

WILDLAND FIRE MANAGEMENT

HEARING
BEFORE THE
COMMITTEE ON
ENERGY AND NATURAL RESOURCES
UNITED STATES SENATE
ONE HUNDRED THIRTEENTH CONGRESS
FIRST SESSION
TO
EXPLORE WILDLAND FIRE MANAGEMENT

JUNE 4, 2013



Printed for the use of the
Committee on Energy and Natural Resources

U.S. GOVERNMENT PRINTING OFFICE

82-103 PDF

WASHINGTON : 2013

For sale by the Superintendent of Documents, U.S. Government Printing Office
Internet: bookstore.gpo.gov Phone: toll free (866) 512-1800; DC area (202) 512-1800
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WILDLAND FIRE MANAGEMENT

TUESDAY, JUNE 4, 2013

U.S. SENATE,
COMMITTEE ON ENERGY AND NATURAL RESOURCES,
Washington, DC.

The committee met, pursuant to notice, at 10:10 a.m. in room SD-366, Dirksen Senate Office Building, Hon. Ron Wyden, chairman, presiding.

OPENING STATEMENT OF HON. RON WYDEN, U.S. SENATOR FROM OREGON

The CHAIRMAN. The committee will come to order.

Good morning. The purpose of this morning's hearing is to discuss wildland fire management.

The 2013 fire season has hardly begun. Yet hundreds of families in California and New Mexico have already been forced to evacuate in the face of raging fires. As we speak, a major fire is burning on National Forest lands just 25 miles outside of Santa Fe.

The latest fires are part of an ominous trend toward a bigger, hotter, longer fire season, simply, more treacherous in all the particulars. In 2012, 15 firefighters died combating blazes that engulfed more than 9 million acres in the Western United States. Two air tankers crashed and more than 4,200 homes and other structures were destroyed, well over annual averages.

The Federal agencies responsible for protecting Western communities from these fires must use the smartest, most cost-effective firefighting strategies possible. As the risk from wild fire escalates, the status quo for firefighting simply is not going to be good enough. These intense fire seasons also present direct threats to America's communities.

The Waldo Canyon fire in Colorado last year, for example, burned 346 buildings, a led to insurance claims totaling more than \$350 million. 2013 is predicted to again be an intense fire season.

Fires have already begun in my home State of Oregon, even in the Western part of our State which is typically less fire prone. Last week at town hall meetings and other gatherings in Oregon, I continually heard questions from these dedicated, committed professionals questions about whether they would have the adequate resources to fight these fires.

Forecasts show that the challenges posed by wild fire are only going to grow in the coming years. The summer of 2012 was the third warmest on record. It included the warmest July on record in our country.

The overall trend of increasing drought and wild fire in the West and Southwest has been attributed in numerous scientific reports to human-induced climate change. Scientific reports also confirm that the wildland fire season is becoming longer and more intense due to climate change.

Today we have an expert panel of witnesses to explore the topic of wildland fire management. I want to just make 3 points and then recognize my friend and colleague, Senator Murkowski.

First, there are actions the Federal Government can take that not only reduce the risk of catastrophic fire, but also save our taxpayers money. Studies have confirmed that wildland fire prevention activities such as hazardous fuels treatments and restoration can, in fact, reduce fire suppression costs. Yet this year's budget request from the Forest Service and the Department of the Interior calls for dramatic cuts to hazardous fuels treatments.

Today the committee will hear from Diane Vosick at the Ecological Restoration Institute about a report they've assembled about the economic benefits of hazardous fuels projects. Especially at a time when folks are hurting in rural America and Oregon's timber communities, for example, where they desperately want to get back to work, these projects are some of the best investments our government can make.

So we are going to ask a number of questions so that we can get into this baffling OMB position that there is no significant justification for the requests that are being made for these hazardous fuels treatment funds. My own take is that investing in these kinds of fire prevention activities are exactly what's needed. We will be getting into that issue.

Second, our current fleet of air tankers is so ancient they are probably better placed in museums than in the sky. In 2002, the Forest Service had 44 air tankers under contract. Now they have 8.

I am encouraged by the announcement last month by the Forest Service of 5 new "Next Generation" air tankers contracts that are pending. These air tankers are vital to helping fire fighters on the ground keep ever more destructive wildfires from threatening communities across the West year after year.

I do know that at least one protest has been filed to the next generation air tanker proposal. I do understand that yesterday the Forest Service was able to award 3 of the next generation contracts while it continues to work on the protest. I look forward to hearing from the Chief and others what they're going to be doing to get those planes up and ready as soon as possible.

Finally, the committee wants to focus on fire budgeting. The proportion of the Forest Service budget devoted to wildland fire management has increased steadily from 13 percent of the budget in 1991 to 41 percent of the budget in 2013. In many recent years, the Forest Service has exceeded its budget for wild fire suppression requiring it to transfer funds from other projects, colloquially called fire borrowing, to cover emergency wild fire suppression costs.

Now, the FLAME Act was enacted in 2009 to establish a reserve of funding for emergency wildland fires that would be available to fight just those situations. Spectfully, the FLAME Act established a fund to cover the cost of larger or complex wild fire events and

to serve as a reserve when amounts provided for wild fire suppression appropriation accounts were exhausted.

Unfortunately the Office of Management and Budget has not been implementing the FLAME Act as intended. Instead, they calculate the FLAME fund as part of the 10-year average cost of fire suppression. It's time for the Office of Management and Budget to actually implement this law as intended. We've spoken with Secretaries Vilsack and Jewell about the need for a comprehensive discussion about wildland fire budgeting with the Office of Management and Budget.

Finally, the committee looks forward to a rigorous discussion on actions that can be taken to reduce the threat of catastrophic fires, get the air-tankers needed to fight those fires mobilized, and to ensure that enough funding is provided to fight fires without sacrificing the agencies' other critical missions.

I also want to welcome Mr. Doug Decker, the outstanding state forester from my home State. We look forward to his testimony and that of our other witnesses.

Before I turn to our ranking member I do want to take note of a historic event that seems to have transpired just recently: Senator Franken has welcomed his first grandchild into the world. We congratulate our friend and colleague. Maybe he'll offer some thoughts about that special event when he has time. Unless he wants to do it now?

Senator FRANKEN. I just held my grandson in my arms when he was—a couple days ago and told him that no one expects him to know anything. There's no pressure on him now.

[Laughter.]

The CHAIRMAN. Perfect.

A perfect summary of our challenges.

[Laughter.]

The CHAIRMAN. Senator Murkowski.

**STATEMENT OF HON. LISA MURKOWSKI, U.S. SENATOR
FROM ALASKA**

Senator MURKOWSKI. Ah, to be young and innocent again, huh?

Mr. Chairman, thank you for the opportunity to focus this morning on where we are with wildland fire management.

Today we're going to be examining our national wild fire policy. This includes the efforts of land managers to coordinate and collaborate with partners at the State and Federal levels to improve wild fire response, prevention and restoration of fire adapted wildlands, the dynamic tensions between fire to sustain wildland health in certain ecosystems and the need to minimize negative impacts to people and their homes from wildlife. Of course, the escalating Federal costs of these activities, as you have noted. I think we all recognize that in a constrained budget environment we have to figure out how we're strategic. How we use our limited Federal resources wisely.

Mr. Chairman, you have spoken to the historical increase that we're seeing in terms of wildland fires across the country, what is happening in this season. I think we're all anxious, as we await the summer and know that we will, once again, have forest fires burning across our country. Certainly as more and more people live in

and around our forests, our grasslands and other wildland areas, the fire related challenges of managing these wildlands and the associated risk to life and property have significantly increased the complexity and the cost of assessing these wild fires.

The total amount of funding appropriated for wild fire management has averaged \$3.5 billion from FY 2008 to present. The majority of wildland fire management funding goes to the Forest Service. In FY2012 the Forest Service wildland fire management budget funding totaled nearly 41 percent of the total discretionary funds that are appropriated to that agency.

It was because fire fighting was eating up the agency's budgets and causing the agency to engage in the fire borrowing, as you have mentioned, that we enacted the FLAME Act. As you have noted, Mr. Chairman, we have not seen the FLAME Act do what we had intended for it to do when we proposed that into law. Instead, the agency's budget proposals fund the 10-year rolling average using both suppression accounts and the FLAME reserve fund.

The May 2013 forecast for annual suppression expenditures put out by the agency in season, as required by FLAME, seemed to put the agency on the same trajectory as last year. Then it looks like we're once again going to be looking at fire borrowing.

My understanding is that the Office of Management and Budget may be part of the problem here. But regardless of who is involved, we need to figure out what's happening. Agencies cannot continue to raid non-fire accounts to pay for fire fighting.

Now this brings me to the aerial firefighting. Specifically, the increased use of aircraft is also contributing to the rising costs of our fighting wild fires. We all recognize that the agencies must have an aviation fleet for fire fighting, but quite frankly, I'm a little perplexed at how much the agencies have struggled with developing and executing an aviation strategy, particularly when it comes to modernizing our aged air tanker fleet.

We've seen numerous studies, reports and plans over the years. Another GAO investigation is underway right now. But we still don't seem to have a real clear picture here on what a safe, efficient, effective and sustainable national aviation program should look like.

We asked the question whether or not a newer, more modern aviation fleet ultimately helps rein in firefighting costs and whether or not it can mitigate the devastating impacts of wild fire. I've been listening to the agencies for years saying that yes, in fact, it can. I want to believe that.

But really there hasn't been sufficient data collected on actual aviation fire fighting performance to back up the claim and ultimately to support the acquisition of an expensive new aircraft. Even the best business case has yet to pass muster with OMB. Then tied to the question of escalating suppression costs has been whether sufficient investment in hazardous fuels reduction and ecosystem restoration can reduce the risk of catastrophic fire and in turn, reduce suppression expenditures.

Here in Congress we've already spent a tremendous amount of taxpayer money on fuel reduction activities. Back in FY2001 Federal lands fuel reduction funding rose substantially to over \$400

million. It continued to rise steadily through FY 2008 to nearly \$620 million.

Now the agencies are proposing substantial reductions in fuel reduction activities. Congress is having a harder time justifying increasing the expenditures. I think one of the reasons is that there are still some outstanding questions on where we make the difference here.

So a great deal to be discussing this morning, clearly, a considerable impact in our Western States. I look forward to the discussion from the panelists this morning and the conversation that we will have from here. Thank you.

The CHAIRMAN. Thank you, Senator Murkowski. Your excellent statement and the number of Senators on both sides of the aisle who are here this morning reflects the urgency of the situation. I look forward to working with you.

For our panel we have Forest Service Chief Tom Tidwell, Interior Deputy Secretary Kim Thorsen, Chris Topik of The Nature Conservancy, Lynn Jungwirth of the Watershed Research and Training Center, Diane Vosick of the Ecological Restoration Institute, and Oregon State Forester, Doug Decker.

We'll begin with you, Chief. We'll make all of your prepared statements a part of the record. If you could summarize in the interest of time, and the fact that we have so many Senators here, that would be helpful.

Let's begin with you, Chief. Welcome.

**STATEMENT OF THOMAS TIDWELL, CHIEF, FOREST SERVICE,
DEPARTMENT OF AGRICULTURE**

Mr. TIDWELL. Mr. Chairman, Ranking Member Murkowski, thank you again for having the opportunity to be here.

Between the 2 of you, your opening remarks, basically I think laid out the challenges that we're dealing with. There's just no question that today the fires are larger and more complex. The fire seasons, they're hotter, they're drier and they're longer. From everything that we see, this is not going to be changing.

Now this change of conditions has come about for a couple of reasons.

One is this abundance of biomass that's on the landscapes which we can contribute to our successful suppression over the last many decades.

But the other thing that's really driving it is just the changing climate that we're dealing with. Today the fire seasons that we face today, they're over 60 days longer than when I was a fire fighter. That's the snow melts earlier, fields dry out that much faster. I'll tell you 2 more months of fire season is really what's driving a lot of the conditions that we're faced with.

Even though we continue to be close to 98 percent successful when we take initial attack, those 2 percent fires when they escape, they quickly explode almost on the landscape. We're seeing that again once again this year and down in New Mexico, out there in the powerhouse in California and then also again with fires in Colorado.

The other thing that adds to this is of course the over 40 million acres of dead trees we have throughout the interior West. It's also

going to be fueling these fires over the next few years. Then you add to that the continued expansion of the wildland urban interface. Just with the Forest Service, we have 62 million acres of national forest that are either in or near the wildland urban interface. It definitely adds to the complexity of fighting fires when the first thing you have to do is make sure you're doing everything to keep that fire from coming into the community or into that subdivision.

Now what are we doing about this?

This is a thing that I think it's important that it's part of the FLAME Act. Your direction for us is for us to work together between the Federal agencies and our State partners to come up with a cohesive strategy about how to deal with this. That's what we're moving forward with.

The first part of that is to be able to restore fire adapted ecosystems. Tracks right with our accelerated restoration. The reason why we need to be doing more work out in the woods to restore these lands and reduce the hazardous fuels.

The second key part of that is to help build fire adapted human communities so that our communities are developing their community wild fire protection plans. They're implementing fire wise techniques so that they can do their part to reduce the threat of fire on the private land.

Then the third part of this is to continue for us to be able to suppress fires where we need to suppress fires.

We have the resources we need between the Federal agencies, our State, county and local fire. We have the fire fighters. We have the aviation resources. Yes, we will have the large air tankers that we need this year to be able to respond to these fires.

The thing I need to stress is that these conditions are not going to change. But I do think by focusing on our cohesive strategy and moving forward with all 3 pieces of it, it's essential for us to really make a difference. So that one, we can continue to protect our communities.

Then restore these national forests and grasslands.

Reduce the hazardous fuel so that when fires do occur and they will occur, that they burn at a much less severity. So that it's easier for our fire fighters to be effective with their suppression actions.

Then the consequences to the water sheds are so much less. These areas recover so much faster following a light to moderate burn verses some of the severe burning conditions that we're facing today.

This concludes my remarks. I look forward to your questions. Thank you.

[The prepared statement of Mr. Tidwell follows:]

PREPARED STATEMENT OF THOMAS TIDWELL, CHIEF, FOREST SERVICE, DEPARTMENT OF AGRICULTURE

Chairman Wyden, Ranking Member Murkowski, and members of the Committee, thank you for the opportunity to appear before you today to provide the status of the U.S. Forest Service's wildland fire management program.

Around the world, the last two decades have seen fires that are extraordinary in their size, intensity and impacts. In Australia in 2009, the Black Saturday Bushfires killed 170 people. Domestically, Florida, Georgia, Utah, California, Texas, Arizona,

New Mexico and Colorado, have all experienced the largest and/or the most destructive fires in their history just in the last six years. On average wildfires burn twice as many acres each year as compared to 40 years ago, and there are on average seven times as many fires over 10,000 acres per year. (Climate Central, 2012)

In 2012 over 9.3 million acres burned in the United States. The fires of 2012 were massive in size, with 51 fires exceeding 40,000 acres. Of these large fires, 14 exceeded 100,000 acres (NICC 2012). The increase in large fires in the west coincides with an increase in temperatures and early snow melt in recent years. This means longer fire seasons. The length of the fire season has increased by over two months since the 1970s (Westerling, 2006).

We estimate that 65 to 82 million acres of National Forest System lands are in need of fuels and forest health treatments—up to 42 percent of the entire system. Part of the problem is severe drought, resulting in extreme fire weather and very large fires. At the same time landscapes are becoming more susceptible to fire impacts, more and more Americans are choosing to build their home in wild lands. The number of housing units within half a mile of a national forest grew from 484,000 in 1940 to 1.8 million in 2000. The number of housing units within national forest boundaries rose from 335,000 in 1940 to 1.2 million in 2000. Forest Service estimates indicate a total of almost 400 million acres of all vegetated lands are at moderate to high risk from uncharacteristically large wildfires, and over 70,000 communities are at risk.

NATIONAL COHESIVE WILDLAND FIRE MANAGEMENT STRATEGY

In 2009, Congress passed the Federal Land Assistance, Management, and Enhancement (FLAME) Act, calling on federal land managers to develop a joint wildland fire management strategy. Working together with the Department of the Interior, we took the opportunity to involve the entire wildland fire community in developing a long-term National Cohesive Wildland Fire Management Strategy. Our strategy has three components:

1. Restoring fire-adapted ecosystems—Hundreds of post-fire assessments show that fuels and forest health treatments are effective in reducing wildfire severity. Accordingly, our fuels treatments have grown; from FY 2001 to FY 2011, the Forest Service treated about 27.6 million acres, an area larger than Virginia. We focus our treatments on high-priority areas in the Wildland Urban Interface, particularly communities that are taking steps to become safer from wildfire.

2. Building fire-adapted human communities—With more than 70,000 communities in the Wildland Urban Interface (WUI) at risk from wildfire, the Forest Service is working through cross-jurisdictional partnerships to help communities become safer from wildfires, for example by developing community wildfire protection plans. In addition, the Firewise program helps communities with actions to reduce the potential for homes to be ignited from wildfires. This is done through using techniques such as home siting and development, home construction, and home landscaping and maintenance which reduces that potential. Through the Firewise program, the number of designated Firewise communities rose from 400 in 2008 to more than 700 in FY 2012.

3. Responding appropriately to wildfire—Most of America's landscapes are adapted to fire; wildland fire plays a natural and beneficial role in many forest types. Where suppression is needed to protect homes, property and resources we focus on deploying the right resources in the right place at the right time. Using improved decision support tools, fire managers are making risk-based assessments to decide when and where to suppress a fire—and when and where to use fire to achieve management goals for long-term ecosystem health and resilience.

FIRE IMPACTS TO NATURAL RESOURCES AND INFRASTRUCTURE

In 2012 over 4,000 structures were destroyed, including 2,216 residences (average annual residences lost is 1,416 from 1999 through 2012, NICC). The greatest loss of structures occurred in Colorado. In addition, these losses have a devastating impact on citizens, communities and economies. Watersheds that supply drinking water for the cities of Fort Collins, Greeley, Colorado Springs, Alamosa, and Holloman Air Force Base in New Mexico were damaged by wildland fires in 2012. The communities continue to feel the impact with over 20 miles of water delivery systems (pipelines, canals) and several large storage reservoirs still affected by post-fire flooding.

In addition, impacts to natural resources can often have long term and sometimes irreversible consequences. In 2012, the Whitewater Baldy fire in New Mexico severely burned critical habitat and holdout areas for relict lineages of Gila Trout (one

of the original species listed as endangered under the Endangered Species Act in 1973), significantly setting back recovery efforts that had successfully resulted in 17 populations occupying over 80 miles of stream. The Gila Trout Recovery Plan requires 39 populations established in roughly 170 miles of stream to justify full delisting. This impact not only has consequences related to the viability of a species, but also severely impacts the ability of the agency or other entities to conduct management activities that could have the potential to impact the population.

IMPACTS OF INCREASED FIRE COSTS

Costs of fire suppression have increased to consume nearly half of the entire Forest Service budget. In FY 1991, fire activities accounted for about 13 percent of the total agency budget; in FY 2012, it was over 40 percent. In the 1980s and 1990s the 10-year average of suppression costs remained relatively stable, as did the number of acres burned nationwide. This was an abnormally wet period in the United States and fire activity was relatively low. However, beginning in the extreme fire season of 2000, which cost \$1 billion, this trend started to change. The cost of the FY 2000 fires alone caused the 10-year average to rise by over \$80 million—a 16 percent increase. Since FY 2000, the 10-year average has risen almost every year—from a little over \$540 million to almost \$900 million in just the three years between 2000 and 2003, and then to over \$1 billion in 2010 and beyond.

Staffing within the agency has also shifted to reflect an increased focus on fire. Since 1998 fire staffing within the Forest Service has increased 110 percent from over 5,700 in 1998 to over 12,000 in 2012. Over the same time period, National Forest System staffing has decreased by 35 percent from over 17,000 in 1998 to over 11,000 in 2012 and Forest Management staffing has decreased by 49 percent from over 6,000 in 1998 to just over 3,200 in 2012.

Fire transfers occur when the agency has exhausted all available fire resources from the Suppression and FLAME accounts. From FY 2002 to FY 2012, the Forest Service made fire transfers from discretionary, mandatory, and permanent accounts to pay for fire suppression costs six times, ranging from a low of \$100 million in FY 2007 to a high of \$999 million in FY 2002, and totaling approximately \$2.7 billion. Of that total, \$2.3 billion was repaid but still led to disruptions within all Forest Service programs. In FY 2012, the Forest Service transferred \$440 million to the fire suppression account for emergency fire suppression due to severe burning conditions and increasing fire suppression costs (and was repaid within weeks).

Each time the agency transfers money out of accounts to pay for fire suppression there are significant and lasting impacts across the entire Forest Service. Not only do these impacts affect the ability of the Forest Service to conduct stewardship work on national forests, they also affect our partners, local governments and Tribes.

For example, in California, the Region lacked funding to complete trail work on the Pacific Crest National Scenic Trail or repair many other key trails and trailheads and was not able to leverage that funding by utilizing partners that provide thousands of volunteer hours for trail maintenance. This lack of maintenance work is predicted to cause sedimentation and damage to watersheds. Additionally, agreements with partners such as the California Conservation Corps on the Los Padres National Forest were deferred and relationships impacted.

FIREFIGHTING RESOURCES

The agency has the capability to protect life, property, and natural resources while assuring an appropriate, risk-informed, and effective response to wildfires that is consistent with land and resource management objectives. We do this through not only the resources of the Federal Government, but also with employees from States, Tribal governments, and local governments, contract crews, and emergency/temporary hires. Firefighter and public safety are the primary considerations for all operations. The agency continues to suppress about 98 percent of the fires that require initial attack. However, the few fires that continue to burn after they escape initial attack tend to grow quickly.

Wildland fire response requirements are unpredictable. This requires a management strategy that can increase and decrease the workforce based on fire activity levels. The Forest Service employs both permanent firefighting assets, which also conduct fuels treatments, and seasonal assets to support suppression activities during peak fire season. Call When Needed (CWN) assets are important in meeting fire response requirements when activities exceed our standard asset capability. Firefighting assets are employed in a cost effective way when they are justified within our preparedness and suppression strategies. We evaluate each asset's cost effectiveness relative to the need they meet.

Under the President's budget for FY 2014, suppression capability will be comparable to previous years. However, we recognize that given limited budgets, maintaining this capability will present challenges. With greater mobility and with agreement to focus assets on high risk areas, it is likely that high levels of initial attack success will continue. For the 2013 fire season, the available firefighting forces—firefighters, equipment, and aircraft—are reduced to those available in 2012. Nonetheless, we will have close to 13,000 firefighters available from the Department of Agriculture and the Department of the Interior with approximately 70 percent coming from the Forest Service. The reduction resulted in fewer firefighters and engines, but the level of highly-trained smokejumpers, Type 1 national interagency incident management teams (the most experienced and skilled teams) available for complex fires or incidents, and Type 2 incident management teams available for geographical or national incidents, are comparable to those available in 2012. Depending on how the 2013 fire season develops, we are prepared to bring on additional CWN resources (engines and aircraft) to offset the reduction in firefighters and engines. However these additional resources will increase suppression costs since the cost of CWN resources averages 1.5 to 2 times the cost of exclusive use resources.

Additionally, the Federal wildland firefighting community works with State and local fire departments, which serve a critical role in our initial attack and, in many cases, our extended attack success. The Forest Service uses its authority to provide State Fire Assistance funds to State partners to support State fire management capacity. We could not achieve the successes we have without these key partners.

Nationally, the wildland firefighting agencies continue to employ a mix of fixed and rotor wing aircraft. The number of these aircraft may fluctuate depending on contractual and other agreements. Key components of the Forest Service 2013 aviation resources include:

- Up to 26 large air tankers under contract or agreement;
- 420 helicopters;
- 15 leased Aerial Supervision fixed-wing aircraft;
- Up to 12 Smokejumper aircraft;
- 2 heat detecting infrared aircraft;
- 3 water scoopers including 1 CL-415.

An additional key component is the organized network of 295 federal, state, and local government dispatch and coordination centers which provide tactical, logistical, and decision support to the federal wildland fire agencies.

FIRE ADAPTED COMMUNITIES

The spread of homes and communities into areas prone to wildfire is an increasing management challenge. From 2000 to 2030, we expect to see substantial increases in housing density on 44 million acres of private forest land nationwide, an area larger than North and South Carolina combined (USDA Forest Service, 2005). Currently, more than 70,000 communities are now at risk from wildfire, and less than 15,000 have a community wildfire protection plan or an equivalent plan. (USDA Forest Service, 2012) Federal engagement with State and local fire agencies and other partners is central to our collective success in assisting communities at risk from wildfires. Wildfires know no boundaries and we must work within an all-lands context to prevent human caused fires, mitigate risk to communities, and manage for and respond to wildfires. According to studies cited in the 2013 USDA Forest Service General Technical Report (RMRS-GTR-299), more than one-third of all housing units in the continental U.S. are located within the WUI, and the trends suggest that these numbers will continue to grow.

To help address the risk faced by communities in the WUI, the Forest Service began developing the Fire Adapted Communities program in 2009, with a 2012 launch (including the website www.fireadapted.org and an Ad Council national public awareness campaign). This program assists communities to become fire adapted and is critical to protecting residents, firefighters, property, infrastructure, natural resources, and cultural values from wildfires. The strategy emphasizes that mitigation is a shared responsibility by Federal, State, local, and private stakeholders and that pre-fire mitigation is part of the solution to escalating wildfire suppression costs in the WUI.

