

THE NATIONAL COHESIVE WILDLAND FIRE STRATEGY

# Southeast Regional Risk Analysis Report



Phase III  
Science-  
Based  
Report



RESILIENT LANDSCAPES  
FIRE-ADAPTED COMMUNITIES  
FIREFIGHTER SAFETY

# EXECUTIVE SUMMARY

Wildland fire management in the Southeastern United States is complex and multi-faceted. The significant threat posed by unplanned or undesirable fires threatens the lives and well-being of emergency responders and the public, and damages or destroys homes, property, and other values-at-risk. Although the Southeastern region includes just thirteen states, the Commonwealth of Puerto Rico, and the U.S. Virgin Islands, it leads the nation in the number of annual wildland fire ignitions (Fig. 1), with an average of 41,500 unplanned ignitions burning a total of 1.9 million acres every year (NICC 2012).

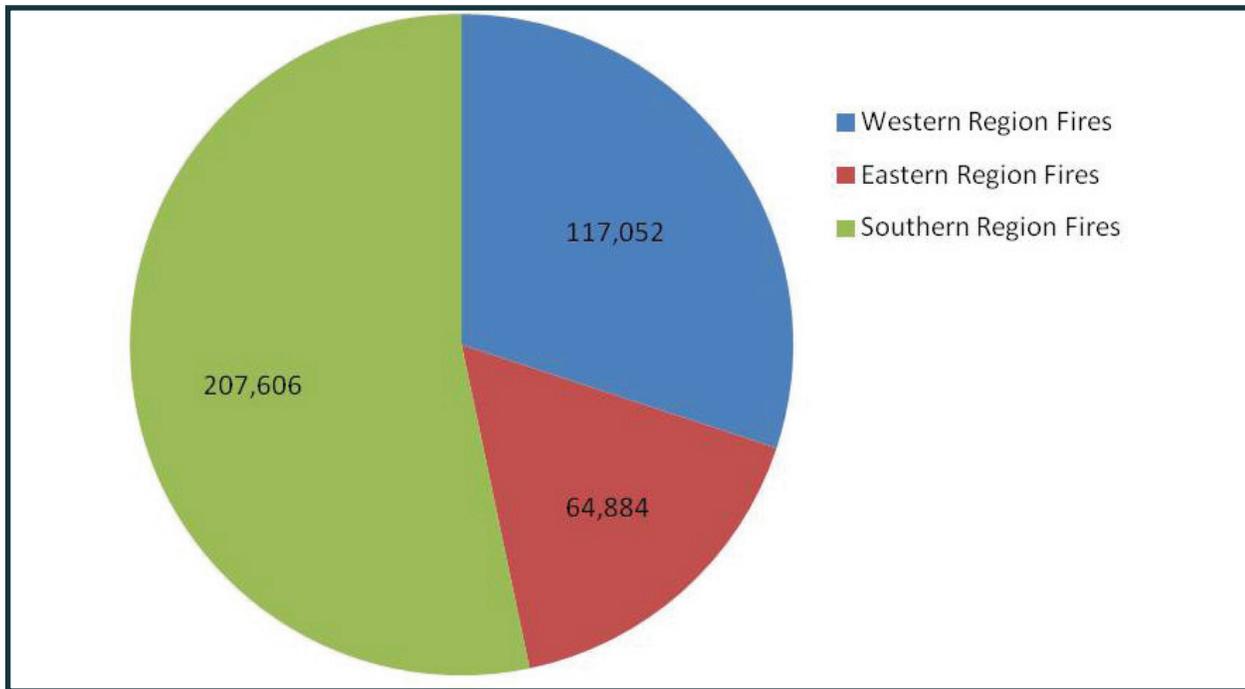


Figure 1. Number of fires by region, 2007–2011 Source: NICC 2012

This management challenge is exacerbated by rapid population growth, rapid expansion of wildland urban interface (WUI) areas, and the fragmentation of land ownership in the region. In 2011, 10 firefighters lost their lives during wildfire management in the Southeast (NIFC 2011). During that same year, in Texas alone 3,993,716 acres were burned by wildland fires, with 5,738 structures destroyed, including 2,946 homes (Texas Forest Service 2012). Today 118,083 Southeastern communities are considered at risk from wildfire (Southern Wildfire Risk Assessment 2006). Of these, 43 percent are assessed as being at very high or high risk from wildfire (Andreu 2008). Wildfire threat to homes is consistently above average due to the number and density of homes throughout the Southeast (Fig. 2).

