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A National Crisis: Lack of Forest Management Resulting in Destructive Wildfires [and Global Degradation]

A *Call to Action*

Foreword

The intent of this document is to establish the framework and petition for a *Call to Action*. This *Call to Action* is designed to reduce the impacts of large, intense wildfires on people's lives, their communities, and lands along a rural to urban gradient resulting from lack of management of America's forests.² The results of this *Call to Action* will have positive global impacts, as well. The goal is to advance this *Call to Action* to key decision-makers [i.e., the President of the United States; Members of Congress; USDA³ Secretary; DOI⁴ Secretary; and other leaders] – as a *Petition* in order to secure support, advancement and finally, deployment.⁵

A National Crisis with Global Implications

Currently, there are over one billion burnable acres of landscapes across America. And, during the last three decades or so, the size and intensity of wildfires has left a path of destruction and annual losses in wildfire-related damages to infrastructure, public health, and natural resources estimated to be \$70 to \$350 billion each year.⁶

Sometimes we take the power of healthy forests for granted. In addition to their role in helping reduce the intensity of wildfires, healthy forests reduce the impacts of a changing climate by offsetting as much as 20 percent of the country's annual greenhouse gas emissions.⁷ Healthy forests also reduce flooding by catching rainwater, creating permeable soils and reducing erosion. Healthy forests are crucial for good quality water and air. Over one-half of Americans depend on healthy forests to capture and filter their drinking water. Healthy forests remove

² In this *Call to Action*, the term *forest* represents more than just trees. For example, the Chaparral Forests of southern California and the wide-range of vegetation that make up the urban gradient, specific to the Wildland-Urban Interface.

³ USDA: United States Department of Agriculture.

⁴ DOI: Department of Interior.

⁵ Petition Link: <http://chnng.it/bGsyZvSb>

⁶ The annualized economic burden from wildfire is estimated to be between \$71.1 billion to \$347.8 billion (\$2016 US). NIST Special Publication 1215. The Costs and Losses of Wildfires: A Literature Survey. Douglas Thomas, David Butry, Stanley Gilbert, David Webb and Juan Fung. Applied Economics Office Engineering Laboratory. November 2017.

⁷ https://www.fs.fed.us/climatechange/advisor/scorecard/Carbon_Infographic_Final.pdf

millions of tons of pollutants each year helping to reduce respiratory problems, such as asthma and even premature death that pollutants may cause. Healthy forests create habitat for a wide array of plants and animals, including those in which their continued existence is threatened.

The degradation of America's forests due to the lack of management and the subsequent destruction by uncontrollable wildfires has brought us to a pivotal point. That is, a lowered capability of our forests to help mitigate the adverse impacts of a changing climate and produce the air and water we need to survive, is resulting in planetary conditions that are threatening the very existence of humans and wildlife. Simply put, without the protection that healthy forests provide, we are jeopardizing the future of planet Earth.

For example, smoke from wildfires does not only affect people's health, it can speed up the melting of polar icecaps. Particulate matter in smoke – soot -- settles on glaciers and darkens the ice surface, thereby speeding up melting as more of the sun's heat is absorbed. A growing body of research suggests that wildfire soot will contribute to accelerating the Arctic meltdown in the decades ahead. With a projected rise in sea levels of about 2 meters by 2100 – due to ice melting -- the impacts along coastal communities throughout the world will be devastating. According to research by Cornell University in 2017, "...2 billion people – about one-fifth of the world's population – could become climate change refugees due to rising ocean levels by 2100."⁸ The social and economic impacts of this level of displacement is almost incalculable. As conservation leaders, we cannot stand by and allow this to take place. We must do all that can be done to mitigate the adverse impacts, now and ahead.

Declining forest health and large, high intensity wildfires that accompany this decline is *the* land conservation issue of our time. We must be vigilant. The lack of forest management is a safety issue. It is an economic issue. It is a security issue. This lack of forest management in America and the associated consequences is now a national crisis contributing to global degradation.

Discussion

In 2018, the Camp Fire wiped away the town of Paradise, California, killing 85 people directly. Other fires accounted for over 2,000 civilian deaths. The 2018 fire season was horrific in terms of its destruction. But it was not that much different than what happened in 2017; 2016; 2015; 2012; 2011; 2009; 2008-2004; and, 2001-2000.⁹ 2019 may prove to be somewhat of a reprieve overall, even though the number of fires and acres burned across the country were still significant¹⁰. However, this *reprieve* has unfortunately become an anomaly. We cannot become complacent.

