to untreated conditions, and captures the succession of post treatment understory and fuels recovery in southern pine flatwoods forests.

The photo guide is designed to assist land managers in estimating the recovery and growth of characteristic understory conditions in flatwoods forests of the Southern Coastal Plain. Forest managers can use the photos and accompanying data to compare with observed conditions in pine flatwoods forests and to support management decision-making regarding prescribed fire or fuels treatment implementation, timing, and consequences for potential wildfire activity.



[Click here to access the
new photo series guide.](#)

Partner Spotlight: Chattahoochee Fall Line

Conservation Partnership

The **Chattahoochee Fall Line Conservation Partnership** (CFLCP) works with many partners throughout Georgia and Alabama to protect, restore, and manage lands in the Chattahoochee Fall Line Region. The Fall Line, an ancient shoreline, stretches from Augusta, Georgia west into Alabama. The area along the border of Georgia and Alabama, where the Fall Line and the watershed of Chattahoochee River meet, is known as the Chattahoochee Fall Line. The CFLCP vision for this region is “a sustainable landscape of native wildlife and plant communities including healthy longleaf pine forests, streams, wetlands, and working lands.”



CFLCP partners include private landowners, non-profit organizations, public agencies, along with elected officials and community leaders from West Georgia and East Alabama. Together, these partners own and manage over 114,100 acres in the area for conservation purposes. These lands support the local economies through activities such as forestry, farming, hunting, outdoor recreation, and tourism. The region is actively managed with prescribed fire, as fire plays an important role in this landscape. With Fort Benning being located within the Chattahoochee Fall Line region, the CFLCP works closely with the US Army and aims to protect, restore, and manage up to 40,000 acres around the base as a conservation corridor and natural buffer by 2020.

Together with the CFLCP and other partners, the Southern Fire Exchange co-hosted the “Lessons from the Fall Line Region” field tour in fall 2013. Participants learned about local longleaf pine and prescribed fire research as well as restoration efforts in the region. To see photos from the field tour, check out the [SFE album on flickr](#). SFE is excited to partner with the CFLCP and we look forward to working together on future events and activities. For more information, visit the CFLCP website at <http://www.cflcp.org>.

Vegetation Treatment Options in Longleaf Pine Sandhill



Photo by David Godwin, SFE
Program Coordinator

In ecosystems where the use of prescribed fire may be constrained by human development or risk aversion, other vegetation management options have been applied to reduce fuel loads for potential wildfires. Unfortunately, scientific comparisons of such management options in longleaf pine sandhill are relatively few. A recent study in South Carolina took a broad approach to comparing fuel treatment options and impacts in a 35-year-old longleaf pine stand on a xeric sandhill site. For his doctoral research at Clemson University, Brett Moule compared prescribed fire, herbicide application (hexazinone as Velpar ULW, 1.15 lb ai/ac), and mechanical mastication of midstory vegetation for their effects on understory species diversity, wiregrass presence and recruitment, survival of longleaf pine seedlings, litter depth, and gopher tortoise forage species. Moule concluded that prescribed fire would be the preferred treatment method in longleaf pine sandhill; however, *“The results from this study suggest the possibility that the broadcast application of granular hexazinone at a relatively low rate and above ground mechanical mastication treatments ... may be used to sustain the diversity of the herbaceous understory vegetation, promote natural longleaf pine seedling regeneration, and remove competing hardwoods from the mid-story.”*

A summary of the research results that led to these conclusions will be available soon as a new SFE Fact Sheet: Vegetation Treatment Options and Management Objectives in Longleaf Pine—A Case Study.

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 sfe@ifas.ufl.edu.

Webinars

Human-side of Restoration
May 20, 12:30pm EDT

Prescribed Fire Council Meetings

Alabama PFC Meeting
August 28, 2014
Columbiana, Alabama

North Carolina PFC Meeting
August 12-14, 2014
Black Mountain, NC

Georgia PFC Meeting
September 25, 2014
Tifton, Georgia

Workshops and Trainings

Certified Burn Manager Courses

Check the Southeast Prescribed Fire Update for trainings scheduled in your state for this summer and fall.

Longleaf Pine Forest Restoration & Management Workshop
May 14, 2104
Washington County, Florida

Intro to Prescribed Fire Workshop
May 15, 2014
Collins, Mississippi

Outreach for Prescribed Fire in the Wildland-Urban Interface
June 2, 2014
Deltona, Florida

Prescribed Fire Field Day for Landowners
July 24, 2014 (Save the Date, More Info Soon)
Livingston, Alabama

S130/190 Basic Wildland Firefighter Training
August 11-15, 2014
Gainesville, Florida

Fire in Oaks Workshop
August 14, 2014 (Save the Date, More Info Soon)
Black Mountain, NC

Conferences

Large Wildland Fires: Social, Political & Ecological Effects
May 19-23, 2014
Missoula, Montana

Prescribed Fire in the Mid-South: Field Tour and Conference
June 2-5, 2014
Locations in KY and TN

Natural Areas Annual Conference
October 15-17, 2014
Dayton, Ohio

Longleaf Alliance Regional Conference
October 21-23, 2014
Mobile, Alabama

Wildland Fire Canada Conference
October 7-9, 2014
Halifax, Nova Scotia

Conference on Ecological & Ecosystem Restoration
July 28-August 1, 2014
New Orleans, Louisiana

NEWS AND REMINDERS

TELL US WHAT YOU THINK!