Over the past decade, population growth in the Southeast has outpaced any other region in the country. According to the 2010 U.S. Census, the South's population grew 14.3 percent between 2000 and 2010 to reach 114.6 million inhabitants at the end of the decade (Fig. 3). As of 2010, six of the ten fastest growing counties were in Southeastern states along with a total of 36 percent of the nation's population (U.S. Census Brief 2010).

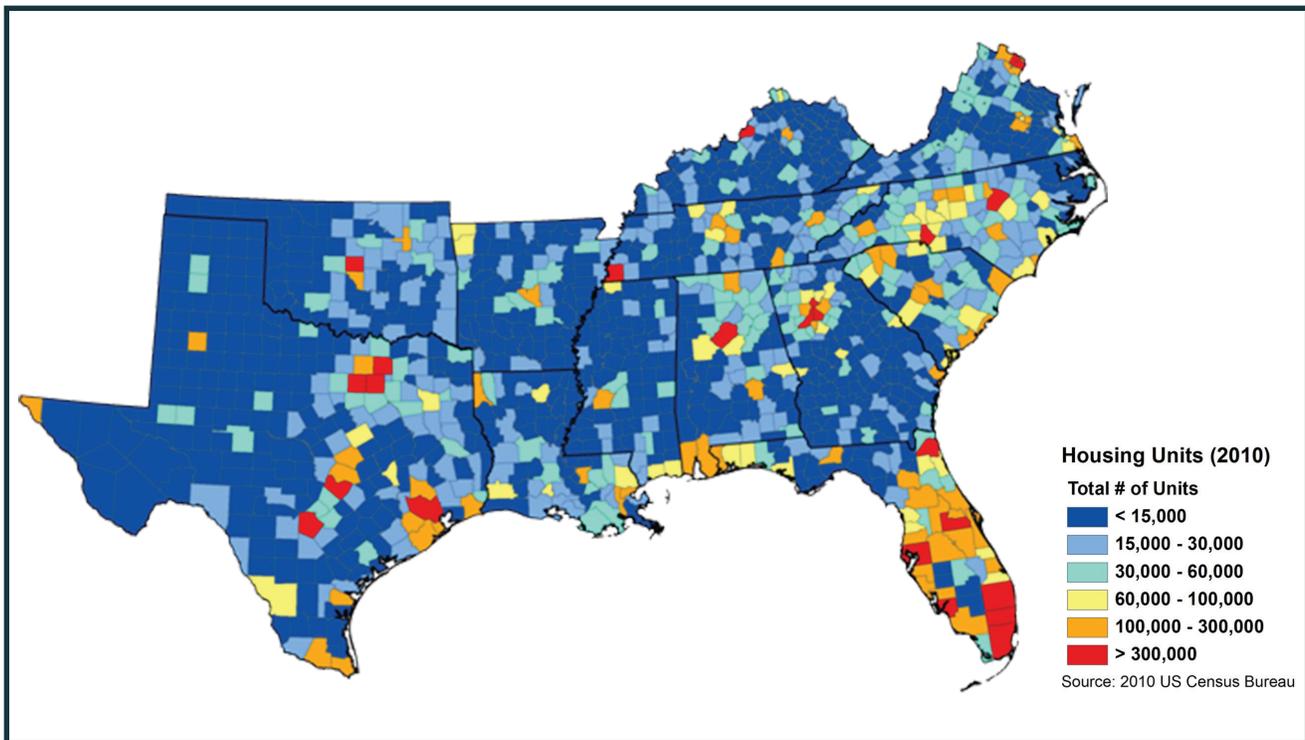


Figure 2. Number of housing units per county in the Southeast

In the past, the Southeastern fire and land management community has relied on cultural and historical acceptance of land management activities including prescribed fire to facilitate their implementation of appropriate management activities. New residents, however, are often unfamiliar with the use of fire as a valuable management tool. This population and an accompanying significant demographic shift, along with other factors, are creating new challenges for the fire management community. It is increasingly more difficult for agencies, organizations, and landowners to plan for and respond effectively to wildfire, while protecting vulnerable WUI communities and providing for firefighter safety. The Southeast has a complex fire environment unlike any other in the nation, with interrelated critical controlling factors influencing wildland fire management including:

1. **Wildfire Activity:** Between 2001 and 2010 nearly half of all national ignitions and over 40 percent of the country's large wildfires occurred in the Southeast.
2. **Large and Rapidly Expanding WUI:** As of 2000, more than half of WUI acres were located within the Southeast.
3. **Smoke Management Challenges:** Smoke impacts safety, health, and quality of life. Smoke-related impacts challenge the fire management community to implement management and response activities safely.
4. **Year-round Fire Season:** Wildland fires burn all 12 months of the year in the Southeast, stressing firefighting capacity and resources.
5. **Area Protected:** More than 420 million terrestrial acres are protected from wildfire by federal, Tribal, and state agencies with just under half (200 million acres) being forested lands.

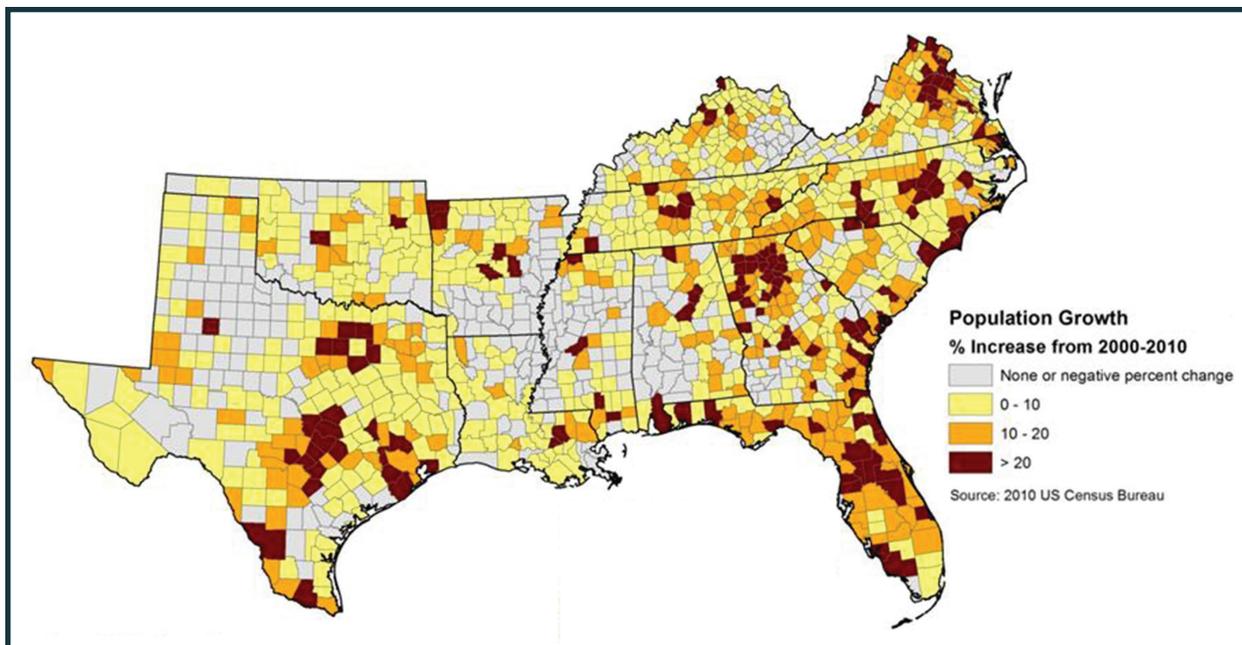


Figure 3. Population growth in the Southeast between 2000 and 2010

6. **Privately Owned Forestland:** Nearly 90 percent of forestland in the Southeast is owned by more than five million private landowners.
7. **Prescribed Burning:** The Southeast leads the nation in prescribed burn acres accomplished on silvicultural land; but issues related to capacity, smoke, and liability are significant obstacles to encouraging practitioners to increase prescribed burning. Prescribed fire must occur at a much greater frequency than elsewhere in the country as a result of the region's rapid vegetation regrowth rate.
8. **Invasive Species:** Many invasive species spread quickly after a wildfire event, contributing to fuel loading and otherwise influencing forest health (e.g., cogongrass (*Imperata cylindrica*)).
9. **Working Forests:** Traditional and new economically viable forest markets support local economies, help curb hazardous fuel accumulation, and serve as a source of local wildfire knowledge, but the long-term strength of these markets is unknown.
10. **Strong Relationships in the Fire Management Community:** An extensive history of excellent cooperation and working relationships exists between agencies, organizations, and local fire departments with other wildland fire management organizations, resulting in a safer, more effective response and collaborative planning for future occurrences.
11. **Rural Fire Departments:** An extensive network of rural fire departments, including many volunteer fire departments, are responsible for many initial responses to wildfires throughout the region.

No single agency, organization, or landowner can adequately address these complex and related challenges on their own. The National Wildland Fire Management Cohesive Strategy (Cohesive