The Forest Service's Fire Adapted Communities effort brings together a wide array of government and non-government partners to educate the public about the full suite of mitigation tools that can help communities adapt to wildfire. Fire Adapted Communities messaging is delivered by partners including the National Fire Protection Association International Association of Fire Chiefs, The Nature Conservancy Ad Council, National Volunteer Fire Council, and the National Asso-

ciation of State Foresters, who leverage federal dollars with their own program dollars for maximum effect. Fire Adapted Communities create a safer place for firefighters, give response teams more decision space, reduce the need for additional suppression in the community, and reduce large fire suppression costs.

RESTORING ECOSYSTEMS

The Forest Service is restoring the ability of forest and grassland ecosystems to resist climate-related stresses, recover from climate-related disturbances, and continue to deliver important values and benefits. By restoration, we mean restoring the functions and processes characteristic of healthier, more resistant, more resilient ecosystems, even if they are not exactly the same systems as before. Restoring and maintaining fire resilient landscapes is critical and essential to our stewardship responsibilities for the national forests. Factors including human activities and land development, loss of indigenous burning practices, and fire suppression have all led to changes in forests that historically had frequent fires. Some forests have experienced a buildup of trees and brush due to a lack of fire. In some areas fuel loads on the forest floor have increased where low intensity fires were historically the norm. These forest types are now seeing high severity fires under even moderate weather conditions.

Approaches to restoring fire-adapted ecosystems often require treatment or removal of excess fuels (e.g. through mechanical thinning, prescribed fire, or a combination of the two), reducing tree densities in uncharacteristically crowded forests, and application of fire to promote the growth of native plants and reestablish desired vegetation and fuel conditions. Excess fuels are those that support higher intensity fires than those under which the ecosystem evolved, and can include leaf litter and debris on the forest floor as well as the branches and foliage of small trees that provide ladder fuels allowing surface fires to transition to crown fires. Fuel treatments result in better outcomes on the land, more resilient and healthier ecosystems that provide the many benefits society wants and needs, including water, scenic and recreational values, wood products, and biodiversity; communities that are better able to withstand wildfire; and safer conditions and more options for firefighters. Fuel treatments change fire behavior and provide more options to engage a fire. This can decrease fire size, intensity, divert fire away from high value resources, and can result in reduced suppression costs.

When a wildfire starts within or burns into a fuel treatment area, an assessment is conducted to evaluate the resulting impacts on fire behavior and fire suppression actions. Of over 1,600 assessments conducted to date, over 90 percent of the fuel treatments were effective in changing fire behavior and/or helping with control of the wildfire (USFS, 2012).

In FY 2012, the Forest Service accomplished 1.2 million acres of prescribed fire, 662,475 acres of mechanical treatment to reduce hazardous fuels and managed 141,314 acres of wildfires to benefit natural resources as well as reduce hazardous fuels for a total accomplishment of over 2 million acres. The WUI remains the highest priority and nearly 1.3 million acres of the total treated acres were in the WUI. Of these treatments, 93 percent of the acres accomplished were identified as a treatment priority in a community wildfire protection plan or an equivalent collaborative plan. Hazardous fuels treatments also produced 2.8 million green tons used for energy and nearly 1 million CCF of wood products. In FY 2012, 20 biomass grant awards from the Woody Biomass Utilization Grant program totaling approximately \$3 million were made to small business and community groups across the country. This \$3 million dollar investment leveraged over \$400 million dollars of Rural Development Grants and Loan Guarantees for woody biomass facilities. The Woody Biomass Utilization Grant program has contributed to the treatment of over 500,000 acres and removed and utilized nearly 5 million green tons of biomass at an average cost of just \$66 per acre. Grantees also reported a combined 1,470 jobs created or retained as a result of our grant awards.

ISSUES FOR THE FUTURE

The largest issue is how we adapt our management to anticipate climate change impacts and begin to mitigate their potential effects. Additionally, the agency needs to continue to advance the Cohesive Strategy and treatment of landscapes collaboratively through our Accelerated Restoration Strategy to increase the number of acres and watersheds restored across the system, while supporting jobs and increasing annual forest products sales. Finally, we must discuss and find ways to fund programs while minimizing the effect on all Forest Service operations.

This concludes my statement.

The CHAIRMAN. Very good. Thank you, Chief.
Ms. Thorsen.

STATEMENT OF KIM THORSEN, DEPUTY ASSISTANT SECRETARY, PUBLIC SAFETY, RESOURCE PROTECTION, AND EMERGENCY SERVICES, DEPARTMENT OF THE INTERIOR

Ms. THORSEN. Chairman Wyden, Ranking Member Murkowski, members of the committee, thank you for the opportunity to testify today on Interior's readiness for the 2013 wildland fire season.

The Department of the Interior, along with our partners in the Forest Service, is prepared for this season with our available resources. Just a couple of days ago the National Wildland Fire Potential Outlook for the period of June through September was released. That outlook predicts above normal fire potential for much of the West.

As you know a variety of conditions, which have been discussed this morning, contribute to actual fire activity and severity. But this outlook gives us an important insights as to when, where and how to position our resources for the summer. Much like other departments across the Federal Government programs within Interior have felt the impact from sequestration.

As we developed our sequestration implementation plan we made every effort to prioritize preparedness for the upcoming fire season and to absorb the cuts in a way that it would not compromise our ability to respond to fires this season. Therefore, we focused cuts to the wildland fire program in areas such as travel, training, contracted services and operating supplies first. Overall the sequestration resulted in a \$37.5 million cut to Interior's fire program.

The long term impacts of sequestration are impossible to avoid. We have had to make difficult choices that will reduce our overall capacity such as not filling permanent staff vacancies, reducing seasonal firefighter employment periods and reducing the number of hazardous fuels crews. In addition other reductions in seasonal hiring across Interior will have a residual impact on the overall numbers of fire fighters available for dispatch, since many of these hires, while being non-fire positions are red carded or trained to fight fire.

In aviation this year Interior has 27 single engine air tankers or seats on exclusive use contracts. Double the number we have had in the past and 42 on call, when needed, contracts. The Department made a conscious decision to double the number of seats on exclusive use contracts in order to be prepared for the 2013 season and to reduce the overall cost to the program. We also have small and large helicopters and water scoopers available.

The reality of today's Federal funding challenges highlights the importance of working together across landscapes and with our partners to achieve our goals. Interior is committed to the national cohesive wildland fire management strategy to restore and maintain resilient landscapes, create fire adaptive communities and respond to wild fire, to realize those goals.

I want to conclude my comments by noting several programmatic challenges facing the Department's wildland fire management program.

We need to realign the overall program to better integrate with land and resource management activities as we continue to develop strategies to deal with the long term affects of declining budgets, the changing climate, evolving work force and the continued need to develop technologies and decision support tools.

The Department of the Interior is prepared to make the wildland fire fighting challenges of today and tomorrow with the most efficient use of its available resources.

Specific actions include continued reduction of hazardous fuels in priority areas where there is the greatest opportunity to reduce the risk of severe wild fires.

Continued improvement in decisionmaking on wildland fires by leveraging the wildland fire decision support systems, capabilities to predict what may happen during a wild fire, to safeguard lives, protect communities and enhance natural resource ecosystem health.

Continued enhancement to wild fire response that comes from efficient use of national shared resources, prepositioning of fire-fighting resources and improvements in aviation management.

Continued review of wild fire incidents to apply lessons learned and best practices to policy and operations.

Continued strategic planning and collaboration with the Forest Service, our tribal partners, State partners and local government partners to develop meaningful performance measures and implementation plans to address the challenges posed by wild fires in the Nation.

The Department of the Interior and the Department of Agriculture work collaboratively of all aspects of wildland fire management along with our Federal, tribal, State and local partners.

We will continue to improve safety, effectiveness, cost efficiency and community and resource protection with all of our available resources.

This concludes my statements. Thank you for this interest in the Department's wildland fire management program and for the opportunity to testify today.

[The prepared statement of Ms. Thorsen follows:]

STATEMENT OF KIM THORSEN, DEPUTY ASSISTANT SECRETARY, PUBLIC SAFETY, RESOURCE PROTECTION, AND EMERGENCY SERVICES, DEPARTMENT OF THE INTERIOR

Introduction

Chairman Wyden, Ranking Member Murkowski, and members of the Committee, thank you for the opportunity to testify today on Department of the Interior's readiness for the 2013 wildland fire season. The U.S. Department of the Interior (DOI), along with the Forest Service within U.S. Department of Agriculture, is prepared for the 2013 wildland fire season with our available resources.

2012 Wildfire Season

The 2012 wildfire season was an active year. The fire season was especially notable because about 9.3 million acres burned across the United States of which 4.4 million acres were on DOI lands. It was one of the largest fire seasons in terms of annual acreage burned, based on the reporting of fire statistics from 1960 to present. Fifty-one fires exceeded 40,000 acres in 2012, ten more than in 2011. Over 4,200 structures were reported destroyed by wildfires, including over 2,200 residences, nearly 2,000 outbuildings, and approximately 70 commercial structures.

This is well above the annual average of 1,400 residences, 1,300 outbuildings, and 50 commercial structures (data from 1999 through 2012, NICC).

More than twenty percent of the United States (510 million acres) is managed or held in trust by the Department's bureaus with fire management responsibilities.

Those lands stretch from Florida to Alaska, from Maine to California. DOI has achieved a high success rate in suppressing fires during the initial attack stage, which helps control cost.

2013 Fire Season

We are expecting the 2013 fire season to be similar to last year's. The National Wildfire Potential Outlook for the period of June through August predicts above-normal fire potential for June over much of California and Oregon, south central Washington, most of Arizona and New Mexico, and southern Utah and Colorado. These above-normal conditions will remain in California, Oregon and Washington through July and August, while also expanding into central Idaho and southwestern Montana.

Wildland fire behavior and the Department's response are influenced by complex environmental and social factors as discussed in the 2009 Quadrennial Fire Review (QFR), the National Cohesive Wildland Fire Management Strategy, and other strategic foundational documents used to guide the Wildland Fire Management program. The impacts of climate change, cumulative drought effects, increasing risk in and around communities, and escalating emergency response costs continue to impact wildland fire management and wildfire response operations. Through the end of May the Nation has experienced nearly 18,000 fires on just over 240,000 acres mainly in the East, South, and Southwestern geographic areas where fire season typically begins early in the year. Although these numbers are less than the ten year average, due to wet conditions in the East and South, we expect normal to above normal fire conditions throughout the West this year. Conditions in California up through Oregon and Washington are expected to be above normal as the summer progresses.

Effects of Sequestration

Much like other Departments across the federal government, programs within Interior have felt the impact from sequestration. As we developed our sequestration implementation plan, we made every effort to prioritize preparedness for the upcoming fire season and to absorb the cuts in a way that would not compromise our ability to respond to fires this season. Therefore, we focused cuts to the wildland fire management program in areas such as travel, training, contracted services, and operating supplies first. Overall, the sequestration resulted in a \$37.5 million cut to Interior's fire program and resulted in a reduction of approximately 7 percent of FTE the Department's firefighter seasonal workforce, with reduced lengths of employment for those hired.

The long-term impacts of sequestration are impossible to avoid. We have had to make difficult choices that will reduce our overall capacity such as not filling permanent staff vacancies, reducing seasonal firefighter employment periods, and reducing the number of hazardous fuels crews. In addition, other reductions in seasonal hiring across Interior will have a residual impact on the overall numbers of firefighters available for dispatch, since many of these hires, while being non-fire positions, are "red-carded" or trained to fight fire when needed.

Expected Available Fire Resources

Among its bureaus, the Department will deploy just over 3,400 firefighters, including 135 smokejumpers, 17 Type-1 crews; 750 engines; more than 200 other pieces of heavy equipment (dozers, tenders, etc.); and about 1,300 support personnel (incident management teams, dispatchers, fire cache, etc.); totaling nearly 5,000 personnel.

In aviation, this year, Interior has 27 single-engine airtankers or SEATS on exclusive use contracts—double the number we have had in the past, and an additional 42 on call-when-needed contracts. The Department made a conscious decision to double the number of SEATs on exclusive use contracts in order to be prepared for the 2013 season and to reduce the overall costs to the program. SEATs are a good fit for the types of fires that the Interior agencies experience, which usually burn at lower elevations, in sparser fuels, on flatter terrain. We also have small and large helicopters and water scoopers available. We will utilize Forest Service contracted heavy airtankers and, if necessary, Modular Airborne Fire Fighting System (MAFFS) aircraft from the Military. Agreements are in place to acquire supplemental aircraft from our state and international partners, if necessary.

Department of Defense Assistance

Over the past year, officials from the Departments of the Interior and Agriculture have worked with officials from Northern Command (NorthCom), in Colorado, to develop a new approach for obtaining support from the Department of Defense (DoD) should their assistance be needed during the 2013 fire season and into the future.

Previously, the DoD provided ground forces configured as battalions—550 soldiers each. Future requests for support will now include approximately ten 20-person crews from regionally based installations, within a reasonable distance from the incident. This ability will provide flexibility in the use of DoD resources as well as providing the anticipated numbers needed based on historical use. Our staffs are in the process of developing options for training that will include a smaller training cadre and include qualified DoD personnel. An Incident Awareness Assessment is also being conducted to identify potential gaps and areas where DoD may be able to provide specialized and/or surge capability in imagery products for use on wildfire incidents.

Fiscal Year 2014 Budget

The President's FY 2014 budget proposes a total of \$776.9 million to support the fire preparedness, suppression, fuels reduction, and burned area rehabilitation needs of the Department. The budget fully funds the inflation-adjusted 10-year average of suppression expenditures of \$377.9 million, with the funding split between \$285.9 million in the regular suppression account and \$92.0 million in the Federal Land Assistance, Management, and Enhancement (FLAME) Fund. This represents a program increase of \$205.1 million over the 2012 enacted level, because the full 10-year average was not appropriated in 2012 and the program relied on available balances from prior years. Consistent with the FLAME Act, the regular suppression account will fund the initial attack and predictable firefighting costs, while the FLAME Fund will fund the costs of large, catastrophic-type fires and also serve as a reserve when funds available in the regular suppression account are exhausted. While the budget provides funding to cover anticipated preparedness and suppression needs, the Department recognizes the need to invest not just in firefighting related activities, but also hazardous fuels reduction, community assistance, and rehabilitation of burned areas. Interior has made significant improvements to management information tools to provide program leadership information on determining where funds may best be directed. The Department will continue to pursue efficiencies and reforms that reduce project cost, increase performance, ensure the greatest value from invested resources, all while strengthening the accountability and transparency of the way in which taxpayer dollars are being spent.

Hazardous Fuels Reduction Program

The 2014 budget requests \$95.9 million for the Department's Hazardous Fuels Reduction (HFR) program, a reduction of \$88.9 million from 2012 and \$49.4 million from 2013. The increase in complexity and intensity of fires over the last ten years presents enormous budgetary challenges for the wildland fire program. With today's fiscal climate, and competition for limited resources, we are being asked to make tough choices. The reduction to the fuels budget is one of those tough choices. This presents an opportunity to re-evaluate and recalibrate the focus of the HFR program to align and support the direction in the National Cohesive Wildland Fire Management Strategy and the Federal Wildland Fire Management Policy. Affirming a commitment to the intergovernmental goals of the Cohesive Strategy, HFR program activities will be planned and implemented to mitigate risks posed by wildfire. The program uses a risk-based prioritization process to ensure activities are implemented in the areas of greatest risk from wildfire, and will foster closer alignment and integration of the program into the bureaus' broader natural resource management programs. To encourage this, the 2014 program includes \$2 million to conduct additional research on the effectiveness of hazardous fuels treatments. As a result, the Department will take a serious look at how we can make the most difference on the ground with what we have. The program will continue to focus fuels reduction on the highest priority projects in the highest priority areas resulting in the mitigation of risks to communities and their values.

Partnerships

The realities of today's federal funding challenges, such as the reduction to the hazardous fuels program, highlights the importance of working together across landscapes, and with our partners to achieve our goals.

The federal government wildland fire agencies are working with tribal, state, and local government partners to prevent and reduce the effects of large, unwanted fires through preparedness activities like risk assessment, prevention and mitigation efforts, mutual aid agreements, firefighter training, acquisition of equipment and aircraft, and dispatching; community assistance and hazardous fuels reduction. These actions demonstrate Interior's continued commitment to the goals of the National Cohesive Wildland Fire Management Strategy (restore and maintain resilient landscapes, create fire-adapted communities, and response to wildfire).

Federal Wildland Fire Management Policy

The Department will also continue to take full advantage of the current Implementation Guidelines for the Federal Wildland Fire Management Policy. Our unwavering commitment to firefighter and public safety in managing wildfire is the foundation of the wildland fire management program within each DOI bureau. We will continue to respond quickly and effectively to control unwanted wildland fires. Initial action on human-caused wildfire will continue to suppress the wildfire at the lowest risk to firefighter and public safety. When appropriate, we will also allow fire managers to manage a wildfire for multiple objectives and increase managers' flexibility to respond to changing incident conditions and firefighting capability, while strengthening strategic and tactical decision implementation supporting public safety and resource management objectives.

Actions by wildland fire managers will be supported by the best available science and decision support systems such as the Wildland Fire Decision Support System (WFDSS). These tools afford our wildland fire managers an enhanced ability to analyze wildfire conditions and develop risk informed strategies and tactics, which result in the reduced exposure to unnecessary risk during a sequester-impacted wildfire season.

Long-Term Programmatic Challenges

There are several longer-term programmatic challenges facing the Department's wildland fire management program including the need to re-align the overall program to better integrate with land and resource management activities. We must continue to develop strategies to deal with the long-term effects of declining budgets, the changing climate, evolving workforce, and the continued need to develop technologies and decision support tools to better inform our wildland fire managers of the future.

The Department of the Interior is prepared to meet the wildland firefighting challenges of today and tomorrow with the most efficient use of its available resources. DOI will maintain operational capabilities and continue to improve the effectiveness and efficiency of the wildland fire management programs. These efforts are coupled with other strategic efforts and operational protocols to improve oversight and use of the latest research and technology in order to ensure wildland fire management resources are appropriately focused. Specific actions include:

- Continued reduction of hazardous fuels in priority areas, where there is the greatest opportunity to reduce the risk of severe wildfires;
- Continued improvement in decision-making on wildland fires by leveraging the Wildland Fire Decision Support System's capabilities to predict what may happen during a wildfire, to safeguard lives, protect communities, and enhance natural resource ecosystem health;
- Continued enhancement to wildfire response that comes from efficient use of national shared resources, pre-positioning of firefighting resources, and improvements in aviation management;
- Continued review of wildfire incidents to apply lessons learned and best practices to policy and operations; and
- Continued strategic planning in collaboration with the Forest Service and our tribal, state, and local government partners to develop meaningful performance measures and implementation plans to address the challenges posed by wildfires in the nation.

Conclusion

The Department of the Interior and the Department of Agriculture (USDA) work collaboratively in all aspects of wildland fire management, along with our other federal, tribal, state and local partners. Together, with all our available resources, we will provide a safe, effective wildland fire management program. We will continue to improve effectiveness, cost efficiency, safety, and community and resource protection with all our available resources.

This concludes my statement. Thank you for your interest in the Department's wildland fire management program and for the opportunity to testify before this Committee. I welcome any questions you may have and appreciate your continued support.

The CHAIRMAN. Ms. Thorsen, thank you.
Mr. Decker.

**STATEMENT OF DOUG DECKER, OREGON STATE FORESTER,
SALEM, OR**

Mr. DECKER. Good morning, Chairman Wyden, Ranking Member Murkowski, members of the committee and colleagues here. I'm Doug Decker, Oregon State Forester and Director of the Oregon Department of Forestry. I'm pleased to be with you this morning to offer a view from a State where 60 percent of our forests are owned by the Federal Government and also to speak on behalf of the National Association of State Foresters.

Most States have statutory responsibility to protect State and private forest lands from fire. Last year the States provided fire protection on more than a billion acres nationally. For us in Oregon the fire mission is the cornerstone of our agency culture. It's a major part of what we do and who we are and the reason our agency was first organized in 1911.

We are Oregon's largest fire department. I'm proud to say this morning that we have a strike team of engines and personnel headed from Oregon to New Mexico to help out on the fires down there.

In Oregon our fire conditions are more than a month ahead of normal. We've already had double the number of fires that we usually see this time of year and triple the number of acres burned. We've seen evacuations of subdivisions. As Senator Wyden mentioned, even in the coast range, the moist part of Oregon, we've had active fires in May. We're very concerned about the fire season ahead.

In Oregon, as elsewhere, more people are living in fire prone landscapes. Fire seasons are indeed longer. Fuel loads are uncharacteristically high, particularly in Federal forests. All of this produces risk and cost that can really overwhelm even our best fire management efforts.

The trends also highlight important differences in mission and risk tolerance between State and Federal agencies. Clearly we need to understand and accommodate these differences. Our mission at the State level is very clear. It's to put out every fire as quickly and as safely as possible. It's a posture that we believe minimizes resource damage, minimizes suppression costs borne by land owners and in Oregon also by all Oregonians.

Our Federal partners, by contrast, are tasked both with suppressing fires and in some cases allowing fire to achieve resource benefits. In effect this transfers risk from Federal lands to adjoining or intermingled State protected lands. I think it's important to note that this transfer has actually already occurred even before a fire starts given the expanses of Federal land that are at risk today of uncharacteristically severe fire. Unfortunately reductions, proposed reductions, in land management and hazardous fuel programs make it more difficult to address these problems at a meaningful scale.

This brings us to the Blue Mountains of Northeast Oregon, one of the Nation's first pilot projects under the Cohesive Wildfire Strategy. You know the strategy targets improving fire response, creating better fire adapted communities and implementing active management and restoration as a way of having more fire resilient landscapes. In the Blues the Department of Forestry shares 3,500 miles of boundary with the U.S. Forest Service. In these commu-

nities and under the Cohesive Wildfire Strategy pilot, we're all working together to look for better ways to strengthen what we believe is an already sound fire response.

Our collective ability to respond successfully to fires is directly linked with how resilient the landscape is to fire and how well we've adapted our communities to wildfire in these areas. In the Blues we're having very frank discussions about risk tolerance, about the values at risk on private land and how and when to use fire as a management tool. We're also looking for ways to improve the economics of forest management as a way to increase the fire resilience of the landscape.

On the subject of fire costs and speaking here for Oregon as well as for the National Association of State Foresters, we are concerned about the escalation of suppression costs for all agencies. Those costs often come at the expense of the very programs that are intended to restore the lands and to mitigate the risks. With many others, the association supports adequately funding Federal fire suppression and maintaining the FLAME reserve accounts in a way that doesn't come at the expense of other programs. We know that that was the intent when FLAME was enacted in 2009. We think it's an essential element to our long term collective success.

Thank you for the opportunity to share their perspectives. I look forward to our questions and answers.

[The prepared statement of Mr. Decker follows:]

PREPARED STATEMENT OF DOUG DECKER, OREGON STATE FORESTER, SALEM, OR

The Oregon Department of Forestry (ODF) and the National Association of State Foresters (NASF) appreciate the opportunity to submit testimony as the Committee explores the many and complex issues surrounding wildland fire management. The mission of ODF is to serve the people of Oregon by protecting, managing, and promoting stewardship of Oregon's forests to enhance environmental, economic, and community sustainability. Among other responsibilities and activities, ODF manages state-owned forestlands, administers the Oregon Forest Practices Act and provides forestry assistance to Oregon's 143,000 non-industrial private woodland owners. Additionally, ODF provides fire protection for 16 million acres of private, state and locally owned forests in Oregon, including federal lands in western Oregon owned by the Bureau of Land Management. ODF's fire protection goals are clear: to devise and use environmentally sound and economically efficient strategies to minimize the cost of protecting Oregon's timber and other forest values from loss caused by wildland fire.

The NASF represents the directors of the state forestry agencies in all fifty states, eight territories, and the District of Columbia. State Foresters deliver technical and financial assistance, along with forest health, water and wildfire protection for more than two-thirds of the nation's forests. The mission and duties of state agencies with forestry and wildfire protection responsibilities vary significantly from state to state; however most have statutory responsibility to provide wildland fire protection for state and private lands. In 2012, state forestry agencies provided this service on over 1 billion acres and helped train nearly 83,000 rural firefighters. State Foresters work closely with federal partners to deliver forestry programs and wildfire protection.

2012-2013 Fire Season

Wildland fire protection and management continues to increase in both cost and complexity across the country. With more people living in fire-prone landscapes, longer fires seasons due at least in part to our changing climate, and forests with fuel loads well outside the historic range of variability, we are continuing to see larger fires along with longer and more variable fire seasons. The conditions in our forests-particularly federal forests-have created a situation that can easily overwhelm fire management efforts, challenge fire management entities-especially in multi-jurisdictional fires-and produce billions of dollars in suppression costs and resource loss each year. The scope of the wildland fire problem is immediately evident

in the Forest Action Plans,¹ wherein wildland fire was uniformly identified as a significant threat and a priority issue for states.

In 2012, a total of 67,774 fires were reported across the country, burning 9.3 million acres across all ownerships. These fires destroyed over 5,200 structures, including at least 3,500 homes. NASF estimates that nearly 72,000 communities are at risk of wildland fire, of which only 20% are covered by a Community Wildfire Protection Plan.

