2021

Wildland Urban Interface Community Resiliency Program

POLICY RECOMMENDATIONS FOR FIRE-VULNERABLE COMMUNITIES

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Executive Summary

Wildfires have grown increasingly devastating over the past decade, with the summer of 2020 being the most devastating fire seasons on record for the west coast. Fire severity and frequency has been increasing due to a combination of two factors, climate change and a century of methodical fire suppression which has culminated in an excess of fuels in our forests. Fire exclusion and suppression on federal lands began in 1900s and has resulted in an excess of fuels in many wildland areas, especially those which used to burn on a more frequent basis, like the pine forests east of the cascades as well as oak savannas and other ecosystems which were historically maintained by frequent low severity fires. These fires removed wood, shrubs, branches, leaves and other vegetation from the area and maintained a vegetation structure with an open understory which prevented the occurrence of massive devastating fires like those which we see today. These areas were "resilient" meaning that they could bounce back from disturbances well, but by excluding fire our ecosystems are becoming increasingly unable to tolerate fire, which leads to more severe fires which take much longer to recover from Stephens et al., 2016). This lapse in resiliency is the direct result of fire exclusion and global warming.

Climate change has allowed for an extension of the fire season, which historically lasted from the late summer to the early fall; it now can run from midsummer to late fall. Ignitions from humans have become increasingly common due to the increasing size of the Wildland Urban Interface (WUI), which is the area in which human development and wildland areas like forests, chaparral and grasslands intersect. These areas are especially vulnerable to ignitions due to the overlap of typical wildland fire fuels such as grasses, shrubs, trees and woody debris, and human introduced fuels like trash, structures, and cars. Wildfire fighting practices prioritize the protection of human "improvements" on the land such as homes and other structures, but wildland firefighters are neither trained nor equipped to deal with the unique fuels presented by wildfires in the WUI. This means that WUI fires are more expensive and dangerous to fight than your average wildfire, and often suppression efforts are focused on the protection of homes.

More than 70,000 communities occupied by 46 million people in the U.S. are at risk for WUI fires and the WUI continues to grow at a rate of about 2 million acres annually (FEMA, 2021).

Significant work needs to be done on federal lands to reduce fuels and mitigate fire risks, however fire risk management should not fall solely on federal land management agencies like the United States Forest Service (USFS) and the Bureau of Land Management (BLM). Residents of the WUI, where fire risk is higher and man-made fuels present risks to wildland firefighters, should be held accountable for mitigating risk on their property. The implementation of a national WUI fire risk mitigation grant program could educate and motivate WUI landowners to do their part in hazard reduction by providing funding and

education about defensible space and wildland fire risks. Defensible space is a buffer created between a building and the vegetation and fuels present elsewhere on the property, such as bushes, trees, grasses, woodpiles, and propane tanks (Ready for Wildfire, 2019).

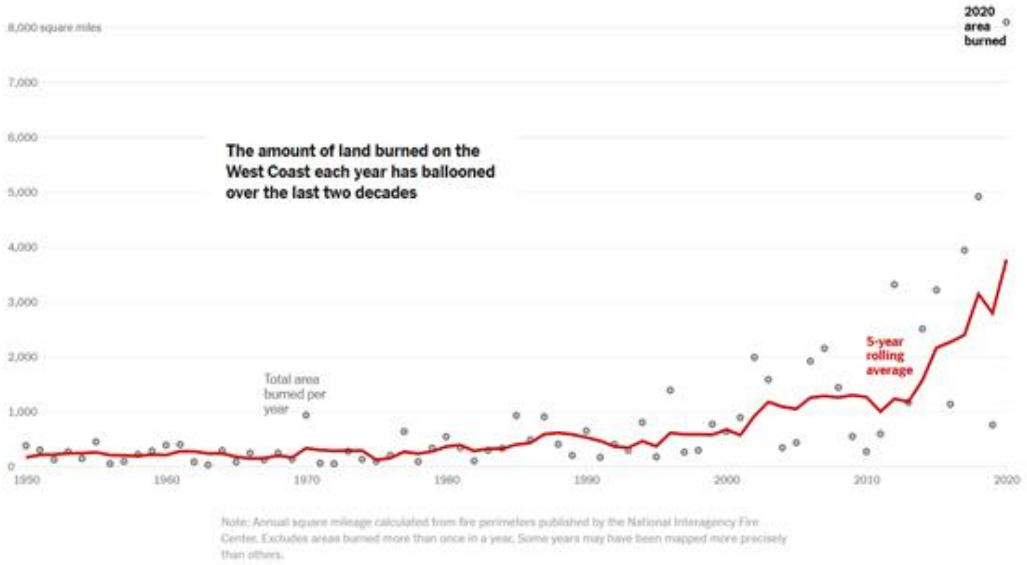

Figure 1: Acres Burned per Year Since 1950 (Graphs courtesy of the New York Times, Migliozzi et al., 2020)

