

What's New at the Southern Fire Exchange?



Central Florida Prescribed Fire Council

October 19, 2012

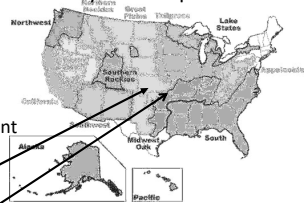
Alan Long, Tall Timbers Research Station, UF

Today's Plan

- Accomplishments - last 12 months
- Discuss how we might benefit you
- Fire Behavior & Fuels Conference, Raleigh
- Research highlights
 - Prescribed fire effects on wildfire risk
 - Extreme fire behavior research synthesis
- Your feedback

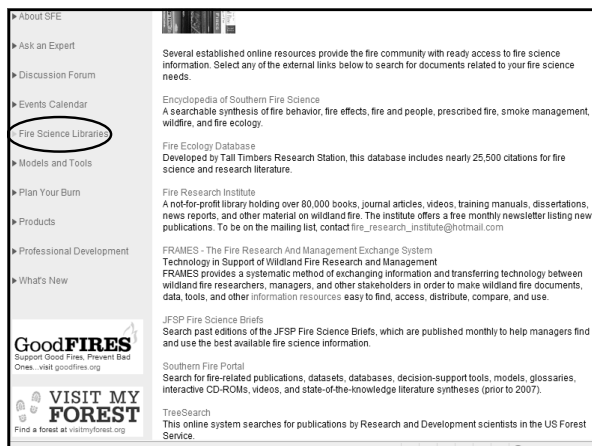
The JFSP Fire Science Consortia

- SFE is one of 14 JFSP regional consortia of fire managers and science providers; started 2010
- Goal: enhance fire science delivery and adoption
- SFE focus:
 - Prescribed fire
 - 4 sets of activities
 - Large, diverse audience
 - Based on needs assessment
- New consortia in region:
 - Great Plains
 - Midwest Oak Woodlands



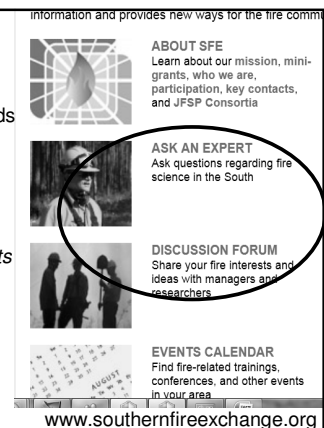
www.southernfireexchange.org

- Google search on home page
- Current highlights – *What's New - top rotating banner*
- Rx Fire Councils
- Links to all relevant fire resources (we think)



Online Forums

- High priority in initial needs assessment
- Reality = very little use
- Some recent topics
 - Smoke & health effects
 - Dendrochronology
 - Aerial firefighting
- How do we make these more useful?



SFE Activities: Direct Interaction

- Webinars – archived on NCSU Webinar Portal & FRAMES
 - Smoke prediction models for Rx burn plans
 - Prescribed fire and the public: Myths & realities
 - Interagency Fuel Treatment Decision Support System
 - Fire effects & smoldering combustion in cypress swamps
 - Many from other consortia also archived and available
- Workshop: Field demonstration of fuel mastication effects
- Reality
 - Travel time for workshops is limiting
 - Webinars less time and archived, but...



International Conference on Fire Behavior & Fuels Mgt, Raleigh, Feb 18-22, 2013



- How can this benefit fire managers?
- Monday – variety of training workshops
- Diverse presentation & panel topics
- Field trip Friday to Camp Lejeune