The National Interagency Fire Center recently reported that the 2013 fire season across the country has been slower than usual, with 16,436 fires burning 219,920 acres as of May 21, 2013.² These early season numbers are due in large part to cooler than normal weather in the southeastern United States. In Oregon, the 2013 fire season has actually been well above normal with more than 100 fires this year already, including evacuations of subdivisions in central Oregon and active burning even in Oregon's moist Coast Range. Much of the West, including Oregon, Arizona, New Mexico, California, Colorado, Idaho, Montana, Utah, and Washington are expecting above normal fire activity throughout the summer.³

Wildland Fire Challenges

Oregon's fire season—which has already begun, as mentioned above—appears to be roughly one and a half months ahead of the typical seasonal cycle. Very recent moisture is providing some much-needed relief, even if only temporarily. Much of the state experienced below-average precipitation through late winter and spring. When coupled with recent above-average temperatures and lightning, this created unusually volatile early season burning conditions and challenged our resources with 40 fires during the first weekend in May. These fires spanned the entire state, from the Coast Range to the eastside, and presented unique challenges as the majority of Oregon's state and federal seasonal firefighters were not yet in place.

In addition to facing what is expected to be a very challenging fire season in Oregon and across much of the West, we are also working to address issues that are especially keen in western states with significant federal forest acreage. It is a constant challenge for states to reconcile our different missions and responsibilities with those of our federal partners. In Oregon, the responsibility of our Protection from Fire Division is clear when it comes to fire suppression: put the fire out as quickly and safely as possible. This is accomplished in Oregon through aggressive initial attack. We seek to keep fires as small as possible, which limits the risks to firefighting personnel from extended attack fire suppression and minimizes damage to the forest resources that forest landowners and all Oregonians pay ODF to protect. We strive to control 97 percent of all fires we fight at less than 10 acres, protecting property and saving millions in fire costs and damage.

Conversely, our federal partners do not have the same clear direction to engage in full suppression, but are tasked with both suppressing fire and also using fire by allowing it to burn under certain conditions in order to accomplish resource benefits. Our federal partners, such as the USDA Forest Service (Forest Service), are able to do this largely because they have a different risk tolerance than the states. Because states are paid to protect private forestlands by the landowners, the states typically do not engage in anything less than full suppression of wildland fires during fire season. The differences in risk tolerance become a real problem for states when the strategies willingly assumed by federal partners—typically allowing fires to grow large to address other resource goals, or introducing fire in intermingled ownership patterns—are transferred as risk to non-federal lands. Even before a fire starts or is managed on federal forests, there are millions of federal forests where the transfer of risk has already occurred as a result of less active management or essentially passive management for a variety of reasons. As a result, millions of federal forest acres are at risk of catastrophic wildfire; this in turn has become central to the challenge of protecting adjoining private forests.

One of the guiding principles of the National Cohesive Wildland Fire Management Strategy (Cohesive Strategy) states “[w]here land and resource management objectives differ, prudent and safe actions must be taken through collaborative fire planning and suppression response to keep unwanted wildfires from spreading to adjacent jurisdictions.”⁴ Divergent forest management and fire policies and fire crossing ownerships—and even state boundaries—strain working relationships between local

¹ See Forest Action Plans website, www.forestationplans.org. Last accessed May 21, 2013.

² The 10-year average for this same period is 27,657 fires burning 1,078,441 acres. National Interagency Fire Center www.nifc.gov/fireinfo/nfn.htm. Last accessed May 21, 2013.

³ National Significant Wildland Fire Potential Outlook. Issued May 1, 2013. Available at www.nifc.gov/fireinfo/fireinfo_main.html. Last accessed May 21, 2013.

⁴ Wildland Fire Leadership Council Commitment to Cohesive Strategy, January 27, 2012. Available at www.forestsandrangelands.gov/strategy/. Last accessed May 22, 2013.

managers, communities, and forest landowners. They can also result in substantial resource damage and loss. Much of the work of active management, collaboration and pre-planning that needs to be addressed under the Cohesive Strategy must occur in the off season if it is to succeed during a fire event.

An Oregon Lens-Northern Blue Mountain Pilot Project

Alongside the Forest Service, ODF has taken a lead role in one of the Nation's first pilot projects under the Cohesive Strategy. The Blue Mountain Pilot is based around the same three goals as the Cohesive Strategy:

1. Respond to Wildfire-seeking to ensure a safe, effective, and efficient response to wildland fire.
2. Create Fire-Adapted Communities-seeking to help populations create and modify infrastructure such that it can withstand a wildfire without loss of life or property.
3. Restore and Maintain Resilient Landscapes-seeking to implement management across all ownerships and jurisdictions to work towards landscapes that are resilient to fire-related disturbances.

The work of ODF and its partners in the Blue Mountain Pilot Project will serve as a backdrop for the remaining issues covered in this testimony. I will touch on specifics of our pilot project in the Blues, and relate them to challenges State Foresters experience at the national level.

- Responding to wildfire

One of the fundamental challenges in the area encompassing the Blue Mountain Pilot,⁵ and a challenge that is replicated across much of the West, where large federal holdings exist, stems from intermixed ownerships and the conditions on the ground—including a growing wildland urban interface and fuel loads well beyond the historic range of variability. Within the Blue Mountain Pilot area, ODF shares roughly 3,500 miles of property and protection boundary with the Forest Service. High fuel loads and differences in fire policy and risk tolerance between federal land managers and ODF can create issues on both sides of the boundary.

With intermixed ownership and protection, interagency coordination of fire suppression and management is key—along with specifically communicating and coordinating with local landowners. Work is ongoing in the Blue Mountain Pilot to find ways for federal, state, rural and local responders to work together and better coordinate staffing levels and resource availability based on fire danger and conditions on the ground. Recognizing and utilizing local landowner and/or contract resources are important parts of this overall effort.

Nationally and in Oregon, State Foresters have played a substantial role in helping equip rural fire departments and assisting communities to prepare for wildland fire through the Volunteer Fire Assistance and State Fire Assistance Programs. In Oregon, nonprofit Rangeland Protective Associations and a fire detection camera system are two proven successes that started through these programs. Unfortunately, these programs have experienced significant cuts in recent years and are slated for additional cuts under the President's proposed budget. The reductions also come as state budgets for wildfire programs have declined nearly 15 percent (between 2008 and 2010).

Funding of federal fire suppression efforts is one of the greatest challenges we face in fire response. The fire suppression budget at the Forest Service has continued to grow in recent years and now accounts for nearly one-half of total spending for the Agency. State Foresters and other partners have real concerns about the continued escalation of fire costs. As suppression costs have risen, the Forest Service has had to transfer money from other programs to fund fire suppression. As the Committee is aware, the Federal Land Assistance, Management and Enhancement (FLAME) Act was intended to address this problem. Unfortunately, the emergency funds established for the Forest Service and the Department of the Interior (DOI) have not been funded as intended under the FLAME Act.

In fact, during fiscal year (FY) 2012 the Forest Service transferred \$440 million and the DOI transferred \$23 million from non-suppression programs within the agencies to cover the cost of fire suppression. While the federal FY 2013 Continuing

⁵The Blue Mountain Pilot Project is located in northeastern Oregon and includes 2.4 million acres of the Wallow-Whitman National Forest, roughly 1 million acres of the Umatilla National Forest, nearly 2 million acres of private ODF protected lands, and 2.1 million acres managed by a host of agencies including the Bureau of Land Management, Bureau of Indian Affairs, the Umatilla Tribe, Rangeland Fire Protection Associations, rural fire districts and unprotected lands.

Resolution restored the transferred funds, the transfers and possibility of future transfers continue to impact programs within the agencies. Fire transfers also impact non-federal partners including states. The FY 2012 fire transfer at the Forest Service left twenty State Competitive Resource Allocation Projects authorized under State and Private Forestry programs unfunded, potentially harming partnerships cultivated by states in developing these projects.

The latest FLAME Forecast Report⁶ from the Administration predicts another costly fire season in 2013. Median forecasts for suppression costs at the Forest Service and DOI are \$1.191 billion and \$329 million respectively. The FY 2013 Continuing Resolution provided funding at the ten-year average suppression expenditure level of \$931 million (\$616 million for suppression and \$315 for FLAME) to fund fire suppression at the Forest Service⁷ and \$378 million (\$286 million for suppression and \$92 million for FLAME) to fund fire suppression at the DOI.⁸ When cuts mandated under the sequester were applied, total suppression funding available to the Forest Service dropped to \$807 million and \$349 million for the DOI.⁹ Comparing actual available FY 2013 funding with the agencies' cost forecasts, funding at the Forest Service is \$384 million below the forecasted level. The DOI funding level is actually \$20 million above the forecast, but \$29 million below the ten-year average. These findings, particularly for the Forest Service, indicate that transfers are likely in FY 2013. These transfers will again disrupt agency programs, including forest management programs that would help to reduce wildfire suppression costs in the future.

One solution to minimize the need for the Forest Service and DOI to transfer monies from non-suppression accounts to suppression is to treat the FLAME reserve accounts as they were intended when the FLAME Act was enacted in 2009. In order for this to happen, State Foresters, along with a wide-range of partners, support funding the FLAME accounts separately from the ten-year suppression average, and not at the expense of other agency programs.¹⁰ Additionally, any remaining balance in the FLAME accounts at the end of FY 2013 should be carried over, as intended under the FLAME Act, to FY 2014.

- Creating Fire-Adapted Communities

One of the challenges facing interagency leaders on our Blue Mountain Pilot Project is to grow that sweet spot represented by the overlapping themes of resilient landscapes, adequate fire response, and fire-adapted communities. In northeastern Oregon, creating fire-adapted communities involves asking what else can be done, working together, to manage the risk and to focus work in the highest priority areas. One of the ways that this decision-making and resource allocation process can be informed is through the Western Wildfire Risk Assessment. This is an effort led by the Council of Western State Foresters to quantify the magnitude of the current wildland fire problem in the West and provide baseline data for understanding the impact of mitigation activities, and to monitor change over time. The information provided through the Western Wildfire Risk Assessment is being used to inform national, regional, state and local planning efforts.¹¹ The Southern Group of State Foresters has completed a similar project and the Northeastern Association of State Foresters also utilizes regional risk assessment tools.

Importantly, the Blue Mountain Pilot Project leadership recognizes that fire-adapted communities are closely linked to broader forest health and restoration issues. Because of this linkage, federal, state and local partners are engaging in frank and open conversation about risk tolerance, values at risk and the use of fire as a management tool. The Pilot Project is seeking to find ways to improve the economics of forest management to maintain resilient landscapes that will in turn help protect communities.

⁶Federal Land Assistance, Management and Enhancement (FLAME) Act Suppression Expenditures for Interior and Agriculture Agencies: May 2013 Forecasts for Fiscal Year 2013. April 18, 2013.

⁷Fiscal Year 2013 USDA Forest Service Budget Justification. Available at <http://www.fs.fed.us/aboutus/budget/>. Last Accessed May 29, 2013.

⁸The U.S. Department of the Interior Budget Justifications and Performance Information Fiscal Year 2014-Wildland Fire Management. Available at <http://www.doi.gov/pmb/owf/BPM-Resources.cfm>. Last accessed May 29, 2013.

⁹Id.

¹⁰Written Public Testimony from Members of the Fire Suppression Funding Solutions Partner Caucus. Available at <http://www.stateforesters.org/testimony-members-fire-suppression-funding-solutions-partner-caucus>. Last accessed May 30, 2013.

¹¹An example of the potential utility of the Western Wildfire Risk Assessment is the Colorado Wildfire Risk Assessment Portal developed by Colorado State Forest Service with input from the Western Wildfire Risk Assessment.

- Restoring and Maintaining Resilient Landscapes

Forests across the nation face a host of threats from disturbance mechanisms such as insects, disease, and wildland fire. Much of the forestlands within the Blue Mountain Pilot Project are representative of forests across the country in urgent need of active management to address forest health issues. Unfortunately, one of the direct results of the increased spending on wildland fire suppression at the Forest Service is that fewer dollars are available to fund on-the-ground management activities that can reduce fire risk, such as the Hazardous Fuels program, which is slated for substantial cuts in the President's proposed budget. Unfortunately, until we can find a way to invest in management of forests before they burn, this problem will only be exacerbated as we undercut our ability to address the cause of the problem by directing most of our limited resources at efforts to treat the symptoms.

A recent report prepared for Oregon Governor John Kitzhaber and Oregon's Legislative leaders found that "[a]n investment in forest health restoration has the potential to save millions of dollars in state and federal funds by avoiding costs associated with fire suppression, social service programs and unemployment benefits."¹² The report notes that "[f]or every \$1 the [Forest Service] spends on forest restoration, the agency avoids a potential loss of \$1.45."¹⁴ In addition to reducing the fire risk, investing in active forest management can improve the social, economic and ecological health of our forests and the communities that depend on them.

- Wildland Fire Billing

Before concluding, I would like to touch briefly on another matter that affects the ability of state and federal agencies to work together as efficiently as possible. State foresters are working with the Forest Service and members of Congress to clarify the Forest Service's authority to continue coordinating the national response to wildland fires by facilitating mobilization and billing for state resources sent to support firefighting efforts in another state. This is a key role that the Forest Service has fulfilled for several decades and was only recently called into question. It is critically important to provide the Forest Service with the clarifying language they need to continue this role and we appreciate the support we have received from Congress in working to codify this authority. Having a central clearinghouse for fire billing saves the states and the federal government critical resources and time.

Finally, state foresters are also working with their partners at the Forest Service and the DOI Office of Wildland Fire to further understand direction that came from the National Wildfire Coordinating Group (NWCG) this past winter¹⁴. The release of the NWCG direction has created confusion as to who will handle billing for state resources sent out of state to assist in suppression of fires managed by a DOI agency. States have historically submitting billing packages to the Forest Service at the Albuquerque Service Center and have received assurances from the Forest Service that this process will continue through the current fire season.

Conclusion

I appreciate the opportunity to appear before the Committee today on behalf of the Oregon Department of Forestry and the National Association of State Foresters. Wildland fire response is one of the most challenging facets of our jobs. The NASF and I stand ready to assist the Committee in finding ways to address the challenges we all face as the wildland fire problem continues to grow and consume larger and larger portions of our federal budget. Finally, I would like to thank the Committee for its continued leadership and support of efforts to both respond to wildland fire and to take the necessary actions to address the underlying causes through increasing active management of all forestlands.

The CHAIRMAN. Mr. Decker, thank you. At those town hall meetings in Eastern Oregon last week people were really talking about the collaborative work that you and the. We want to explore that with you through questions.

Mr. DECKER. Very good.

The CHAIRMAN. Mr. Topik.

¹²National Forest Health Restoration: An Economic Assessment of Forest Restoration on Oregon's Eastside National Forests at pg. IV. Nov. 26, 2012. Available at www.oregonstate.edu/inr/national-forest-health-restoration. Last accessed May 21, 2013.

¹³Id.

¹⁴See NWCG memorandum dated December 10, 2012 on Single Point Interstate Billing available at <http://www.nwcg.gov/general/memos/nwcg-020-2012.html>. Last accessed May 21, 2013.

STATEMENT OF CHRISTOPHER TOPIK, DIRECTOR, RESTORING AMERICA'S FORESTS, THE NATURE CONSERVANCY, ARLINGTON, VA

Mr. TOPIK. Mr. Chairman, Senator Murkowski and members of the committee, I want to thank you very much for inviting The Nature Conservancy here today. I'm going to focus on 3 portions of my longer written testimony: collaboration, proactive management needs and the need to support emergency fire suppression without trading off proactive management.

Mr. Chairman, The Nature Conservancy is deeply vested in science and nature based solutions to forest conservation and the use of fire. We conducted our first prescribed burn on a TNC preserve 50 years ago. We work all over America with a wide variety of communities and partners to restore forests in a way that makes people, water and wildlife more resilient in the face of wildfire. We facilitate the National Fire Learning Network and our land fire science team is a key asset.

My first issue is collaboration as a foundation for success.

This was once considered to be innovative. But it is an essential way to increase forest restoration and contribute to local economies. By bringing together county commissioners, local mill owners, water and utility managers, fire protection officials, conservation groups, scientists and others, collaborative groups can identify mutually beneficial solutions to forest health challenges.

The Collaborative Forest Landscape Restoration Program has been a valuable vehicle for prioritizing and testing science based approaches to forest restoration. We must continue this exciting program. We need to apply the lessons learned from the CFLR program to improve forestry throughout the Nation as forest plans are developed under the new forest planning rule. We must also increase our emphasis on and support for community collaboration as a fundamental aspect of successful forest restoration planning and implementation that meets local needs and national priorities.

My second major issue is proactive management as a responsible investment.

Strategic proactive hazardous fuels treatments have proven to be a safe and cost effective way to reduce risks to communities and increase forest stability. The Nature Conservancy is also very disappointed to see that the President's budget proposes devastating cuts to hazardous fuels programs at Interior and the Forest Service. The Nation has experienced a 57 percent increase in acres burned this past decade. The National Interagency Fire Center predicts extreme fire potential for most of the West this summer. It does not make sense to reduce the Nation's investment in one of the proven Federal programs that get us ahead of this problem.

We're also concerned to see the President's budget emphasizes protecting structures nearly to the exclusion of natural areas that support life and livelihood. We urge a balanced approach among treatments in wildland and developed areas.

Mr. Chairman, I hope that this committee will also support careful, appropriate use of fire as a safe and cost effective management tool. We all need to work with the public to increase understanding of accepting some risk of managed fire is essential to reduce overall chances of damaging mega fires.

My last issue is providing sufficient funding for emergency wild-fire response.

The Nature Conservancy recognizes the need for robust, proactive Federal and State firefighting operations to protect life, property and natural resources. Unfortunately wildfire suppression expenditures are currently far out of balance and threaten to overtake the vital management and conservation purposes for which the Forest Service and Interior bureaus were established. Fire suppression costs have soared due to several factors.

Paying for this tremendous emergency cost results in borrowing. Even the threat of fire borrowing has a chilling effect on the ability of land managers to plan activities and retain skilled contractors and work force. The FLAME Act of 2009 was a bipartisan effort to change the funding mechanism for wildfire suppression. But unfortunately implementation has not proceeded as intended, as you all have mentioned.

Last year the Administration again had to transfer more than \$450 million for non-suppression programs. Forecasts for the coming fire season suggest another costly year ahead and more disruptive moneys will have to be transferred. Vital forest improvements including hazardous fuels will not get done to protect our communities and wildlands.

Mr. Chairman, we must move beyond the harmful disruptive cycle of underfunding suppression needs and then robbing from other critical programs to fill the gaps. The FLAME accounts, to be fully funded, separately from and above the 10-year average used to calculate annual suppression needs. Remaining balances in the FLAME account at the end of the year should carry over into the next Fiscal Year.

Mr. Chairman, I further recommend that an expert panel be commissioned to provide options for more effective and sustainable approach to supporting Federal emergency wildfire suppression. The critical life and safety mission associated with wildfire suppression should be guaranteed adequate funding. This should not come at the expense of other vital conservation, public service and science activities of the many agencies and bureaus which share the same Federal funding source.

One option the committee might consider is establishment of a disaster prevention fund that could be utilized to support vital Federal fire suppression actions during emergencies, just as the disaster relief fund is utilized to help communities recover after disasters. Fire suppression is different from other natural disasters. Since Federal response is needed most acutely during the actual event.

I conclude by reminding the committee that climate change is making the fire problem much worse. Our forests are becoming warmer, drier and subject to more extreme weather events and longer fire seasons. Time is of the essence.

We need to shift our Nation's approach to wildfire from an emphasis on costly and reactive emergency response to a more balanced approach. This requires significant congressional attention to help create truly fire adapted communities while restoring resilient watersheds to provide ongoing benefits to society and nature.

Thank you very much, Mr. Chairman.

[The prepared statement of Mr. Topik follows:]

PREPARED STATEMENT OF CHRISTOPHER TOPIK, DIRECTOR, RESTORING AMERICA'S FORESTS, THE NATURE CONSERVANCY, ARLINGTON, VA

Mr. Chairman and members of the Committee, thank you for the opportunity to participate in this important conversation about the role of fire in our nation's forests and communities. My name is Christopher Topik and I am the Director of The Nature Conservancy's Restoring America's Forests Program. The Nature Conservancy is an international, non-profit conservation organization working around the world to protect ecologically important lands and waters for people and nature. Our mission is to conserve the lands and waters upon which all life depends.

The Conservancy's work across North America is guided by an ambitious vision that involves developing nature-based solutions to some of humanity's most pressing global challenges. Primary among our North American priorities is our Restoring America's Forests program, through which we aim to foster a dramatic increase in the proactive, science-based restoration of our nation's federal forests, thereby reducing the tremendous human and environmental costs associated with unnaturally large and damaging megafires.

The Nature Conservancy is deeply vested in forest conservation and the use of fire. We conducted our first prescribed burn on a TNC preserve 50 years ago, and we work with a wide variety of communities and partners to restore forests in a way that makes people, water and wildlife more resilient in the face of wildfire. Our collaborative approach supports management and planning that increases the capacity of forests to sustainably provide Americans with myriad benefits and services, now and into the future. Our leadership roles in facilitating the national Fire Learning Network and LANDFIRE science team are examples of this work.

The values at stake in our forests are enormous and serve to underline the important role forested landscapes play in our quality of life. Forests cover more than a third of our nation; they store and filter half our nation's water supply; provide jobs to nearly a million forest product workers; absorb 13% of our nation's carbon emissions; generate more than \$13 billion in recreation and other related economic activity on Forest Service lands alone; and, of course, provide habitat to thousands of American wildlife and plant species. These are not benefits restricted to rural or forest-dependent communities; rather they are integral to the well-being of every single American.

The new reality of ever larger and more frequent megafires is stretching the capacity of our forests to sustainably provide a full-range of benefits and services - and our public coffers to provide the funding to address wildfire suppression and post-fire recovery needs. Time is of the essence in shifting our nation's approach to wildfire from an emphasis on costly and reactive emergency response to a more balanced approach that includes significant investment in proactively restoring and maintaining resilient landscapes and creating truly fire adapted communities. The U.S. Forest Service's 2012 Report on Increasing the Pace of Restoration and Job Creation on Our National Forests¹ estimates that there are as many as 65 million acres of National Forest System land at high or very high risk of catastrophic wildfires. These numbers are further magnified when the condition and management needs on other federal and non-federal lands are considered.

The societal, environmental and fiscal costs of fire in our nation's forests continue their precipitous climb. During the 2012 wildfire season, alone, a relatively small 68,000 fires burned across nearly 10 million acres and resulted in a \$1.9 billion bill for federal wildfire suppression (on top of the nearly \$1.5 billion required to staff the federal fire programs). The cost of wildfire management currently consumes more than 40% of the U.S. Forest Service budget, leaving an ever smaller pool of funds to support hazardous fuels reduction, timber management, wildlife habitat improvement, recreational access, watershed protection and the wide variety of other important services that the American people value and expect.

Climate change is exacerbating the fire problem as our forests are becoming warmer, drier and subject to both more extreme weather events and longer fire seasons. The Forest Service itself expects severe fires to double by 2050². Last year was the third biggest fire year since 1960, with 9.3 million acres burned- the Forest Service is estimating 20 million acres to burn by 2050. We are already seeing these

¹ <http://www.fs.fed.us/publications/restoration/restoration.pdf>

² <http://www.globalchange.gov/what-we-do/assessment/nca-overview;> <http://www.denverpost.com/breakingnews/ci—22943189/feds-project-climate-change-will-double-wild-fire-risk?source=email>

impacts: the Four Corners region has documented temperature increases of 1.5-2 degrees Fahrenheit over the last 60 years³. It should come as no surprise that New Mexico has had back-to-back record fires the last two years, Arizona had its largest fire in 2011, and Colorado had its most damaging fire in 2012.

The National Cohesive Wildland Fire Management Strategy (Cohesive Strategy) establishes a helpful framework for guiding us toward a more balanced approach to fire, forests and communities, but it will take more than a document to enact the kind of fundamental and swift change that is needed. We must also collectively put our time, money and resources behind our words.

During this time of tight federal budgets and pressing forest restoration needs, it is essential that we invest the limited resources we have both strategically and proactively in order to maximize the benefit for people, water and wildlife, while also reducing the costs for future generations.

Below are some additional thoughts on how to pursue this important course of action.

1. Collaboration is a Foundation for Success

The scale and complexity of the situation facing our nation's forests and communities means that we must find ways to forge agreement among diverse interests about the "where, when and how" of forest management and then focus our resources on those landscapes that are poised for success. Collaboration, once considered "innovative" and "new," has become an essential tool in the tool box of those hoping to reduce wildfire risks, increase forest restoration and contribute to the sustainability of local economies. By bringing together county commissioners, local mill owners, water and utility managers, fire protection officials, conservation groups, scientists and others, collaborative groups can identify mutually beneficial solutions to forest health challenges and, sometimes by enduring a few bumps and bruises, pave the way for smooth and successful projects on the ground.

Although effective collaboration takes many forms, the Collaborative Forest Landscape Restoration (CFLR) Program has been a valuable vehicle for prioritizing and testing a variety of collaborative, science-based approaches to forest restoration that both reduce wildfire risks and contribute to local jobs and economic opportunities.