Scope of the Problem

The Wildland urban interface (WUI) is the term used to describe the transitional area between human developments and the periphery of undeveloped vegetated or forested areas. Fire behavior and risks are different in the WUI than in either urban or wholly wildland areas. There is generally limited access for transportation, resource availability, or escape routes if needed. However, unlike undeveloped areas, there are people and structures at risk. This creates a responsibility to mitigate damage and protect the area even after the residents have evacuated. Human presence both increases the difficulty to manage vegetation, as it can be disrupted or unpleasing to residents, but human activity can increase the number of ignition sources and the likelihood of fires starting (Radloff, et al., 2018). In ideal conditions, natural burns would be self-regulated by reducing fuel loads and facilitating small, low severity fires without human assistance in most ecosystems. With a history of fire suppression and current management practices, fuel loads have accumulated, and any fire then would ignite would be high intensity and a risk to homes and personal safety. This leads to the accumulation of fuel loads so when a fire does ignite, it is both near homes and in a high-fuel setting. This exacerbates current wildland fire issues of long-term fire suppression, increasingly extreme wildfire seasons, and the social stigma around controlled burns which could mitigate this extreme fire behavior.

There is a misconception that WUI fires only occur in western states or only specific areas. This is incorrect, as the states with the

greatest number of houses in the WUI are California, Texas, Florida, North Carolina, and Pennsylvania (FEMA, 2021). Nationwide, more than 46 million residences are in the WUI and at risk for wildfires. The WUI expands approximately 2 million acres a year, increasingly putting stress on local communities and fire departments. The training and equipment needed for wildland firefighting are much different than urban structure fires, making it unsuitable for current community fire stations to manage the WUI as it is.

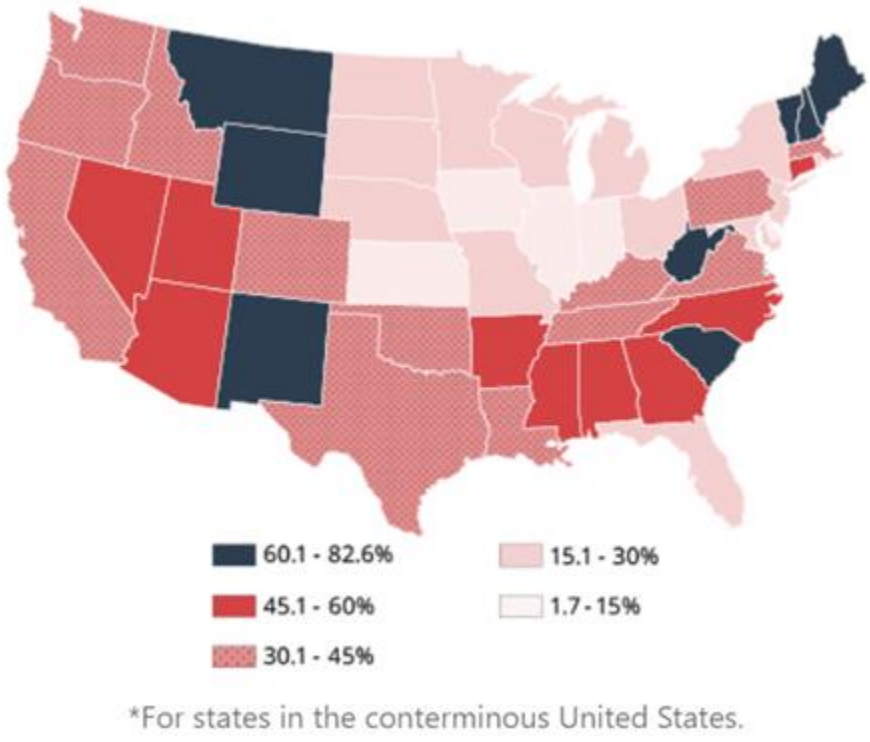

Figure 2: Percent of Houses in the WUI out of Total Houses in the State* (%) (U.S. Fire Administration, 2021)

Due to the lack of support from local fire stations, individual landowners need to take initiative and mitigate the fire risk to their own properties. Fire mitigation can make a property less likely to burn severely, which makes it more defensible. Wildland fire crews have made choices to prioritize defensible properties over difficult or unsafe properties in the same area. Property owners can mitigate their personal risk with a combination of methods such as roofing choices and fuels management. Unfortunately, this management is costly, and many individuals may not be capable of completing the necessary work themselves. Fire mitigation treatment is most effective when applied across communities, rather than single discontinuous properties in a landscape. For this reason, federal funding should be made available to lower fire risk and severity rather than waiting to suppress fires after they start.

