



SOUTHERN Fire Exchange

Uniting Fire Science and Natural Resource Management



FIRE LINES

A Joint Newsletter of the Southern Fire Exchange and the Southeastern Section of the Association for Fire Ecology

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Variability Is Key for Promoting Wildlife Foods in Longleaf Pine

While many studies have explored relationships between longleaf pine plant communities and fire, little research has been done on how fire influences wildlife food sources in these ecosystems. A recent article in *Fire Ecology* (Lashley et al, 2015) shared research results from a study that aimed to answer the question: How do wildlife food sources in longleaf pine ecosystems respond to fire season and fire-return interval? In 2011 and 2012, a team of scientists measured understory leafy biomass, biomass selected by white-tailed deer, and fleshy fruit production at Fort Bragg Military Installation, North Carolina within study sites that varied by vegetation type (upland pine, upland hardwood, and bottomland hardwood), burn season (growing and dormant), and years since fire (0-3 years).

Key study results include:

- Understory leafy biomass increased one and two years after fire in both upland pine and upland hardwood forests.
- As time since fire increased, forages selected by white-tailed deer decreased in upland pine forest and increased in upland hardwood forest.
- Bottomland hardwood forest consistently provided the highest understory leafy biomass and forages selected by white-tailed deer.
- Burn season influenced monthly fruit density. Upland pine burned in the dormant season had greater fruit density in July than in other summer months, while upland pine burned in the growing season had greater density in September than in other summer months. In addition, growing-season burns promoted understory grasses, while dormant-season burns promoted herbaceous and woody plants.
- Most (94%) fruit detected in the growing-season burned upland pine forest occurred 2 years after fire.
- Overall summer fruit density was greatest in upland hardwood forest; by month, fruit density was greatest in
 - bottomland hardwood forest in June,
 - dormant-season burned upland pine forest in July,
 - upland hardwood forest in August, and
 - upland and bottomland hardwood forests in September.

These results indicate that varying fire season and fire return intervals among and within burn units will help provide key food sources for wildlife in longleaf pine ecosystems. In addition, the results show that having upland and bottomland hardwood forests interspersed within upland pine is beneficial for providing diverse wildlife food sources over time, and that “removal efforts [of upland hardwoods] should be minimized when wildlife habitat is of concern.” [Click here](#) to access the full article which provides substantial discussion on the results.

Lashley, M. A., M. C. Chitwood, C. A. Harper, C. S. DePerno, & C. E. Moorman. (2015). Variability in fire prescriptions to promote wildlife foods in the longleaf pine ecosystem. *Fire Ecology* 11(3): 62-79.



Photo Credits: Larry Kornhak, University of Florida (top and bottom) and David Godwin, Southern Fire Exchange (middle)

Longleaf Pine Management and Southeastern Fox Squirrels

Along a similar line of research, another study conducted at Fort Bragg focused on how fire management in longleaf pine ecosystems influences southeastern fox squirrels—a species which requires open pine forest, as well as mid-story oaks for food and cover (Prince et al, 2016). As growing-season burns are frequently used in the region and are often designed to limit hardwoods, such as oaks, this study investigated the effect of growing-season burns on fox squirrel habitat. Data on the selection of home ranges and habitat selection within ranges were collected by tracking and relocating squirrels, and then analyzed using resource utilization functions and statistical analysis.

Of the seven vegetation cover types included, fox squirrels selected southern yellow pine more than other cover types for their home ranges. However, the results show that fox squirrels depended on both pine and hardwood vegetation types for food and cover. Distance to riparian areas significantly predicted habitat use within home ranges, with habitat use increasing closer to riparian areas. Fox squirrels also selected areas with greater densities of reproductively mature oaks. The authors conclude that “Fox squirrels likely benefit from growing-season fires that maintain expansive upland pine stands but are negatively affected by homogeneous fire application and mechanical hardwood removal that reduce the occurrence of reproductively mature oaks across the landscape. Managers should strive to maintain oaks in riparian areas, fire shadows, and naturally occurring patches within pine stands when managing for fox squirrels.”



