

**Testimony of Jim Karels, Florida State Forester
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:
PERSPECTIVES OF KEY STAKEHOLDERS**

October 4, 2017

Good morning, Chairman Shimkus, Ranking Member Tonko, and Members of the subcommittee. My name is Jim Karels, State Forester and Director of the Florida Forest Service, as well as past President of the National Association of State Foresters (NASF) and current Chairman of the NASF Wildland Fire Committee. 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. 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, which represent over two-thirds of our nations forests and where over 80% of the nation's wildfires start.

In addition, state agencies work closely with our federal partners in managing complex multi-jurisdiction landscapes. We often say “fire knows no borders”, and thus aim to carry out management and planning across ownerships. To this end, with the authority granted by Congress in the 2014 Farm Bill, over 30 states have signed “Good Neighbor” agreements with the federal government, including in my own state of Florida. These agreements allow states to help perform watershed restoration and forest management such as by addressing hazardous fuels on federal lands in critical fire risk areas.

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.

Summary of Regional Fire Activity

The fire season that is currently winding down has been one of the worst in recent memory. Nearly 50,000 fires have burned 8.4 million acres across our country since January 1, with significant fire activity still expected before the year is out in California and parts of the southeast. Federal fire suppression costs in Fiscal Year 2017 exceeded \$2 Billion dollars for the Forest Service alone, not to mention the suppression expenses at the Department of the Interior, State Agencies, Volunteer Fire Departments, and other cooperators.

Last fall, we experienced a rash of large fires across the southeastern United States, including the Great Smoky Mountains wildfire complex in Tennessee that swept into Gatlinburg, taking the lives of 14 individuals and capturing the nation's attention for its intensity and smoke impacts.

In the spring of 2017, the West Mims fire in the Okefenokee swamps of Georgia and Florida burned for over two months, consuming over 150,000 acres and blanketing the region in smoke which impacted fire responders, local communities, motorists, and more. The spring also saw over 5,000 homes evacuated due to threats from wildfire in southwest Florida over a 4-month period, as well as hundreds of fires burning across the Southwestern US challenging firefighters early in the western fire season.

Despite a winter with significant snowfall which was expected to minimize the summer fire season, spring and summer droughts brought rampant wildfire to the Pacific Northwest and Rocky Mountain geographic regions this year as well. Significant fire activity in nearly every state brought to bear nearly every fire resource available in the country.

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.

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; 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. Despite our attempts to manage away wildfire, our forests are currently as fire-prone as 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. Where forests of different ownerships exist in close proximity to each other, it is critical that these decisions about suppression and fuels treatments get made in a collaborative and cooperative way. This is especially true for federal lands on which fire management has a direct impact to adjacent state and private lands and/or communities.

Hazardous fuels reduction has two main components; prescribed fire and silvicultural thinning. Both activities have a beneficial impact on mitigating wildfire emissions by reducing combustible material in the woods and allowing fire to play its natural role in the ecosystem. In many parts of the country, especially on federal lands which have not seen regular management, forest stands are too dense to conduct prescribed fire and thus forest thinning is a crucial first step in managing hazardous fuels. Subsequently, prescribed fire is an important tool to maintain the “investment” of a thinned and resilient forest, and to keep the likelihood of catastrophic wildfire at a low level.

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 two 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.

State Examples of Managing Prescribed Fire for Air Quality

Despite the ecological and social diversity across our nation and the different forest management and wildfire challenges states face, there is a common effort among state foresters to focus on increasing the use of prescribed fire during favorable conditions in order to reduce the likelihood

of catastrophic fire and smoke from wildfire. I would like to share examples of two state efforts with you today.

Florida

Land managers in Florida have realized the benefits of prescribed fire in maintaining healthy ecosystems. As Florida's population rapidly increased in the latter half of the 20th century, it became necessary to address the impact prescribed burning had on air quality. In the late 1980s, the Florida Forest Service (FFS) developed the Certified Prescribed Burn Manager program to educate prescribed fire practitioners regarding their legal and good-neighbor responsibilities along with basic information on fire behavior, smoke management and other topics. In 1999 the FFS developed its first smoke management plan (SMP) approved by EPA. Florida's current SMP (dated 2014) was developed in conjunction with the Florida Department of Environmental Protection and the Florida Highway Patrol.

By following the guidelines in the SMP, Florida is able to conduct one of the largest prescribed burning programs in the nation. Each year the FFS authorizes an average of 2.3 million acres of silvicultural and agricultural burns with minimal impact on the state's 20 million residents. This is done using weather forecasts and sophisticated smoke models to determine the best days to conduct a burn while minimizing impacts from prescribed fire emissions.

Oregon

In Oregon, prescribed burning is utilized to meet a variety of land management goals, including hazardous fuel reduction. Annually, landowners, public and private, initiate approximately 3,000

prescribed burns on about 200,000 acres. Oregon has accomplished this effort with limited smoke impact to its communities, averaging only seven intrusions (visible ground level smoke) into its communities annually. Oregon's robust smoke management program provides a daily forecast utilized by burn managers to achieve its goal of maximizing burn opportunities while minimizing community impacts. In contrast, wildfires burn approximately 500,000 acres annually across the State, and as seen in recent years, wildfires present significant health and economic impacts. Like in most areas of the country, there is a recognition in Oregon that still more collaborative work needs to be done to increase the use of prescribed burning and reduce the potential for large catastrophic wildfires. To this end, Oregon is currently reviewing its smoke management program to balance risk of intrusions with reduced wildfire risk.

The Need to Fix Wildfire Funding

It is impossible to talk about managing for healthy, resilient forests, and reducing the number of catastrophic air quality events without mentioning the detrimental impacts of the current way of budgeting for wildfire suppression, and recognizing the critical need for change.

Today's fire seasons are on average 78 days longer than in the 1970s and are projected to grow hotter, more unpredictable, and more expensive in the coming years. When wildfire strikes, the funds used to combat these disasters come directly out of the budgets for the USDA Forest Service and the Department of the Interior Agencies. Over the last few decades, the USDA Forest Service budget for fire suppression has grown from less than 20 percent to more than 50 percent of the agency's total budget.

As wildfire eats up a significantly larger share of the agency's budget, critical funding that supports federal, state and private forests is also impacted. Those impacts include a decrease in the ability to thin forests to create more resilient conditions. Compounding the issue is a practice known as "fire borrowing", which occurs when the agency runs out of appropriated funding in a given year. Fire borrowing robs money from non-wildfire programs to pay for the current year's fire suppression needs.

America's forests urgently need a fix that will fund these catastrophic wildfires the same way other natural disasters are funded. On the heels of one of the worst fire seasons ever, State Foresters request Congress to urgently address this issue in a way that ends "fire borrowing" and also addresses the rising costs of suppression's impacts on other agency programs and budgets.

Conclusion

Thank you for the opportunity to appear before the Committee today on behalf of the National Association of State Foresters. Wildland fire response is one of the most challenging facets of our jobs. 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. 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.

Where forests of different ownerships exist in close proximity to each other, it is critical that decisions about suppression and fuels treatments get made in a collaborative and cooperative way. This is especially true for federal lands on which fire management has a direct impact to adjacent state and private lands and/or communities. We look forward to continuing our strong working relationships with the federal agencies, and to working with Congress to enable more good work to be done on the ground.