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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IN THIS ISSUE

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Learn more about our Partners and the JFSP Fire Science Exchange Network.

Visit the SFE Resource Center
www.southernfireexchange.org

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Prescribed Fire Risk on Private Lands

A recent publication reported results of a study seeking to test the generally-accepted idea that using prescribed fire is riskier than using mechanical land management techniques. This perception can influence landowner program funding, training, and support, as well as liability and insurance issues. Using data from the National Interagency Fire Center and the US Department of Labor Bureau Statistics, the researchers compared fatalities from occupations related to land management from 2006-2013, compared fatalities resulting from wildland fire versus prescribed fire from 1963-2013, and explored causal factors responsible for wildland fire-related fatalities. Key study results include the following:

⇒ Of the occupations assessed (animal production, construction equipment operation, crop production, firefighting and logging operations), firefighting had the lowest rate of fatal injury and logging operations had the highest.

⇒ Fatalities associated with prescribed fire were considerably lower than those associated with wildfire (with wildfire fatalities exceeding prescribed fire by 3,350%), leading to the conclusion that basing prescribed fire risk upon wildfire fatality data is not accurate.

⇒ Since 1990, wildland fire-related deaths have been mostly caused by vehicles and transportation. Up until this point, burnover and entrapment were the number one cause.

Overall, the authors conclude that the **"current risk aversion driving the preference for alternative land management techniques over prescribed fire is not supported."** As the first study to approximate the relative risk of using prescribed fire, these results provide "the foundation for agencies to establish data-driven decisions regarding the degree of support they provide for prescribed burning on private lands." In addition, the authors call for a better tracking system to document several variables related to prescribed fire on private lands, so we can better assess risk moving forward. Click here for the full article, which is openly available online.

Twidwell, D., Wonkka, C.L., Sindelar, M.T., & Weir, J.R. (2015). First Approximations of Prescribed Fire Risks Relative to Other Management Techniques Used on Private Lands. *PLoS ONE 10* (10): e0140410.

Join Us December 3 for Mixing Height Webinar

To bring new science concerning mixing height methodologies to a variety of audiences nationwide, several partners have come together with the NWCG Smoke Committee to host the webinar, Establishing a National Methodology for Operational Mixing Height Determination. Mixing height is one of many critical elements used in assessing wildland smoke dispersion for prescribed fires or wildfires. This webinar will focus on recent efforts to review and explain the strengths and weaknesses of several methods used in determining mixing heights. The National Weather Service will also describe their work on a national standard for mixing height as a weather element in the NWS Fire Weather Program.

Presenters/Authors
Matthew Fearon, Desert Research Institute
Robyn Heffernan, National Weather Service

Webinar Date and Time
December 3, 2015 at 1pm Eastern

Education Credits
Society of American Foresters: 1 Hour Category 1 Credit Approved

Click Here to Register Now

Smoke and Socially Vulnerable Populations

Studies have shown that lower income and minority populations experience higher exposure to environmental pollutants than middle and higher income, non-minority populations. To examine this relationship in the context of exposure to wildland fire smoke in the Southeast, a research team conducted a "hot spots" analysis—looking at areas with both high social vulnerability and high potential for exposure to smoke (Johnson Gaither et al., 2015). The study used the US Census Block (CBG) as the scale of analysis and smoke plume data from NOAA's Hazard Mapping System. Potential exposure to smoke was measured for each CBG by counting the number of times smoke plumes intersected any portion of the CBG boundary from August 2005 to November 2011. Both monthly and seasonal counts (winter and spring/summer seasons) were conducted for five ecoregions, and a social vulnerability index was created and applied to each CBG unit. The social vulnerability index included eight equally-weighted socio-demographic variables determined from past literature to influence human vulnerability to environmental disturbance (age greater than 65 years old, less than 15 years old, American Indian/Alaskan Native, African American, Hispanic, renters, poverty status, and persons 25 or over without a high school diploma).

Photo by Jan Amen, Texas Forest Service.

The results by ecoregion show areas with "significant spatial clustering of high social vulnerability block groups in the vicinity of block groups with a high number of smoke plumes." Overall, the mean number of smoke plumes for hot spots was not different for areas with low social vulnerability and high smoke plumes. However, on a per capita basis results indicated that when hot spots were compared to block groups with low social vulnerability/high smoke plume counts, the number of smoke plumes per 100,000 persons was higher in hot spots for four of five ecoregions. Click here to view images of the spatial analysis for each ecoregion and season (click Browse Figures or see pages 13-17 in the PDF). You can also view slides from a USFS webinar presentation given by authors Cassandra Johnson Gaither and Scott Goodrick in spring 2015.