In just three short years since its inception, the CFLR Program has provided support to 20 projects in 14 states, with an additional 3 high priority restoration projects receiving support from non-CFLR funds. Through these projects, the CFLR Program is demonstrating that collaboratively-developed forest restoration plans can be implemented at a large scale with benefits for people and the forests. From fiscal year 2010-fiscal year 2012, the cumulative outputs generated by the funded projects already total: 94.1 million cubic feet of timber; 7,949 jobs created or maintained; \$290 million in labor income; 383,000 acres of hazardous fuels reduction to protect communities; 229,000 acres of fire prone forest restoration; and 6,000 miles of improved road conditions to reduce sediment in waterways.

Equally important is the long-term commitment these projects have fostered to both community sustainability and forest resilience.

We must continue to fully fund the CFLR Program as authorized by this Committee, including the matching fund and monitoring requirements, as well as the project planning and preparation activities that facilitate implementation success, over the ten year life span of the projects. We must also increase our emphasis on and support for collaboration as a fundamental aspect of successful forest restoration planning and implementation. This should involve applying lessons learned through the CFLR Program to improve National Forest management throughout the system as collaborative, large-scale projects are created and new land management plans are developed under the new forest planning rule.

2. Proactive Management is a Responsible Investment

Across the nation, communities and land managers are struggling with how to address tens of millions of acres of National Forest, and several million acres of other federal and non-federal lands, in need of treatment to reduce the risk of unnaturally large or damaging wildfires. In the absence of large-scale restoration management, the federal government spends up to \$2 billion annually on emergency fire suppression to minimize loss of lives, property, community infrastructure and vital natural resources. Hundreds of millions more are spent by local, state and federal governments, as well as private citizens, to address the devastating and often long-lasting impacts left in the wake of wildfires.

³Managing Changing Landscapes in the Southwestern United States, Center for Science and Public Policy, 2011, find here: http://azconservation.org/downloads/category/south-west__regional

Strategic, proactive hazardous fuels treatments have proven to be a safe and cost-effective way to reduce risks to communities and forests by removing overgrown brush and trees, leaving forests in a more natural condition resilient to wildfires. When implemented strategically, at a meaningful scale, these treatments can make a crucial difference in the size, spread and severity of wildfires. They can improve the safety and effectiveness of firefighters and provide protection for a community or essential watershed that might otherwise see extensive loss.

Many of these hazardous fuels reduction projects are also providing jobs and other economic benefits to rural communities. For example, a recent economic assessment of forest restoration in Oregon revealed that “an investment in forest health restoration has the potential to save millions of dollars in state and federal funds by avoiding costs associated with fire suppression, social service programs and unemployment benefits.”⁴ In addition, for every \$1 million invested in hazardous fuels treatments, approximately 16 full-time equivalent jobs are created or maintained, along with more than half a million in wages and over \$2 million in overall economic activity.⁵

It is absolutely essential that we maintain federal investments and skilled capacity in reducing hazardous fuels. The Ecological Restoration Institute’s (ERI) valuable new study on the efficacy of hazardous fuels treatments presented at this hearing is part of a growing body of literature documenting the many instances in which on-the-ground actions have modified wildfire behavior, thereby allowing firefighters to safely engage in protecting infrastructure and landscapes.⁶ Others have also compiled evaluations of a number of studies of hazardous fuels treatments that show that in most areas, when done right, the activities are effective. Rather than repeat those references, I will describe a couple instances where I personally witnessed the role strategic fuels reduction treatments can play in enabling an entire community to survive a horrific wildfire.

I refer first to the Esperanza Fire, an arson caused blaze which tragically cost the lives of five firefighters in California’s San Bernardino National Forest in October 2006. The Esperanza Fire also destroyed 30 homes, but the entire town of Idyllwild may well have been destroyed if not for the extensive hazard reduction activities that were implemented in the area thanks to funding from the U.S. Forest Service and Natural Resources Conservation Service. During an official oversight trip for my previous job with the House Appropriations Committee, I toured the entire Idyllwild area the day before the fire, and then witnessed the fire’s progression from a distance. Defensible space treatments implemented along the main roads into and out of Idyllwild fostered the safe passage of citizens and firefighters; areas where strategic thinning had reduced overly dense stands of trees served to modify the potential for crown fire; and reduced brush in proximity of structures helped to slow fire spread.

The post-fire assessment of Arizona’s record-setting 2011 Wallow Fire also clearly demonstrated that homes and forest were saved in and around the town of Alpine by management treatments applied in tandem with FireSafe practices near structures. I had the good fortune of flying with Project Lighthawk last summer over the entire Wallow Fire burn site. The fire area was huge, over half a million acres, and a very complicated and complex burn pattern occurred. It was clear that the extensive tree thinning treatments around the town of Alpine caused the fire to calm down so that firefighters, including the Conservancy’s own Southern Rockies Wildland Fire Module, could protect extensive infrastructure.

My informal case studies, along with those that have been more formally documented in recent publications, provide further evidence that proactive forest management pays. But it is also clear that the scale and pace of this proactive forest management must increase and that treatments must be balanced between both developed and wildland areas.

The Nature Conservancy was very disappointed to see that the President’s FY 2014 Budget proposes devastating cuts to the Hazardous Fuels Reduction programs for both the U.S. Forest Service and the Department of the Interior. The nation has experienced a 57% increase in acres burned this past decade; the National Interagency Fire Center is predicting extreme fire potential for most of the West this

⁴National Forest Health Restoration: An Economic Assessment of Forest Restoration on Oregon’s Eastside National Forests. Prepared for Governor John Kitzhaber and Oregon’s Legislative Leaders. November 26, 2012. Quote on page (iv). http://www.oregon.gov/odf/BOARD/docs/2013_January/BOFATTCH_20130109_08_03.pdf

⁵The Employment and Economic Impacts of Forest and Watershed Restoration in Oregon. Max Nielsen-Pincus and Cassandra Moseley, Institute for Sustainable Environment, University of Oregon. Spring 2010, page

⁶<http://library.eri.nau.edu/gsd/collect/erilibra/index/assoc/D2013004.dir/doc.pdf>

summer⁷. It does not make sense to reduce the nation's investment in one of the few proven federal programs that get us ahead of the problem.

We are also concerned to see that the President's FY 2014 Budget emphasizes protecting structures nearly to the exclusion of natural areas that support life and livelihood. The Conservancy agrees that funding is urgently needed to create community protection buffer zones that can limit the damage from wildfire. Fighting fires will remain costly until such buffers are in place and people feel safe.

But shifting too much funding away from undeveloped forest areas where fires have been excluded for a century, and conditions remain overly dense and susceptible to unnaturally damaging wildfire, will have a long-term negative impact on forest health and resiliency. The Nature Conservancy urges a balanced allocation of funding between treatments in wildland and developed areas.

Strategic mechanical fuels reduction in wildlands, combined with controlled burning to reduce fuels across large areas, can significantly reduce the chance that megafires will adversely impact the water supply, utility infrastructure, recreational areas and rural economic opportunities on which communities depend.

We hope that this Committee will work with the Appropriations Committee, the Administration and others to foster funding that facilitates proactive management and hazardous fuels reduction, including the use of fire as a safe and cost-effective management tool, at a meaningful scale. We also encourage sustained investment in applied research, such as the Joint Fire Science Program, that develop both information and tools that enable land managers to maximize the effectiveness and ecological benefit of fuels treatments.

3. Provide Sufficient Funding for Emergency Wildfire Response

The Nature Conservancy recognizes that even with a robust, proactive approach to land management, federal fire preparedness and suppression resources will need to be maintained at an effective level to protect life, property and natural resources. Unfortunately, wildfire suppression expenditures are currently far out of balance and threaten to overtake the vital management and conservation purposes for which the USDA Forest Service and Department of the Interior bureaus were established.

The dramatic increase of homes near natural areas that are prone to frequent and unnaturally damaging fire has added significantly to the cost of fire suppression. In the past, paying for this tremendous cost often resulted in "borrowing" or outright transfer of funding from critical land management and conservation programs into fire suppression accounts. Fire borrowing, and the threat of fire borrowing, has a chilling effect on the ability of land managers to plan the complex activities that modern forestry requires and retain skilled contractors and workforce. Previous hearings and GAO work documented the tremendous adverse impacts of this fire borrowing helping to generate the public outcry and Congressional action that led to the FLAME Act.⁸

The FLAME Act of 2009⁹ was signed into law as part of a bipartisan effort to change the funding mechanism for wildfire suppression by establishing two emergency wildfire accounts funded above annual suppression. The original version of this Act passed the House of Representatives in March 2009 with a vote of 412-3. These FLAME reserve accounts were intended to serve as a safeguard against harmful fire borrowing and should have represented an important change in the funding mechanism for wildfire suppression.

One of the cornerstones of the FLAME Act was the establishment of two FLAME wildfire suppression reserve accounts, one each for the Forest Service and the Interior Department. In passing the FLAME Act, Congress intended to fully fund federal wildfire suppression needs, while avoiding the need to transfer monies from other agency programs to fund emergency wildfire suppression expenses. Annual suppression was to be calculated using an improved predictive modeling that included the ten-year average and other indicators. The FLAME reserve accounts were to be funded at levels beyond average annual suppression expenditures and not at the expense of other agency programs. Additionally, any balances remaining in the FLAME accounts were to carry-over into future years so that funds retained in years when we have less than average expenditures could be held over for the inevitable, high cost years.

Disappointingly, the implementation of the FLAME Act has not proceeded as intended. Due to several factors, last year the Administration again transferred hun-

⁷<http://www.predictiveservices.nifc.gov/outlooks/outlooks.htm>

⁸Wildfire Suppression Funding Transfers Cause Project Cancellations and Delays, Strained Relationships, and Management Disruptions GAO-04-612, June 2004

⁹Federal Land Assistance, Management and Enhancement Act of 2009. Title V of Division A of 123 STAT. 2904 PUBLIC LAW 111-88-OCT. 30, 2009.

dreds of millions of dollars from the agencies' non-suppression programs into emergency response accounts before the end of FY 2012.

Forecasts for the fiscal year 2013 wildfire season suggest another costly year ahead and strongly indicate that funds will again be transferred from non-suppression accounts, resulting in severe disruption of agency programs, including the hazardous fuel reduction and other forest management programs that would help to reduce wildfire suppression costs in the future.

In order to move beyond this harmful and disruptive cycle of underfunding suppression needs and then robbing from other critical programs to fill the gaps, we recommend that the FLAME Accounts be fully funded as intended, separately from and above the ten-year average used to calculate annual wildfire suppression needs. We also recommend that annual suppression needs be fully funded using the ten-year average along with more predictive modeling based on current weather conditions, fuel loads and other data that contribute to wildfire risk. Finally, we ask that any remaining balance in the FLAME accounts at the end of FY 2013 carry over into FY 2014.

The Nature Conservancy further recommends that an expert panel be commissioned to provide options for a more effective and sustainable approach to federal emergency wildfire suppression funding. The critical life and safety mission associated with wildfire suppression should be guaranteed adequate funding, with oversight and efficiency safeguards, but this funding should not come at the expense of the other vital conservation, public service and science activities for which the federal land management agencies, and other agencies and bureaus which share the same federal funding source, were established. The Conservancy recommends that a new, separate federal funding source be established so vital fire suppression activities are funded distinct from existing land management requirements. One option the Committee might consider is the establishment of a "Disaster Prevention Fund" that could be utilized to support vital federal fire suppression actions during emergencies just as the Disaster Relief Fund is utilized to help communities recover after disasters. Fire suppression is different from other natural disasters, since the federal response is needed most acutely during the actual event. Such support should complement prevention and risk reduction activities discussed earlier, and post-fire recovery and restoration actions.

4. Communities Must Be Part of the Solution

Federal agencies alone cannot prevent the loss of homes, infrastructure and other values in the wildland-urban interface (WUI). Individuals and communities living in the WUI must meaningfully invest in preparing for and reducing their own risk from fire. Post-fire studies repeatedly show that using fire resistant building materials and reducing flammable fuels in and around the home ignition zone are the most effective ways to reduce the likelihood that a home will burn¹⁰. Similarly, community investments in improved ingress and egress routes, clear evacuation strategies, strategic fuel breaks and increased firefighting capacity can go a long way toward enabling the community to successfully weather a wildfire event.

Many communities across the nation are already deeply engaged in trying to proactively address their role within fire driven forest ecosystems, but this engagement must be both sustained and increased. For more than 10 years, The Nature Conservancy has worked cooperatively with the U.S. Forest Service and the Department of the Interior to foster the Fire Learning Network (FLN) that brings communities together and helps them build collaborative, science-based strategies that protect both people and ecosystems. The FLN supports public-private landscape partnerships that engage in collaborative planning and implementation, and provides a means for sharing the tools and innovations that help them scale up. Locally, the FLN helps federal land managers to: convene collaborative planning efforts; build trust and understanding among stakeholders; improve community capacity to live with fire; access training that helps fire professionals work with local communities; and address climate change and other emerging threats.

Community commitment is also necessary to effectively shift our national approach to wildfire from a costly emphasis on disaster response to a balanced and proactive strategy with multiple benefits. Research increasingly shows that rising wildfire suppression costs are directly linked to the growing presence of homes and related infrastructure in the wildland-urban interface.¹¹ A corresponding analysis by Headwaters Economics revealed that with 84% of the WUI is still undeveloped, so

¹⁰ See, for example, Four Mile Canyon Fire Findings. Graham, et al. Pages 64-69. http://www.fs.fed.us/rm/pubs/rmrs_gtr289.pdf

¹¹ Wildfire, Wildlands and People: Understanding and Preparing for Wildfire in the Wildland Urban Interface. Stein, et al. Page 7. http://www.fs.fed.us/rm/pubs/rmrs_gtr299.pdf.

there is tremendous potential for the costs associated with wildfire protection to exponentially increase.¹² According to the same study, if just half of the WUI is developed in the future, annual firefighting costs could explode to between \$2.3 and \$4.3 billion. By comparison, the U.S. Forest Service's total average annual budget is \$5.5 billion.

Given the potential for devastating increases in both values lost and public expense, a diverse range of agencies and organizations (including The Nature Conservancy) have begun promoting the concept of "fire-adapted communities." The Fire Adapted Communities Coalition established and hosts www.fireadapted.org, which provides access to a wide variety of educational materials and tools in support of community wildfire protection planning and action.

The U.S. Forest Service defines a fire-adapted community as a knowledgeable and engaged community in which the awareness and actions of residents regarding infrastructure, buildings, landscaping, and the surrounding ecosystem lessen the need for extensive protection actions and enables the community to safely accept fire as a part of the surrounding landscape.¹³ This level of individual and community preparedness goes beyond just developing a plan and begins to make the fundamental shift that must occur if we are going to get beyond our current wildfire suppression burden and toward restoring resilience to our nation's forests.

Programs such as State and Volunteer Fire Assistance provide important resources to help states and local communities develop and sustain community wildfire protection capacity. We encourage both the federal land management agencies and this Committee to prioritize programs that foster the development of fire-adapted communities and, specifically, to allocate other federal resources in a way that rewards communities for proactive actions that collectively result in national benefit. Building local community capacity to learn to live with fire is the most cost effective way of reducing harmful impacts to society, while also allowing for enhanced, safe and controlled use of fire to restore wildlands as appropriate.

5. Efficiency and Innovation to Increase the Pace of Success

The Nature Conservancy strongly supports the Administration's goal of accelerating restoration in our Nation's forests as described in the February 2012 report, *Increasing the Pace of Restoration and Job Creation on Our National Forests*. In this report, the agency acknowledges that the pace and scale of restoration must dramatically increase if we're going to get ahead of the growing threats facing our forest ecosystems, watersheds and forest-dependent communities. In order to facilitate this accelerated rate of treatment, we must make effective use of all available management tools and explore opportunities to increase the efficiency of planning and implementation processes.

Stewardship contracting, for example, is an innovative and critical tool that allows the U.S. Forest Service and Bureau of Land Management to implement projects that restore and maintain healthy forest ecosystems, foster collaboration and provide business opportunities and local employment. Stewardship contracts are the only administrative tool that can ensure up to 10 year supplies of timber, a level of certainty that encourages job creation and long-term industry investment. Without Congressional action, Stewardship Contracting authority will sunset on September 30, 2013. Permanent reauthorization is urgently needed to provide surety for contractors and communities and to ensure that the USFS and BLM retain this important proactive tool to address our daunting forest restoration needs.

The beneficial use of fire as a tool for resource management is another area where greater forest restoration efficiency and effectiveness could be achieved. By increasing the use of both controlled burns and naturally ignited wildland fires to accomplish resource benefit, land managers can accomplish both ecological and community protection goals on a larger scale and at reduced cost. In fact, some states annually reduce fuels on more than 100,000 acres in wildlands with fire treatments. The Nature Conservancy recommends that both Congress and the Administration make it clear that the safe and effective use of fire is a priority for land management agencies, and provide the necessary funding, training and leadership support needed to foster increased fire use where appropriate.

We were pleased to see the emphasis on collaborative, science-based and adaptive management contained in the new National Forest System Land Management Planning Rule and draft Directives. We hope that, once finalized, this new framework will be promptly implemented and will guide a new round of forest planning that is both more meaningful and more efficient, and sets the stage for timely implementation of projects that achieve multiple benefits on the ground. Clear guidance and

¹² <http://headwaterseconomics.org/wildfire/fire-research-summary/>.

¹³ http://www.fs.fed.us/fire/prev___ed/index.html.

support for the development and implementation of monitoring strategies will also be essential to the Rule's success.

Finally, while we are committed to the principles of public engagement and environmental review embodied in the National Environmental Policy Act (NEPA), we believe there may be opportunities to significantly increase the efficiency of these processes through targeted adjustments in policy and implementation. The U.S. Forest Service is currently testing and tracking a variety of innovative NEPA strategies that hold promise for broader application. Adaptive NEPA, for example, is a relatively new approach in which the official record of decision allows sufficient leeway for some variety of subsequent federal actions, thereby greatly streamlining the analysis, allowing for more efficient project implementation, and enabling land managers to more effectively incorporate emerging science. These innovative approaches to NEPA should be expanded and additional opportunities sought for streamlining policies and processes in a way that increases the pace and scale of implementation while holding true to the core values inherent in the Act.

Conclusion

Thank you for your attention to the important issues related to wildfire, forests and communities. We appreciate the opportunity to offer The Nature Conservancy's perspective on how we might shift our focus toward a more proactive and cost-effective management approach that provides multiple benefits to people and nature. Please let us know if we can provide any additional information or assistance to the Committee as you move forward in this arena.

The CHAIRMAN. Thank you, Mr. Topik.
Ms. Jungwirth.

STATEMENT OF LYNN JUNGWIRTH, SENIOR FELLOW FOR POLICY AND DEVELOPMENT, THE WATERSHED CENTER, HAYFORK, CA

Ms. JUNGWIRTH. Thank you, Senator Wyden. It's a pleasure to be here. I represent, I think, public land communities.

We're those little towns in the middle of your national forest. We've worked for 20 years to help end the forest wars, get people working together and make those towns vital and keep your public lands and our public lands in good condition. We are very affected by our wildland fire policy and we are even more affected by our wildland fires.

So we have 2 approaches to this.

One is about the budget and we're very happy that you're willing to take on OMB in their conversation. We, sort of, feel that in the national fire plan and in this cohesive fire strategy there are 3 pieces. People talk about 3 pieces, suppression, hazardous fuels treatment and/or restoration and fire adapted communities.

Our Federal Government funds suppression to the detriment of everything else. So preparedness in this wildland fire management budget is \$1.2 billion. Hazardous fuels, even at a reduced rate, is in the hundreds of millions and at one time was at \$600 million.

The community assistance piece of this budget was missing for the first 10 years. Funded through the Economic Action Program at \$12 million a year to help us learn how to live with fire, build our biomass plants, get our work done, train our work force. It disappeared after the first 2 years. It has only been resurrected since 2009 when the Forest Service decided perhaps they should proactively help communities learn to live with fire. It is funded as a mere \$2 million a year.

So if you want to have a robust culture of fire that deals with fire, treats the landscapes, make it work economically, you have to give the Forest Service some tools to work with communities, pri-

vate business at the local level where the land and the fire is, so that we can make this transition. We've had no tools to make that transition. So that's one part of the budget we'd like you to think about.

The other part is when you have a tornado you do not ask the National Weather Center to help those people with that disaster. The National Weather Center does not fund FEMA. Why is the Forest Service, your premier natural resource management agency, asked to fund fire disasters out of its natural resource budget?

We believe that any fire that takes more than a local type 3 team is an escaped fire. It is an emergency to ask the Forest Service to fund emergencies out of its own budget is a mistake. It will lead us to this horrible negative feedback loop we are now in.

So we're with Chris. We think we need to convene on this. We need to make a better, more sane decision for the people of America.

We're losing our forests. Our communities are losing their health. We're losing property. We're losing lives.

So on to solutions. What can we do know to reduce costs over time?

One of the things that we've learned is that collaborative planning does work. People will use fire use if they've had a chance to meet together and decide when and where and in what condition it is appropriate. That can reduce costs over time but that decision needs to be before the fire starts.

So we, sort of, embrace collaboration as a way to get this integration going. We know that if the Forest Service would take their vegetation management plans and integrate them with our CWPPs we could get more land treatments done on the landscape. But that doesn't happen on a regular basis. So we're having a hard time integrating the civil side with the agency side.

Finally, a skilled work force at the local level is going to save you a lot of money. In the West we identified 6,200 communities at risk. If each of us had a 20 man crew that was a conservation crew/fuels crew/fire crew you've got a 120,000 more fire fighters that you don't have to pay for every single day.

There are ways to be more efficient about this. There are ways to do it smarter. There's ways to save money. There is a way to make the Forest Service be kin to be again the premier natural resource agency in the world.

Thank you very much.

[The prepared statement of Ms. Jungwirth follows:]

PREPARED STATEMENT OF LYNN JUNGWIRTH, SENIOR FELLOW FOR POLICY AND DEVELOPMENT, THE WATERSHED CENTER, HAYFORK, CA

Thank you for the opportunity to participate in the discussion concerning wildland fire management. My perspective is as a member of a public land community, snuggled deep in the heart of the Shasta-Trinity National Forest, and as a leader in community forestry in the United States for the past 20 years.

I also serve as a core group leader of the Rural Voices for Conservation Coalition (RVCC), a community forestry policy education group comprised of county supervisors, environmentalists, forest industry, conservation industry and local non-governmental organizations who work collaboratively at the ground level to improve forest health, provide sustainable commodity volumes and increase economic opportunities for forest and range communities. RVCC members represent over 80 community forestry groups and in 8 western states.

I served on the Western Governor's Association's Forest Health Advisory Group from its inception and in that capacity was able to help draft the first National Fire Plan (the 10 year strategy) and the recent Western Region Cohesive Wildland Fire Strategy where I participated in the Fire Adapted Communities working group.

Our local organization, the Watershed Center, was founded twenty years ago prior to the closure of our local sawmill (and the loss of over 40% of our town's payroll dollars). Our forest was included in the Northwest Plan for the Recovery of the Northern Spotted Owl and we needed to build our capacity to adapt to the subsequent economic and social turmoil in our community. To help meet our community's needs we developed training programs for displaced forest workers, started a local small business incubator, built restoration programs and youth programs. We also facilitated a county wide fire planning effort starting in 1998, and participate in the long standing Trinity County Fire Safe Council. We aimed at rebalancing the community's relationship to the local landscape through stewardship and restoration. Today, our small organization in a town of 2,000 people employs 45 local workers during the summer field season (in restoration, fuels reduction, prescribed fire, natural resource surveys and planning, and youth programs) and has contributed over \$1 million to the local economy each year for the past 20 years.

There are hundreds of organizations like ours throughout the national forests of the west. By working collaboratively at the local level we have learned to create social agreement, leverage and integrate public and private resources, and build our strength and skills to deal with this stewardship responsibility we all feel for the land and our community. The knowledge our community forestry and range and fire management collaboratives have created over the years is now being shared throughout the west with community and agency actors in an attempt to more quickly spread successful innovations in wildland fire prevention, mitigation, and suppression. In 2011, as part of the learning of the Western Regional Cohesive Strategy planning group, The Watershed Center and its partners surveyed over 500 local organizations to find out what they felt were key elements contributing to successful fire adaptation strategies.

We have learned that a fire disaster is the result of never just one thing, and a fire safe community is never the result of just one thing. Becoming fire adapted is complex, the landscape and the people are not separable, and we must set up local institutions, infrastructure and culture for living with fire until at least the next ice age.

First, the budget

The first Ten-Year National Fire Plan (2000-2010) was developed through a robust collaborative process and had four focus areas:

1. Firefighting-Suppression and Preparedness
2. Rehabilitation and Restoration of Fire Adapted Ecosystems
3. Hazardous Fuels Reduction
4. Community Assistance

Over the years from 2000 to 2003 funding for fire fighting increased 57%, restoration and rehabilitation remained relatively even and hazardous fuels gained slightly, about 4%. The Economic Action Program, the highly effective and efficient community assistance flagship was funded at \$12 million per year for the first two years and then zeroed out. This pattern persisted throughout the entire 10 years and continues today.

We believe it is a fatal flaw.