Please take a few minutes to participate in the evaluation of the Southern Fire Exchange. Your responses to this web-based survey are important and will help us better understand how we can assist you with the communication and application of fire science research results and resources. If you have already completed the survey, we appreciate your participation! If you have not yet responded, please [click here](#) to read the survey invitation and access the survey link. The survey closes May 30, 2014.

LLC TORCH LEG BURNS

A new Rapid Lesson Sharing from the Wildland Fire Lessons Learned Center focuses on **torch leg burns**. This quick read points you to six instances where fuel from torches ignited on pant legs.

COHESIVE STRATEGY

The National Cohesive Wildland Fire Management Strategy recently released a document titled **The National Strategy**, which provides “the strategic direction necessary to achieve the vision for the next century—to safely and effectively extinguish fire when needed; use fire where allowable; manage our natural resources; and, as a Nation, live with wildland fire.”

PRESCRIBED FIRE IN THE MID-SOUTH

For those on the northern edge of our range, our partners from the **Oak Woodlands and Forests Fire Science Consortium** are hosting a **multi-site field tour and mini-conference** this summer in early June. Field tours in TN and KY will precede a two-day conference in Crossville, TN. Attendance is free but registration is required.

BASIC SMOKE MANAGEMENT WEBINAR

Did you miss Pete Lahm’s webinar on Basic Smoke Management Practices? Watch the **archived version** any time! Check out the **SFE YouTube** page for this and other archived webinars.

FIRE LINES CONTRIBUTIONS

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



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.

Private Landowner Perspectives on Prescribed Fire for Wildfire Risk Reduction in the Southern US

Leland Taylor and Leda Kobziar, School of Forest Resources and Conservation, University of Florida

Prescribed fire has long been utilized by private landowners in southern forests to meet a variety of objectives such as fuels reduction, competition control, pest or disease control, improvement of wildlife habitat, and wildfire risk reduction. The purpose of this work was to bridge the knowledge gap between assumptions and opinions of private landowners as to the effects of prescribed fire on wildfire in the southeastern US.

Survey results focus on both commercial and non-commercial private landowners engaged in prescribed fire use. Respondents were surveyed in the fall of 2011 using email lists from the Southern Fire Exchange, with an overall response rate of 19% of which 83 respondents were private landowners. The majority of respondents were from Florida (14), North Carolina (22), South Carolina (12) and Georgia (10). Roughly equal numbers reported increases, decreases, or no change in prescribed fire use in the last five years, while the last decade saw slightly more respondents with increased fire use. Private contractors burned the highest percentage of the lands they managed, over 20%, whereas private commercial landowners reported burning only a small fraction of their lands.

Most respondents believed prescribed burning reduced wildfire ignitions in loblolly/shortleaf pine systems for 2-4 years, while the longevity in longleaf/slash pine uplands and flatwoods was slightly higher (Figure 1). There was a clear consensus that maintaining a regular fire return interval of less than five years reduced the amount of time, money, and resources required for wildfire suppression. Under different forest types when a wildfire occurs in a recently burned area (1-3 years) there is a consensus that overstory tree mortality will experience a “major decrease” while fire rate of spread, flame length, and duration of smoldering combustion would experience “some” or “major” decreases (as a result of prescribed fire). A majority of respondents believed that regular prescribed fire use affords fire managers greater flexibility in suppression tactics by allowing them to consider and potentially incorporate direct attack into suppression efforts, if necessary. In general, the survey results suggest that frequent prescribed burning has overall beneficial impacts on decreasing the severity of wildfires, and allows fire managers greater flexibility during wildfire suppression on private lands.

For more information about this study, contact Leda Kobziar at lkobziar@ufl.edu. This research brief was originally printed in the CFEOR March 3, 2014 newsletter, available online (http://sfrc.ufl.edu/cfeor/docs/updates/CFEOR_Updates_041114.pdf).