Smoke is Also a Killer

Although it may not be as obvious as a raging inferno, smoke from wildfires is also a killer. America's population is expected to decline between 2000 and 2100. However, the mortality attributable to wildfire smoke is expected to triple between now and the end of the Century --

⁸ <https://news.cornell.edu/stories/2017/06/rising-seas-could-result-2-billion-refugees-2100>

⁹ For the latest fire statistics, use this website: <https://www.nifc.gov/fireInfo/nfn.htm>

¹⁰ 2019 wildland fire statistics as of 11/22/2019: Number of Fires [46,706] and Acres Burned [4,612,659]. To date, this is about 80 percent in Number of Fires and 70 percent in Acres Burned of the reported 10-year average.

from as much as 25,000 to about 75,000 deaths per year.¹¹ More conservative estimates show this range to be from about 15,000 to 44,000 annual deaths.¹²

According to the US Climate and Health Alliance¹³, "...wildfire smoke is primarily made of carbon dioxide, water vapor, carbon monoxide, particulate matter, hydrocarbons and other organic chemicals, nitrogen oxides, and many other trace elements. Smoke composition can vary, depending on the fuel type, fire temperature, and wind conditions. Of these pollutants, "particulate matter [PM] is the most concerning, given their very small size and ability to be inhaled deeply into the lungs." According to the Environmental Protection Agency¹⁴, numerous scientific studies have linked long-term PM_{2.5} [also called particle pollution] exposure to a variety of problems, including:

- Cancer.
- Stroke.
- Irregular heartbeat and heart attacks.
- Respiratory problems, such as irritation of the airways, coughing or difficulty breathing.

People with asthma, heart or lung diseases, children and older adults are the most likely to be affected by particle pollution exposure.

According to atmospheric researchers, led by a team from Yale and Harvard, "The scope of the problem is immense: Over the next three decades, more than 300 counties in the West will see more severe smoke waves from wildfires, sometimes lasting weeks longer than in years past."¹⁵ An obvious and immediate concern should be the vulnerability of the first responders, our wildland firefighters.

It's a Tie for the Top Spot

Large, high intensity wildfires throughout America – especially in the west – have created this national crisis. The three primary reasons are, with a tie for the top spot:

1. Lack of forest management.
1. The impacts of a changing climate.
3. The expansion of the Wildland-Urban Interface

In some of my past writings I have stated that the primary culprit for the deterioration of America's forests [reminding us all that *forests* represent more than trees]¹⁶ and the incredible destruction caused by wildfires, is the *lack* of forest management. Further, I have concluded that the impacts of a changing climate represents a real force, no doubt, but not the driving force.

¹¹ B. Ford, M. Val Martin, S. E. Zelasky, E. V. Fischer, S. C. Anenberg, C. L. Heald, J. R. Pierce. Future Fire Impacts on Smoke Concentrations, Visibility, and Health in the Contiguous United States. *GeoHealth*, 2018.

¹² <https://grist.org/article/44000-americans-could-end-up-dying-from-wildfire-smoke-every-year/>

¹³ <http://usclimateandhealthalliance.org/wildfires-public-health-view-front-lines/>

¹⁴ <https://www.epa.gov/pm-pollution/health-and-environmental-effects-particulate-matter-pm>

¹⁵ <https://www.cbsnews.com/news/2019-wildfire-season-smoke-from-wildfires-increases-health-risks-for-millions-of-americans/>

¹⁶ For example, the Chaparral Forests of Southern California and the wildland-urban forests [a wide-range of vegetation and tree species] are in critical need of improved management. Fuels treatment represent far more than just trees.

Lately, however, the lines between the two – impact of wildfires and impact of a changing climate on the warming of our planet have become much too blurred for me to make a rationale distinction; there is none. As Jad Daley, President and CEO of American Forests concluded in his November 2018 article, “Climate Change = More Fire = More Climate Change.”¹⁷ Or, as Bob Berwyn of Inside Climate News stated in his August 2018 news note, we are in a “vicious cycle when the results of warming produce yet more warming.”¹⁸

The Paris Climate Agreement of 2015¹⁹ provided worldwide awareness, leadership and goals to help ensure post Industrial Revolution global warming would not exceed a +2oC threshold [from pre-Industrial Revolution levels]. To many, including myself, withdrawing from the Paris Climate Agreement [also known as, the Paris Accord] indicates to the world that the United States no longer cares about global warming and its impacts on the health, economy and security of current and future generations. Since 1895, temperatures in the United States have increased by about one-half degree Fahrenheit; projections by mid-Century are 2 to 4 degrees.²⁰ That’s huge. The consequences will be devastating. We cannot afford to abdicate our responsibility as visionary leaders to help mitigate the impacts of a changing climate. Time is running out.