It is a fatal flaw to increase suppression resources at the expense of restoration and fuels reduction. It is a fatal flaw to take away tools which allow the local Forest Service personnel to work with local communities and build social capacity to manage fire on the landscape. It is a fatal flaw to think that suppression by itself can solve the myriad of issues exposed by the increasing fire risk.

In 2009 the Forest Service decided to think about a proactive approach to community wildfire protection. By 2011 a small, elegantly conceived and implemented program, funded at about \$2 million was launched and a national Fire Adapted Communities Coalition was created. By 2012 the National Fire Protection Association (a strong partner) launched an excellent web-site to help communities access tools and information to help themselves become fire adapted (fireadapted.org). So this small investment of \$2 to \$2.6 million a year carries the agency commitment to community assistance to the over 72,000 community groups now identified at risk. Community preparedness through mitigation pays off. The return on \$1 of mitigation investment in the Colorado Springs Fire was \$527 in reduced costs. \$2.6 million in a 2014 wildland fire proposed budget of \$2.2 billion is strikingly absurd. A billion dollars for preparedness within the agency and \$2.6 million to support fire adapta-

tion and preparedness among the communities at risk, many of whom are federal forest communities?

While the administration and congress appear to be walking away from supporting hazardous fuels reduction and community protection, mitigation, and preparedness, the Secretary of Agriculture and the Chief of the Forest Service announce that “the federal government can’t deal with the fire risks alone”. It is both a relief and a terror to hear those words.

We never intended for the federal government to try to do it alone. We know that only through shared risks and shared responsibility can we protect our landscapes and our communities. We are now being told to “take responsibility”. Well, we’ve been trying to do that through our Community Wildfire Protection Plans, our Firewise Communities programs, our local offices of emergency services, our Fire Safe Councils. The counties of the west are mobilizing to an extent never seen before. But the west is littered with CWPPs that are not being fully implemented. Why? Because we can write rules and regulation for private development, individual homeowners can pick up a rake and get to work, NRCS will help us with fuels reduction on private agricultural and forest lands, State Fire Assistance will help with clearing around homes but we have very little ability to tackle the fire threat from our adjacent federal lands.

We cannot implement the WUI and the strategically placed fuels treatments identified in spatially explicit CWPPs and there are thousands of locally crafted, collaboratively designed CWPPs throughout the nation. You know the problems with planning, NEPA, appeals, etc so I won’t go into that. Suffice it to say, we can’t get the work done. So, OMB has decided to reduce funding for hazardous fuels in both DOI and Forest Service in 2014. That is pretty much the source of our terror. If you don’t help us build our capacity to become fire adapted (gaining knowledge and experience) and then don’t take down the roadblocks to use that knowledge on the land we will all fail.

It appears that our three pronged approach of suppression, land treatments, and community capacity has in reality turned into a one pronged spear of suppression. For over a decade our investments have been wrong.

Today the new “Cohesive Wildland Fire Strategy” has a strong focus on inter-agency and intergovernmental coordination and leveraging the three goals of the strategy. Its three goals areas are: 1. Suppression 2. Landscape Resilience, and 3. Fire Adapted Communities. It was created by a very robust national planning effort that included many more organizations and individuals than the 2000 National Fire Plan. But once again, congress and the administration believe the way to cut suppression costs in the long run is to increase suppression budgets, fund the 10 year rolling average out of the Forest Service base budget and, if that’s not enough, make the agency borrow from its own accounts to cover the difference. The budgets and resources are not lined up with the new strategy and the current reality. We will not burn our way out of this risk.

If a local Type 3 team cannot contain a fire and a Type 2 or Type 1 Incident Command Team is brought in, then the fire is an emergency and it should be funded off-budget. Period.

Enough with the budget priorities, on to solutions!

In the 2000 National Fire Plan we collaboratively described the silos of suppression, restoration, hazardous fuels reduction, and community assistance. We invested heavily in suppression but our states and communities began organizing to deal with fire risks.

In the 2013 National Cohesive Wildland Fire Strategy, we decided coordination among state, federal, and local actors was a way to co-ordinate among the silos. We appear to be investing heavily in suppression but trying to work out inter-agency coordination administratively.

We predict the next iteration will finally focus on integration of these silos. That will require evaluation of some of these proposals:

1. Integrated budgets, performance measures, and targets.—For example: hazardous fuels reduction projects/restoration projects have acres treated targets and personnel are rewarded for exceeding targets by reducing unit costs. What if they were rewarded for meeting targets by treating acres in the WUI and identified in CWPPs? Back country acres could count 1:1. Strategic WUI acres could count 3:1. Strategic WUI acres that provided saw timber and utilized biomass could count 5:1. Timber targets that met hazardous fuels reduction goals in the WUI and CWPP strategic areas could count 2:1. Hazardous fuels treatments in the back country that protected critical fish and wildlife habitat could likewise have a multiplier effect. People need to be rewarded for reaching multiple objectives.

2. Integration of agency Wildland Fire Management Plans with CWPPS and tribal eco-cultural restoration plans.—We do all lands watershed planning, we need to do all lands fire watershed planning. Integrate those plans into the WFDSS, incident decision support documents. Not only will incident teams understand the fire breaks, roads, and water sources available to them on private lands and the restoration goals on public lands, but this up front integration will anticipate the annual tension between the “fire use” mission of the federal agencies and the “fire suppression” mission of the state and local entities by some pre-event guidance about when, where, and how to use fire for resource benefit with spatially explicit documents. It could even enable pre-event planning for mitigation of the post-event impacts so the arguments over BAER and salvage and reforestation could be anticipated and dealt with. The gulf between the Incident Command professionals and the local restoration and fire protection efforts was identified in our Fire Adapted Communities Survey as the most important issue to be addressed. We are planned, digitized, mapped, and organized. Use us.

3. Integrate the skilled workforce.—Business Operations can help us build local multi-skilled, cross-trained public and private sectors crews who can remain in place doing conservation practices, prescribed fire, hazardous fuels reduction, and planning on public and private lands. This cross trained workforce can also be trained and equipped to be the volunteer fire department “wildland division” to respond with our federal partners as initial attack for fire incidents. It means using agreements with local ngos and volunteer fire departments for fuels management. It means deliberately using stewardship contracting authority to package work across a full field season for crews of twenty and awarding them locally as a best value to the nation. Local contractors and ngos can then use NRCS funded projects, private landowner projects, state fire assistance projects to fill out the field season and keep that crew available not only for wildfire events, but also for on-call pile burning and prescribed fire. This model is emerging and we need to make it easier to do. An in-place stewardship workforce is our next big task.

4. Use the tribes.—Building a culture of fire takes times. Building the desire in the culture to learn how to live with fire takes a long time. Tribal cultures are leading the way with their eco-cultural restoration plans. We need to be brave enough to support them. Our federal agencies need to be nuanced enough and flexible enough to engage with these highly motivated and highly knowledgeable people and let them help us find our way forward to locally adapted socio-ecological systems.

The people who live and work in and adjacent to our federal lands have tried to be good partners to the federal agencies. We have to figure out how to live with fire on this landscape. It is only increasing. Instead of putting all fire out, we need to increase the good fires and decrease the bad ones. We need to figure out the role of logging and silviculture to adapt to climate change and mitigate fire risk. And since we are going to be experiencing fire on our lands over and over and over, we need to find a way to manage the forest resources to produce revenue for its perpetual management and protection. Like the Secretary says, “we can’t do it alone”. Thank you for the opportunity to participate in this most important discussion.

A Comparison of Suppression Funding Levels (including FLAME), U.S. Forest Service and Department of the Interior*

| | Forecast (1) | | 10-Year Average (2) | | FY13 CR Levels (PL 112-175) (3) | Sequestered FY13 CR Levels with Sequestration (4) | Difference between Sequestered FY13 CR Levels and Forecast | Difference between Sequestered FY13 CR Levels and FY13 10-Yr Average | Difference between Sequestered FY13 CR Levels and FY14 10-Yr Average |
|------|--------------|-------|---------------------|-------|---------------------------------|---|--|--|--|
| | FY13 | FY14 | FY13 | FY14 | | | | | |
| USFS | \$985 | \$981 | \$996 | \$852 | \$852 | \$307 | \$178 | \$124 | \$169 |
| DOI | \$281 | \$309 | \$378 | \$369 | \$369 | \$319 | \$68 | -\$20 | \$29 |

* All values are in million dollars and include annual suppression and FLAME levels

Sources:

(1) Federal Land Assistance, Management and Enhancement (FLAME) Act: Suppression Expenditures for Interior and Agriculture Agencies: March 2013 Forecasts for Fiscal Year 2013

(2) FY2013 and FY2014 USDA Forest Service Budget Justification; FY2013 and FY2014 DOI Budget Justification - Wildland Fire Management

(3) Levels are adjusted for inflation but do not include sequestration

(4) Budget Control Act of 2011 (PL 112-25) - 5.3% Sequestration cut to discretionary programs

The big question here is "where is the extra money going to come from?"

The CHAIRMAN. Thank you.
Ms. Vosick.

STATEMENT OF DIANE VOSICK, DIRECTOR OF POLICY AND PARTNERSHIPS AT THE ECOLOGICAL RESTORATION INSTITUTE, NORTHERN ARIZONA UNIVERSITY, FLAGSTAFF, AZ

Ms. VOSICK. Chairman Wyden, Senator Murkowski and members of the committee, thank you for this opportunity to present the conclusions from a recent study completed by the Ecological Restoration Institute at Northern Arizona University. We examined the ecological and economic effectiveness of hazardous fuels reduction and restoration treatments in our study.

My name is Diane Vosick. I'm the Director of Policy and Partnerships at the ERI. Our institute, under the direction of Dr. Wally Covington, is well known for its work in developing ecological restoration treatments that include burning, thinning and thinning and burning and testing the results of those treatments. We also look at the economic and the social implications of restoration as well.

Today I'm joined by my colleague Dr. Yeon-Su Kim, who is the lead economist for this project and is a faculty member of the School of Forestry.

In January 2012 the Office of Wildland Fire at the Department of Interior asked us to examine some persistent questions that have been asked by the Office of Management and Budget as well as by the Government Accountability Office regarding the effectiveness of fuel treatments and restoration. I'm not going to go into great detail on the report. You all should have a copy of that report. But I am going to focus my remarks on the conclusions that we reached that are pertinent to the topic today. How can we improve our Federal wildland fire management?

The answer based on our analysis is straightforward. We need to be more aggressive about solving underlying problems of degraded forest health and excess fuels by affecting more treatments that restore the landscape. Our study provides ample economic and ecological evidence for this approach.

In summary we did several things.

First, we used an evidence based approach, similar to the one used in medicine to go through the literature and analyze the effectiveness of treatments.

What we found in the literature is that treatments can reduce fire severity and tree mortality during a wildfire. We also found that treatments are effective at storing carbon onsite.

We also looked at wildfire simulations and that showed that treatments can change fire behavior, fire severity and increase fire-fighting effectiveness thereby reducing suppression costs.

Treatments are shown to be effective in protecting communities in both wildfire simulations and also in just getting out in the field and looking at them. I would draw your attention to page 11 of this report and a picture of treatments outside the city of Alpine. These treatments protected the city of Alpine during the 2011 wildfire, were extremely effective. I mean, it's a pretty dramatic representation.

But what we have found is that WUI treatments are effective. However, if treatments had occurred at broader scales such as outside the wildland urban interface there would be a greater impact on reducing these large severe mega-fires. We can improve the ecological and economic effectiveness of treatments if we get on the problems sooner, before forests have degraded and are departed from their natural conditions.

Finally we found that if present trends of development in the wildland urban interface continue during a time of increasing drier and warmer climate, we will see increases in suppression costs.

One of the key questions we were also asked was when will a Federal dollar invested in treatments result in a Federal savings in suppression?

As I mentioned previously we demonstrated through the literature that treatments can be effective. However, asking the question this way is an insufficient analysis for understanding the full value that treatments impart to both the ecosystem as well as communities. In addition, it fails to ask the question what is the consequence of inaction?

You all have in front of you a copy of the Schultz Full Cost Accounting fire. We did this in partnership with the School of Business at NAU. It presents a pretty grim example of what happens as a result of inaction.

We sought to calculate the full cost of this fire and the subsequent post fire flooding that occurred in the Flagstaff and Coconino County area. Through surveys and interviews we calculated that this fire cost between \$133 million and \$147 million. The biggest cost was the loss in property values to adjacent land owners, \$60 million. The most devastating cost was the loss of a 12 year old in the post fire flooding.

So in conclusion the evidence shows that treatments are effective. However, looking at treatments only in terms of suppression savings is inadequate to understand the full value that we accrue by doing this work. In order to get ahead of the large and severe fires more treatments are needed and they are needed outside the wildland urban interface where the big mega-fires boil up. By treating degraded landscapes sooner we can be more economically and ecologically effective.

Finally we need to manage our wildland urban interface to reduce fire risk and suppression costs.

Thank you for this opportunity to speak to the committee.

[The prepared statement of Ms. Vosick follows:]

PREPARED STATEMENT OF DIANE VOSICK, DIRECTOR OF POLICY AND PARTNERSHIPS
AT THE ECOLOGICAL RESTORATION INSTITUTE, NORTHERN ARIZONA UNIVERSITY,
FLAGSTAFF, AZ

Chairman Wyden, Senator Murkowski, and members of the Committee, thank you for the opportunity to present conclusions from a recent study completed by the Ecological Restoration Institute at Northern Arizona University examining the ecologic and economic effectiveness of hazardous fuels reduction and restoration treatments.

My name is Diane Vosick. I am the Director of Policy and Partnerships at the Ecological Restoration Institute. Our Institute, under the direction of Dr. Wally Covington, is well known for scientific research on how to restore forest ecosystems and lower fire risk to communities. In addition to examining the biological responses to forest restoration, we also examine the economic and social implications of forest restoration throughout the West. Also, and perhaps most important, we take the

best available knowledge about restoration and communicate it in a language that is accessible to a wide variety of audiences, including collaborative groups and land managers who are designing and implementing forest restoration approaches at large scales. I am joined today by my colleague and the lead economist on the report, Dr. Yeon-Su Kim, Professor at the School of Forestry at NAU.

In January 2012, the Office of Wildland Fire at the Department of Interior asked us to conduct a third-party analysis of several persistent questions asked by the Office of Management and Budget and the Government Accountability Office about the effectiveness of fuel reduction treatments. We assembled a group of wildfire economists to examine five questions:

1. Have the past 10 years of hazardous fuel reduction treatments made a difference? Have fuel reduction treatments reduced fire risk to communities?
2. What are the relative values of treatment programs at the landscape scale?
3. How can we improve current and future economic returns to restoration-based hazardous fuel reduction treatments?
4. What are the fuel treatment, wildland-urban interface, and climate change effects on future suppression costs?
5. When or will investments in fuel reduction treatments lead to a reduction in suppression costs?

Rather than going into detail on the answers to each of these questions, I will focus on the findings that pertain to the subject of this hearing, “How can we improve federal wildland fire management?”

The answer is straightforward—we need to be more aggressive about solving the underlying problems of forest health and excess fuels. Our study provides ample economic and ecological evidence for why this makes sense.

- Using an evidence-based approach that uses the best available science, similar to the approach used in medicine to identify effective therapies, we concluded that fuels and restoration treatments can reduce fire severity and tree mortality in the face of wildfire. Treatments also increase the amount of carbon stored on-site over the long term.
- In addition, various wildfire simulations show that treatments can change fire behavior and fire severity and increase fire-fighting effectiveness. Thus, suppression costs can be reduced.
- Treatments are shown to be effective in protecting communities in wildfire simulations and in real wildfire experiences. HOWEVER, if treatments occurred at broader scales—such as outside the wildland-urban interface, or WUI, then there would be a greater impact on reducing damage from large fires.
- We can improve the economic and ecological effectiveness of treatments by acting before forests become too departed from their natural conditions.
- If present trends of development in the WUI and warmer and drier conditions continue, we will see increases in suppression costs.

One of the key questions we were asked was when investments in federal fuel treatments will offset federal suppression costs. As I mentioned previously, well placed hazardous fuel reduction and restoration treatments can reduce suppression costs. However, the question is insufficient to illuminate all the collateral benefits of treatments that go beyond suppression savings. Also, it does not address the full cost of catastrophic wildfire on all sectors of society if we fail to take action.

Studies conducted by the ERI demonstrate that treatments are beneficial to improving water resources, aesthetics and recreation opportunities, forest health and resilience, and wildlife habitat.

The case study of the Schultz Fire (which is included in the full report) provides a grim example of what happens when we fail to act. We sought to calculate the full cost of the fire and the post-fire flooding that impacted Flagstaff, Arizona, and Coconino County following the fire in June of 2010. Through surveys and interviews, we calculated that the full cost of the 15,000-acre Schultz Fire is between \$133 and \$147 million. The cost was spread across four federal agencies, three state agencies, three utilities, local municipalities, nonprofits, and citizens. One of the largest costs is nearly \$60 million in lost property values associated with the event, and one of the most devastating costs was the loss of a 12-year-old child. In contrast, had we treated every acre that burned at the high cost of \$1,000 per acre, we could have saved between \$9 to \$10 in avoided fire and flood cost per each dollar spent.

In conclusion:

- The evidence shows that fuels treatments are ecologically and economically effective. However, assessing the value of treatments only in terms of reducing

suppression costs is an inadequate analysis for understanding the full economic and ecological value of treatments.

- In order to get ahead of the cost of large and severe fire, more treatments will be needed outside the wildland-urban interface.
- By treating degraded landscapes sooner, we can maximize economic and ecological effectiveness.
- And finally, development in the wildland-urban interface and intermix should be managed to reduce risk.

Thank you for the opportunity to speak before the Committee.

We respectfully submit the two studies referenced in this presentation as part of our testimony (The Efficacy of Hazardous Fuel Treatments <http://library.eri.nau.edu/gsd/collect/erilibra/index/assoc/D2013004.dir/doc.pdf> and a Full Cost Accounting of the 2010 Schultz Fire <http://library.eri.nau.edu/gsd/collect/erilibra/index/assoc/D2013006.dir/doc.pdf>).

The CHAIRMAN. Ms. Vosick, thank you.

Chief, let's start with the air tankers. These air tankers are supposed to be strategic assets, not museum pieces. We've got something like a quarter of the tankers today that we did in 2002. I believe our country needs at least 7 additional next generation air tankers flying this fire season.

We learned yesterday that the Forest Service was able to award 3 of the 7 pending contracts for next generation air tankers. I gather the other 4 are under a stay because of this ongoing protest.

Will the 3 additional air tankers, the ones that were awarded yesterday, be able to operate this summer?

Mr. TIDWELL. Yes, in fact one of them was flying in Southern California over just the last couple days. So we already have one of those aircraft operating. We're expecting the other 2. They're going through their static and drop tests. That they'll be soon be ready to fly.

The CHAIRMAN. OK.

What is being done to bring on the additional 4 next generation contracts this summer?

Mr. TIDWELL. We're working through the protest process which is part of our contracting regulations. We'll continue to work through that to be able to see where we end up.

The CHAIRMAN. We've just got to cut through that. I understand there are issues with respect to stays. I want us to do everything that's necessary to override those stays because we have got to have timely operation of these 7 additional planes. I want you to tell Senator Murkowski and I, as well as this committee, what we need to do to deal with that.

Now I next want to turn to the situation with OMB because I think this is so critical to the question of what this committee needs to do to ensure that we get the resources for fire prevention.

So Chief, and Deputy Assistant Secretary Thorsen, when did you last meet with OMB to determine how much funding should be set aside for the upcoming fire season?

Mr. TIDWELL. We have routine meetings with the staff at OMB throughout the year to keep them abreast of what's happening in the fire season. But in each year prior to development—

The CHAIRMAN. When was the last one, Chief? I want to find out when the last one was, who was there and what was said because we have got to turn this around. As you know on this committee, this waltz between the agencies and the Office of Management and

Budget just goes on year after year after year. The urgency of preventing fire is what is on the mind of the committee.

So when was the last meeting with OMB?

Mr. TIDWELL. I'll have to get back to you as to the date and who attended that meeting. But I'll be glad to provide that.

The CHAIRMAN. Ms. Thorsen, do you know when the last meeting was?

Ms. THORSEN. Not by date, sir. But we too also have ongoing conversations with OMB. These discussions have been going on in the Administration on what kinds of alternatives might be available.

The CHAIRMAN. OK. I would like to know for the record when the last meeting was. I would like to know who was there.

The CHAIRMAN. Now, given the fact that you have these meetings on an ongoing basis, what has been the position of OMB, particularly on this very odd argument they seem to be making that says there's really no justification for these prevention moneies? So I gather that has been the position. If you could tell me more about what was said by OMB officials in your response, that would be helpful because what we're going to do when we get this is try to figure out how to pull the relevant parties together and turn this around.

This waltz has gone on long enough. I am committed to turning this around. So what has been the tenor of these discussions with respect to this argument that they say you can't justify the prevention and then what do you say?

Both the Chief and Ms. Thorsen.

Mr. TIDWELL. The tenor of the discussions has always been around the increasing costs and what can we do to be able to address that. It's one of the things why we've been implementing our risk management decisions. So that when we do have a large wild-fire we can do a better job to make the best decision, using the best science, the best expertise, the best technology to recognize that when our actions are going to be ineffective and unnecessary we shouldn't be putting people and pilots at risk.

Because of these actions we've been implementing over the last few years, just last year alone, we saved over \$377 million by avoiding risk that would not have made any difference on those fires. So this is the discussion we're having with OMB is to be able to show that the actions we're taking, we're doing everything we can to be able to manage appropriately but at the same time to be able to have the resources that are necessary.

The CHAIRMAN. My time is up. I know that 2 of you have to handle, very gingerly, these discussions with respect to OMB. But I also know that they have repeatedly questioned the justification for prevention. I'm committed to getting to the bottom of this.

This has got to stop. My time is expired. We'll have another round of questions.

Senator Murkowski.

Senator MURKOWSKI. Thank you, Mr. Chairman.

Chief, it seems that everyone here on the panel would agree that our situation with our hazardous fuels and how we deal with the treatment is critical. It's a priority. Secretary Jewell has described the condition of our Western forests as a tinder box. I think that you have pretty much told this committee the same thing.

Again the consensus is that this work is important work. It's necessary. It's valuable. That we need to invest more in treatments, not only where we have the wildlife urban interface, but beyond that as well.

Yet, when we look at the budget it looks like we're going a different direction. The budget cuts to hazardous fuels programs at both agencies, a 50 percent cut at Interior, a 30 percent cut at Forest Service. This is a significant departure then from what appears to be the consensus in the direction that we're taking.

Furthermore, you're taking \$50 million from the hazardous fuel program and proposing to use it for modernization of the larger air tanker fleet.

So can you give me the rationale behind taking the money from hazardous fuels and using it to pay for the air tanker modernization?

Mr. TIDWELL. Senator, it comes down to just the simple reality of having to address the suppression needs with the new aircraft. At the same time just between FY2012 and our request from 2014 to meet the 10-year average for the Forest Service we had to put another \$138 million into suppression to meet the 10-year average. So when you look at what you've already brought out that over 41 percent of our budget is currently in fire. It gets to a point where you just have to stop putting so much into the fire program.

So, you know, one place was to look at reducing, you know, fuels, you know, for FY2014 with a focus on doing the highest priority work in the wildland urban interface and then using our restoration efforts to be able to accomplish that hazardous fuels reduction outside of the WUI. It's just a simple problem with having to increase funding in suppression and only having so much of a budget to be able to work with.

Senator MURKOWSKI. We all understand the budget limitations and the constraints. But it seems to me that when you take the money from the program, you would reduce the number of fires you're going to have to deal with. It seems to me when we're moving money from one pot to another, taking it from hazardous fuels, I think that is pretty risky.

I made comments in my opening that we haven't clearly defined what our aviation fleet should look like. When we look to the efficacy of suppression and the hazardous fuels treatments, we also need to be looking at the efficacy of our aerial firefighting as we work to reduce the suppression costs. So it would seem that in order to show the value of each aircraft were to this firefighting program you've got to be able to track some kind of performance data.

How do you do that? What are you using to determine aviation performance data?

Mr. TIDWELL. Last year we started to keep track of where every retardant drop was put down and then using a sample of the effectiveness by basically talking to the people on the ground tracking the conditions. We want to expand that again this year to the point that in the future all of the aircraft will have a system onboard so they can automatically track those loads. Then we'll be able to do this systematic review so that we can learn where we're being the most effective, which of the aircraft.

That's part of the strategy that we—the way we designed our next generation contract is to have a mix of different aircraft. Then by being able to evaluate their performance then we can decide which of these aircraft is the best buy? Which are the most effective airframe for us to pursue?

So that's what we're going to be working with, especially as we bring on the next generation aircraft.

Senator MURKOWSKI. Isn't it the situation though that you have different fires that require different types of suppression and clearly different types of aviation assets? What works in Alaska, you know, the scoopers that can come and just suck it out of the lake right there? Then fly low over those fires is one thing that works there as opposed to application of flame retardant in some of your fires in the West.

So I'm hoping that it's not going to be a one-size-fits all approach. That you are really, really are looking at the efficacy of how we deal with all of our fires in a pretty big area.

Mr. TIDWELL. Yes, it will include the use of water scoopers. It will include the use of the VLATs that are on. Hopefully we'll have on call when needed. It will also you look at our large air tankers, medium air tankers and down to the single engine air tankers that the Department of Interior provides.