Johnson Gaither, C., Goodrick, S., Murphy, B.E., & Poudyal, N. (2015). An Exploratory Spatial Analysis of Social Vulnerability and Smoke Plume Dispersion in the U.S. South. *Forests, 6,* 1397-1421.

Reaching Managers in the Field

The Southern Fire Exchange, Apalachicola Regional Stewardship Alliance, and The Nature Conservancy (TNC) recently teamed up to host an upland ground cover restoration workshop at the beautiful Apalachicola Bluffs and Ravines Preserve in North Florida. About 30 participants representing federal and state land managers, consultants, and non-industrial private landowners spent the day learning about ground cover restoration management strategies, research, and equipment. After presentations on TNC ground restoration programs and regional science findings on composition, diversity, and fire, participants headed out under sunny skies to tour project areas and for an equipment demonstration.

We'll be posting archived information about the event and presentations on the SFE website soon. And we are looking forward to upcoming field events at Ordway-Swisher Biological Station in Florida and next spring at the Kisatchie National Forest in Louisiana. Please consider attending if you are in the area!

Updated Resource on Insurance Options

We often hear requests for information on prescribed fire insurance and liability. In 2013, North Carolina Extension Forestry at North Carolina State University surveyed insurance companies in the Southeast and compiled a one-page document with details about insurance companies, costs, and important considerations. This information has recently been updated and is a great resource for you and colleagues.

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

Sharing Fire Behavior Practices & Lessons Learned: Fire Season 2015
November 16, 2pm Eastern

Oak, Fire, and Global Change
December 1, 2pm Eastern

Establishing a National Methodology for Operational Mixing Height Determination
December 3, 1pm Eastern

Workshops and Trainings

Longleaf Academy: Herbicides & Longleaf 201
November 17-19, 2015
Brooksville, FL

S-212 Wildland Fire Chainsaws
Registration Deadline: November 17
December 1-3, 2015
Melrose, FL

Georgia Blue Ridge Fire Learning Network
Email Malcolm Hodges for Info
December 3, 2015
Ellijay, GA

10th Southern Forestry and Natural Resource Management GIS Conference
December 7-8, 2015
Athens, GA

Longleaf Pine Forest Restoration Workshop
December 8, 2015
Gainesville, FL

Introduction to State-and-Transition Simulation Modeling of Landscape Vegetation Dynamics
December 8-9, 2015
Durham, NC

Ordway-Swisher Biological Station Workshop and Field Tour (Registration Coming Soon; Check SFE website)
December 9, 2015
Melrose, FL

Crew Boss Academy
Application Deadline: December 1
January 19-27, 2016
Wekiwa Springs State Park, FL

Conferences

6th International Association for Fire Ecology Congress
November 16-20, 2015
San Antonio, TX

Wildland-Urban Interface Conference
March 8-10, 2016
Reno, NV

5th International Fire Behavior and Fuels Conference
April 11-15, 2016
Portland, Oregon

NEWS AND REMINDERS

EXCHANGE NEWSLETTERS

Check out recent newsletter issues from our neighbors the Oak Woodlands and Forests Fire Consortium, Consortium of Appalachian Fire Managers and Scientists, and Great Plains Fire Science Exchange.

ARCHIVED CHINESE TALLOW WEBINAR

Did you miss the Integrated Management for the Control of Chinese Tallow webinar in September? You can now watch the archived version on the SFE YouTube Channel. During this webinar, Lauren Pile of Clemson University shares research findings from a multi-year investigation of multiple treatment combinations for eradicating Chinese Tallow in coastal South Carolina.

ARCHIVED LOCAL ECOLOGICAL KNOWLEDGE WEBINAR

The Southwest Fire Science Consortium's webinar Local Ecological Knowledge and Fire Management: What Does the Public Understand? with John Diaz of North Carolina State University is available for viewing at your convenience.

GOING TO THE 2015 FIRE CONGRESS?

