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On Behalf of The National Association of State Foresters

Submitted to the U.S. House Committee on Energy and Commerce,
Subcommittee on the Environment

For Hearing on
Air Quality Impacts of Wildfires:
Mitigation and Management Strategies

September 13, 2018

Good morning, Chairman Shimkus, Ranking Member Tonko, and Members of the subcommittee. My name is Tom Boggus, State Forester and Director of the Texas A&M Forest Service, as well as an active member of the National Association of State Foresters' (NASF) Wildland Fire Committee and past President of the Southern Group of State Foresters (SGSF). I appreciate the opportunity to speak with you today and submit written testimony as the Committee considers the significant impacts of wildfire smoke on citizens and communities across the country, as well as the preventive role prescribed fire and hazardous fuels reduction can have in mitigating smoke impacts.

The NASF represents the directors of the state forestry agencies in all 50 states, eight territories, and the District of Columbia. While an independent organization, the SGSF represents 15 of those same State Foresters from across the South, Puerto Rico and the US Virgin Islands. State Foresters deliver technical and financial assistance, along with protection from wildfire and protection of forest health, water, and other ecosystem services for more than two-thirds of our nation's 766 million acres of forests. Through the State Fire Assistance (SFA) and Volunteer Fire Assistance (VFA) programs, state agencies equip prescribed fire managers and wildfire

initial attack resources for state and private lands where over 80% of the nation's wildfires start. In addition, State Foresters have a critical role in maintaining healthy forests and minimizing wildfire risk through a variety of management techniques, including preemptive hazardous fuels reduction through tree thinning and prescribed fire.

While the duties of state agencies vary from state to state, all share common forest management and protection missions and most have statutory responsibilities to provide wildland fire protection on all lands, **public and private**. As such, we are intimately aware of the increasing occurrence of wildland fire and associated smoke impacts in nearly every state. State forestry agencies also work closely with our federal partners in managing complex multi-jurisdiction landscapes, both in wildfire response and in preemptive prescribed burning. As we often say "fire knows no borders", and thus aim to carry out management and planning across ownerships.

Summary of Annual Fire Activity

The current fire season that is still very active has been one of the most newsworthy in recent memory, with numerous incidents making national news. As of September 10, over 47,000 fires have burned more than 7 million acres across our country since the beginning of 2018[1], with significant fire activity still expected before the year is out in California and parts of the southeast. Roughly 75% of those fires have been on state or private land, and thus under the response jurisdiction of State Foresters and local rural/volunteer fire departments.

[1] https://www.nifc.gov/fireInfo/nfn.htm

In Texas, we have seen 8,045 wildfires burn 518,074 acres so far in 2018 – with 9,647 homes reported as saved from wildfires and 108 lost. This fire activity directly impacts responders at the local, state and national level. The first impact is to the communities and local responders across our state – with 75% of Texas wildfires occurring within one mile of a community. While most of these fires (historically 91%) are extinguished by local resources – the other 9% become the large, multiple-day incidents that account for roughly 2/3 (63%) of the acres burned in Texas – and require local, state and national resources to control.

Wildfires affect us all – rural & urban areas as well as at the local, state and national levels.

At the state and national level – the demand to respond does not go away. The wildfire community has moved from using the term "fire season" to "fire year", as wildfire is now a threat somewhere in our nation at all times of the year, and in places the local threat is year-round. Over the past 12 months, there has been virtually no area of the country immune from wildfire incidents and the associated smoke impacts. This year has been particularly noteworthy, in that fires and their impacts have not been localized to the forest-based communities most experienced with living with fire. Large cities, often far from the forests on fire, have experienced significantly reduced air quality, impacting human health, community events, tourism, recreation, and much, much more. The issue of how to manage smoke from wildfires is an increasingly essential one to address.

Our Nations Forests and Wildfire

Fire is a natural phenomenon for nearly every forest ecosystem in this country. Fire has shaped the occurrence and distribution of different ecosystems for centuries, simultaneously impacting the human and natural communities that live in and around those forests. Over the past century, a culture of fire suppression has unfortunately removed the natural role of fire from the public consciousness to varying degrees in different regions; however, when combined with a reduced level of forest management in many areas of the country this culture has also led to the build-up of hazardous fuels to historic levels. **Our forests are currently more fire-prone than ever.**

What Federal, State and local fire managers as well as scientists and researchers have learned over the past decades is the critical role of hazardous fuels management in mitigating wildfire impacts. Solely focusing on wildfire suppression and ignoring proactive forest management does not lead to the least amount of fire in the long run; the fuel continues to build up to the point where eventually wildfires become unmanageable under initial attack. The task for wildfire managers is to manage the risk to communities and ecosystem values in both the short-term and long-term by implementing a coordinated and science-based program of fuels reduction, fire suppression, and community planning. Our forests will inevitably burn, the task is to figure out how this phenomenon can occur with the least impact, including from wildfire smoke, on communities.