An estimated 120 million Americans in more than 46 million homes are at risk due to wildfire; 72,000 communities are directly in harm’s way. Thousands of heroic firefighters have died protecting people and property. How many more reasons does it take before we can begin to improve America’s forests so fire can be used as a conservation tool and no longer feared for their destruction? We have a national crisis. The American people are calling for a solution. What is happening does not need to happen. We know what to do to stop this destruction. Now is the time for a *Call to Action*.

The National Fire Plan

It has been almost 20 years since the report entitled, “Managing the Impacts of Wildfires on Communities and the Environment” [the *National Fire Plan*] was written by the Departments of Agriculture and Interior. A critical feature of the *National Fire Plan* was “hazardous fuels reduction improves forest health and its resiliency to fire.” Unfortunately, not much has changed since then. In fact, land conditions have deteriorated. For example, in 2001 there was an estimated 38 million acres on our National Forests considered to be at high risk from destructive wildfires. Today, the estimate is about 80 million acres; some analysis suggest as high as 90 million acres.

A Funding Gap That Has Never Been Closed

The primary culprit for this deterioration, is the lack of forest management. And, this is due to the lack of adequate resources, caused by 25+ years of shifting funds *from* management actions *to* the fire suppression effort.

¹⁷ Daley, Jad. *New Math: Climate Change = More Fire = More Climate Change*. American Forests. Nov 27, 2018.

¹⁸ Berwyn, Bob. How Wildfires Can Affect Climate Change (and Vice Versa). Inside Climate News. August 23, 2018.

¹⁹ The Paris Agreement [Accord de Paris]. United Nations Framework Convention on Climate Change [UNFCCC]. 2015.

²⁰ <https://www.americangeosciences.org/webinars/wildfire-management-in-the-21st-century>

For example, about 60 percent of the current Forest Service budget goes toward controlling fires. In 1995 this amount was about 16 percent. As more and more of the agency’s resources were [and are] shifted to the fire effort, fewer funds are available to support forest management work – the same restorative projects that reduce the fire threat. Clearly, a paradox has been created. As funds are shifted away from forest management work, fires have become larger and much more destructive because forests are not being maintained. The loss of funds for forest management over the last decades has not been restored to the Forest Service through the appropriation process. This gap equates to about \$2.2 billion, annually. The specific investment of just the Forest Service amount, when restored, should be as follows:²¹

- +\$97 million for “federally assisted state programs [the Forest Stewardship Program] to address the “...strengthening the stewardship of private lands”, as stated by USDA Secretary Perdue.
- +\$600 million for hazardous fuels reduction [this brings the overall level for the Forest Service to \$1.05 billion]. Not the \$2.4 billion per year called for in some estimates but an important increase none-the-less over the completely inadequate \$450 million being proposed in the 2020 budget.
- +\$26 million for fire science and technology development [including defensible space protection in the Wildland-Urban Interface].
- +\$45 million for the cooperative fire programs.
- +\$14 million for forest health protection [specifically, invasive species control].
- +\$1.385 billion for management actions on the National Forests.
- +\$33 million for biomass uses that include wood-based nanotechnology [cellulose nanomaterials], specifically addressing low value wood, such as hazardous fuel.

Lack of Forest Management

At an August 16, 2018 Cabinet Meeting²², the President of the United States spoke about the need to improve the *maintenance* of the forests. The Department of Interior Secretary Zinke [former] stated that the current situation of uncontrollable wildfires is due to “gross mismanagement [of the forests] for decades.” Actually, what former Secretary Zinke said was not true. It is not *gross mismanagement*. It is little or no management. Nobody knows how to manage forests better than the Forest Service. But, “...you cannot do when you do not have.”

In a November 19, 2018 opinion piece entitled “...Who or What Is Really Responsible for the Huge Forest Fires in California? [by Bruce Bialosky],” a quote from Chris French, now Deputy Chief of the National Forest System stated: “the primary cause of the intense forest fires is the forests are overstocked. There are more trees than 100 years ago.” Simply put, America’s forests are getting clogged up. Again, please be reminded that our forests – which are much more than just trees²³ [for example the Chaparral Forests of Southern California] -- are getting stressed,

²¹ These estimates are for the Forest Service only. Additional amounts, if any, will need to also be determined for the DOI.