Photo Credit: Jeffrey S. Phippen, www.jeffhippen.com

Prince, A., M. C. Chitwood, M. A. Lashley, C. S. DePerno, & C. E. Moorman 2016. [Resource selection by southeastern fox squirrels in a fire-maintained forest system.](#) *Journal of Mammalogy*, 97(1): 1-8.

New Synthesis: Effects of Drought

The U.S. Forest Service, in partnership with Duke University, has published a new research synthesis titled [Effects of Drought on Forests and Rangelands in the United States](#). The document is the product of a thorough assessment that involved 77 scientists from diverse agencies, research institutions, and universities that aimed to establish a scientific foundation for managing forests and rangelands for drought resilience and adaptation. The assessment focuses on

- drought characterization;
- drought impacts on forest processes and disturbances such as insect outbreaks and wildfire; and
- consequences on forest and rangeland values.

The [full report](#) and the [executive summary](#) are available online. A two-page fact sheet has also been released that provides a [summary of the findings specific to the South](#).

A Tribute to Kent Hanby

The southern fire community lost a tireless teacher, mentor, practitioner and friend when Kent Hanby passed away last November. Kent served in the Navy from 1958 to 1961 before turning his attention to Forestry. He graduated from Auburn University in 1965 and received a Master of Forestry degree from Yale University in 1971. He taught fire management at Auburn beginning in 1993 and played a lead role in Alabama’s Burn Manager Certification workshops until 2014. Kent was also active in the Society of American Foresters, which recognized him as a Fellow in 2003. He was the initial Southern Fire Exchange Advisory Board member from Alabama, beginning in 2010. May we all have the same dedication to safe and productive prescribed burning as Kent taught and practiced.

UPCOMING EVENTS

Visit the [SFE Calendar](#) to learn more about upcoming events. To add an event to our calendar, [email us](#) the event information.

Webinars

[How Cattle, Logging, Fire, and Climate Shaped the Mississippi Piney Woods Since 1750](#)
April 14, 2016; 1pm Eastern

[Fire’s Long Legacy](#)
April 20, 2016; 3pm Eastern

[U.S. Wildfire Policy as Socio-Ecological Problem](#)
April 25, 2016; 3:30pm Eastern

[LANDFIRE Update and Biophysical Settings Review: Why Should You Care?](#)
May 12, 2016; 1pm Eastern

Workshops and Trainings

[Fire, Fuels and Longleaf Pine Management Workshop and Field Tour](#)
April 6, 2016
Longleaf, LA

[Restoring Sandhill Ecosystems Workshop and Field Tour](#) *Registration coming soon to SFE website*
April 26, 2016
Melrose, FL

[Prescribed Fire and Woodland Management Field Tour](#)
April 1, 2016
Rudolf Bennitt Conservation Area, MO

[FFI-Lite Software Online Training](#)
April 6-7, 2016

[Use Prescribed Fire Safely and Effectively](#)
April 28, 2016
Gainesville, FL

[Prescribed Burning Workshop](#)
May 5-7, 2016
Florien, LA
**Contact khawkins@agcenter.lsu.edu for info

[Southern Blue Ridge FLN](#)
May 17-19, 2016
Johnson City, TN

[SAF/SFRC Spring Symposium: Advances in Southern Pine Silviculture](#)
May 18-19, 2016
Gainesville, FL

Conferences

[5th International Fire Behavior and Fuels Conference](#)
April 11-15, 2016
Portland, OR

[Arkansas Wildlife Habitat Restoration on Private Lands Conference](#) ** 3 field tour days, plus 1 day at conference
May 2-5, 2016
Batesville, AR

[11th Biennial Longleaf Conference](#)
November 1-4, 2016
Savannah, GA

[IAWF 2nd International Smoke Symposium](#)
November 14-17, 2016
Long Beach, CA

Mark Your Calendars for Spring SFE Events

We are very excited about our line-up of excellent speakers for webinars in April and May, and for three field tours that have been planned with great teams of partner organizations and local managers and researchers. Please mark your calendars and register to participate! Check the registration pages for each event for information about CFE credits.

