SOUTHERN Fire Exchange
Uniting Fire Science and Natural Resource Management

FIRE LINES

A Bimonthly Newsletter of the Southern Fire Exchange

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CONTACT INFORMATION

For questions and feedback, email contactus@southernfireexchange.org

Exchange Leads
Alan Long (Director, PI)
Rae Crandall (Co-PI)
Joseph O'Brien (Co-PI)
Kevin Robertson (Co-PI)
Joe Roise (Co-PI)

Exchange Staff
David Godwin (Program Coordinator)
Leslie Boby (Outreach Specialist)
Chet Buell (IT Specialist)

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

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www.southern fireexchange.org

Frequent Fires Reduce Fleshy Fruit Production in Longleaf Pine Stands

Fruiting Rubus in a recently burned area.

Examples of fruit producing Plants in the Longleaf Pine Ecosystem:

- Huckleberry *(Gaylussacia spp.)*
- Blueberry *(Vaccinium spp.)*
- Blackberry *(Rubus spp.)*
- Poison Oak *(Toxicodendron, spp.)*
- Sumacs *(Rhus spp.)*

Frequent fire return intervals (< 3 years) are often recommended in longleaf pine (LLP) ecosystems to increase plant diversity in the understory, manage fire-intolerant plant species and reduce fuels. A recent study examined the effect of frequent fire return intervals on fleshy fruit production in Fort Bragg, NC (Lashley, M.A., Colter Chitwood, M., DePerno, C.S. and Moorman, C.E. 2017. Frequent fires eliminate fleshy fruit production. Forest Ecology and Management, Vol. 405, pp. 9-12). The researchers measured production of energy-rich fleshy fruits in a LLP system burned at three different fire return intervals (FRI)- 1, 2 and 3-years replicated across 3 watersheds. Fleshy fruits provide food for a variety of wildlife, including migratory birds, wild turkey, most mammals, and fruit consumption is necessary for the dispersal of those plants. Previous studies have shown that wildlife populations may be negatively affected by a lack of these fruits and plants are negatively affected by the lack of wildlife consumption. The researchers measured fruit production monthly (May-September), in the three different FRI at Fort Bragg Military Installation, North Carolina. Seasonality of burns differed across treatments, as the 2- and 3-year FRI stands were burned in May-June and the 1-year FRI stands were December-February. All of the stands had been burned at least four times at their designated FRI.

Fruit production was counted in each stand along thirty 150 ft transects monthly, from May to September 2014. Fruits were measured in the 2- and 3-year FRI treatment areas in the last growing season before their next burn. Results were dramatic: The 3-year FRI treatment areas had approximately 100 times as many fruits in the understory as the other two treatment areas. Furthermore, fruit was only found in patches that had not burned in the previous fire cycle in the 1- and 2- year FRI stands, despite the fact that fruit-bearing plants were commonly found in those treatment areas. In the 3-year FRI areas, the greatest number of fruits counted on a single transect was 660 while in the 1- and 2-year FRI areas the greatest count on a transect was only 25 and 27, respectively. Researchers did not find any fleshy fruit-bearing plants in the midstory and overstory in any treatment area. Poison oak was the most abundant fruit found by far, as it representing 91% of all fruit, while huckleberry and blueberry each accounted for 4% of all fruit observed. Different fruits, however, dominated each of the different FRI; poison oak was 95% of the fruit on 3-year transects, blueberry was 96% of fruit along 2-year transects

and huckleberry was 77% of the fruit along the 1-year transects. Overall, fleshy fruit production was nearly eliminated by FRI of less than 3 years.

Wild turkey eating fruit from a shrub.

Results from this study suggest a need for 'pyrodiversity' to generate a mosaic of fire conditions in longleaf pine to maintain production of fleshy fruits and to capitalize on the benefits of shorter FRI as well. These results are consistent with a previous study examining fire and wildlife food sources in longleaf pine, by the same lead author, and highlighted in a Fire Lines newsletter, "Variability is Key for Promoting Wildlife Foods in Longleaf Pine." Widespread burning at a FRI of less than three years will significantly reduce the production of fruits over the landscape and even a FRI of 3 years reduces midstory and overstory fruit production, which reduces long-term food sources for many wildlife. The study authors "caution managers on the development of fire management plans based on the response of a few flora or fauna in fire-maintained ecosystems because of the potential negative consequences of homogenous fire applications." They do not recommend that all stands be managed at a FRI of at least 3 years, but rather that fire managers should use a range of fire return intervals at the landscape level as well as adjusting firing techniques and burn weather conditions at the stand level to encourage some unburned patches within burn stands.

Not Everyday is a Burn Day: Predicting Good Burn Days

Preparing to conduct prescribed burns means fire managers monitor various weather indices and services and use their experience to estimate when they might have the correct conditions to fit their prescriptions. There is considerable variability in how often those good burn days occur across seasons, from one year to the next, from one state or region to another, and even by El Niño events.