²² See 11:53 of the Cabinet meeting: <https://www.youtube.com/watch?v=mNddZ4cwzRU>

they are dying, and are becoming a tinderbox for fire. And, once a fire gets a foothold, they become destructive behemoths that destroy everything in their paths.

Forest Management: Pace and Scale

Again, the primary culprit for the deterioration of America’s forest and the incredible destruction caused by wildfires, is the lack of forest management. But whenever the term “forest management” surfaces, there are many that conclude, “that’s just a coverup for *logging*” and as former Forest Service Chief Jack Ward Thomas said, “gladiators form and fights ensue.” To be clear, forest management focuses on managing vegetation, restoring ecosystems, reducing hazards and maintaining forest health. Vegetation management²⁴ activities, including timber harvesting [including salvage], thinning, pruning and prescribed fire are fundamental to the management of trees, forests and forest ecosystems. Over the last 30 years, timber harvest levels, for example, have declined by about 80 percent. Excessive regulations, disguised as important to an *environmental movement* have in fact contributed to a reduction in environmental health.

Let there be no doubt, the health of America’s forests is declining. Wildfires are destroying lives and property, reducing air quality, altering critical wildlife habitat and killing millions of animals needlessly. Forests in declining health, the impacts of a changing climate, and the expanding Wildland-Urban Interface, has created a volatile mixture that has led to the current national crisis. Now, it is time to step forward with a concentrated effort and address the 19-20 million acres annually of forests across our country that need some type of restorative action – about 8 million acres each year on the National Forests.

The goal of this restoration commitment is to help create healthy, sustainable forests that are more resilient to disturbances so the linkage between environmental health and community stability can be more fully realized.

Reduction in Hazardous Fuels

This large, fundamental task cannot be accomplished with such a meager level of funding. In the late 1990s, a General Accounting Office (GAO) report noted that “the most extensive and serious problem related to the health of forests in the interior West is the over-accumulation of vegetation, which has caused an increasing number of large, intense, uncontrollable, and catastrophically destructive wildfires.” When the National Fire Plan was written, it was thought that about \$850 million annually was required to more effectively address the issue of hazardous-fuels removal. More recently, a 2013 Congressional Research Service report suggests costs for a comprehensive hazardous fuels treatment program for the National Forests could exceed \$2 billion a year.

The point is, cost estimates to effectively address the removal of hazardous fuels range from about \$1 to \$2 billion dollars a year for just the Forest Service depending on the acres that can be

²⁴ Vegetation management includes a wide-range of vegetation types and tree species. Perhaps a newer phrase in our communications needs to emerge. That is, instead of the lack of *forest management* we should say, lack of *vegetation management*. Our forests are more than just trees!

treated. The current agency budget for this activity is about \$450 million. Thus, with only a fraction of required funds available, focusing work on the highest-priority areas is fundamental to success. But let's be candid: no amount of focusing can offset this level of funding shortfall. Simply put: at the current investment level, the effort in reducing hazardous fuels is not making a difference that is even close to what is needed.

Biomass Uses

Most people are aware that traditional timber harvesting, thinning, and salvage of dead and dying trees, as examples, represent biomass removed and then used; shorthand for *biomass uses*. Recently, biomass uses have turned to more innovative solutions that offer opportunities for high-volume, high-value markets for lower quality wood. For example, wood-based nanotechnology²⁵, a biomass use example, offers a revolutionary technology to create new jobs and strengthen America's forest-based economy through industrial development and expansion as well as providing means to enable forests to remain healthy and sustainable through accelerated restoration. Wood-based nanotechnology applications include packaging barrier coatings; printing paper coatings; structural composite panels for construction; flexible electronic displays; printed electronics; lightweight structural and non-structural panels and parts for aerospace; automotive applications; and, a host of industrial tools and consumer products.

Other examples include innovations in the development, application and technology transfer of cross laminated timber – CLT -- for use in nonresidential building construction.

These science-based innovations are critical to forest restoration, thus healthy forests. The greater the amount of hazardous fuels that can be economically removed, the more efficient the forest management campaign becomes.

It is estimated that a strong, well-established program in cost-effective biomass uses could create high-value markets from low-value wood [i.e., hazardous fuels] that could reasonably help restore about 20 million forested-acres annually. About one-half of the nation's 885 million acres of forestland currently requires some type of restorative action. This pace and scale of restoration could reduce future fire suppression costs in the range of 12-15 percent [some say as high as 23 percent]. In terms of what the 2018 fire suppression expenditures were, this represents a savings of about \$1 billion! These are funds that could be redirected for forest management uses, which will in turn help reduce the size and intensity of unwanted fires. Simply put, it makes good economic sense to aggressively invest in biomass uses to help achieve more resilient forests throughout the rural to urban land gradient. As stated earlier, funding in the range of \$33 million per year equates to a "strong, well-established program" in innovative biomass uses.