Webinars

How Cattle, Logging, Fire, and Climate Shaped the Mississippi Piney Woods Since 1750 | April 14, 1:00 - 2:00PM Eastern
Grant Harley, University of Southern Mississippi, will discuss recent research that has reconstructed the historical fire regimes of southern Mississippi longleaf pine forests. This webinar will reveal his findings, as well as management recommendations for those looking to burn in ways that mimic historical landscape patterns.

Fire's Long Legacy | April 20, 3:00 – 4:00PM Eastern

Stephen Pyne, Arizona State University, will present this webinar on the historical and contemporary relationships between fire and humanity. A question and answer session will follow the webinar.

U.S. Wildfire Policy as Socio-Ecological Problem | April 25, 3:30 – 4:30 PM Eastern

Toddi Steelman, University of Saskatchewan, will present a live seminar on how a socio-ecological understanding of wildfire in the U.S. can be helpful in matching ecological changes with appropriate wildfire policies.

LANDFIRE Update and Biophysical Settings Review: Why Should You Care? | May 12, 1:00 – 2:00 PM Eastern

Jim Smith, TNC LANDFIRE, will give an update on current LANDFIRE products and will provide details on why and how southern natural resource managers can contribute their knowledge to improve future LANDFIRE Bps models.

Field Tours

Fire, Fuels and Longleaf Pine Management Workshop and Field Tour — SOLD OUT! We'll see you there!

April 6, 2016; 8:30am - 4:00pm Central | Kisatchie National Forest and the Palustris Experimental Forest, Louisiana

This workshop and field tour is designed to showcase longleaf pine management strategies and lessons that have come from the Palustris Experimental Forest and the Kisatchie National Forest. The event begins with presentations by regional experts and includes a guided tour of the nearby Palustris Experimental Forest in the afternoon. Topics include: Fire Friendly Site-Prep Methods, Season of Burn and Longleaf Competition Control, Prescribed Fire Effects on Louisiana Invasive Species, and More.

Restoring Sandhill Ecosystems Workshop and Field Tour

April 26, 2016; 8:30 - 3:30 PM Eastern | Ordway-Swisher Biological Station, Florida

During this event, regional experts will explain findings from recent research designed to improve the results of returning prescribed fire to long-unburned sandhill ecosystems. In the afternoon, we'll go into the field to talk about some examples of the morning discussion topics. Registration will open closer to the event date; check the [SFE website](#).

Fire Science in the Ouachitas: The Pine-Bluestem Buffalo Road Tour

May 2, 2016; 9:30 AM - 3:00 PM Central | Near Waldron, Arkansas

We've partnered with the Oak Woodlands and Forests Fire Consortium for this field tour, which is part of a series of field tours they are hosting prior to the Wildlife Habitat Restoration on Private Lands Conference. This field tour will focus on a pine-bluestem restoration project at the Ouachita National Forest. This area has been managed for decades using fire, benefiting many species from bobwhites to red-cockaded woodpeckers. Experts will provide insights about management practices and effects.

SOUTHEASTERN REGION COHESIVE WILDLAND FIRE STRATEGY UPDATE

By Gary C. Wood, Southeastern Regional Coordinator Cohesive Wildland Fire Strategy

Numerous collaborative efforts continue to take place across the Southeast, which is exactly the intent of the Cohesive Wildland Fire Strategy. Over the past month, I have heard of several projects being implemented involving multiple agencies, partners, and stakeholders working together and across boundaries. One example is the Prescribed Fire Cooperative Burn Project carried out by Okefenokee National Wildfire Refuge, Florida Forest Service's John Bethea State Forest, and the Osceola National Forest. This project is in its third year and each agency covers their own costs. Cooperatively, the agencies identify and treat high priority burn units that produce positive fuel management benefits, restore resilient landscapes, and provide reduced risks to nearby communities. This project fulfills National Cohesive Strategy Goals by maintaining and promoting resilient landscapes, improving wildfire response, and promoting fire adapted communities. In addition, it fulfills Southeastern Cohesive Strategy Goals for firefighter safety, property protection, and ecological services. This project is an outstanding example of cohesive strategy at work and hats off to these agencies for their continued efforts.