We need that full mix of different aircraft to approach or to deal with the fires that you've described. There's so many different conditions across this country we have to deal with. That's why we need a mix of different aircraft to be able to address all these conditions.

Senator MURKOWSKI. Thank you, Mr. Chairman.

The CHAIRMAN. Senator Udall.

Senator UDALL. Thank you, Mr. Chairman.

Let me start by associating myself wholeheartedly with your comments and the Ranking Member's about OMB. I think you may be a little too kind when you talk about a waltz. It feels to me like OMB isn't even entering the dance floor. I agree that we have to move in a way that takes into account what happens when we remove those fuel loads.

In that spirit I want to turn to Mr. Topik and thank you for your expertise. I want to thank The Nature Conservancy for all the great work you're doing in Colorado. Let me ask you your opinion of this topic.

I have a hard time, as I've said, understanding why OMB would propose cutting a program that aims to reduce the severity of fires by removing the fuel source. I've introduced legislation that would tap into the FEMA disaster relief fund per what I think Ms. Jungwirth powerfully said, to help support wildlife mitigation projects. Can you briefly address the effectiveness and the cost of fire mitigation?

Mr. TOPIK. I believe there is an abundance of evidence that hazardous fuels treatments in the right places have lasting effects that are positive for both the environment and for fire suppression. I just was given a new study that's coming out today or tomorrow on a meta-analysis of 62 different hazardous fuel studies. Once again in the bulk of the areas where treatments occur there are positive benefits.

There are some places where you may have stand replacing kinds of fires such as in the Chaparral Fires we're seeing where it doesn't obtain. But there is a preponderance of evidence such as the Ecological Restoration Institute's work that shows that it does work.

I would encourage the—to be so bold that the—my love of the Constitution is that the Congress has the power of the purse here and that I really appreciate you all addressing these issues. I think it's so vital that we've heard for years that an ounce of prevention is worth a pound of cure. We need to do it.

Senator UDALL. Thank you for that.

Chief, let me turn to you and return to the topic of aircraft.

You're well aware that the NDAA, the National Defense Authorization Act provides direction to the Department of Defense to transfer divested C-27Js to the Forest Service. Can you provide an update on the receipt of those divested aircraft? In particular have you had enough access to the C-27s in order to determine the specs and the potential modifications that may be needed? Do you see any other potential road blocks in this process?

Mr. TIDWELL. Currently we were waiting for the Air Force to complete their analysis and determination why these aircraft are surplus or not. As soon as that's completed. They determine that they are we are ready to take possession of those aircraft.

We have started to do some of the analysis as to what it will take to retrofit either a MAF's unit or a tank on these so they'll—we can retrofit them for retardant. At the same time to recognize that modifications we'll have to make on these to take a military aircraft and to make it into our mission, some of the equipment, armor that are on these aircraft, they're not necessary for our missions. So we'll have to make those modifications.

Senator UDALL. Allow me to reiterate that I've been on your doorstep about the next generation contracts as has the Chairman and the Ranking Member. I will also be on the doorstep of the Air Force if this doesn't happen as quickly as it needs to happen. I don't unnecessarily want to put you in the middle of this, but I want you to know that we've got to get this done. So I want to be updated on it.

You mentioned call when needed contracts just a few minutes ago. You know fires don't wait for contracts to be signed. You've said you'll have access to these air resources.

Could you share with us the fiscal effects of relying on these types of contracts? Then back to the C-27Js, would they be a cost effective addition to the tanker fleet?

Mr. TIDWELL. You're point on the call when needed resources. They do come at a higher cost. That's why we work together with the Department of Interior to look at the resources that we need at the start of the year. That's what we try to contract for because that's the exclusive use contracts are definitely cheaper.

Call when needed contract will run about one and a half to 2 times as much for the same resource as an exclusive use contract. So we do everything we can to have the resources we need at the start of the year, but as the fire seasons develop and we need to bring on additional resources we can use call when needed. We usually use that with helicopters.

As far as the C-27Js, they will be an efficient asset that the work that we've done so far that we feel that we'll operate a little bit less than what we currently are anticipating with the next generation. That includes the requirement that we have to be able to also include in the operation the replacement costs. So as we fly these aircraft we also have to set aside additional funds so that when 20 years from now we'll have funds set up in an account so we can buy another aircraft. When you factor that in it's still a little bit more efficient than our current contract.

The other key part about the C-27Js which I think is just essential for us to have a part of. Our fleet needs to be government owned, contractor operated. It gives us that certainty, that even under the most difficult situations we're going to have some aircraft to fly.

Our contractors over the years have done an excellent job. But they have to deal in the business world. We've all seen some of the things that have happened when we've had to shut down these aircraft because of safety concerns and then other things happen when a contractor decides no longer to fly in the middle of a fire season. So ideally if we could have some government owned, contractor operated and then contractor owned, contractor operated aircraft, I think that provides us the best mix of large air tankers.

Senator UDALL. Chief, thank you for that.

What I hear you saying is that you want to fight 21st century fires with 21st century aircraft. We're fighting 21st century fires with Korean War era aircraft. We need the next generation aircraft at our disposal. We need these C-27Js at our disposal.

Thank you.

The CHAIRMAN. Thank you, Senator Udall. I know Colorado just got pounded last year. I'm going to work very closely with you. I know the committee will. We just appreciate your expertise and passion for this.

Senator Heller is next, but he is being very gracious and Senator Risch will go. Then we'll have Senator Franken and then Senator Heller.

Senator RISCH. Thank you very much.

This hearing is—we're supposed to talk about what's going to happen this year. I'm pleased to say we had Secretary Vilsack and Secretary Jewell at the National Interagency Fire Center in Boise last month to look at the prospects for this year and look at the readiness of that agency. I can tell you they are ready. The difficulty, of course, is ready for a certain amount. If they get overwhelmed it's very difficult.

They have excellent equipment. They have even better personnel. They're experienced. So they know how to do this. They're ready.

They actually got tested on Friday. We had a fire just about 50 miles west of Boise. Everything, every landscape is different whether it's Colorado, Eastern Oregon, and I'm talking rangeland now, Alaska or Nevada or Arizona.

But right in the Boise area we had a very dry spring. The result of that is we have very limited fuel on the rangelands. So this was a 380 acre fire. The wind was blowing about 20 miles an hour. In an ordinary year it probably would have been a several thousand

acre fire. But they were able to get right on it. The fuel load was low. They kept it to 2, 300 acres.

I'm glad we're talking about solutions because I think everyone now is aware of the problems that we have. We need to talk about solutions. Long term solutions are important.

When I was Governor we got a roadless rule in Idaho. We're the only State that does have a State sponsored roadless rule. It was affirmed by the ninth circuit this year. I want to again, publicly thank Chief Tidwell for the Forest Service commitment to that.

One of the real benefits of that particular plan and one of the things we've focused on was small communities that Ms. Jungwirth talked about. That has, in the roadless areas, particular emphasis on prescription type of preparations for fires that come through there. We're very helpful with that.

But having said all that. I have some suggestions. Chief Tidwell these numbers will be interesting to you.

You have about, we, the Forest Service, has about 20, a little over 20 million acres in Idaho. Now if you take out of that the roadless and the wilderness you take out about 12 and a half million acres. So you get down to around 7 and a half, 8 million acres, something like that.

Idaho, on the other hand has endowment funds. We've got 2 sections out of every township. Utah's got 4 and some other States got a lot more than that. But we only got 2. But none the less we've got 2.4 million acres.

Last year we took 330 million board feet of timber off of those 2.4 million acres. We got \$50 million for school endowment programs.

The Forest Service, on the other hand, has 3, 4 times that or more that's available for that. But compared to our 330 million, you only took off 79 million board feet. But last year 1.6 million acres burned in Idaho.

So a lot of that timber that you could have taken off of it is laying on the ground now. It's black, probably not salvageable. The solution here seems almost too clear.

The Forest Service needs to step it up. If you step it up you'll get rid of the fuel. You'll do a whole lot better as we go forward.

I mean the difference is stunning. 79 million of yours compared to 330 million of ours where you have 4 or 5 million—or you have 4 or 5 times the amount of land. So I hope you will step it up. It will do better as we go forward.

As far as the BLM is concerned, I know you have environmental people that are after you all the time. But again, if you get the cows on it in the spring and you get the fuel off in the spring, you're going to have less severe fires. I think that there's a recognition of this coming. I hope the agency will go forward in that respect.

So, thank you for holding this hearing. I think the solutions are important. I think we're all coming together better on the fact that we can do better. We're going to have to do better as we go forward with seemingly less resources and a climate that is more susceptible to fire.

So thank you for your good work that you do. Thank all of you for your support.

Mr. Decker, I'm glad to hear that Oregon has got the pretty much the same view that Idaho does. As far as the State grounds are concerned, we're doing really, really well. I hope the Federal Government will be a good neighbor and will do as well as the State is on their grounds on stopping fires and on doing long range planning that's necessary.

My time is up. Thank you, Mr. Chairman.

The CHAIRMAN. That point about the Oregon/Idaho partnership is particularly important, Senator Risch. We're going to prosecute that.

Senator RISCH. By the way your comment, previously, about Colorado being hard hit last year. We had 3 fires.

The Halstead Fire of 182,000 acres.

Trinity Ridge, 138,000.

Both in Southwestern Idaho. One of them burned from July to October. People in Boise sat on the edge of their seats every night turning on the news. We were afraid we were going to lose some of those small communities. We watched at night after night after night because of the hard work of the State and the Federal fire-fighters we were able to stop it.

We had a Mustang Fire that was 150,000 acres.

So we weren't—we paid our dues last year too, Mr. Chairman. Thank you.

The CHAIRMAN. Good point.

Senator Franken.

Senator FRANKEN. Thank you, Mr. Chairman. Thank you for this hearing and to the Ranking Member. Thank you for all the witnesses. This has been just fascinating.

Senator Risch brought up school trust funds and Chief, in the interest of time I'm going to submit a question for the record regarding the boundary water canoe area land exchange. I want to urge you to take a good look at the funding request submitted by the Superior National Forest and to encourage you to continue to work with Minnesota on both the sale and exchange aspects of that issue.

Senator FRANKEN. I think last time we had a hearing on wildfires or maybe it was 2 times ago, we talked about climate change. From the testimony that I'm hearing I think this is very crucial. I think this is just a—we're talking about where we're spending money.

Last—you said, Chief Tidwell that the season now is 60 days longer than when you were fighting fires. Do the scientists at the Forest Service say that this is related to climate change? You said they did 2 years ago. Do they continue? Has anything changed their mind?

Mr. TIDWELL. No, nothing's changed their mind. What we're seeing today is a product of the changing climate. Not only the longer fire season, but the record temperatures that we seem to set every year, the record low relative humidities we set every year and, you know, it's just all a part of it.

These are the changed conditions that we have to now deal with.

Senator FRANKEN. We're talking a lot about funding here. You know, when I ran for the Senate in 2008 I, for a while there, my

slogan was going to be return on investment. That wasn't a very good slogan for a Senate campaign, but.

[Laughter.]

Senator FRANKEN. That lasts about a day.

But we're talking. I just want everyone to think about this. We are paying the price for climate change now because what we're talking about are tradeoffs here. We're talking about a lot of our discussion is about funding about air tankers, about fire suppression, about the taking money away from—Ms. Jungwirth talked about the negative feedback loop.

So I just want everyone to understand that we are paying a price now for climate change. This isn't something that's 50 years away. We're paying it now. We're making choices, very painful choices, on the basis of that.

I think that's a very important thing for everyone to talk about. We need to have this conversation about what are the costs of climate change and what are we doing to mitigate it and what are the smartest ways. For example, Ms. Jungwirth, you talked about biomass coming off that land. I think, Ms. Vosick, you did too.

It seems to me that we can use that biomass. Perhaps we can use it to—it is carbon that we can store onsite. It is carbon that we can use to do use biomass to make/do combined heat and power, for example, in these kinds of communities.

Speaking of these communities, I just wanted to ask Chief Tidwell this idea that Ms. Jungwirth talked about of a forming kind of a trained citizen corps. She talked about 20 people trained in firefighting in each of these communities that 120,000 firefighters. What are the issues regarding that. How feasible is that in your opinion? What would the issues be in doing that?

Mr. TIDWELL. We work with the States to carry out the programs that they need to have to be able to train either the local fire or volunteer fire departments so that people are able to respond. We currently get a lot of assistance especially from local fire and volunteer fire. In fact they're almost always some of the very first folks to respond to the local fires.

So we are using, you know, part of what Lynn is talking about now. It's something that we want to continue, of course to be able to work with the States, with the counties and local fire to be able to do what we can to provide the assistance to make sure that these folks have the equipment that they need. But also that the training that they have to have so that when they do respond they can do it in a safe way and make sure they come home at night.

Senator FRANKEN. Thank you.

One just last, I just want to ask about sequestration. Could you talk a little bit about the impact that sequestration would have on your ability to fight fires?

Mr. TIDWELL. This year we've had to reduce the number of firefighters that we provide by about 500. To put that into context we normally provide about 10,480. So we're going to be a little less than 10,000. We're also going to have a few less engines.

We're offsetting this impact by doing some things, just bringing on some of the firefighters on a little bit later than normal. Sometimes instead of staffing an engine for 7 days we're only going to staff it for 5 days to be able to make sure that we can respond

when we need to. If this fire season develops as predicted we also then could call on additional resources under call when needed contracts to make sure that we can respond when we need to in the appropriate way with the right number of resources.

Senator FRANKEN. Thank you, Mr. Chairman. Again, thank both you and ranking member.

The CHAIRMAN. I want to thank you, Senator Franken, for hammering away at this climate change question. I think we all saw here recently that we are now talking about 400 parts per million with respect to concentration of CO₂ in the atmosphere. This was a NOAA finding. This was a reading taken at the NOAA operated observatory in Hawaii.

So I very much appreciate you bringing this up. I'm going to be working closely with you.

Senator Heller is next.

Senator HELLER. Thank you, Mr. Chairman and appreciate you holding this hearing. A number of hearings that I have been involved in in both the House and the Senate this is always a topic of interest to most Nevadans. I want to begin by congratulating Senator Franken on his grandchild.

Senator FRANKEN. Thank you.

Senator HELLER. I didn't realize you were so young. I'm expecting my second by the end of the year. So again—

Senator FRANKEN. I blame my children.

[Laughter.]

Senator HELLER. I want to delve in a little further as most have here on this particular issue. I want to thank everybody that's spent time, those who have testified today for your input. Again this is a topic of discussion that can go a lot of different directions.

We just heard about climate change. I want to talk about another topic that I think you can't discuss, for example, Sage Grouse listing without talking about wildfires. We had about 944 individual wildfires in Nevada last year. We burned over 613,000 acres which is about 1,000 square miles which is about the size of Rhode Island. So we figure we burn Rhode Island every year in the State of Nevada.

Obviously the trend is troubling. We've done a lot of mitigation. There's some real good examples of that in the State of Nevada. Lake Tahoe Basin is a real good example of their efforts too and how aggressive pre-fire treatment can be in mitigating some of these big fires. We have small towns in Nevada that take sheep and cattle and they run them around their communities to make sure that any wildfire that may occur that they lessen the potential damage.

But I want to talk about the threat of the endangered species act listing of the Sage Grouse. I think it looms over 11 Western States and it includes Nevada. Most of those, in all of those 11 Western States, of course have a heavy Federal land management presence including my home State of Nevada which is 87 percent federally controlled. So as I said, I don't think we can talk about Sage Grouse without talking about the threat of wildlife. In Nevada we're committed to doing everything we possibly can to prevent a listing of the Sage Grouse.

Our government, State agencies, stakeholders are working tirelessly to ensure that we have the tools in place to satisfy the needs of the Sage Grouse and their ecosystem. But we're getting closer to the 2015 deadline where the Sage Grouse listing decision is to be made. I think it's important for our Federal agencies to partner with our State and local governments.

As I spoke earlier about mitigation, I believe one of the 3 contracts, air tankers, one is in the State of Nevada. I want to congratulate my staff for their hard work and effort to get that contract in place because of the impact that will have on wildfires in Nevada. As a result, the impact it will have on the ecosystem for Sage Grouse.

But I guess my question is to you, Chief. What are the Federal agencies doing to partner with States and the stakeholders to prevent the Sage Grouse listing?

Mr. TIDWELL. There's a team of folks that's actually led by the Department of the Interior that's working with, you know, the States and the interest groups to be able to come up with a strategy, so that we can continue to provide the habitat that's necessary to be able to maintain the Sage Grouse and prevent it from listing. Some of the things that have been changing over the time as we develop better and better science, is to understand the impacts to species, especially listed species when we start to lose either the ecosystem health. It's happening there with the Sage Grouse.

It's just like what's happening up in the Spotted Owl country of the Chairman's State where today we recognize that the biggest threat to like the Spotted Owl is from wildfires. That it's essential that we get in and restore those fires to reduce the potential for catastrophic fire to be able to maintain the habitat for Spotted Owls.

So as we move forward with the efforts around Sage Grouse it's essential that we factor in the need to be able to restore these ecosystems and to be able to use fire as a tool to be able to restore those ecosystems to be able to recover Sage Grouse.

Senator HELLER. Let me give you—Senator Risch gave you some comments and suggestions. Let me try a suggestion. This is something I brought up with Secretary Jewell when she was in my office. That's specifically about whether or not a farmer or a rancher can help stop a fire.

We have a lot of wildfires, mostly from lightning. We will have ranchers, cattlemen, people out on the plains that watch a lightning hit, cause a fire. But they're being told by Federal agencies you're not allowed to go over there and put it out.

You said that 98 percent of most fires are put out in a reasonable time. It's the other 2 percent that become a problem. Those 2 percent, I would suggest, would be helpful if we could allow these men and women that are out there attending their property. When they do spot a wildfire that they would have access or the ability to go there, put that fire out. Now they're being told they can't.

How do you think this issue should be addressed?

Mr. TIDWELL. It needs to be addressed by working through the local volunteer fire departments to make sure that those ranchers, those farmers have an understanding of fire behavior. They have

the right equipment so that if there is an opportunity for them to respond they can do it in a way that they can safely come home.

That's my No. 1 concern about those folks. Often they're out there right when that fire gets started. So they're in a very good position. But I'll tell you we've had too many situations over my career where those volunteers have responded. Go out there and have not come home.

We can do it in a way so that they have the training that they need, the equipment that they need and to be able to do it in a way that they can be successful. The thing that I would ask is just that they would work through their volunteer fire departments, through the state foresters, to be able to make sure that they have the right training and the right equipment.

Senator HELLER. Chief, thanks for your comments.

Mr. Chairman, thank you.

The CHAIRMAN. Thank you, Senator Heller.

Senator Heinrich.

Senator HEINRICH. Thank you, Chairman. I want to thank the chairman and ranking member for the timeliness of this.

Chief Tidwell I want to start by thanking all of the incredible people who have responded from the Forest Service in New Mexico over the last week or so. It's been incredible the resources put on the current fires at Tres Lagunas and Thompson Ridge fires. My first concern was going to be resources. We've had an incredible response.

We've also had great response and I want to thank you, Mr. Decker, for the resources coming from Oregon. You know, we have a situation where in addition to those 2 active fires. On Sunday night I watched as one of our pre-monsoon thunderstorms rolled through the State.

It moved through the Manzano Mountains just outside Albuquerque. We think there were about 1,000 lightning strikes during that thunderstorm and not a lot of rain to come with all of that. As a result there were 4 ignitions in that area and volunteer and Forest Service resources were able to respond and get those taken care of as well. So we're going to be fighting this for a few months until our monsoons kick into place.

I want to suggest to the Chairman that we ask the OMB to come and have this kind of a conversation, this kind of a hearing directly with OMB so that they can explain to us their interpretation of the FLAME Act because there seems to be broad consensus on this committee that they're not implementing it the way it was designed. I think we all have an interest to make sure that we do implement that law and we get ahead of this. To that end, I want to lay out a contrast and then get your ideas, Chief Tidwell.

In the last few years we've had 2 of the biggest fires in New Mexico history.

In 2011 we had the Las Conchas Fire, 150,000 plus acres.

In 2012 that was eclipsed. It was the largest fire in our State's history at the time in 2012. Whitewater-Baldy burned about 300,000 acres.

Just looking at the acreage numbers you would think oh, well, you know, Whitewater-Baldy was the one, the example of how things really go badly. But when you drill down and actually look

at the impacts on the ground and you look at the fact that Whitewater-Baldy, I think, over half of that was actually back burn, for example. Then you go look at what's happening in terms of flood impacts, mineralized soil and the condition and the dramatic change I think we're going to see change in stand condition on forest type in Las Conchas for at least the rest of my lifetime. You realize that there is a contrast in how the Forest Service has managed fire in different locations across the country.

When you look at the combination of what the Gila National Forest has done with hazardous fuel reductions, progressive fire management and ecosystem restoration. Letting fires burn, where it's appropriate, to reduce those fuels on a very cost effective basis we see cooler, healthier fires even in extreme drought conditions like we were in last year when Whitewater-Baldy burned. So I guess my question is, are the lessons that should be learned from the places where this combination of hazardous fuel reductions, of restoration and of good fire management, where those things have been shown to reduce the impacts on community we're really doing things well.

Have those lessons been applied and are they reflected in your agency's budget because I think what you're hearing from folks on this committee is we don't think that's the case. We're worried that we're robbing Peter to pay Paul. We need more prevention to be able to reduce the cure in the long run.

Mr. TIDWELL. We have applied lessons that we've learned over the years, especially when it comes to the use of prescribed fire. The Gila has been one of the leaders in the Nation for years. You described very well the difference that it makes when we're using prescribed fire, managing natural fire in the right place.

When we do get a fire started it will still maybe burn a lot of acres, but it burns at such a lower intensity that the watershed doesn't have the impacts. The country comes back rather quickly. We don't see the level of flooding that we often see from these other fires.

So we are applying those lessons. There's just no question we need to do more work. That's why we came out with our accelerated restoration strategy last year and we identified between 65 and 82 million acres of our national forest that we need some form of restoration.

The majority of that is going to be with fire. But there's also a component of that about 12 and a half million that we need to be used in mechanical, timber harvest field to address that work. That we know we can make a difference.

Between the Department of Interior and the Forest Service we've done case studies on hundreds, close to the thousand different situations where we have done field treatments and then had a fire burn into those treated areas. Over 90 percent of them show that it's been effective to reduce the severity of that wildfire. We know we need to do a better job to be able to quantify it economically. But we know that it works.

So these are the things that we need to be able to move forward with is to be able to do some additional research, to be able to put the economic quantification to the benefit of these fuels projects because we've all seen it on the ground without any question. When

they are done at a large enough scale and the right place on the land that it will reduce the severity of the fire. It makes suppression efforts much more effective. It makes it a lot safer for our firefighters.

Senator HEINRICH. I want to thank you for your efforts in that regard because I just hate to see us taking money out of hazardous fuel reduction, out of ecosystem restoration, out of, you know, proactive fire management in order to fund the very real need that we need to respond to, an urgent fire situation now. It's really a terrible choice to be making because every dollar that we put into those prevention activities into creating healthier forest ecosystems in the first place is dollars we don't have to spend down the road for fire management after we have a catastrophic fire like the ones we're seeing now.

Thank you, Chairman.

The CHAIRMAN. Senator Heinrich, thank you.

Your point with respect to the Office of Management and Budget I think is very well taken. My understanding is that OMB has never testified. But I want you to know I think your point is important.

Your point is so important we are going to stay at this until we turn OMB around on the question of how important prevention is and carrying out the FLAME Act. It just seems to me, given the fact that Westerners night after night in the fire season—what Senator Risch was alluding to—are seeing these infernos, we ought to get OMB to wake up to your point about prevention and the FLAME Act. I'm committed to working with you and Senator Murkowski, Senator Flake, and all of our colleagues until we turn OMB around on this. I appreciate your suggestion.

Senator HEINRICH. Thank you, Chairman, because I think it's one area where regardless of party or geographic issues or anything else I think this committee is united around the fact that the FLAME Act is not being implemented in the way that we all intended it to.

The CHAIRMAN. You are correct.

Senator Flake.

Senator FLAKE. Thank you. Thank you, Mr. Chairman, Ranking Member Murkowski for calling this hearing and for those who have testified this has been enlightening, informative and obviously for Arizona this is a very important issue.

I grew up in Northern Arizona in the Town of Snowflake surrounded by a lot of the forested areas there. When the Rodeo-Chediski Fire burned in 2002 I flew up there to just—it made me sick just to see so many in our community and other communities who still, 11 years later, have not recovered. I went up camping in the mountains just near Forest Lakes just a few weeks ago in one little valley that was spared the fire. But looking all around burned out trees, areas that won't recover for a couple 100 years.

I thought that there's no way we could see a fire that big in our lifetimes again. But just less than 2 years ago, the Wallow Fire. I traveled with Senator McCain, Senator Kyl to Springerville. Chief Tidwell, you were there. We experienced exactly what Ms. Vosick said, well has proven scientifically with Dr. Covington over and over and over again that these treatments work.

We drove on a road just outside of Alpine. To the left were the untreated areas. To the right were the treated areas. Just the road separating them.

To the left was a virtual moonscape. Everything obliterated, gone. Won't recover for a couple 100 years.