A Call to Action

Conservation leaders are concluding that in order to "create healthy, sustainable forests that are more resilient to disturbances -- so the linkage between environmental health and community

²⁵ https://www.fpl.fs.fed.us/documnts/pdf2014/fpl_2014_rains001.pdf

stability can be more fully realized” -- a *Call to Action* is required. That is, a well-coordinated partnership that bands together, shares resources and avoids duplication will ensure a successful campaign that improves our forests and the economy and protects lives and property.

This *Call to Action* will include a:

1. **National Commitment.** This shall include a formal declaration of an unprecedented national federal, state and local commitment to aggressively manage America’s forests along the complex rural to urban land gradient, so the destructive nature of large, high intensity wildfires will be reduced. The national commitment must address the current lack of resources that have dictated a lack of forest management, resulting in the landscape scale destruction from wildfires we are seeing every year. Estimates suggest this amount is more than \$2 billion annually for just the Forest Service. The total investment level for all involved shall be determined and budgeted. Leading the way for this national commitment will be a clear and powerful “Statement of Intent” to be issued jointly by the Secretaries of the Departments of Agriculture [USDA] and Interior [DOI]. Success of this national commitment we be enhanced by local and regional coalitions seeking to resolve common problems.

2. **Statement of Intent.** An example “Statement of Intent” is as follows:

“The lack of forest management across the country has greatly contributed to the current wildfire situation and the associated horrific impacts on people’s lives and their communities. This is going to change. Immediately, we [USDA and DOI Secretaries] will be meeting with Administration leaders and Congress to gain adequate funding for the *Toward Shared Stewardship Across Landscapes: An Outcome-Based Investment Strategy*²⁶ and other corporate guides.

This will be the beginning of a long-term campaign to ensure our landscapes become healthy, sustainable and more resilient to disturbances. We will be counting on the aggressive, promotional leadership of everyone to ensure our direct and indirect roles in the stewardship of America’s forests is achieved, now and ahead. The Forest Service Chief, as America’s Chief Forester, will be relentless in leading the way.”

3. **Vision.** The vision of the national commitment will be guided by the following: “To ensure America’s forests are healthy, sustainable and more resilient to disturbances in order to protect people, landscapes and communities from the destruction of large, high intensity wildfires.”

4. **Strategy.** *Toward Shared Stewardship Across Landscapes: An Outcome-Based Investment Strategy* shall be a guiding strategy for the Forest Service.²⁷ This will be augmented by the 2014 *National Cohesive Wildland Fire Management Strategy*.²⁸ The strategy shall include

²⁶ <https://www.fs.fed.us/sites/default/files/toward-shared-stewardship.pdf>

²⁷ <https://www.fs.fed.us/sites/default/files/toward-shared-stewardship.pdf>

²⁸ <https://www.forestsandrangelands.gov/strategy/thestrategy.shtml>

specific levels of vegetative management to improve ecosystem health through actions such as timber harvesting [including salvage], thinning, pruning, prescribed fire and reforestation. And, quantifying associated outputs and expected outcomes with specific investment levels targeted to specific geographic areas [i.e., a *fireshed*] that are at high risk to wildfire.

- 5. 10-year Plan of Work.** A comprehensive 10-year Plan of Work shall be developed to deploy the *Call to Action*. This Plan of Work will include monitoring and the annual evaluation of progress and outcomes, with adjustments as needed. The Plan of Work will need to include detailed tactics, including investment strategies to increase the pace and scale of forest restoration; optimal fire suppression methods; agency workforce requirements; outlining of specific roles; identification and deployment of improved organizational processes; comprehensive reform management; and the delineation of specific outcomes. These annual outcomes shall include, but not be limited to, the amounts of prescribed burning; targeted hazardous fuels reduction; increasing the production of traditional and innovative new forest products; and reducing the backlog in critically needed reforestation.

The recent “Increasing Workforce Capacity” report²⁹ developed by the National Association of Forest Service Retirees, as an example, provides a strong foundation for many elements of an effective 10-year Plan of Work for the *Call to Action*.

²⁹ <https://www.nafsr.org/advocacy/2019/072619%20Workforce%20Capacity%20Study.pdf>