NEWS AND REMINDERS

USING NEW TECHNOLOGIES TO RESEARCH FIRE

A recent [USFS Compass article](#) describes research by a USFS team who are using high resolution infrared thermography, LiDAR, and photogrammetry to better understand interactions of fuels, fire, and plant diversity in long-leaf pine ecosystems.

PRESCRIBED FIRE IN GRASSLANDS

The University of Tennessee, Center for Native Grasslands Management's publication, [Using Prescribed Fire to Manage Native Grass Forages in the Mid-South](#), covers the benefits of burning in grasslands, growing and dormant season burning, and burning techniques.

FIRE ADAPTED COMMUNITIES WEBSITE

The Fire Adapted Communities Learning Network has a [new website](#), which provides information about the Network, resources, and a blog on community wildfire adaptation.

SMOKE MODELS RESEARCH BRIEF

The North Atlantic Fire Science Exchange has a new 3 page research brief titled [Smoke Science: Review of Smoke Models](#).

FREE FIRE WEATHER APP

The University of Montana Fire Center and the National Center for Landscape Fire Analysis have a [FREE mobile application](#) for calculating, sharing, and archiving fire weather information based on field observations. Search for "Fire Weather Calculator" in either the Apple iOS or Google Android app stores.

TO THE LAST SMOKE

Stephen Pyne has a new series of books, which summarize historical and current fire management practices by region in the U.S. Two of the six books are available now, focusing on [Florida](#) and [California](#). The multivolume series will also include the Northern Rockies, the Great Plains, the Southwest, and other critical fire regions.

DRIPTORCH DIGEST

Check out the [February issue](#) of the SERPPAS Prescribed Fire Work Group's e-newsletter, *Driptorch Digest*.



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2015 Incident Review Summary

The Wildland Fire Lessons Learned Center (LLC) recently released the [2015 Incident Review Summary](#). This 10-page document summarizes incident reports submitted to and gathered by the LLC during 2015. Incidents most commonly occurred while fire professionals were driving, using chainsaws, or during physical training.

After reading this report, make sure to discuss and share what you've learned with your colleagues. This information is the perfect addition to the agenda for your upcoming meetings and trainings. In fact, LLC has exercises and video clips to help you do this! Just look for the action icon throughout the report to find ideas for incorporating the report findings into your trainings.



International Smoke Symposium: Call For Presentations Now Open

The 2nd International Smoke Symposium is being held November 14-17 in Long Beach, California. The Call for Presentations was recently announced for this event, and conference organizers are seeking presentations on a variety of topics, such as smoke management, communications, emissions, health effects, and modeling. Both practitioners and researchers are strongly encouraged to submit a proposal for a presentation, poster, or special session. The deadline for submissions is May 16, and authors will be notified on July 15. [Click here](#) for more information and to see the full range of conference topics.

Fire Behavior Fuel Model

Guidebook-Database and Workshops

LANDFIRE has announced an opportunity for data users to provide comments and suggestions to the Fire Behavior Fuel Model Guidebook-Database (FBFM) to improve and refine how FBFMs are mapped in LANDFIRE. In addition, a series of workshops is scheduled for this spring. The first workshop will be at the International Association of Wildland Fire (IAWF) 5th annual Fire Behavior and Fuels Conference in Portland, Oregon in April. LANDFIRE then plans to host virtual geographic workshops; details about the virtual workshops will be available soon. [Click here](#) for more information on the review and IAWF workshop.



Fire Ecology Database:

Are You Using It? Let Us Know!

We are currently conducting a short survey to understand more about users and usage of the [E.V. Komarek Tall Timbers Fire Ecology Database](#). Even if you've never used the database, please let us know by answering just a few easy questions! Your input will help us to determine strategies for meeting the information needs of fire and natural resource managers and researchers.

Please take a couple of minutes and let us know if and how you use the Fire Ecology Database.

[Click Here to Take the Short Survey](#)