SOUTHERN
Fire Exchange
A JFSP Knowledge Exchange Consortium

FIRE LINES

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Learn more about our Partners and the JFSP Knowledge Exchange Consortia.

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www.southernfireexchange.org

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Prescribed Fire Surrogates in the South

How effective are non-fire vegetation treatments for achieving ecosystem restoration and management goals? A recent review of 18 research studies in Florida focused on that very question (Menges and Gordon 2010). The authors' findings have relevance to other southern Coastal Plain states with areas containing sandhill, scrub, dry prairie and flatwoods ecosystems. The authors concluded that mechanical and herbicide treatments can be acceptable pretreatments to prescribed fire, especially when ecosystem structure and composition have been altered by long periods without fire. The research studies reviewed indicated that mechanical treatments (such as mowing) and herbicide applications can accelerate structural changes in long-unburned vegetation conditions. Those treatments are most beneficial when they are used in the early stages of ecosystem restoration and followed by a transition to regular prescribed fire regimes. If fire alone can accomplish restoration objectives, then in most cases fire should be the preferred management strategy. In addition, Menges and Gordon suggested that prescribed fire regimes vary temporally and spatially to optimize ecological benefits. Menges and Gordon also cautioned against management programs that focus on single (umbrella) species which might limit habitat conditions for a larger range of plant and animal species. One final recommendation was for long term tracking of mechanical and herbicide treatments for their possible effects on vegetation conditions and fire management.

These general conclusions and management implications might support your ongoing programs or perhaps they will provide new insight for your particular fire management situation and objectives. For additional details, check out the new 2-page SFE fact sheet summarizing Menges and Gordon's recommendations or see their original publication.

Menges, E., and D. Gordon. 2010. Should mechanical treatments and herbicides be used as fire surrogates to manage Florida's uplands? A review. *Florida Scientist 73*(2):147–174.

Additional information on the different treatment procedures, benefits, and costs are available in the following regional field guides:

* Fuel Treatments in Pine Flatwoods: A Photo Series Guide
* Synthesis of Knowledge of Hazardous Fuels Management in Loblolly Pine Forests
* Fire Managers Field Guide: Hazardous Fuels Management in Subtropical Pine Flatwoods and Tropical Pine Rocklands

Herbicide Effects on Longleaf Regeneration and Fire Management

One of the long term studies recommended by Menges and Gordon was completed in 2009 at Fort Benning, GA, six years after granular hexazinone (ULW) or an imazapyr/glyphosate (arsenal-accord) tank mix were used in site preparation prior to planting longleaf pine seedlings (Addington et al. 2012). Prescribed fire was used after the herbicides but before planting, and then again 3 and 6 years after planting. At the end of 6 years, longleaf seedlings in the two herbicide site preparation treatments were twice as tall as trees in an untreated control, largely because the two herbicide treatments significantly reduced hardwood stem density. On the other hand, understory plant species richness was similar across the herbicide and control plots, and herbaceous vegetation/fuel cover increased on the two treatments over time. In the authors' words, "Overall, results suggest that treated plots are better poised than control plots for restoration success without additional treatments beyond fire." Although the authors clearly demonstrate favorable outcomes for herbicide use as a pretreatment for prescribed fire, they caution that managers need to carefully develop herbicide prescriptions and be judicious in their use.

Addington, R., T. Greene, M. Elmore, C. Prior and W. Harrison. 2012. Influence of herbicide site preparation on longleaf pine ecosystem development and fire management. *Southern Journal of Applied Forestry 36*(4): 173–180.

An imazapyr/glyphosate herbicide treatment plot (top) and a control plot (bottom), 4 months after the 2009 prescribed burn. Photos by Robert Addington, Colorado State University.

Partner Spotlight: SERPPAS

The Southeast Regional Partnership for Planning and Sustainability (SERPPAS) is a unique six-state partnership comprised of state and federal agencies that promotes collaboration in making resource-use decisions supporting conservation of natural resources, working lands, and national defense. SERPPAS includes the states of North Carolina, South Carolina, Georgia, Alabama, Florida, and Mississippi.

