



SOUTHERN Fire Exchange

A JFSP Knowledge Exchange Consortium



FIRE LINES

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

Jan-Feb 2012
Volume 2 - Issue 1

IN THIS ISSUE

Prescribed Fire: A Necessity for Restoring Longleaf Pine	1
Rx-Cadre: A Novel Approach to Wildland Fire Research	1
SFE: Moving Forward	1
Partner Spotlight: National Park Service	2
New! LANDFIRE Support Materials Available	2
Upcoming Events	2
Reminders	3

CONTACT INFORMATION

For general questions, to provide feedback, or to join the listserve, email sfe@ifas.ufl.edu.

Consortium Leads

Leda Kobziar (PI)
Alan Long (Director, Co-PI)
Annie Hermansen-Baez (Co-PI)
Kevin Robertson (Co-PI)
Joe Roise (Co-PI)
Toddi Steelman (Co-PI)

Consortium Staff

Carol Armstrong (TTRS Librarian)
Chet Buell (IT Specialist)
John Diaz (Graduate Assistant)
Annie Oxarart (Tech Transfer)
Justin Shedd (GIS Specialist)

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

Visit the SFE Resource Center
www.southernfireexchange.org



Prescribed Fire: A Necessity for Restoring Longleaf Pine

One process for converting existing loblolly pine stands to longleaf pine involves partial removal of the loblolly overstory to retain ecological benefits, such as endangered species habitat, followed by appropriate site preparation treatments, planting longleaf pine seedlings, and using prescribed fire to control new natural loblolly pine regeneration. This research, conducted on ecologically distinct sites at Fort Benning, Georgia and Camp Lejeune, North Carolina, demonstrated that repeated burning will be key to keeping loblolly pine from taking over. The effects of residual overstory density on natural loblolly regeneration, were evaluated using high, medium, and low uniform stand densities (70, 39, or 26 feet²/acre basal area), as well as clearcut or 0.7-acre gap clearcut openings. Neither overstory density nor gap position affected loblolly seedling density two growing seasons after harvesting and a fall site prep burn. However, seedling height did increase as overstory density decreased and available sunlight increased. *continued on page 3*

Rx-Cadre: A Novel Approach to Wildland Fire Research

By Roger Ottmar, US Forest Service; J. Kevin Hiers and Brett Williams, Eglin Air Force Base

Most fire research is focused on a single aspect of fire, often in isolation from the complex interactions between fuels, fire, and atmosphere that define the combustion environment. In an effort to measure fire holistically, a team of over 15 scientists from the US Forest Service Rocky Mountain, Pacific Northwest, Northern, and Southern Research Stations; Joseph W. Jones Ecological Research Center (JJERC); University of Idaho; University of Montana; San Jose State University; and the Rochester Institute of Technology, pooled their operational and in-kind resources and collected fuels, fire, and meteorological data on prescribed fires in the southeastern United States in 2008. Five operational prescribed burns were monitored in southern pine forests at Eglin Air Force Base (EAFB) and the JJREC. In 2011, two operational prescribed fires were monitored at EAFB with a larger team that included the US Air Force unmanned aerial systems (UAS) project and several private vendors of UAS. *continued on page 3*



Photo Credit: Bill Holley

SFE: Moving Forward

The Southern Fire Exchange held its Annual Meeting in Raleigh, North Carolina on December 2, 2011. Joined by members of the SFE Steering Committee, Advisory Board, and Consortium of Appalachian Fire Managers and Scientists (CAFMS), the team discussed accomplishments and opportunities for improvements and future collaborations. Some key activities to look for in the upcoming year: a monthly fire-related webinar series and four workshops held in various locations across the Southeast. If you have ideas for webinar or workshop topics, or workshop locations, we'd love to know! Email us at sfe@ifas.ufl.edu.