Strategy) is a collaborative, three-phase effort to create a landscape-level national fire strategy that addresses these increasingly complex challenges of wildland fire management in the United States. This national effort is novel in that it has encouraged participation by all individuals and entities with a stake in fire management as partners during the strategy’s development. This diverse stakeholder group includes federal and state land management agencies, local governments, private landowners, environmental groups, Tribal groups, fire professionals, non-governmental organizations, and others. The Cohesive Strategy effort also marks the first time that regions of the country have had an opportunity to provide locally specific input for incorporation into a national strategy. Stakeholders from the Southeast have engaged in the Cohesive Strategy effort during the entire process. During Phase I, national goals were established and a framework for the creation of the strategy was developed. In Phase II, the Southeastern region identified three regional goals and objectives that highlighted challenges, resources, and evolving opportunities unique to the South. The goals identified are:



1. ***Restore and Maintain Landscapes:*** Landscapes across all jurisdictions are resilient to fire-related disturbances in accordance with management objectives.
2. ***Create Fire-Adapted Human Communities:*** Human populations and infrastructure can withstand a wildfire without loss of life and property.
3. ***Respond to Fire:*** All jurisdictions participate in making and implementing safe, effective, efficient risk-based wildfire management decisions.

During the past ten months, the Southeastern region has been in the process of selecting regional alternatives as part of the Phase III process. These regional alternatives focus on identifying specific actions and activities that would best help achieve regional objectives while retaining maximum flexibility for land managers to determine the most appropriate management activities for their property. Six key values important to Southeastern stakeholders were identified early in the Cohesive Strategy process, and helped guide the development of regional alternatives, along with the regional goals and objectives developed during Phase II. For the purpose of this report, those six items were consolidated into five values:

1. ***Firefighter and Public Safety***
2. ***Marketable Products***
3. ***Ecological Services***
4. ***Cultural values***
5. ***Property Loss***

### Three Goals of the Southeastern Cohesive Strategy

1. Restore and maintain landscapes
2. Create fire-adapted human communities
3. Respond to fire

## Firefighter and Public Safety

Actions and activities that would have the most significant impact on enhancing firefighter and public safety, as well as achieving regional goals, have been identified from the Phase II Regional Assessment. The numbering reflects their location in the Phase II report. The emphasized actions and activities are as follows:

1. Utilize prioritization in SWRA and other efforts to identify and treat wildland fuels in areas that will facilitate tactical defense of human communities or ecological values and services from wildfire (tactical fuel breaks). (1.2.2)
2. Increase community preparedness and mobilization abilities (e.g., evacuation) and increase coordination and planning between local, state, and federal responders prior to wildfire ignition. (2.2.3)
3. Train, develop, and increase state, federal, Tribal, and local agencies and cooperating entities capacity for wildland fire management to ensure staffing levels meet operational needs. Utilize training academies and improved MOUs to increase response capacity, including awareness of risk management techniques. (3.1.1)
4. Investigate and invest in the development and deployment of specialized fire suppression equipment to increase the efficiency and effectiveness of wildland fire suppression activities. Ensure that specialized equipment is available to all entities that have a role in wildland fire suppression. (3.2.2)
5. Utilize relationships to increase interagency cooperation during wildland fire suppression. Develop/encourage the implementation of statewide mutual aid agreements and cross-jurisdiction MOUs, including Cooperative Fire Agreement billing. Support development of interagency all hazard Type 3 IMTs. (3.2.4)

## Marketable Products

Actions and activities that would have the most significant impact on marketable products, as well as achieving regional goals, have been identified from the Phase II Regional Assessment and are as follows:

1. Encourage the use of alternative management techniques (mechanical, grazing, etc.) to restore and maintain fire dependent ecosystems where fire is not feasible or desirable. (1.1.4)
2. Use education and incentive programs to encourage new and nontraditional private landowners to manage their lands to contribute to resiliency while providing forest products and expanding ecosystem markets. (1.1.5)
3. Encourage traditional and developing economic markets, such as biomass, to enhance economic viability of timber harvesting and mechanical fuel treatments. (1.2.4)
4. Encourage landowners, particularly new and non-traditional landowners to deliberately actively manage land regardless of ownership objectives, including fuels management. (1.2.5)
5. Control invasive species that alter fire regimes and ecosystem function. (1.5.2)

## Property Loss

Actions and activities that would have the most significant impact on protecting property, as well as achieving regional goals, have been identified from the Phase II Regional Assessment and are as follows:

1. Utilize prioritization in SWRA and other efforts to identify and treat wildland fuels in areas that will facilitate tactical defense of human communities or ecological values and services from wildfire (tactical fuel breaks). (1.2.2)
2. Promote establishment of insurance incentives, building and landscape ordinances, and ignition resistant construction techniques through communication and collective action with planners and insurers, emphasizing Firewise concepts when planning communities and building homes to reduce wildfire impacts. (2.1.3)
3. Increase awareness of community and homeowner responsibility for fire preparedness and prevention. (2.1.4)
4. Encourage development and implementation of CWPP and Firewise or equivalent concepts, prioritizing CARs in greatest need of CWPPs. (2.1.5)
5. Increase community preparedness and mobilization abilities (e.g., evacuation) and increase coordination and planning between local, state, Tribal, and federal responders prior to wildfire ignition. (2.2.3)

## Ecological Services

Actions and activities that would have the most significant impact on enhancing ecological services, as well as achieving regional goals, have been identified from the Phase II Regional Assessment. Some of these actions and activities have been slightly revised to reflect the changing needs perceived by stakeholders involved in the Cohesive Strategy process. The identified actions and activities are:

1. Promote and use fire to emulate natural disturbance patterns to maintain and improve ecological systems, balancing social, cultural, and economic needs, especially over large contiguous landscapes. (1.1.1)
2. Plan and implement post-fire stabilization and rehabilitation activities and education in order to reduce site degradation and potential impact from hydrological events, invasive plant infestations, and other events that follow severe fires. (1.1.6)
3. Support efforts to increase prescribed burning for ecosystem restoration (e.g., SERPPAS efforts for Longleaf pine restoration). (1.1.7)
4. Work with regulatory agencies and entities (i.e., air quality) to ensure that prescribed fire remains a viable management tool and maximize flexibility for its use. (including liability issues). (1.2.3)
5. Control invasive species that alter fire regimes and ecosystem function. (1.5.2)

## Cultural Values

Actions and activities that would have the most significant impact on protecting and enhancing cultural values, as well as achieving regional goals, have been identified from the Phase II regional assessment and are as follows:

1. Use education and incentive programs to encourage new and nontraditional private landowners to manage their lands to contribute to resiliency while providing forest products and expanding ecosystem markets (“working forests”).
2. Support the “One Message, Many Voices” campaign and development of other unified prescribed fire education programs. (1.1.5)
3. Support efforts to increase prescribed burning for ecosystem restoration (e.g., SERPPAS efforts for Longleaf pine restoration). (1.1.7)
4. Work with regulatory agencies and entities (i.e., air quality) to ensure that prescribed fire remains a viable management tool and maximize flexibility for its use (including liability issues). (1.2.3)
5. Appropriately use cost-effective technology (social media, SWRA, etc.) and systems to ensure decision-makers (county commissioners, urban planners, town councils, etc.) have access to information in a timely manner. (2.3.2)

## Cross-Regional Actions and Activities

Actions and activities from Phase II that were considered best able to enhance regional values and make progress towards achieving regional goals were identified for each of the five value areas. The goal of this process was to identify emphasized alternatives which, using a scientifically-informed approach, would potentially have the greatest positive impact in each value area, developing a suite of potential choices to be used in combination or singly.

These actions and activities are:

1. Use education and incentive programs to encourage new and nontraditional private landowners to manage their lands to contribute to resiliency while providing forest products and expanding ecosystem markets. (1.1.5)
2. Encourage planning efforts across landscapes between practitioners and land managers to address wildland fire and landscape resiliency and community safety balancing other concerns, emphasizing plan development in high risk areas. (1.2.1)



3. Work with regulatory agencies and entities (i.e., air quality) to ensure that prescribed fire remains a viable management tool and maximize flexibility for its use (including liability issues). (1.2.3)
4. Encourage greater public smoke tolerance through outreach and understanding. (1.4.2)
5. Control invasive species that alter fire regimes and ecosystem function. (1.5.2)

Though each of the numerous actions and activities identified are considered fundamental to addressing regional values, these five cross-cutting actions and activities simultaneously address all five regional values. Implementing any of these actions and activities would significantly help address regional goals and objectives.

The diversity of ecosystems, land management goals, and landscapes across the Southeast means that a single solution will not work for everyone. Additionally, with nearly 90 percent of Southeastern land owned privately, decisions cannot be made at the state or regional level for the vast majority of landholdings. Instead, partners in the Cohesive Strategy may, moving forward, work collectively with land managers and landowners, using the best available information, to encourage and inform their decision-making process to help address issues and challenges related to wildland fire. Several tools have been developed and made available that will continue to inform the decision-making process in the future. Twenty-five actions and activities were identified from the Phase II report.

Each decision includes trade-offs and associated costs. Having a number of feasible options that are efficient and effective at focusing on regional goals and values will be valuable for stakeholders. The Southeastern group, with the assistance of regional stakeholders, found several broad themes that ran throughout the actions and activities identified. These themes included:

1. *Prescribed fire and fire use*
2. *Fuels treatment other than fire*
3. *Working forests*
4. *Planning for fire, forest resiliency and community safety*
5. *Incentives for fuels management*
6. *Treatment and restoration of areas affected by natural events and fire*
7. *Community protection and prevention programs, ordinances and construction, homeowner responsibility, fire prevention*
8. *Community preparedness, evacuation, and planning by responders*
9. *Use of technology to inform community leaders*
10. *Specialized response equipment, training, developing and ensuring adequate staffing of responders*
11. *Interagency suppression cooperation, MOUs, and Mutual Aid*

The Southeast faces significant and growing challenges related to wildland fire management. Decision-makers and land managers at all levels must weigh trade-offs, goals, and values-at-risk in order to select the most appropriate suite of alternatives that best serve to accomplish land management goals safely and effectively. However, faced with burgeoning population and rapidly growing WUI areas, along with climate change, land ownership fragmentation, decreasing budgets, and other concerns, it is clear that collective action is required. The National Cohesive Wildland Fire Management Cohesive Strategy serves as both a framework as well as a mechanism through which stakeholders in fire management can work together to prepare and protect vulnerable populations from wildfire risk, ensure effective wildfire response, and restore and maintain some of the most intact and extensive fire-adapted landscapes in the United States. By continuing to use the best available science to inform decisions, and leveraging the diverse Southeastern partnership base, the region will continue to make strides in policy, planning, and management that result in a positive impact to protecting lives and property, reducing risk and constructing landscapes and communities resilient to fire.