

Prescribed Fire, Smoke Management, Air Quality and Human Health



Southern Integrated Prescribed Fire Information System
Workshop

August 8, 2017

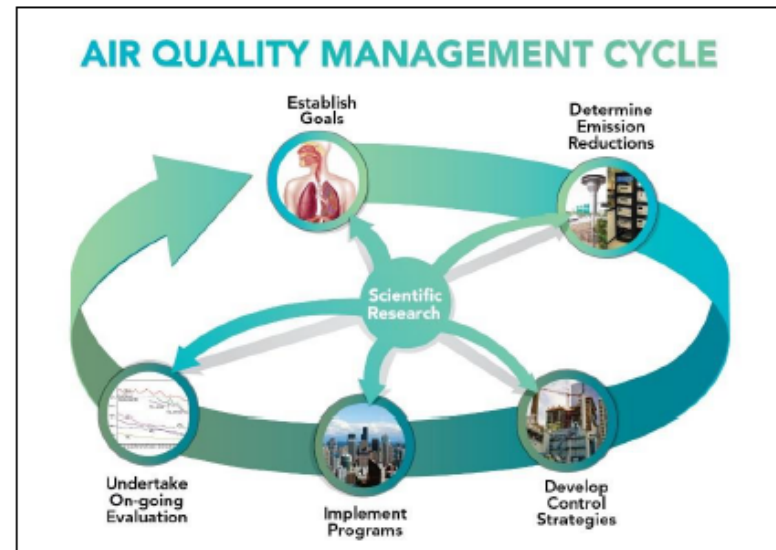
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EPA's Role in Smoke Management

- EPA works to address air pollution caused by smoke in multiple ways:
 - Regulations, policies, and guidance
 - Voluntary Programs and Partnerships
 - Research





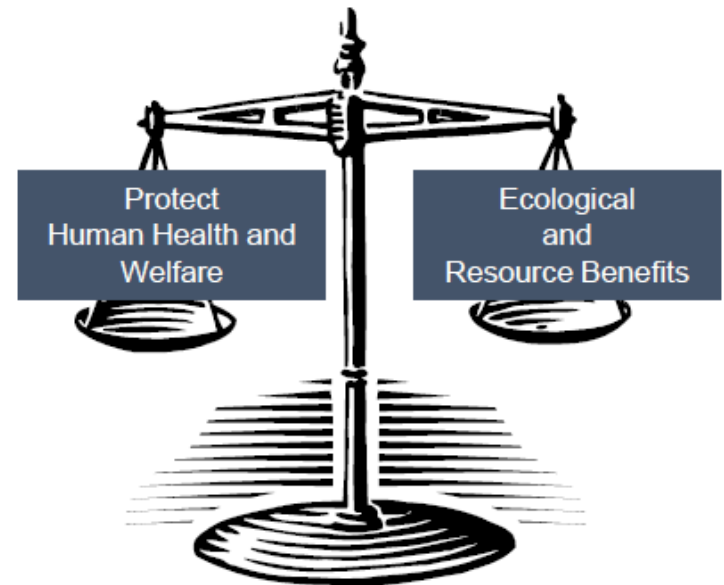
EPA's 1998 Interim Air Quality Policy on Wildland and Prescribed Fires

Attempts to Integrate 2 Public Policy Goals:

1. Allow fire to function in its natural role in maintaining healthy wildland ecosystems
2. Protect public health and welfare by mitigating the impacts of air pollutant emissions on air quality and visibility

Encourages collaboration among fire management agencies and air quality agencies

Encourages consideration of smoke management techniques and smoke management planning



EPA Recognizes the Importance of Prescribed Fire



- “...EPA has continued to express an understanding of the **importance of prescribed fire**, noting that it can be used to **mimic the natural process necessary to manage and maintain existing fire-adapted ecosystems** and/or return an area to its historical ecosystem (or another natural ecosystem if the historical ecosystem is no longer attainable) while **reducing the risk to public safety and the risk of uncontrolled emissions from catastrophic wildfires.**”

– Quote from the preamble to EPA’s November 2015 Proposed Exceptional Events Rule Revisions - http://www.epa.gov/sites/production/files/2015-11/documents/ee_nprm_11-20-15_80_fr_72840.pdf





SERPPAS Wildland Fire Initiative

- Formed in 2011 by the SERPPAS Principals
- Currently facilitated by Jennifer Fawcett with NC State University
- Developed the 2012 *SERPPAS Comprehensive Prescribed Fire Strategy* to achieve the Long Leaf Pine Conservation and Restoration Vision of increasing long leaf pine acres from 3.4 million to 8 million by 2025