Wildfire and Air Quality

The air quality impacts from forest fire smoke have long been scientifically documented. Of primary concern is particulate matter (PM), which is produced from the combustion of woody material. Specifically, particulate matter smaller than 2.5 microns (PM 2.5) is of concern for

individuals exposed to wildfire smoke due to its ability to penetrate deep into the lungs and respiratory system. PM 2.5 can cause both short-term health effects such as eye, nose, throat and lung irritation, coughing and shortness of breath, as well as long-term effects on respiration and the worsening of medical conditions such as asthma and heart disease. Air quality impacts from wildfire often hit the hardest in sensitive populations (i.e. children, elderly and those with pre-existing conditions). In addition to human health, reduced air quality from wildfire smoke can impact tourism, recreation, education, and a variety of other aspects of community life.

The differing air quality impacts from prescribed fire compared to unplanned wildfire are important to recognize. One of the keys to prescribed fire for hazardous fuels management is that it is done in seasons and under conditions where fire managers have the ability to control fire location, spread, intensity, and many other parameters. Weather forecasting and state-of-the-art smoke modeling software allow for fire managers to tailor ignition locations and times to meet smoke management objectives. While each state has different laws and regulations around burning permits and number of allowable burn days, fire managers work within these parameters and laws to manage a minimal amount of smoke now in avoidance of the potential for a much greater amount in the future.

The beneficial impact of managed prescribed fire on air quality emissions has been recognized by the US Environmental Protection Agency (EPA) in its rulemaking over the past years. In both the updating of the National Ambient Air Quality Standard (NAAQS) for PM 2.5 (81 CFR 164, pg. 58010) and the updating of the Exceptional Events Rule (81 CFR 191, pg. 68216), the EPA clearly documents the role of wildfire as an emissions source and the relevance of

prescribed fire use and fuels management to reduce the risk of catastrophic wildfire. It is becoming increasingly evident through science and experience that without prescribed fire and the small amount of managed smoke that comes with it, we are perpetuating the conditions that generate catastrophic air quality issues and put communities and individuals at risk.

Managing Prescribed Fire for Air Quality in the South

The Southern part of the country has a long history of managing fire in its forests, and in coexisting with the smoke that necessarily comes along with fire, whether it be planned or unplanned ignitions. In 2017, the top eight states in terms of number of acres of prescribed fire carried out were in the South, including my state of Texas with almost 200,000 acres[2]. Those eight southern states accounted for over 85% of the prescribed fire acres in the country in 2017.

The reasons that southern states are able to successfully implement such a large program of prescribed fire work are numerous and vary from state-to-state, but there a few regional commonalities that I would like to highlight.

First is the expertise of our state fire and forest managers, and their diligence in planning. Within the South, we have formed a Fire Management Committee, consisting of the Fire Directors from each of our 13 States, who work together to share best practices and develop tools that support the whole region. One such tool is the Southern Wildfire Risk Assessment Portal (SouthWRAP)[3]. SouthWRAP is the primary mechanism for the SGSF to make wildfire risk

[2] Source: National Interagency Fire Center, https://www.predictiveservices.nifc.gov/intelligence/2017_statssumm/fires_acres17.pdf
[3] https://www.southernwildfirerisk.com/

information available and create awareness about wildfire issues for the Southern states. It is an excellent tool for establishing the basis for "where" and the justification for "why" subsequent prescribed burning is necessary.

This expertise of our state staff and partners has also been used to generate educational materials to ensure that proper best management practices are followed by those conducting burns, minimizing smoke impacts and helping retain social license to burn. One such example is the Prescribed Fire Smoke Management Pocket Guide, created by the Coalition of Prescribed Fire Councils and the Southeast Regional Partnership for Planning and Sustainability (SERPPAS).[4] The Pocket Guide includes how-to videos on basic smoke management guidelines, fact sheets on specific smoke-related issues, and a comprehensive list of additional resources to help any prescribed burn manager complete their job effectively and efficiently from a smoke perspective.