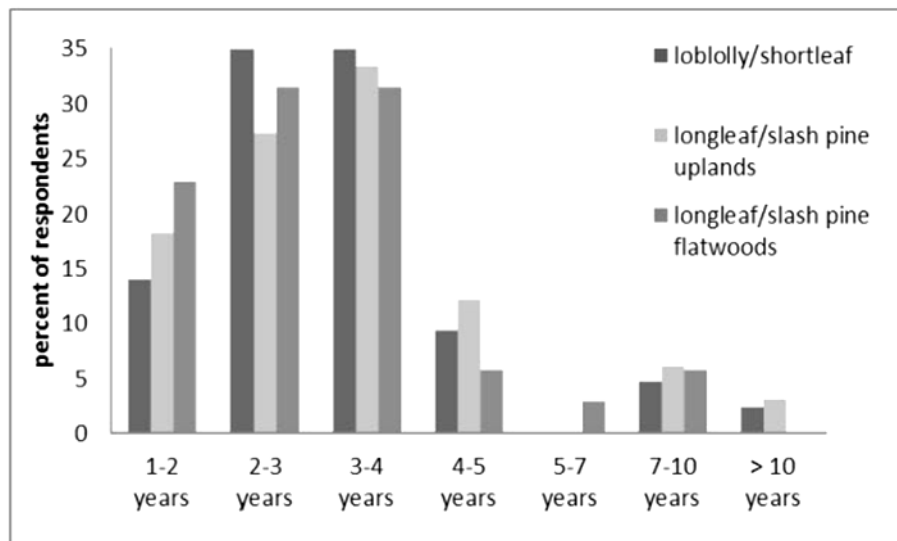


Figure 1. Longevity of effectiveness of prescribed fire in reducing wildfire ignitions across vegetation community types, as reported by private landowners across the southeastern US (n=83).

How Does Prescribed Fire Affect Wildfire Risk?

That question has been asked across the South for at least 50 years and a number of research studies have addressed it from various angles. This article provides a very brief summary of the conclusions of four of those studies from pine flatwoods ecosystems. Collectively the studies all come to similar conclusions although from different perspectives. One of the earliest studies was reported in the *Journal of Forestry* in 1963 (Davis & Cooper, 1963). The authors tracked 380 wildfires over 4 years on almost 1 million acres in South Georgia and North Florida during which time they documented the years since last burned for each wildfire. They concluded that fuel accumulations of fewer than 3 years resulted in less wildfires, fewer acres burned, and lower fire intensities than fuel accumulations greater than 3 years.

Wildfires occurred across northern Florida during a prolonged droughty period from 1998 to 2000. A number of those fires burned up to or across areas that had been treated with prescribed fire or other fuel treatments. Several studies evaluated the effects of these treatments on wildfire characteristics. Brose and Wade (2002) measured fuel loads in sites representing various times since last fire. Using those fuel load measurements in combination with weather conditions recorded during the 1998 wildfires, they modeled fire behavior in BEHAVE and concluded that prescribed fire on those sites would reduce wildfire hazard for approximately 2 years until shrubs recover. Outcalt and Wade (2004) evaluated pine mortality after the 1998 and 2000 Florida wildfires on three different properties. They concluded that wildfire intensity and severity were lower for one to two years after prescribed fire than longer fire return intervals.

A more recent study used Landsat satellite imagery of 217 fires (almost half were prescribed burns) on the Osceola National Forest in northeast Florida to detect differences in fire severity as related to previous fire history (Malone, Kobziar, Staudhammer, & Abd-Elrahman, 2011). By comparing images from before a fire and one year after the fire, the authors concluded that the lowest probability of high severity wildfires were in areas that had been burned in the previous one to two years.

Collectively, these studies indicate that for flatwoods ecosystems in the South, prescribed burning will reduce wildfire risk for several years after the burn until the shrub understory and midstory recover.

References

- Brose, P., & Wade, D. (2002). Potential fire behavior in pine flatwood forests following three different fuel reduction techniques. *Forest Ecology and Management*, 163, 71-84.
- Davis, L. S., & Cooper, R. W. (1963). How prescribed burning affects wildfire occurrence. *Journal of Forestry*, 61, 915-917.
- Malone, S. L., Kobziar, L. N., Staudhammer, C. L., & Abd-Elrahman, A. (2011). Modeling relationships among 217 fires using remote sensing of burn severity in southern pine forests. *Remote Sensing*, 3(9), 2005-2028.
- Outcalt, K. W., & Wade, D. D. (2004). Fuels management reduces tree mortality from wildfires in southeastern United States. *Southern Journal of Applied Forestry*, 28(1), 28-347.

Hazardous Fuels Management Guidebooks

The Joint Fire Science Program has funded two important summaries of fuels management methods in the South: *Synthesis of Knowledge of Hazardous Fuels Management in Loblolly Pine Forests* (USFS GTR SRS-110, 2008) and *Fire Managers Field Guide: Hazardous Fuels Management in Subtropical Pine Flatwoods and Tropical Pine Rocklands* (USDA USFS GTR SRS-123, 2010).

These two guides provide resource managers with summaries of science-based information related to fire behavior and fuel loading in three fire-prone southeastern U.S. regions. The documents provide reviews of the benefits, concerns, and considerations regarding the use of prescribed fire, mechanical, herbicide, and even grazing treatments for managing vegetative fuels in these ecosystems. Finally, the guides also discuss the implications and effects of fuels management programs on wildlife species and certain invasive plant species. For managers and resource specialists new to the Southeast or for those looking to fill gaps in their knowledge, these guides are excellent resources and easy reads.



Photo by David Godwin, SFE Program Coordinator