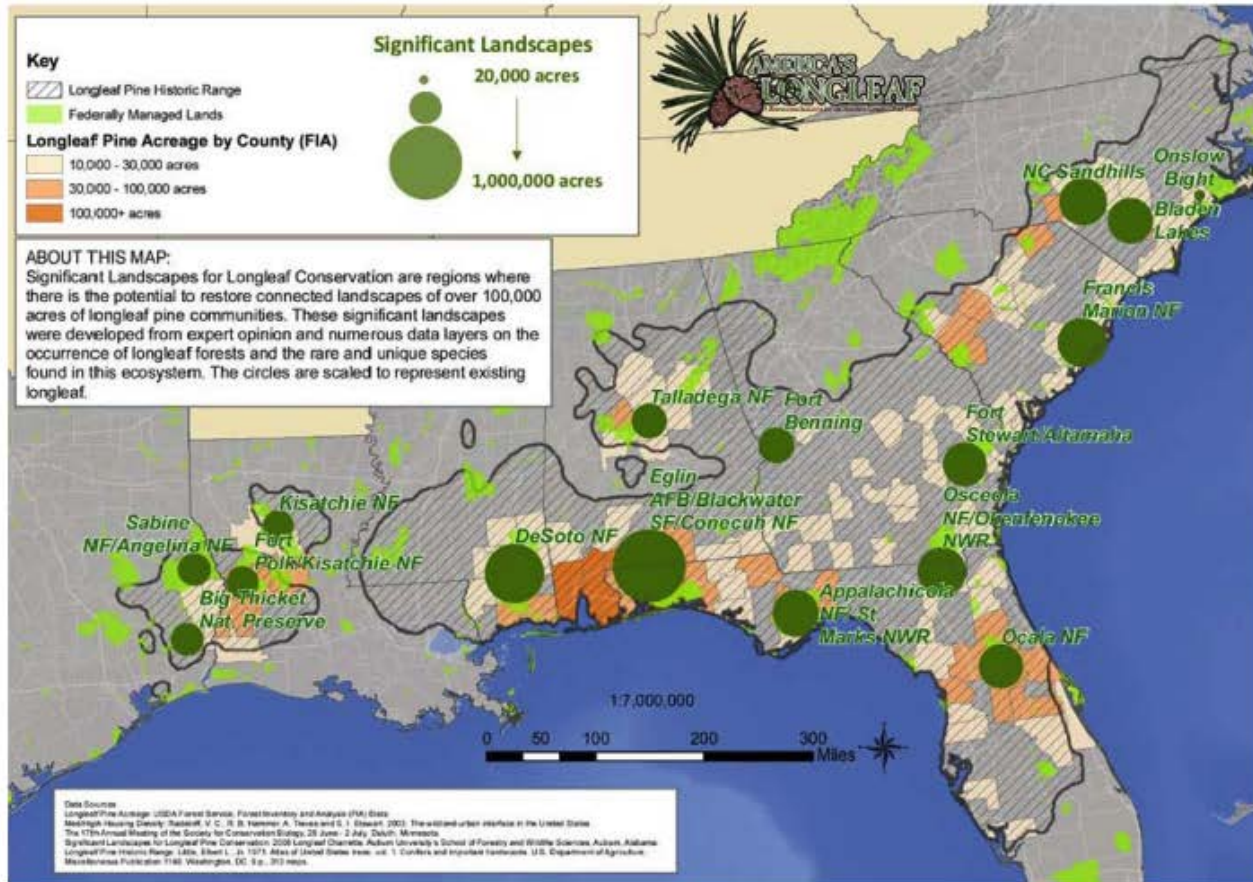
Strategy Goals

- Ensure sufficient, consistently available resources to promote and implement increased prescribed fire operations
- Implement focused, effective communication, and education campaigns to increase awareness of prescribed fire and willingness to burn
- Increase the number of trained, qualified and experienced burners (both landowners and contractors) conducting prescribed burning on private and public lands
- Minimize landowners' risk of liability associated with prescribed fire
- Support prescribed fire programs on public lands
- Minimize local smoke impacts on air quality and public health and safety; Maximize coordination between air and fire communities
- Implement a consistent fire activity and emissions tracking system across the Southeast that is accessible to public and private burners
- Ensure coordination and collaboration at the regional, state, and local levels to implement the prescribed fire strategy



SERPPAS and Longleaf Pine Conservation

Vision: Increase 3.4 million acres to 8 million acres by 2025





Southeast Prescribed Fire and Air Quality Workgroup

- Consists of State Air Directors and State Forestry Fire Chiefs for 8 Southeast States along with Regional partners
- Initiated in 2013, Co-lead by Jones Ecological Research Center, National Wildland Fire Council, and EPA Region 4
- Provides a forum to discuss state, regional, and national prescribed fire, smoke management and air quality goals and issues
 - First Prescribed Fire and Smoke Management Summit was in April 2013 at the Jones Ecological Research Center at Ichauway, GA
 - Summit II held February 2015 at Jones Center
 - **Summit III held April 2017 at Jones Center**
- Periodic Conference Calls among group





Critical Research Question from Smoke Summit III

- Will a large increase in the number of prescribed fire acres burned have an adverse impact on air quality and human health in the Southeast?
- Information needed to answer this question
 - Accurate emissions inventory
 - Estimate of future frequency/location of prescribed burn acres
 - Robust air quality modeling tools
 - Population exposure and health impacts from prescribed fire smoke
 - Are Smoke Management Programs (SMPs) or Basic Smoke Management Practices (BSMPs) being used effectively?





Another Important Research Question for the SE

- How do the emissions from frequent prescribed fires compare to emissions from infrequent uncontrolled large wildfires?
- Important considerations:
 - Are pollutants of concern different?
 - Quantity of emissions
 - Atmospheric chemistry and transport of emissions
 - Pollutant concentrations
 - Number of people being impacted





Wildland Fire Related Research

- **Toxicology studies** are ongoing to differentiate how wildland fire smoke impacts human health compared with a typical urban environment
- **Health communication** information “Wildfire Smoke: A Guide for Public Health Officials” is available at the AIRNOW wildland fire site
- **Smoke Sense App** development - intended to understand effective health risk communication strategies for people impacted by wildfire smoke
- **Wildland Fire Sensors Challenge** - intended to stimulate development of low-cost, light-weight, accurate, and easily deployable sensor technology for first responders and public health agencies during wildland fires
 - Learn more at <https://www.challenge.gov/challenge/wildland-fire-sensors-challenge/>
- **Improved emissions and air quality modeling of wild and prescribed fire**; recent field work in Flint Hills, KS for Region 7 RARE; early stages of planning field work and model development focused on prescribed burning in the southeast U.S.
- Working toward a **comprehensive survey/inventory of EPA research** related to wildland fire (wildland fire research prospectus)



Questions?



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