There is currently a program through the BLM that provides a few types of financial assistance to community projects, all under the Fuels Management and Community Fire Assistance Program. This assistance can be in the form of grants, equipment, or technical information to complete the project (Federal Grants Wire, 2020). There is no currently set limit on the amount though it is a discretionary grant, and the amount available is highly variable from year to year. The objective of this program is to

lower vegetative fuels and mitigate the threat of catastrophic fires and protect the local and small business in rural communities.

Policy Alternatives

The increasing cost and incidence of wildfires has created a need for an update in policy. The USFS is spending an increasing amount of money on the fighting of fires both on and off public land. This expenditure has reduced their ability to perform preventative maintenance on forests, service and maintain recreation sites and roads, and generally created a stress on the budget which will only increase as fires become increasingly common and severe. The USFS currently spends approximately 50% of their budget on firefighting annually, compared to 16% in 1995, and it is projected that if no action is taken this number could reach 67% by 2025 (U.S. Forest Service, 2015). A suggested solution to this problem would be shifting the cost of fire fighting in areas not owned and maintained by the USFS or BLM onto local and/or state jurisdictions. This would reduce the financial burden of firefighting on the USFS and could incentivize communities to perform maintenance on their land in a proactive manner. However, this solution would likely cause other issues, and would add stress to the budgets of often already underfunded local governments. Local fire departments may not have the equipment or personnel to fight large fires, especially when the fire is in the WUI where typical urban fuels and wildland fuels intersect. Local firefighters are likely not trained to handle wildland fire fuels which would present danger to them and decrease the chances of successfully suppressing the fire. This solution would also be likely to create additional tension in already strained local government and federal government agency relations

Fuels treatments, which is the purposeful removal of forest fuels like brush, grasses, accumulated wood and other flammable materials from the forest, is a necessary management strategy which is being increasingly implemented on public and private lands. Decades of fire suppression and seclusion have left massive fuel loads in public forests and wildlands. However, public agencies do not have the funding or personnel to rapidly perform these treatments across the landscape. One of the most efficient and cost-effective methods of fuel reduction, prescribed fire, is socially unacceptable in many areas due to the decrease in air quality that occurs and a broad societal fear of fires which extends even to controlled fires. The land mass over which fuel treatments need to occur is massive, and it will take years and millions of dollars to complete the necessary maintenance to reduce wildfire occurrence. While fuels treatments are necessary, they are not an immediate solution to reducing fire risk in the WUI.

Policy Recommendations

The primary policy recommendation is to create a grant program for people living in the WUI to obtain funds for fuel reductions. These funds will be used to help individuals purchase fire resilient roofs, manage their vegetation, and lower fuels on their

properties. This is similar to the existing BLM program in that the federal government is supplying the means to lower fire hazards.
This program would stand apart from the BLM's Fuels Management and Community Fire Assistance Program because the funding would not come from the fire suppression budget, but instead a separate program. The BLM program is also aimed at communities rather than individuals, while the proposed program accepts both with proportional funding allotted. This ensures that there is sufficient funding available every year for both suppression and mitigation.

The secondary policy recommendation to create educational programs and campaigns for fire hazard awareness. These will be aimed at landowners in hazardous areas to help them manage their own properties and seek resources as needed. This includes existing programs and outside resources in addition to the proposed actions. This further informs landowners while also providing them with the opportunity to improve their own safety. Engagement and outreach programs would be established to promote safety practices, management techniques, and resource accessibility. This form of communication has been used in other forestry programs such as prescribed burn advocacy and mixed land use programs. The Smokey the Bear campaign had a significant impact on the way Americans view fire, and the same principles can be applied to fuels mitigation education (Cloughesy, 2018).

The third policy recommendation is to conduct a survey on the landscape level to assess fire risk. The survey will compile ecotype and topography data to give lower levels of government a rough estimate of the base level of risk and make management recommendations. State and Local governments can also use this data to allocate resources and assistance where it is needed most or create incentive programs to encourage participation. Surveys would be coarse grained and largely based in satellite imagery due to the scale of the project.

These policies combined would provide the means and motivation for residence of the Wildland Urban Interface to create defensible spaces and protect their homes. The initial policy recommendation to designate funding assistance to projects lowers the financial barrier to improvement. The recommendation for educational programs and surveys provided the information to prioritize, plan, and execute situationally logical projects with the aforementioned funding. The long-term effect of this is to lower likely intensity of fires in direct contact with the property, bettering health and safety. This also in greater defensible spaces in the event of a severe wildfire and could improve firefighter safety while empowering WUI residents with the ability to help protect their homes.

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