Partner Spotlight: National Park Service



The National Park Service (NPS) is active in wildfire management and prescribed burning throughout the nation, with more than half of their 84 million acres containing burnable vegetation. As stated in NPS Director's Order 18, "the National Park Service manages wildland fire to protect the public; park communities and infrastructure; conserve natural and cultural resources; and maintain and restore natural ecosystems and processes." Two wildland fire modules, **one** based out of Great Smoky Mountains National Park and **the other** operating from Cumberland Gap National Historical Park, manage fire in national parks in Alabama, Georgia, Florida, Kentucky, Louisiana, Mississippi, North Carolina, South Carolina,

and Tennessee. The Southeast region has the largest prescribed burn program in the NPS, and burns the most acreage at Big Cypress National Preserve and Everglades National Park in Florida. You can keep up with current burns and fire news in the region's parks by following NPS Southeast Fire on Twitter [@SouthEastNPS](#). In addition, if you are interested in learning about a specific park's fire management plan, you can locate the park's fire website by [clicking here](#).

For more information, explore the [NPS Fire and Aviation Management website](#), which provides helpful resources including [fire stories](#), a [fire manager's toolbox](#), [common terms and definitions](#), and [multimedia presentations](#) (make sure to check out this [video](#) featuring southern fire researchers and managers!).

New! LANDFIRE Support Materials Available

By Kori Blankenship, *The Nature Conservancy*

Wall-to-wall spatial data and ecological models of vegetation for the United States are freely available online from [LANDFIRE](#) and now there are [support materials](#) to help end users apply them to real world fire and land management problems. LANDFIRE datasets include current vegetation, historic vegetation, and a suite of fuel related products including the original 13 and the new 40 fire behavior fuel models, forest canopy bulk density, cover, height, and much more. Check out the in-depth guides, watch the how-to videos, and use the step-by-step tutorials to get the most out of these datasets. Building on the existing [LANDFIRE courses](#), the following support materials are now available.

HOW-TO USER GUIDES

- [Reviewing & Modifying LANDFIRE Vegetation Dynamics Models](#)
- [Reviewing & Modifying LANDFIRE Spatial Products](#)
- [Adapting LANDFIRE Vegetation Dynamics Models](#)

VIDEOS/TUTORIALS

- [Overlay Grids Using the "Combine" Function](#)
- [Calculate the Area for Each Type Mapped in a Grid](#)
- [Editing Raster Attributes](#)
- [Making a New Raster](#)
- [Introduction to Analyzing Ecosystem Health](#)
- [Review and Modify FRCC Mapping Tool Reference Conditions](#)



In addition to these new user support materials, LANDFIRE recently released improved and updated spatial products current through 2008 on its [Data Distribution Site](#). Many of these updates were directly aimed at improving the datasets in the Southeast US, such as enhanced mapping of growth changes in shrub and wetland cover types and incorporating recent disturbance and treatment information.

LANDFIRE cannot replace good local data but you may find it useful for filling gaps or supplementing local datasets. What's more, the LANDFIRE Team can help you do it! Contact any member of The Nature Conservancy's [LANDFIRE Team](#) or the helpdesk (helpdesk@landfire.gov). Keep an eye out for expanded support offerings coming in 2012!

UPCOMING EVENTS

Visit the [SFE Calendar](#) to learn more about upcoming workshops, trainings, field trips, demonstrations, and other opportunities. To add an event to our calendar, please send the event information to sfe@ifas.ufl.edu.

PFC Meetings

- LA PFC Meeting
February 1, 2012, 8:30am to 12pm (CST)
Pineville, Louisiana

Webinars

- [FEIS Demonstration](#)
January 18, 1pm to 3pm (EST)
- [Hydrologic Impacts of High Severity Fire](#)
January 18, 2pm to 3pm (EST)
- [Planning to Live with Fire](#)
January 26, 2pm (EST)
- [Latest JFSP Research](#)
January 26, 3pm (EST)
- [Learning from Escaped Rx Fire Reviews](#)
February 21, 3pm (EST)

Conferences

- [SE SAF Annual Meeting](#)
February 19-21, 2012
Jekyll Island, GA
- [Southwest Fire Ecology Conference](#)
February 27-March 1, 2012
Santa Fe, New Mexico
- [Wildland Urban Interface Conference](#)
March 25-29, 2012
Reno, Nevada
- [3rd Human Dimensions of Wildland Fire Conference](#)
April 17-19, 2012
Seattle, Washington
- [Ass. of Natural Resource Extension Professionals \(ANREP\) 2012 Conference](#)
May 20-23, 2012
Hendersonville, NC