SERPPAS has identified working lands and threatened, endangered, and at-risk species as two of its priority areas. The SERPPAS Prescribed Fire Work Group helps meet these priorities by managing longleaf pine ecosystems with prescribed fire. Properly managing longleaf pine not only restores longleaf ecosystems but also yields associated benefits such as reduced risk of catastrophic wildfires and improved wildlife habitat. Specifically, the Prescribed Fire Work Group has focused on the following priorities to meet goals related to longleaf pine conservation and restoration:

- Increase the number of trained, qualified, and experienced burners (both landowners and contractors) conducting prescribed burns on private and public lands;
- Minimize landowners' risk of liability associated with the proper use of prescribed fire;
- Minimize local smoke impacts on air quality and public health and safety by maximizing coordination between air quality and fire communities; and
- Ensure sufficient, consistently available resources to promote and implement increased prescribed fire operations.

The Southern Fire Exchange has developed a strong partnership with the SERPPAS Prescribed Fire Work Group by serving as members of the Work Group, collaborating on common goals, and producing valuable resources such as webinars and field tours together. The Southeast Prescribed Fire Update is a great place to learn about fire-related events and activities being conducted by the SERPPAS Prescribed Fire Work Group. In addition, the Prescribed Fire Work Group has developed a list of prescribed fire resources for landowners and others who are interested in learning more about prescribed fire.

SERPPAS MISSION: To seize opportunities and solve problems in ways that provide mutual and multiple benefits to the partners, sustain the individual and collective missions of partner organizations, and secure the future for all the partners, the region, and the nation.

Help Us Plan Upcoming Field Tours

Photo by David Godwin, Southern Fire Exchange

We are gearing up for a new slate of field tours in fall 2014 and spring 2015. Together with key partners, we have been involved in 12 field tours that have brought together more than 300 managers, researchers, landowners, and students to learn from one another at different locations throughout the Southeast. As one participant said, ***"There's no way around it, that seeing things makes you understand more than just hearing about them... And the informal atmosphere of field trips promotes discussion in a way that even meeting breaks don't."***

A key aspect of our planning process is that our field tours be manager driven, so we are inviting YOU to help us determine new field tour opportunities. Tours that illustrate science applications to fire management are particularly relevant. Please send your location, topic, or presenter ideas to David Godwin (drg2814@ufl.edu; 850-893-4153 ext 261). We look forward to hearing from you and hope to see you in the field this year!

Firefighter Safety Zone Guidelines Being Updated

The *International Journal of Wildland Fire* recently featured an extensive review of factors that impact firefighter heat exposure and injury on fires, various entrapment incidents in the last 50+ years, and how safety zone guidelines might be altered based on recent safety zone models (Butler 2014). The key variable throughout the review was Safe Separation Distance (SSD), or the radius (not diameter) of a safety zone. The current guideline of "4 x flame height (FH)" assumes flat terrain, radiant energy only, and no wind. Butler concluded that SSD is not accurately approximated by a constant factor for flame heights less than 30 feet. He recommends that the current guidelines be revised to account for convective heating, slope steepness, ambient wind, safety zone geometry, and fuel descriptors. *Continued on Page 3*

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

Mulch Combustibility: Choosing the Right Type for Your WUI Home
August 19, 2014
4pm to 5pm, Eastern

Stay tuned for webinars this fall highlighting LANDFIRE Data Applications in the South!

Prescribed Fire Council Meetings

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

Alabama PFC Meeting
August 28, 2014
Columbiana, AL

Georgia PFC Meeting
September 25, 2014
Tifton, GA

South Carolina PFC Meeting
September 24-25, 2014
Near Clemson, SC

North Florida PFC Meeting
October 7, 2014
Tallahassee, Florida

Central Florida PFC Meeting
September 26, 2014
Kissimmee, FL

Kentucky PFC Meeting
September 15-16, 2014
Greenville, KY

Workshops and Trainings

Alabama Prescribed Burn Manager Trainings
Several trainings for certification and recertification in August and September

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

Georgia Prescribed Burn Manager Training
September 9-10, 2014
Tifton, GA

Introduction to Prescribed Burning Field Days
September 11, 2014
Elizabethtown, NC