To the right, just across a little 2 lane road were the treated areas near Alpine. The fire dropped immediately to the ground, scorched a few trees at the bottom. But everything was intact.

It showed anecdotally what we see over and over and over again and now has been proven again and again and again scientifically that if we treat these areas it's worth it economically. It saves these communities. It saves these forests. It saves endangered species over and over again.

It's heart wrenching to see some of the impediments that are still there to keep us from treating more of the forests, not just the forest community interface, but deep into the forest as well. A lot of good work has been done by the center in Flagstaff. Please give my regards to Dr. Covington.

But you've studied, Ms. Vosick, you studied the cost of the Schultz Fire. Can you tell a little about that? I think you mentioned treating a significant portion of the Schultz Fire imprint with an investment of 15 million. It could have greatly reduced the cost of that fire. That was—it was about 15,000 acre fire and then the flooding comes.

Can you talk a little about that? It's not just the fire that's devastating but in Arizona, in particular, the monsoons that come after. Can you talk a little about that?

Ms. VOSICK. Sure. As you recapped it was a 15,000 acre fire. A significant part of it burned severely. The actual cost of fighting the fire rolled in at about \$13 million.

But what was unanticipated was a monsoonal event that happened 29 days later. That basically a rainstorm that parked over the fire area and led to a tremendous flooding event that moved debris, rocks, incredible amounts of material off the slopes, very steep slopes around Flagstaff and into the downstream communities. So it's interesting to note that we could have treated every acre of that fire which you don't really need to do.

You know, the data show, the experiments show, you can usually get by with about 30 percent of the area treated. We could have treated every acre for a \$1,000 an acre which is high for a treatment cost. We could have avoided, for every dollar spent on treatments, \$9 to \$10 in damage costs.

So the question becomes can we afford not to treat. Because of you either pay at the beginning or you pay at the back end. If you look at how that cost is spread across the community. A lot of people can appreciate the fact that cost were spread against—there were 4 Federal agencies that bore the cost. There were 3 State agencies, the county, the city, non-profit organizations, social service agencies and the citizens.

The citizens still live in fear every time we have a monsoonal rain in that community because they don't know what debris might be delivered back to the community.

Senator FLAKE. This is 3 years later after that fire.

Ms. VOSICK. Yes.

Senator FLAKE. My recollection is there was a young girl that was killed, swept away, by the flood waters there as well.

Ms. VOSICK. That's right. That's right.

Senator FLAKE. Just one quick question if I could, Chief Tidwell?

Again and again we see some of the moneys that are put aside for hazardous fuel reduction cut and additional money requested for land acquisition. Now I know some of this is outside of your purview or pay grade. But can you kind of give us some rationale or explanation for that given what we know about the value of hazardous fuel reduction?

Mr. TIDWELL. The additional request that we have in our 2014 budget for more land and water conservation funding for acquisition and conservation easements. There's not a direct tradeoff. The purpose for those programs is to respond to what we hear from the public of a need to be able to acquire these key parcels to be able to maintain key habitats but also provide recreational access. In almost every case it actually reduces our administrative costs.

These are just the challenges of some very difficult tradeoffs that we have to make. It's one of the things that with the Department of Interior has proposed I think a very innovative approach with LWCF to be able to provide a different revenue stream to make a mandatory system that would allow us to be able to move forward and acquire these key parcels. But we have to find this balance.

That's just the challenge of finding the balance of not only doing the fuels work, continue to do the restoration, provide for recreation, to be able to acquire these key parcels of land. It takes all of it. It's just one of the challenging situations that we're in. It's where we need your help. We need the help of Congress to be able to find the right mix of programs and the right mix of funds so that we can move forward.

Senator FLAKE. Thank you.

Thank you, Mr. Chairman.

The CHAIRMAN. Senator Flake, thank you.

We're very much looking forward to working with you on this because I think part of the challenge—having watched you on budget issues—is to try to target the maximize amount of value of what we're doing in this area. That's why I think this point about prevention that you and others are making is what it's all about. So, I look forward to working with you.

Mr. Decker, let me turn to a different matter which I think is going to be increasingly important particularly as we look at some of these issues in the wildland urban interface, the so called WUI description. Now, you mentioned the poor condition of the Federal lands is placing a burden and a threat on State and private lands. In effect you have these fires leaping off the Federal lands causing significant losses on private and State lands.

Of course, we saw that last summer in our home State at the town meeting that I recently had in Lakeview, for example, people were continually coming back to the Barry Point Fire. I guess folks in the legislature are interested as well in doing good work, bipartisan work, in terms of the State-Federal relationship of what ought to be done here.

Summarize for me what you think the Federal Government ought to be doing in this area, and maybe, Chief, you could answer

as well because I think folks want to be located in these areas close to the forests, these wildland urban interface areas. This is an issue and a concern that is going to increase in our part of the world and certainly lots of other places. So what do you think the Federal Government ought to be doing in terms of staking out a smarter policy in this area?

Mr. DECKER. Thank you.

The partnership that we have with the Forest Service is critical. We have what we call in Oregon, a complete and coordinated system of fire response. We must work together. We do work together. We work together well in most cases.

There is a natural tension in the system that has to do with the difference in fire policy. Part of that is who, you know, we're paid by the landowners to fight fire aggressively on their land. They basically don't want fire on their land. They're paying us to exclude fire.

Different management objections on those lands than on national forest lands. So there's a tension there that we face regularly. In Lakeview, as an example, we have a closest forces agreement where we will, whoever is closest, will respond to the fire. We'll do initial attack together. It doesn't matter the color of the land. That works out very well in most cases.

I think I would echo the themes that you've heard from this group in terms of things that the Federal Government can do as you've asked. I think it's about getting the mix right. Early on Senator Murkowski talked about the strategic, what is the best strategic way to invest funds.

I think it's hazardous fuels. It's initial attack and extended attack. It's, you know, it's all of those pieces together. It's the State fire systems, the volunteer systems that comes our way.

Really it's, in addition to those funding pieces, it's also maybe a paradigm shift in terms of the use of active management on national forest lands. I think we have to fundamentally change the way fire lives on the landscape. We do that by active management on that landscape.

So there's some funding pieces. I think there's some policy pieces that can change as well.

The CHAIRMAN. Chief, what would you like to add to that?

Mr. TIDWELL. What I'd add is that we need to continue to do a better job with coordination. It needs to be up front before the fire season, before the fires start. This is one of the key lessons that we learned from the situation last summer that we have to do a better job. We have to do it across the board.

So we'd, I think if we do that up front coordination so that when we do get a fire started everyone is together about the actions that need to be taken. I think that will help. But that's about the only thing.

I agree with what Mr. Decker has said. But I would just stress we need to do a better job. The Forest Service needs to a better job to do the coordination, not only with the State agencies, but with those communities prior to the fire seasons.

The CHAIRMAN. Let me just ask one other question. Perhaps we can bring you into this, Assistant Secretary Thorsen and Ms. Jungwirth.

We've heard a lot of very favorable comments about the community wildfire protection plans. These are the plans, of course, where the local communities get together at the grassroots level and make judgments about their priorities for fuel treatments. In some States, like New Mexico, apparently they've been so successful that they're requiring the communities in the State to actually develop these community wildfire protection plans.

So Ms. Jungwirth and perhaps we can get you into this, Ms. Thorsen, what has been your experience with these plans in terms of actually protecting communities and reducing costs? In other words we're looking for approaches that give you both the protection you want at a lower cost than the approaches that we're seeing today.

What are you seeing with respect to those and your judgment, Ms. Thorsen?

Ms. JUNGWIRTH. In California, as you know, we have many community wildfire protection plans. They've been in place for many years. In fact many of them have been updated now.

The virtue of those is that all the land owners are involved. The volunteer fire departments are involved. The Office of Emergency Services is involved and CDF and the Forest Service.

So they're getting the—not only are they getting the land treatments done in a strategic manner and in a coordinated manner, but they're also building our prescribed fire capacity, our trained and coordinated work force capacity and then our fire response. As a result of that we have fire safe councils that now are in existence. They meet every month. They've been doing that for 10 years.

So we're getting the infrastructure on the landscape built out. When we have a fire event, as we had last year right around my community, we had a local area advisor from the community who worked with the volunteer fire department, the Forest Service and CDF and helped people understand where the roads were, where the fuel breaks were, where the water was because that when you get teams into a community they know fire, but they don't know that landscape. As a result we were able to have a better response.

It's a long term investment. But there will be a tipping point. That, I think, is what OMB needs to start thinking about.

I think they also need to think about what are the numbers that justify their fire suppression budget.

The CHAIRMAN. Ms. Thorsen, again the prospects for reducing costs with this kind of approach?

Ms. THORSEN. Senator, we are very supportive actually of the CWPP plan. In fact when the Department of Interior goes through our priority setting process for our hazardous fuels and allocating those dollars for hazardous fuels part of what we look for and one of the criteria is CWPP plan. So it's very much a part of what we look at when we're allocating the dollars that we do have for hazardous fuels.

So a big part of also the cohesive strategy effort now and working with communities and partnering at that local level is looking at those plans as part of the overall—one of the solutions to the challenges we have in the hazardous fuels program. So.

The CHAIRMAN. Senator Murkowski.

Senator MURKOWSKI. Thank you, Mr. Chairman. Thank you all for your testimony here this morning.

We've all been talking about the FLAME Act and how it hasn't been working as we had intended. It's been suggested that we need to treat these mega-fires like we treat other emergencies and fund them out of some kind of off-budget account outside the agencies. The concern there of course, there, is that if you do that, then you remove the incentive to keep the cost containment strategies in place.

Mr. Topik, you mentioned in your comments and you actually put forth several different proposals there as to how we can work to reduce our fire suppression. You mentioned a disaster prevention fund.

Chief,—and anybody else can jump in here—if we move to that framework, the incentive to deal with cost containment be lost? If you know, that every year, Congress is going to come forward and magically print more money to pay for these mega-fires—how big of a problem is this?

Mr. TIDWELL. You know, I don't see that as a problem as long as we continue the level of the focus we have on making the best decisions. Then realizing that we're always driven by what is the tactics that are effective. Cost containment was focused around dealing with some rather financial management around fires.

The thing that's more important is for us to be able to do the preventive work, to do the fuels work up front. But when we do have a large fire, when we can recognize that what we're up against and eliminate those ineffective tactics, those things that in the past that I personally have done a lot myself, put on retardant, load after retardant load and had zero effect built mile after mile a line. We just burned through the next day because I didn't recognize, understand, what I was up against.

Today we have that science. So as long as we can maintain that focus to be able to make the right decision and then we need to be held accountable. We need to be able to respond. We need to continue our large fire reviews so that we can learn from that.

But I think we can have both. The current budget does not provide an incentive. The incentive is doing the right thing on the ground to make sure our firefighters are safe and doing everything that we can to keep our communities safe. That's what drives our decisions today. It's what's driven our decisions in the past.

So I believe we can continue to do both.

Senator MURKOWSKI. I mentioned to the Chairman that one thing we seem to have a problem with here in the Congress, is being proactive when it comes to any form of prevention. Whether it's prevention as it relates to our health care costs. Whether it's prevention as it relates to the health and safety of our forests and our wildlands. I'm a firm believer in prevention and really working to implement some of these policies from a more holistic perspective.

This is going to be good for all of us, not only from the perspective of the health of our forests, for the safety of the people that live and around them, but also from a financial perspective. So I look forward to working with you, Mr. Chairman, and the rest of you. Thank you for your commitment to this.

The CHAIRMAN. Thank you, Senator Murkowski.

You're being way too logical, obviously, for purposes of the Federal Government in this area because clearly—

Senator MURKOWSKI. I've been accused of that.

[Laughter.]

The CHAIRMAN. The message has not gotten through with respect to the choice. You can spend more modest amounts on the front end with preventive kind of efforts or you can spend your time investing substantially more money trying to play catch up ball as these infernos rip their way through the West.

I just want for the Federal witnesses because I know both of them and talk to the Chief often. Very responsive. Very professional.

We appreciate your being here, Ms. Thorsen. I know how difficult it is to get into these discussions with respect to OMB in an open hearing.

But I want both of you to know I am going to stay at this until we turn this around. We have spent the better part of 2 hours talking about prevention issues, talking about tanker questions, talking about the FLAME Act. I just think our priorities are out of whack. I mean that's what you've heard both Democrats and Republicans talking about.

When one of these conflagrations rips through a community, nobody is sitting around talking about Democrats and Republicans. They're talking about why it seems, year after year, the Federal Government can't get this right. We've got a lot of very good people in this country, in the communities.

Mr. Decker made an additional important point about the Federal/State partnership and these fires leaping off the Federal lands and affecting private property and the States. I think now with the combination of the fires getting bigger and hotter and the season lasting longer, the Administration seems to be concerned, as I am, about the 400 parts per million finding with respect to carbon dioxide in the atmosphere.

I think we've also got to deliver the same kind of wake-up call on this question of a new focus on prevention, carrying out the FLAME Act as intended, and some of the good suggestions that you've made, Mr. Topik, as well.

So thank you for your patience. Suffice it to say, next steps, particularly with the Office of Management and Budget, are going to be set in motion right away.

With that the Energy Committee is adjourned.

[Whereupon, at 12 p.m. the hearing was adjourned.]

APPENDIXES

APPENDIX I

Responses to Additional Questions

RESPONSES OF DIANE VOSICK TO QUESTIONS FROM SENATOR MURKOWSKI

Question 1. As you know, the bulk of the hazardous fuel reduction treatments have been implemented in the wildland-urban interface (WUI) at a significant cost. Currently, over 70 percent of the hazardous fuel appropriations go to WUI treatments. Based on your report it looks like this focus is misplaced. (a) Is that the case? (b) What priority should be given to locating hazardous fuel reduction treatments in the backcountry v. the WUI? Why?

Answer. 1(a) Following the 2011 Wallow Fire, the United States Forest Service (USFS) Deputy Chief for State and Private Forestry asked the Ecological Restoration Institute (ERI) to answer the question of why we continue to see large and severe landscape scale (mega) fire in dry forest types after 10 years of fuels reduction and restoration treatments.

To analyze the question of whether or not national priorities for treatment implementation reduce the impact of mega-fires, we used fire and treatment models. Specifically, the modeling evaluated, "If nationally developed USFS fuel reduction priorities had been implemented on the Apache-Sitgreaves National Forest prior to the Wallow Fire, would wildfire outcomes under mega-fire (Wallow-like) conditions have different fire severity and probability patterns when compared to no implementation? What we found (the results are reported on page 20 of the report) are:

Fuel reduction treatments are effective at reducing fire behavior where implemented and can successfully reduce risk to prioritized values like communities. (This is demonstrated through modeling and on-going field research).

- Forest restoration treatments at broader scales (outside the WUI) can break-up continuous fuel and degraded conditions that are at higher risk for causing large and severe fires.
- In summary, WUI treatments are effectively addressing national priorities to protect communities at risk. However, if we only focus treatments in the WUI then there will be large areas of degraded forest conditions and excess fuels in the wildlands that can support mega-fire.

Answer. 1(b) Where to locate treatments depends on the goals of Congress, the federal agencies, and the public. This question came up in different conversations during agency staff briefings where when we presented the report.

If the goal is to restore degraded landscapes so that they are resilient and resistant to insect infestations, disease, potential climate changes, as well as to reduce the risk of severe, landscape scale (mega) fire then treatments will be needed in the wildlands and the WUI. Our research shows that without more comprehensive treatment of the wildlands we will continue to see large, severe fires.

Due to public safety and economic concerns the agencies have emphasized placing treatments in the WUI. There is evidence to support that under extreme fire conditions, such as plume dominated fires, treatments can fail. The comprehensive solution to modifying this extreme fire behavior is to reduce fuels and restore resiliency to unhealthy forests at the landscape scale.

Finally, the Schultz Fire Full Cost Accounting report (the second document provided to the committee) demonstrates that there are important values at risk in the forest (watersheds, critical habitat, aesthetic values tied to recreation) and other natural resources that have economic value to communities. These areas also benefit

from treatments in the wildlands and will provide long-term economic and ecological benefits.

Question 2. Based on the findings in your report, it is suggested that not all hazardous fuel reduction treatments are created equal. The relationship of a treatment to long-term risk reduction is contingent on the quality of the treatment at the start. (a) What characterizes a quality treatment at the start? (b) Are their influences that could sub-optimize treatments from the start? What are these influences and can you provide some examples?

Answer. 2(a) Treatments are designed based on forest type. The ERI's expertise is in the area of ponderosa pine forests, mixed conifer forests, and pinyon-juniper woodlands. These are dry forests and unlike the moist forests of Alaska or the Pacific Northwest.

The goal of ecological restoration treatments in dry forests is to restore health and resiliency. This approach will also reduce hazardous fuels in these forest types. It is worth noting that treatments that are designed with the sole purpose of reducing hazardous fuels may not accomplish multiple natural resource objectives such as restoring resiliency, enhancing watershed health, or improving wildlife habitat whereas taking an ecological approach will provide multiple benefits.

Based on scientific research, in order to restore forest resiliency and reduce the risk of unnatural fire in the forest types previously mentioned, treatments should seek to establish more natural conditions. This means fewer trees, with an uneven age distribution that emulates the natural pattern that existed before the period of fire suppression, livestock grazing and aggressive logging. By doing so fire (which is inevitable in a landscape prone to lightning and recreation use) is less extreme and can even be used as a management tool under safe circumstances. Future use of managed fire in a restored ecosystem will also serve to reduce forest management costs. Also, by restoring forests to more natural conditions they are better positioned for warmer and drier climate conditions.

Answer. 2(b) Treatment effectiveness in frequent fire forests are sub-optimized by leaving too many or the wrong trees at the treatment site. Based on our experience there are multiple reasons why excess trees are retained.

From a USFS perspective this is often done in order to manage for the multiple resources required by Land Management Resource Plans and other legal mandates. These include, but are not limited to: a) maintaining future opportunities for timber harvest; b) maintaining wildlife habitat for existing species populations (which may be different than historic populations); c) maintaining scenic views or screening for recreational use in National Forests; and, d) limited operational capability to actively manage in steep terrain, in roadless areas, or other management designations.

From a social perspective excess trees can also result when diameter caps are used to limit which trees can be removed (diameter caps in this case limit the number of trees above a certain size that can be taken). Negotiated diameter caps have been one way the Forest Service has been able to implement hazardous fuels reduction treatments without being challenged by litigious environmental groups. An example of where an informal agreement occurred that limited the size of trees removed during fuels restoration treatments is on the Apache-Sitgreaves National Forest as a part of the White Mountain Stewardship Contract.

In summary, a proportion of forested landscapes will always be in a condition outside its natural range of variation. Even where treatments are feasible they may not be able to optimally reduce fire risk reduction because they are required to meet other management goals. However, even with these existing management guidelines we can place treatments to strategically change the fuel loadings that contribute to mega-fire.

Note: Dr. Scott Abella identifies the trade-offs associated with diameter caps in a paper published in the Journal of Forestry entitled, "Diameter Caps for Thinning Southwestern Ponderosa Pine Forests: Viewpoints, Effects, and Tradeoffs". It can be found on the ERI website at <http://library.eri.nau.edu/>

RESPONSES OF CHRISTOPHER TOPIK TO QUESTIONS FROM SENATOR MURKOWSKI

Question 1. Your testimony seems to acknowledge that NEPA compliance can be a significant impediment to achieving efficiencies in the planning and implementing of restoration-based forest treatments. Do I have that right? Please explain.

Answer. The Nature Conservancy is committed to meaningful public engagement in and environmental review of National Forest management and believes that the National Environmental Policy Act (NEPA) provides an appropriate framework for this activity. Unfortunately, the actual implementation of NEPA is often driven by

fear of law suits and results in lengthy, inflexible documents that take so long to produce that the decisions may be out of date by the time they're issued. We believe that there are many ways for the federal government to be in full compliance with NEPA procedures while also benefitting from public input and review that does not unduly delay need actions. We also believe that there is a greater chance for increasing the scale and pace of forest treatments if the agency follows NEPA; there may be more opportunities for common kinds of projects to follow the categorical exclusion provisions of the NEPA procedures. We do not believe that the NEPA compliance is the barrier, but it is the procedural step at which a wide variety of problems can be manifested. Fortunately, the U.S. Forest Service is working both internally and with external partners to identify and support alternative approaches to NEPA that encourage more timely action, result in more adaptive decisions, and facilitate larger scale management on the ground.

Question 2. Your testimony also appears to suggest that there could be opportunities to streamline NEPA. Can you describe the kind of streamlining you envision and whether legislation would be necessarily or desirable to achieve it?

Answer. The Nature Conservancy supports and is engaged with the U.S. Forest Service in testing a variety of alternative approaches to NEPA, including the large-scale NEPA being developed by the Four FRI in Arizona and an adaptive approach to NEPA underway in Colorado. We hope to find additional ways to increase this kind of agency creativity and flexibility because we believe it will serve to increase the pace and scale of management while also decreasing the time and resources spent in analysis. There are likely to be more opportunities to streamline NEPA procedures by using categorical exclusions for ordinary and common kinds of treatments that are well understood. We also see some national forests use area or watershed NEPA planning that covers common and ordinary kinds of forest and fire treatments over large areas, allowing individual treatments to be conducted rapidly under the umbrella of the area plan. We would also be interested in exploring ways that NEPA may be made more favorable to management alternatives developed through and supported by a robust collaborative process. Further, we would be interested in finding a way to clarify that collaborative groups are not violating the Federal Advisory Committee Act (FACA) when they engage in the NEPA process. We do not believe legislation would be required but would be open to discussing a range of alternatives.

RESPONSE OF CHRISTOPHER TOPIK TO QUESTION FROM SENATOR BARRASSO

Question 1. As a doctor, I understand that an ounce of prevention is worth a pound of cure. Your testimony and the Ecological Restoration Institute's recent study highlight the importance of hazardous fuels reduction programs and more overall active management. An ounce of hazardous fuel treatment can prevent a pound of wildfire suppression. In your testimony you stated your disappointment in the President's FY 2014 Budget cuts to Hazardous fuel programs.

Do you support hazardous fuel treatments in the backcountry and do you agree with the conclusions in the Ecological Restoration Institute's study that we need to do more hazardous fuel reduction particularly in the backcountry or undeveloped forest areas?

Answer. Yes, The Nature Conservancy was concerned to see that the Administration's FY 2014 budget proposal continued to emphasize protecting structures to the near exclusion of the natural areas that support both life and livelihood. The Conservancy agrees that funding is urgently needed to create community protection buffer zones that can limit the damage from wildfire. Fighting fires will remain costly until such buffers are in place and people feel safe. But shifting too much funding away from undeveloped forest areas where fires have been excluded for a century, and conditions remain overly dense and susceptible to unnaturally damaging wildfire, will have a long-term negative impact on forest health and resiliency.

The Conservancy urges a balanced allocation of funding between treatments in wildland and developed areas. Strategic mechanical fuels reduction in wildlands, combined with controlled burning to reduce fuels across large areas, can significantly reduce the chance that megafires will adversely impact the water supply, utility infrastructure, recreational areas and rural economic opportunities on which communities depend. We also see that modest investments in community capacity building and community involvement, such as the "Fire Adapted Communities" project, can yield tremendous gains by increasing the social license to do forest treatments and by helping determine, with the benefit of local knowledge, what areas are the highest priority. Furthermore, even though there are well over 60 million Forest Service managed acres that would benefit from some treatment, strategic treatments of the right acres with the right methods can yield large gains to society

by treating a much smaller area. That is attainable and realistic. With adequate support for fire and management science, priorities can be more clearly established and monitored to ensure a sound return on federal investment.

RESPONSES OF KIM THORSEN TO QUESTIONS FROM SENATOR MURKOWSKI

The rapid assessment report by the Ecological Restoration Institute on the Efficacy of Fuel Treatments makes the point that more hazardous fuel treatments are needed in the backcountry if we are going to reduce the size and severity of landscape-scale mega-fires that can scorch watersheds and drain agency budgets.

Question 1. How much of the hazardous fuels budget is focused on treatments in the backcountry?

Answer. The Ecological Restoration Institute report describes the benefits from both WUI and non-WUI fuel treatments, as each can provide benefits to reducing the risks posed by wildland fire. The Department of the Interior (DOI) has long recognized the need for fuel treatments near communities as well as on surrounding landscapes, as a means of reducing the risk and severity of potential catastrophic wildfires. The number of acres that would benefit from Hazardous Fuels Reduction (HFR) treatment far exceeds the annual budget. The budgetary challenge for the program is to seek the optimal treatment mix across the spectrum of values and resources. In fiscal years 2003-2010, approximately 60-65 percent of the HFR budget was allocated to the Wildland-Urban Interface (WUI), with the remaining 35-40 percent applied to more remote areas (i.e., "backcountry" or non-WUI areas). In recent years, the Department has approached the challenge by prioritizing the reduction of risk to communities and their values. Beginning with FY 2011, approximately 90 percent of the HFR budget was applied to the WUI, with the remainder to more remote areas.

Question 2. How will this report and this finding in particular, affect your planning and budgeting in hazardous fuel reduction programs in the future?

Answer. This research improves the body of knowledge we have for executing a fuels reduction program that meets fire management, land management, and community objectives through sustainable and cost-effective means. The findings will inform our approach to executing the fuels management program now and into the future.