Workshops

- [Smoke Management for Landowners and Consultants](#)
January 24-25, 2012
Livingston, Texas
- [CAFMS Workshop: Smoke in the Mountains](#)
February 28, 2012
Asheville, North Carolina
- [Landowner Training: Rx Fire for Wildlife](#)
February 28-29, 2012
Tallahassee, Florida
- [CAFMS Workshop: Management Impacts on Timber Rattlesnakes](#)
March 8, 2012
Columbus, Ohio

REMINDERS

THANK YOU!

Special thanks to more than 500 fire professionals who responded to the recent SFE survey on prescribed fire effectiveness! Look for a report on the results coming this spring.

FIRESOFTWARE.GOV

The Joint Fire Science Program has a **new website!** Make sure to check out their blog, *On Fire*, sign up for the *Flash* newsletter, and follow on Twitter @FireScienceGOV.



ARCHIVED IFTDSS WEBINAR

View the archived **IFTDSS webinar**, which was presented in December 2011 by Stacy Drury of Sonoma Technology, Inc.

SFE MINI-GRANTS

The Southern Fire Exchange is offering mini-grants (\$300 to \$1000) to support the development research syntheses, webinars, or fact sheets on high priority topics relating to wildland fire. [Click here](#) to learn program details and download the application.

Prescribed Fire: A Necessity for Restoring Longleaf Pine

continued from page 1

Dormant season prescribed fire was applied to all plots after the second growing season and killed approximately two-thirds of the loblolly seedlings. Loblolly mortality was positively related to the percentage of area burned in each plot which, in turn, increased with overstory density and fine fuel availability. The relationship between area burned and loblolly seedling mortality illustrates the necessity of complete burns for loblolly pine control. Seedling size (up to 5 feet height) did not influence the likelihood of mortality from the prescribed fires. By May after the fire, a new recruitment class of loblolly germinants was in place, demonstrating the importance of prescribed fire at regular two to three-year intervals to control each cycle of loblolly pine natural regeneration while seedlings are small enough to maximize fire-induced mortality. The interval needs to be shortest in gaps and clearcuts where loblolly seedlings optimize growth.

For more detail, see Knapp, B., G. Wang, H. Hu, J. Walker, C. Tennant. (2011). Restoring longleaf pine (*Pinus palustris* Mill.) in loblolly pine (*Pinus taeda* L.) stands: Effects of restoration treatments on natural loblolly pine regeneration. *Forest Ecology and Management* 262 (7): 1157-1167.

Rx-Cadre: A Novel Approach to Wildland Fire Research

continued from page 1

The Prescribed Fire Combustion and Atmospheric Dynamics Research Experiment (Rx-CADRE) research project:

- quantified fuel characteristics and consumption across scales using standard methods and with aerial and ground-based LiDAR;
- measured fire-atmosphere interactions, plume dynamics, and ambient meteorological conditions;
- measured surface fire behavior including radiant and convective energy release, fire rate of spread, and flame characteristics;
- approached closure of the fire heat budget from measurements and estimates of total and effective heat of combustion and radiative, convective, latent, and soil heat dissipation;
- characterized smoke emissions at the source and downwind from the fire; and
- characterized first order fire effects.

The data were shared collectively among all research groups, and findings are being published in peer-reviewed journals and serving as validation for next generation fire behavior models. Additional reports and analysis are forthcoming, and funds have been requested from the Joint Fire Science Program (JFSP) to make all data from RxCADRE burns available to the fire community.

In addition, a JFSP proposal has been submitted to continue the research project. If funded, four 10-acre replicate burns and two 1000-acre operational burns will be monitored in a short grass rangeland fuel type. The first iteration of future burns will occur in relatively uniform grass fuelbeds with a simple ignition pattern on EAFB in November 2012 to explicitly provide validation datasets for next generation models that couple fire dynamics and atmospheric physics.

For more details on the 2008 RxCADRE fires, a series of **presentations** can be accessed online from the 4th International Fire Congress proceedings.