Mississippi Wildland Fire Academy
October 20-31
Pearl, MS

Conferences

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

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

Longleaf Alliance Regional Conference
October 21-24, 2014
Mobile, AL

SE Regional Forest Resource Owner and Manager Conference
October 28-29, 2014
Valdosta, GA

Continued—Firefighter Safety Zone Guidelines Being Updated

Following up on this recommendation, Butler, along with Russ Parsons and Ruddy Mell, developed the preliminary safety zone guidelines illustrated in the table below, where SSD is based on slope, wind, and vegetation height (rather than flame height). These variables can be quickly estimated, and SSD can be calculated prior to observing flame height. The notes that accompany the SSD calculation table indicate that the new guidelines should be used for both flat and sloping terrain and suggests additional space for large crews and vehicles. Readers are encouraged to calculate the SSD equation with several example scenarios to see how the new guidelines impact safety zone size compared to the current 4 x FH guideline.

Another conclusion in Butler's paper was an answer to a frequent question in wildland-urban interface incidents: can structures be safely used if entrapment occurs? His answer is "yes" as long as firefighters can exit after the fire has moved past; this answer assumes firefighters have evaluated the structure for susceptibility to ignition and involvement in the fire (including safe separation from flammable vegetation) and determined that it can be safely entered.

Butler, B. 2014. Wildland firefighter safety zones: A review of past science and summary of future needs. *International Journal of Wildland Fire 23*:295–308.

New Preliminary Proposed Safety Zone Rule (July 2014)

Calculating a Safe Separation Distance (SSD)

Revised equation for calculating SSD

SSD = 8 * Slope wind Factor * Height of the surrounding vegetation

SLOPE-WIND FACTOR

Wind Speed	Flat 0% Slope	20% Slope	>30% Slope
Light 0-10 mph	1	2	3
Moderate 11-20 mph	2	3	5
Strong > 20 mph	3	5	6

The slope-wind factor (1-6) accounts for the additional exposure of firefighters to convectional heat on slopes and in windy conditions.

COHESIVE STRATEGY UPDATE

Contributed by Mike Zupko, Chair
Southern Regional Strategy Committee, Cohesive Wildland Fire Strategy

Through the efforts of many people and agencies, the National Cohesive Wildland Fire Strategy was conceptualized, created, and is currently being implemented throughout the Southeast. We welcome the opportunity to utilize this Southern Fire Exchange forum to provide regular updates to fire constituencies and stakeholders on activities and opportunities to engage. The "cohesive strategy" was initiated by federal legislation in 2009, but has been embraced as a new way to handle wildland fire business across the landscape. It is not a new program within agencies, but is a broadened philosophy that supports expanded partnerships and new approaches to wildland fire management and issues. The Southeast Regional Strategy Committee has embraced the use of the Cohesive Strategy's national science analysis and has packaged regional actions and tasks around five important values: Firefighter and Public Safety, Marketable Products, Ecological Services, Cultural Values and Property Protection. These values are interconnected throughout the region, and help the numerous constituencies and stakeholders identify new and ongoing opportunities to engage with other partners and make a difference across the landscape. You can read more about the values and regional actions in our Southeast Regional Action Plan. The National Science and Analysis Team created a robust set of tools that utilizes extensive data to explain and support opportunities for action. Currently, the Southeast Regional Strategy Committee is refining those opportunities and creating a public interface that will enhance the visibility and application of the data, actions and tasks. Stay tuned for the interface rollout later this year. In the meantime, you can review the national level science data and products at http://cohesivefire.nemac.org.

For information on Southeast specific activities or to become further engaged, please contact: Mike Zupko, Chair, Southern Regional Strategy Committee, Cohesive Wildland Fire Strategy, Southern Governors' Association Representative, 770-267-9630, mike@zup-co-inc.com

Annual prescribed burn at Austin Cary Forest in Florida, July 18. Photos by Larry Korhnak, University of Florida.