<http://www.iawfonline.org/2013FuelsConference/CFP.php>

Training Workshops at FB Conference

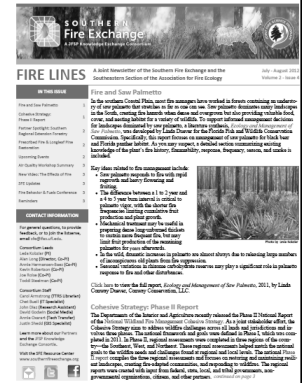
- BEHAVE for Rx fire planning
- Advanced fire behavior analysis
- ArcFuels-10 fire behavior modeling
- Wildland Fire Assessment Tool (WFAT)
- Rx-310 – Introduction to fire effects (NWCG)
- Tools for assessing wildland fire smoke
- IFTDSS (Interagency Fuel Treatment Decision Support System) & several other DSS
- Assessing residential wildfire hazard
- Fire monitoring & application tools
- Assessing climate change impacts
- Fire Regime Condition Class (FRCC)
- Crown Fire Behavior in Conifer Forests

SFE Publications: Fire Lines Newsletter

- Every two months

- Recent issues:
 - Wildfire suppression strategies & costs
 - Smoke management & Rx fire
 - Fire and saw palmetto
 - Prescribed fire & longleaf restoration
 - Cohesive Strategy II Report
 - Rx fire effects on reptiles
 - DoD & Eglin AFB

Question – have you seen this?

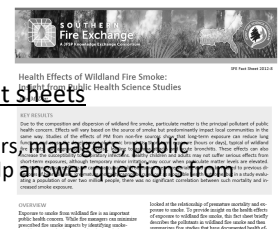


SFE Publications: Fact Sheets/Reports

- Last 12 months
 - Smoldering Combustion in Organic Soils
 - Cypress Mortality after Fire
 - Smoke Prediction with V-SMOKE
 - Growing Season Burns and Ground Nesting Birds
 - Getting the Most out of Online Resources
 - Encyclopedia of Southern Fire Science
 - Tall Timbers Fire Ecology Database & FRAMES
 - JFSP Research Briefs & Findings (www.firescience.gov)
 - Predicting Smoke movement – User Friendly Computer Models
- Other reports
 - Particulate Matter in Smoke (TTRS workshop)
 - Prescribed Fire and Longleaf Pine (SERPPAS report)
 - National Prescribed Fire Use Survey Report (CPFC)

SFE Publications: Fact Sheets

- New public education fact sheets
 - Intended for use by burners, managers, public information officers to help answer questions from the public and neighbors
 - 4 new ones on the SFE website:
 - Health effects of smoke – summary of 5 medical studies
 - Economic costs of large wildfires
 - Commonly asked questions about Rx fire in NC
 - Commonly asked questions about Rx fire in FL



SFE Helping Landowners

- *When Wildfire Strikes – What Do I Do Now?*
 - *Forest Landowner Journal* – Sept-Oct, 2011
 - Contributors: SFE, GA FC, SC PFC, TFS, OK, AR, AL
 - http://www.southernfireexchange.org/factsheets/FL_Mag.pdf



Research Summary 1 Particulate Matter in Smoke

- Tall Timbers-organized workshop with 17 organizations
- Focus on 7 questions related to smoke emissions
- One key finding (repeated in SERPPAS report)
 - “..Improving estimates of burned area is the greatest of all needs for improving PM emissions inventories”



Wildland Fire PM Emission Factor Workshop Summary
on www.southernfireexchange.org

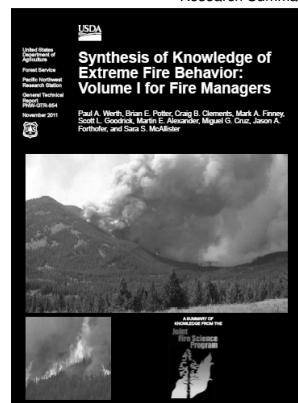
Research Summary 2

Rx Fire and Longleaf Pine

- SERPPAS Report, 2012: *Current Work on Prescribed Fire Related to Longleaf Pine Restoration* - also on SFE website
- DOD, USFS, FWS, SGSF, PFCs, TNC, NCSU, TAMU and others
- Synthesis of current knowledge about barriers and recommendations related to prescribed fire in the SE:
 - Smoke management & AQ regulations
 - Agency missions, programs
 - Land use changes
 - Public perceptions and knowledge
 - Capacity & financial resources
 - Liability issues
 - Fire science and information
- First step for developing new strategy for increasing Rx fire and longleaf restoration