In the recent issue of International Journal of Wildland Fire, authors Chiodi, Larkin and Varner reviewed data from two weather "reanalysis" models which allowed them to examine past variability in the occurrence of preferred weather windows from 1979-2010 (Chiodi, A.M., Larkin, N.S., and Varner, J.M. 2018. An analysis of Southeastern US prescribed burn weather windows: seasonal variability and El Nino associations. International Journal of Wildland Fire, Vol. 27-3). They specifically focused on mixing height and transport winds - conditions that are critical to smoke dispersal and to reducing the chances of erratic fire behavior – and the frequency with which those variables matched up with the preferred transport wind speed (9-20 mph) and mixing height (1700-6500 ft) in the 1989 Guide for Prescribed Fire in Southern Forests (Wade & Lunsford). Their graphical results are cover the Southeast and may be viewed by purchasing the article from CSIRO; members of the International Association of Wildland Fire have free online access to the journal.

A firefighter lights a prescribed fire on a "good burn day."

With the transport wind and mixing height crite-ria, burn days across the region are on average 3 times more common in the winter or autumn than the summer (up to 8 times more common in some geographic regions). Many agencies have identified summer months as a preferred season for burns and those were the months that were consistently the most challenging in this region-wide analysis. "Our analysis high-lights the difficulty that managers

UPCOMING EVENTS

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

Workshops and Conferences

45th Annual SAF & School of Forest Resources (UF) Spring Symposium
May 2-3, 2018
Gainesville, FL

Southern Blue Ridge FLN Annual Workshop
May 15-18
Pickens, SC

The Fire Continuum Conference: Preparing for the Future of Wildland Fire
May 21-24, 2018
Missoula, MT

Restoring Resilient Communities in Changing Landscapes
Oct. 15-19, 2018
Spokane, WA

12th Biennial Longleaf Conference
Oct. 23-26, 2018
Alexandria, LA

Trainings

Longleaf Academies

Longleaf 101
May 8-10, 2018
Lufkin, TX

Fire and Longleaf 201
Jun. 12-14, 2018
Weymouth Woods, South. Pines, NC

Fire and Longleaf 201
Jul. 17-19, 2018
Webb Center, Garnett, SC

Longleaf 101
Dec. 4-6, 2018
Georgetown, SC

Alabama Learn and Burn Event
Prescribed Burning on Private Lands
ONE day event (based on weather)
between Jun. 18-22, 2018
Bullock County, AL

Natural Areas Training Academy

Wildland Fire Trainings
S-131 Firefighter Type I
Jun. 12
Gainesville, FL

S-215 Fire Operations in the Wildland Urban Interface
Jun. 13-14, 2018
Gainesville, FL
Registration deadline: May 15

Trainings (continued)

GA Prescribed Fire Certification

Jun. 7-8, 2018
Thomasville, GA

Jun. 18-19, 2018
Griffin, GA

Oct. 24-25, 2018
Athens, GA

Dec. 4-5, 2018
Tifton, GA

Prescribed Certified Burn Manager Course

Sept. 25-27, 2018
Virginia Dept. of Forestry
$50 fee, email
sandy.mills@dof.virginia.gov
for registration

Webinars

Landscape Conservation Forecasting for the Great Smokey Mountains NP
May 1, 2018
11:30 am ET

Air Quality 101- For Foresters and Prescibed Burners
May 10, 2018
1:00 - 2:30 pm ET

Adapting Wildfire Management to 21st Century Conditions
May 16, 2018
1:00 -2:00 pm ET

Hosting Fire Festivals: Lessons Learned
May 31, 2018
1:00 -2:00 pm ET

Hosting Learn-n-burn Events: Lessons Learned
Jul. 12, 2018
1:00 -2:00 pm ET

Role of Fire in Southeastern Wetlands
Jul. 19, 2018
1:00 -2:00 pm ET

Wildland Fire in the Southeast Newsletter

Check out the latest newsletter from the Southeastern Cohesive Wildland Fire Management Strategy group.

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.

face when season-of-burn (prescriptions) narrow the potential burn days in an already slim (summer/growing season) period."

One final interesting result of the analysis was that major El Niño events impact burn day availability. El Niño events tend to peak in the tropical Pacific in late fall, and there are more burn days in the preceding summer and following spring, but fewer burn days in the winters of the impactful El Niño events.

NEWS AND REMINDERS

Apply now for the Graduate Research Innovation (GRIN) JFSP Funding Opportunity

JFSP released an announcement for a funding opportunity for masters or doctoral students in wildland fire and related physical, biological, and social sciences. Apply by May 30th for this grant which is designed to enhance students' exposure to the management and policy relevance of their research.

NWCG 2017 Prescribed Fire Complexity Rating System

The recently updated NWCG 2017 Prescribed Fire Complexity Rating System includes the PMS 424 Guide (pdf), the PMS 424-1 worksheet (Excel document) and a new 45 minute webinar recording that describes and explains the rating process.