In Texas, state and federal agencies implement prescribed fire programs, but most prescribed fire is conducted by private landowners. Therefore, my agency is using concepts of the pocket guide to develop materials aimed at private landowners. Recently, we have worked to develop a Texas State Smoke Management Plan to provide best management practices to landowners and cooperators. The plan provides resources for prescribed burn managers to utilize in order to best manage the smoke from their prescribed burns.

A second reason that the South has such a strong record of prescribed burning is that our state forestry agencies have built strong partnerships in many arenas which help facilitate prescribed

[4] http://smokeapp.serppas.org/

burning work getting done on the ground. In many of our states we have employees in every county that work with local government and landowners to make them aware of any planned burning and keep community support for such necessary activities. Our states also work with many partners, NGOs, and federal agencies to accomplish the planning, treatment prioritization, and eventual work on the ground. In the spirit of the Cohesive Wildland Fire Management Strategy, our States and our partners across the region team up regularly to create and restore resilient landscapes with prescribed fire. The Cohesive Fire Strategy provides a framework to minimize the risks associated with wildland fire in the Southeast while increasing the region's fire-resiliency.

Additionally, good communication and partnership with the State environmental regulatory agencies is essential to help them understand the need for prescribed fire, allowing some emissions under good weather conditions in order to avoid massive emissions down the road. One regional example of such efforts is regular "smoke summits" that have been organized with University extension specialists, staff from EPA Region 4, and air quality officials and fire chiefs from the eight southern states in that EPA region[5] to discuss issues around smoke management and air quality. These are the only regional meetings of this type in the country.

Finally, the land ownership matrix in the South, with our forests being primarily privately owned, allows for fewer process hurdles to getting work done. Each of our states, including Texas, has a process in place to permit and track prescribed burns throughout the year. This is important because over 94 percent of Texas is privately owned and the majority of prescribed

[5] EPA Region 4 includes Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina, South Carolina, and Tennessee

burning is done by private landowners. Texas is a diverse state from the forestlands in east Texas to the rangelands in central and west Texas. The reasons for conducting prescribed burning are just as diverse as the geography of Texas. Some fire managers utilize it to reduce fuel loading to protect communities, some use it to improve rangeland, watershed quality, and wildlife habitat, and still others use it to manage forest or ecosystem health. This requires a collaborative approach to prescribed fire. Because of this, the statutory authority for prescribed burning was placed under the Texas Department of Agriculture. The Texas Department of Agriculture's Prescribed Burning Board (PBB) regulates the Certified Prescribed Burn Manager Program. The Board is comprised of representatives of state agencies, private landowners, and researchers. In Texas there are 64 certified burn managers and there are 11 prescribed fire councils. Environmental regulations such as air quality are under the authority of the Texas Commission on Environmental Quality.

In other parts of the country that have a majority of federal forest land, the NEPA planning and associated processes for burning projects can be cumbersome, or the staff and resources to carry out the burning can be lacking. Finding new and unique ways to accelerate the pace and scale of prescribed burning and active timber management on federal lands across the country is key to reducing wildfire risk and associated extreme smoke emissions, which is why making use of opportunities like Good Neighbor Authority (GNA) on federal lands is so important no matter what region of the country you are in. One of the essential ingredients for the substantial amount of prescribed burning on the South's primarily privately-owned forest landscape is a commitment by States and partners to hire and train the requisite staff to get the work done. Our

federal forests need to be similarly equipped for the pace and scale of active management that faces them.

Conclusion

Thank you again for the opportunity to appear before the Committee today on behalf of the National Association of State Foresters. Managing fire in Texas's forested landscapes is one of the most challenging facets of my job, as it for most of my colleagues in their respective states. As State Foresters, we believe we need to be doing significantly more hazardous fuels reduction all across this country and are working towards this goal as individual members and as an association. I am proud of the work our state fire managers and partners are accomplishing on the ground. Such treatments allow us to put fire on the landscape at times and under conditions that minimize impacts, including smoke emissions. These treatments reduce fuel loading in the forests so that when wildfires inevitably occur, they burn with less intensity, reduced spread and fewer smoke impacts on communities and firefighters.

My colleagues and I look forward to continuing our strong working relationships with the federal agencies, state and federal environmental quality agencies, and other partners, as well as working with Congress to facilitate more good work getting done on the ground.