Stop by the exhibitor's area and say hello to the SFE and other Fire Science Exchanges, and check out the special session on Wednesday morning, *Let's Talk Fire Science: Strategies and Successes* to hear from several exchange representatives. Click here for the conference program.

JOB ANNOUNCEMENTS

We've recently posted several job openings of interest for both fire managers and researchers in the Southeast and nationwide.

THANK YOU!

As we begin the holiday season, we'd like to express our sincere thanks to our partners and all SFE participants for the important work you do in natural resource management, research, and outreach.

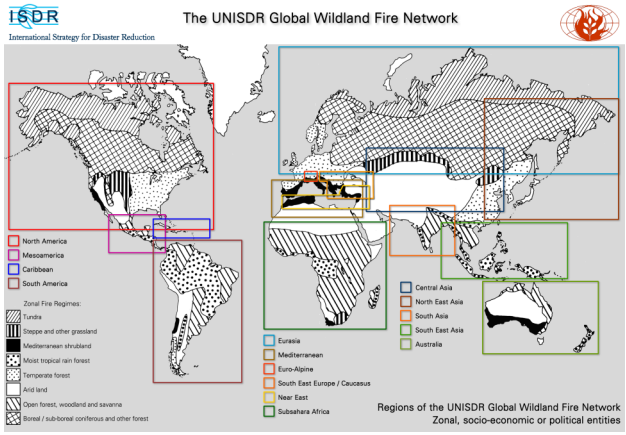
The Southern Fire Exchange is funded through the Joint Fire Science Program, in agreement with the United States Forest Service, Southern Research Station. This institution is an equal opportunity provider.

International Wildland Fire Conference Highlights

The 6th International Wildland Fire Conference held in Pyeongchang, South Korea in mid-October attracted approximately 1,400 participants from 73 countries, who met for 5 days at the future site of the 2018 Winter Olympics. Conference themes included prevention, management, and mitigation of fire damage and risk at the national, regional, and international level; how to expedite the exchange of fire science, experience, technology, and resources across the globe; and how to enhance international cooperation through the Global Wildland Fire Network. Currently, the U.S., Canada, Australia, and New Zealand have an active agreement sharing human resources; equipment and fire science were discussed as future possibilities.

A demonstration by the Korean Forest Service of their use of aviation in fire suppression. Photo by Joe Roise, NCSU.

The Global Wildland Fire Network shares similar goals with the JFSP Fire Science Exchange Network, except that it focuses on the exchange of people and resources across borders. As part of the International Strategy for Disaster Reduction, the United Nations Office for Disaster Risk Reduction is helping to coordinate this effort across the globe with 15 regional networks. The Global Network concluded with a declaration to promote international efforts for addressing vegetation fires, often being of transboundary nature. Traditional expertise, advanced fire science, and mechanisms for exchange of expertise between countries were included. In addition, the development of regional programs, training, and resource centers are seen as highly important for capacity building and will need support by countries and international organizations.



The Global Wildland Fire Network consists of 15 regional networks.

Share Your Story: Southern Region Cohesive Strategy

The Southern Regional Strategy Committee for the National Cohesive Wildland Fire Management Strategy invites you to submit stories to highlight both successes and challenges related to the implementation of the three Cohesive Strategy themes: resilient landscapes, fire-adapted communities and wildfire response. These short case studies, called Models for Action, share examples, successes, and lessons learned from a variety of contexts and locations across the Southeast. You can view the stories already collected at www.southernwildfire.net/models-for-action.

It is easy to submit your story!

1) Go to www.southernwildfire.net and click the link under the website menu.
2) Download the form, fill it out, and save it to your computer.
3) Email the completed form to hcampbell@sref.info (Holly Campbell, Extension Associate of Forest Resources, Southern Regional Extension Forestry)

Southeast Assessment of Climate Change Vulnerability

The Southeast Regional Climate Hub (SERCH) recently published a report to summarize future climate expectations for the region; how changes may impact forests, cropland, and livestock; adaptation strategies and greenhouse gas mitigation options; and how USDA agencies and programs are addressing impacts. A short section on prescribed fire (page 31) suggests that projected changes in temperatures and rainfall may shorten typical burn windows, and that managers and landowners should pay special attention to "changes in the spring green-up period of tree and understory growth as the climate warms" and conduct burns "during periods that minimize damage to the crop trees and beneficial understory species." Click here to read the report.