Air Quality 101 for Foresters and Prescribed Burners

Learn more about topics such as National Ambient Air Quality Standards, ozone, fine particulate matter, non-attainment areas in the Southeast, regional haze and more. There will be additional presentations on state air quality planning and perspectives.

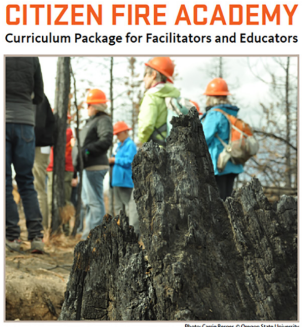
May 10, 2018
1- 2:30 pm ET

Webinar brought to you by:

- *Environmental Protection Agency*
- *GA Environmental Protection Division*
- *NC Department of Air Quality*
- *Southern Fire Exchange*
- *SE Regional Partnership for Planning & Sustainability (SERPPAS)*
- *NWCG Smoke Committee*

Citizen Fire Academy

The Citizen Fire Academy (CFA) curriculum was developed at Oregon State University to equip participants with the knowledge they need to improve fire preparedness and resiliency on their own properties and in their communities. Interested educators or agencies can use the teaching tools (lesson plans, detailed agendas, tour ideas, etc.) to conduct their own CFA program. The materials in the curriculum are centered on Oregon ecosystems and conditions but could be adapted for use in another state.

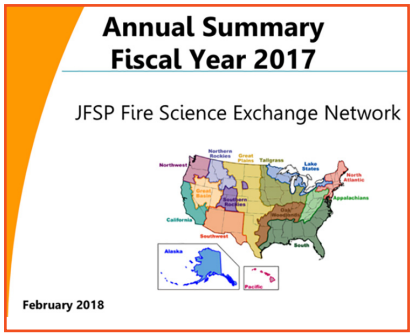


Call for Presentations - 12th Biennial Longleaf Conference!

Do you have information about longleaf to share? Submit an abstract for a longleaf related oral presentation or poster for the 12th Biennial Longleaf Conference in Alexandria, VA, October 23-26, 2018. Abstracts are due by May 31st.

NWCG Smoke Management Guide for Prescribed Fire, PMS 420-2 Now Available

The latest *NWCG Smoke Management Guide for Prescribed Fire*, PMS 420-2, is available now and includes updated information on multiple aspects of smoke management. Prescribed fire, smoke management techniques, air quality regulations, smoke monitoring, modeling, communication, practical weather approaches, smoke tools and more.



2017 Accomplishments of the Fire Science Exchange Network

The Fire Science Exchange Network (FSEN) was highlighted in this recent FY17 summary (pdf) from the Joint Fire Science Program. SFE is the southeastern regional member of the FSEN.

NFPA Launches Wildfire Mitigation Specialist Certification

The NFPA has launched a brand new professional certification program for wildfire mitigation specialists. Check out the details here. Many of our readers work as wildland/urban interface specialists, wildfire mitigation specialists, wildfire prevention officers, etc. who do similar work, but there has been no standard body of knowledge which defines their work. This new certification program will help provide those who are working in wildfire risk reduction and preparedness the recognition and standards that come with a certification. This three-year program includes study in wildfire behavior science, home ignition science, public education practices, land use planning and hazard mitigation and preparedness.

Team Launches New Videos Detailing Fire Adaptation Process

The Wildfire Research (WiRē) Team is an innovative interdisciplinary researcher and practitioner collaboration focusing on helping communities adapt to wildfire in the Rocky Mountain states. They recently released three videos to prompt residents and communities to take action to reduce their wildfire risk. If you are in a professional position with the same mission as the WiRe Team, you may want to check out their videos and website for ideas you can use.

New Fireline Lookouts Video from the USFS

Establishing lookouts while fighting wildfires is a critical part of crew safety. Check out this new video from the USFS which describes the Lookout part of the Lookout, Communication, Escape Routes and Safety (LCES) system. Lookouts are the crew's "eyes" to watch fire behavior from a vantage point to keep the crew informed, knowledgeable and safe.

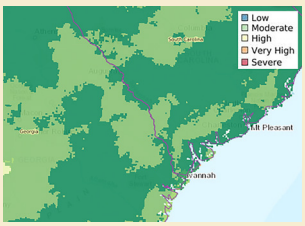
NEW TECHNOLOGY TOOLS

Learn How to Create a GeoPDF for AVENZA from the Enterprise Geospatial Portal

The Fire Enterprise Geospatial Portal (EGP) is the definitive source for standardized geospatial information. Follow the steps outlined on this page to quickly create a GeoPDF on the EGP.

Longleaf Alliance Releases StoryMap Describing the History of Longleaf

Check out this "storymap" which describes the history of longleaf pine in the Southeast with a focus on Alabama. This interactive story mixes pictures, maps and text to describe how longleaf pine fits into the southeastern landscape.



Monitor Wildfire Risk from your Phone

The WFAS severe Fire Weather Potential Mapping system is a mobile- and browser-friendly mapping interface that will show severe fire weather potential based on daily data from the National Weather Service and the Weather Information Management System.