RESPONSES OF KIM THORSEN TO QUESTIONS FROM SENATOR BARRASSO

Question 1. Earlier this year, the House passed a Continuing Resolution to fund the Department of the Interior Wildland Fire Management at \$823,473,000. Senate Majority Appropriators then stripped the Wildland Fire Management account of \$97 million dollars before it became law.

Was the Department of the Interior made aware of these substantial cuts to Wildland Fire Management before they took place?

Did the DOI agree with the Senate Majority's action to reduce Wildland Fire management by \$97 million dollars?

If not, did the DOI contact Senate Appropriators and ask them to keep the House passed funding levels available for fighting fires?

Answer. The President's FY 2013 President's Budget for Wildland Fire Management (WFM) was \$726 million. The House passed CR included \$929.9 million for the Wildland Fire account and the Senate passed CR included \$833.8 million for the Wildland Fire account. The Department was not aware of the funding levels for the program included by the House or Senate in the CR until the information was released to the public. There was not an opportunity or a forum for the Department to express its position with regard to the House or Senate CR.

Question 2. One of the primary risks facing sage grouse habitat is wildfire. Not only is sage grouse habitat destroyed, but the burned landscape paves the way for invasive species such as cheatgrass to spread. What steps are being taken to limit wildland fires in sensitive sage grouse habitat areas?

Answer. The Department of the Interior manages a majority of the sage-grouse habitat in the West. While firefighter and public safety and the protection of life and property remain the priority for fire managers, the conservation of sagebrush habitat, especially preliminary priority habitat, is one of our top conservation concerns. To fulfill this commitment, the Department, through its agencies, implements comprehensive best management practices before, during, and after a fire.

Pre-fire preparation that minimizes fire damage to critical habitat includes: training of both fireline managers and firefighters in best practices of habitat protection; habitat areas are identified and recommended response actions are pre-loaded into dispatch and decision support systems; habitat maps are provided to dispatch offices

and field-going fireline managers; and firefighting resources are pre-positioned near areas of sage grouse habitat most susceptible to wildfires. Additionally, fuels management projects are planned and designed to assist in minimizing the destructive spread of wildfire. Projects include the use of prescribed burning, chemical and natural deterrents to invasive species, the augmentation of existing fuel breaks through mowing along roads and open areas, and the creation of greenstrips on the landscape to slow or alter fire spread.

During a fire, best practices include: involving resource advisors early in the response for scientific advice and direction, using tactics and tools that minimize the size of the fire, and conserving all possible unburned habitat (such as retaining unburned islands).

Post fire actions include: assessing burned areas in order to develop Emergency Stabilization plans and, if necessary, developing a Burned Area Rehabilitation Plan. The Emergency Stabilization plans are designed to mitigate immediate threats to life and property to minimize further degradation of the surviving habitat due to invasive species or other threats. These plans outline the areas that can benefit from re-seeding and those likely to re-establish on their own. Plans include treatments to combat the spread of invasive species such as cheat grass, maintenance of site soil stability, and hydrologic function. The post fire programs use an adaptive management process that monitors treatments for effectiveness and requires the reporting of results. The Burned Area Rehabilitation Plan is then developed one to three years after a damaging wildfire to promote recovery from fire damages including results that are not achieved by emergency stabilization treatments alone, in order ensure the long term and recovery of habitats as well as the development of fire-resilient landscapes for the future.

RESPONSE OF DOUG DECKER TO QUESTION FROM SENATOR MURKOWSKI

Question 1. State Foresters protect two-thirds of the nation's forests, with jurisdiction over and response to 75 percent of all wildfires. Based on your experience, what measures do the state foresters recommend taking to address escalating fire suppression costs?

Answer. The condition of our forests is one of the primary drivers of the increasingly costly fire seasons we are experiencing. The millions of acres that are well outside the historic range of variability for fuel loads support large-scale wildfires that usurp increasingly larger sums of federal fire suppression dollars. Unfortunately, the USDA Forest Service (Forest Service), a land management Agency, now spends more than 40 percent of its entire budget on fire suppression. State foresters have recently urged Congress to find a solution that would fund emergency wildfire suppression activities in a similar way to how we fund other federal disasters. A solution that finally eliminates the need to raid non-fire programs at the Agency to fund wildfire suppression would be a substantial step in combating escalating fire suppression costs. Importantly, such a solution would help the Agency make real progress in treating unhealthy forests while they can have the greatest impact-before a fire starts.

With the fire budget already eating up nearly half of the Forest Service budget and repeated fire transfers over the past 10 years, the ability of the Forest Service to accomplish any fuels reduction, restoration, and active forest management has been substantially eroded. As a result, the Forest Service is facing a backlog of forest restoration over millions of acres of National Forest System lands that will only continue to grow if we do not address the issue of fire transfers and how they impact the ability of the Agency to manage the National Forests. As noted in my testimony to the Committee, a recent report for Oregon Governor John Kitzhaber and Oregon's Legislative leaders suggests that "[a]n investment in forest health restoration has the potential to save millions of dollars in state and federal funds by avoiding costs associated with fire suppression, social service programs and unemployment benefits."¹ Congress must provide the Forest Service with the tools it needs to succeed-including an emergency fire funding structure that protects important land management programs. Failure to do so will only exacerbate the current wildfire and forest health crisis facing our National Forests.

¹National Forest Health Restoration: An Economic Assessment of Forest Restoration on Oregon's Eastside National Forests at pg. IV. Nov. 26, 2012. Available at www.oregonstate.edu/inr/national-forest-health-restoration

RESPONSE OF DOUG DECKER TO QUESTION FROM SENATOR BARRASSO

Question 1. As you know, the NASF supports S. 327, the Good Neighbor Forestry Act. Colorado has used Good Neighbor Authority successfully on hazardous fuel reduction projects. In your written testimony, you talked about how passive forest management by the federal agencies is transferring risk to neighboring landowners. Good Neighbor authority would allow state foresters and agencies to voluntarily work in a collaborative fashion to address a variety of forest health needs within intermixed land ownerships.

As a state forester, how do you view Good Neighbor Authority working to further our cooperative land management goals and are there things Congress can do or not do to ensure state foresters will use the tool to enter into contracts with federal agencies?

Answer. The Good Neighbor Authority has proven a successful model of cooperation in Colorado and Utah. Declining federal budgets and increasing spending on wildland fire suppression have resulted in fewer forest management projects, which only further inhibits our ability to address the growing forest health and economic problems in rural America. The Good Neighbor Authority provides states and federal agencies with an additional tool to implement land management projects to treat insect infested forests, reduce hazardous fuels, and restore or improve forest, rangeland and watershed health, including fish and wildlife habitat. NASF supports the expansion of the Good Neighbor Authority to all states with National Forest System and Bureau of Land Management lands. As you consider expanding the Good Neighbor Authority, state foresters urge Congress to move forward with language that retains maximum flexibility for states to implement projects under the Authority.

RESPONSE OF THOMAS TIDWELL TO QUESTION FROM SENATOR FRANKEN

Question 1. Please provide an update on the progress you are making in working with the State of Minnesota and with the Superior National Forest on both the exchange and sale components of the Boundary Waters Canoe Area land exchange issue.

Answer. We fully support the value and importance of the proposed purchase and exchange of State of Minnesota lands within the Boundary Waters Canoe Area. This is the second year the Eastern Region has submitted the proposed purchase and land exchange as a LWCF Pre-Proposal. LWCF projects are to be collaboratively developed including the robust participation of at least two Federal agencies. To date, the project has not been selected to move forward, but the Forest Service continues to discuss options to submit a full proposal with the full support from other federal agencies, the State of Minnesota and other partners. In the meantime, the Forest Service is moving ahead with the State of Minnesota regarding feasibility analysis for a portion of the proposed candidate federal exchange parcels outside of the BWCAW. This is an initial step towards the combined purchase/exchange that the State and Forest Service agree is appropriate solution. Funding through LWCF or other source for federal purchase of school trust lands within the BWCAW will move us closer towards this solution.

RESPONSES OF THOMAS TIDWELL TO QUESTIONS FROM SENATOR MURKOWSKI

The rapid assessment report by the Ecological Restoration Institute on the Efficacy of Fuel Treatments makes the point that more hazardous fuel treatments are needed in the backcountry if we are going to reduce the size and severity of landscape-scale mega-fires that can scorch watersheds and drain agency budgets.

Question 1. How much of the hazardous fuels budget is focused on treatments in the backcountry?

Answer. The Forest Service does not track direct expenditures in the backcountry directly. The agency tracks the number of acres treated within and outside the Wildland Urban Interface (WUI). In FY 2012, 77% of acres treated using Hazardous Fuels funding was in the WUI. That means 23% of the acres treated using Hazardous Fuels funding were outside the WUI.

Acres treated within the WUI are often more expensive than acres outside the WUI. Program direction used by the Forest Service guides decisions regarding hazardous fuel reduction for protecting communities (and associated lives, property and public infrastructure) and other high priority areas.

Question 2. How will this report and this finding in particular, affect your planning and budgeting in hazardous fuel reduction programs in the future?

Answer. The Efficacy of Fuel Treatments report from Northern Arizona University confirmed that decisions about natural resource management are complicated and dynamic. It is important to consider the dynamics of the ecosystem, the scale of the treatments, and the timing of the treatments. The impacts of a wildfire can extend well beyond the boundaries of the fire and the timing of the suppression effort.

We believe the report reinforces and strengthens our commitment to a tiered system of planning and budgeting. There are some decisions that are appropriate at a national-scale, e.g., budget distribution to regional offices. On the other hand, decisions about design and implementation of site-specific fuel treatment projects are best made collaboratively, at the local level, in conjunction with the affected communities and our partners. This helps us avoid the pitfalls of a “one-size-fits-all” program.

This report contributes to the best available science that must be considered when making land management decisions. It is likely that in many areas this report will help collaborative efforts establish the best mix of treatments to be implemented across the landscape, both inside and outside of the WUI.

Fuel treatments will reduce the severity of wildfire resulting in less damage to watersheds, increasing suppression effectiveness and reducing the threat to communities, the public and firefighters. We need to increase our efforts to treat larger areas of both WUI and the back country in conjunction with work on private and State land.

Question 3. What measures are currently being taken by the agencies to contain wildfire suppression costs? What performance measures does the Forest Service currently use regarding cost containment?

Answer. We have made significant strides in implementing risk management for fire suppression efforts, to ensure we have an appropriate, risk informed, and effective response to all fires. Cost is one outcome of our decisions. By utilizing risk management techniques we are successful in having positive financial outcomes on our suppression operations. We are currently evaluating new performance measures that focus on management decisions and their outcomes.

Question 4a. There is a certification process that all operators must put their aircraft through to be allowed to fight on Forest Service fires. It includes FAA certification and certification by the Air Tanker Board.

How long does the certification process take to get aircraft in the air fighting fires?

Answer. It can be three years or more for vendors to achieve both FAA certification and certification by the Interagency Airtanker Board. The length of time to achieve both certifications depends on the aircraft, tank design and the capital invested by the vendor in development.

Question 4b. What is the quickest you have seen a company get one of the existing certificated aircraft through that process?

Answer. Three years is the quickest a company has previously completed the required aircraft certification and approval process. This includes design, manufacture and retardant tank approval as well as FAA certification, Interagency Airtanker Board evaluation, and final Forest Service approval.

Question 4c. How long did it take the Forest Service to accomplish the airworthiness surveys it undertook after the agency grounded all of the heavy slurry aircraft in 2003 and 2004?

Answer. The Forest Service worked with the FAA and National Transportation and Safety Board who provided input into the process and plan to return the aircraft back to the wildland fire mission. It took four months to determine if the aircraft had an operational life for the airtanker role and an additional two years to perform the engineering analysis and develop inspection programs for the airtanker mission.

Question 5. If you get the C-27Js from the AirForce are you fully committed to using most (90% or greater) of those aircraft to deliver slurry on the forest fires the Next Generation aircraft have been contracted to do?

Answer. The Forest Service is committed to using any C-27J aircraft transferred from DoD in multiple wildland fire missions. The primary mission as a medium airtanker would be aerial application of fire retardant. Secondary missions would be smokejumper and cargo delivery and fire crew transport. The Fleet of C-27J aircraft would augment the fleet of Next Generation large airtankers currently on contract. We cannot predict exactly how many C-27J aircraft will be available and what the ratio will be compared to the Next Generation aircraft.

RESPONSES OF THOMAS TIDWELL TO QUESTIONS FROM SENATOR BARRASSO

Question 1a. Earlier this year, the House passed a Continuing Resolution to fund the Forest Service Wildland Fire Management account at \$2.44 Billion. Senate Majority Appropriators then stripped the Wildland Fire Management account of \$473 million before it became law. This reduction to the Forest Service budget is more than four times the approximate \$114 million sequester cut to Wildland Fire Management.

Was the Forest Service made aware of these substantial cuts to Wildland Fire Management before they took place?

Answer. The Forest Service was not part of the Congressional deliberations regarding this subject.

Question 1b. Did the Forest Service agree with the Senate Majority's action to reduce Wildland Fire management by \$473 million dollars

Answer. The Forest Service supports the funding level requested per the FY13 President's Budget Request.

Question 1c. If not, did the Forest Service contact Senate Appropriators and ask them to keep the House passed funding levels available for fighting fires?

Answer. The Forest Service supports the funding level requested per the FY13 President's Budget Request.

Question 2a. By all accounts the U.S. is facing another active fire season. On May 13, 2013 Secretaries Vilsack and Jewell were at the National Interagency Fire Center in Boise, Idaho to discuss the upcoming fire season. Secretary Vilsack said because of sequestration, the Forest Service will have 500 fewer fire fighters. Given the importance of protecting life and property, I am concerned with Secretary Vilsack's statement that the Forest Service will have 500 fewer fire fighters.

My understanding is the Forest Service currently has transfer funding authority under the Forest Fires Emergency Act of 1908 to bring on additional fire fighting personnel if needed. Is that correct?

Answer. The Forest Service does have authority to transfer "any appropriations or funds available" to the Wildland Fire Management appropriation for forest fire-fighting upon notification to appropriators that fire suppression funds (in both the Wildland Fire Management and FLAME accounts) will be obligated within 30 days. The transfer authority is provided in the annual appropriation acts.

Question 2b. Why did Secretary Vilsack indicate the Forest Service will be short 500 fire fighters for the season when State, Tribal, and Local government personnel, and other Call When Needed crews stand willing and ready to assist?

Answer. The Secretary was only referring to the agency's internal capacity. We will continue to utilize all available cooperators and contracted firefighting assets to support suppression operations.

APPENDIX II

Additional Material Submitted for the Record

THE WILDERNESS SOCIETY,
Washington, DC, June 3, 2013.

Hon. RON WYDEN,
Chairman, Committee on Energy & Natural Resources, U.S. Senate, Washington, DC.

Hon. LISA MURKOWSKI,
Ranking Member, Committee on Energy & Natural Resources, U.S. Senate, Washington, DC.

DEAR CHAIRMAN WYDEN AND RANKING MEMBER MURKOWSKI:

The Wilderness Society respectfully requests that this statement be included in the June 4, 2013, Committee on Energy and Natural Resources hearing record regarding wildland fire management.

Wildland fire is a natural disturbance that is essential to the development of flora and fauna in many forested ecosystems. Some forests are adapted to frequent surface fires under the canopy, while others are adapted to burning less often as landscape-clearing fires. While fire is a necessary natural process, it nevertheless poses well-known challenges to land managers and policy-makers, especially in places where people and forests overlap. Every year, fires tragically destroy homes and burn uncharacteristically through wildland vegetation that is not adapted to regular crown fire. Recent research shows that, in the Southwest and southern Rocky Mountains at least, fires have increased in severity and extent over recent decades¹, putting at risk the ability of ecosystems to recover. Climate change promises to increase the trend.

In response, enormous amounts of money have been spent on suppression activities and fuel treatments to reduce the risk. Wildland fire now consumes a significant fraction of the budget of the U.S. Forest Service, stealing resources from stewardship activities and public services like recreation management. Fuel treatments generally have been shown to be effective at changing local fire behavior under moderate weather conditions, but fires continue to degrade landscapes and destroy homes. More money spent on fuel treatment and restoration in dry forests may improve the situation over time, but such treatments are enormously expensive, and the return on investment is unclear.

Fortunately, there is one management alternative that has been shown to pay off: Wilderness. Wilderness fire management, where natural ignitions are allowed to burn under safe, prescribed conditions, has been shown to reduce fuels and improve landscape condition at a fraction of the cost of fire suppression². In places like the Selway-Bitterroot³ and Bob Marshall⁴ wilderness complexes in the northern Rocky Mountains, the Gila Wilderness⁵ in the Southwest, and Yosemite National Park⁶,

¹Dillon, G.K., Z.A. Holden, P. Morgan, M.A. Crimmins, E.K. Heyerdahl, and C.H. Luce. 2011. Both topography and climate affected forest and woodland burn severity in two regions of the western US, 1984 to 2006. *Ecosphere* 2(12):130. Doi: 10.1890/ES11-00271.1

²Noss et al. 2006. Managing fire-prone forests in the western United States. *Front Ecol Environ* 4(9): 481-487.

³Brown et al. 1994. Comparing the prescribed natural fire program with presettlement fires in the Selway-Bitterroot Wilderness. *Int. J. of Wildland Fire* 4:157-168.

⁴Larson et al In Print. Latent resilience in ponderosa pine forest: effects of resumed frequent fire. *Ecological Applications*.

⁵van Wagtenonk, J.W. 2007. The history and evolution of wildland fire use. *Fire Ecology* 3(2): 3-17.

⁶van Wagtenonk, J.W. 1995. Large fires in wilderness areas. In: Brown et al., Tech. Coords.Proceedings: Symposium on fire in wilderness and park management; 1993 March 30-April 1; Missoula, MT. Gen. Tech. Rep. INT-GTR-320. Ogden, UT: U.S. Department of Agriculture

Continued

decades of natural fire management have produced forests that are demonstrably more resilient to fire than adjacent landscapes where fire has been excluded. In the Selway-Bitterroot, past burns from several decades of natural fire now regulate the growth of new fires⁷, and on the Gila, a history of wilderness fire has produced a landscape that now burns at a lower severity than surrounding lands from which fire has been excluded.⁸ The designation of land as wilderness and its subsequent management under a program of natural fire is one of the great success stories in the challenging world of wildland fire management.

The policy of wilderness fire management has its roots in a very simple conception of the landscape. It holds that in any landscape there are places where we want to exclude fire because of its potential damaging effects (e.g., communities) and other places that are far enough away from communities that we need not be concerned about damage, and fire can be managed for its well-known beneficial effects on ecosystems. In between is a tension zone that is close enough to communities that residents are not completely comfortable with fire but where fire does not present an immediate threat to community infrastructure if it does occur. There, managers may choose to suppress fires, but also may use prescribed fire and mechanical fuel treatments to restore forest structure and ensure that inevitable escapes inflict minimal damage. In general, Wilderness is found on the most remote parts of the landscape, and it is there that managers, beginning almost fifty years ago, realized they could use fire to sustain healthy ecosystems while saving on suppression costs.

The Wilderness Society believes that recognition of these three zones provides a coherent framework for achievement of fire management priorities: community protection, ecosystem sustainability, and reduced costs. We recommend that federal agencies develop a landscape-scale, three-zone fire management strategy across each administrative unit that reflects these three situations:

- The “Wildland-Urban Interface” (WUI) exists immediately adjacent to communities and is managed for their protection.
- The “Frontcountry Zone” occurs beyond the WUI and is managed to minimize unplanned fire (through suppression or containment) but also to restore conditions that are resilient to inevitable fires, restoring forest structure and using fire as a tool when conditions are safe.
- Beyond those zones, the full range of management responses to fire (from suppression to allowing natural fire) is possible, but a priority is placed on the use of fire to achieve ecological benefits. This area is called the “Backcountry Zone” to reflect the preference for fire use when conditions allow.

These three planning zones can improve management of public lands by focusing resources where they are most needed and helping to restore natural processes to those lands that can benefit from the restoration of natural fire regimes.

The Wildland-Urban Interface (WUI)

The highest priority of fire management must be the protection of people and their homes. Thus, the first step in designing a plan that addresses fire is to identify the WUI the area around communities that should be managed to protect homes and structures from wildland fire. The WUI is that area in and adjacent to communities that should be examined for opportunities to improve public safety through infrastructure improvement and fuel treatment to protect homes. It will not be necessary to treat fuels everywhere within that zone, but quantifying the extent of the area where communities are at risk from wildland fire can help focus community protection efforts.

It has been demonstrated that the most effective way to protect homes is to build them out of fire-resistant materials and aggressively reduce adjacent fuels. The simple principle behind this notion is that homes will not burn if they do not ignite, regardless of what happens to the surrounding forest, and research by the U.S. Forest Service has shown that a very narrow “home ignitability zone” of approximately 60 meters determines whether a home will burn. By clearing highly flammable fuels near homes, thinning small-diameter trees within 60 meters of homes, and building

culture, Forest Service, Intermountain Research Station: 113-116; Collins, B.M. and S.L. Stephens. 2007. Managing Natural Fires in Sierra Nevada Wilderness Areas. *Frontiers in Ecology and the Environment* 5(10): 523-52

⁷ see Success Stories from the Western Region: Selway Bitterroot Wilderness Fire Program (http://www.wflcenter.org/success_stories/pdf-53/)

⁸ see Neil LaRubbio, Fire science: Research in Gila National Forest unprecedented, High Country News, November 12, 2012 (http://www.denverpost.com/opinion/ci_22041591/larubbio-what-scientists-are-learning-from-wildfire-new#ixzz2V5zcXlki)

with non-flammable materials, especially roofs, fire risk to homes can be dramatically reduced.

Beyond the 60-meter home ignitability zone, communities may wish to thin trees to create “defensible space” within which firefighters may work safely, to reduce the probability of crown fire, and to protect scenic views or watershed quality. Rules of thumb developed by fire physicists and fire safety personnel suggest that community protection zones of 400 meters could provide an area that would allow firefighters to work safely to protect structures. In general, extension of the WUI more than a half-mile beyond community boundaries serves only to dilute the effectiveness of community protection efforts.

The Frontcountry Zone

The Frontcountry Zone extends beyond the WUI to a distance where it may be viable for fire to occur as a natural landscape process. Within the Frontcountry Zone, prescribed fire may be used intentionally to achieve management objectives. There, the primary management objectives are the protection of critical resource values within the zone, such as recreation sites, experimental forests, and research natural areas, and the restoration of forest composition and structure in dry forests that have suffered from a century of logging, grazing, and fire exclusion. The objective of restoration is to reestablish a condition that is resilient when the inevitable fire occurs, based on an understanding of the conditions that made forests resilient to fire historically.

While some may argue that the Frontcountry Zone should be as broad as possible to facilitate restoration across the maximum extent of the landscape, there are many practical reasons to constrain the Frontcountry Zone. First, the larger the Frontcountry Zone, the more land must be managed under an obligatory suppression/containment response, which has proven to be more difficult and expensive over time. Constraining the Frontcountry Zone allows suppression forces to focus on a smaller portion of the landscape where they can be most effective. Second, restoration work is expensive and simply cannot be done everywhere. So far, restoration work has not paid its own way, and for the foreseeable future, it will need to be supported through taxpayer investments. Sound fiscal management requires that those investments be limited.

Finally, to be effective, restoration must be focused on the places where it is needed most. Throughout the arid West, the landscapes that are most in need of restoration are those immediately adjacent to communities, often at the base of adjacent mountain ranges. These dry, low-elevation forests of ponderosa pine, Douglas-fir, and various oaks have been the most altered by fire exclusion and are the most in need of treatments to restore a fire-tolerant forest structure. Constraining the Frontcountry Zone to the area closest to the WUI will focus restoration efforts where they will yield the greatest benefit.

The Backcountry Zone

In the Backcountry Zone, although the full suite of management responses (including suppression and containment) are available depending on the severity of weather conditions, the intent is to maximize opportunities to use fire to achieve ecological benefits. Managing naturally burning fires in designated, remote sections of the landscape is widely accepted by scientists and policymakers as an important tool for helping to restore forest health and mitigating the escalating costs of fire suppression.

Identifying the specific conditions under which to allow fires to burn requires detailed scientific and spatial analyses. Even in remote areas, forest conditions, weather and wind factors may preclude the safe use of fire. Fire use is only appropriate where the results of fire are likely to produce resource benefits. Generally, this requires a determination that fire behavior will be natural or historically typical for the location and a determination made before the fire, either in a land and resource management plan or a fire management plan, that natural fire is likely to benefit the ecosystem. Because remote areas tend to be in higher-elevation, cooler vegetation types, little of the Backcountry Zone is likely to be in low-severity-fire forest types that may require thinning or prescribed fire before natural fire will yield resource benefits. The vast majority will be in less-frequent fire regimes that will likely benefit from natural fire.

While the Backcountry Zone may include roadless areas and remote, roaded lands, it is especially appropriate for wilderness. Wilderness policy already supports maintenance of fire as a natural process, and managers are accustomed to its presence. In many places, decades of fire use have produced conditions that are well adapted to fire, and in many others, fire, if allowed to burn under moderate weather conditions, will yield benefits even after decades or centuries without it. Wilderness

is a valuable component to a comprehensive landscape-scale fire management strategy.

Sincerely,

GREGORY H. APLET, PH.D.,
Senior Forest Scientist.

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