Perceptions of Smoke Management and Influences of Communication

A new JFSP Final Project Report shares research results of a multi-region analysis that explored social acceptance of smoke management practices and factors influencing acceptance, including the effectiveness of communication approaches. This research was completed over a 3-year period using a case-study design, which included interviews and questionnaires with fire managers and residents at study sites in California, Montana, Oregon, and South Carolina. The report, Examining the Influence and Effectiveness of Communication Programs and Community Partnerships on Public Perceptions of Smoke Management: A Multi-Region Analysis, provides a summary of key findings and management implications.

Photo by David Godwin, Southern Fire Exchange

The results show that respondents "generally understood and were more accepting of smoke from prescribed fire than might have been expected based on managers' experiences." While perceptions of smoke varied by type of fire (e.g., prescribed fire, wildfire, debris burns), most respondents found smoke from fuel reduction activities at least somewhat acceptable. The respondents' acceptance of smoke was also influenced by their perceptions of risks and benefits, with those that perceived fewer smoke risks and more benefits of prescribed fire having greater acceptance. In addition, the study found that informational messages can influence smoke acceptance and perceptions. After being exposed to informational messages about smoke emissions and management, respondents felt more knowledgeable, better able to control their exposure to smoke, more positive toward agency managers, and had greater acceptance of prescribed fire use and smoke.

The authors suggest that strategically-planned communication efforts—those that align communication objectives, delivery methods, and content—could increase understanding and improve social acceptance of smoke. The development of appropriate messaging is particularly important for those segments of the population that oppose the use of prescribed fire due to smoke and health-related concerns. Moreover, coordinating communication across multiple agencies could improve consistency of messaging and allow for more efficient use of limited funding and resources.

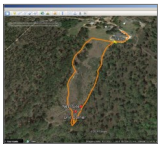
Click here to read the full report. A summary of the South Carolina case study results from the first year is also available.

New Southern Fire Exchange Fact Sheets

In addition to the Mechanical Treatments and Herbicides fact sheet mentioned above, the Southern Fire Exchange (SFE) has three new publications:

Vegetation Treatment Options and Management Objectives: A Case Study in Longleaf Pine

We provided a short highlight on this research in our May-June newsletter. Read the new fact sheet to get more details about a study in South Carolina that investigated the effects of prescribed fire, herbicide, and mechanical fuel treatments on various key management objectives in a mature upland longleaf pine site.



Offline Maps for Wildland Fire and Natural Resource Management: Custom GPS Enabled Maps on a Mobile Device

Learn how to export custom GPS enabled maps from ArcGIS that can be used on a mobile device (smart phone or tablet) in remote locations without cellular data connections.

10 Minutes with SFE: Caroline Noble

Caroline Noble, former Southeast Region Fire Ecologist with the National Park Service offers her perspective and knowledge of GIS and Mapping for prescribed burn and natural resource managers.

NEWS AND REMINDERS

OAK WOODLANDS AND FORESTS FIRE CONSORTIUM UPDATE

Are you interested in Midwest U.S. oak regeneration and management? Our neighbors from the Oak Woodlands and Forest Fire Consortium have a recent newsletter with research briefs and information about upcoming webinars and field tours related to oak management in the Midwest.

JFSP 2015 POTENTIAL RESEARCH QUESTIONS

Joint Fire Science Program (JFSP) intends to request proposals through one or more formal Funding Opportunity Notice (FON) announcements this fall. An early notice of potential research questions has been distributed so potential investigators can begin considering ideas, partners, and collaborators.

IAWF CONFERENCE PROCEEDINGS AVAILABLE

The International Association of Wildland Fire (IAWF) recently released the conference proceedings for the 4th Fire Behavior and Fuels Conference which was held in Raleigh, North Carolina in February 2013 and St. Petersburg, Russia.

YARNELL HILL FIRE CASE STUDY

The Wildland Fire Lessons Learned Center recently released an 81 slide case study for individuals and groups to learn from the 2013 Yarnell Hill Fire. The case study presents opportunities for lessons that can be applied to both prescribed fires and wildfires in any forest type or ecosystem.

SFE PHOTOS

Check out recent photos of workshops and field tours added to the SFE Flickr page. Feel free to use these images in your fire presentations or publications.

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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