Research Summary 3



Contents

- Chapter 1: Introduction *Brian E. Potter and Paul A. Wertz*
- Chapter 2: Effects of Complex Terrain on Extreme Fire Behavior *Craig B. Clements*
- Chapter 3: Critical Fire Weather Patterns *Paul A. Wertz*
 - Introduction
 - Weather Elements That Promote Extreme Fire Behavior
 - Critical Fire Weather Patterns
 - Regional Critical Fire Weather Patterns
 - Southeastern United States
- Models and Predictive Tools
- Chapter 4: Fire Interactions and Mass Fires *Mark A. Finney and Sara S. McAllister*
- Chapter 5: Column/Plume Dynamics *Brian E. Potter*
- Chapter 6: Spot Fires *Brian E. Potter*
- Chapter 7: Vortices and Wildland Fire *Jason A. Zentgraf and Scott L. Goodrick*
- Chapter 8: Crown Fire Dynamics in Conifer Forests *Martin E. Alexander and Miguel G. Cruz*
- Implications for Fire and Fuel Management
- Future Outlook

• The revised *Guide for Prescribed Fire in Southern Forests*

• Authors: Tom Waldrop, Scott Goodrick

• Download at:
<http://www.srs.fs.usda.gov/pubs/41316>

• Hard copies, 2/person, at
pubrequest@fs.fed.us



INTRODUCTION TO
PRESCRIBED FIRE IN
SOUTHERN ECOSYSTEMS



Research Summary 4 – Southern Pines

Prescribed fire effects on wildfire risk?

- Overview
 - Questions about value of prescribed fire (and other fuel treatments) for reducing wildfire ROS, intensity and area burned for 50 years
 - Standard practice – dormant season burn every 3-5 years to reduce understory shrubs and fuel buildup
 - Substantial on-the-ground (eg Wallow fire) and anecdotal evidence, especially with home protection in WUI, that it does reduce risk
 - Variety of research studies have contributed information – most leading to similar conclusions
- What does research say?

Research Summary – Southern Pines

Prescribed fire effects on wildfire risk?

Southeast Pine Flatwoods – You have all been there!



Research Summary

Prescribed fire effects on wildfire risk

- 1963 - Davis & Cooper, *How prescribed burning affects wildfire occurrence*. J. For. 61:915-917.
- 2002 - Brose & Wade, *Potential fire behavior in pine flatwood forests following three different fuel reduction techniques*. Forest Ecology & Management 163:71-84.
- 2004 - Outcalt & Wade, 2004 . *Fuels management reduces tree mortality from wildfires in southeastern United States*. South. J. Appl. For. 28:28-347.
- 2011 – Malone, Kobziar, Staudhammer, Abd-Elrahman. *Modeling Relationships among 217 Fires Using Remote Sensing of Burn Severity in Southern Pine Forests*. Remote Sensing 3:2005-2028

Research Summary

Prescribed fire effects on wildfire risk ***Key Results***

- 0 - 2 year rough => lowest:
 - Fire incidence & acres burned annually
 - ROS & flame length
 - Burn severity & pine mortality
- All fire and effects parameters greatest in > 5 year rough
- Inverse effects with herbicides out to 5 years after treatment

Research Summary

Prescribed fire effects on wildfire risk?

- Summary: 50 years of research say almost the same thing, at least for SE pine flatwoods
- Prescribed fire provides protection which generally disappears within 2 years as shrubs recover.
- “Hazard reduction fire prescriptions, therefore, are profitable investments for forest landowners in the Southeast if roughs are kept below the 5-year level.”
(Davis & Cooper, 1962)
- SFE – UF survey of fire managers
 - 500 + responses last spring
 - Results later this year
- Your input: *What do we still need to know about it?*

Discussion - Questions



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